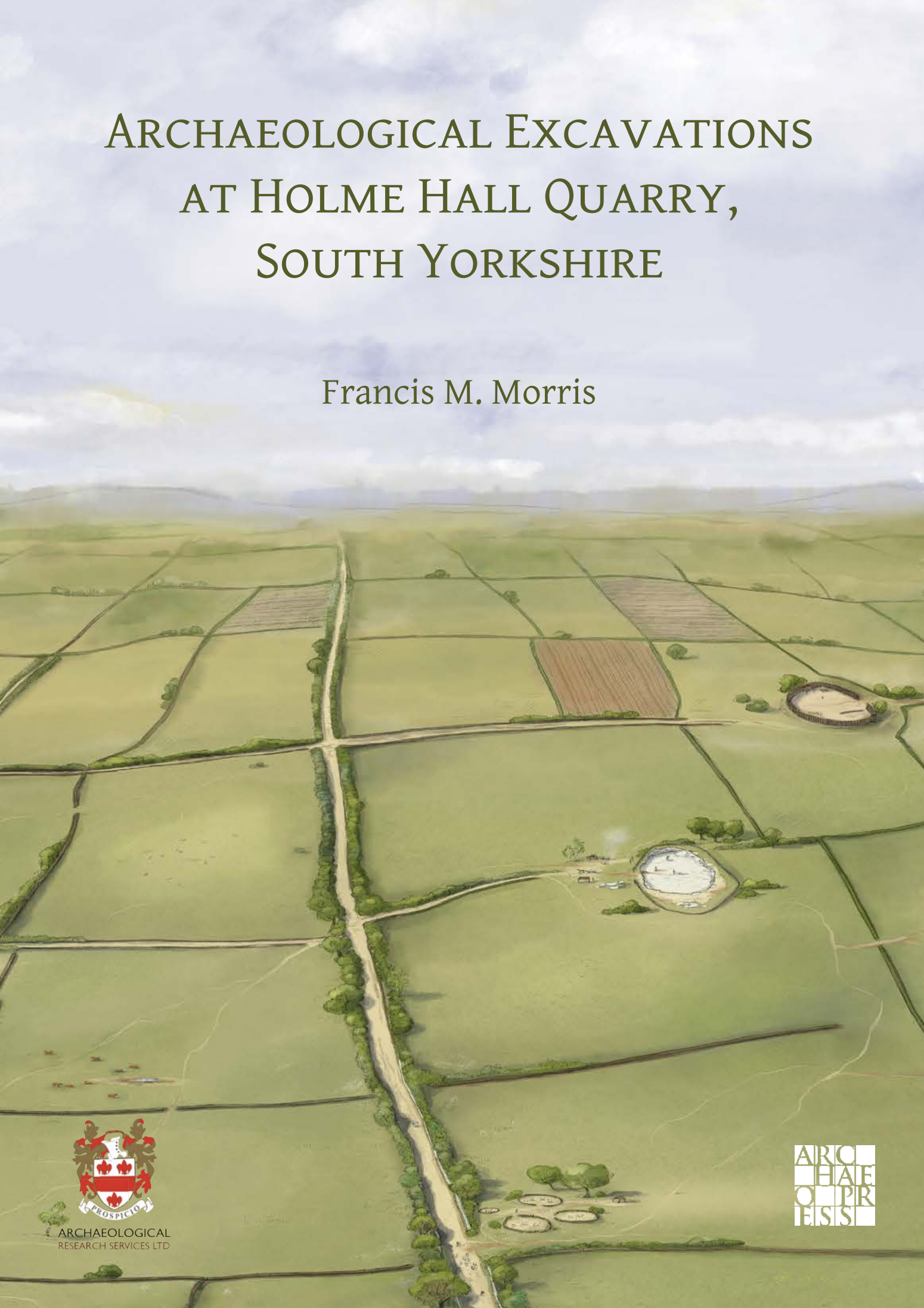
Archaeological Excavations at Holme Hall Quarry, South Yorkshire

Francis M. Morris



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Archaeological Excavations at Holme Hall Quarry, South Yorkshire

Francis M. Morris

with contributions by

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Cover: Reconstruction drawing: looking south over the field system and associated droveways and enclosures at Holme Hall Quarry in the mid 2nd century AD (by Ada Lewkowicz).

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Summaries

Summary

Holme Hall Quarry is a large limestone quarry located on the 'Magnesian Limestone' ridge in South Yorkshire, 7.6 km south-west of Doncaster, and 3.2 km south of the River Don. Archaeological excavations and watching briefs encompassing a total area of 35.2 ha were undertaken in 2004 (1.1 ha by the University of Sheffield), 2015 and 2019–22 (34.1 ha by Archaeological Research Services Ltd) prior to northwards extensions of the quarry. The excavations were preceded by extensive fieldwalking and geophysical surveys.

The earliest human activity on the site was evidenced by a scatter of 206 chipped lithics ranging in date from the Mesolithic to the Early Bronze Age. The vast majority were found in topsoil and none appeared to derive from contemporary archaeological features. This lithic assemblage provides context for hunter-gatherer activity across the area as well as more extensive use of the landscape by Early Neolithic farmers who built their burial monuments along the Magnesian Limestone ridge.

Two pits found in the 2020–22 excavations were radiocarbon dated to the 4th to 2nd centuries BC in the Middle Iron Age. These pits lay *c*.520 m apart. Several possible postholes or small pits, none with finds, lay near one of the pits and could be contemporary with it, perhaps relating to a small area of Middle Iron Age settlement. The radiocarbon-dated features of Middle Iron Age date provide a useful addition to our knowledge of this period, which is poorly represented in South Yorkshire due to the paucity of features and artefacts, especially pottery, of this date.

The main occupation of the site occurred during the Roman period (possibly beginning in the very Late Iron Age, but unlikely). An extensive, well-preserved rectilinear/coaxial field system of this date, spanning at least 650 m east–west by 495 m north–south, was recorded and sample-excavated across a large continuous area of 25.8 ha in 2020–22. The field system was associated with a north–south droveway (which ran for at least 489 m across the full extent of the excavated area), three curvilinear enclosures (Enclosures 3–5) and a rectilinear enclosure or small field/paddock (Enclosure 6). Excavations a short distance further east in 2015 and 2019, revealed a rectilinear Early Roman farmstead (Enclosures 2a and 2b) with associated field ditches to the north and west. About 450 m further south, another curvilinear (sub-circular) Early Roman farmstead was excavated in 2004 (Enclosure 1). Four Roman deposits containing burnt or charred human bone fragments were also found in the 2015 and 2019–22 excavations, including a disturbed/truncated urned cremation burial of late 1st- to 2nd-century AD date, situated *c*.40 m south-west of Enclosure 2a.

The field system at Holme Hall Quarry appears to have represented a large-scale planned reorganisation of the landscape and will have served to intensify agricultural production on what were fertile soils situated over limestone. On the basis of the pottery and radiocarbon dates, the field system was probably established during the 1st century AD, likely (but not certainly) after the appearance of the Roman military in the locality, probably from the early AD 50s onwards. A few enclosures were also constructed early in the Roman period as part of this planned layout: rectilinear Enclosure(s) 2a and 2b was probably established in the late 1st or 2nd century AD, whilst sub-circular Enclosure 1 was possibly built in the late first century AD. D-shaped Enclosure 3, meanwhile, may have gone out of use by the late 1st century AD. Similar field systems are well known in areas of South Yorkshire, West Yorkshire and Nottinghamshire to the north, east and south. Some of these other systems may have originated in the Iron Age, whilst others appear to have been established early in the Roman period, but it can be difficult to distinguish Iron Age field systems from Roman-period fields in this region.

Following occupation of the region around Holme Hall Quarry in the AD 50s onwards, the Roman military may have reorganised land tenure in order to intensify agricultural production to ensure their supply in an initially unstable and potentially hostile frontier zone. It is possible land in the Holme Hall Quarry area was confiscated or ownership/tenure transferred, with

farming taken up by preferred individuals or groups, such as Roman military veterans, rich absentee landlords, or friendly/compliant local 'native' leaders. The copper-alloy Stannington diploma, found hidden by a boulder on the western side of Sheffield, represents a grant of citizenship to a Roman auxiliary soldier by Hadrian and indicates that retired Roman auxiliaries may have bought/been granted land elsewhere in South Yorkshire in the early 2nd century AD.

Some useful insights into farming practices on the site were gained from analyses of the animal bone assemblage and the palaeoenvironmental samples. These indicated a mixed farming economy which likely supported local consumption as well as surplus for the Roman military. Bones of all three main meat-yielding species were represented and their relative proportions calculated: cattle were most commonly represented, closely followed by sheep/goat, with smaller amounts of pig. Charred grains of spelt wheat and barley were identified at Enclosures 2a and 2b (interpreted as rural Roman farmsteads), indicating crop processing, whilst fragments of quern stones found at Enclosures 1 and 2a indicate grinding of grain.

A considerable amount of Late Iron Age/Roman and Roman pottery (a total of more than 11,100 sherds, 117.56 kg) was recovered from the various excavations. This was largely of relatively local production (e.g. from the Doncaster area), but some vessels came from adjacent regions or other parts of Britain, whilst a handful of samian vessels (red glossy tableware) were imported from Gaul and olive oil amphorae from Spain. Other Roman objects included a few coins (x4, all copper alloy), a glass bead, copper-alloy brooches (x2, dragonesque and penannular types) and other metalwork, with a considerable amount of ironwork found near Enclosure 1.

Occupation at the site, as represented by pottery and other finds, appears to have focused on the enclosures/farmsteads, especially sub-circular Enclosure 1, which was probably a farmstead with evidence for cooking and for the presence of a blacksmith, and rectilinear Enclosure(s) 2a and 2b, which also appears to have been a rural farmstead, with evidence for feasting (the preparation and consumption of food). Curvilinear Enclosure 4 contained a small limestone quarry, although the enclosure may have been created before the quarry and perhaps originally had a different purpose. Other enclosures, such as D-shaped Enclosure 3, horseshoe-shaped Enclosure 5 and rectilinear Enclosure 6, might have been used to corral livestock.

The surviving parts of the field and enclosure ditches appear to have been filled by the late 2nd or early 3rd centuries AD, however, the field boundaries may have remained in use (e.g. as hedges and/or banks) into the later part of the Roman period or early medieval period. Numerous late Roman pits and postholes were found within rectilinear Enclosure(s) 2a and 2b, suggesting that this farmstead/enclosure may have remained a feature into the late 3rd century. Considerable evidence for occupation down to at least the late 3rd century was also represented by features within and immediately outside the other probable farmstead, Enclosure 1. There is, however, virtually no evidence for Roman activity on the site in or after the early/mid 4th-century, perhaps due to disruption of the previous system of military supply and/or to unrest and instability that was widespread across the Roman empire, including within *Britannia*, at this time.

A few early medieval features of 7th- to 10th-century date were identified in the 2020–22 excavations on the basis of radiocarbon dating. As for the Middle Iron Age, the radiocarbon-dated features of early medieval date provide useful additions to our knowledge of this period, which is archaeologically poorly represented in South Yorkshire. There is little evidence for activity during the high and late medieval periods and 16th to 17th centuries, when the site is likely to have been open fields, perhaps in part wooded. The site was primarily an agricultural landscape during the 18th and 19th centuries, but limestone was clearly being quarried on a considerable scale to produce lime for 'marling' the fields and maintaining fertility at the time of the Napoleonic and other wars when agricultural production was being intensified across England. Several infilled quarries of this date were recorded in 2004 and 2020–22, whilst the well-preserved base of a mid 19th-century lime kiln was also found in the 2020–22 excavations. This extractive activity was a precursor to the much larger-scale modern limestone quarrying at Holme Hall, which began after the Second World War.

Synthèse

La grande carrière de calcaire de Holme Hall est située sur l'arête de calcaire magnésien dans le Sud Yorkshire, à 7,6 km au sud-ouest de Doncaster, et à 3,2 km au sud de la rivière Don. Des fouilles archéologiques et des programmes de surveillance couvrant une superficie totale de 35,20 ha ont été entrepris en 2004 (1,10 ha, par l'université de Sheffield), en 2015 et en 2019–1022 (34,1 ha, par la société Archaeological Research Services Ltd) préalablement à l'extension de la carrière vers le nord. Les fouilles ont été précédées de prospections au sol et de relevés géophysiques extensifs.

Les activités humaines les plus anciennes sur le site sont mises en évidence par 206 matériaux lithiques éparpillés, remontant du mésolithique jusqu'à l'âge du bronze ancien. Retrouvés en grande majorité

dans la couche de terre arable, aucun ne semble provenir de vestiges archéologiques contemporains. Cet assemblage lithique donne comme contexte des activités de chasseurs-cueilleurs dans cette zone, ainsi qu'une utilisation plus extensive du paysage par des agriculteurs du néolithique ancien qui ont construit leurs monuments funéraires le long de l'arête de calcaire magnésien.

Deux fosses découvertes lors des fouilles de 2020–2022 ont été datées par radiocarbone du 4e au 2e siècle avant notre ère, à l'âge du fer moyen. Ces fosses sont écartées d'environ 520 m. Plusieurs trous de poteaux ou petites fosses, n'ayant rien révélé, se trouvent à proximité d'une des fosses et pourraient être contemporains, liés peut-être à une petite zone d'habitat de l'âge du fer moyen. Les vestiges datés de l'âge du fer moyen par radiocarbone sont un apport appréciable à nos connaissances de la période, qui est peu représentée dans le Sud Yorkshire du fait du manque de vestiges et d'artefacts de cette période, en particulier de céramique.

La principale occupation du site remonte à la période romaine (éventuellement à partir de l'âge du fer tardif, mais c'est peu probable). Un système de champs rectilinéaire/coaxial étendu et bien préservé de cette date, couvrant au moins 650 m d'est en ouest et 495 m du nord au sud, a été relevé et des sondages réalisés sur une large superficie ininterrompue de 25,80 ha en 2020–2022. Le système de champs était associé à un chemin d'accès (droveway) nord–sud (qui courait sur au moins 489 m sur toute l'étendue de la zone de fouilles), à trois enclos curvilinéaires (Enclos 3–5) et à un enclos rectilinéaire ou petit champ/paddock (Enclos 6). Des fouilles réalisées un peu plus loin à l'est, en 2015 et 2019, ont révélé une ferme rectilinéaire du début de la période romaine (Enclos 2a et 2b) associée à des fossés de champs au nord et à l'ouest. Environ 450 m plus au sud, des fouilles ont mis à jour en 2004 une autre ferme curvilinéaire (subcirculaire) du début de la période romaine (Enclos 1). Quatre dépôts romains contenant des fragments osseux humains brûlés ou calcinés ont également été retrouvés lors des fouilles de 2015 et de 2019–2022, y compris une sépulture à urne crématoire perturbée/tronquée datant de la fin du 1er au 2e siècle, située à env. 40 m au sud-ouest de l'Enclos 2a.

Le système de champs à Holme Hall semble correspondre à une réorganisation planifiée et à grande échelle du paysage et aura servi à intensifier la production agricole sur des sols fertiles recouvrant des couches calcaires. En s'appuyant sur la céramique et les datations au radiocarbone, il est probable que le système de champs ait été établi au cours du 1er siècle, sans doute après l'arrivée de l'armée romaine dans la région (mais ce n'est pas certain), probablement à partir du début de l'an 50. La construction de quelques enclos remonte aussi au début de la période romaine dans le cadre de cet agencement planifié : l'Enclos 2a et 2b rectilinéaire a probablement été établi à la fin du 1er ou au cours du 2e siècle, tandis que la construction de l'Enclos 1 subcirculaire remonte peut-être à la fin du 1er siècle. Entretemps, il est possible que l'Enclos 3, en forme de D, ait cessé d'être utilisé à la fin du 1er siècle. Des systèmes de champs semblables sont bien connus dans certaines parties du Sud Yorkshire, de l'Ouest Yorkshire et du Nottinghamshire, au nord, à l'est et au sud. Certains d'entre eux pourraient remonter à l'âge du fer, tandis que d'autres semblent avoir été établis en début de période romaine ; toutefois, il peut s'avérer difficile de faire la distinction entre les systèmes de champs de l'âge du fer et les champs de la période romaine dans cette région.

Suite à l'occupation de la région environnant Holme Hall à partir de l'an 50, il se peut que l'armée romaine ait réorganisé la propriété foncière afin d'intensifier la production agricole, pour assurer leur approvisionnement dans une zone frontalière initialement instable et potentiellement hostile. Il est possible que les terres dans la zone de Holme Hall aient été confisquées ou la propriété foncière/tenure transférée et l'exploitation agraire reprise en main par des personnes ou groupes privilégiés, tels que d'anciens soldats romains, de riches propriétaires absentéistes, ou des chefs locaux affables/bien disposés. Le diplôme de Stannington en alliage de cuivre, qu'on a retrouvé caché près d'un rocher à l'ouest de Sheffield, signifie que Hadrien concède la citoyenneté à un soldat de la légion auxiliaire romaine ; des légionnaires auxiliaires ont pu acheter/se voir remettre des terres ailleurs dans le Sud Yorkshire au début du 2e siècle.

Des informations précieuses sur les pratiques agraires sur place ont été obtenues à partir d'analyses de l'assemblage d'ossements animaux et d'échantillons paléoenvironnementaux. Ces derniers indiquaient une économie agraire mixte qui soutenait vraisemblablement la consommation locale, ainsi qu'un surplus pour les soldats romains. Les ossements des trois espèces productrices de viande étaient représentés et leurs proportions relatives ont été calculées : le bétail était le plus représenté, suivi de près par les moutons/chèvres, et quelques cochons en moindre proportion. Des grains d'épeautre et d'orge calcinés ont été identifiés dans les Enclos 2a et 2b (interprétés comme étant des fermes rurales romaines), ce qui est indicateur du traitement des céréales, tandis que des fragments de meules à grains retrouvés dans les Enclos 1 et 2a témoignent de la mouture de céréales.

Un nombre considérable de poteries de l'âge du fer tardif/de la période romaine et de poteries romaines

(au total, plus de 11 100 tessons, 117,56 kg) ont été retrouvées lors des diverses campagnes de fouilles. Il s'agissait principalement d'une production assez locale (p. ex. de la région de Doncaster), mais certains récipients provenaient de régions voisines ou d'autres parties de la Grande-Bretagne, tandis qu'une poignée de récipients samiens (vaisselle rouge vernissée) ont été importés de la Gaule et des amphores d'huile d'olive de l'Espagne. Parmi d'autres objets romains, on peut citer quelques pièces de monnaie (4, toutes en alliage de cuivre), une perle de verre, des broches en alliage de cuivre (2, l'une en forme de dragon et l'autre pénannulaire) et d'autres pièces de métal, ainsi qu'une quantité considérable de ferronnerie retrouvée à proximité de l'Enclos 1.

L'occupation du site, mise en évidence par la poterie et d'autres vestiges, semble avoir été axée sur les enclos/fermes, en particulier l'Enclos 1 subcirculaire, qui était probablement une ferme avec des traces d'activité culinaire et de la présence d'un forgeron, et l'Enclos 2a et 2b, qui semble également avoir été une ferme rurale, avec des traces de festin (préparation et consommation de nourriture). L'Enclos 4 curvilinéaire renfermait une petite carrière de calcaire, mais il est possible que la création de l'enclos ait été antérieure à la carrière et qu'il ait eu à l'origine une autre finalité. Les autres enclos, tels que l'Enclos 3 en forme de D, l'Enclos 5 en forme de fer à cheval, et l'Enclos 6 rectilinéaire, ont peut-être servi d'enclos pour le bétail.

Les parties subsistantes des fossés de champ et d'enclos semblent avoir été comblées à la fin du 2e ou au début du 3e siècle de notre ère ; toutefois, les limites parcellaires ont pu continuer à être utilisées (p. ex. sous forme de haies et/ou de talus) jusqu'à la dernière partie de la période romaine ou au début de la période médiévale. Des fosses et trous de poteaux de la fin de la période romaine ont été retrouvés en grand nombre dans l'Enclos 2a et 2b rectilinéaire, ce qui suggère que cette ferme/enclos a pu subsister jusqu'à la fin du 3e siècle. Des traces considérables d'occupation jusqu'à, au moins, la fin du 3e siècle sont visibles également à l'intérieur et immédiatement en dehors de l'Enclos 1, l'autre ferme probable. Il n'existe cependant quasiment aucune trace d'activité romaine sur le site au début/milieu du 4e siècle ou ultérieurement, peut-être du fait du bouleversement du système antérieur d'approvisionnement militaire et/ou du désordre et de l'instabilité qui s'étaient répandus à ce stade dans tout l'empire romain, y compris dans la province de Bretagne.

Quelques caractéristiques du début de la période médiévale, entre le 7e et le 10e siècles, ont été identifiées lors des fouilles de 2020–2022 par datation au radiocarbone. Comme pour l'âge du fer moyen, les vestiges datés par radiocarbone du début du Moyen-Âge sont un apport appréciable à nos connaissances de cette période, qui est peu représentée dans le Sud Yorkshire du point de vue archéologique. Il existe peu de traces d'activités au haut Moyen-Âge et à la fin du Moyen-Âge, et du 16e au 17e siècles, périodes auxquelles des champs ouverts recouvraient probablement le site, éventuellement en partie boisé. Principalement un paysage agricole aux 18e et 19e siècles, il est clair que le calcaire du site était exploité sur une échelle considérable afin de produire de la chaux pour le « marnage » des champs et en maintenir la fertilité à l'époque des guerres napoléoniennes et autres, où la production agricole s'intensifiait en Angleterre. Plusieurs carrières comblées de cette date ont été recensées en 2004 et 2020–2022, tandis que la base bien préservée d'un four à chaux du milieu du 19e siècle a également été mise à jour lors des fouilles de 2020–2022. Cette activité d'extraction était le précurseur d'une carrière de calcaire moderne à Holme Hall, dont l'exploitation à une échelle beaucoup plus grande a démarré après la Seconde guerre mondiale.

Zusammenfassung

Holme Hall Quarry ist ein weitläufiger Kalksteinbruch im Gebiet des Magnesian Limestone Ridge in South Yorkshire, einem Bergrücken aus magnesischem Kalkstein. Der Steinbruch befindet sich 7,6 km südwestlich von Doncaster und 3,2 km südlich des Flusses River Don. Auf einer Fläche von insgesamt 35,2 ha wurden hier 2004 (1,1 ha von der University of Sheffield), 2015 sowie 2019–2022 (34,1 ha von Archaeological Research Services Ltd.) archäologische Ausgrabungen sowie archäologische Baubegleitungen durchgeführt, bevor der Steinbruch in nördliche Richtung erweitert wurde. Im Vorfeld der Ausgrabungen wurden zudem umfangreiche Feldbegehungen und geophysikalische Untersuchungen vorgenommen.

Die ältesten Belege für menschliche Besiedelung in diesem Gebiet bilden 206 verstreut aufgefundene Steinartefakte, die aus der Zeit zwischen dem Mesolithikum und der Frühbronzezeit stammen. Der Großteil der Steinartefakte wurde im Oberboden gefunden und keines der Artefakte schien von Strukturen der jüngeren Vergangenheit zu stammen. Diese Ansammlung von Steinartefakten deutet auf eine Jäger-und-Sammler-Kultur in der Gegend sowie eine extensivere Nutzung des Gebiets durch frühneolithische Bauern hin, die entlang des Magnesian Limestone Ridge ihre Grabstätten errichteten.

Durch die Radiokarbondatierung zweier im Zuge der Ausgrabungen zwischen 2020 und 2022 freigelegter Gruben konnte festgestellt werden, dass diese im vierten bis zweiten Jahrhundert vor Christus in der

mittleren Eisenzeit angelegt wurden. Die beiden Gruben liegen circa 520 m voneinander entfernt. In der Nähe einer der Gruben befinden sich mehrere mögliche Pfostengruben bzw. kleine Gruben, in denen keine Funde getätigt wurden. Diese könnten aus der gleichen Zeit stammen und möglicherweise auf eine kleine Siedlung in der mittleren Eisenzeit hindeuten. Die radiokarbondatierten mitteleisenzeitlichen Strukturen liefern uns wertvolle neue Einblicke in dieses Zeitalter in South Yorkshire, über das aufgrund des Mangels an Strukturen und Artefakten aus dieser Zeit, insbesondere an Keramiken, nur wenig bekannt ist.

Die Hauptbesiedlungsphase des Gebiets fand zur Zeit des Römischen Reichs statt (möglicherweise ab der sehr späten Eisenzeit, was jedoch unwahrscheinlich ist). Zwischen 2020 und 2022 wurden ein weitläufiges, gut erhaltenes, rechtwinkliges/koaxiales Feldsystem aus dieser Zeit dokumentiert, das sich mindestens 650 m von Ost nach West und 495 m von Nord nach Süd erstreckte, sowie eine große zusammenhängende Fläche von 25,8 ha auf mögliche Funde untersucht. Das Feldsystem umfasste einen von Nord nach Süd verlaufenden Triftweg (der sich mindestens 489 m durch den gesamten Grabungsbereich erstreckte), drei gekrümmte Einfriedungen (Einfriedungen 3–5) und eine rechteckige Einfriedung bzw. ein kleines Feld/eine kleine Koppel (Einfriedung 6). 2015 und 2019 wurde bei Ausgrabungen etwas weiter östlich ein rechteckiges frührömisches Gehöft (Einfriedungen 2a und 2b) mit zugehörigen Feldgräben im nördlichen und westlichen Teil des Bereichs freigelegt. Etwa 450 m weiter südlich wurde 2004 ein weiteres gekrümmtes (kreisförmiges) frührömisches Gehöft entdeckt (Einfriedung 1). Im Zuge der Ausgrabungen in den Jahren 2015 und 2019–2022 wurden außerdem vier römische Lagerstätten freigelegt, die verbrannte bzw. verkohlte menschliche Knochenfragmente enthielten, darunter ein gestörtes/teilweise zerstörtes Grab mit Urne aus dem späten ersten bis zweiten Jahrhundert nach Christus, das sich circa 40 m südwestlich der Einfriedung 2a befand.

Das Feldsystem von Holme Hall Quarry scheint das Ergebnis einer umfangreichen, geplanten Umgestaltung der Landschaft gewesen zu sein und diente wohl der Intensivierung der Landwirtschaft auf dem fruchtbaren Boden, der den Kalkstein bedeckte. Anhand der Keramiken und der Radiokarbondatierung lässt sich feststellen, dass das Feldsystem wahrscheinlich im ersten Jahrhundert nach Christus angelegt wurde, höchstwahrscheinlich nach der Besetzung des Gebiets durch römische Legionen, vermutlich ab den frühen 50er-Jahren nach Christus. Einige Einfriedungen wurden ebenfalls als Teil der Plansiedlung in frührömischer Zeit errichtet: Die rechteckigen Einfriedungen 2a und 2b stammen vermutlich aus dem späten ersten oder zweiten Jahrhundert nach Christus, wogegen die kreisförmige Einfriedung 1 wahrscheinlich im späten ersten Jahrhundert nach Christus errichtet wurde. Im Gegensatz dazu wurde die D-förmige Einfriedung 3 im späten ersten Jahrhundert nach Christus womöglich bereits nicht mehr verwendet. Ähnliche Feldsysteme sind in der Gegend von South Yorkshire, West Yorkshire und Nottinghamshire im Norden, Osten und Süden bereits bekannt. Einige dieser Systeme stammen wohl aus der Eisenzeit, wogegen andere offenbar in frührömischer Zeit angelegt wurden. In diesem Gebiet erweist es sich jedoch häufig als schwierig, eisenzeitliche Feldsysteme von römischen Feldsystemen zu unterscheiden.

Nach der Besetzung des Gebiets um Holme Hall Quarry ab den 50er-Jahren nach Christus wurde der Landbesitz durch die römische Besatzung möglicherweise neu aufgeteilt, um die Landwirtschaft zu intensivieren und die Versorgung der Truppen in diesem anfangs instabilen und unter Umständen feindlichen Grenzgebiet sicherzustellen. Es ist vorstellbar, dass das Land im Bereich des Holme Hall Quarry konfisziert oder der Grundbesitz anderen übertragen wurde, um die landwirtschaftliche Produktion bevorzugten Individuen oder Gruppen anzuvertrauen, beispielsweise römischen Veteranen, wohlhabenden, nicht vor Ort lebenden Grundbesitzern oder wohlgesinnten/kooperationsbereiten „einheimischen“ Anführern. Das im westlichen Teil von Sheffield hinter einem Felsblock aufgefundene Stannington-Diplom aus Kupferlegierung stellt den Beleg für die Verleihung des römischen Bürgerrechts an einen römischen Hilfssoldaten durch Hadrian dar und deutet darauf hin, dass ausgediente römische Hilfssoldaten im frühen zweiten Jahrhundert nach Christus Ländereien in anderen Teilen von South Yorkshire erstanden bzw. erhalten haben.

Analysen von Tierknochenfunden und paläoökologischen Proben erbrachten einige aufschlussreiche Einblicke in die landwirtschaftlichen Praktiken des einstigen Siedlungsgebiets. Sie ließen auf gemischte Landwirtschaft schließen, die wahrscheinlich den Bedarf der lokalen Bevölkerung deckte sowie einen Überschuss für die römischen Truppen lieferte. Die Funde umfassten Knochen aller drei primären Fleischlieferanten. Laut Berechnungen waren Rinderknochen am häufigsten, dicht gefolgt von Schafs- bzw. Ziegenknochen sowie einer kleineren Menge von Schweineknochen. In den Einfriedungen 2a und 2b (bei denen es sich vermutlich um ländliche römische Gehöfte handelte) wurden verkohlte Dinkel- und Gerstenkörner gefunden, die auf die Verarbeitung von Getreide rückschließen lassen. Die in den Einfriedungen 1 und 2a aufgefundenen Mahlsteinfragmente deuten hingegen darauf hin, dass hier Getreide gemahlen wurde.

Aus den verschiedenen Grabungsstätten wurde eine erhebliche Menge von späteisenzeitlichen/römischen und römischen Keramiken geborgen (insgesamt mehr als 11.100 Scherben bzw. 117,56 kg). Diese Keramiken stammten größtenteils aus relativ lokaler Produktion (z. B. aus dem Gebiet von Doncaster), einige Gefäße waren jedoch angrenzenden Regionen oder anderen Teilen der britischen Inseln zuzuordnen. Eine Handvoll samischer Gefäße (rot glänzendes Geschirr) wurde hingegen von Gallien und Olivenölamphoren aus Spanien importiert. Die geborgenen römischen Objekte umfassten außerdem einige Münzen (vier Stück, alle aus Kupferlegierung), eine Glasperle, Fibeln aus Kupferlegierung (zwei Stück, eine Drachen- und eine Ringfibel) sowie andere Metallobjekte, darunter zahlreiche Eisenobjekte in der Nähe von Einfriedung 1.

Die durch Keramiken und andere Funde belegte Besiedelung scheint auf die Einfriedungen bzw. Gehöfte konzentriert zu sein. Dies gilt insbesondere für die kreisförmige Einfriedung 1, die vermutlich ein Gehöft war und Spuren einer Kochstelle sowie einer Schmiede aufweist, sowie die rechteckigen Einfriedungen 2a und 2b, die ebenfalls vermutlich Gehöfte waren und Spuren von üppigen Mahlen (Vorbereitung und Verzehr von Speisen) aufweisen. Die gekrümmte Einfriedung 4 beherbergte einen kleinen Kalksteinbruch. Die Einfriedung könnte jedoch bereits vor dem Steinbruch errichtet worden sein und ursprünglich einen anderen Zweck erfüllt haben. Andere Einfriedungen wie die D-förmige Einfriedung 3, die hufeisenförmige Einfriedung 5 und die rechteckige Einfriedung 6 dienten möglicherweise als Gehege.

Die intakten Teile der Feld- und Einfriedungsgräben wurden offenbar im späten zweiten oder frühen dritten Jahrhundert nach Christus mit Schutt aufgefüllt. Die Feldbegrenzungen fanden jedoch möglicherweise bis in spätrömische oder frühmittelalterliche Zeit weitere Verwendung (z. B. als Einfriedungen und/oder Böschungen). In den rechteckigen Einfriedungen 2a und 2b wurden zahlreiche spätrömische Gruben und Pfostengruben freigelegt, die darauf hindeuten, dass diese Gehöfte bzw. Einfriedungen bis in das späte dritte Jahrhundert hinein erhalten blieben. Funde in und unmittelbar außerhalb des anderen mutmaßlichen Gehöfts (Einfriedung 1) liefern ebenfalls einen eindeutigen Beleg für dessen Bewohnung bis mindestens in das späte dritte Jahrhundert hinein. Es existieren jedoch nahezu keine Belege für eine römische Besiedlung dieses Gebiets im bzw. nach dem Beginn/der Mitte des vierten Jahrhunderts. Dies könnte auf einen Zusammenbruch des vorhergehenden militärischen Versorgungssystems und/oder auf Unruhen und die instabile Lage zurückzuführen sein, die sich zur damaligen Zeit auf große Teile des Römischen Reichs, darunter auch auf *Britannia*, ausgebreitet hatten.

Im Zuge der Ausgrabungen zwischen 2020 und 2022 wurden einige frühmittelalterliche Strukturen freigelegt, die mittels Radiokarbondatierung auf das siebte bis zehnte Jahrhundert datiert werden konnten. Diese radiokarbondatierten frühmittelalterlichen Funde liefern uns genauso wie die Funde aus der mittleren Eisenzeit wertvolle Einblicke in dieses Zeitalter in South Yorkshire, über das nur wenig bekannt ist. Für eine Besiedelung im Hoch- und Spätmittelalter sowie im 16. und 17. Jahrhundert gibt es nur wenige Belege. In diesen Zeiträumen war das Gebiet wahrscheinlich von offenen Feldern geprägt und möglicherweise teilweise bewaldet. Im 18. und 19. Jahrhundert wurde das Gebiet vorrangig landwirtschaftlich genutzt. Es gibt jedoch auch eindeutige Belege für einen großangelegten Kalksteinabbau zur Zeit der Napoleonischen und anderer Kriege, um Kalk für Mergel zum Düngen der Felder herzustellen. In diesem Zeitraum wurde die Landwirtschaft in ganz England intensiviert. Einige mit Schutt gefüllte Steinbrüche aus dieser Zeit wurden 2004 und 2020–2022 dokumentiert. Im Zuge der Ausgrabungen in den Jahren 2020–2022 wurde außerdem die gut erhaltene Basis eines Kalkofens aus der Mitte des 19. Jahrhunderts entdeckt. Diese Bergbauaktivitäten gelten als Vorläufer des weitaus umfangreicheren modernen Kalksteinabbaus im Gebiet von Holme Hall, der nach dem Zweiten Weltkrieg seinen Anfang nahm.

Chapter 1

Introduction

Outline of the study

Holme Hall Quarry is a large limestone quarry located in South Yorkshire in the parishes of Stainton and Edlington. It is situated immediately south of the M18 motorway, 7.6 km south-west of the city of Doncaster, 12 km east-north-east of the town of Rotherham and 3.2 km south of the River Don (Fig. 1.1, cf. Figs 6.4 and 6.5). In recent years several archaeological investigations have been undertaken as part of the planning process and a Review of Old Mineral Permissions prior to northwards extensions of the quarry towards the M18.

The results of archaeological excavations and watching briefs at Holme Hall Quarry by Archaeological Research and Consultancy at the University of Sheffield (ARCUS) in 2004 and by Archaeological Research Services Ltd (ARS Ltd) in 2015 and 2019–22, encompassing a total area of 35.2 ha, are published in this monograph (Fig. 1.2). Also included are the results of associated fieldwalking (across an area of proposed quarrying exceeding 100 ha) and geophysical surveys (across a total area of *c*.56 ha) by ARCUS and Geophysical Surveys of Bradford in 1993–4 and by ARS Ltd in 2014–15. These investigations took place in a series of agricultural fields that were assigned codes during the initial fieldwalking of 1993–4. These field codes have been used throughout this publication and are set out in Table 1.1 and shown on Fig. 1.2.

The principal archaeological features revealed in the excavations were several Roman period rural farmsteads, together with additional enclosures and ditches that formed part of an extensive, well-preserved (just possibly Late Iron Age to) Roman rectilinear/coaxial field system with associated droveways and paddocks. Features of Middle Iron Age, early medieval and post-medieval date were also recorded, along with an array of finds ranging in date from the Mesolithic to post-medieval periods.

Detailed archive reports providing comprehensive descriptions of all contexts and analysis of the artefacts and the human, faunal and palaeoenvironmental remains recovered are available online through the Archaeology Data Service (O'Neill and Raybould 2007; Mora-Ottomano 2016; Morris 2024).

The physical archives for the Holme Hall Quarry excavations of 2015 and 2019–22 and the associated fieldwalking are currently held temporarily by ARS Ltd at their Riverside Store in Bakewell (Derbys.). Doncaster Museum is at present unable to accept archaeological archives, but has agreed to take in the Holme Hall Quarry archives when possible. The paper records and drawing sheets have all been scanned and the digital records, including photographs, will be archived with the Archaeology Data Service. The OASIS numbers for these investigations are archaeol5-207186, archaeol5-269164 and archaeol5-514797. The ARCUS excavation of 2004 is archived at Doncaster Museum with accession number DONMG:2004.9.

Structure of this report

The first section of this monograph (Chapter 1) introduces the study and describes the geology and physical setting of the Holme Hall Quarry site, its archaeological and historical background, the sequence of archaeological investigations that took place on it and the phasing. The results of the fieldwalking and geophysical surveys conducted prior to the archaeological excavations are presented in Chapter 2. Chapter 3 describes the ARCUS excavation of 2004. Chapter 4 covers the excavations by ARS Ltd in 2015 and 2019. Chapter 5 details the excavations by ARS Ltd in 2020–22. Chapter 6 presents an overall summary and discussion of the results of the excavations and sets the site in its regional context.

Table 1.1. Archaeological investigations at Holme Hall Quarry: concordance table showing field/area codes, field names (used for some site records and archive reports), field sizes and the years and types of archaeological investigations in each field (for field locations, see Fig. 1.2).

Field/area code	Field name (used in site records)	Field size (approx.)	Year(s) of excavation	Year(s) of fieldwalking	Year(s) of geophysical survey
S1	-	33 ha	2004	1993–4	1994
S2	-	6 ha	-	1993–4	-
N1	Top Drive Left	4.7 ha	2020	1993–4, 2015	2014–15
N2/N3	Common	14 ha	2021–22	1993–4, 2015	2014–15
N4	Motorway	7.8 ha	2022	1993–4, 2015	2014–15
N5/N6	Top Drive Right	9.6 ha	2020–22	1993–4, 2015	2014–15
N7	Peterwood	5 ha	2019	1993–4, 2015	2014–15
N8	Cottage	5.8 ha	2015	1993–4, 2015	2014–15
N9	-	6 ha	-	-	-
N10	-	6 ha	-	1993–4	-
N11	Bottom Grass	5.3 ha	2015	1993–4	2014–15
N12	-	9 ha	-	1993–4	-
N13	5 Acre	2.3 ha	-	-	2014–15

Geology and physical setting of the site

The underlying solid geology of the site consists of Cadeby Formation Dolostone (widely referred to as 'Magnesian Limestone'), a sedimentary bedrock formed between 272.3 and 252.2 million years ago during the Permian period (British Geological Survey 2024). This forms part of an elevated 'Magnesian Limestone' belt or ridge, which runs north from near Nottingham, through South and West Yorkshire and into North Yorkshire and County Durham (Roberts *et al.* 2010, Illus. 5 and 6; British Geological Survey 2024). The upper part of the Dolostone is extracted at the modern quarry. It is overlain by freely draining lime-rich loamy soils (Cranfield University 2024, Soilscape 5).

Immediately to the east of the quarry is a band of Edlington Formation calcareous Mudstone, a sedimentary bedrock also formed during the Permian period (British Geological Survey 2024). This is overlain by slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils (Cranfield University 2024, Soilscape 18).

Prior to development (quarrying) the area of the site comprised arable fields to the north and west of the former Cockhill House Farm (2015 and 2019–22 excavations) and to the south-west of the former Woodlands Farm (2004 excavation). There were various areas of woodland to the north-east and east of the site and the working quarry lay to the south.

The site generally sloped gently down from a high point of 97–98 m aOD in the west to about 80 m aOD at the eastern point of the ARS Ltd excavation, over a distance of about 800m. The ground undulated in places and there was a noticeable but relatively shallow dry valley on the west edge of the site, with the ground rising up above 100 m aOD further west.

Holme Hall Quarry is located within the catchment of the River Torne, which flows roughly northwards, approximately 5 km to the east of the quarry. A number of small tributaries of the Torne rise within 2 km of the boundary of the quarry, and generally flow in an easterly direction. To the west of the quarry, beyond the watershed for the catchment of the Torne, water drains towards the River Don, which runs approximately south-west to north-east, its closest point lying *c*.3.2 km to the north of the site.

The closest extant natural watercourse to the site is the Ruddle Dike, which rises on the northern edge of Maltby, initially flowing in a north-north-easterly direction towards Cockhill Lane, east of Braithwell (reaching a point *c*.750 m south-south-west of the 2004 excavation and *c*.1 km south of the south-east corner of the 2020–22 excavations), where it turns south-east to flow through Stainton and ultimately into the Torne. Another unnamed watercourse rises at Ring Pond in fields to the east of the quarry (*c*.1.2 km east of the

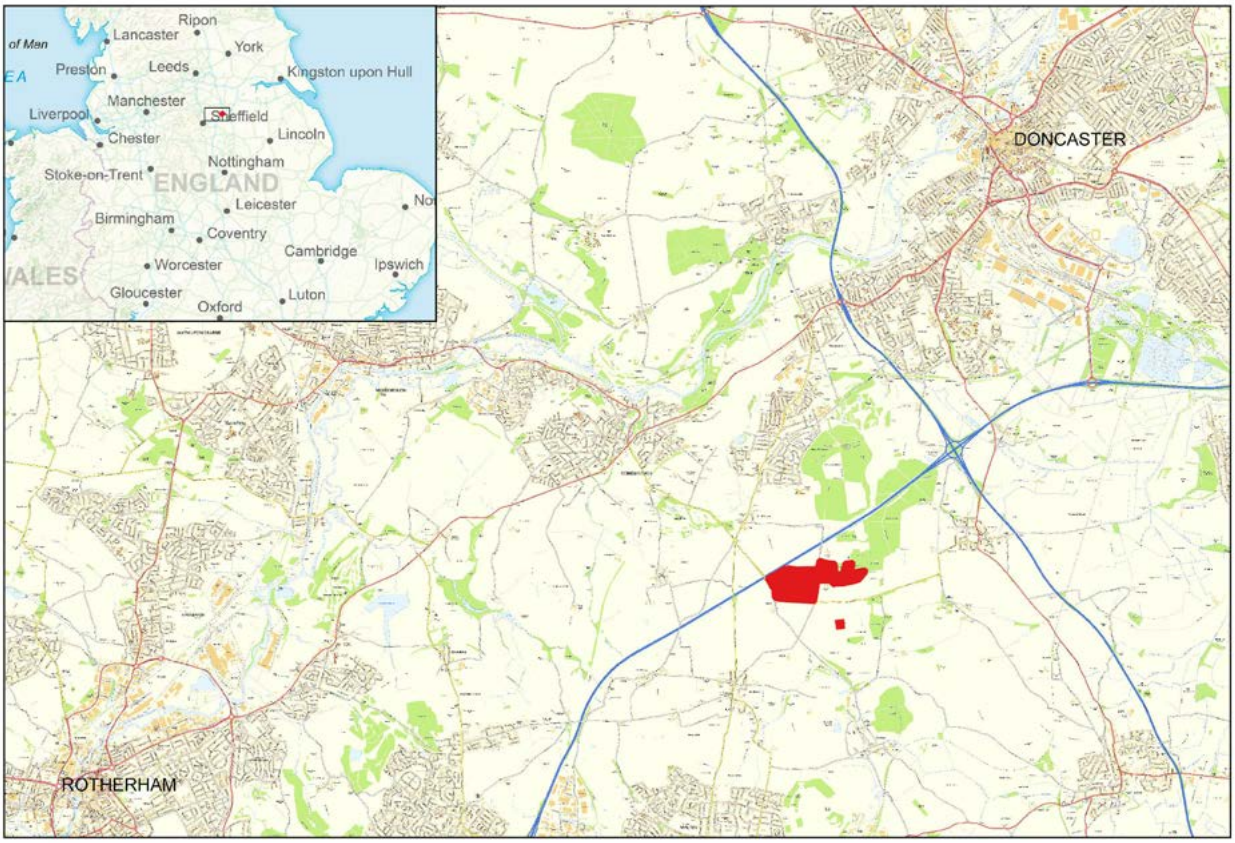


Fig. 1.1. The location of Holme Hall Quarry (2004, 2015 and 2019–22 sites shown in red) in South Yorkshire. Contains Ordnance Survey data © Crown copyright and database right (2024).

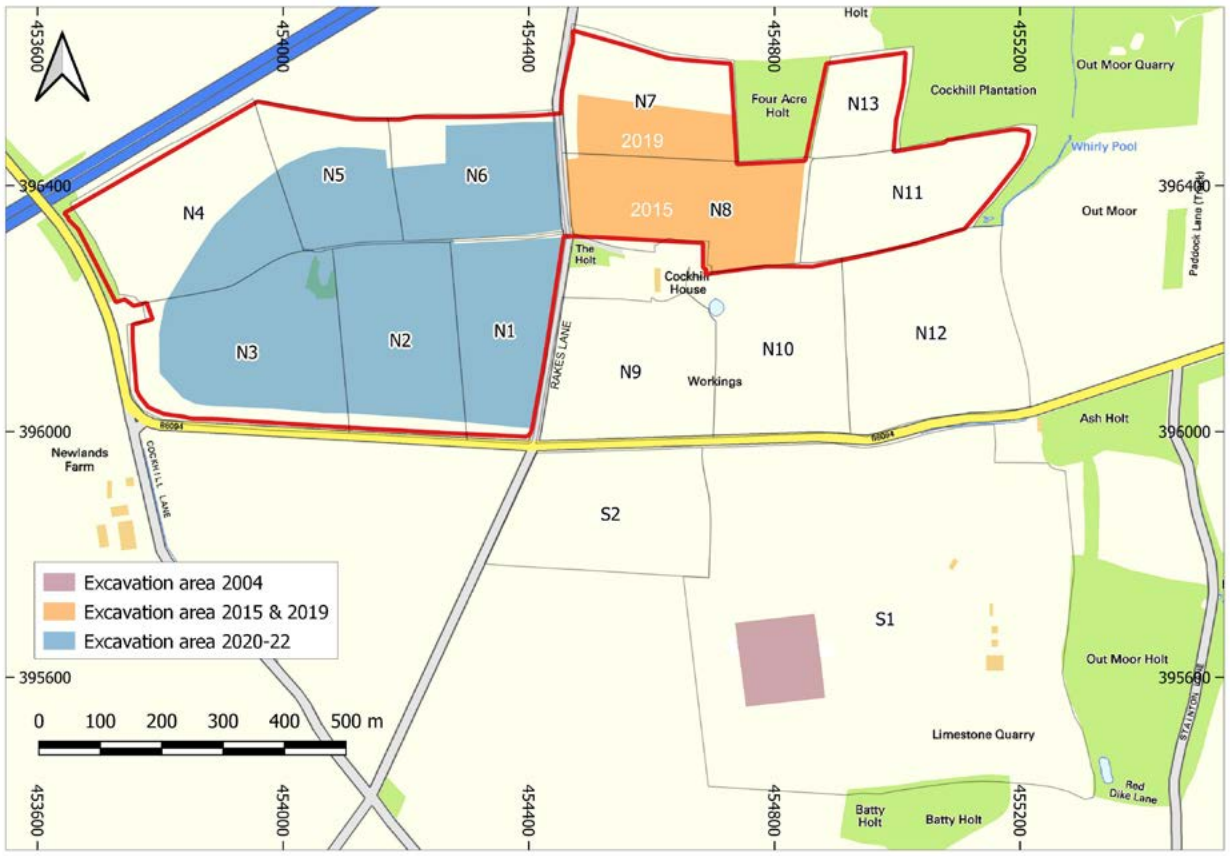


Fig. 1.2. Plan showing the areas excavated at Holme Hall Quarry in 2004, 2015, 2019 and 2020–22. The boundary of the 2015 and 2019–22 ARS site is shown in red. For field/area codes, see Table 1.1. Contains Ordnance Survey data © Crown copyright and database right (2024).

2004 excavation and *c*.1.2 km south-east of the 2015 excavation) and flows in a generally easterly direction towards the Torne. A spring which produces a short watercourse that sinks at a 'Whirly Pool' to the north is labelled on Ordnance Survey maps of 1854 onwards, immediately east of an area of a proposed northern extension to the quarry known as Cockhill East and just *c*.400 m east of the 2015 excavation (cf. maps included in Brown 2015). This spring may possibly relate to 19th-century drainage works during enclosure of the Cockhill East area, but an earlier minor watercourse or damp ground/pools may have existed in this part of the site (see below, p. 56).

Archaeological and historical background

This section summarises the state of knowledge of the archaeology and history of the locality of the site prior to the completion of the project. It is based on Desk Based Assessments prepared before the two main stages of the project. The first of these was undertaken in 1993 by ARCUS on behalf of Tarmac Roadstone Ltd (Eastern) in response to a forthcoming planning application for a northern extension to Holme Hall limestone quarry (Symonds 1993). This preceded the fieldwalking and geophysical survey of 1993–4 and the excavation of 2004.

The second was prepared in 2014 (updated 2015) by ARS Ltd on behalf of Wardell Armstrong LLP for Hope Construction Materials ahead of a Review of Old Mineral Permissions for a number of historic mineral permissions at Holme Hall and Stainton Quarries (Brown 2015). The 'red line boundary' of the combined area of all of the mineral permissions that were to be addressed by the Review of Old Mineral Permissions is depicted by red polygons on Figs 1.3 and 1.4, and is c.320 ha in area. This second assessment preceded the fieldwalking and geophysical survey of 2014–15 and the excavations of 2015 and 2019–22.

The Desk Based Assessments aimed to identify and determine the nature of any archaeological or historic building remains that existed on the site and to outline the site's archaeological potential. To this end, both assessments included surveys of known archaeological and historic remains in the immediate locality. The results of the 2014–15 survey within a study area extending 1 km in all directions from the Review of Old Mineral Permissions boundary are shown on Figs 1.3 and 1.4. For further discussion setting the archaeological remains found in the subsequent excavations at Holme Hall Quarry in their regional context, see Chapter 6 (below, pp. 126-50).

Palaeolithic to Bronze Age

Upper Palaeolithic occupation has been recorded at several caves and rock shelters in the Magnesian and Carboniferous Limestone karsts at the south-western and eastern edges of South Yorkshire, including Cresswell Crags (Derbys.), *c*.20 km south of Holme Hall Quarry (Oliver and Davies 2008; Pettitt 2018). Late Upper Palaeolithic artefacts, possibly derived from a rock shelter, have also been found at Edlington Wood, a short distance north of the quarry site (Gaunt and Buckland 2003, 21; Pettitt 2018). Late Upper Palaeolithic or Mesolithic flints were recorded as surface finds immediately south of the quarry and west of Stainton prior to 1964 (Fig. 1.4, AR35) and a Mesolithic flint backed blade has been found at Edlington Wood (Fig. 1.3, AR10).

Probable Neolithic long cairns are known from the vicinity of the site, e.g. at Edlington Wood, *c*.2 km to the north, and at Sprotborough, 5 km to the north (Buckland 1986, Fig. 3; Manby *et al.* 2003, 97; Brown 2015, 4; Merrony *et al*. 2017). A possible long barrow (Fig. 1.3, AR13) has also been identified in Wadworth Wood immediately north-east of the quarry. Stray surface finds of Neolithic date from the vicinity of the site include a leaf-shaped arrowhead (Fig. 1.4, AR39) and a stone axe head (Fig. 1.3, AR18). Bronze Age sites and finds are known from the surrounding region (Roberts *et al.* 2010, Illus. 24 and 57; Cockrell 2019), but are poorly represented in the immediate surroundings of the quarry.

Iron Age to Roman

Field systems of Late Iron Age to Roman date, with associated trackways and enclosures, are widespread in the surrounding region. They are well evidenced as cropmarks visible in aerial photographs and have been excavated at several sites in South and West Yorkshire and in Nottinghamshire (Fig. 6.4; cf. Roberts *et al.* 2010, especially Illus. 26, 115 and 116). Cropmarks representing fragments of several field ditches, trackways and enclosures of probable Late Iron Age to Roman date have also been identified within 1 km of Holme Hall Quarry (Figs 1.3 and 1.4, AR06, AR07, AR09, AR12, AR15, AR20, AR21, AR22, AR26, AR32 and AR36; cf. Fig. 6.5). At Edlington Wood, *c*.2 km to the north of the quarry, enclosures built of stone and earth banks faced with limestone blocks have been recorded, with three rectangular stone buildings lying a short distance to the north (Corder 1951; Ramm 1973; Sumpter 1973; Chadwick 2020). A wide variety of Roman finds were recovered from the Edlington Wood site, including coin hoards of the mid to late 3rd century.

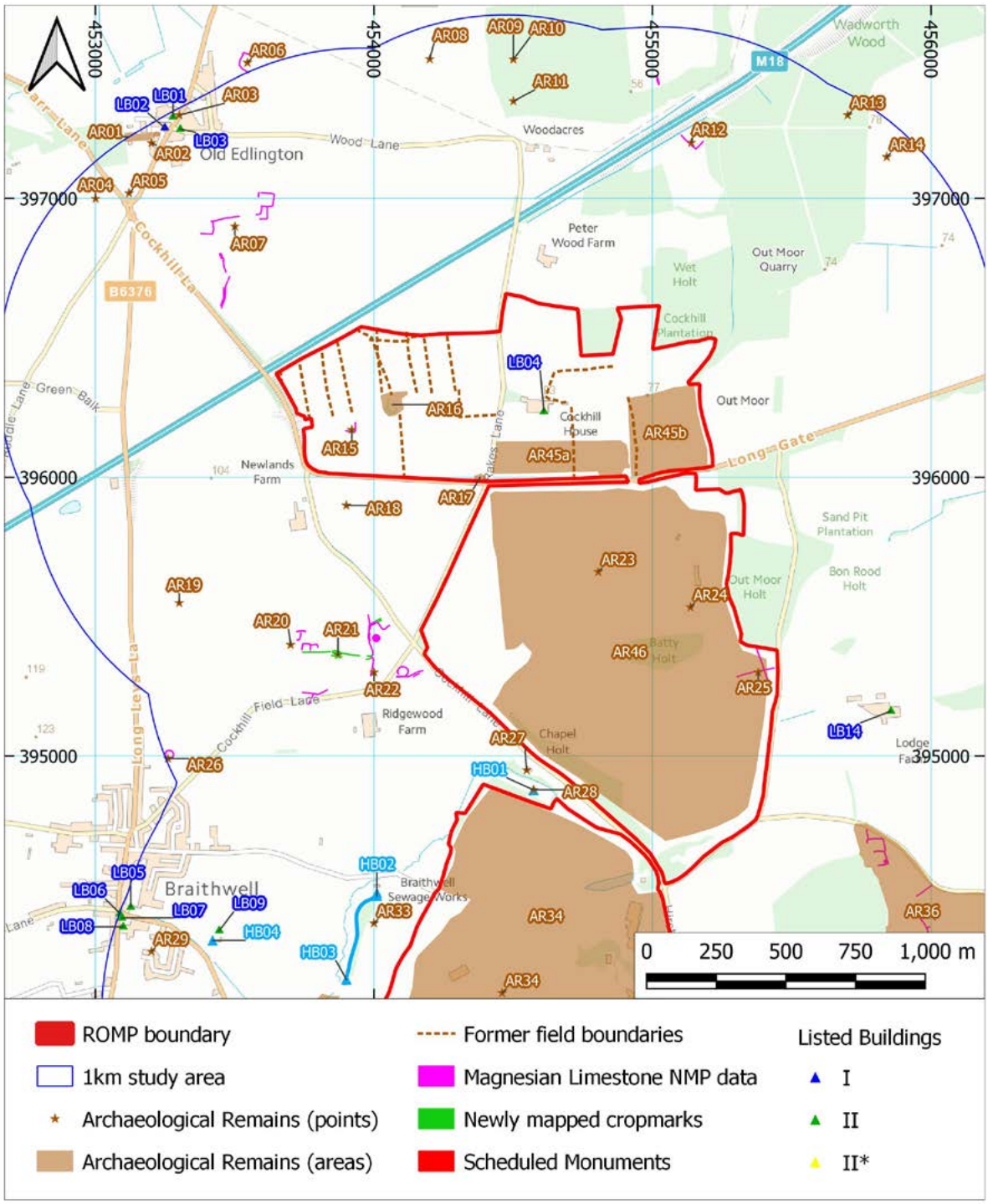


Fig. 1.3. Archaeological remains and historic buildings in the vicinity of Holme Hall Quarry, northern part (Brown 2015, Fig. 7a, with adjustments). Full details of archaeological remains (AR numbers) and historic buildings (LB and HB numbers) labelled on this figure are provided in Brown 2015, 22–33. AR23 marks the site of the 2004 excavation. Information based on Sites and Monuments Record data © South Yorkshire Archaeology Service and © English Heritage (2014). Contains Ordnance Survey data © Crown copyright and database right (2014).

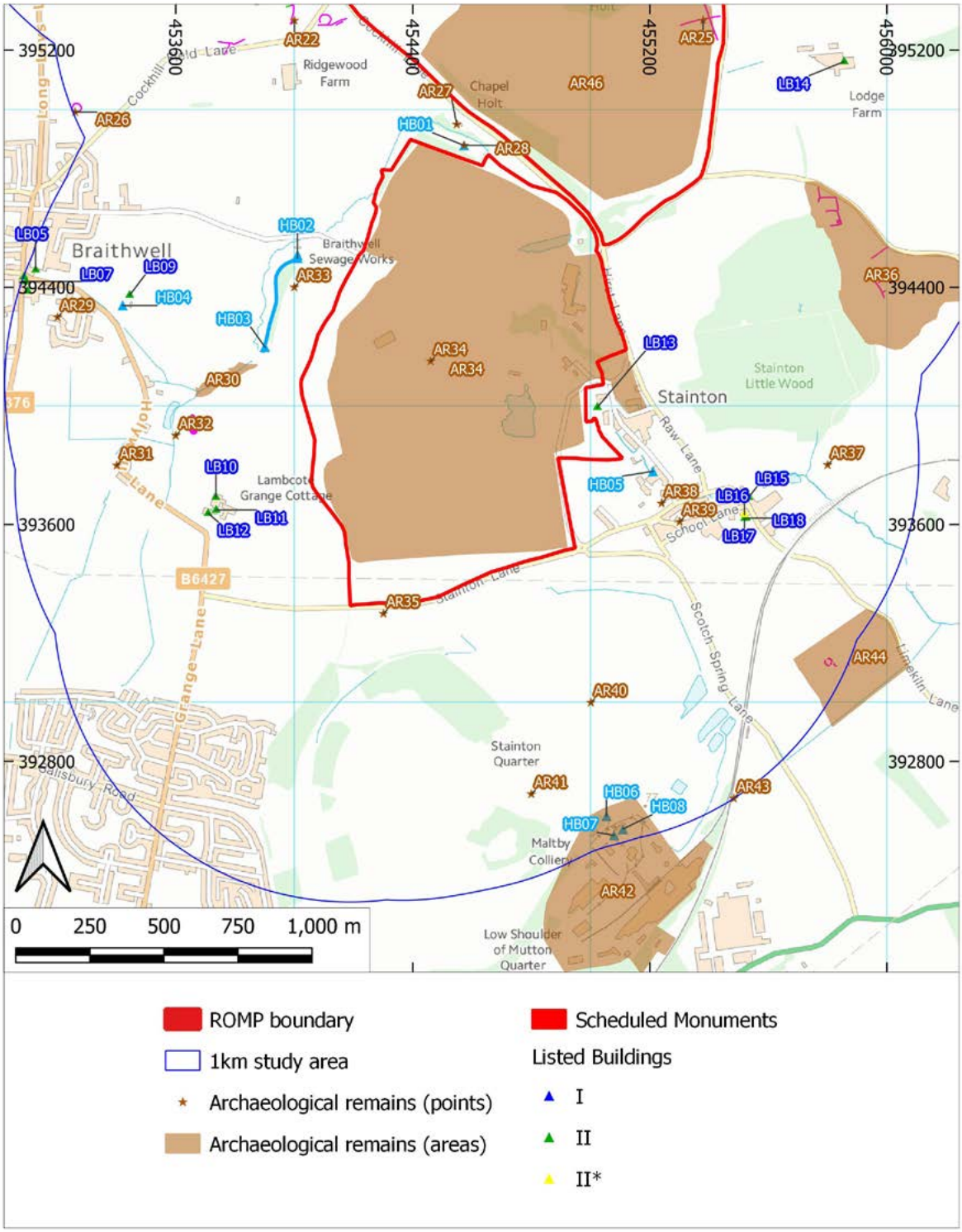


Fig. 1.4. Archaeological remains and historic buildings in the vicinity of Holme Hall Quarry, southern part (Brown 2015, Fig. 7b, with adjustments). Full details of archaeological remains (AR numbers) and historic buildings (LB and HB numbers) labelled on this figure are provided in Brown 2015, 22–33. AR23 marks the site of the 2004 excavation. Information based on Sites and Monuments Record data © South Yorkshire Archaeology Service and © English Heritage (2014). Contains Ordnance Survey data © Crown copyright and database right (2014).

Other stray Roman finds from the vicinity of Holme Hall Quarry include a late 1st-century AD coin (Fig. 1.3, AR04) and pottery and roof tiles (Fig. 1.3, AR05) from the area to the south of Edlington. A possible Roman kiln has also been postulated at Chapel Holt/Hole due to the identification of a group of pottery (apparently of 2nd- to 3rd-century date), patches of burnt ground and large cobbles (Figs 1.3 and 1.4, AR27).

Medieval

The place name Edlington derives from the Old English for 'Farmstead/town associated with *Edla*' (Smith 1961, 129) indicating that this settlement had Anglo-Saxon origins. Various other local place names are also of Anglo-Saxon origin, e.g. Conisbrough, Wadworth, and Sprotborough, suggesting that this was an area heavily settled in Anglo-Saxon times. There is, however, a distinct lack of archaeological evidence for early medieval activity near the Holme Hall Quarry site, although a pottery sherd of possible Anglo-Saxon date has been discovered to the east of Wadworth Wood (Fig. 1.3, AR14).

The remains of Edlington shrunken village (Fig. 1.3, AR03) indicate that this settlement may have been more substantial in medieval times than in later periods. Two other settlements of probable medieval origin are located nearby, the villages of Braithwell and Stainton. Braithwell is a form of 'Bradwell', meaning 'broad well or stream', the Old English *brayd* being later replaced by the Old Norse *breiðr* (Smith 1961, 133). There is a medieval holy well at Braithwell (Fig. 1.4, AR31), and it is likely that it is from this that the place name derives. Stainton is a form of the Old English 'Stantun' meaning 'stone farmstead', with the Old English *stan* being later replaced by the Old Norse *stein* (Smith 1961, 130). These names reflect the widespread Scandinavian presence in the region surrounding Doncaster and York from the arrival of the Danes in the mid 9th century up until the Norman Conquest (Smith 1962, 45). Maltby is another local example of a Scandinavian placename.

A building and an earlier cemetery, both possibly of medieval date (on the basis of the pottery and other finds recovered from the excavation), were investigated in the 1950s at Chapel Holt/Hole (Figs 1.3 and 1.4, HB01/AR28) and a 13th-century and later moated site is known at Moat Hall (Figs 1.3 and 1.4, SM2), immediately east of Braithwell. The remainder of the study area is likely to have comprised open fields divided between the surrounding parishes throughout the medieval period. The large area known as Cockhill Common was shared between the parishes of Edlington and Stainton. This toponym was first recorded as *Kokkehil* in 1202, and is thought to derive from the Old English *cocc* or 'hillock', and *hyll* or 'hill' (Smith 1961, 129). The important ecclesiastical centre of Roche Abbey (founded 1147) lies just 5 km to the south and the area of Holme Hall Quarry may have formed an important hinterland for this substantial Cistercian foundation.

Post-medieval

It is not clear when the farm centred on Cockhill House (Fig. 1.3, LB04) was first established, but a 'Cockhill Farm' was mentioned in a deed dating to 1714 (GMAC 1994, 11) and Jeffreys' map of the County of York engraved in 1771 (Jefferys 1772, Sheet 8) depicts 'Cockhill House' immediately to the north of the unlabelled Cockhill Common. Maps of 1811, 1815 and 1840 depict the ongoing enclosure of the area around Cockhill Common during the first half of the 19th century (Brown 2015, Figs 2, 3 and 5), as well as a limestone quarry that had been dug in the north part of the Common (Fig. 1.3, AR16). The 1854 Ordnance Survey map at 1:10,560 scale (extracts reproduced in Brown 2015) shows several other small limestone quarry pits (some labelled 'Old Quarry' or 'Old Quarries') in the area of the proposed extension of the modern quarry.

Other evidence for post-medieval industrial activity can be found to the south-west of the extension area at the Ruddle Mill (Fig. 1.4, HB02), with its associated Mill Race (HB03) and Mill Pond (AR30). The mill appears to have been built around 1810 and soon after was known as the Union Colour Mill (Brown and Cowdell 1967, 139). Ruddle was mined at Micklebring, *c*.2.6km to the west, and it is thought that the mill was constructed at the nearest place where there was sufficient water supply to drive a waterwheel (Brown and Cowdell 1967, 139).

In 1910 the first shafts were sunk at Maltby Colliery, a short distance south of the village of Stainton (Fig. 1.4, AR41 and AR44). Modern limestone quarrying began at Holme Hall, immediately to the north of Stainton, in 1948 (Roberts *et al.* 2007, 30) and expanded massively in the late 20th century (Figs 1.3 and 1.4, AR34, AR46) and into the 21st century (Fig. 1.3, AR45a, b).

Conclusions

The desk-top study of 1993 (Symonds 1993) identified no known medieval or earlier archaeological features within the proposed quarry extension area, but the evidence of finds of various periods from the locality indicated that the site had significant archaeological potential, which was subsequently further investigated, initially by a widescale fieldwalking survey in 1993–4.

The Desk Based Assessment of 2014/2015 (informed by the results of the fieldwalking and geophysical surveys of 1993–4, the excavation of 2004 and comprehensive analysis of aerial photographs in the Magnesian

Limestone National Mapping Project, cf. Roberts *et al.* 2010) concluded that there was a high probability that previously unknown archaeological remains of Iron Age/Romano-British date could survive within the Review of Old Mineral Permissions boundary where disturbance by later quarrying activity had not taken place, whilst the presence of remains from other periods should not be discounted (Brown 2015, 15–18). The recommendations of this assessment were that a phased scheme of archaeological evaluation should be undertaken, initially comprising geophysical and fieldwalking surveys. The results of these surveys could then be used to identify what further archaeological works were required.

The investigations

Fieldwalking and geophysical surveys 1993–4

Following on from the Desk Based Assessment of 1993 (Symonds 1993), ARCUS undertook an extensive fieldwalking survey covering all available/suitable fields (over 100 ha) in the *c.*110 ha area of a proposed quarry extension (Merrony 1994; see Chapter 2, below, Fig. 2.1). This survey was commissioned by Tarmac Roadstone Ltd (Eastern) to accompany a planning application for the proposed extension. The purpose of the survey was to qualify and quantify the archaeological potential of the site, thereby allowing subsequent stages of the archaeological recording work to be devised and implemented.

In 1994 Geophysical Surveys of Bradford conducted a gradiometer survey of *c.*1 ha around the single concentration of finds (Roman pottery) identified by fieldwalking in field S1 (Fig. 2.1). The geophysical survey (GSB 1994; see below, p 13) indicated significant archaeological potential in the survey area.

Excavation 2004

Following the initial evaluation work of 1993–4, it was decided that further field evaluation was not required, but that conditions would be placed on the planning consent for the quarry extension regarding the archaeology (O'Neill and Raybould 2007, 1; App. Ref. 94/72/3583/P/MIN, granted by Doncaster Metropolitan Borough Council in 1998). The area to be archaeologically investigated was only the area of the geophysical survey in field S1 (cf. Fig. 1.2). Proposals to excavate were shelved for several years until 2004 when Tarmac Quarry Products Ltd commissioned ARCUS to carry out an excavation of 1.1 ha (O'Neill and Raybould 2007; see below, Chapter 3, pp. 22-41). The aims and methodology of this excavation are set out in detail in the archive report (O'Neill and Raybould 2007, 4–5). The basic aims were to date and understand the anomalies revealed in the geophysical survey and to relate them to the local, regional and national contexts, thus allowing an assessment of the significance of the site to be made. The investigations comprised a watching brief during the stripping of topsoil, followed by targeted excavation of the features revealed.

Fieldwalking and geophysical surveys 2014–15

In the decade or so following the 2004 excavation, quarrying proceeded northwards as far as Long Gate (part of the B6094 road). This newly quarried area was known as Batty Holt North and covered the southern part of the permissioned northern extension, including the site of the 2004 excavation.

In 2013 the Local Planning Authority (Doncaster Metropolitan Borough Council) informed the owners of the quarry that existing planning permissions were subject to a review of the working and restoration conditions. In 2014 ARS Ltd was commissioned by Wardell Armstrong LLP on behalf of Hope Construction Materials (the then owners and operators of the quarry) to undertake archaeological evaluation work ahead of this Review of Old Mineral Permissions (this arrangement continued for subsequent archaeological work at the quarry). Following an initial Desk Based Assessment (Brown 2015; discussed above, pp. 4-8), ARS Ltd conducted a geophysical survey across eight fields (N1, N2/N3, N4, N5/N6, N7, N8, N11 and N13; Figs 1.2, 2.2 and 2.4) with a total approximate area of 55 ha in the north part of the previously permissioned area (Durkin 2015; see below, pp. 13-16). These fields lay to the north of the B6094 in areas known as Cockhill East and Cockhill West. Fieldwalking was subsequently undertaken in 2015 in all available fields in the area of the geophysical survey (N1–N4; N6–N8; Figs 2.6 and 2.7; Mora-Ottomano 2015; see below, pp. 17-21).

The purpose of the geophysical and fieldwalking surveys was to determine the potential for sub-surface archaeological remains to survive at the site, to test the ploughsoil for the presence of ancient artefacts and identify any areas of activity within the study area that could host buried archaeological remains. The surveys were also intended to provide sufficient information to enable the Local Planning Authority to make an informed decision on the archaeological implications of the proposed development and to assist in the development of appropriate mitigation.

Excavations at Cockhill East 2015 and 2019

On the basis of the 2014–15 evaluation work, a Working Scheme of Investigation was prepared for the four fields in the Cockhill East area of the previously permissioned quarry extension (Scott 2015). This scheme proposed an archaeological strip, map and sample excavation

in N8 and watching briefs in fields N7, N11 and N13 in advance of mineral extraction (see Fig. 1.2 for field boundaries).

A strip, map and sample excavation of 5.8 ha was conducted in 2015 by ARS Ltd in field N8 in Cockhill East (Mora-Ottomano 2016; see below, Chapter 4). This field was located *c.*570 m to the north of the 2004 excavation. The objectives and methodology of this excavation are set out in detail in the Working Scheme of Investigation (Scott 2015) and in the archive report (Mora-Ottomano 2016, 4–5). The main objectives were to determine the extent, condition, character, importance and date of any archaeological remains present and to provide information to enable the remains to be placed with their local, regional, and national contexts and for an assessment of the significance of the archaeology of the site to be made. The topsoil was stripped under continuous archaeological supervision to the first archaeological horizon in successive level spits. Following the stripping of the topsoil, potential archaeological features were systematically cleaned using hand tools. Archaeological features and deposits were subsequently excavated stratigraphically down to the naturally-occurring deposits, to enable their date, nature, extent and condition to be properly assessed. A watching brief was also undertaken in 2015 during topsoil stripping of field N11 (5.3 ha) (Brown 2016, 10.14).

In 2016 a planning application (16/01220/REVA) was submitted by Breedon Aggregates (the new owners of the quarry who had acquired Hope Construction Materials that same year) to the relevant Local Planning Authority (Doncaster Metropolitan Borough Council) for a Review of Old Mineral Permissions for the extraction of limestone and subsequent restoration to a mixture of woodland, grassland, agriculture and waterbodies with footpaths and bridleways on land at Holme Hall Quarry. This application was accompanied by an environmental statement which included a cultural heritage chapter prepared by ARS Ltd (Brown 2016), incorporating the information gained from the archaeological works of 2014–15.

Planning permission was granted and in 2019 Breedon Aggregates commissioned ARS Ltd to conduct a watching brief of 2.5 ha in field N7 in Cockhill East (Morris 2024). As set out in the agreed Working Scheme of Investigation (Scott 2015), the objectives were to identify any archaeological features present and to define their forms, functions and dates and relations to the findings from the adjacent 2015 strip, map and sample excavation. The topsoil was stripped by a mechanical excavator fitted with a toothless ditching bucket under archaeological supervision. The archaeologists were able to stop site work within a given area in order to investigate and adequately record potential archaeological features.

Excavations at Cockhill West 2020–22

As for Cockhill East, a Working Scheme of Investigation for the four fields (N1, N2/N3, N4, N5/N6) in the Cockhill West area of the proposed quarry extension was prepared in 2015 on the basis of the 2014–15 evaluation work. This scheme (ARS Ltd 2015) proposed strip, map and sample excavations in fields N1 and N2/N3 and watching briefs in fields N4 and N5/N6 (see Fig. 1.2 for field boundaries).

Breedon Aggregates commissioned ARS Ltd to undertake these investigations in 2020–22 across a continuous open area of 25.8 ha (Morris 2024; see below, Chapter 5). Quarrying had not at that time been permitted for the northern and western fringes of the Cockhill West fields, so these areas were not investigated. Although the proposed methodology in the Working Scheme of Investigation was for a watching brief in field N5/N6, the eastern part of this field, excavated with field N1 in 2020, was also subject to strip, map and sample excavation. The objectives and methodologies of the archaeological works within the strip, map and sample and watching brief areas, as set out in Working Scheme of Investigation (ARS Ltd 2015), were essentially the same as those briefly summarised above for the 2015 and 2019 excavations in Cockhill East.

The regional research framework for South Yorkshire was not completed until the excavations at Holme Hall Quarry in 2015 and 2019–22 were underway. The research framework could not therefore be taken directly into account during the preparation of the Working Schemes of Investigation, but it has been used to inform the analysis and publication of the results of the excavations (cf. Morris 2024). The principal archaeological features revealed at Holme Hall Quarry were remains of a (possibly Late Iron Age to) Roman field system with associated droveways and enclosures. Relevant research aims listed in the research framework for South Yorkshire (Ottaway 2019; Chadwick 2020) include the following:

- Can we shed further light upon the development of field and boundary systems?
- Can the dates of Iron Age and Romano-British field system inception, and disuse/abandonment, be established with any greater accuracy?
- How can we investigate the hypothesis that ditched field systems went out of use in the 3rd century?
- What was the purpose of small Iron Age/Romano-British sub-circular and sub-rectangular enclosures?

Table 1.2. Periods of activity on the Holme Hall Quarry site, as revealed by excavation.

Period	**Activity**
Prehistory (Middle Palaeolithic)	Palaeochannels/palaeovalleys (natural)
Mesolithic to Early Bronze Age	Scatters of chipped lithics
Middle Iron Age	Pits
Late Iron Age to Roman	Field systems Droveways Enclosures Posthole structures (pens?) Cremation burial and other deposits with human remains Quarries Pits
Early medieval	Pits
Late medieval	Pot sherds
Post-medieval	Field ditches Plough furrows Wall and building remains Quarry pits Lime kiln
Undated	Possible ditches Possible pits Possible postholes Sinkholes (natural) Minor palaeochannels (natural) Tree throws (natural) Rooting deposits (natural)

- Can we identify more tangible physical traces of past human and animal movements through the landscape?
- Large-scale developer-funded work has increased palaeoenvironmental evidence for South Yorkshire, but there is still a marked lack of information for the Iron Age and Romano-British periods, especially on Magnesian Limestone and Coal Measures areas. How might this be improved?
- To what extent was spelt wheat the dominant crop during the Roman period?
- Can we examine cereals, accompanying weed seeds and other crop-related debris to gain information on methods of husbandry?
- Can any archaeological, geoarchaeological or archaeozoological evidence be found for practices such as stalling animals in pens and within buildings, or keeping animals within infields?
- Were livestock kept primarily for milk and traction, or for meat? Did this vary between communities?
- What was the balance between rearing of the three main meat-yielding species: cattle, sheep/goats and pig? Did this change over time?
- Can we identify age-at-death patterns for livestock, and can these help us understand dairying, wool and meat production strategies, or specialised products like veal or sucking pigs?
- Where did the livestock supplied to Roman army garrisons at Templeborough, Doncaster, Rossington and other military sites come from?

Site phasing

Stratigraphic and spatial analysis of the features revealed in excavation, combined with analyses of the artefactual and cartographic evidence, has enabled a chronological sequence to be established for the site. This is summarised in Table 1.2 and the evidence is described in greater detail in following chapters of this monograph (for phased excavation plans, see Figs 3.1, 4.1, 5.1 and 6.2).

Chapter 2

Fieldwalking and geophysical surveys

Introduction

Fieldwalking and geophysical surveys were undertaken prior to all phases of archaeological excavation at Holme Hall Quarry. In 1993–4 a fieldwalking survey by Archaeological Research and Consultancy at the University of Sheffield (ARCUS) formed part of the planning process prior to a proposed northern extension of quarrying into an area of *c.*110 ha. This survey produced a scatter of prehistoric worked flints from across the area and one clear concentration of Roman pottery (Fig. 2.1). In 1994 a geophysical survey (by Geophysical Surveys of Bradford) of *c.*1 ha took place around this pottery concentration and revealed a possible Roman sub-rounded/circular enclosure and potentially associated features. The area of the geophysical survey was subsequently excavated by ARCUS in 2004 (see below, Chapter 3, pp. 22-41).

In 2014–15 a further geophysical survey was conducted by Archaeological Research Services Ltd (ARS Ltd) in the northern part of the previously proposed northern extension of quarrying, which had been subject to fieldwalking in 1993–4 (the southern part of the northern extension area was by now part of the active quarry). This new geophysical survey covered eight fields (N1, N2/N3, N4, N5/N6, N7, N8, N11 and N13) with a total approximate area of 55 ha and revealed several possible enclosures and field ditches, potentially of Iron Age/Roman date (Figs 2.2–2.5). Subsequent walking of these fields in 2015 produced: a scatter of prehistoric worked flints; a small amount of Roman pottery, with one distinct cluster above a probable ditched enclosure identified in the preceding geophysical survey; a low-level scatter of probable medieval pottery; and a wide range of post-medieval/modern material (Figs 2.6 and 2.7). The east part of the geophysical and fieldwalking survey area of 2014–15 was excavated by ARS Ltd in 2015 and 2019 (see below, Chapter 4, pp. 42-68) and the west part in 2020–22 (see below, Chapter 5, pp. 69-125).

Other evaluation work undertaken at the quarry by ARS Ltd is discussed briefly at the end of this chapter. This includes a watching brief conducted in 2017 on the site of the demolished Cockhill House Farm, as well as geophysical and fieldwalking surveys and trial trenching carried out in advance of another proposed northern extension of Holme Hall Quarry into the area north of the 2019–22 excavation.

The fieldwalking survey of 1993–4

By Colin J. N. Merrony (edited by Francis M. Morris)

Introduction

Between August 1993 and May 1994 archaeological fieldwalking and surface collection was conducted at Holme Hall Quarry by ARCUS on behalf of Tarmac Roadstone (Eastern) Ltd (Merrony 1994). The fieldwalking formed part of the planning process prior to a proposed northern extension of quarrying into an area of *c.*110 ha. The area to be fieldwalked was agricultural land. All available arable fields (over 100 ha) were walked once crops had been harvested and the land ploughed. Each field was laid out in a grid of 20 by 20 m squares, which were the units of recording, and was walked along transects between 2 and 5 m apart. A relatively small quantity of material was recovered, comprising prehistoric worked flints, Roman pottery and a single sherd of early medieval pottery (Table 2.1; Fig. 2.1). The finds were thinly distributed across the survey area, except for a concentration of Roman pottery in one small part of field S1 and one or two possible concentrations of worked flints in fields N4 and S2.

Prehistoric worked flints

A total of 47 worked flints and 60 fragments of flint with no surviving traces of working noted (recorded as 'unworked' flints) were recovered from the fieldwalking survey of 1993–4. Flint does not seem to occur naturally in the local area and it was therefore presumably brought to the site from elsewhere. Except for a broken possible post-medieval gunflint from field N5, the worked flints all appeared to be of prehistoric date, although none were dated more precisely. They comprised: a projectile point from field S1; 22 blades from S2, N1, N4, N5 and N8–N12; 5 scrapers from N2, N4 and N5; 11 flakes from S1, S2, N2, N5, N6 and N12; 6 cores from S2, N4 and N5; and a chip with retouch from N4. There were no obvious

Table 2.1. Summary of finds from fieldwalking in 1993–4 and the relation of the fields to the later areas of excavation (cf. Fig. 2.1).

Field code	Field size (approx.)	Year(s) of excavation	Finds from 1993–4 fieldwalking (summary)
S1	33 ha	2004	Worked flints x2 Unworked flints x2 Roman pottery x9
S2	6 ha	-	Worked flints x11 Unworked flints x4 Roman pottery x 1 Early medieval pottery x 1
N1	4.7 ha	2020	Worked flint x1 Unworked flints x5
N2	6 ha	2021–22	Worked flints x2 Unworked flints x10
N3	9 ha	2022	Unworked flint x1
N4	7.8 ha	2022	Worked flints x14 Unworked flints x22 Roman pottery x1
N5	4 ha	2021–22	Worked flints x6 ?Gunflint x1 Unworked flints x4 Roman pottery x1
N6	6 ha	2020–21	Unworked flints x1
N7	5 ha	2019	Roman pottery x1
N8	5.8 ha	2015	Worked flints x4 Unworked flints x3 Roman pottery x4
N9	6 ha	-	Not walked (pasture)
N10	6 ha	-	Worked flint x1 Unworked flints x2
N11	5.3 ha	2015	Worked flint x1 Unworked flints x2
N12	9 ha	-	Worked flints x4 Unworked flints x4 Roman pottery x1

concentrations of material that suggested settlement or other closely defined activity areas; however there appeared to be a greater frequency of flints along or close to the ridge that ran across the north-west part of the survey area, i.e. in the general area of fields N1–N6 and especially in field N4. Another possible concentration of flints lay across field S2.

Roman pottery

Only 18 sherds of Roman pottery were recovered, comprising 17 sherds of undecorated greyware produced in the local area, e.g. at Cantley or Rossington, and a single decorated samian base sherd. There was one clear concentration, with eight sherds of greyware occurring in an area of about 60 by 80 m in field S1 (another sherd of greyware was also found in the same field, *c.*80 m further west); this concentration was thought to be consistent with the probable presence of a small Roman farmstead. The only other field that produced more than a single sherd of Roman pottery was N8, from which four sherds were recovered, including the samian base.

Medieval and later material

The medieval period was almost completely unrepresented apart from a single body sherd of pottery thought to be of early medieval date from field S2. Objects obviously of recent origin were not kept. A

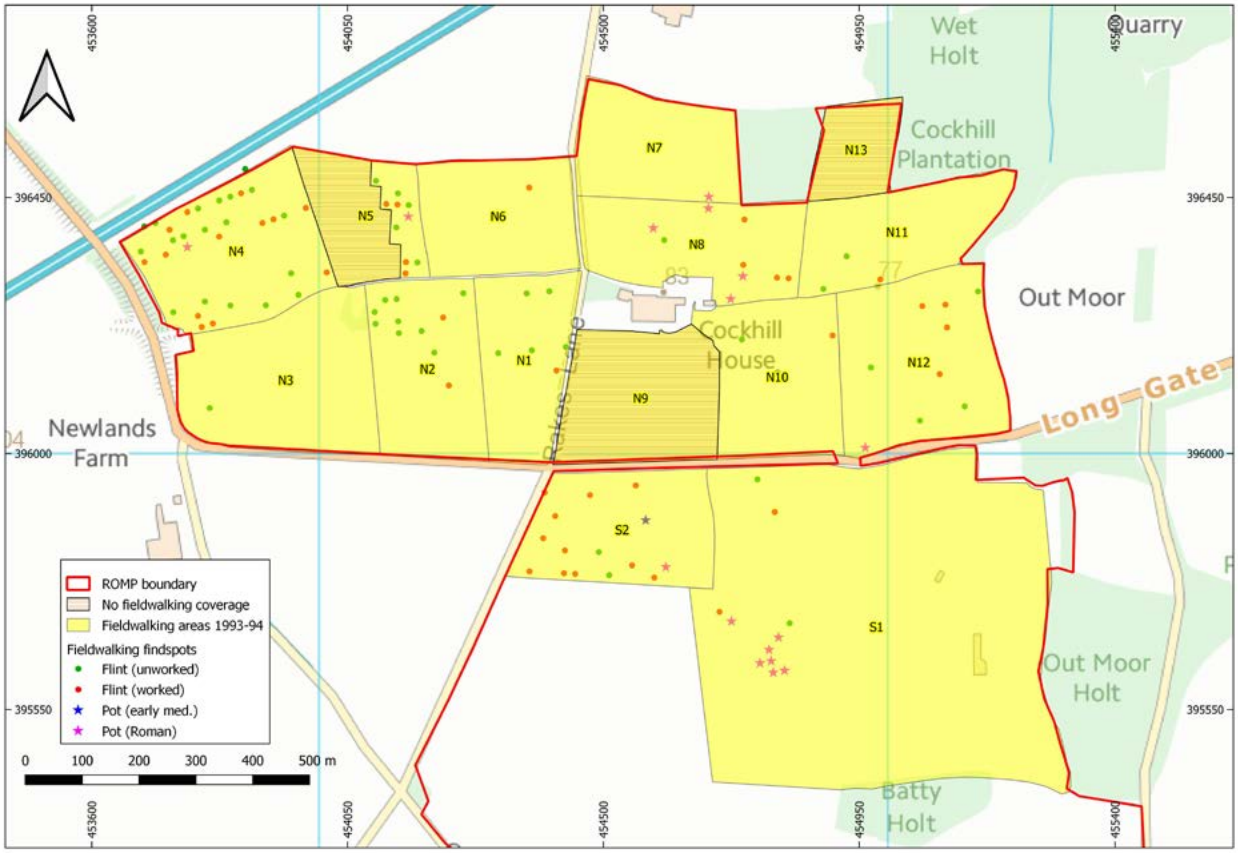


Fig. 2.1. Fieldwalking survey of 1993–4: results (Brown 2015, Fig. 8).
Contains Ordnance Survey data © Crown copyright and database right (2014).

generally low background of post-medieval and modern material was noted, however, with a higher frequency of material close to Woodlands Farm and to the west of Cockhill House Farm.

The geophysical survey of 1994

By Francis M. Morris, Richard O'Neill and Owen Raybould (based on work by Geophysical Surveys of Bradford)

The fieldwalking survey of 1993–4 identified one clear concentration of Roman pottery covering an area of *c.*60 by 80 m in field S1 (see above). In 1994 Geophysical Surveys of Bradford conducted a gradiometer survey of *c.*1 ha in and around the area of this pottery concentration (GSB 1994). The gradiometer survey results indicated significant archaeological potential within the survey area. A number of ditch-type anomalies were identified, including a possible Roman sub-rounded/circular enclosure and potentially associated features. A few of the anomalies were very strong and one appeared to be a burnt feature, possibly an oven. The effects of ploughing were also evident in the data and former ridge and furrow produced characteristic linear trends.

The fieldwalking and geophysical survey suggested the presence of a Roman enclosure/farmstead in field S1. The area of this possible farmstead was consequently archaeologically excavated in 2004 (see below, Chapter 3, pp. 22-41).

The geophysical survey of 2014–15

By Richard Durkin (edited by Francis M. Morris)

Introduction

A geophysical survey (using a Bartington 601 dual sensor fluxgate gradiometer) was carried out between October 2014 and February 2015 in the northern part of the area previously fieldwalked in 1993–4 (Figs 2.2–2.5). This survey (Durkin 2015) was conducted by ARS Ltd on behalf of Hope Construction Materials Ltd as part of a Review of Old Minerals Permissions for a number of historic minerals permissions at Holme Hall and Stainton Quarries.

The purpose of the survey was to determine the potential for sub-surface archaeological remains to survive at the site, to assist in the development of appropriate mitigation and to provide sufficient information to enable the Local Planning Authority to make an informed decision on the archaeological implications of the proposed development.

The geophysical survey area comprised eight fields with a total approximate area of 55 ha to the north and

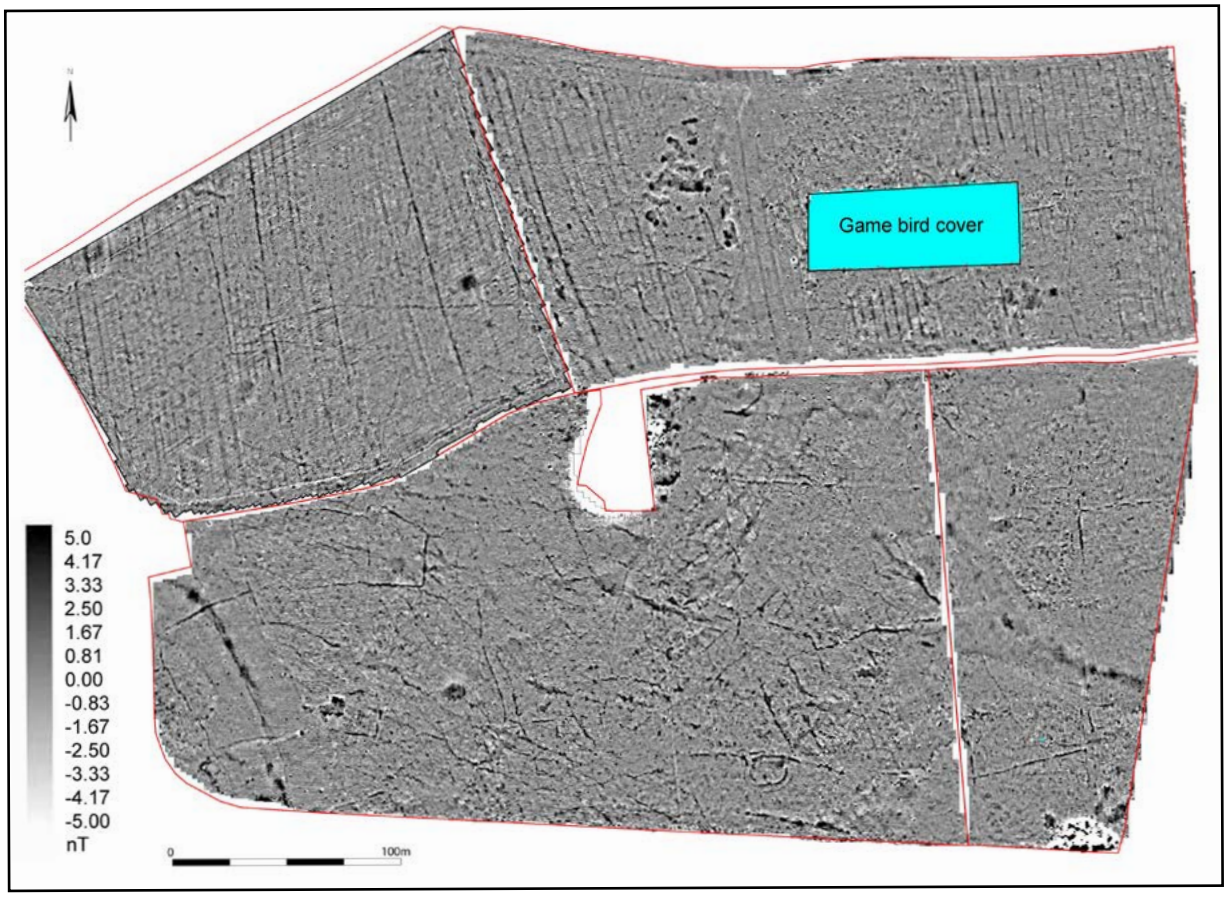


Fig. 2.2. Geophysical survey of 2014–15, Cockhill West, processed gradiometer data (Durkin 2015, Fig. 25).

west of Cockhill House Farm (N1, N2/N3, N4, N5/N6, N7, N8, N11 and N13). The survey area was divided in two by the north–south orientated Rakes Lane. The four fields to the west of Rakes Lane lay in an area known as Cockhill West (N1, N2/N3, N4, N5/N6), which was subsequently archaeologically investigated in 2020–22 (see below, Chapter 5, pp. 69-125). The four fields to the east of Rakes Lane were in an area known as Cockhill East (N7, N8, N11 and N13), which was archaeologically investigated in 2015 and 2019 (see below, Chapter 4, pp. 42-68).

Cockhill West

In the south part of Cockhill West the two fields known as N1 (*c.*4.7 ha) and N2/N3 (*c.*14 ha) revealed the most extensive evidence of sub-surface archaeological remains, with the majority of the anomalies recorded in the vast expense of field N2/N3 (Figs 2.2 and 2.3). Amongst the most notable was Anomaly C4 in the west part of field N2/N3; this corresponded with the south-east corner of a possible Iron Age/Romano-British rectilinear enclosure identified in an aerial photograph by the Magnesian Limestone National Mapping Project (cf. Fig. 1.3, AR15; Brown 2015, 6, 13, 14, 16, 24, Fig. 7a, AR15), but based on the results of the geophysical survey it was perhaps part of a small field, paddock or enclosure also formed by parts of Anomalies C5 and C5a. In the south-east part of field N2/N3 was Anomaly C8, a possible double-ditched D-shaped, or 'curvilinear', enclosure attached to an east–west linear boundary ditch and perhaps similar to an Iron Age/Roman example known from Ledston in West Yorkshire (Roberts *et al.* 2010, Illus. 35). Anomalies C1, C5–C7, C9–C12, C14–C16 and C18 also provided evidence of a previously unknown field system or systems, probably principally of Iron Age/Roman date, including a possible trackway (C10) and further possible paddocks or enclosures (C5–C7, C9, C11, C16). These ditches lay on varying alignments suggesting that the surviving archaeology may have been multi-phase. Anomalies C2, C3 and C18 were thought to represent natural palaeochannels.

To the east, in the adjacent field N1, was a possible ditched trackway, Anomaly L4, which was orientated north–south. Similar trackways/droveways of Late Iron Age/Roman date have been found in the surrounding region (Roberts *et al.* 2010, 22–4, Illus. 28–31). Linear Anomalies L1 and L2 appeared to link to the trackway and were thought to be possibly contemporary with it, although Anomaly L1 lay approximately on the line of a section of a post-medieval field boundary identified on historic maps (cf. Fig. 1.3; Brown 2015, Fig.

Fig. 2.3. Geophysical survey of 2014–15, Cockhill West, interpretive plan (Durkin 2015, Fig. 26).

7a). Linear Anomalies L3 and L6 might also have been field boundaries. Anomalies L5, L5a, L5b, L9, L11 were regarded as possibly archaeological, although some of them had irregular orientations. Anomalies L7 and L7a likely related to a palaeochannel, whilst Anomaly L8 corresponded to a post-medieval quarry in the south-east corner of field N1 (Fig. 1.3, AR17; Brown 2015, 24, Fig. 7a, AR 17).

The remainder of the data in field N2/N3 and to a lesser extent N1 were characterised by innumerable anomalies which had the potential to be of archaeological origin, but natural origins for these anomalies, e.g. as soil-filled depressions or fissures, could not be ruled out on the basis of the geophysical survey results.

In the two northern fields of Cockhill West — N4 (*c.*7.8 ha) and N5/N6 (c.9.6 ha) — extensive evidence of medieval or post-medieval ridge and furrow cultivation was recorded, but also further evidence for potentially significant archaeological remains (Figs 2.2 and 2.3). In the east part of field N5/N6 was a north–south ditched trackway or droveway (Anomaly R9), which appeared to align with the possible trackway identified further south in N1 (Anomaly L4). Linear feature(s) Anomaly R12 ran to either side of R9 and may have been contemporary with it. In the centre of field N5/N6 an area of approximately 1 ha was under high crop that was used as game bird cover (see Figs 2.2 and 2.3); this was impassable and consequently unsuitable for geophysical survey. Possible archaeological anomalies (R7, R8, R10 and R11) were found to the north and south of the game bird cover. In the west part of field N5/N6 was Anomaly R1, which appeared to comprise archaeological cut features, possibly relating to a settlement. Anomalies R2 and R3 were also consistent with settlement activity, perhaps including rock cut pits and/or industrial/metalworking activity of unknown age. Anomalies R4 and R5 were vague, possible archaeological features.

Towards the centre/south-east of field N4 several anomalies (M1–M9) were thought to perhaps indicate the surviving remains of another previously unknown field system, possibly incorporating a system of stock management, although some of these anomalies could simply have been agricultural scarring or related to land drainage. Three large (c.15 m diameter) discrete anomalies were recorded in different areas of field N4 (M11, M12 and M13). These perhaps represented naturally occurring soil-filled depressions, quarry or borrow pits, but a more significant archaeological origin could not be ruled out.

Cockhill East

In Cockhill East, the main area of archaeological interest was the centre-north of field N8 and the south-east of the adjacent field N7. Here, a well-defined anomaly group (CT1) was recorded towards the north of field N8 (Figs 2.4 and 2.5). This appeared to represent the eastern, southern and a short length of the western sides of a rectilinear ditched enclosure, *c*.40 m in length and of unknown width. There was evidence of a possible entrance on the eastern side, although alternatively the ditch could have been truncated here by modern ploughing. This enclosure may well have been of Roman date; indeed, the fieldwalking surveys produced a concentration of Romano-British pottery in precisely this area, perhaps indicating the presence of a farmstead (see above, p. 12; below, pp. 20-2). Immediately to the north, in the south-east/ south of field N7, a group of positive linear anomalies (P1, P1a and P1b) appeared to represent the remains of a previously unknown field system possibly associated with the enclosure (Figs 2.4 and 2.5). In the north part of field N7, Anomaly group P2 was less well-defined, but was thought to perhaps represent further evidence of the same field system.

The remainder of the data in Cockhill East appeared to be largely devoid of features of archaeological interest (Figs 2.4 and 2.5). The data were characterised by anomalies that were doubtless agricultural in origin, related to either land drainage, farm machinery tracks or plough scarring. It is possible that the lower lying, poorly draining soils in this part of the site may have been much less attractive for early settlement and farming. The east side of field N8 and all of fields N11 and N13 had, however, apparently been disturbed by the installation of an extensive network of land drainage and it may be that this work along with years of ploughing had removed the earlier archaeological remains that may once have existed in this area.

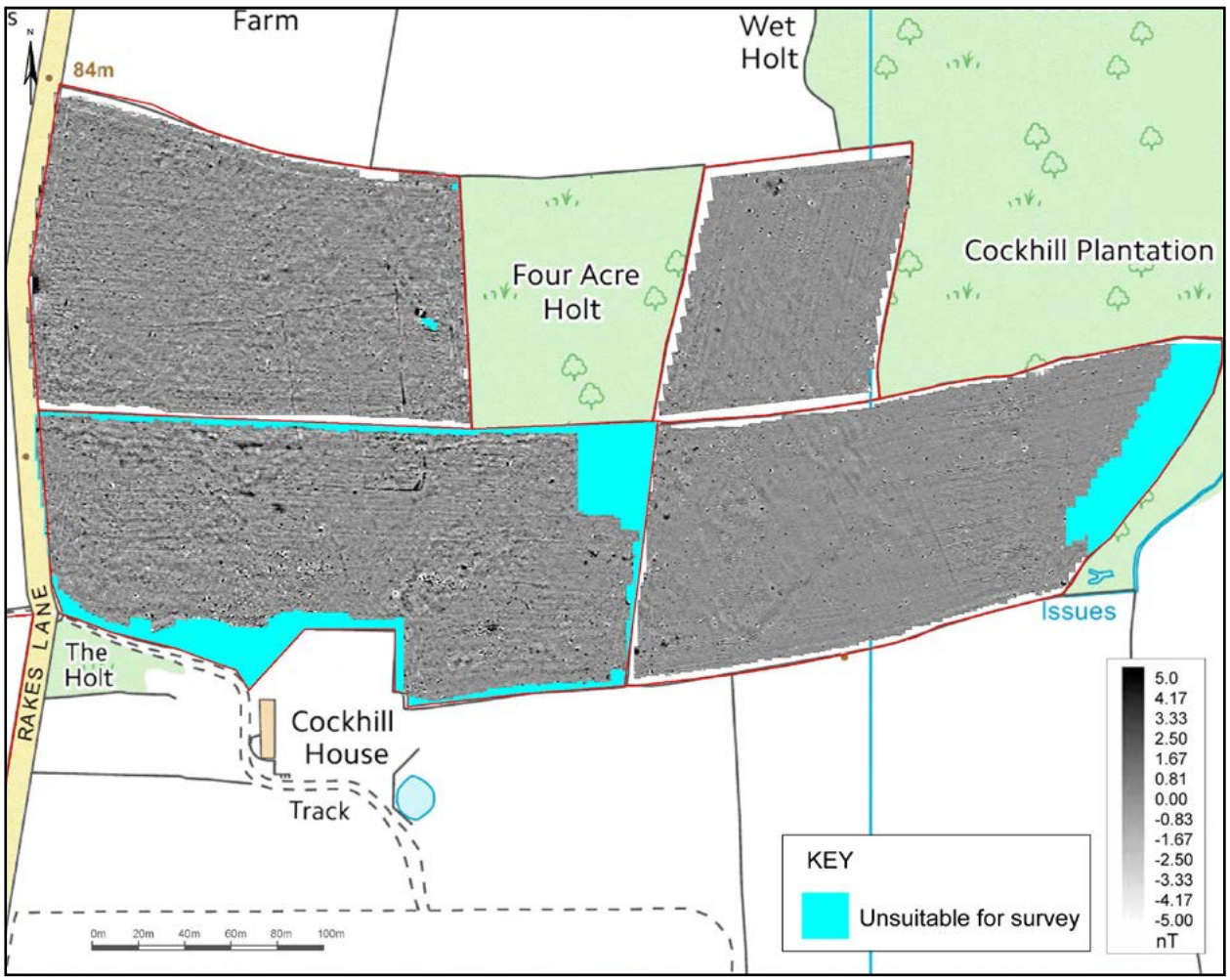


Fig. 2.4. Geophysical survey of 2014–15, Cockhill East, processed gradiometer data (Durkin 2015, Fig. 41).

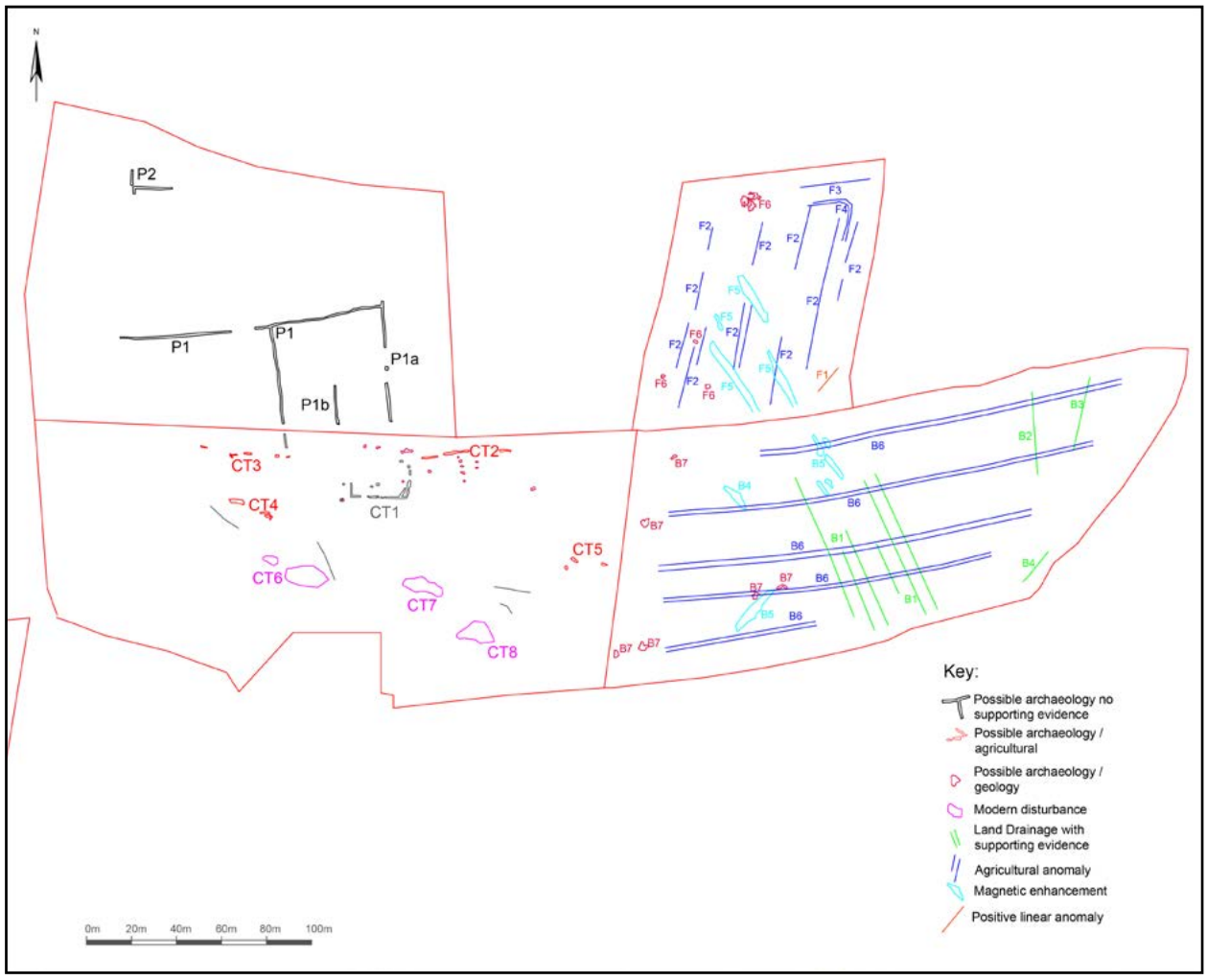


Fig. 2.5. Geophysical survey of 2014–15, Cockhill East, interpretive plan (Durkin 2015, Fig. 42).

The fieldwalking survey of 2015

By Alvaro Mora-Ottomano (edited by Francis M. Morris)

Introduction

In March 2015 ARS Ltd undertook an archaeological fieldwalking survey (Figs 2.6 and 2.7) ahead of a Review of Old Minerals Permissions for a number of historic minerals permissions at Holme Hall and Stainton Quarries (Mora-Ottomano 2015). This work was commissioned by Wardell Armstrong LLP on behalf of Hope Construction Materials. The fieldwalking took place immediately after and in the same fields as the geophysical survey of 2014–15 (see above, pp. 13-16), although three of the fields subjected to geophysics were not walked because they had not been ploughed (N5, which was the west part of N5/N6, N11 and N13. The fieldwalking of 2015 covered most of the fields in the northern part of the area previously walked in 1993–4 (see above, pp. 11-13). The fields in the southern and south-eastern parts of the area walked in 1993–4 (S1 and S2, as well as N9, N10 and N12) were no longer available as they now formed part of the active limestone quarry. The fields available in 2015 were line-walked at 2 m intervals. Every findspot was point referenced by a total station.

The purpose of the archaeological fieldwalking survey was to test the ploughsoil for the presence of ancient artefacts and to identify any areas of activity within the study area that could host buried archaeological remains. It was intended to be used in conjunction with the geophysical survey of 2014–15 to inform subsequent evaluation and mitigation, as represented by the excavations of 2015 and 2019–22 (see below, Chapters 4 and 5, pp. 42-125).

Prehistoric worked flints

The lithic assemblage consisted of 73 worked pieces and 18 unworked flint chunks/lumps (Table 2.2; Fig. 2.6). The chunks were severely damaged pieces of grey to dark grey non-cortical flint with no surviving evidence of knapping; however, they may have previously been worked lithics such as cores, core-tools or large flakes that were brought to the site as flint does not occur naturally in this area.

Table 2.2. Worked and unworked prehistoric lithics found during fieldwalking in 2015 (cf. Fig. 2.6).

Field code	Field size (approx.)	Year(s) of excavation	No. of worked flints	Descriptions and dates of worked flints	No. of unworked flints
N1	4.7 ha	2020	2	1 micro-scraper (Mesolithic); 1 notched flake (Neolithic?)	1
N2/N3	14 ha	2021–22	11	2 scrapers (Mesolithic); 1 notched flake (Neolithic?); 1 misc retouched; 6 flakes/blades; 1 spall	0
N4	7.8 ha	2022	18	1 scraper (Mesolithic/ Neolithic); 1 oblique arrowhead (Late Neolithic); 1 fabricator (Neolithic); 3 misc. retouched; 11 flakes/blades; 1 spall	8
N6	6 ha	2020–21	8	1 broken backed blade (Mesolithic?); 1 leaf-shaped arrowhead (Neolithic); 1 awl/borer (Neolithic/ Bronze Age); 1 piercer (Neolithic/Bronze Age); 1 misc. retouched; 3 flakes/blades	1
N7	5 ha	2019	6	5 flakes/blades; 1 core	1
N8	5.8 ha	2015	28	2 micro-scrapers (Mesolithic); 2 end scrapers (Mesolithic/ Neolithic); 1 saw (Neolithic); 1 knife (Neolithic?); 1 notched flake (Neolithic/ Bronze Age); 2 awls/borers (Neolithic/ Bronze Age); 3 misc. retouched; 16 flakes/blades	7
Total			**73**		**18**

All the lithic artefacts were manufactured from flint whose quality and colour varied slightly. The flints were of moderate to good quality and predominantly light mottled grey to grey in colour. The mottled grey flint, as well as the fewer black pieces, may originate from the chalk lands of Lincolnshire (Pierpoint 1981; Barfield 2002, 3) and/or the Yorkshire Wolds (Pierpoint 1981). Dorsal coverage of cortex was noted on 29 pieces. The cortex attributes indicated that the raw materials were water-worn pebbles and cobbles derived from river terrace gravels or glacio-fluvial sheet deposits. The precise location of the sources(s) has not yet been identified but may lie in the gravels of Doncaster and/ or Humberside (Gaunt and Girling 1996, 191; McEvoy *et al.* 2004).

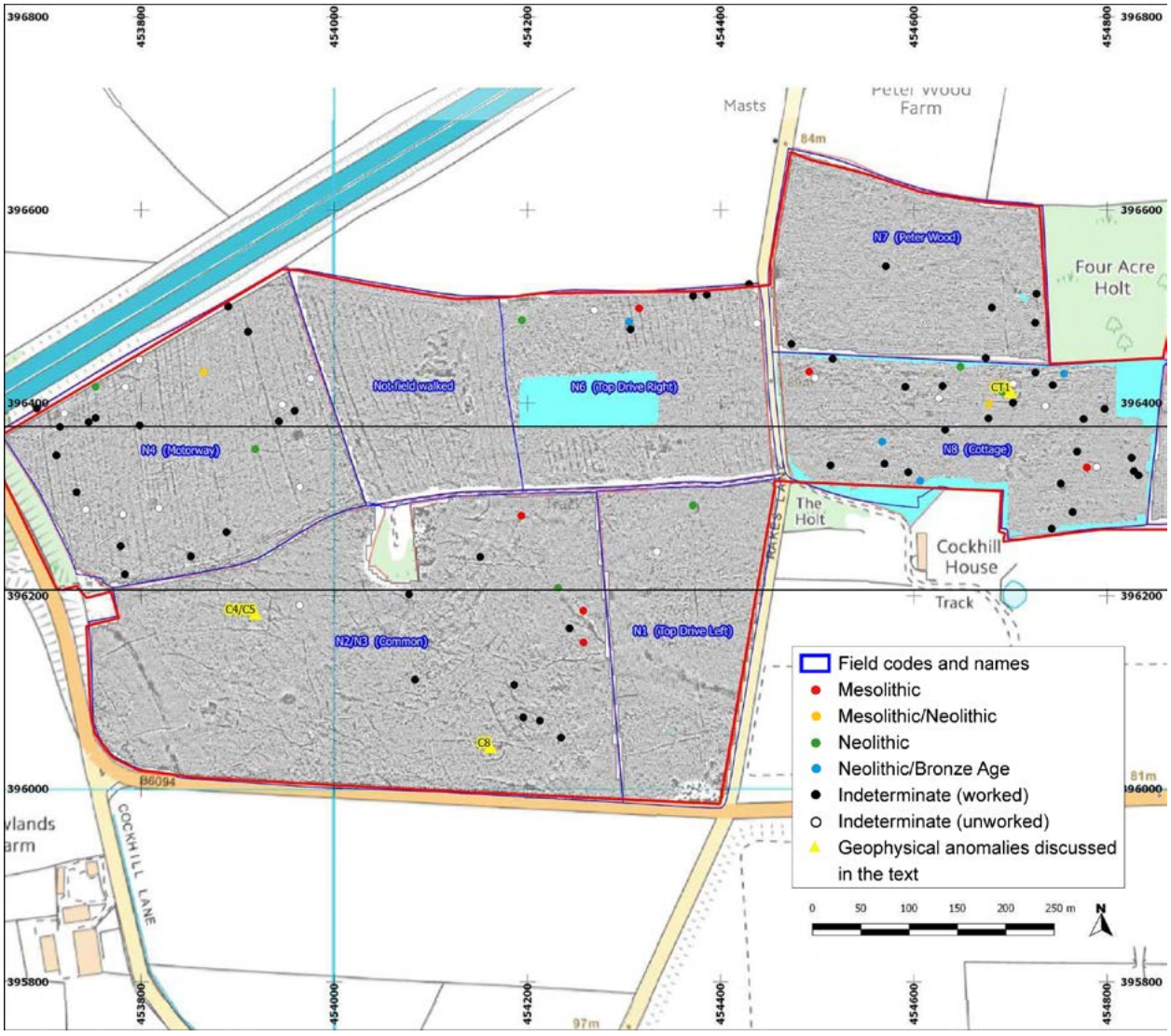


Fig. 2.6. Fieldwalking survey of 2015: distribution of worked and unworked flints overlying geophysical plot of 2014–15 (Mora-Ottomano 2015, Fig. 14). Contains Ordnance Survey data © Crown copyright and database right (2014).

Amongst the worked flints were 29 tools, including three micro-scrapers of Mesolithic date and five other scrapers with distinct Mesolithic characteristics, although some of these may date to the Early Neolithic period (a double-sided end scraper with generally semi-abrupt although slightly irregular retouch; three end scrapers with semi abrupt retouch and a slight convex-shaped edge; and a semi-keeled convex end scraper with very abrupt parallel retouch). A broken backed blade was probably also Mesolithic in date.

There were two arrowheads: an Early Neolithic leaf-shaped example of Green's (1980) Type 4B and a Late Neolithic oblique arrowhead. A fabricator and a saw or serrated flake were also datable to the Neolithic, whilst a fragment of a possible knife, was perhaps datable to the Neolithic or Beaker period. Neolithic/Bronze Age tools comprised three awls/borers and a piercer. There were three notched pieces on large flakes; notches are found in all periods of prehistory, but these examples are most likely to be of Neolithic and/or Bronze Age date. Eight further miscellaneous retouched artefacts were also identified, but no specific purpose could be defined from the nature of the retouch; although regarded as of indeterminate age, they are most likely to belong to the Neolithic or Bronze Age.

The rest of the assemblage (30 flakes, 4 blades, 4 bladelets, 3 chunky flakes, 1 core and 2 spalls) was irregular waste/debitage, which was generally not closely datable, although some of these pieces had characteristics possibly of Late Mesolithic to Early Neolithic or of Late Neolithic to Bronze Age date.

There were three or four areas of denser concentration in the distribution of lithics across the site, which may indicate areas of settlement or other closely defined prehistoric activity. These concentrations were in:

field N8 and the adjacent part of field N7 to the north; in the centre/eastern part of fields N2/N3; in field N4 (which produced the most worked flints in the survey of 1993–4); and perhaps also in the north part of field N6. No chronological patterns were apparent in the distribution.

The overall frequency of tools in the assemblage was relatively high and these indicate processing activities related to Mesolithic, Neolithic and perhaps Bronze Age activity. Most of the tools are scrapers, which suggest that some specialised domestic crafts, such as engraving, cutting and so forth were carried out. The repairing and resharpening of artefacts may have also occurred as indicated by the characteristics of the flakes and chips. The presence of notches, awls/borers, one piercer, one saw and one knife also indicate a variety of domestic activities. Furthermore, the two arrowheads may provide evidence for hunting in the Neolithic. In addition, some of the general debitage showed signs of having been extensively utilised; these blanks might have been employed on several occasions for the execution of particular tasks. Only one exhausted core was identified. The low frequency of flakes from the primary phase of the reduction sequence indicates that the roughing-out of the cores took place elsewhere.

Roman pottery

Roman pottery was rare across most of the area fieldwalked (Fig. 2.7), apart from one distinct cluster in the northern part of field N8, which coincided with a probable ditched enclosure (CT1) identified in the geophysical survey of 2014–15 (see above, p. 16). Eighteen sherds of Roman pottery (sixteen recorded as greyware, one as a cooking pot and one as a bowl/dish

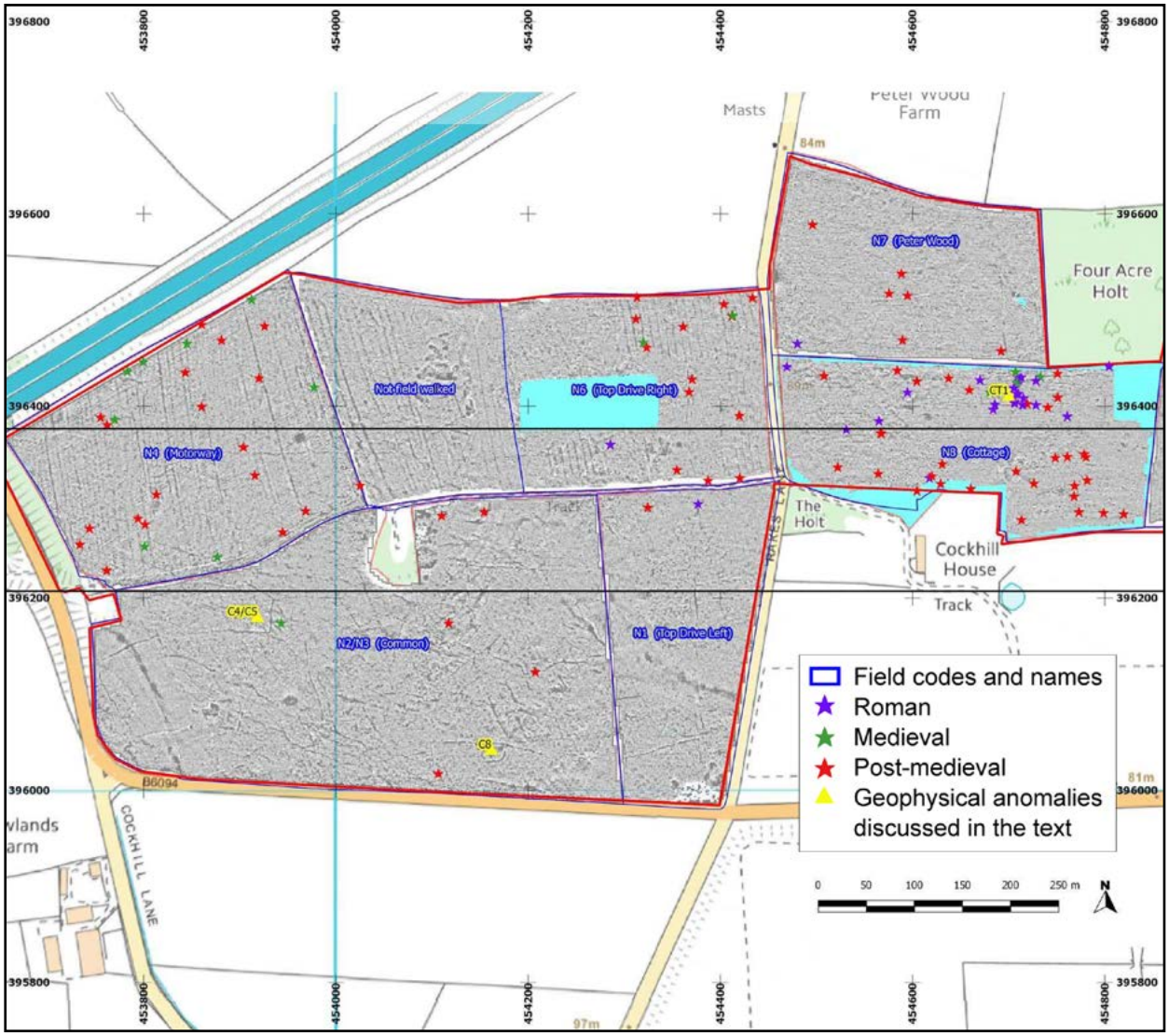


Fig. 2.7. Fieldwalking survey of 2015: distribution of pottery overlying geophysical plot of 2014–15 (Mora-Ottomano 2015, Fig. 15). Contains Ordnance Survey data © Crown copyright and database right (2014).

rim) as well as four sherds of possible Roman pottery were found in field N8, most from the vicinity of the ditched enclosure. Another sherd of greyware came from the south-west corner of field N7 and another from the southern part of field N6. A single sherd of very abraded decorated samian was recorded near the northern boundary of field N1.

Medieval and later material

The medieval period is represented by only fifteen sherds of probable late medieval pottery. Of these, six came from field N4, mostly towards its northern boundary. Four sherds were collected from the northern part of field N8, interestingly concentrated with the Roman pottery near the ditched enclosure (CT1) identified in the geophysical survey. A further two sherds were found in field N2/N3 and two more in the north part of field N6.

Post-medieval and modern material was found generally at medium to high frequency across the survey area with the densest concentrations again apparently in fields N4 and N8. This material included: pottery of 18th-/19th-century date; ceramic building material, with numerous fragments of pantiles; glass; ironwork; a fragment of clay tobacco pipe; and a piece of worked quartz which may originally have been part of a decorative brooch-like object attached to clothing. Five pieces of slag of indeterminate date and character were recorded in four fields: N1 (x1), N4 (x1), N7 (x1) and N8 (x2)

Other evaluation work

In 2017 a watching brief was undertaken by ARS Ltd, commissioned by Breedon Group PLC, in advance of quarrying on the site of the demolished Cockhill House Farm; no archaeologically-significant remains were found (Cobbold 2017).

Whilst excavations were in progress at Holme Hall Quarry (Cockhill East and West) in 2019–22, Breedon Aggregates commissioned ARS Ltd to undertake further evaluation work, comprising another desk-based assessment (Brown 2019), a geophysical survey (Durkin 2020) and fieldwalking (Jacklin 2020), in advance of a proposed northern extension of the Holme Hall quarry into the area around Peter Wood Farm, immediately north of Cockhill East and West. The fieldwalking produced: one possible flint core used to detach flakes, although this piece is more likely to be a naturally fractured piece of flint; a sherd of 14th- to 15th-century pottery; a sherd of 16th-century pottery; a few sherds of 17th- and 18th-century date; as well as much pottery and other material of the 19th to 20th centuries. In 2020 60 trial trenches were cut in the area of the proposed new northern extension in order to clarify the nature of features revealed in the new geophysical survey (Bassendale 2020). Most of these trial trenches contained little of archaeological significance, but one included a relict palaeochannel and others had post-medieval land drains or various features (ditches, pits, plough furrows and a possible posthole) of possible Romano-British to post-medieval date.

Chapter 3

The excavation of 2004

By Richard O'Neill and Owen Raybould (edited by Francis M. Morris)

Introduction

In June–July 2004 Archaeological Research and Consultancy at the University of Sheffield (ARCUS) conducted an archaeological excavation covering an area of 1.1 ha at Holme Hall Quarry (Figs 1.2 and 3.1). This work was commissioned by Tarmac Quarry Products Ltd and was part of the planning process prior to a northward extension of quarrying into an area approximately 110 ha in size. The site had been in agricultural use and was grassland on the edge of the quarry at the commencement of the fieldwork.

The excavation followed on from a previous program of evaluation work involving a desk-based assessment (Symonds 1993), fieldwalking (Merrony 1994) and geophysical survey (GSB 1994). The desk-based assessment established that no known archaeological features lay within the extension area. A fieldwalking survey across the *c.*110 ha area found a thin scatter of prehistoric, Roman and post-medieval material, with one clear concentration of Roman pottery covering an area of *c.*60 by 80 m (Fig. 2.1 in field S1). The area of this concentration was subjected to a geophysical survey, which indicated significant archaeological potential, with the possible presence of a settlement, or sub-rounded enclosure, and associated features including an oven. The 2004 excavation took place in the area of this geophysical survey.

A detailed archive report providing comprehensive descriptions of all contexts from the 2004 excavation and analysis of the artefacts and the faunal and palaeoenvironmental remains recovered, as well as numerous illustrations and photographs of the archaeological features and finds, is available online through the Archaeology Data Service (O'Neill and Raybould 2007).

The archaeological features were typically cut into limestone bedrock and were sealed by a modern topsoil, which was stripped off by a mechanical excavator under archaeological supervision.

Late Neolithic to Early Bronze Age

The earliest human activity was evidenced by a small assemblage of 19 prehistoric chipped flints, at least part of which can be dated to the late Neolithic to Early Bronze Age (for detailed discussion, see below, p. 35). The flints were scattered across the site and none derived from contemporary archaeological features. Most came from the topsoil, with the remainder residual in features of Roman date. Further worked flints were found nearby during the earlier fieldwalking survey (see above, pp. 11-12, Fig. 2.1).

Late Iron Age/Roman

Sub-circular enclosure (Enclosure 1)

A Late Iron Age/Roman sub-circular (curvilinear) enclosure (Enclosure 1), previously identified through a combination of fieldwalking (Merrony 1994) and geophysical survey (GSB 1994), was exposed in the north-eastern part of the excavation area (Figs 3.1–3.3). The enclosure measured *c.*34 m east–west by 28 m north–south internally and had an area of *c.*0.07 ha. It was defined by a single ditch, broken into several segments on its western side (likely due to truncation by later ploughing), with a considerable break on the southern side of the enclosure that presumably represented an entrance, 7.5 m in width. The enclosure ditch was probably dug at some point in the late 1st to 2nd centuries AD (although a date earlier in the 1st century AD, perhaps even in the Late Iron Age cannot be ruled out) and it probably went out of use in or after the early 3rd century.

Sections excavated through the continuous ditch forming the north-eastern, eastern and south-eastern sides of the enclosure (Groups 1 and 2) revealed a fairly uniform profile (Fig. 3.3). The ditch was between 0.94–1.62 m in width and up to 0.53 m in depth. A line of stones was visible in the filling of the feature through a number of sections (e.g. Fig. 3.3, Sections 3–5). This material did not appear to be collapse from an associated bank. It was recorded as a possible recut in several sections although there was not enough

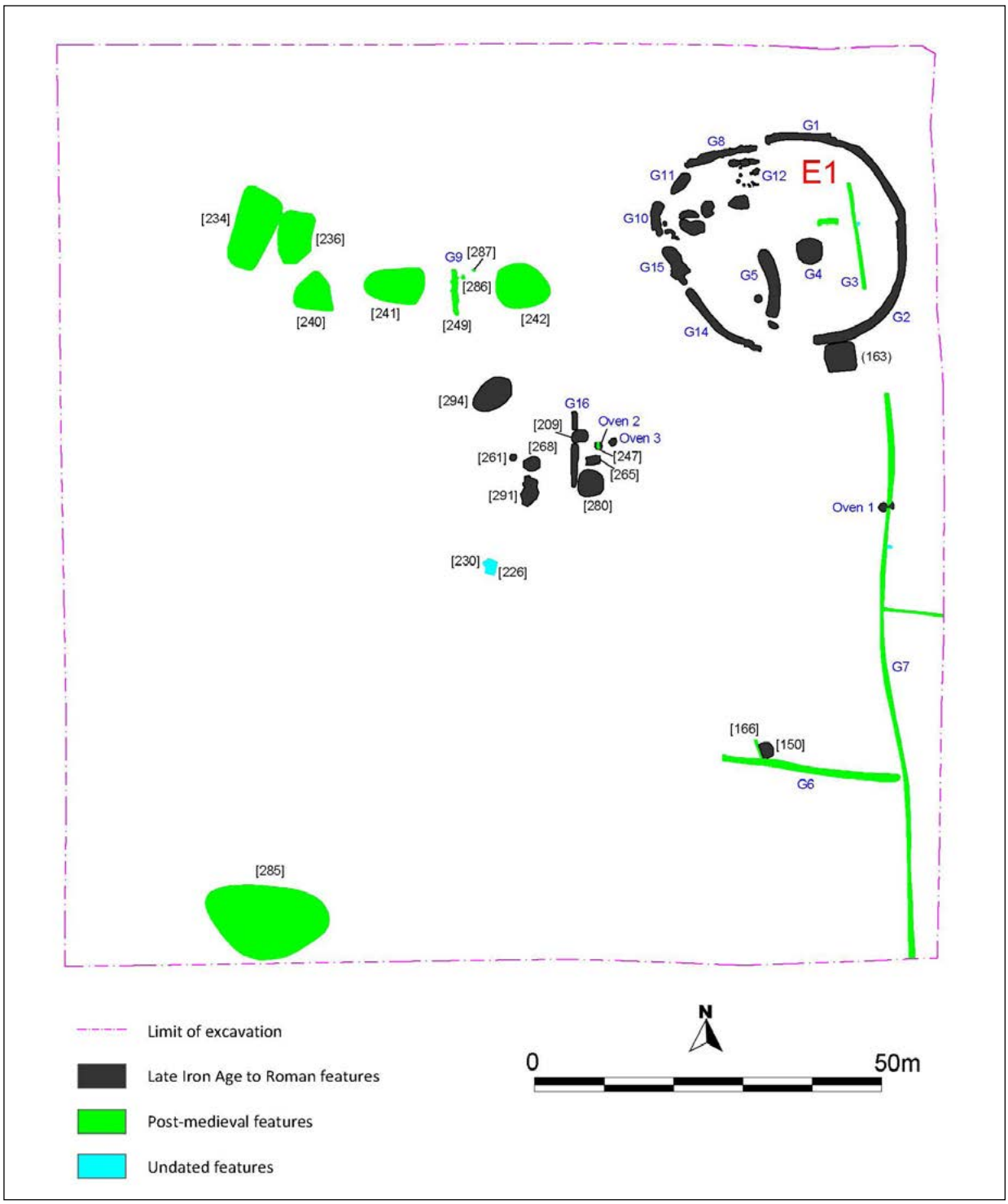


Fig. 3.1. Archaeological phased plan of the Holme Hall Quarry excavation of 2004.

differentiation in the filling of the relevant sections to warrant assigning separate context numbers. The southernmost section rose sharply to the west in the line of the ditch and appeared to be a deliberate terminal butt-end (forming the east side of an entrance into the south side of the enclosure), rather than truncation from later ploughing.

The sections excavated through the ditch segments forming the north-western, western and south-western sides of the enclosure (Groups 8, 10, 11, 14 and 15) revealed a much more irregular profile, presumably the result of later truncation. Here the ditch measured between 0.83–2.56 m in width and up to 0.34 m in depth. The sequence of infilling of the ditch was observed to

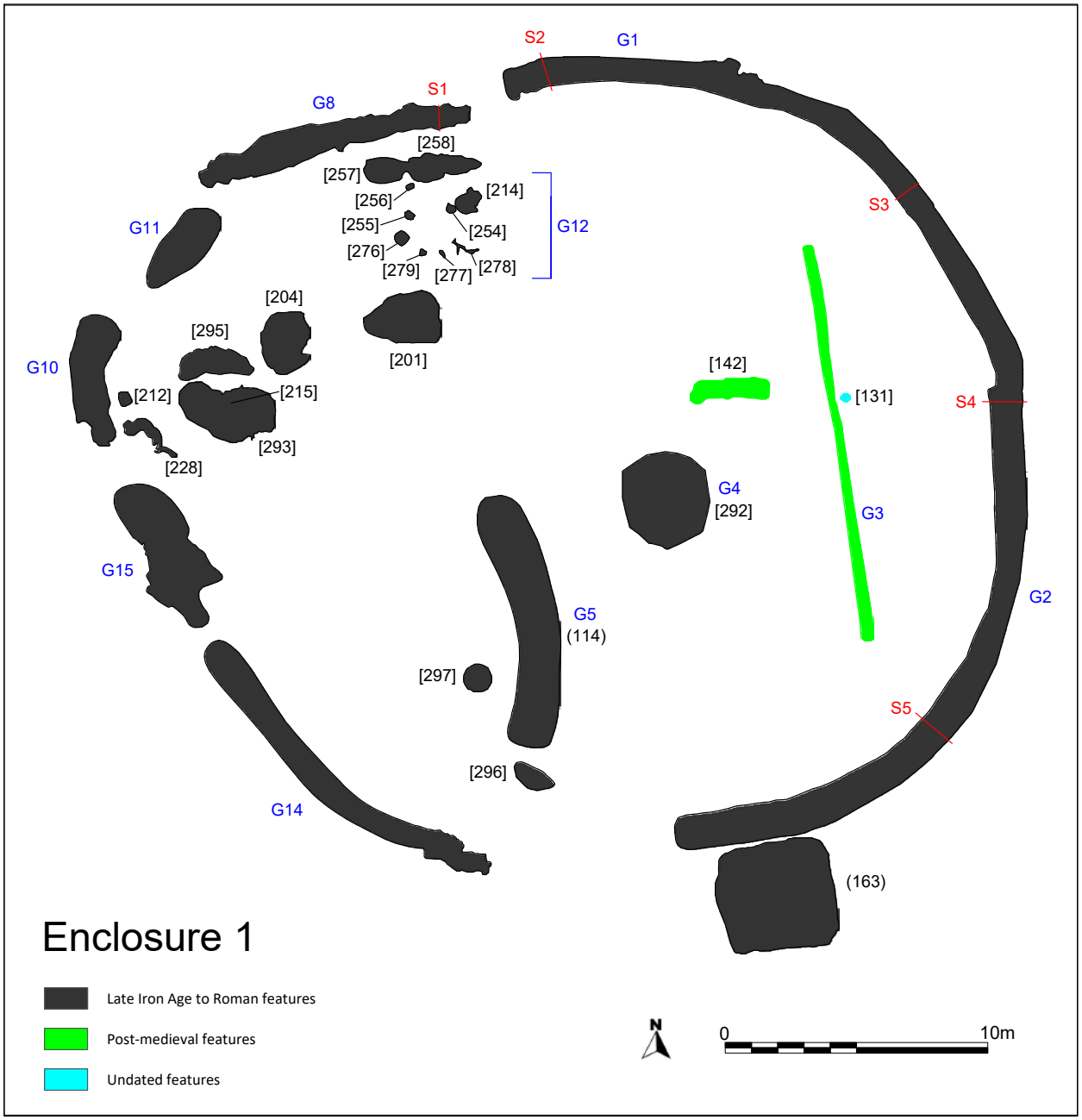


Fig. 3.2. Plan of Late Iron Age to Roman sub-circular Enclosure 1 (for sections, see Fig. 3.3).

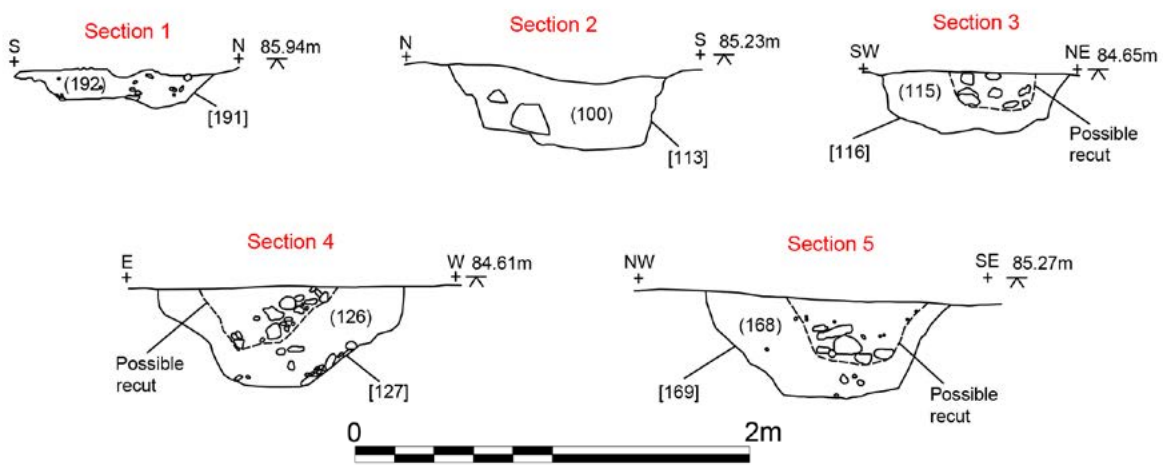


Fig. 3.3. Sections of Late Iron Age to Roman sub-circular Enclosure 1 (for section lines, see Fig. 3.2).

be fairly similar in each section. The southernmost section (in Group 14) was thought to be a deliberately cut butt-end (forming the west side of an entrance into the south side of the enclosure) rather than an irregular rock cut reduced through truncation.

The pottery from the enclosure ditch groups suggests activity began in the Late Iron Age, although it is uncertain if this pottery relates to occupation of the enclosure or was redeposited from earlier layers when the ditch was dug. The much abraded condition of these sherds indicates the latter suggestion is possible. Activity belonging within the late 1st to mid 2nd centuries AD is represented by rusticated wares, fabrics CTB1 and GTA8 bead-rim deep jars and everted-rim jars and a possible carinated beaker (for pottery fabrics, see below, pp. 30-2). The large jars and wide mouthed jars are difficult to date precisely having a long life, but an incipient flanged bowl from Group 10 was datable to the late 2nd to early 3rd centuries and a small amount of Dales ware from Group 14 and probably Group 11 suggests activity into the 3rd century AD. The latest sherd was a bead and flange hemi-spherical bowl (in fabric OAB1), datable to the late 3rd to 4th centuries, from Group 2.

Other finds from the enclosure ditch groups include a beehive quern stone fragment in Millstone Grit (SF201) and an iron nail from Group 2 and a copper-alloy edge-binding or repair patch from an organic object (SF279) from Group 10. Residual prehistoric flint flakes (x2) and a bladelet were also recovered from Groups 2 and 8. Animal bone included remains of cattle and sheep/goat, as well as numerous fragments of a dog in Group 2.

Features within sub-circular Enclosure 1

A large number of Roman features were recorded within the enclosure (Fig. 3.2), comprising hearths, an area of discarded heated cobbles (pot boilers) that had probably been used in cooking, pits, postholes and a short gully, as well as natural hollows and gullies whose fills contained Roman material. These features, and the pottery and other finds they produced, indicate fairly intensive occupation within the enclosure during the 2nd to 3rd centuries, possibly extending into the 4th century. No clear evidence of structures was found.

Pit [296] lay just inside the enclosure's southern entrance. This pit was oval-shaped in plan, 1.6 by 0.8 m, with a surviving depth of only 0.08 m. It contained Roman pottery including a Dales ware jar of 3rd- to 4th-century date.

Immediately to the north of pit [296] and *c.*3 m back from the west side of the southern entrance was a large concentration of non-local siltstone river cobbles, (114) = Group 5, covering a gently arcing area measuring 9.65 m north–south by 1.75 m east–west, with slight curves to the north-west and south-west at its north and south ends respectively. These cobbles ranged in size from 0.03 to 0.18 m in diameter and around 95% of them were heat affected, i.e. they were 'pot boilers' that would probably have been used in cooking. Feature (114) resembled a cobbled surface, i.e. closely compacted cobbles pressed into the earth, but the shape in plan suggests more of a discard-zone subsequently trampled. In addition, excavation of the feature showed that the cobbles were sometimes three deep with frequent voids between them, indicating that they were not placed with the intention of creating a surface. A possible hearth, [297], measuring 1.1 m by 1.0 m and comprising an area of reddened sand/clay with a few flecks of charcoal, was located *c.*1.0 m west of and within the arc of the cobbles. It seems likely that the cobbles had been heated in this hearth and were subsequently used in cooking prior to being discarded to form feature (114); the size of the cobble discard zone suggests that cooking activities at this location were repeated over a considerable period of time. Amongst the cobbles was pottery of 2nd- to 4th-century date, with some vessels datable to the mid and late 3rd to 4th centuries, as well as a square-sectioned iron bar (SF981), two cattle teeth and a horse tooth.

In the east part of the centre of the enclosure was a large circular pit, [292] = Group 4, which had a diameter of 4.8–5.0 m and a depth of 1.29 m. The lower fill had no finds, but the upper fill had Roman pottery consistent with a 3rd-century date, including Dales ware, as well as a few cattle-sized animal bones. The function of the pit was not apparent from the excavated evidence. It may have been a water hole, or simply a solution hollow. Several other features were present in the eastern part of the enclosure, but were regarded as post-medieval in date, e.g. Group 3 and [142], or, in the case of [131], were undated.

Many Roman features were found in the north-west part of the enclosure. These comprise: a possible hearth [214]; pits [215] and [258]; postholes [212], [254], [255], [256], [276], [277] and [279]; a short gully [257]; and natural hollows and gullies [201], [295], [204], [228], [278] and [293].

At the western extremity of the interior of the enclosure was a natural gully, [228], formed by an irregular crack in the surface of the natural limestone, 2.5 m in length, 0.1–0.3 m in width and 0.05–0.3 m in depth. This gully was notable for containing a copper-alloy enamelled dragonesque brooch (SF266; see below, p. 37, Fig. 3.5) of mid/late 1st- to 2nd-century AD date in its fill, in addition to sherds of Roman greyware and 3rd- to 4th-century Dales ware.

To the north of [228] was a posthole, [212], which had a number of heat-affected cobbles arranged like packing-stones within its fill. Its fill also included Dales ware and a Nene Valley colour-coated sherd, possibly of late 3rd- to 4th-century date, an iron bolt fragment from a structural fitting and an iron hobnail.

To the east of [228] and [212] was a natural hollow, [293], the upper part of the fill of which contained Roman pottery, including a Mancetter-Hartshill hammerhead mortarium with traces of brown paint that probably dated to the mid 3rd to mid 4th centuries. Fragments of ceramic building material, possibly intrusive, were also recovered from the hollow including a flat roof tile and an undiagnostic fragment. Hollow [293] was cut by a sub-circular pit [215], which contained heat-affected pebbles, pottery of late 3rd- to early 4th-century date and an unidentified iron object. Overlying the southern side of the pit was a small area of burnt clay, measuring 0.8 m by 0.6 m, perhaps the remnants of a hearth. It seems likely that the pit was initially used for the disposal of domestic waste and later became the setting for a fire.

Immediately to the north of [293] was another natural hollow, [295], which contained a copper-alloy coin of Vespasian, datable to AD 70 (SF427), and pottery of probable 2nd- to 3rd-century date, including Dales ware. To the east lay natural hollow [204], which also contained Dales ware.

Natural hollow [201] lay a short distance further east. It was up to 0.35 m deep and contained an articulated animal skeleton, possibly a young cow, which rested against a natural outcrop of limestone on the north side of the hollow. Numerous other fragments of animal bone (including cattle, sheep/goat and red deer) and Roman pottery of probable 2nd- to 3rd-century date, including Dales ware, were recovered from the fill of the hollow.

Immediately to the north of [201] were a number of possible postholes, [254], [255], [256], [276], [277] and [279], which may have formed a small structure of some sort, although it was difficult to discern any distinct pattern to their arrangement. A possible hearth [214], comprising a sub-circular area of burnt limestone bedrock was located immediately east of the postholes and a natural gully [278] lay in the near vicinity. The fills of these features (Group 12) included a small amount of pottery consistent with a 2nd-century date, as well as three iron structural fittings (a link, SF202; a washer, SF286; and a T-clamp, SF287), an iron nail and a residual prehistoric flint flake.

On the north side of the postholes was a pit, [258], that was cut into the central area of an east–west gully [257] whilst the latter was open. The upper part of the pit and the gully had the same fill, which produced pottery of early/mid 2nd- to 3rd-/4th-century date, including Dales ware and a proto-Huntcliff jar datable to the late 3rd to early 4th centuries.

Features outside the sub-circular enclosure

Several Roman features were found to the south, south-west and west of the enclosure (Fig. 3.1). These comprised: three ovens, Ovens 1 = [171]/[172], 2 = [232] and 3 = [270]; a quarry/midden, [294]; a cobbled surface, (163); a rubble bank, [251] (not drawn), possibly representing part of a field boundary buried beneath post-medieval wall [249]; north–south gullies [253] and [264] (Group 16), possibly representing slots for a timber structure associated with Ovens 2 and 3; and various pits, [150], [209], [261], [265], [280] and [291]. Pottery and other material from these features indicated occupation in the 2nd and 3rd centuries, concentrating in the late 2nd to late 3rd centuries (when most or all of the features were filled) and possibly extending into the early 4th century.

Immediately outside and just to the east of the southern entrance into the enclosure was an area of cobbles, (163), 4.5 by 4.1 m, set either on natural bedrock or in natural clay. Unlike the area of heat-affected cobbles within the enclosure this was a single layer of stones, possibly the remnants of a surface rather than the result of cobble discard. The individual cobbles measured 0.05–0.15 m in diameter. A smaller number of cobbles were contained within an overlying deposit of reddish-brown firm silty clay, which contained fragments of charcoal and limestone. This overlying deposit produced very abraded sherds indicating activity from the early 2nd to the late 3rd century, including a flanged bowl of late 3rd- to 4th-century date. The deposit also produced a copper-alloy enamelled stud (SF46; Fig. 3.4) of mid/late 1st- to 2nd-century AD date, a square-sectioned iron bar fragment (SF830) representing an offcut from blacksmithing, a few pieces of possible slag, two iron nails and a residual prehistoric flint thumbnail scraper.

Oven 1 was located approximately 25 m to the south of the enclosure (not closely illustrated). It was keyhole-shaped in plan, comprising a circular cut [171], 1.3 m in diameter, with an east–west aligned flue, [172], on its eastern side. The feature measured 2.15 m in overall length and had a surviving depth of 0.15 m. The circular oven had a flat base lined with flat fragments of limestone, possibly bleached through use, that sloped down towards the flue. None of these lining stones touched, the gaps between them having been filled with clay. A noticeable skim of charcoal lay on the base slabs. The primary and main fill of the oven appeared to be burnt clay, possibly the remains of the

superstructure that collapsed into the feature once it had gone out of use. The main fill of the flue was rich in charcoal, presumably the result of successive 'rake-out' episodes. A sherd from a copy of a samian vessel, probably produced at Cantley kiln 7 in the late 3rd to early 4th century, was found in a secondary fill of the flue and a base fragment of a Mancetter-Hartshill mortarium, dating after *c.*140/150, was found in an upper fill of the oven. The flue was cut by part of a post-medieval north–south field ditch [176]/(Group 7).

A cluster of Roman features was identified *c.*21–38 m south-west of the enclosure in the area of a natural escarpment of limestone. These features comprised: quarry/midden [294]; Ovens 2 = [232] and 3 = [270]; pits [209], [261], [265], [280] and [291]; and north–south gullies [253] and [264].

About 28 m south-west of the enclosure was a shallow, sub-circular quarry/midden [294], 6.5 by 5.0 m and *c.*0.30 m in depth. The natural limestone ridge appeared to have been quarried here, with discrete areas within the feature cut deeper than others (particularly at the centre). The bedrock forming the base of the feature also displayed evidence of *in situ* burning, possibly fire-setting for the removal of stone. The stone is likely to have been used locally, most probably for construction, e.g. of field boundary banks/walls or oven linings. The quarried void contained in its infilling the highest concentration of Romano-British artefacts on the site. The presence of extremely dense scatters of artefacts within the fill was indicative of the deliberate deposition of midden material over a period of time. A total of 2871 sherds (25,479 g) of Roman pottery was recovered, constituting 54% of the 2004 assemblage by sherd count and 46.9% by weight; it probably represented an accumulation of material over a 50–75 year period, with a terminal date in the late 3rd century. Other finds included: a copper-alloy coin of Gallienus, datable to AD 253–60 (SF637); an iron punch (SF414) with a fine point suggesting a role in decoration of non-ferrous metal; six iron nails; six iron hobnails; and an unidentified iron object. Five iron bar and strip fragments representing offcuts from blacksmithing (including SF644, SF645A, SF809A and SF1066), an iron strip (SF645B) folded probably in the process of recycling and a quantity of iron smithing slag together suggest that a blacksmith was working at, or in very close proximity to, Enclosure 1. Animal bones included those of cattle and sheep/goat. Heat-affected cobbles and charcoal were also found in the midden.

About 14 m south-east of the quarry/midden feature [294] and *c.*21 m south-west of the enclosure were two ovens, Oven 2 = [232] and Oven 3 = [270], situated just 0.95 m apart. Unlike Oven 1, these had no flues. These features were sub-circular in plan, measuring roughly *c.*1 m in diameter, and had gently sloping sides cut into the natural bedrock. Oven 2 measured up to 0.15 m in depth and Oven 3, 0.09 m in depth. Oven 3 was lined with split limestone slabs. The gaps between the stones were filled with red, hard clay, the colour probably derived from *in situ* burning. Oven 2 may also originally have had a stone lining, but it was severely truncated through its centre by a post-medieval land drain [247]. Both ovens were filled with silty clay material, as well as patches of reddened heat-affected cobbles and charcoal fragments. Oven 2 produced a rim of an East Gaulish samian dish, datable to 180–260 and a few other indeterminate Roman pottery sherds. Oven 3 had sherds of 3rd- or 4th-century Dales ware and an iron nail. The lack of metalworking debris, pottery wasters or charred grain recovered from the near vicinity of these features suggests they were unlikely to be furnaces, kilns or corn driers. It is tentatively suggested that they were ovens, perhaps for baking foodstuffs prepared within the enclosure.

Immediately north-west of Oven 2 [232] was pit [209], which contained a large quantity of burnt clay which did not appear to have been burned *in situ*. It seems likely that this material was redeposited from the nearby ovens. A sherd from a Dales ware jar was also present, indicating a 3rd-century date, at the earliest, for the filling of the pit.

To the north and south of pit [209] were two short linear gullies, [253] and [264] respectively (Group 16). These gullies lay on the same north–south line, but were interrupted by the pit (no stratigraphic relationships between the features were observed). They possibly represented slots for a timber structure associated with Ovens 2 and 3. Gully [253] measured 2.6 m in length, 0.8 m in width and 0.1 m deep; its fill contained sherds from a complete or near complete Dales ware type jar, probably datable to the first half of the 3rd century, a single residual flint flake and a red deer bone. Gully [264] measured 6.3 m in length, up to 1.05 m in width and 0.46 m deep. The southern terminus was not discernible as it had been truncated by later ploughing. The fill of this gully produced undiagnostic sherds of Romano-British greyware, heat-affected cobbles, and animal bone fragments (cow and sheep/goat). A number of stones were concentrated in its base, possibly to aid drainage.

South of Ovens 2 and 3 and immediately east of north–south gully [264] were two pits: [265] and [280]. The fill of [265] contained Romano-British ceramics, including samian ware dating to 180–260 and four sherds of probable Dales ware, along with a residual flint arrowhead of Late Neolithic date and animal bone including cow and sheep/goat. Pit [280] included Romano-British ceramics indicating a 3rd-century date.

To the west of north–south gully [264] were three more pits or natural hollows: [291], [268] and [261]. Pit [291] contained a large quantity of medium-large angular limestone boulders, fragments of charcoal, sherds of mostly undiagnostic Romano-British ceramic, a greyware sherd (probably Late Iron Age/early Roman) in an unusual fabric and a single piece of Roman glass (SF1060) from a prismatic bottle of mid 1st to late 2nd-century AD date. The fill of pit [268] also had abundant large limestone boulders and sherds of Romano-British pottery suggesting a date in the late 2nd or 3rd century. Pit [261] had the upper part of a large Roman jar, perhaps deliberately placed and probably datable to the late 2nd century or later.

Roughly 12m to the north of the midden/quarry feature [294] and *c.*29 m west of the enclosure was what appeared to be a preserved section of rubble bank [251], possibly the remains of a Roman field boundary. The bank was buried beneath a post-medieval wall [249] and remnants of a buried subsoil deposit. The bank appeared to have been formed by extending a natural finger of outcropping limestone northwards with subangular limestone fragments and river cobbles. The cobbles appeared to have been heaped on top of each other and included a number of heat-affected fragments, all within a matrix of yellowish-brown clay silt. The bank extended for approximately 4 m in a north–south alignment, measuring up to 1.7 m in width and 0.2 m in depth. A copper-alloy coin of Claudius II, datable to AD 268–70 (SF681) and Roman pot sherds were found within it. The bank was sealed by what appeared to be a naturally accumulating buried subsoil deposit, which contained Roman pottery and an iron structural fitting (a fine L-shaped clamp).

Towards the southern edge of the excavated area, *c.*56 m due south of the enclosure, was a large roughly circular pit [150], *c.*2.5 m in diameter and 0.28 m in depth. It was filled by a mottled deposit of red-brown smooth clay containing charcoal fragments, small pebbles and larger limestone inclusions, as well as a Central Gaulish samian cup and a large group of greyware which dated to the late 2nd to early 3rd centuries. The function of the pit was not clear; it may have been a rubbish pit or a water hole subsequently infilled with cultural material. The feature was truncated on its western side by a modern land-drain [166].

Post-medieval

Introduction

Post-medieval features comprised the scant remains of a building (the former Cockhill Cottage), six limestone quarry pits, several field ditches and field drains (Fig. 3.1). All these features appeared to be of 18th- to 19th-century date and several are visible on Ordnance Survey maps of the mid to late 19th century.

Building, Cockhill Cottage (Group 9)

To the west of the Romano-British enclosure were the remains of a building, represented by a north–south wall, [249], with a surviving length of 6.5 m and width of 0.6 m (Fig. 3.1). The wall was formed of roughly hewn limestone blocks, surviving only one course (0.2 m) in height and bonded with a lime mortar containing brick and coal inclusions. Non-diagnostic handmade brick fragments (of probable post-medieval date) were also recovered from the wall make-up. The southern section of the wall overlay a buried subsoil and a probable Romano-British bank [251], whilst the northern section was set on a natural outcrop of limestone. There was a possible return on the eastern side of the southern end of the wall, where mortar was observed; this might suggest that [249] was the west wall of the building (or of a room within it), and the return the south side. Traces of mortar were also seen 2 m north of the north end of wall [249], giving a projected length of at least 9 m for the building. The area immediately east of the wall was extremely flat and, although no built floor surface was observed, appeared to have been intentionally levelled. In this area were two discrete patches of burning where the limestone bedrock had taken on orange hues, [286] and [287], presumably fire settings. The wall and associated building remains (Group 9) match the location of a small building labelled as 'Cockhill Cottage' on the first edition Ordnance Survey 1:10,560 map of 1854 (O'Neill and Raybould 2007, Illustration 3; also included in Brown 2015). This building is absent from the Ordnance Survey 1:10,560 maps of 1893–4 and 1902 (*ibid.*), by which time it had clearly been demolished.

Quarry pits

Five large quarry pits were situated along the natural escarpment of limestone which lay across the northern part of the site, to the west of the Roman enclosure (Fig. 3.1). It seems likely this may have always have been an outcrop above the soil line and therefore an easily exploitable source of limestone probably extracted for building purposes. Four of the quarry pits, [234], [236], [240] and [241], lay between 4 and 33 m west of the probable west wall, [249], of post-medieval Cockhill Cottage, whilst one of the pits, [242], lay 6 m to the east of the wall.

The westernmost quarry pit, [234], measured 11.2 by 7.6 m and was up to 0.56 m in depth. Its fill contained a 19th-century pot sherd. Less than 0.2 m to the east of [234] was quarry pit [236] (no stratigraphic relationship between these features was observed), which was 7.5 by 4.9 m and up to 1 m deep. The fills of [236] included

pottery and pantiles of 18th- to 19th-century date and there was evidence that a fire had been set in the hollow between its primary and final fills. South of [236] was a smaller quarry pit [240], measuring 5.5 by 5m and 0.5 m in depth; no finds were recovered from its fill. A short distance to the east of pit [240] and *c.*4 m west of wall [249] was quarry pit [241]. This was 8.7 by 5.3 m, with a depth of 0.5 m; its fill included 18th- to 19th-century pantile fragments and a clay pipe stem datable to 1750–1850. Pit [242], to the east of wall [249], was 8.0 by 6.4 m and over 0.5 m in depth. The pit was sub-circular in plan and had concave faces that were weathered indicating that they had been exposed for some time prior to the quarry infilling. The primary fill was an apparently natural accumulation that included fragments of 18th- to 19th-century pantile. The second (?deliberate) fill contained further fragments of pantile, a clay pipe mouthpiece datable to 1800–50 and post-medieval glass, as well as residual Roman material.

Only the two westernmost pits, [234] and [236], appear to be shown as a single feature labelled 'Old Quarry (Limestone)' on the first edition Ordnance Survey 1:10,560 map of 1854 (O'Neill and Raybould 2007, Illustration 3; also included in Brown 2015). None of the pits are visible on the Ordnance Survey 1:10,560 maps of 1893–4 and later (*ibid.*). These quarry pits clearly dated to the 18th and/or 19th centuries. It is unclear whether some or all of the quarries pre-dated Cockhill Cottage, or were in use during the life of the building. Some of the quarries may even have provided building material for the walls of the cottage.

A further quarry pit [285], the largest identified within the excavation area, was located near the south-west corner of the site, roughly 84 m south of those already described. Quarry pit [285] measured 18 by 10.5 m and had a depth between 0.5 and 1.0 m. No finds were recorded from this feature, but its position corresponds with a pit marked 'Limestone Quarry', which has a track leading to it from the east, on the first edition Ordnance Survey 1:10,560 map of 1854. The quarry is absent from the Ordnance Survey 1:10,560 maps of 1893–4 and later.

Field ditches

A north–south linear feature traversed the eastern side of the site over a total distance of at least 112 m, comprising from south to north: [182], [184], [188], [245] and [176] (Group 7); and [135], [134] and [133] (Group 3). The Group 7 ditch survived over a distance of 81 m, meandering slightly along its length and running beyond the area of excavation to the south (Fig. 3.1). It was between 0.35–0.50 m in width and up to 0.18 m in depth. The ditch, [176], truncated the flue of Roman Oven 1. A clay pipe stem datable to 1750–1840 and a post-medieval copper-alloy and iron composite fitting were recovered from the ditch fill. The Group 3 ditch was recorded further north, solely within the area of Roman Enclosure 1, but was clearly part of the post-medieval field system. This ditch measured 16.7 m in length, 0.35 m in width and 0.05 m in depth. The only find from its fill was a fragment of 19th-century pottery recovered from an environmental sample.

The first edition Ordnance Survey 1:10,560 map of 1854 (O'Neill and Raybould 2007, Illustration 3; also included in Brown 2015) shows this north–south field ditch, but only running as far north as an east–west ditch, itself apparently found in the 2004 excavation as [142] (Fig. 3.2). Ditch [142] was recorded *c.*2 m west of the Group 3 ditch within the area of the Roman enclosure; it had a surviving length of only 3 m, was 0.7 m in width, 0.15 m in depth and contained pottery of late 18th- to early 19th-century date along with an unidentified modern iron object, possibly an aerial. The Ordnance Survey 1:10,560 map of 1893–4 (*ibid.*) shows that the east–west ditch had by then gone out of use and the north–south ditch by now extended further north. On the basis of the Ordnance Survey maps, this north–south field boundary continued in use until at least 1956, but had disappeared by 1966–7, when the surrounding fields had been merged into a single large field (maps included in Brown 2015).

About 56 m south of east–west ditch [142] was a ditch that ran east from the Group 7 north–south ditch, [245], for at least 8.7 m. This east–west ditch was contemporary with the Group 7 ditch, but was not visible on any Ordnance Survey maps. In the second half of the 19th century, the ditch would have lain within Red Dike Wood, but it possibly represented a post-medieval field boundary that pre-dated the wood.

About 24m further south was another east–west ditch [161]/[165] (Group 6). This ditch was at least 20 m long, ending in an eastern terminus just 0.45 m short of north–south ditch (Group 7). Its western extent had seemingly been truncated by ploughing. The Group 6 ditch was up to 1.14 m wide and between 0.12–0.18 m deep. Its fill included only Roman pottery, which was presumably residual. The feature is not shown on any 19th- or early 20th-century Ordnance Survey maps, but it appears to line up with field boundaries visible on these maps to the east and west and may well be a part of the field system that had gone out of use/been modified prior to 1854. The ditch might have pre-dated the laying out of Red Dike Wood to the east, after which this section of the field boundary shifted to the south.

Field drains

A number of archaeological features were truncated by post-medieval/modern land drains (most are not

shown on Fig. 3.1) which traversed particularly the western part of the site, e.g. [247], which cut Roman Oven 2 and [166], which cut Roman pit [150].

Topsoil

The existing surface at the commencement of the works was a plough soil which overlay all archaeological features, the subsoil, the natural clays and the limestone bedrock. A large number of artefacts were recovered from this topsoil, including over a thousand sherds of pottery, mostly Romano-British but also post-medieval, a few prehistoric flint flakes and many other objects of Roman and post-medieval date. The large quantity of residual Romano-British artefacts in the topsoil demonstrated the severe reduction and ploughing out of earlier features. The majority of artefacts in the topsoil were unsurprisingly concentrated around the main areas of Roman activity: the enclosure; the midden/quarry, [294]; and the ovens, pits and gullies.

Undated features

These comprised: a single posthole, [131], adjacent to and possibly contemporary with the post-medieval Group 3 field ditch (Fig. 3.2); a recut pit, [226]/[230], with much charcoal in its fill, located *c.*9 m south-west of the concentration of Roman features including Ovens 2 and 3 (Fig. 3.1); and an animal skeleton (sheep/goat) found in a shallow natural hollow between the topsoil and natural bedrock, close to and possibly contemporary with post-medieval field ditch Group 7.

Specialist reports

A total of 7028 artefacts were recovered from the 2004 excavation. By far the most common artefact was pottery (*c.*5340 fragments). Other artefacts included animal bone (1385 fragments), ironwork (110), metallurgical material (76), ceramic building material (46), glass (31), lithics (19), clay pipe (9), copper alloy (9, including 3 coins) and quern stones (3). Specialist reports on these artefacts and on the microbiological plant remains also recovered are summarized below. No radiocarbon dating was undertaken. The following specialist reports are reduced and edited versions of those provided in the original archive site report (O'Neill and Raybould 2007). Only the two most significant objects are illustrated below (Figs 3.4 and 3.5), but many others are illustrated in the archive report.

Roman pottery

By R. S. Leary, Margaret Ward and Alan Vince

Introduction

Just over 5,300 sherds, weighing 54,276 g, from a minimum of 161 vessels were recovered from the site. The assemblage included pottery dating from the Late Iron Age to the 4th century AD, but most of the pottery dated to the late 2nd and 3rd centuries AD.

Fabrics

The fabric codes are hierarchical in character. The first one or two letters denotes the general fabric group, as in GR = grey ware, the second coarseness, as in GRA = fine grey ware, whilst the numbers indicate further subdivisions based on characteristics of the fabrics. Reference is made to the National Fabric Collection where relevant (Tomber and Dore 1998) and common ware names are given where known.

Amphora

Dr 20 Dressel 20. A single sherd from natural hollow [204] within the Roman enclosure.

Black-burnished ware

BB1: black or dark grey. Hard with smooth feel and granular fracture. Abundant, well-sorted, medium-sized, subangular quartz. Black-burnished ware category 1 (Williams 1977; Tomber and Dore 1998 DOR BB1). Plain-rim dishes, a flat-rim bowl/dish and incipient flanged bowls, late BB1 jars and a lid.

RBB1: Grey. Hard with smooth feel and granular fracture. Abundant, well-sorted, medium-sized, subangular quartz. Black-burnished ware category 1. Probably Rossington Bridge product. Tomber and Dore 1998 ROS BB1. Flat-rim bowl/dish, neckless everted rim jar and necked everted-rim jars, all of Antonine type.

Black/dark brown early Roman wares with quartz inclusions

BSAI brown, often with reddish brown core. Smooth and fairly soft with finely irregular fracture. Fairly clean matrix with moderate amounts of well-sorted, medium-sized, subangular quartz, sparse, fine brown iron oxides and some fine mica. Typical of early Roman groups. One undiagnostic sherd.

Vesicular wares

CT: brown vesicular ware with angular and platey vesicles or white inclusions sparse medium quartz. Probably CTA2.

CTA2: Dales ware. Tomber and Dore 1998 DAL SH. Dales ware jars, double lid-seated jar and a grooved-rim dish.

CTB1: dark brown fabric. Soft and corky with irregular fracture. Moderate ill-sorted coarse to fine vesicles, sparse medium subangular quartz. Vesicles chunky and platey as shell. Sometimes surface is buff. Lacks orange-brown margins of CTA2. Bead- and club-rim deep bowl/jars.

CTB2: brown, dark brown, sometimes with buff surface. Hard with smooth feel and irregular fracture. Moderate, well-sorted, medium-sized, subangular quartz; moderate, ill-sorted, medium to fine, platey vesicles. A sandier version of CTB1. Club-rim deep bowl/jar.

CTB8: greyish brown with brown inner margin. Hard with sandy feel and irregular fracture. Moderate, ill-sorted medium, subangular quartz and moderate ill-sorted fine to medium vesicles.

OTC: grey vesicular ware. Moderate, ill-sorted, medium-coarse, rhomboidal/irregular vesicles. Rare, fine quartz. Flat-top upright rim jar with double neck groove.

EYCT: East Yorkshire calcite-gritted wares. Tomber and Dore 1998 HUN CG. Proto-Huntcliff and Huntcliff ware jars.

PCT1: black with buff to orange surface. Moderate ill-sorted coarse chunky angular vesicles, rare, soft. angular, non-reactive, cream inclusions (clay pellet) and sparse, fine subangular quartz and fine mica. Handmade. Probably prehistoric but calcite rather than shell.

Derbyshire ware

DBY: Derbyshire ware. Tomber and Dore 1998 DER CO.

White ware

FLA: pale yellow to cream. Slipped, sometimes firing to darker yellow or greyish hue. Hard and smooth with very finely irregular fracture. Moderate, well-sorted, very fine, subangular quartz; moderate fine, ill-sorted, rounded, red, brown and black inclusions (possibly clay pellets and some oxides; occasional, well-sorted, fine, rounded, calcareous inclusions; sparse, well-sorted, fine, flakes of mica. Possibly from York.

Grey wares

GRA1B: light grey with brown core. Hard, smooth with smooth fracture. Sparse, well-sorted, fine subangular quartz. Flask.

GRA2: grey. Soft with smooth feel and finely irregular fracture. Moderate, well-sorted fine, subangular quartz; rare, ill-sorted, medium-sized, white inclusions; rare, fine, rounded black or brown iron oxides. General group of fine grey wares. Rusticated jar, hooked, rolled out rim jar and everted rim jar.

GRA6: grey. Soft with sandy feel and finely irregular fracture. Moderate, fine, subangular quartz; moderate, moderate, well-sorted, fine mica. Possibly related to Rossington Bridge Parisian ware.

GRB1: medium quartz-tempered grey ware. General group for fabrics not otherwise distinguished. Plain-rim dishes, grooved-rim dishes, flat-rim dishes/bowls, incipient flanged rim bowls, bead and flange bowls, beaker base, flanged hemispherical bowls, carinated everted rim beakers, cheesepress, shouldered wide mouthed jars with everted rims, deep bowls with bead, club, bifid and flat rims, everted-rim beaker, flask/flagons, cupped-rim jars, neckless everted-rim jars, jars with short, almost horizontal rims, everted-rim jars, rusticated jars, large jars with everted rims

GRB4: dark grey. Hard with rough feel and hackly fracture. Abundant, well-sorted, medium-sized, subangular quartz. Very similar to BB1 in fabric but not form. Everted rims, jar with short stubby everted rim like 'native' jars, cupped rim jar.

GRB6: grey. Very hard with granular feel and granular fracture. Abundant, well-sorted, subangular medium quartz. Finer version of GRC6. Everted-rim jars and large jar with everted rim. Similar fabrics from Little London (Lincs.).

GRB15: as GRB1 but pale grey with darker grey surfaces/slip. Plain-rim dishes, grooved-rim dishes, flat-rim dishes/bowls, incipient flanged rim bowls, bead and flange bowls, beaker base, flanged hemi-spherical bowls, carinated everted rim beakers, colander, shouldered wide mouthed jars with everted rims, deep bowls with bead, club, bifid and flat rims, everted-rim beaker, flask/flagons, cupped-rim jars, neckless everted-rim jars, jars with short, almost horizontal rims, everted-rim jars, rusticated jars, large jars with everted rims.

GRB16: as GRB1 but with brown core, as Evans 2001 R03. Flat-rim dish/bowl, bead and flange bowl, shouldered wide mouthed jar, everted-rim jars and rusticated ware.

GRB17: as GRB but with brown margins. Bead and flange bowl, everted-rim jars and large jar with everted rim.

GRB18: as GRB with bright orange margins and grey core.

GRB19: dark grey/brown, hard gritty ware with irregular fracture. Moderate well-sorted medium, sub-rounded quartz and rare medium, rounded white calcareous inclusions (react to acid). Rusticated ware.

GRCI: medium to light grey. Hard with rough feel and hackly fracture. Abundant, ill-sorted, medium to coarse subangular quartz; sparse, medium-sized, rounded, black iron oxides. Rusticated ware, deep bowl and large everted rim jar.

GRC6: grey with light grey core. Very hard with rough feel and irregular fracture. Abundant, well-sorted, subangular medium/coarse quartz. Rather like fine Derbyshire ware in feel and hardness. Large everted rim jars, deep bowl with flat rim, bifid rim, cupped-rim jar and distorted flange, possibly from a mortarium. Similar fabrics from Little London (Lincs.).

GRC: very coarse fabric. Base and body of jar.

CRA RE: Crambeck grey ware. Tomber and Dore 1998 CRA RE.

Fabrics with clay pellets and/or grog

GTA8: brown. Hard with rough feel and irregular fracture. Sparse, medium, subangular quartz and moderate, ill-sorted, coarse to medium platey and angular vesicles and white inclusions, moderate, ill-sorted coarse to medium subangular grey/buff argillaceous inclusions. 'Native' jars with everted rims and flat upright rims, deep bowl/jar with club rim, jar with rather flat turned-in rim and deep bowl with club rim, slightly grooved on top.

GTA10: Medium grey with lighter grey or brownish grey core. Soft with bumpy feel and irregular fracture. Sparse-moderate, ill-sorted medium to fine sub-rounded quartz and sparse ill-sorted, coarse, subangular grey inclusions, clay pellets or grog. The grey pellets are often visible on the surface. Deep bowls with bead rim and club rim, storage jar with everted rim, and pilled jar with bifid everted rim.

GTA11: soft pale grey fabric with smooth feel and fracture Sparse, fine, sub-rounded quartz, moderate, ill-sorted, fine to coarse, rounded grey-black inclusions, clay pellets. Similar to fabric from Derby Racecourse. Neckless everted rim jar with grooved shoulder.

GTA17: dark grey often with brown margins. Hard with bumpy feel and irregular fracture. Sparse, sub-rounded, medium quartz and rare, very coarse grey sub-rounded argillaceous inclusion. 'Native' type jar with everted rim.

GTA18: medium to dark grey. Hard with sandy feel and irregular fracture Moderate to common well-sorted subangular quartz and sparser fine to very coarse rounded grey of buff argillaceous inclusions. A group rather than an individual fabric. Like GTA17 but sandier. Jar body sherds.

GTA19: dark grey throughout. Very hard with leathery bumpy feel and irregular fracture Sparse-moderate. ill-sorted medium-fine shell, sparse, well-sorted medium subangular quartz and sparse, ill-sorted medium to coarse grey inclusions - hard, possibly argillaceous cognates. 'Native' type jar with everted rim, deep bowl with club rim and jar with triangular rim formed by folding in on itself.

Oxidised wares

OAB1: as GRB1 but with reddish brown or orange surfaces. Grooved-rim dish, flanged hemi-spherical bowls, narrow necked jar with everted rim, and hooked and everted rims.

OBB1: as GRB1 but with buff surfaces. Flange with grooved tip, probably from bowl.

OBC: brown-buff. Hard, rough with irregular fracture. Moderate, coarse, ill-sorted, subangular quartz, often crystalline appearance suggesting quartzite; moderate, coarse, ill-sorted, rounded, black or brown inclusions, probably iron oxides. Similar to 'pre-Derbyshire' ware.

Mortaria

SYWS: gritty orange with grey core and traces of white slip. Abundant well sorted sub-rounded medium/fine quartz and rare rounded black inclusions. South Yorkshire white slipped. Cf. Tomber and Dore 1998 CAN WS Cantley white slipped ware and Rossington Bridge white slipped ware (Hartley 2001 fabric 1). The form suggests this is a Rossington fabric. Bead and flange mortarium.

MH: Mancetter Hartshill white ware. Tomber and Dore 1998 MAH WH. Bead and flange mortaria and hammerhead mortaria.

Colour-coated wares

NV1: Nene Valley colour coated ware, white with dark grey/brown colour coat. Tomber and Dope 1998 LNV CC. Indented beaker sherds.

NV2: Nene Valley colour coated ware, orange/brown with dark grey/brown or red/opange colour. Tomber and Dore 1998 LNV CC. Painted scroll beaker

TS: samian.

The Samian ware

by Margaret Warc

The 45 sherds represented 27 vessels (0.23 EVEs). The total weight of 216 g gave an average of only 5 g per sherd, considerably lower than at many comparable sites. No stamps survived. The two moulded bowls comprised only 12% of the collection, discounting sherds of indeterminate form. Of these, one retained part of the decoration. A large proportion of the collection consisted of small indeterminate fragments (37%). Again discounting these indeterminate sherds, the dish forms were greatly predominant (77%).

The most striking feature of this assemblage was the absence of material dated before the Hadrianic-Antonine period. There was no evidence of activity in the Trajanic period or earlier, for there were no products of South Gaul or of Les Martres-de-Veyre. The sole vessel assigned to the Hadrianic-early Antonine period was most probably an early Antonine product, and the Hadrianic-Antonine material in general was not closely datable within that wide range. Much may have been of Antonine origin. Certainly, the great bulk of the collection was produced in the Antonine period or later: 63% was produced after the middle of the 2nd century. The sole decorated sherd, representing the style of Advocisus, was produced at Lezoux in the period *c.*160–190.

It may be fortuitous that no mortaria, produced in the period after *c.*170/180, were represented. At any rate, much of the material will have originated in that period, for the proportion of East Gaulish ware was unusually large (*c.*26%). The presence of the later East Gaulish products is to be expected on a site with steady occupation from the later Antonine period into the 3rd century. However, their proportion at Holme Hall must reflect a high level of activity in the 3rd century. Only one of the East Gaulish vessels could be identified firmly as Trier ware, the remainder being more likely to have been Rheinzabern products. Several of the sherds may have represented vessels of 3rd-century date.

None of the material appeared burnt. No graffiti and repair work was evident. One sherd had been reworked: this was a rough counter of diameter *c.*25 mm that was found in the topsoil.

Discussion

The pottery from the enclosure ditch groups suggests activity began in the Late Iron Age, although it is uncertain if this pottery relates to occupation of the enclosure or was redeposited from earlier deposits when the ditch was dug. The much abraded condition of these sherds indicates the latter suggestion is possible. Activity belonging within the late 1st to mid 2nd centuries AD is represented by rusticated wares, CTB1 and GTA8 bead-rim deep jars and everted-rim jars and a possible carinated beaker.

The Roman pottery assemblage was overwhelmingly of local origin from kilns around Doncaster. In the late 1st and 2nd centuries AD, some 'native' wares were obtained in small numbers. These are common throughout the East Midlands in similar fabrics, but some of the fabrics present here (GTA 17–19) are close to a group appearing at Doncaster and contrast with those found further south in the Trent Valley, north Nottinghamshire, south Derbyshire, Lincoln and Leicester (cf. Todd 1968; Darling 1984, fabric 150; Leary 1987, 43; Pollard 1994, 73; Leary 2001, 99). Fabrics GTA8 and GTA10 seem to be more widespread and compare closely with fabric groups common in North Lincolnshire and Humberside that are particularly used in the manufacture of club-rim jars and bowls, examples of which are present at the Holme Hall Quarry site. The vessels in GTA8 and GTA10 may come from Lincolnshire, but their relationship with the later South Yorkshire deep bowl forms is close and these vessels may be early versions of the deep bowl forms made locally. Apart from the samian ware, one white ware sherd, one sherd of Dressel 20 amphora and a Mancetter-Hartshill mortarium, the rest of the 2nd-century pottery appears to have been produced locally. The Derbyshire ware is likely to date to the 2nd or early 3rd century when this ware was most common outside its local market range.

In the 3rd century AD, the few sherds of Dorset BB1 arrived at the site. Some of the grey wares and the CTC Dales ware jar may originate at the kilns around Little London (Lincs.). Fabrics GRB6 and GRC6 can be matched there, as well as at the South Yorkshire kilns. One example of a distinctive bifid flange rim jar was present in topsoil; its form and fabric, GTA10, can also be paralleled at Little London. Dales ware reached the site from the 3rd century. By the mid 4th century, the South Yorkshire industries had declined sharply as East Yorkshire products, Crambeck and Huntcliff wares, spread across the north of England. Occupation of the site appears to have declined dramatically by the early/mid 4th century, although low-level occupation down to the late 4th century is indicated by two rims of Huntcliff jars and a rim of a probable double lid-seated jar in Dales ware found in the topsoil.

The site assemblage compares closely with other rural sites in South and West Yorkshire and north Nottinghamshire. Traded wares are rare and the assemblage is dominated by jar forms. Only a small number of burnt or sooted sherds were present.

Most sherds were found in and around the enclosure. The two principal groups, from the segments of the enclosure ditch and from quarry/midden [294], are quite different from each other in terms of their likely taphonomy. The material from [294] seems to be a deliberate deposit of a large amount of ceramic debris (2871 sherds; 25,479 g), possibly representing much of the waste produced by the contemporary settlement. The pottery from the enclosure ditch seems to be incomplete in terms of the range of vessel types expected, suggesting that deposition here might have been selective. There was, however, nothing very significant about the pottery deposited in the enclosure ditch in terms of vessel form or completeness of vessels and no certain structured deposition was noted during excavation. Many of the sherds seem to belong to the late ditch fills and represent casual discard and redeposition of earlier material. Some patterning was discernible in the horizontal distribution of the ceramic material in the enclosure ditch segments: there were more sherds from the north (total 103 sherds) and south (total 77 sherds) parts of the ditch than from its east (4 sherds) or west (26 sherds), but the problems of later truncation by ploughing reduce the significance of this patterning.

Much of a highly fragmented CTC Dales ware type jar was retrieved from Roman ?structural gully [253] outside the enclosure; this may represent a complete vessel that was possibly deliberately placed in the gully. Other sherds whose position might suggest deliberate placement were 30 sherds from the upper portion of a large GRB1 jar with sharply everted rim in pit [261] outside the enclosure.

A comparison of the vessel types present in the enclosure ditches fills with those in quarry/midden [294] suggests that the proportion of jars increased in the 3rd century, although their forms changed with more wide mouthed jars and fewer medium necked jars present in [294]. The slight relative rise in [294] of tablewares such as bowls, dishes, beakers and flasks, along with the rise in narrow necked jars (which may also be associated with the storage and serving of liquids), might reflect an increasing adoption of Roman table manners and culinary techniques on the site in the 3rd century AD. These changes may also be reflected at the South Yorkshire pottery kilns where medium necked jars seem to decline as wide mouthed and narrow necked jars increase through the 3rd and 4th centuries. The pattern for bowls and dishes is less clear at the kilns, but it seems they were most frequent in the late kilns at Cantley 7 and Branton B. Similar results are found at other sites in and around Doncaster (for details, see the archive report: Leary *et al.* 2007).

Post-medieval pottery

By C. Cumberpatch

Thirty-nine sherds of post-medieval pottery were identified, weighing 923 g and representing a maximum of 37 vessels. The pottery assemblage was predominantly of 19th-century date. There were small numbers of late 18th- to early 19th-century sherds and of late 19th- to early 20th-century sherds. The range of pottery types is typical of what would be expected for an assemblage of domestic pottery of this date. Utilitarian domestic pottery (Brown Salt Glazed Stoneware and Brown Glazed Coarseware) predominates with slightly smaller quantities of contemporary tablewares. Whether the pottery is connected with the building which is believed to have existed on the site (Cockhill Cottage), or reached the fields by other means is unknown. Abrasion is relatively slight which might suggest a means of dispersal other than manuring, but it is difficult to be certain of this.

Ceramic building material

By J. Tibbles

The ceramic building material (CBM) assemblage comprised: 13 fragments of brick (75 g); 31 fragments of roof tile (2770 g); and 2 miscellaneous CBM fragments (15 g). There was also 1 fragment of land drain (130 g) and 1 fragment of sewer drain (50 g). All pieces were, or potentially were, of post-medieval/modern date. Approximately 40% of the assemblage displayed evidence of moulding sand. Mortar adhesions were recorded on 12% of the assemblage.

The brick fragments were non-diagnostic. They were found in a post-medieval wall formed of mortared limestone blocks [249] and probably represent filling or levelling courses within the wall. Amongst the roof tiles was a single possible flat tile, heavily abraded. This was likely of medieval to post-medieval date, but came from the fill of natural hollow [293] within the Roman enclosure, in which it may have been intrusive. There were 27 fragments of pantile, regarded as 18th-century or later in date, all from post-medieval quarry pits [236], [241] and [242], or topsoil. A single fragment of ridge tile came from post-medieval quarry pit [236]; its manufacturing characteristics and fabric suggest a provisional late 18th- to 19th-century date. A wall tile fragment with a black glaze on one flat surface came from post-medieval quarry pit [236].

The fragment of possible land drain sole plate was recovered from the topsoil. A single fragment of sewer pipe with internal and external red salt glaze was probably part of a 'socket or half-socket' form, suggesting a mid to late 19th-century date; this was intrusive in Roman quarry/midden [294].

Two fragments of non-diagnostic ceramic building material were recorded: one from the fill of a natural hollow [293] within the Roman enclosure; the other from post-medieval quarry [234]. Their fabrics were comparable to the majority of the assemblage and are likely to be of a similar date range.

Lithics

By Dr B. Chan

The lithic assemblage from Holme Hall Quarry consists of 19 pieces of flint. These comprise 18 flakes or tools made on flakes and a single core. The majority of the assemblage (10 of 19 pieces) comes from topsoil, whilst the other nine pieces are residual in Roman contexts. The raw material varies with some pieces such as the core probably coming from chalk-derived flint, whereas others have the appearance of flint derived from tertiary gravel deposits. On balance, the majority of diagnostic pieces come from gravel-derived flint.

Within the assemblage, there are high proportions of flakes (4 of 18) with either trimmed or faceted butts, a technique that indicates a considered approach towards platform maintenance and hence flake removal. Similarly, there are no primary flakes, a corresponding high proportion of tertiary flakes (11 of 18 flakes) and a high proportion of pieces with retouch (6 of 18 flakes). All of these features of the assemblage indicate an emphasis on the later stages of the reduction sequence and on the use of prepared flint tools to carry out tasks. Equally, there is very little evidence of the early stages of the reduction sequence such as the extraction of raw material or the roughing out of cores.

Due to the small size of the assemblage, no chronological assessment can be made from the debitage on the basis of a typology of technology. However, a few pieces provide stronger evidence of the chronology of the assemblage. The first is the oblique arrowhead, which is Late Neolithic in date. The second is the small thumbnail scraper. Scrapers of this type are most commonly assigned to the Late Neolithic/Early Bronze Age. However, the current example is particularly small with steep retouch and scrapers with these features have also been found in Late Mesolithic contexts (Edmonds pers. comm.). Lastly, there is a possible fabricator. This type of tool is typical of the Late Neolithic to Early Bronze Age. Hence, based on a limited amount of evidence it would appear that at least parts of the assemblage can be dated to the late Neolithic to Early Bronze Age period.

In summary, the lithic assemblage is small and its low density and general nature seems in keeping with the wider picture of a low level spread of material across the area identified during previous fieldwalking (Merrony 1994). The finds from the excavation do little to change this pattern and have not indicated a concentration of material that might have been associated with any settlement or other type of focused activity area. In addition, the material is either from unstratified contexts or is residual. Given the extent of erosion by the plough across the site it is likely that if the material was associated with any prehistoric features, these were ploughed away in the past. Hence, it is suggested that, despite the information that has been gained, the assemblage is generally of minor importance and may be described as a low level background scatter indicative of slight yet persistent use of the area throughout the Neolithic and Bronze Age.

Quern stones

By Archaeological Services Durham University

Fragments of three possible querns of Iron Age to Roman date were found in the 2004 excavation.

Fragment SF201 is the top of a small beehive quern upper stone, manufactured from Millstone Grit. It measures *c.*250 mm in depth, 93.5 mm in width, and is 78 mm thick. The fragment came from a fill of the Roman enclosure ditch (Group 2). Approximately half of the top remains, representing less than half the thickness of the quern. The edge has been roughly pecked to shape, and peckmarks from manufacture remain in the interior of the small bowl-shaped hopper (*c.*110 mm deep, 76 mm high); the feeder pipe is lost. The quern has been fractured horizontally at the level of the conical horizontal handle socket (55 mm long, maximum width 19 mm). The uneven surface indicates this arose from breakage, not wear; such a fracture could not readily arise from use, and was probably a deliberate act. Patches of dark surface discolouration suggest exposure to heat.

Fragment SF204 is a sub-rectangular trough quern or basin, preserving part of the curving base and side of a straight-edged vessel manufactured from local Magnesian limestone. It measures 107 mm in length, 84.5 mm in width, and 92 mm in height. The thickness at the edge of the quern is 23 mm, and the thickness at the base is 23.5 mm. This fragment was recovered from the topsoil. The outer edge is flat and well-shaped; its original height is unknown, with the maximum remaining dimensions being 92 mm in height and 25 mm in width. The base is fractured, probably from breakage in use, a common pattern in trough querns. The interior has been pecked to shape, with the base somewhat smoothed from use; all the surfaces are rather worn, suggesting significant abrasion since breakage.

Fragment SF264 represents approximately 20% of a decorated flat upper quern stone of Millstone Grit, with an angled grinding surface. It measures *c.*350 mm in depth, 170 mm in length, 134 mm in width, and 74 mm in thickness. This fragment was recovered from the topsoil. A broad but shallow conical hopper leads into the lost feeder pipe; no handle socket remains. The quern has been carefully shaped, and the outer edge is decorated by defining it with marginal circumferential pecked grooves some 25 mm from the outside edge. Areas of blackening on the surface indicate exposure to heat.

The two rotary querns are typical of a Romano-British assemblage in Yorkshire: the beehive (SF201) is an Iron Age type which continued into the Roman period, while the flat upper stone with angled grinding surface (SF264) is a type well-known from the Roman period (Curwen 1937, 142–4; Wright 2002, 267–72). If fragment SF204 was from a trough quern, this would typically be of later prehistoric rather than Romano-British date, but the fragment is so small that it could equally be from a stone basin or similar vessel.

Fragment SF204 is of Magnesian limestone, most probably local, perhaps produced on or in the vicinity of the site itself, while the rotary querns (SF201 and SF264) are of Millstone Grit, typical for the area; the site lies *c.*30km from known Millstone Grit quern manufacturing sites at Wharncliffe and Rivelin (Wright 1988, 68), well within the distribution range of their products. The decorated quernstone (SF264) is a notable find, as querns are rarely decorated.

The ultimate fate of the querns is an interesting issue. While the trough quern/basin fragment is likely to represent accidental breakage, this is not the case with the rotary querns. Gwilt and Heslop (1995, 40) have commented on the frequent occurrence of fragmentary and partial beehive quernstones, and suggest that these substantial objects, unlikely to have broken accidentally, were deliberately and systematically destroyed. Neither of the rotary quern stones from Holme Hall has broken due to usewear (such as fracture of the handle socket or excessive thinness from wear); it is most likely they were deliberately shattered. There are no convincing practical reasons for this. It is unlikely that they were broken up as building material, given the availability of local stone on the site. There is evidence of hot stone cooking technology and they may have been broken up for this (as the evidence of burning on both SF 201 and SF 264 might suggest); a concentration of heat-affected cobbles were noted within the enclosure. However, if cobbles were available it seems unnecessary to go to the effort of breaking up quern stones. It has been argued (Hingley 1992) that querns were a potent symbol of agricultural production and fertility; they were not purely functional but had considerable symbolic importance to a family or community. The deliberate destruction of these sturdy objects could thus hold significant symbolic potential, in which burning could play a part; rotary quern fragments from Blansby Park, Pickering (Jones 2003, 36) and Thurnscoe (Wright 2004, 55–6) also displayed signs of exposure to intense heat. These fragments may represent ritualised destruction of objects which were seen as powerful symbols, perhaps at times of change in the life cycle of the settlement.

Coins

By Archaeological Services Durham University

Three copper-alloy Roman coins were found. The first was an as of Vespasian, datable to AD 70 (SF 427; *RIC* 399), which came from the fill of a natural hollow, [295], within the Roman enclosure. The second, a billon antoninianus of Gallienus, datable to AD 253–60 (SF 637; *RIC* (joint reign) 184 variant), was found in a quarry/midden, [294], situated south-west of the enclosure. The third, an antoninianus of Claudius II, datable to AD 268–70 (SF 681; *RIC* 104) came from rubble bank [251], which was possibly the remains of a Roman field boundary.

Copper-alloy objects

By Archaeological Services Durham University

Three copper-alloy objects of Roman date were found in the 2004 excavation: a disc-headed enamelled stud; an enamelled dragonesque brooch; and an edge-binding or repair patch from an organic object. These pieces are described in detail below. Three modern/post-medieval copper-alloy objects were also found: a decorated post-medieval shoe buckle frame fragment; a modern RAF button; and a modern copper-alloy and iron composite fitting.

The disc-headed enamelled stud (SF46; L: 32.5 mm; head D: 17.5 mm, T: 4 mm; shank L: 28.5 mm; shank D: 4 mm) came from a Roman deposit overlying an area of cobbling (163) immediately outside and just to the east of the southern entrance into the Roman enclosure. The head bears a design featuring a champlevé four-armed whirligig in alternating red and yellow (Fig. 3.4). The disc has a rounded rim with a flat-based recessed flange under it. The shank is bent (at 23 mm) and its tip lost. File marks are visible on the underside of the head and the shank, but the upper surfaces are well-finished. The flat underside and the thinness of the shank at its tip indicate this was a stud designed to fit against a surface rather than a fragmentary pin; the length of the shank suggests it was for wood rather

Fig. 3.4. Enamelled stud (mid/late 1st to 2nd century AD) from a Roman deposit overlying an area of cobbling immediately outside the southern entrance into Roman Enclosure 1 excavated in 2004 . Scale in 1 cm graduations.(© University of Sheffield).

than leather. The enamel is in reasonable condition; the edges and sides of the fields are roughened to aid keying. Its alloy (from surface XRF analysis) was leaded bronze. Most Roman-period enamelled studs have circular or rectilinear geometric patterns and small shanks for attachment to leather (e.g. Curle 1911, Pl. LXXXIX; Bateson 1981, 53, Fig 7B). This example draws instead on Iron Age styles. Although less common than the triskele, four-armed whirligig motifs are found on northern Iron Age metalwork (e.g. MacGregor 1976, No. 150). This example falls into a wide range of material from the northern half of Roman Britain which fuses Roman and Iron Age artistic traditions (e.g. Megaw and Megaw 2001, 229–31). Other studs with Celtic-style ornament are known from North Britain, for instance from Manchester and South Shields (Webster 1974, 123, Fig. 44, No. 20; Allason-Jones and Miket 1984, No. 3.6).

The intact enamelled dragonesque brooch (SF266; L: 46 mm; W: 18 mm) was found in the fill of a natural gully, [228], in the west part of the Roman enclosure. Two enamel colours are present on the brooch (Fig. 3.5), a deep blue and another now discoloured by copper corrosion; under the microscope there are traces of its original red colour. One head is joined to the body at the chin, with a humped and slightly distorted pin (D: 1–2 mm) wound round the neck; the pin's section is sub-rectangular at the neck and circular elsewhere, tapering to a slightly upturned point (L: 26.5 mm). The heads have an ear with a central spine flanked by red-enamelled pelta-motifs, a ring and dot eye (the centre blue, the ring red, although one shows some overflow of blue), and an upturned snout with curled terminal bearing an enamelled dot (the colour lost). The body bears an enamelled design with rotational symmetry of three curved fields either side of a circular central device. The two fields touching the centre are blue, the other red. Within the centre is a reserved pattern of four ovoids arranged in a cross, surrounded by red. A marginal lip lies along the edge of the convex curves of the body at a lower level. On the rear a central slightly raised circular area is probably a residual casting sprue. Both brooch and pin are in a leaded bronze alloy. Dragonesque brooches are a well-known type with a distribution strongly concentrated in the northern part of Roman Britain, particularly Yorkshire; they are likely to be products of this area and probably date to *c.*AD 50–175 (Hunter 2010, 95–6, Fig. 2; Brindle 2018, 30–1, Fig. 2.28). This example, with its central circular device (in this case a quatrefoil), is type A1e in Hunter's typology (Hunter 2010, Fig. 4, Table 4; cf. Feachem 1951, Fig. 2, Nos 23, 32, 36–7).

An edge-binding or repair patch from an organic object (SF279; H: 14 mm; W: 10 mm; T: 0.5 mm) came from the fill of the west ditch (Group 10) of the Roman enclosure. This comprised a narrow, rectangular strip bent into a U-shape and perforated through the ends (D: 2.5 mm); the extreme edge of the base is lost. The contained width (3.5 mm) suggests an organic medium, as does the survival of flashing around the rivet holes, which would have been flattened if the binding was used against a hard material. Its alloy was leaded bronze.

The enamelled stud and the dragonesque brooch, both of mid/late 1st- to 2nd-century AD date, are striking finds. The stud is an unusual one, used probably for ornamenting a wooden object. Its design and use of enamelling hark back to indigenous traditions. The same is true of the dragonesque brooch, a classic example of a Romano-British object which fused indigenous and Roman styles. Such items are well attested in central and northern Britain, and their discovery on a South Yorkshire site need occasion no surprise. It is interesting that the brooch is intact; this may represent casual loss, but intact brooches were also common votive offerings, although the context offers few clues to take interpretation further.

Fig. 3.5. Enamelled dragonesque brooch (mid/late 1st to 2nd century AD) from the fill of a natural gully in the west part of Roman Enclosure 1 excavated in 2004. Scale in 1 cm graduations (© University of Sheffield).

Ironwork

By Archaeological Services Durham University

Introduction

A considerable assemblage of 110 iron objects were recovered from the 2004 excavation, of which five were clearly modern and about half were nails (Table 3.1). The bulk of the finds (n = 62) were recovered from the topsoil, but this did include substantial quantities of typologically Roman material. Apart from the modern pieces (and perhaps some of the nails and eight unidentifiable fragments from modern contexts), the material is all plausibly Roman and is treated as such in what follows.

Tools

Iron tools included: the broken tip of a dolabra (SF172), i.e. a Roman axe or pickaxe, from modern topsoil; an ox goad (SF602) with a short spike and a single twist in the flat bar from natural hollow [201] within the Roman enclosure; a punch (SF414) with a fine point suggesting a role in decoration of non-ferrous metal, from Roman quarry/midden [294]; a punch (SF1076) with a short shank, suggesting it was a tool to decorate bronzework (or perhaps leather) rather than iron, as short shanks are impractical when working hot iron (from topsoil); a square-sectioned bar (SF981), perhaps a broken tool such as a tanged punch, but unidentifiable in its fragmentary condition, from the Roman area of heat-affected cobbles (114) within the enclosure; knives probably of Manning's Types 11 and 12b (Manning 1985a, Fig. 28), both from topsoil; and a possible toilet implement (SF497), a rectangular-sectioned bar, one end apparently a broken narrow scoop, the other (set at right angles to the first) probably a broken spatula (from topsoil).

Structural fittings

Structural fittings from Roman contexts comprise a T-clamp with short arms and broken shaft (SF287), an oval link (SF285) and a square washer with central nail hole (SF286), all from a subsoil filling features in the north-west part of the enclosure; a bolt fragment from Roman posthole [212] within the enclosure; and a fine L-shaped clamp from a subsoil with Roman material that sealed rubble bank [251].

Structural fittings possibly of Roman date, but deriving from post-medieval/modern contexts comprise: a sturdy S-shaped double hook, a clamp (its form, especially a nail hole, indicating that it was for wood rather than masonry) and a hooked fitting, perhaps from a vessel suspension chain, as these often display hooked terminals and twisted shafts (e.g. Manning, 1983), all from the fill of post-medieval quarry pit [242]; as well as two loop-headed spikes (SF714 and SF821), a double-spiked loop (SF1017), an oval link (SF752) and a flat strip (SF822), probably a mount with its ends lost, all from topsoil.

Blacksmithing waste

Various bar and strip fragments representing offcuts from blacksmithing were found, of which: five (including SF644, SF645A, SF809A and SF1066) came from Roman quarry/midden [294]; one (SF830) came from a Roman deposit overlying an area of cobbling (163) immediately outside and just to the east of the southern entrance into the Roman enclosure; and four (SF321, SF357, SF496 and SF646) came from topsoil. One of these offcuts (SF1066) was a distorted and poorly-formed bar, one end little-modified bloom. This fragment was fractured off the end of a part-worked ingot, with a chisel mark near the end resulting from attempts to sever it. There was also an iron strip (SF645B), folded probably in the process of recycling, from Roman quarry/midden [294]. Two plano-convex bar fragments (SF325 and SF570), which had both been cut, presumably in the course of recycling, were recovered from topsoil.

Nails

As is typical of most Roman sites, the ironwork assemblage is dominated by nails, with 51 examples recorded from eight contexts. While most nails were recovered from topsoil (n = 34) or from the fill of post-medieval quarry pit [242] (n = 4) and may not be Roman, 13 were found in Roman contexts, including: 6 from quarry/midden [294]; 2 from natural hollow [201] within the Roman enclosure; 2 from a deposit (145) overlying an area of cobbling (163) immediately outside and just to the east of the southern entrance into the enclosure; 1 from enclosure ditch fill, Group 2; 1 from a subsoil filling Roman features in the north-west part of the enclosure; and 1 from Oven 3, [270].

The majority of the nails are fragmentary; only ten intact examples were recovered, all from the topsoil and thus potentially more recent. The majority of the assemblage conforms to the most common Roman nail type, Manning's Group 1B, Type E (Manning 1985a, 134; Manning 1985b, 289). These are typically 30–60 mm long and were probably used to attach cladding to structural frames; they were thus used in great quantities for timber buildings (Manning 1985b, 291). Four nails are of a different type. Two of these have solid hemispherical heads and relatively short shanks and were probably used for ornamentation. The third has a round-sectioned shank and round, slightly domed head, conforming to Manning Type 6 (Manning 1985a, 135). A fiddle-key horseshoe nail was also recovered

Table 3.1. Ironwork from the 2004 excavation at Holme Hall Quarry.

Category	Number	Object type/comments
Tools	8	Dolabra Ox goad Punches (probably for fine metal-working) (x3) Knives (x2) Toilet implement
Structural fittings	13	S-hook Clamps (x3) Hooked fitting, perhaps for suspending a vessel Loop-headed spikes (x2) Double-spiked loop Links (x2) Mount Washer Bolt
Black-smithing waste	13	Offcuts (x10) Strip folded for reuse Recycled fragments (x2)
Nails	51	Mostly standard forms; some decorative studs
Hobnails	10	A few from casual losses
Unidentified	10	Various fragments
Modern iron	5	Plough tip Scythe Fork Fittings (x2)
TOTAL	**110**	

from topsoil and is likely to be modern. Twenty-six nail fragments are bent, including 70% of the intact examples. In most cases the slight distortion may have been the result of either use or removal, but five clenched examples indicate these were discarded while attached to timber.

Hobnails

Hobnails from Roman shoes were present in small numbers, with 10 from four contexts: 6 from Roman quarry/midden [294]; 1 from natural hollow [201] within the Roman enclosure; 1 from Roman posthole [212]; and 2 from topsoil. They measure from 8.5–16 mm in length, with an average of 13.5 mm. In general the heads are slightly domed, ranging in size from 5.5–9 mm in diameter with the majority measuring around 7.5 mm. The shank was usually 2–2.5 mm thick. Eight shanks are clenched. Only one has remnants of leather adhering to the head. The quantities indicate casual losses rather than the disposal of whole shoes.

Unidentified iron objects

A fine flat strip (SF417), the ends broken, came from Roman quarry/midden [294] and a tapering rod fragment from Roman pit [215] within the enclosure. The other unidentified fragments came from modern topsoil (n = 7) and the fill of a post-medieval land drain [247] (n= 1).

Modern iron objects

Several modern/post-medieval iron objects derived from the topsoil, including: a probable plough tip, a probable scythe, a modern fitting and a two-pronged fork. An unidentified fitting resembling an aerial came from post-medieval field boundary [142].

Discussion

The Roman assemblage is a standard domestic one, but there are points of interest. Notable among these is the evidence for blacksmithing, in the form of

offcuts of part-forged bloom, bars and recycled objects, and a folded strip prepared for recycling. Apart from scattered material in the topsoil, this concentrates notably in Roman quarry/midden [294], indicating a blacksmith was operating in the vicinity. There are also hints of fine metalworking (perhaps bronze-working) in the fine punches, while the dolabra and ox-goad point to agricultural activities.

Metalworking slag

By R. MacKenzie

A total of around 2.20 kg of archaeometallurgical finds were recovered from the excavation, the vast majority of which came from the fill of Roman quarry/midden [294] (1337 g) and from the topsoil (722 g).

The fill of quarry/midden [294], thought to date to the 3rd century, and the topsoil both produced evidence of iron production in the form of metal and slag. The presence of offcuts of iron (see above, p. 38), together with the abundance and morphology of the slag, suggests that iron smithing, and possibly smelting, was being carried out either on, or within close proximity to, the site. Initial assessment of the slag assemblage identified some pieces of possible smelting slags from [294]. However, there are a large number of slag types where it is extremely difficult to determine their process origin using morphology alone (Bachmann 1982, 31; McDonnell 1984, 52).

Eight samples, representing the range of slag types present were chosen for scanning electron microscopy with energy-dispersive X-ray spectroscopy (SEM/EDS) analysis to determine whether the slag assemblage contains evidence of smelting. All of the samples were taken from pieces found in [294], apart from a single sample from the topsoil.

The results of the SEM/EDS analysis suggest that all of the samples relate to iron smithing rather than smelting. The presence of 'offcuts' of iron that have been interpreted as smithing waste together with smithing slag suggest that a blacksmith was working at, or in very close proximity to the site.

Glass

By H. Willmott

A single fragment (12 g) of Roman glass was recovered from Roman pit [291], situated about 33 m south-west of the enclosure. This is a portion of lower side from a blue/green prismatic bottle. Its outer surface is slightly roughened, showing that it has been formed by being blown into a square or hexagonal stone mould. Prismatic bottles are the most common form found on Romano-British sites of the mid 1st to late 2nd centuries AD. They held all variety of foodstuffs and were clearly transported and used widely across the Empire. This type of bottle was also frequently reused as cinerary urns, although this is unlikely in the case of this example.

Four fragments (45 g) of post-medieval/modern glass were retrieved from topsoil and 26 fragments (405 g) from the fill of post-medieval quarry pit [242], 25 of which represented a green soft drink bottle.

Clay pipe

By S. White

The excavation produced nine fragments of clay tobacco pipe consisting of eight plain stems and a single glazed mouthpiece. Five of the stem fragments came from the topsoil, one from a post-medieval field ditch [219] (Group 7), one from post-medieval quarry pit [241], and one was intrusive in the fill of the ditch of the Roman enclosure (Group 2). The mouthpiece came from post-medieval quarry pit [242]. All eight stem fragments appear to be late 18th or early 19th century in date. None are marked and only one fragment, from the post-medieval field ditch, appears to have traces of burnishing. The single mouthpiece fragment has a simply cut tip, which is covered with a thick brown glaze. This mouthpiece would have originated from long-stemmed pipe of a style that gradually went out of fashion from the mid 19th century, being replaced by the shorter 'cutty' style pipe. This fragment is most likely to date from *c.*1800–50.

Animal bones

By S. Bell

A total of 1385 fragments of animal bone were recovered. The numbers of fragments of identifiable and broadly classifiable animal bone from Roman features is presented in Table 3.2. Generally, the bone material had suffered a marked degree of degradation along with a high incidence of abrasion to the surface. This reduced the possibility of observing both diagnostic features and the identification of cut marks of the bone surface. The high incidence of small-sized fragments which are not readily identifiable also restrict the conclusions which can be drawn from the assemblage despite its overall, reasonable size. A few general conclusions can be drawn, however.

Recent studies of the north of England during the Iron Age and Roman periods have questioned the belief that the economy was based entirely upon pastoralism (Roberts *et al.* 2010, 63–5). Animal husbandry may have been the dominant factor in the economy, and it has

Table 3.2. Numbers of fragments of identifiable and broadly classifiable animal bone from Roman features (2004 excavation).

	Enclosure ditch	Hollow [201] within enclosure	Midden/quarry [294]	Other features	Total
Cattle (*Bos sp.*)	15	24	12	6	57
Sheep/goat (*Ovis/ Capra sp.*)	5	21	14	3	43
Pig (*Sus scrofa*)	1	0	1	0	2
Horse (*Equus*)	0	0	0	2	2
Dog (*Canis sp.*)	41	0	2	0	43
?Red deer (*Cervus elaphus*)	0	5	0	1	6
Cow/horse-sized	49	58	35	14	156
Sheep/goat/pig-sized	5	35	2	2	44
Small mammal	0	0	3	0	3
Total	**116**	**143**	**69**	**28**	**356**

been proposed this was sheep-dominated (Haselgrove 1984; Branigan 1989). This view has not been supported, however, by the archaeological evidence (Roberts *et al.* 2010, 63–5). The assemblage from Holme Hall Quarry shows a dominance of cattle, rather than sheep/goat. Of the 300 fragments retrieved from Romano-British contexts identified as being *Bos* sp., cow/horse-sized, *Ovis/Capra* sp. or sheep/goat/pig-sized, a total of 213 (71%) were *Bos* or cow/horse-sized (Table 3.2). Given the highly abraded surfaces of much of the bone recovered and the high incidence of the more durable elements such as teeth and the non-long bone elements of the manus and pes, this may be partially ascribed to taphonomic process. The presence of neonatal elements in hollow [201] within the enclosure, in quarry/midden [294] (*Ovis/Capra* sp.), in pit [215] and in the topsoil indicates that in areas of the site soil conditions exist which allow the preservation of the more fragile bone elements.

The epiphysial and tooth wear data is limited in its potential to provide an accurate analysis of the age-of-death within the population. It does indicate that cattle were slightly older than the sheep/goat population at the time of death, with cattle being raised to provide meat primarily, rather than being slaughtered once they had fulfilled their usefulness as traction animals. The sheep/goat population shows a slight bias towards the 7–12 months age range within a more pronounced bias to the 6–36 months range. The size of the sample, with only 16 anatomical units providing usable epiphysial data, is too small to indicate a meat-, wool-, or milk-based economy for sheep/goat rearing.

Only three elements showed signs of cut marks of their surfaces. A cow-sized long bone fragment recovered from the quarry/midden [294] had also been chopped. A further 26 fragments had been burnt, 12 of which had become calcined. As has been noted above, the abraded nature of much of the assemblage may have had a negative effect on the evidence for cut marks and removed the shine associated with elements that have been boiled.

Macrobiological plant remains

By G. M. Carter

Thirty samples were processed using a combination of bucket and Siraf-type machine flotation. The presence of charcoal, grain, wild seeds, chaff and modern (uncharred) wild seeds was assessed, but further identification to species level was not undertaken. The samples indicated scant evidence of environmental or economic charred indicators.

Several samples from Roman features produced small amounts of grain. These features included the ditch of the enclosure (Groups 2, 10 and 14), natural gully [228] and pit [215] within the enclosure, quarry/midden [294] and Oven 2, [232]. The only Roman feature that produced a small amount of chaff was quarry/midden [294]. Charred wild seeds were present in most of the samples, particularly in those derived from natural gully [228] within the enclosure, quarry/midden [294] and Oven 2, [232]. A few samples exhibited sufficient material to warrant further analysis, but these were either from post-medieval or undated features, or had potentially been contaminated by post-medieval/modern activity and were therefore not analysed further.

Chapter 4

The excavations of 2015 and 2019

By Alvaro Mora-Ottomano and Francis M. Morris

Introduction

This chapter presents the results of the strip, map and sample excavation undertaken in field N8 (5.8 ha) in September–November 2015 and the archaeological monitoring and excavation of 2.5 ha undertaken in the southern part of the adjacent field N7 (5 ha), which lay immediately to the north, in September–December 2019 (Figs 1.2 and 4.1). This work was undertaken by Archaeological Research Services Ltd (ARS Ltd) as part of the planning process prior to a northward extension of Holme Hall Quarry.

The 2015 excavation was commissioned by Wardell Armstrong LLP on behalf of Hope Construction Materials Ltd and the 2019 watching brief was undertaken on behalf of Breedon Aggregates. Fieldwalking and geophysical surveys of these fields were previously undertaken by ARS Ltd in 2014–15 and indicated that there was high potential for archaeological remains dating to the Roman period, and perhaps the Late Iron Age, to survive, including ditches of a probable rectilinear enclosure and of a possible field system (see above, pp. 16, 20-1; Figs 2.4 and 2.5).

Fields N7 and N8 were arable fields that lay on the east side of the north–south orientated Rakes Lane in an area of proposed limestone quarrying known as Cockhill East (Fig. 1.2). To the south of field N8 was Cockhill House Farm, with the existing working quarry beyond. To the north of field N7 was Peter Wood Farm and a few surrounding fields, with the M18 motorway beyond. To the east were areas of woodland and two more fields N11 and N13. The site of Cockhill House Farm (Cobbold 2017) and field N11 (5.3 ha) (Brown 2016, 10.14) were also subject to watching briefs by ARS Ltd in 2017 and 2015 respectively, prior to the extension of quarrying into these areas, but no significant archaeological remains were found at these locations.

Detailed archive reports providing comprehensive descriptions of all contexts from the 2015 and 2019 excavations and analysis of the artefacts and the human, faunal and palaeoenvironmental remains recovered are available online through the Archaeology Data Service (Mora-Ottomano 2016; Morris 2024).

The archaeological features were typically cut into a natural brown-pink clay colluvial subsoil, which overlay limestone bedrock. They were sealed by a modern topsoil, which was largely stripped off by machine.

Mesolithic to Bronze Age

The earliest human activity was evidenced by a small number of chipped lithics. Fifteen chipped lithics (all flint, except a single chert flake) were retrieved during the stripping of the topsoil in field N8 in 2015 (see below, pp. 65-6). These included a thumbnail scraper of Early Bronze Age date, but the rest of the assemblage was dated only broadly to the Mesolithic, Neolithic or Bronze Age. Three more chipped lithics were found in the 2019 excavation in field N7 (Table 5.3): two flakes (one flint of Late Neolithic/Early Bronze Age date and one chert) came from a possible tree throw (507) that was cut by the east ditch of Roman rectilinear Enclosure 2b (cf. Fig. 4.12); and a flint blade of Mesolithic date was residual in the north ditch of this Roman enclosure. Further chipped lithics were found during earlier fieldwalking surveys of N8 and N7 (see above, pp. 11-12, 17-20).

Roman

Introduction

By Francis M. Morris

A geophysical survey conducted in October 2014 to February 2015 identified the probable southern part of a rectilinear enclosure in the north part of field N8 (Anomaly CT1; see above, p. 16, Figs 2.4 and 2.5), *c.*700 m north of Late Iron Age/Roman Enclosure 1 excavated by ARCUS in 2004 (see above, pp. 22-6). A small assemblage of Roman pottery was subsequently found clustered in and around the possible enclosure in field N8 during fieldwalking in March 2015 (see above, p. 20-1, Fig. 2.7). The ditches of this enclosure (Enclosure 2a) were revealed by excavation in 2015.

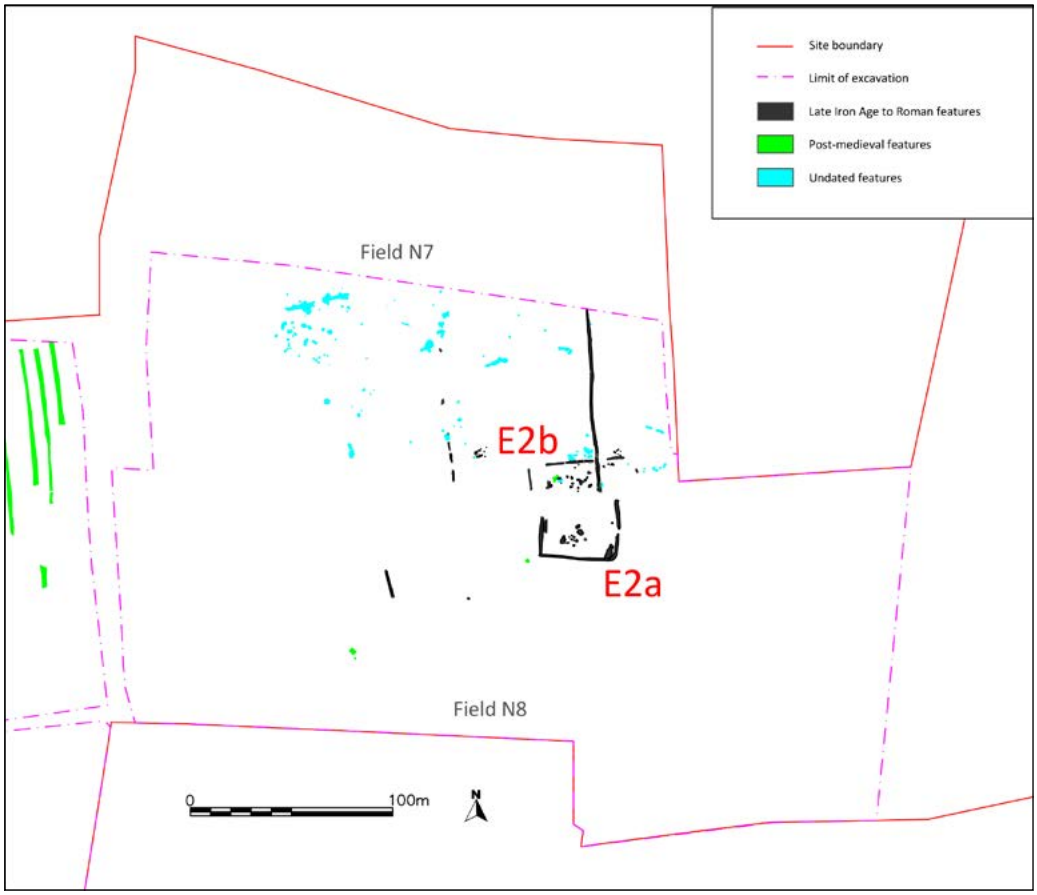


Fig. 4.1. Archaeological phased plan of the excavations in field N8 in 2015 and in field N7 in 2019.

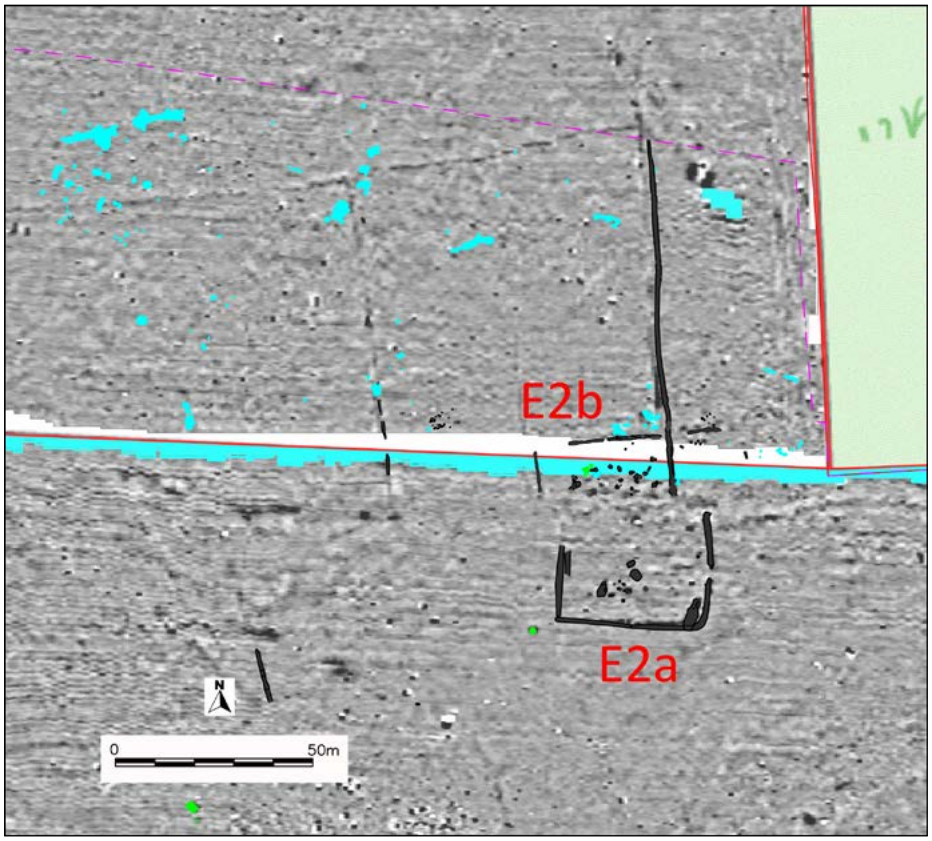


Fig. 4.2. Plan showing an overlay of the excavation (Fig. 4.1) and geophysical (Fig. 2.4) results around Roman Enclosures 2a and 2b in parts of fields N7 and N8.

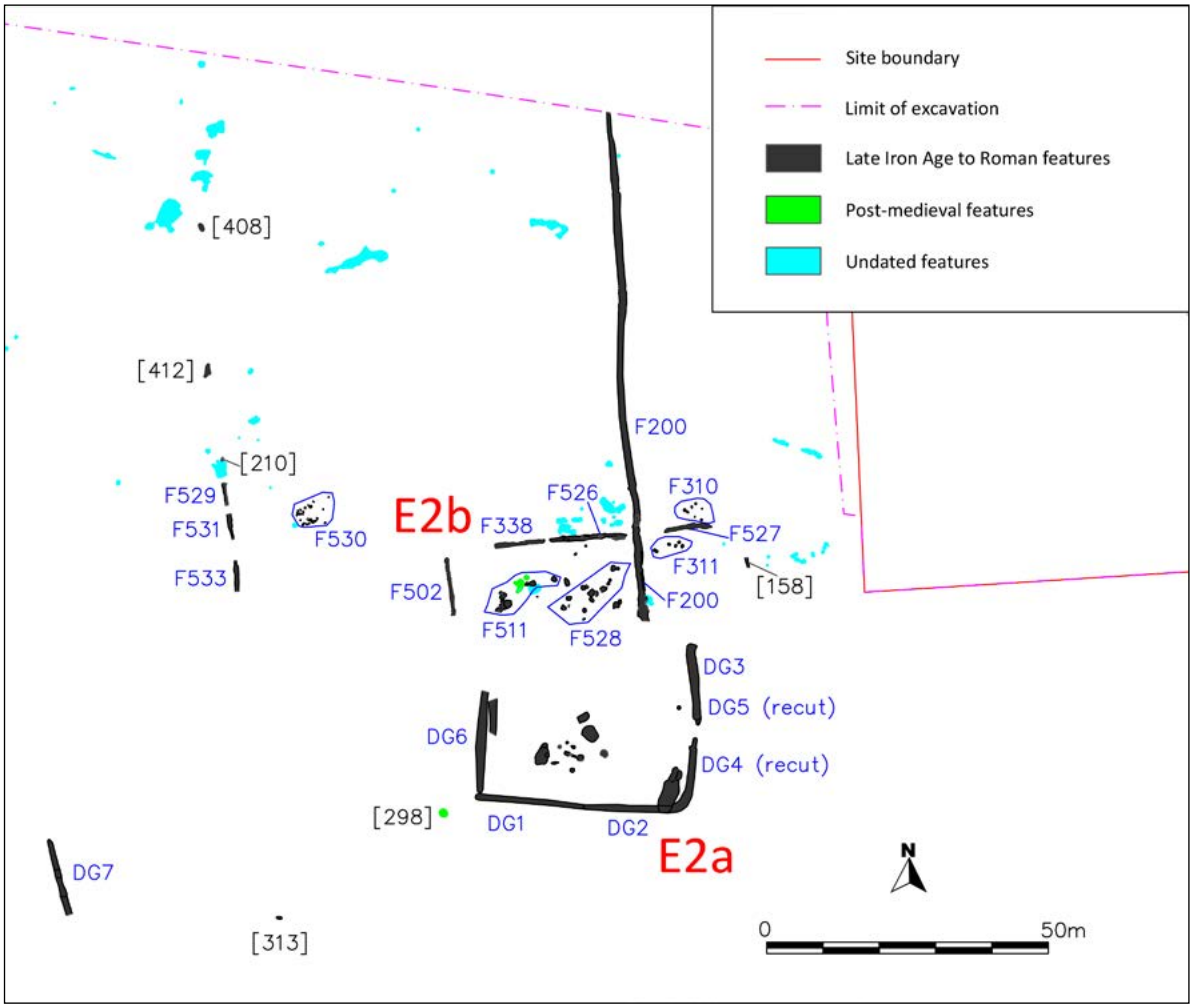


Fig. 4.3. Plan showing Roman rectilinear Enclosure 2a in field N8 and Enclosure 2b in field N7 and other archaeological features in the vicinity.

Geophysical survey in field N7 in 2014–15 revealed a group of positive linear anomalies (P1, P1a and P1b) that appeared to represent the remains of a field system possibly associated with the enclosure immediately to the south in field N8 (Figs 2.4 and 2.5); however, these field ditches appeared to have slightly different alignments and courses than the ditches of Enclosure 2a/Anomaly CT1.

In 2019 the ditches of the northern part of a rectilinear enclosure (Enclosure 2b) were excavated along the southern edge of field N7 and below the hedgerow separating fields N7 and N8. Enclosure 2b was aligned with the ditches identified in the preceding geophysical survey in field N7, but was clearly offset up to 7.5 m to the west of, and lay at a slightly different angle to, the southern part of a rectilinear enclosure found immediately to the south in Cottage Field in 2015 (Enclosure 2a). A plan showing an overlay of the excavation and geophysical results in fields N7 and N8 is presented in Fig. 4.2.

One possibility is that Enclosures 2a and 2b formed a single enclosure, with their irregularity relating to an entrance or entrances into the enclosure, perhaps from the east and/or west. Alternatively, the two offset parts may have been separate enclosures, perhaps divided by an unidentified boundary; indeed, the pottery (see below, pp. 45, 47, 52) suggests that the ditches of Enclosure 2b might have been dug later than the ditches of Enclosure 2a, but the pottery also suggests a considerable overlap in occupation of Enclosures 2a and 2b during the 2nd and 3rd centuries. Enclosure 2a is *c.*36 m east–west and at least 28.5 m north–south internally (i.e. *c.*0.1 ha in internal area), whilst Enclosure 2b is *c.*33 m east–west and at least 15 m north–south (*c.*0.05 ha). The overall north–south internal length of the enclosure(s) across both fields is *c.*45–47.5 m and the total potential internal area *c.*0.16 ha.

Due to the uncertainty over whether Enclosures 2a and 2b formed a single or separate enclosures, they are described below separately by excavation area and have not been amalgamated. Enclosure 2a is described first and then Enclosure 2b.

Rectilinear enclosure, southern part (Enclosure 2a): 2015 excavation (field N8)

By Alvaro Mora-Ottomano (edited by Francis M. Morris)

The ditches of the southern part of a rectilinear enclosure (Enclosure 2a) were revealed by excavation in 2015 (Figs 4.1–4.9). It was Roman in date and had at least two main phases, the first dating broadly to the late 1st to mid 2nd centuries AD, with a recutting of the ditches undertaken perhaps in the late 2nd or early 3rd century. The enclosure measured *c.*36 m east–west and at least 28.5 m north–south internally (i.e. it had an internal area of *c.*0.1 ha or more), with the north side lying beyond the limit of the 2015 excavation. There was a probable entrance represented by a gap in the ditch on the east side. Within the enclosure were various ditches, pits and postholes, which dated largely to the 3rd century (see below, pp. 48, 52–4).

The south ditch of the enclosure was formed of two segments that butted directly against each other (Fig. 4.4). The western segment (Ditch group 1) was 20 m in length, *c.*1 m in width and up to 0.4 m in depth. It had steep sloping sides and a flat base. There was no evidence for recutting, perhaps due to its relatively shallow surviving depth, or perhaps because it was more fully recut compared to some of the other ditch groups (cf. Fig. 4.5, Sections 6 and 7).

The eastern segment of the south ditch of the enclosure (Ditch group 2) ran east from Ditch group 1 for *c.*18 m, before curving to the north to form the south-east corner of the enclosure (Fig. 4.4). Ditch group 2 continued north for *c.*12 m and also represented the southern segment of the enclosure's east ditch. Ditch group 2 was *c.*1.2 m in width and varied from 0.6 to 0.8 m in depth. It had steep sides and a concave base (Fig. 4.5, Sections 8–12; Fig. 4.8).

A shallower and narrower recut (Ditch group 4) was traced through Ditch group 2 for most of its length, with the recut north terminus extending *c.*1.5 m further north than the original terminus. The recut ditch had a fairly uniform concave profile measuring 0.6 m in width and 0.5 m in depth (visible in Fig. 4.5, Sections 8 and 10–12 as cuts [302], [333], [336] and [348] respectively). The fills of Ditch group 4 often included large to medium sub-angular limestone rubble, which might have derived from the collapse, decay or clearance of an associated stone-faced or rubble bank (Fig. 4.8).

The northern segment of the east ditch of the enclosure (Ditch group 3) was 14.5 m in length, with termini at each end (Fig. 4.4). It was *c.*1.5 m in width, 0.6 m in depth and had steep sides, with its base varying from concave to flat. Ditch group 3 was recut throughout its length by Ditch group 5, which had a concave profile measuring *c.*0.6 m in width and 0.5 m in depth (visible in Fig. 4.5, Sections 13–15 as cuts [269], [278] and [345] respectively). The recut south terminus of Ditch group 5 extended *c.*1 m south of the original terminus of Ditch group 3. The fills of the recut ditch often included large to medium sub-angular limestone rubble (Fig. 4.9), like the fills of recut Ditch group 4.

An entrance into the east part of the enclosure was probably represented by a gap between Ditch groups 2 and 3. This entrance gap was originally 4.8 m wide, later narrowed to 2.3 m by the recuttings (Ditch groups 4 and 5). A posthole [310], 0.15 m in diameter, was found in the base of the recut south terminus of Ditch group 5 and presumably contained a timber post, perhaps associated with an entrance structure.

The west ditch of the enclosure (Ditch group 6) proved difficult to identify in excavation as its fills were very similar to the surrounding subsoil into which it was cut. Nevertheless, parts of this ditch were recorded over a north–south distance of at least 16.1 m, with its apparent south terminus identified only 0.2 m north of the west terminus of the south ditch (Ditch group 1). Ditch group 6 had steep sides and a concave base. It varied in width from *c.*1.3 to 1.6 m and had a depth of 0.5 m. No recuts were noted within the fills of Ditch group 6, but a possible parallel ditch, [288] and [339], was located only 0.30 to 0.55 m east of its northern recorded part (Fig. 4.4; Fig. 4.5, Section 16). This parallel ditch was at least 4.8 m long, 1.10 to 1.45 m in width and 0.30 to 0.45 m deep. It may have been an earlier or later version of the enclosure's west ditch.

A total of 2214 sherds, 23,976 g, of Roman pottery (including a few possible Iron Age sherds) were recovered from the 2015 excavation, the vast majority of which came from features relating to the rectilinear enclosure, or from the overlying interface with the topsoil (see below, p. 58). The enclosure ditch fills contained 536 sherds (5185 g) of pottery. Ditch group 1 produced 71 sherds (592 g), including fragments of a colour-coated Castor box and a shell-gritted necked jar of 3rd-century date. Ditch group 2 had 245 sherds (2490 g), principally of 1st- to 2nd-century AD date, apart from a few 3rd-century vessels, which were very probably intrusive as they came from a part of Ditch group 2 (219) which had been largely cut away by a large late Roman pit, [222], that included late 3rd-century pots (cf. Fig. 4.5, Section 9) (note: in the archive pottery report, the 3rd-century pottery from contexts (214) and (215) is also regarded as belonging to Ditch group 2, but these contexts are in fact clearly part of recut Ditch group 4 to which they have been reassigned in the present publication, see: Rowlandson 2016, 26; Mora-Ottomano 2016, 124, Fig. 8, Section 5). Four vessels

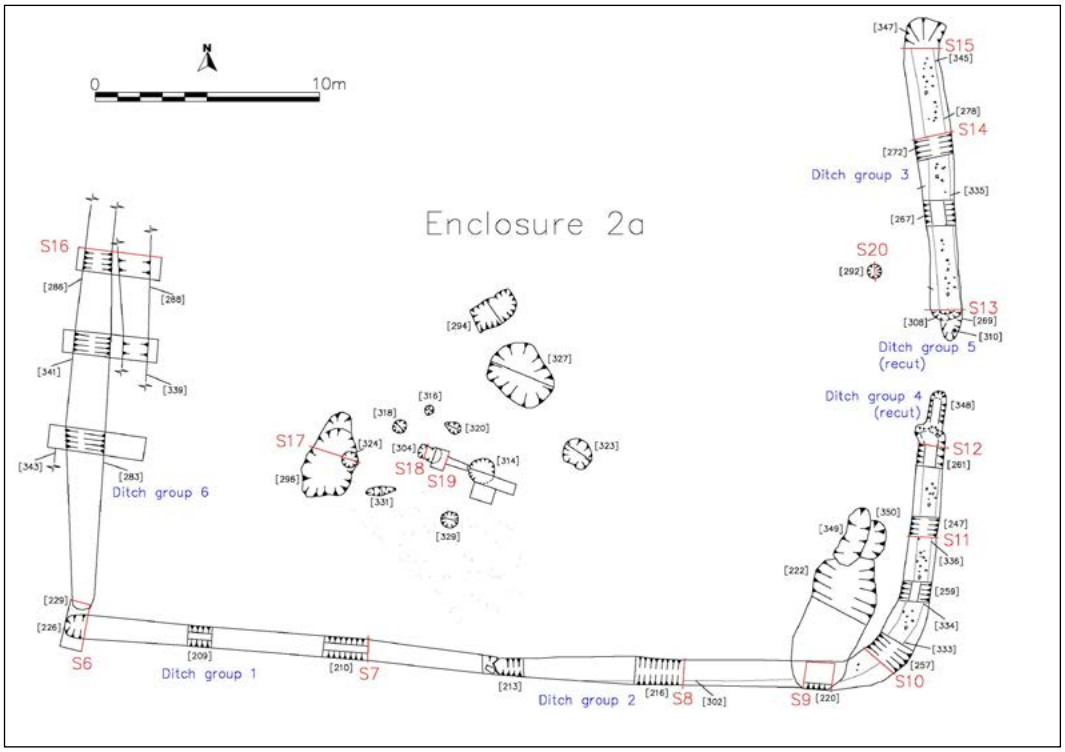


Fig. 4.4. Plan of Roman rectilinear Enclosure 2a excavated in field N8 in 2015 (for sections, see Fig. 4.5)

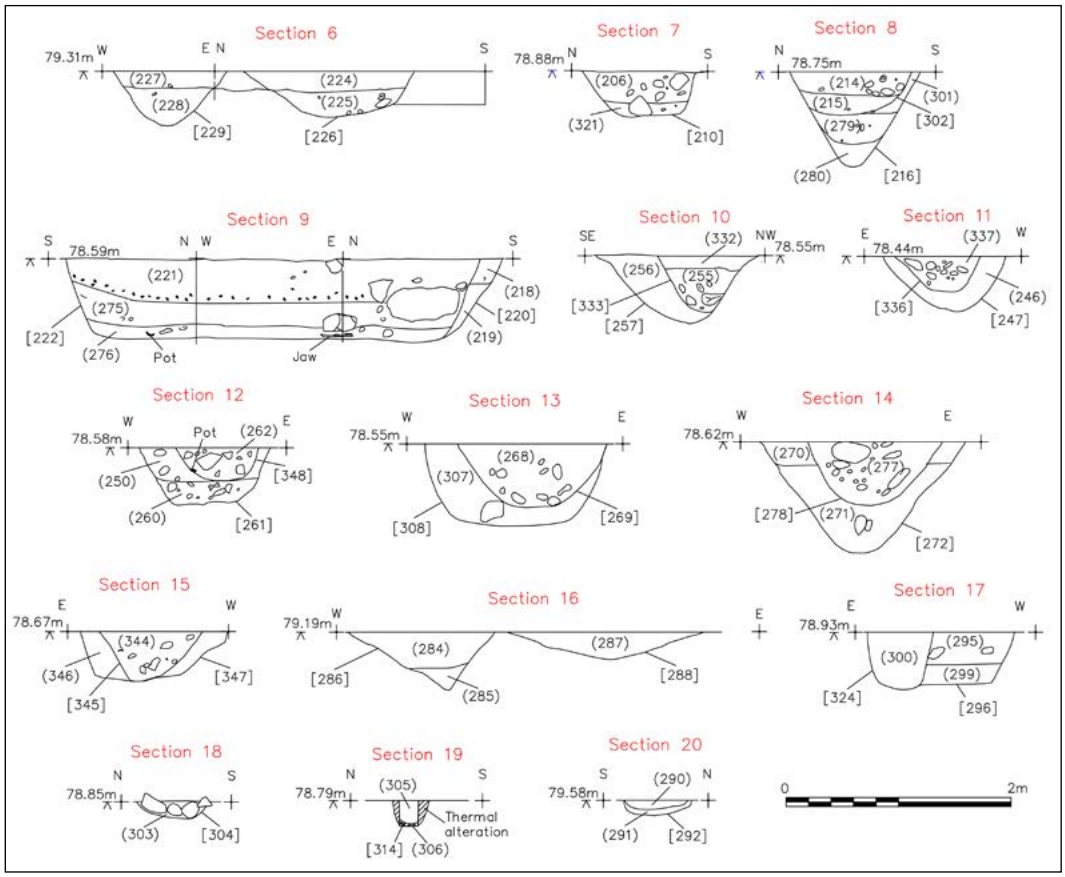


Fig. 4.5. Sections of Roman rectilinear Enclosure 2a and of associated internal features in field N8 (for section lines, see Fig. 4.4).

from Ditch group 2 are illustrated below (Fig. 4.25, Dwg 8; Fig. 4.26, Dwgs 9–11).

Ditch group 3 had only 8 sherds (335 g), with vessels perhaps produced in the late 1st century AD (including a South Gaulish samian bowl) and in the mid 2nd century or later. Recut Ditch group 4 contained 174 sherds (1414 g), with late 1st- to mid 2nd-century AD material as well as several 3rd-century vessels. Recut Ditch group 5 had 20 sherds (168 g) of late 1st- to perhaps 2nd-century AD date, whilst Ditch group 6 had 13 sherds (72 g), including an East Gaulish samian platter datable to 170–250. Five sherds (114 g) of greyware datable to the 2nd century were recovered from fill (287) of a possible recut of the west ditch [288].

Fig. 4.6. Working shot, looking south-west over the northern part of Roman Enclosure 2a during excavation in field N8.

The pottery suggests, therefore, that the enclosure ditches may first have been dug at some point in the late 1st to mid 2nd centuries AD and were recut (Ditch groups 4 and 5) in perhaps the late 2nd or early 3rd century. Two radiocarbon dates obtained from ditch fills are consistent with the pottery dating: a charcoal fragment (birch) recovered from the primary fill of the north terminus of Ditch group 2 was radiocarbon dated to 7 to 133 cal AD at 95.4% probability or 53–124 cal AD at 68.2% probability; whilst a juvenile cow skeleton in the upper fill of the recut terminus (Ditch group 4) was radiocarbon dated to 50–214 cal AD at 93.5% probability or 67–131 cal AD at 68.2% probability.

Fig. 4.7. Roman rectilinear Enclosure 2a in field N8, oblique view, looking west.

Other finds include occasional small, sub-rounded, fire-fractured pebbles and cobbles from the fills of recut Ditch groups 4 and 5; these pot boiler stones would originally have been used for cooking, presumably within the enclosure, prior to being discarded in the ditch. A quarter of a base fragment of a beehive quern in Millstone Grit was found in the upper fill of the recut north terminus of Ditch group 4 and may have been specially deposited.

Fragments of mammal/large mammal bones, mostly of unknown taxa, were retrieved from the fills of Ditch group 2, whilst animal remains from the fills of Ditch group 3 included those of sheep/goat, cattle and fragments of a large mammal. A nearly complete radiocarbon-dated skeleton of a juvenile cow came from the upper fill of the recut north terminus, [348], of Ditch group 4 (Fig. 4.10). As with the quern fragment from the same context, this cow may have been deliberately deposited, perhaps for ritual purposes, in the terminus of a ditch marking the south side of an entrance into the east side of the enclosure, and as such it could have been a deliberate closure deposit at this prominent location, after this long-lived enclosure went out of use. The fills of recut Ditch group 5 also included animal bones, with fragments of large mammal, sheep/goat and cattle, along with a fragment of a possible red deer.

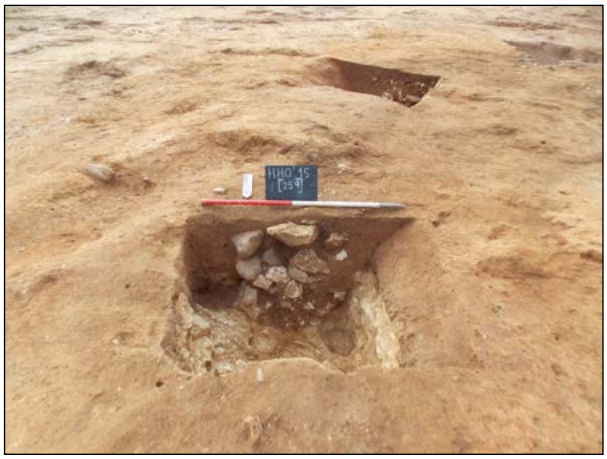


Fig. 4.8. Roman rectilinear Enclosure 2a, north-facing section of Ditch group 2, segment [259], showing recut Ditch group 4, [334], with large stones in its fill. Scale 1 m in 0.5 m graduations.

Fig. 4.9. Roman rectilinear Enclosure 2a, south-facing section of Ditch group 3, segment [272], showing recut Ditch group 5, [278], with large stones in its fill. Scale 1 m in 0.5 m graduations.

Fig. 4.10. Skeleton of a juvenile cow in the upper fill of the recut north terminus of Roman rectilinear Enclosure 2a, Ditch group 4, [348], looking west. Scale 0.30 m in 0.1 m graduations.

Fig. 4.11. East-facing section of Roman hearth [292] within Enclosure 2a, looking west. Scale 0.30 m in 0.1 m graduations.

One feature is likely to relate to early occupation within the enclosure. This is a relatively isolated circular pit [292], 0.65 m in diameter, situated *c.*3 m north-west of the probable entrance in the east side of the enclosure (Fig. 4.4; Fig. 4.5, Section 20). A fire was evidently set in this pit as the bedrock at its base was heat-affected and its fill included evidence for burning (Fig. 4.11). A charred grain sample from the pit gave a radiocarbon date of 7–132 cal AD at 95.4% probability or 33–123 cal AD at 68.2% probability, indicating an early Roman (or possibly very Late Iron Age) date, but no pottery was recorded.

Rectilinear enclosure, northern part (Enclosure 2b): 2019 excavation (field N7)

By Francis M. Morris

In 2019 the ditches of the northern part of a rectilinear enclosure (Enclosure 2b) were found along the southern edge of field N7 and below the hedgerow separating fields N7 and N8 (Figs 4.1–4.3, 4.12–4.17). It was probably constructed in the 2nd century AD, with at least one ditch terminus probably being recut in the late 2nd or 3rd century. The part of the enclosure found in 2019 was clearly offset to the west of, and lay at a slightly different angle to, the southern part of a rectilinear enclosure found immediately to the south in field N8 in 2015 (Enclosure 2a).

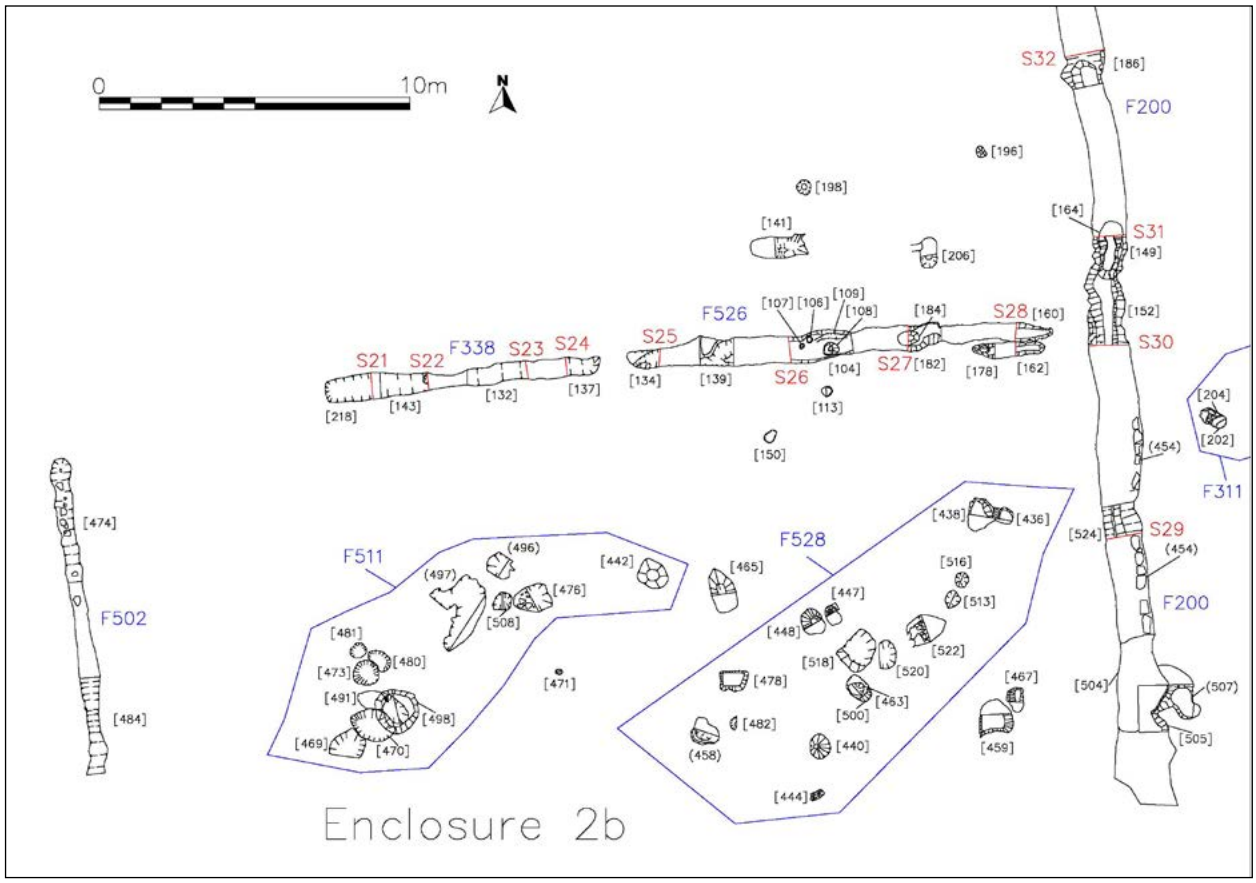


Fig. 4.12. Plan of Roman rectilinear Enclosure 2b excavated in field N7 in 2019 (for sections, see Fig. 4.13).

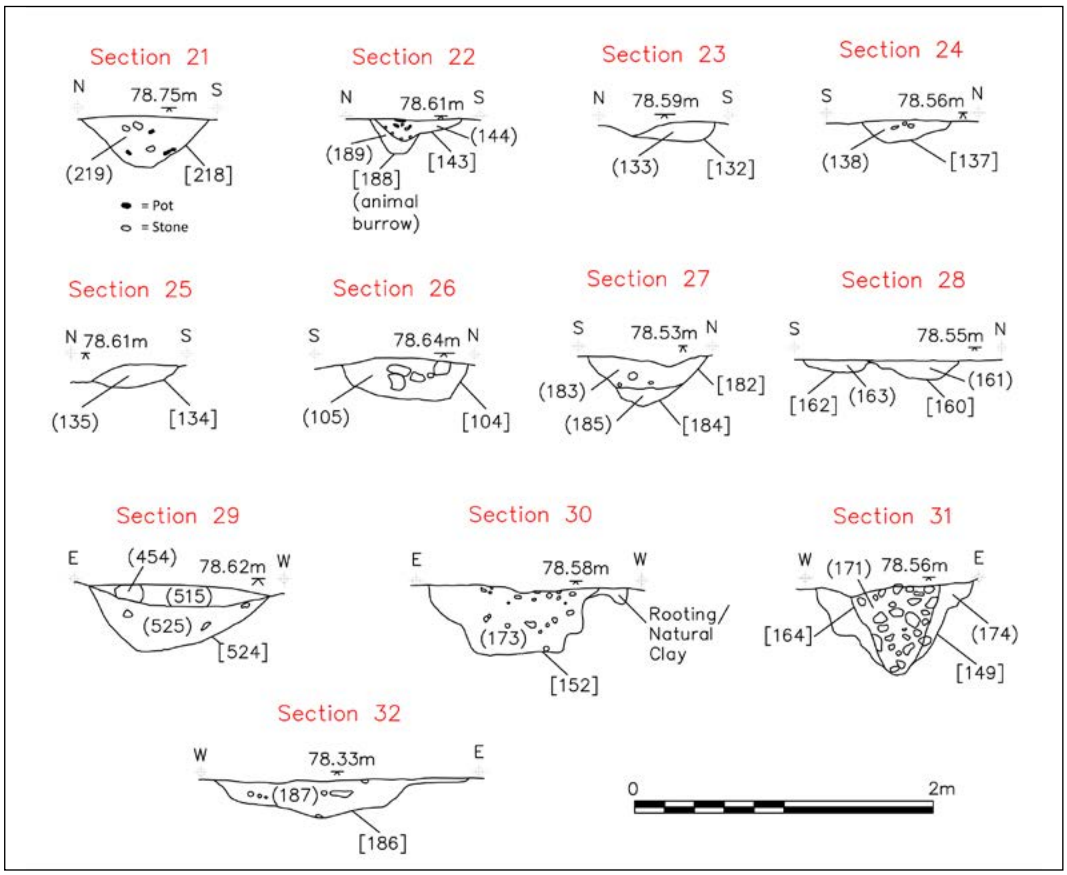


Fig.4.13. Sections of Roman rectilinear Enclosure 2b and of an associated field ditch in field N7 (for section lines, see Fig. 4.12).

Fig. 4.14. Roman rectilinear Enclosure 2b, looking south-west east towards north ditch segments F338 and F526, which run parallel to and below the scale. The hedgerow to the south has not yet been removed. Scale 2 m in 0.5 m graduations.

The north ditch of the enclosure comprised two segments, F338 to the west and F526 to the east (Fig. 4.12; Fig. 4.13, Sections 21–8; Fig. 4.14). Ditch segment F338 was 8.87 m long and 0.86 m wide, whilst F526 was 13.71 m long and 0.93 m wide. Both segments were horizontally truncated by ploughing and had surviving depths of only 0.10–0.34 m; they may originally have been continuous and presumably ran several metres further west towards the west ditch of the enclosure, F502. Feature 338 had moderate breaks of slope, moderately sloping sides and an essentially flat/concave base. Feature 526 was of a similar shape and structure, with sharp breaks of slope where it was cut into the natural limestone and a mostly flat base.

Three possible postholes [106], [107] and [108], a short 'scar' [109], and a possible pit [184] were observed in natural limestone in the base of F526 and were apparently sealed by the fill of the ditch. These produced no finds and might have been natural features that developed prior to or shortly after the cutting of the ditch.

The east ditch of the enclosure, F200, was at least 16.00 m long and up to 1.40 m wide and 0.47 m deep (Fig. 4.12; Fig. 4.13, Sections 29 and 30; Figs 4.15 and 4.16). It had been truncated to the south by modern quarrying (subsequent to the 2015 excavation) and continued north, with no apparent breaks in continuity, as a field boundary for at least a further 71 m. The east ditch has sharp breaks of slope, steep/vertical rock-cut sides and a flat base. In one place, the east side of the ditch cut a possible tree throw, which contained two flake fragments (debitage) in flint and chert (507). The fill of the east ditch included a single course of large limestone blocks (454), some apparently faced, which appeared to run in a line along the east side of the ditch for *c.*7 m (Figs 4.12 and 4.15). The blocks lay on top of the primary ditch fill (525) and were surrounded by fill (515). They presumably derive from a wall or from the facing of an earth bank that had either collapsed or had been deposited into the ditch.

The west ditch of the enclosure, F502, had a surviving length of at least 10.50 m, width of up to 0.65 m and depth of 0.20 m (Figs 4.12 and 4.17). This ditch survived

Fig. 4.15. Roman rectilinear Enclosure 2b, looking north along the east ditch F200, showing a line of large limestone blocks (454) in fill, presumably from a wall or the facing of an earth bank that had collapsed into the ditch. Scale 2 m in 0.5 m graduations.

only as a narrow gully, with a sharp break of slope, curving/concave sides and a rounded/flat base. Some limestone blocks were visible in the fill, smaller and rougher than those in the fill of the east ditch (F200), but perhaps also deriving from the collapse of a stone-faced earth or rubble bank.

In contrast to Enclosure 2a excavated immediately to the south in 2015, no clear evidence for recutting of the Enclosure 2b ditches was found in the 2019 excavation (perhaps due to relatively shallow surviving depth of the 2019 ditches), except for one probable case: an east–west ditch segment [162], 2.30 m in length, 0.50 m wide and 0.14 m deep, was recorded immediately to the south of the east end of the north ditch of the enclosure, F526 (Fig. 4.12; Fig. 4.13, Section 28). Although the site records indicate that the north lip of ditch segment [162] and its fill (163) were just cut by the south lip of ditch [160] of F526, the fill of [162] included two body sherds (3 g) of Dales ware of 3rd- to mid 4th-century date (fabric G10). This suggests that ditch segment [162] is in fact later than F526, which produced only a few sherds of late 1st- to mid 2nd-century date, and the former might represent a late 2nd-century or later recutting of the east end of the north ditch of the enclosure.

Fig. 4.16. Roman rectilinear Enclosure 2b, north-facing section of the east ditch F200, [152]. Scale 1 m in 0.5 m graduations.

Fig. 4.17. Roman rectilinear Enclosure 2b, looking south along the west ditch F502, with limestone blocks in its fill. Scale 2 m in 0.5 m graduations.

A notable assemblage of 1827 sherds, 22,580 g, of Roman pottery was recovered from the Enclosure 2b ditch fills (see below, pp. 102–13). The north ditch segment F338 produced 1521 sherds, 18,691 g, indicating (together with a large collection of other domestic waste such as animal bones) fairly intensive occupation in the vicinity of the north-west part of the enclosure, which is supported by the presence of 270 sherds (3383 g) in

the west ditch (F502). In contrast, the eastern segment of the north ditch (F526) produced a much smaller amount of pottery (14 sherds, 136 g), whilst the east ditch (F200) had only 20 sherds (367 g).

The pottery from the enclosure ditches comprises a wide range of vessels (20 vessels from F338 are illustrated below in Figs 5.42, 5.44, 5.46, 5.48, 5.49 and 5.50, along with a single vessel from F200 in Fig. 5.45), including fragments of: Dorset Black-burnished ware jars and bowls; Rossington Bridge Black-burnished ware jars; reduced Derbyshire ware jars; South Yorkshire oxidised ware bowls and a constricted necked jar; jars, wide mouth jars, beakers, lids, bowls, a dish and a flagon in South Yorkshire greyware; a stamped white-slipped South Yorkshire mortarium; and a piece of Central Gaulish samian. Collectively, this material suggests activity principally of the mid to late 2nd century, possibly stretching into the 3rd century. Whilst the enclosure may well have been constructed in the mid 2nd century, an earlier date of construction, perhaps associated with lower-level initial occupation, cannot be ruled out as a few vessels of broad 1st- (or late 1st-) to mid 2nd-century AD date were found in the ditch fills, including a single Iron Age/native tradition jar (G34/01) from F338. Interestingly, Iron Age/native tradition fabrics form a much lower proportion of the pottery recovered from the 2019 excavation (0.1%) than from the 2015 excavation (27.0%), perhaps indicating that Enclosure 2b was later than Enclosure 2a. The only vessel in F338 definitely made later than the second half of the 2nd century was a reduced Derbyshire ware jar datable to the 3rd to mid 4th centuries (G108/03) from fill (219). There are also two relatively late sherds in the east ditch (F200): a body sherd of Dales ware (fabric G10) datable to the 3rd to mid-4th centuries and a possibly intrusive South Yorkshire greyware bowl of late 3rd- to 4th-century date (R112/25).

A pottery counter, formerly part of a South Yorkshire greyware vessel (R112/31), was found in F502 (Fig. 5.50). Other finds from F338 included an iron knife (see below, p. 117, Fig. 5.63) and a copper-alloy spiral finger or toe ring of Iron Age or Roman date (SF 4; see below, p. 116, Fig. 5.60), as well as a few fragments of probable heat-cracked pot boiler cobbles.

A small amount (22.3 g) of burnt human bone was found in the top of the fill of the north ditch, F338 (in the single fill (144) of [143], which was not a terminus). Some of these bones appeared to be on and were possibly associated with at least one fragment of grey/black Roman pottery (this is visible in photographs in the site archive, but it cannot now be precisely determined what this sherd was), a large amount of which was recovered from this context; however, the poor condition and low weight of the bone suggested to the bone specialist (Milena Grzybowska) that it was probably redeposited in the ditch fill, rather than representing a disturbed or truncated primary urned cremation (see below, p. 119).

Animal bones from the enclosure ditch fills included: an adult cattle skull and disarticulated parts of cattle and sheep/goat from F338; a cattle mandibular molar from F526; a single equid premolar of a *c.*10–11 year-old individual and a portion of sheep/goat mandible from F200; and an avian femur and a single maxillary cattle tooth from F526. The relatively good condition of the disarticulated bone in F338 and the generally large and diverse quantity of other domestic waste from this feature dated by pottery to a short time frame (see above, this page) hints that these remains mostly derived from clearing out a short-lived midden, possibly formed by immediate disposal of remains following feasting or other activities. Six bone fragments of large mammals in F338 and one of a large mammal in F526 were heat-affected, indicating exposure to high temperatures. A C14 sample from burnt bone in F338 gave a date of 118–234 cal AD at 94.0% probability; this is fully consistent with the pottery dating. Two palaeoenvironmental samples (Samples 13 and 14) from F338 contained the largest number of charred cereal grains on the site, with barley and spelt wheat present (see below, pp. 121-3).

Late Roman pits and postholes within the southern part of the rectilinear enclosure (Enclosure 2a): 2015 excavation (field N8)

By Alvaro Mora-Ottomano (edited by Francis M. Morris)

Various pits and remains of perhaps two kilns were found within the southern part of the rectilinear enclosure. Some of the pits were probably used to dispose of rubbish whilst others had fires set in them, possibly for use as ovens.

A notable cluster of pits was present in the south-central part of the enclosure, including four fairly large oval examples: [294], [296], [323] and [327], possibly dug for the disposal of rubbish and ranging in length from 1.3 to 4.1 m and in depth from 0.10 to 0.50 m (Figs 4.4 and 4.18). Pit [323] had only a few Roman sherds that were not closely datable, but pits [294] and [327] had 3rd-century material and the largest of the pits, [296], had late 3rd-century pottery (along with residual earlier Roman sherds). Several vessels from pits [294] and [296] are illustrated below (Fig. 4.23, Dwg 1; Fig. 4.24, Dwg 2; Fig. 4.25, Dwgs 3, 5 and 7; Fig. 4.26, Dwg 12). Pit [296] also included the virtually intact base of a rotary beehive quern in Millstone Grit, and fragments of large mammal bones including cattle, as well as a significant quantity of large stones, possibly derived from a structure (see Fig. 4.17). Two fragments of possible imbrex tile came from pit [327].

Pit [296] was cut by a smaller circular pit [324], 0.70 m in diameter, which also included late 3rd-century pottery (Fig. 4.5, Section 17). Nearby were three more small and shallow circular or sub-circular pits: [316], [318] and [320]. Of these three pits, only [320] produced pottery, with ten sherds from a jar of late 1st- to 2nd-century AD date; it is unclear if this pot is residual and the date of these pits is uncertain, although they are perhaps most likely to be contemporary with the other 3rd-century features in the same area.

Fig. 4.18. North-facing section of late Roman pit [296] in field N8. Scale 1 m in 0.5 m graduations.

Also in the south-central part of the enclosure was the basal area of a small probable kiln (Fig. 4.4; Fig. 4.5, Sections 18 and 19). This feature, [304], contained the remnants of a sub-oval chamber, *c.*1 m east–west by *c.*0.60 m north–south, was 0.35 m deep with gently sloping sides and a rounded base. Within the fill of the chamber was a substantial amount of stone, perhaps representing a rough floor or collapse from the upper part of the kiln chamber. There was a narrow flue channel running off to the east of the chamber. This flue was *c.*1.4 m long, 0.17 m wide with vertical sides and a flat base. It led to a circular pit [314], which presumably served as a stoke hole. There were traces of burning on the sides of the flue channel and a deposit of burnt material on its base that contained collapsed slab-like stones, which could originally have been part of a lining or cover. The purpose of the kiln is uncertain as no diagnostic artefactual or environmental waste was recovered from its backfill. It might have been a single-chamber pottery kiln (cf. Swan 1984) or a corndryer (cf. Morris 1979, 101; Lodwick 2017, 56, Fig. 2.42), although other corndryers from Britain are typically much larger, with heated floor areas of at least 2 square metres (Lodwick 2017, 55–6) and no grains were recovered from the fills which were sampled for environmental analysis. Alternatively, it may have been an oven for baking bread. A few sherds of pottery of mid/late 3rd-century or later date were found in chamber [304] and flue [314].

Less than 2 m to the south-west of kiln chamber [304] was another probable flue [331], consisting of a shallow gully, *c.*1.35 m long and aligned east–west. It was 0.40 m wide and 0.13 m deep, with gently sloping sides and a rounded base. It had heat-affected sides and was filled by a clayey silt burnt deposit, which produced no finds. This suggests that there may have been at least one more kiln/oven in the south-central part of the rectilinear enclosure, but if so, it had been largely truncated by later activity.

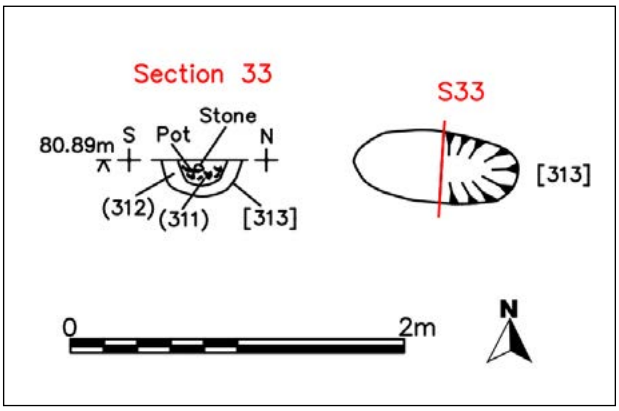


Fig. 4.19. Plan and section of Roman cremation pit [313] in field N8.

Fig. 4.20. East-facing section of Roman pit [313], which contained a truncated, urned human cremation. Scale 0.30 m in 0.1 m graduations.

Further evidence of burning in this part of the enclosure was provided by a shallow circular pit [329], 0.80 m in diameter, situated 2.0 m south of flue [314] and 2.4 m south-east of flue [331]. The bedrock at the base of pit [329] was affected by heat, indicating that a fire had been set here. Three sherds of pottery or fired clay fragments of possible Roman date were found in the fill.

In the south-east corner of the enclosure was a large sub-oval pit [222], which cut partly into the fills of the recut south ditch of the enclosure (Ditch group 4) (Fig. 4.5, Section 9). The pit was *c.*6.5 m north–south by 3 m east–west and 0.55 m in depth. A considerable amount of pottery (92 sherds; 1521 g) was retrieved from its fills (cf. Fig. 4.25, Dwg 6), including material of the late 3rd century or later, as well as a highly-fragmented mandible of a young cow. The upper fill of the pit also included charred grains of spelt wheat and hulled barley in addition to grains of indeterminate barley, wheat and cereal, two possibly cultivated oat grains and a single glume base tentatively identified as spelt, indicating arable farming at the site in the late Roman period.

The north end of pit [222] was cut by a small shallow oval pit [350] which was *c.*1.6 m in length and had a surviving width of 0.80 m and depth of less than 0.10 m. The fill of pit [350] was a burnt silt, suggesting it may have been the site of another fire. Two sherds of broad Roman date were retrieved from this fill. Pit [350] was cut in turn by another pit [349], which was *c.*2.5 m in length, 1 m in width and less than 0.10 m in depth. The fills of pit [349] included sherds of mid to late 3rd-century date.

A large amount of pottery (652 sherds; 6274 g) was also recovered from the interface at the base of the topsoil where it overlay the area of the enclosure. This was presumably disturbed material deriving from features relating to the enclosure. The pottery from the interface ranged in date from the 1st to the late 3rd or perhaps the 4th centuries AD, but the majority was produced in the 3rd century.

The evidence indicates that there was substantial late Roman activity (mid to late 3rd century, possibly stretching into the 4th century) within the enclosure in the form of pits probably dug for rubbish, kilns/ovens and other fires/ovens. This strongly suggests that the enclosure was probably still a feature down to at least the late 3rd century, although the recut enclosure ditches were evidently filling up during the 3rd century. Alternatively (and less likely), the enclosure may have been essentially levelled during the 3rd century with the late Roman pits relating to a new, possibly unenclosed, settlement in the same area.

Late Roman pits and postholes within the northern part of the rectilinear enclosure (Enclosure 2b): 2019 excavation (field N7)

By Francis M. Morris

As in the south part of the rectilinear enclosure excavated in 2015, there was also substantial late Roman activity (late 3rd century, possibly stretching into the 4th century) in the form of pits and postholes found within the north part of the enclosure excavated in 2019.

Ten pits in the north-west part of the enclosure have been grouped as F511 (Fig. 4.12); they appear to have been rubbish pits and their fills typically included much limestone rubble/cobbles and sometimes river stones. Several of these pits were intercut. Pit [498], which produced no finds, was cut by pit [491], which had body sherds of South Yorkshire greyware (fabric R112). Pit [491] and pit [469], which had no finds, were both cut by pit [470], which included a rim from a presumably residual decorated Central Gaulish samian bowl, dated 125–155 (possibly 145–155) (Fig 5.52), and a rim of a South Yorkshire greyware jar datable to the mid 3rd century (R112/09) (Fig 5.48). Pit [480] included body sherds of 3rd- to 4th-century Dales ware (fabric G10) and a radiate (coin) of Claudius II, dated AD 268–70 (SF 84; Fig. 5.59). Pit [480] and pit [481], which produced no finds, were cut by pit [473], which contained a white-slipped South Yorkshire mortarium of 3rd- to 4th-century date (M41/02) (Fig 5.46), a South Yorkshire greyware bowl of late 3rd to 4th-century date (R112/25), an unidentifiable fragment of burnt clay and a couple of fragments of heat-cracked pot boiler cobbles. The other pits in the group comprised [442], [476] and [508]. Pit [442] was situated east of the other pits in the group and contained a body sherd of South Yorkshire greyware, occasional charcoal and heat-fractured pot boiler stones. Pit [476] included a residual sherd of Central Gaulish samian, a Dales ware dish dating to the 3rd to mid 4th centuries (G10/02) (Fig 5.43), a South Yorkshire greyware bowl datable to the late 3rd to 4th centuries (R112/25) and fragments of possible pot boilers. Pit [508] has body sherds of South Yorkshire greyware (fabric R112) and a probable nail shaft in iron (SF 54).

Animal bones were recovered from some of these pits, including [442], [476] and [508], which had remains of cattle, such as a mandible and parts of the extremities of an immature individual, and loose teeth of sheep/goat. The fills of pits [473] and [480] also contained a small number of charred cereal grains and weed seeds typical of those found with waste material of late-stage crop processing (medium-coarse sieving and fine-sieving; see Chapter 5 below, pp. 122–3, Samples 84 and

85) as well as oat and brome grass seeds suggesting that grassland was also utilised.

Pits [476] and [508] were both sealed by an occupation/waste deposit (483) about 0.10 m deep. This deposit had 35 sherds of Roman pottery, including body sherds of Dales ware (fabric G10).

A large number of postholes and/or pits were also found in the north-east part of the enclosure. Ten of these were grouped in initial post-excavation analysis as F528, which was thought to be part of a possible structure aligned north-east to south-west (Fig. 4.12). One of the possible postholes of F528, [447], included a rim of a South Yorkshire greyware bowl (R112/25) datable to the late 3rd to 4th centuries. Two others [444] and [448] had sherds of Dales ware datable to the 3rd or 4th century (jar G10/01 from [444] is illustrated on Fig. 5.43), whilst three [438], [440] and [500], had only body sherds of South Yorkshire greyware of broad Roman date. Possible posthole [500] also contained a few nodules of probable iron smithing slag.

Other possible pits or postholes in the north-east part of the enclosure included: [522], which contained a rim of a South Yorkshire greyware bowl datable to the late 3rd to 4th centuries (R112/25) and a body sherd of 3rd- to 4th-century Dales ware (G10); [446], [518] and [520], which all had body sherds of Dales ware (two other vessels from [518] are illustrated on Figs 5.47 and 5.49, O11/03 and R112/15 respectively); [113], (458) and [463], which all had South Yorkshire greyware vessels datable to the mid 2nd to early 3rd centuries; [478], which had a ?South Gaulish samian body sherd with a partially surviving stamp (Fig. 5.51); and [465], which had body sherds of South Yorkshire greyware of broad Roman date. Pit [446] was cut by [459], but the latter produced no finds.

The pottery indicates that at least some of the postholes or pits in the north-east part of the enclosure were late 3rd or 4th century in date and broadly contemporary with the pits in the north-west part of the enclosure (F511). The other postholes and pits in the north-east part of the enclosure were probably also contemporary, but on the basis of the limited pottery evidence earlier dates cannot be ruled out, with some potentially dating to the mid 2nd to mid 3rd centuries.

Some of the postholes or pits found in the north part of the enclosure may be structural, but no clear structures can be identified. Several of the pits appear to form the northern side of a circle (Fig. 4.12); this could potentially be part of a roundhouse, although most of the constituent pits in the north-west part of the enclosure are intercut and appear to have been dug for rubbish rather than as postholes. There are also hints of a north-east to north-west aligned structure in the north-east part of the enclosure.

Another pit [504]/(453) appears to have been cut into a part of the fill of the east ditch of the enclosure F200/(506), which produced only two Dorset Black-burnished ware sherds (fabric B01) and a possibly intrusive South Yorkshire greyware bowl of late 3rd- to 4th-century date. This pit included a large amount of limestone rubble, some pot boiler cobbles and a few sherds of South Yorkshire greyware jars datable to the mid 2nd to early 3rd centuries (R112/04) and of broad Roman date (R112/05). Pit [504] might have been contemporary with the numerous late Roman pits found within the enclosure.

Features outside rectilinear Enclosure 2a: 2015 excavation (field N8)

By Alvaro Mora-Ottomano (edited by Francis M. Morris)

In the 2015 excavation only two Roman features were found outside rectilinear Enclosure 2a. The first of these was an oval pit [313] situated *c.*40 m south-west of the south-west corner of the enclosure (Figs 4.3, 4.19 and 4.20). This pit was *c.*1 m long, 0.50 m wide and 0.40 m deep with steeply sloping sides and a slightly rounded base. The primary fill was a sterile redeposited natural (312). Its upper surviving fill (311) included a disturbed/truncated urned human cremation of an unsexed adolescent or adult (65.5 g). The cremation urn was a heavily fragmented greyware jar with a high shoulder and linear rustication, datable to the late 1st to 2nd centuries (Fig. 4.25, Dwg 4). A skull fragment gave a C14 date of 24 to 213 cal AD at 95.4% probability, 24 to 178 cal AD at 91.5% probability, or 64–129 cal AD at 68.2% probability. The cremation deposit included charcoal from oak, hawthorn/apple, birch, ash and elm, which presumably represented fuel from the cremation pyre gathered locally (see below, p. 68). Nine charred pea seeds (*Pisum sativum*) were also retrieved from the cremation (see below, p. 67).

The second feature was a north-north-west to south-south-east aligned ditch (Ditch group 7), at least 14 m in length, *c.*1 m in width and up to 0.30 m in depth. It lay *c.*36 m west of the cremation and *c.*75 m south-west of the rectilinear enclosure (Fig. 4.3). A sherd of Roman greyware and a fragment from an East Gaulish samian bowl, dated to 150–250 came from upper fills of the ditch, which probably represents part of a Late Iron Age/Roman field boundary.

A possible southern continuation of the west ditch of the enclosure (Ditch group 6) as a field ditch was indicated by a geophysical survey undertaken in the area of the enclosure whilst the 2015 excavation was in progress (it was not evident in the previous geophysical

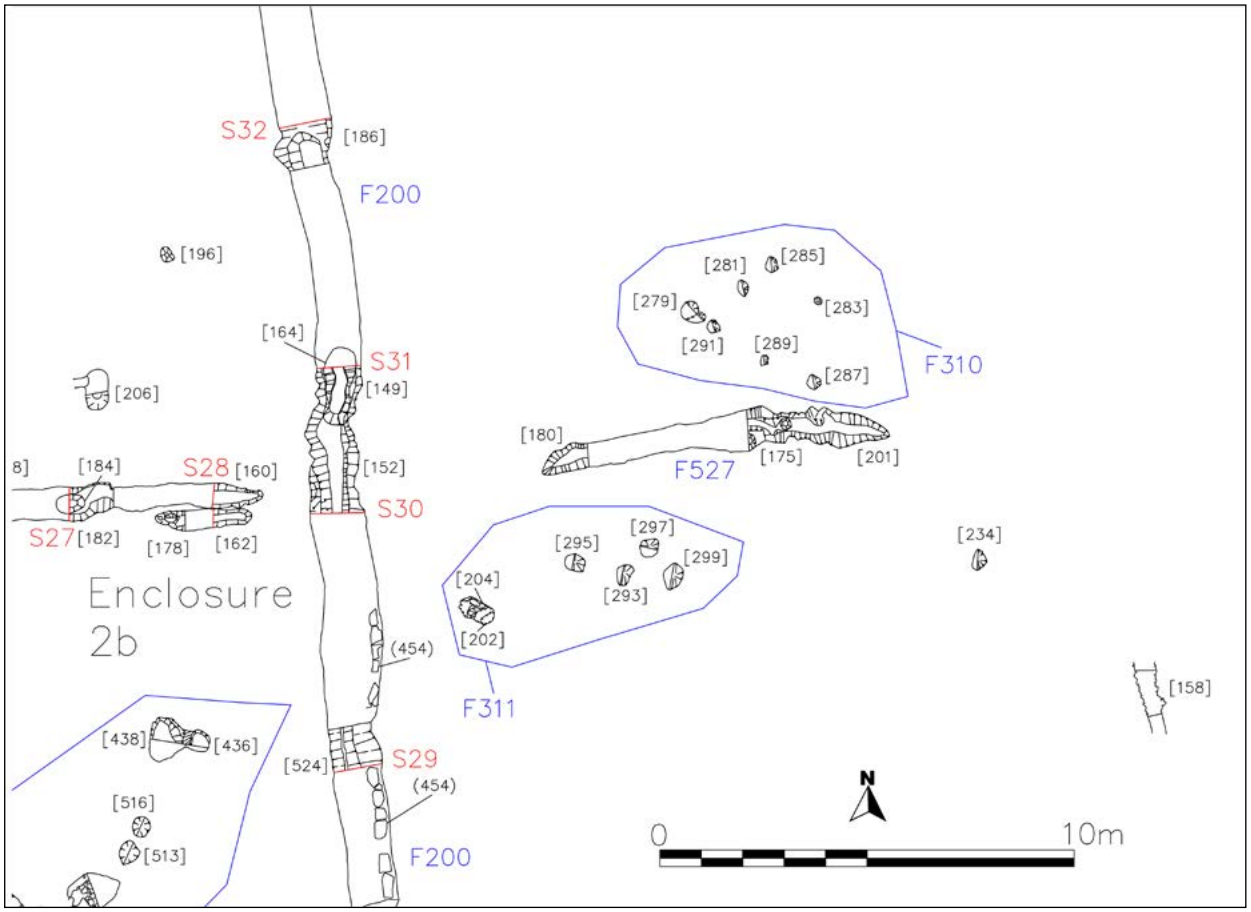


Fig. 4.21. Plan showing possible Roman posthole structures F310 and F311 to the east/north-east of Enclosure 2b in field N7.

survey undertaken in 2014–15 prior to excavation). A sondage was excavated with the aim of locating this possible southern continuation, but no clear evidence for its existence was encountered.

In contrast to the 2020–22 excavations further west (in Cockhill West), surprisingly little evidence for Late Iron Age/Roman field ditches survived to be recorded in field N8 and there was only limited evidence for field ditches in field N7, making interpretation of the field system in this area difficult. The geophysical survey of 2014–15 appeared to show no field ditches in the east part of Cockhill East to the south and east of Enclosure 2a (i.e. in the south and east parts of field N8 and further east in fields N11 and N13; cf. Figs 2.4 and 2.5) and no Roman features were identified in the strip, map and sample excavation and watching brief subsequently undertaken in this area in 2015. This may be because the Roman levels across much of Cockhill East had largely been removed by later ploughing. In Cockhill West, the Roman features were cut into limestone bedrock and sealed by modern topsoil, but the surviving Roman features in Cockhill East were cut through a natural brown-pink clay colluvial subsoil, which overlay the limestone bedrock; this subsoil was presumably more susceptible to damage by ploughing than the bedrock. It is also possible that the lower lying, poorly draining soils in eastern parts of the site may have been less attractive for early settlement and farming; indeed the watching brief undertaken during topsoil stripping in field N11 in 2015 revealed that the ground was much wetter than in field N8, with the superficial geology consisting of a heavy, thick clay indicating that this area had been an ancient wetland where water still pools (Brown 2016, 10.14).

Field ditches and other features outside rectilinear Enclosure 2b: 2019 excavation (field N7)

By Francis M. Morris

Several field ditches were found in the east part of field N7, evidently forming part of a regular field system (Fig. 4.3). These include F200, which was the northern continuation of the east ditch of rectilinear Enclosure 2b (Fig. 4.12; Fig. 4.13, Sections 31 and 32). This was recorded running north from the north-east corner of the enclosure for at least 71 m with no apparent breaks.

F527 was an east-north-east to west-south-west linear ditch segment with a surviving length of 8.40 m. This

was situated 4.50 m east of the north-east corner of Enclosure 2b and represented the eastern continuation of the line of the enclosure's north ditch.

Another ditch segment [158], 1.20 m in length, was recorded *c.*18 m east of the east ditch of the enclosure. This ran approximately north–south and, with F527, may have formed part of the boundary of a small field or sub-enclosure to the east of the rectilinear enclosure.

About 37 m to the west of the west ditch of the rectilinear enclosure and *c.*70 m to the west of field ditch F200 was a segmented north–south field ditch that ran approximately parallel to F200 for at least 66 m. This was formed of various segments, presumably interrupted as a result of recent disturbances, from south to north: F533, F531, F529, [210], [412] and [408]. This field ditch is clearly visible on the 2014–15 geophysical survey (Figs 2.4 and 2.5), where its northern end appears to meet an east–west ditch at a right-angle. This east–west ditch was not traced in excavation, but the geophysical survey shows it running east to meet F200, as well as running west for a similar distance.

A small amount of Roman pottery was recovered from the fills of the field ditches. This was not closely datable, but indicated a Roman date and a low intensity of occupation outside the rectilinear enclosure. The fill of field ditch F200 *c.*39 m north of the enclosure included a body sherd of South Yorkshire greyware (fabric R112) and fragments of possible pot boiler stones, whilst the fill of this ditch *c.*60 m from the enclosure included four body sherds of a South Spanish Dressel 20 olive oil amphora (fabric A01). Field ditch [158] produced two body sherds of Derbyshire ware of mid 2nd- to mid 4th-century date (fabric G108), body sherds of South Yorkshire greyware and a rim of a South Yorkshire greyware jar of broad Roman date. Ditch [158] also included a small iron bar of unidentified nature. Ditch [531] had only a single, highly fragmented equid cheektooth.

A pit, [164], was cut into the fill (174) of field ditch F200 *c.*2 m north of the rectilinear enclosure (Fig. 4.12). The pit had pottery of mid 2nd- to early 3rd-century date in its fill, including: a body sherd of Rossington Bridge Black-burnished ware (fabric B03); a rim of a Dorset Black-burnished ware bowl (B01/03), datable to the 2nd century; South Yorkshire greyware jars (R112/03 and R112/04) datable to the mid 2nd to early 3rd century; and a wide mouth jar of broad Roman date (fabric R112/15). The pit also contained a poorly preserved adult cattle skull and torso (see below, p. 119), as well as a fragment of a possible pot boiler stone.

Two groups of possible postholes, perhaps representing parts of small structures of some kind, were recorded a short distance to the east/north-east of Enclosure 2b: F310 comprised seven postholes immediately north of field ditch F527, whilst F311 comprised five postholes immediately south of ditch F527 (Fig. 4.21, cf. Fig. 4.2). The fills of these possible postholes produced no finds, so precise dating was not possible and a natural origin

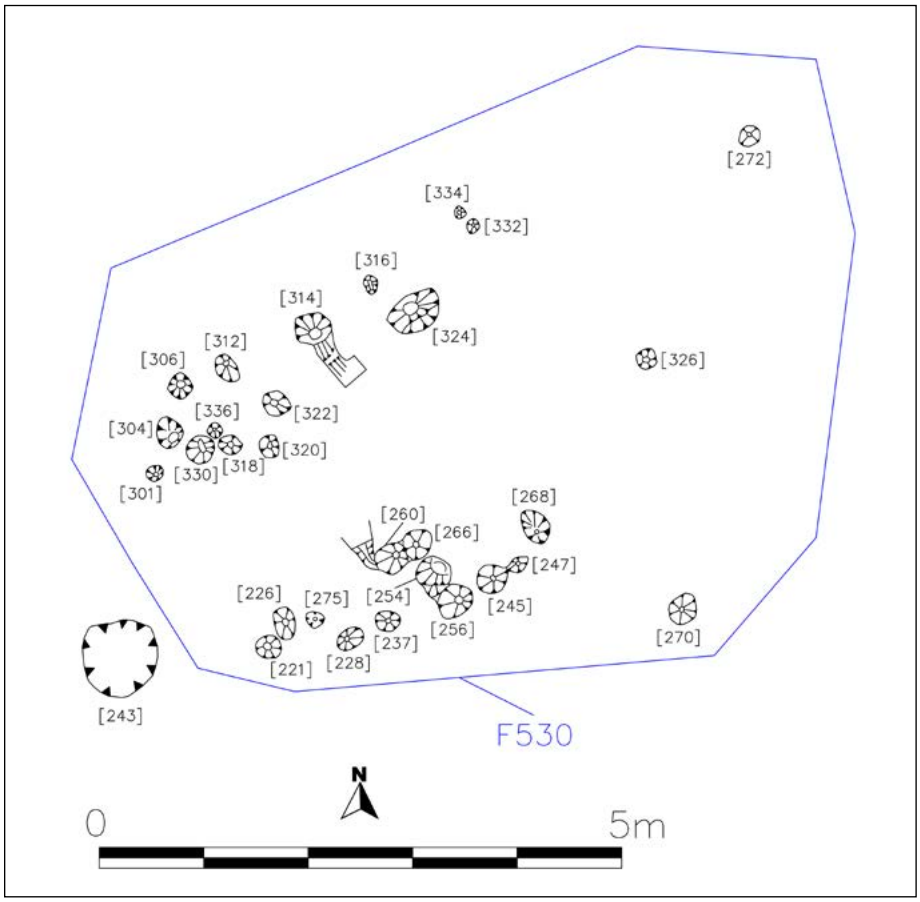


Fig. 4.22. Plan of possible Roman posthole structure F530 to the north-west of Enclosure 2b in field N7.

should not be ruled out. Nevertheless, their proximity to the enclosure makes a Roman date most likely.

About 22 m to the north-west of Enclosure 2b was another possible small structure, F530, formed of 29 possible postholes (Fig. 4.22, cf. Fig. 4.2). Most of these are densely packed in a sub-circular/horseshoe shape, 4.76 m in length, perhaps with an opening facing north-east. F530 is most likely Roman in date, but it produced no finds. A natural origin, e.g. rooting, is possible for at least some of the 'postholes'.

Post-medieval

A circular pit [298], 1.5 m in diameter and 2.5 m in depth, was located *c.*6 m to the south-west of the south-west corner of the rectilinear enclosure in field N8 (Fig. 4.3). The pit included objects of 19th- and 20th-century date and represented a modern rubbish pit.

Also from the 2015 excavation and situated *c.*102 m south-west of the rectilinear enclosure were a rectangular shallow pit [233] and a possible natural depression [231] (shown on Fig. 4.1, but unlabelled). The pit appears to have been excavated by a mechanical digger in order to create a depression to burn domestic waste. These features did not produce any artefacts and were considered to be modern.

No certain post-medieval features were found in the 2019 excavation, except for two possible rooting disturbances, (496) and (497), from a modern hedgerow in the area that lay within the Roman rectilinear enclosure (cf. Figs 4.3 and 4.12).

Undated features

Several other possible archaeological pits or postholes were found in the 2019 excavation, cut into limestone bedrock and sealed by modern topsoil, but in the absence of datable finds they cannot be dated with any confidence. Various probable natural features of uncertain date were also recorded across field N7 (cf. Figs 4.1 and 4.3). These include small sinkholes, minor water channels, animal burrows, tree throws and rooting deposits. One possible tree throw (507), which included two flakes (debitage) in flint and chert, was cut by the east ditch of the Roman rectilinear enclosure, F200, [505].

Specialist reports

The specialist reports for the 2015 excavation are presented below; they are reduced and edited versions of those provided in the original archive site report (Mora-Ottomano 2016). Integrated specialist reports for the 2019–22 excavations are presented at the end of Chapter 5 (see below, pp. 102–25).

Roman pottery

By I. M. Rowlandson with a contribution by G. Monteil for the samian ware

Introduction

A total of 2214 sherds, weighing 23,976 g, total RE 1876, from 31 contexts was recovered from the 2015 excavation [Francis M. Morris writes: these totals are based on the full archive and fabric summary archive tables, which have been used to create Table 4.1, below; they differ slightly from the total of 2228 sherds, weighing 24,104 g, total RE 1896, given in the archive report, which matches the dating summary/spot dating, archive table. The minor discrepancies in counts cannot now be resolved]. The maximum vessel number established was 1173 vessels, although this is probably an overestimate due to the difficulty of securely attributing many of the body sherds to individual vessels. Approximately 195 individual rims were recorded and it is likely that the total number of individual vessels represented lies somewhere between these two figures. Methodology is set out in the archive report. The pottery from each feature has been briefly described above in the main excavation report (for further details, see the archive report: Rowlandson 2016).

Fabrics

Introduction

Table 4.1 shows the breakdown of the Roman pottery from the 2015 excavation by fabric code. Fabric codes follow those developed by the City of Lincoln Archaeological Unit (Darling and Precious 2014) and the fabric series established by the author for an assemblage from Rossington Colliery, South Yorkshire (Rowlandson 2013).

Amphorae

DR20 Dressel 20 amphorae. Globular olive oil amphorae produced in Southern Spain (Tomber and Dore 1998, BAT AM 2). Four body sherds were retrieved from Ditch group 2 of rectilinear Enclosure 2a and from the topsoil.

Mortaria

MOCA Cantley orange mortaria with a white slip and slag trituration grits (Tomber and Dore 1998, CAN WS).

MOMH2 Mancetter/Hartshill mortaria with mudrock/fired clay trituration grits. Including a hammer-head rimmed type and a further vessel described below (Dwg 1).

Table 4.1. Roman pottery from the 2015 excavation by fabric code (NoSh = number of sherds; Wt = weight in grams; RE = rim equivalent).

Fabric code	NoSh	NoSh %	Wt	Wt %	RE
Amphorae					
DR20	4	0.2%	159	0.7%	0
Mortaria					
MOCA	1	<0.1%	24	0.1%	0
MOMH2	7	0.3%	391	1.6%	23
Total	**8**	**0.4%**	**415**	**1.7%**	**23**
Colour-coated					
CC1	40	1.8%	147	0.6%	6
Oxidised					
CR	2	0.1%	14	<0.1%	0
DBY	14	0.6%	140	0.6%	0
OX1	10	0.5%	70	0.3%	8
OX8	45	2.0%	648	2.7%	55
OXC1	15	0.7%	229	1.0%	0
PDBY	4	0.2%	19	<0.1%	0
OXWS	1	<0.1%	14	<0.1%	0
Total	**91**	**4.1%**	**1134**	**4.7%**	**63**
Reduced					
BB1	46	2.1%	359	1.5%	46
RBBB1	8	0.4%	26	0.1%	0
GREY	10	0.5%	104	0.4%	6
GREY?	7	0.3%	40	0.2%	0
GREY1	319	14.4%	4037	16.8%	218
GREY2	32	1.4%	233	1.0%	17
GREY7	7	0.3%	115	0.5%	0
GREY8	738	33.3%	10426	43.5%	922
GFIN	6	0.3%	9	<0.1%	0
GRFF	4	0.2%	92	0.4%	0
Total	**1177**	**53.2%**	**15,441**	**64.4%**	1209

Fabric code	NoSh	NoSh %	Wt	Wt %	RE
Prehistoric and native tradition					
GRCM	1	<0.1%	11	<0.1%	0
SHCM/ GRMC	7	0.3%	38	0.2%	0
IASH1	1	<0.1%	13	<0.1%	7
IASH3	10	0.5%	173	0.7%	0
IAGR	2	0.1%	26	0.1%	0
IAGR?	1	<0.1%	3	<0.1%	0
IAGR1	100	4.5%	1129	4.7%	73
IAGR2	399	18.0%	2701	11.3%	264
IAGR3	9	0.4%	58	0.2%	0
IAGR4	27	1.2%	376	1.6%	0
IAGR5	27	1.2%	370	1.5%	43
IAGR7	14	0.6%	142	0.6%	7
Total	**598**	**27.0%**	**5040**	**21.0%**	**394**
Shell gritted					
DWSHT	128	5.8%	740	3.1%	149
DWSHT?	12	0.5%	30	0.1%	0
SHEL	20	0.9%	62	0.3%	0
SHEL1	49	2.2%	347	1.4%	19
SHEL2	72	3.3%	348	1.5%	2
Total	**281**	**12.7**	**1527**	**6.4%**	**170**
Other					
MISC	6	0.3%	8	<0.1%	0
FCLAY	2	<0.1%	5	<0.1%	0
FCLAY?	1	<0.1%	5	<0.1%	0
Total	**9**	**0.4%**	**18**	**<0.1%**	**0**
Samian					
SAMLG	1	<0.1%	5	<0.1%	0
SAMCG	2	<0.1%	12	<0.1%	7
SAMEG	3	0.1%	78	0.3%	4
Total	**6**	**0.3%**	**95**	**0.4%**	**11**
Overall total	**2214**		**23,976**		**1876**

Dwg 1, Fig. 4.23. MOMH2 MRR. A reeded rimmed mortarium with internal use wear. From pit [294], fill (293).

Colour-coated wares

CC1 Nene Valley type colour-coated wares with white fired fabric (iron poor clay) and a contrasting colour-coat (e.g. Tomber and Dore 1998, LNV CC). Forms include beakers and Castor boxes.

Oxidised wares

CR White ware. No mica was evident in the fabric and a Lincoln source would appear unlikely. Sherds from a single vessel in poor condition were retrieved from the topsoil interface.

DBY Derbyshire ware (Tomber and Dore 1998, DER CO). A small number of vessels, probably all jars. Rim sherds from a typical lid-seated jar were the only diagnostic fragments found.

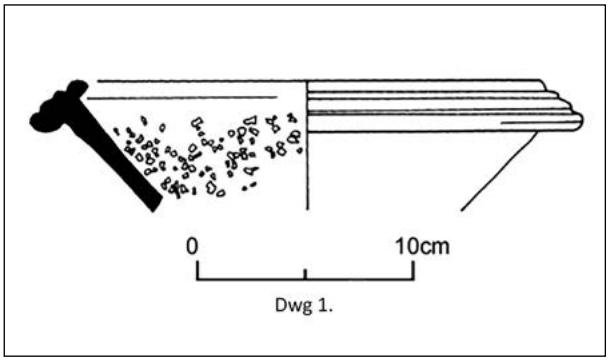


Fig. 4.23. Roman pottery from the 2015 excavation: Mancetter/ Hartshill mortarium.

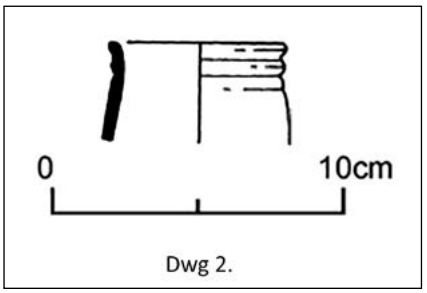


Fig. 4.24. Roman pottery from the 2015 excavation: oxidised ware beaker.

OX1 South Yorkshire Oxidised ware with inclusions as discussed in Buckland and Magilton (2005) and Leary (2008a, OAB1). The forms included a beaker, a bowl similar to samian form 18/31 and a segmental flanged bowl.

OX8 Oxidised ware, mid orange with the same inclusions as GREY8 (see below). The forms present included: a beaker (Dwg 2), a segmental flanged bowl and a hemispherical flanged bowl.

Dwg 2, Fig. 4.24. OX8, BKFN. A beaker with a funnel neck. From pit [296], fill (299).

OXC1/PDBY A coarse oxidised ware, predominantly mid orange with some vessels having patchy reduced grey surfaces; it has a fairly hard 'bumpy' surfaced fabric with common sub-rounded quartz, rare quartz and polycrystalline quartz rock and sparse red-brown inclusions. This fabric is either 'Pre-Derbyshire ware' (Brassington 1971) or a local attempt to produce a similar fabric (Buckland *et al.* 2001, 69). The vessels represented are probably all jars.

OXWS Oxidised with white slip. A single sherd.

Oxidised wares made up only a small proportion of the assemblage as is typical of groups from South Yorkshire. With the exception of the coarse DBY and OXC1 fabrics, which were mostly used for jars, the majority of the other vessels appeared to be from tableware bowls or beakers.

Reduced wares

BB1 Dorset Black-burnished ware 1 (Tomber and Dore 1998, DOR BB 1). The only diagnostic form, a jar with a cavetto rim accounted for the majority of the sherds. This vessel could be dated to the late 3rd to 4th centuries.

RBBB1 Rossington Bridge Black-burnished ware 1 (Tomber and Dore 1998, ROS BB 1; Buckland *et al.* 2001, 47–9). Evidence from the kiln sites suggests this fabric was produced in the mid to late 2nd century. Sherds in this fabric include a fragment from a bowl or dish.

GREY Miscellaneous uncategorised greyware. Including a fragment from a deep conical bowl with a club rim (Buckland *et al.* 1980, Fig. 4.31) in a fine mica rich fabric, probably of late 3rd- to 4th-century date.

GREY1 South Yorkshire greyware with common to abundant sand (Buckland and Magilton 2005, 43). The

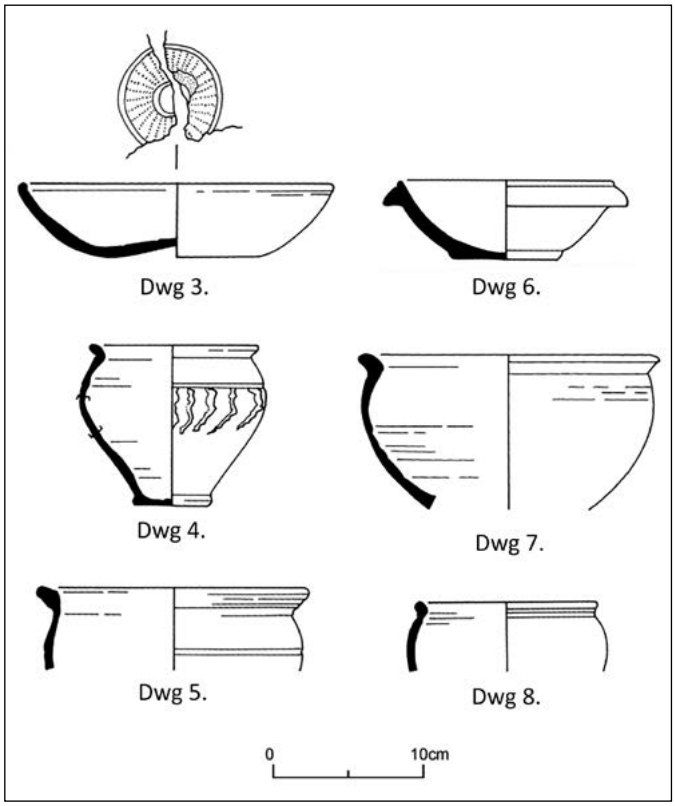


Fig. 4.25. Roman pottery from the 2015 excavation: greyware dish with rouletted decoration (Dwg 3), jars (Dwgs 4 and 5), segmental flanged bowl (Dwg 6), bowl (Dwg 7) and beaker (Dwg 8).

standard South Yorkshire fabric. A small range of forms were retrieved including: beakers with everted rims; lug-handled jars; a Blaxton type lid-seated jar (Buckland *et al.* 1980, Fig. 4.23); a rusticated jar; everted rimmed jars; bowls with no neck (Buckland *et al.* 1980, Fig. 4.29); large bowls with simple lips (Buckland *et al.* 2001, Fig. 49. 277); large bowls with 'S- shaped' rims (Buckland *et al.* 1980, Fig. 4.30); a large bowl with a rounded rim (Darling 1999, Fig. 36.370); lipped bowls; and a straight sided bead and flanged bowl (Buckland *et al.* 1980, Fig. 3.12). The range of forms suggests the majority of this pottery dates to the 3rd century with a few 2nd-century forms also present.

GREY2 A dark grey to black surfaced reduced wheelmade fabric occasionally with paler grey cores and oxidised margins. The inclusions are the same as GREY1 but with most examples with common quartz though a few vessels have only sparse quartz. It has been suggested that vessels in this fabric were manufactured from the Flavian period at or near Doncaster (Buckland *et al.* 1980, 146–7; Rigby 1998, 192). Forms included: a carinated bowl; a jar or beaker with an everted rim; a jar with linear rustication; and a dish with rouletted decoration. It appears that the range of forms in this fabric conform to an early Roman date.

Dwg 3, Fig. 4.25. GREY2, D452. A dish with rouletted decoration and an omphalos base (Gillam 1970, Type 337). From pit [296], fill (295).

GREY7 A greyware with smooth dark grey surfaces and an oxidised core, sparse rounded quartz and rare white inclusions. This fabric appears to have sparse fossil shell inclusions. No forms were identified.

GREY8 A reduced mid grey wheelmade greyware with common poorly sorted sub-rounded quartz, rare black(?) ferrous-rich inclusions and rare fine silver mica. Source uncertain, but possibly from Nottinghamshire or Lincolnshire ('Trentside'), or they may be in a variant South Yorkshire fabric (Field and Palmer-Brown 1991; Darling 2004a). This is the most common fabric in the assemblage. A broad range of forms were retrieved including carinated drinking bowls, jars with linear and web style rustication, necked jars, jars with stubby everted rims (Dwg 4), bowls with reeded rims and low carnations (Buckland *et al.* 1980, Fig. 4.28), native tradition jars (Dwg 5) and bowls (Dwgs 6–8) that dated to the early to perhaps mid Roman period. The assemblage includes a range of large bowls, jars with out-curved rims, lipped bowls and bowls with triangular rims that can be dated to the 2nd century, whilst 3rd- or perhaps early 4th-century forms present include Blaxton type lid-seated jars, bowls with no neck (BNNK), large bowls (including BLD3) and straight-sided flanged bowls (BFB).

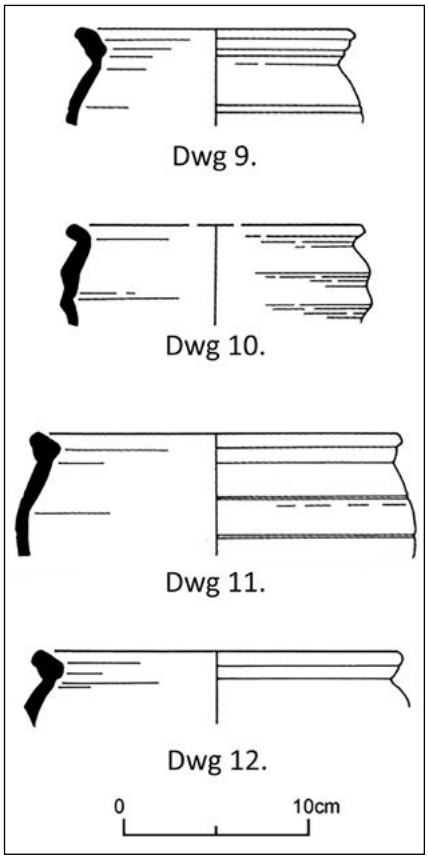


Fig. 4.26. Roman pottery from the 2015 excavation: native tradition jars (Dwgs 9 and 10) and bowls (Dwgs 11 and 12)

Dwg 4, Fig. 4.25. GREY8, JEVS. A jar with a high shoulder and linear rustication. Examples of this form include vessels from Norton Disney and the Lea kilns, both Lincs. (Oswald 1937, Fig. 1, 9; Field and Palmer-Brown 1991, Fig. 16. 33). Used as an urn for a human cremation burial. From pit [313], fill (311).

Dwg 5, Fig. 4.25. GREY8, CPN. A native tradition type jar with many parallels to early Roman groups from Worksop (Notts.), Lincoln and elsewhere in Lincolnshire (Darling 2004a). From pit [296], fill (295).

Dwg 6, Fig. 4.25. GREY8, BSEG. Segmental flanged bowl with traces of burning. From pit [222], fill (276).

Dwg 7, Fig. 4.25. GREY8, BEV. Bowl with an everted rim. From pit [294], fill (293).

Dwg 8, Fig. 4.25. GREY8, BEV. A bowl with an everted rim and with external carbonised deposits (Rigby and Stead 1976, Fig. 75.19). From Ditch group 2, fill (260).

GFIN Miscellaneous fine greyware. Including sherds probably from beakers. None of the sherds were considered to be of Rossington Parisian ware type.

GRFF A 'fairly fine' greyware (cf. Darling 2004a), a finer variant of GREY8. No forms could be identified.

Prehistoric and native tradition pottery

GRCM Handmade with grog/clay pellets: common, medium sized. A single grog-gritted basal sherd with oxidised external and black internal surfaces was retrieved from Ditch group 1. A Bronze or Iron Age date for this vessel appears likely.

SHCM/GRMC Handmade with fossil shell (common, medium sized)/grog/clay pellets (moderate coarse). Two vessels from pits [222] and [296] were attributed to this group, both stratified with Roman wheelmade pottery. A Bronze or Iron Age to early Roman date was possible for these vessels.

IASH1 A predominantly handmade fabric with varying surface colours ranging from brown to orange oxidised hues, often with irregular surface colours, but most commonly brown. Common fossil shell, quartz sparse to rare and some ferrous inclusions present. A single sherd from a native tradition jar (topsoil interface).

IASH3 A handmade fabric with moderate fossil shell, moderate ferrous slag and moderate rounded quartz. Sherds from a large jar or bowl (topsoil interface).

IAGR Miscellaneous Iron Age tradition wares.

IAGR1 A hard handmade or wheel-finished dark grey fabric with moderate grog or mudrock, sparse ferrous, rare rounded quartz and rare rounded calcareous inclusions. One hundred and six sherds from 30 vessels. A range of Late Iron Age to early Roman forms were present including large native tradition bowls, native tradition jars, a jar or beaker with an everted rim and a large storage jar (Darling and Precious 2014, No. 832).

IAGR2 A handmade or wheel-finished 'pimply' fabric with surface colours varying from dark grey to dull orange and inclusions comprising moderate fossil shell, moderate quartz and moderate to sparse grog or mudrock. A similar range of early Roman forms were retrieved to the IAGR1 fabric including a storage jar with stabbed decoration and typical jars and large bowls (Dwgs 9–12).

Dwg 9, Fig. 4.26. IAGR2, CPN. A typical jar with a wedge-shaped rim and slight cordon or groove beneath the rim. Examples include one from the Worksop kiln site and numerous others in Nottingham and the Trent Valley (Darling 2004a, Fig. 10g.141; 2004b). Leary (2008b, 107) has noted this trait as an early indicator amongst the more obviously necked varieties and a similar vessel to the illustrated example has been illustrated from a 1st-century AD group from Old Winteringham (Rigby and Stead 1976, Fig. 74. 7). From Ditch group 2, [261], fill (260).

Dwg 10, Fig. 4.26. IAGR2, JCOR. A rim and shoulder fragment from a jar with a corrugated profile. Similar examples are known from Nottinghamshire and South Lincolnshire, for example from Margidunum, Notts. and Norton Disney, Lincs. (Oswald 1937, Fig. 1.2 and 5; Todd 1968, Fig. 1.6). Ditch group 2, [261], (260).

Dwg 11, Fig. 4.26. IAGR2, BNAT. A typical native tradition bowl with carbonised external deposit with a slightly cordoned rim (see discussion of Dwg 9). From Ditch group 2, [247], (246).

Dwg 12, Fig. 4.26. IAGR2, BNAT. A typical native tradition bowl with a slightly cordoned rim (see discussion of Dwg 9) including many small fragments. From pit [296], fill (295).

IAGR3 A hard handmade or wheel-finished fabric with pale orange or dark grey surfaces, including abundant angular grog/mudrock and sparse rounded quartz. No forms could be identified.

IAGR4 A wheel-finished fabric with dark grey surfaces and a grey core. Inclusions of common grog/mudrock, sparse fossil shell, sparse ferrous rich inclusions and sparse fine silver mica. Most of which were large jars or bowls.

Table 4.2. Samian types recovered from the 2015 excavation.

South Gaulish			Central Gaulish			East Gaulish			Total		
Form	NoSh	Wt (g)	NoSh	Wt (g)	RE	NoSh	Wt (g)	RE	NoSh	Wt (g)	RE
Dr. 31	0	0	1	6	7	1	71	0	2	77	7
Dr. 32	0	0	0	0	0	2	7	4	2	7	4
Dr. 37	1	5	0	0	0	0	0	0	1	5	0
Unident.	0	0	1	6	0	0	0	0	1	6	0
Total	1	5	2	12	7	3	78	4	6	95	11

IAGR5 A reduced wheelmade fabric with abundant rounded quartz and sparse ferrous rich grains. Late 1st- to 2nd-century AD jars with everted rims were the only identifiable forms.

IAGR7 As IAGR1 with the addition of common sand-sized quartz. The pottery attributed to this fabric was probably of late 1st- to 2nd-century AD date.

A small number of sherds of IASH1, IASH3, GRCM and SHCM/GRMC appear likely to be of pre-conquest date. The only identifiable vessel from this group was a native tradition jar (CPN) datable to the Late Iron Age to early Roman period that came from the topsoil interface. The IAGR wares are often known as 'Iron Age Tradition' or 'Trent Valley ware' in the East Midlands (Todd 1968; Darling and Precious 2014) and represent the development from the Iron Age coarse wares in use in the later Iron Age. Evidence from Lincoln suggests they may have remained in use from the 1st until the middle of the 2nd century AD and perhaps longer in some rural areas of the East Midlands (Leary 2008b). In the late 2nd century, many of the large bowls and jars forms that had been produced in these fabrics were produced in wheelmade grey wares. This probably resulted in a decline in such wares which were ultimately replaced by large greyware bowls and late Roman shell-gritted jars in the 3rd century (see below). Following the development of large-scale production of greyware by the South Yorkshire, Nottinghamshire and Lincolnshire industries in the 2nd century, it is likely that IAGR wares made up a smaller percentage of the assemblage by the Antonine period.

Mid to late Roman shell-gritted wares

DWSHT Dales ware fossil shell-gritted fabrics with handmade bodies and predominantly with wheel-finished rims fired to a range of dark brown to grey surface colours (broadly as Tomber and Dore 1998, DAL SH). Only jar forms were evident, all of the standard lid-seated type (inwardly sloped, as Gillam 1970, 157).

SHEL Miscellaneous shell-gritted wares. No diagnostic forms were evident and this group may include early Roman and Dales ware types.

SHEL1 Roman shell gritted ware. A wheelmade dark brown fabric with common coarse fossil shell inclusions (predominantly leached out due to soil conditions). Common rounded quartz and sparse fine silver mica. A 3rd-century or later date would fit with the forms retrieved.

SHEL2 Handmade shell-gritted fabric, broadly as Rigby's 'proto-Dales ware' (Rigby and Stead 1976, 189). Proto-Dales ware types are typically considered to have been produced in the late 2nd to early 3rd centuries.

Other ceramics

MISC Miscellaneous ceramic fragments.

FCLAY Possible fragments of fired clay. All had oxidised fabrics.

Samian ware

By G. Monteil

The samian assemblage is very small with six sherds representing a maximum of five vessels for a total weight of 95 g (Table 4.2). The earliest vessel is South Gaulish (from La Graufesenque, Aveyron, France); it is a decorated bowl (Dr. 37), represented by a single body sherd from Ditch group 3. Three horizontal bands of decoration are visible: a festoon with serrated edge; the tail and back legs of a running animal (perhaps a hare); and a basal wreath. The various motifs are not distinctive or complete enough to allow association with a particular potter or group of potters, but the design of the decoration is consistent with Dr. 37s recovered in the Pompeii hoard and the Cala Culip wreck (Mediterranean, off the coast of Spain) of AD 70–90. The rest of the samian in the assemblage is later, with Central and East Gaulish plain vessels represented in Ditch groups 2, 6 and 7. The types present are typical of the mid/late 2nd to early 3rd centuries: two examples of dish form Dr. 31, including one from Central Gaul in Ditch group 2 and one East Gaulish example from Rheinzabern (Rhineland-Palatinate, Germany) in Ditch group 7; and the rim of a platter form Dr. 32 probably also from Rheinzabern in Ditch group 6. The East Gaulish dish form Dr. 31 from Ditch group 7 presents evidence of repair in the form of a dove-tail slot near the base.

Discussion

The Iron Age inhabitants of much of South Yorkshire and northern Nottinghamshire did not have an abundance of pottery in comparison with their neighbours to the east of the River Trent in Lincolnshire. Much of the later Iron Age pottery found on sites in the vicinity of Doncaster was probably produced in northern Lincolnshire or perhaps southern Nottinghamshire on the basis of fabric and stylistic parallels (Rowlandson 2013). It may be that the inhabitants mostly utilised materials such as iron that was recycled or perishable materials such as wooden vessels (Buckland *et al.* 2001; Cunliffe 2005, Fig. 18.4). A small number of vessels in this assemblage in the IASH1 and IASH3 fabrics suggest that there may have been some limited activity on the site at the time of the conquest. Small sherds from a further three vessels (GRCM and SHCM/GRMC) may also represent limited prehistoric activity on the site. On the basis that these sherds are so few and that

they may have been manufactured later in the 1st century AD, it appears likely that the main focus of the settlement activity on the site began after the Roman conquest.

The presence of a Flavian decorated samian bowl from Ditch group 3 and a range of native tradition 'Trent Valley' type wares (most notably IAGR1 and IAGR2) provide good evidence for activity on the site from the late 1st to the 2nd centuries AD. The native tradition fabrics were used to produce jars and large bowls with no examples of tableware in these fabrics from this site.

The majority of the activity on the site appears to have been in the 2nd to 3rd centuries with perhaps some limited activity continuing on into the 4th century. A small quantity of Central and East Gaulish samian was present, all from dishes and bowls. Dressel 20 amphorae sherds were also present in small quantities perhaps indicating some limited access to imported olive oil. Mortaria, as would be expected for a local rural site of this period were restricted to a small number of vessels from the Mancetter/Hartshill and South Yorkshire/ Cantley industries. Small quantities of Derbyshire ware, light fired flagon wares and Black Burnished ware 1 were retrieved from the site. Sherds from Nene Valley colour-coated ware beakers and Castor boxes were also recovered (comprising 1.81% of the assemblage by sherd count) suggesting the use of specialist fine table wares on the site.

The majority of grey wares present were probably made in northern Nottinghamshire at sites such as Worksop (GREY8, Darling 2004a) and South Yorkshire, probably in the vicinity of Doncaster (GREY1, Buckland *et al.* 1980). The range of forms present was similar to contemporary assemblages from this region with jars and large bowl types dominating the assemblage. This is typical of rural sites where it is likely that pottery was primarily used for a kitchen cooking or storage function with only a limited number of specialist ceramic tablewares in circulation at any one time. Small quantities of shell-gritted Dales ware (over 6% by sherd count) were also present, probably datable to the 3rd to mid 4th centuries and deriving from production sites in northern Lincolnshire.

By the middle of the 2nd century pottery use on rural sites around Doncaster appears to have flourished and this was probably sustained through much of the 3rd century. The majority of the pottery from this site fits into this period. By the 4th century, as the local pottery industries appear to have declined, pottery use in the countryside fell away (Buckland and Magilton 2005, 52) either as a result of difficulties in acquiring ceramics, a decline in settlement, or a move away from using such wares (Rowlandson 2013). The pottery recovered from topsoil and interface deposits appears to show that a range of 3rd- to perhaps 4th-century pottery was disposed of on the site. There is increasing evidence of the deposition of ceramics on sites in some form of organised way (Chadwick 2008a; Chadwick 2008b). In the case of this site the material from the topsoil is abundant with much of it apparently retrieved from the area of rectilinear Enclosure 2a. Other sites from the region have evidenced for zoned rubbish disposal but it is unclear how to interpret this concentration of pottery from the upper strata of the site.

It is unlikely that any Roman pottery reached this site in the mid to late 4th century as the characteristic late 4th-century forms that probably arrived from Lincolnshire (e.g. Darling 1977) are not present amongst this assemblage. No East Yorkshire Holme on Spalding Moor grey wares were noted during recording and none of the diagnostic Huntcliff or Crambeck forms that indicate 4th-century activity (Evans 2001a) that were evident during previous investigations in 2004 (Leary *et al.* 2007; see above, p. 33). Pottery that should be dated to at least the later 4th century has been found in South Yorkshire on other sites such as Doncaster (Buckland and Magilton 1986) and Scaftworth (Bartlett and Riley 1958), but did not make it to this site. Despite a general reduction in the quantities of Roman pottery in use on rural sites in this area during the 4th century (Buckland and Magilton 2005, 52), on the basis of the ceramic evidence there were few, if any, sherds present to suggest domestic occupation of this site at this time. It is possible that the inhabitants moved elsewhere during the later 4th century, such as to the site of the 2004 excavation (although very little pottery of this date was found in 2004), with the area of the 2015 site perhaps reverting to agricultural exploitation rather domestic activity. It is also possible that with a diminishing supply of pottery activity continued without the acquisition of new ceramic vessels.

Francis M. Morris writes: in his archive report on the pottery from the 2019–22 excavations, the late Phil Mills used I. M. Rowlandson's archive data to create a table presenting the functional breakdown of the 2015 assemblage. This showed jars comprising 72.8% by rim equivalent, with tablewares (bowls and dishes) at 16.0%, beakers at 7.9% and mortaria at 1.2%. These percentages are similar to those recorded for the 2019–22 assemblage (see below, p. 113) and are within the range for rural sites (Evans 2001b).

Post-medieval and later pottery

By Jane Young

Four sherds were recovered representing four vessels in two different ware types. A Brown-glazed Earthenware

drinking vessel of late 17th- to 18th-century date and a small sherd from a modern White Earthenware jam or lard jar of late 19th- to mid 20th-century date came from the topsoil interface. Two more small White Earthenware sherds of general 19th- to 20th-century date were found in a modern deep pit [298].

Ceramic building material and fired clay

By Jane Young

Twenty-eight fragments (867 g), each representing an individual Roman tile or brick, were recovered from the site. The material is in four quartz-tempered fabrics with fragments in oxidised fine and medium sandy fabrics being the most common. Twenty-seven of the fragments came from a single context in the south terminus of Ditch group 5 of Roman rectilinear Enclosure 2a. One brick had a partial finger-grooved signature. The final piece of Roman tile came from topsoil. Nine further fragments (90 g) of ceramic building material that were either Roman tile or post-medieval tile/drain were found on the site; most of these came from topsoil, but two fragments of possible imbrex were from Roman pit [327].

The site also produced six small pieces (52 g) of fired clay recovered from Roman Ditch group 1 and pits [222] and [349], as well as from topsoil. These fragments are all very abraded featureless lumps in dull oxidised fine to medium sandy fabrics. In addition, two tiny sintered fragments (3 g), probably representing fuel ash slag fused to a sandy soil, were recovered from modern pit [298].

Quern stones

By John Cruse

Fragments of two querns in Millstone Grit were recovered, comprising an almost intact base of a rotary beehive quern from Roman pit [296] within rectilinear Enclosure 2a and a core fragment of another beehive quern base from the north terminus of Ditch group 4 of Roman Enclosure 2a.

The beehive quern base from pit [296] was *c.*98% intact (Yorkshire Quern Survey no. 6815). It weighed 8.5 kg and had a diameter of 270 mm, a maximum height of 70–115 mm, a conical spindle hole with a diameter of 25 mm and a depth of 45 mm. There were two minor removals of *c.*10% of the grinding surface edge. The grinding surface was flat, with random pecking. The exterior surface was neatly peck-dressed into a curved profile, but the *c.*110 x 110 mm basal area was roughly finished and inclined at 20° to the grinding surface.

The beehive quern core fragment from Ditch group 4 comprised 25–30% of a base stone (Yorkshire Quern Survey no. 6816). It weighed 4.5 kg (estimated intact weight 16 kg) and had a predicted diameter of *c.*280 mm, a maximum height of 90 to >135 mm, a spindle hole (drilled) diameter of *c.*25 mm and a depth of 30 mm. This fragment was marked by 100% removal of its grinding surface edge, which presumably occurred prior to the quern being roughly quartered. The grinding surface was flat, with random pecking. The surviving exterior was roughly hammer-dressed and its upper 40–50 mm had been removed by the grinding surface edge damage. The unworked, natural, boulder surface (c.100 mm diameter) on the base was inclined at 25° to the grinding surface.

Beehive querns had their origins in the Middle Iron Age, but they were generally used on settlements of Late Iron Age or Roman date. The lack of any traits linked to Roman-inspired disc querns in this small assemblage suggests that their use was either pre-Conquest, or that their post-Conquest users were uninterested in such technology. The nearest Millstone Grit sources are outcrops some 25–30 km to the west, in the Peak District National Park.

These objects were used for hand-grinding a variety of material, the most common of which was grain to make flour for bread-making. Quern bases of 280 mm diameter are generally 100–250 mm in height and weigh 10–35 kg. The modest height and weight of the two base stones from the 2015 excavation suggests that they were well-used. Both had flat grinding surfaces and generally rounded profiles, with coarsely worked flat bases, typical of Millstone Grit beehives (Heslop 2008, Table 11 and Fig 21). If set in the ground with their bases horizontal, the grinding surface would have been inclined at 20–25°. This basal orientation may have been deliberate (to preferentially direct the flour to one side of the quern), but could have been incidental, with the grinding surface used horizontally and the angled base buried, unseen.

The quern fragment from Ditch group 4 appears to have come from a quern that had been thoroughly decommissioned by the complete removal of its grinding surface edge before then being quartered. It may have been specially deposited in the terminus of a ditch marking the south side of an entrance into the east side of the enclosure. The near complete base stone in pit [296] may also have been specially deposited.

Chipped lithics

By Alvaro Mora-Ottomano

Fifteen chipped lithics of later prehistoric date were retrieved during the stripping of the topsoil in field N8 in 2015. These comprised: two tools, a blade, two

bladelets and ten flakes. Previous fieldwalking surveys also produced evidence of lithic scatters within field N8 (see above, pp. 11–12, 17–20).

All the chipped lithics (except for one chert flake) were manufactured from flint of moderate to good quality and predominantly light mottled grey to grey in colour. The flint is generally consistent with derivation from the various till deposits of eastern Yorkshire (Brooks 2001), although in some cases the degree of patination makes it impossible to identify its original nature. The white chert may originate from the Pennine's outcrops.

The first of the tools is a thumbnail scraper of Early Bronze Age date, which is the only diagnostic datable artefact in the assemblage. Scrapers were probably used for working soft material such as hide, but may also have been used for woodworking (Butler 2005, 49). The second tool is a notched flake, which is likely (but not certainly) of Neolithic–Bronze Age date.

The rest of the assemblage corresponds to irregular waste, which is not closely datable, but most pieces can be assigned to the later prehistoric period (Mesolithic, Neolithic and Bronze Age) on the basis of their overall morphology. The majority of the flakes/blades were removed by direct percussion. The butts are mainly plain, although a reasonable frequency of prepared butts indicates that the core platforms were meticulously prepared. However, there are flakes with morphological traits that are characteristic of Neolithic traditions and fewer flakes with broader butts, pronounced bulbs and minimal platform edge preparation, which are consistent with the less structured methods of core reduction commonly utilised during the Late Neolithic period and Early Bronze Age.

Metal objects

By Alvaro Mora-Ottomano

Only two objects of copper alloy and four iron fragments were recovered from the 2015 excavation. The first of these was a copper-alloy possible coin that came from the topsoil interface; it had a diameter of 17 mm, but was too heavily damaged to obtain any information from X-ray analysis. A single fragment of a copper-alloy buckle was recorded from topsoil; the character of this artefact was not satisfactorily established due to its poor condition. Three corroded iron fragments, one of which may be part of a nail, came from late Roman pit [324]. Another possible iron nail was found in the topsoil interface

Cremated human bone

By Milena Grzybowska

A disturbed/truncated urned cremation burial was recovered from the upper surviving fill of an oval pit [313] situated *c.*40 m south-west of the south-west corner of Roman rectilinear Enclosure 2a. The cremation urn was a heavily fragmented jar, datable to the late 1st to 2nd centuries (Fig. 4.25, Dwg 4), whilst a skull fragment from the cremation gave a C14 date of 24 to 213 cal AD at 95.4% probability, 24 to 178 cal AD at 91.5% probability or 64–129 cal AD at 68.2% probability.

The cremated human bone weighed 65.5 g. This comprised only a small proportion of the amount ordinarily expected from a complete cremation burial (1001.5 g to 2422.0 g: McKinley 1993). This discrepancy could be attributed to the horizontal truncation of the vessel in which the cremation was contained. Fragmentation of the bone was moderate, with 85% of fragments exceeding 10 mm in size. Fragments from a skull and limbs were identified. The robustness of the bones suggests they represented an adolescent or adult. Sex could not be determined and no pathology was observed. No evidence was found to suggest that more than one individual was represented.

Animal bone

By Milena Grzybowska

Introduction

The material consisted of 3 kg of animal bone derived principally from Roman contexts, but also from topsoil. A single animal bone group (ABG) was recorded from a Roman enclosure ditch terminus. Two quantification methods, number of identified specimens (NISP) and minimum number of individuals (MNI), were used to compare the frequencies of the main taxa. Methodology is described in the archive report (Grzybowska 2016).

Animal bone group

The upper fill of the recut north terminus of Ditch group 4 of rectilinear Enclosure 2a contained over 800 g of bone, out of which 370 g comprised the articulated postcranial remains of a young juvenile cattle ABG (Fig. 4.10). The skeleton consisted of partially preserved thorax, forelimbs and hind legs. A proportion of bones manifested recent breaks, which may suggest that the incompleteness of the skeleton resulted from post-depositional processes. No traces of butchery were found on any of the elements, but surface preservation of the bones was scored as 'bad'. The stage of epiphyseal fusion of the bones indicated that the individual was

less than 7 months old (Silver 1969). The finding of a nearly complete skeleton of a juvenile cow at Holme Hall Quarry is consistent with the pattern observed for Romano-British sites in Yorkshire, where over half of the cattle ABGs were complete and all constituted neonatal or juvenile individuals (Morris 2011). The location of this cow in the terminus of a ditch marking the south side of an entrance into the east side of the enclosure might suggest it was ritually deposited.

This context also contained a small portion of an articulating proximal forelimb (proximal ulna and radius) and a mandible of adult cattle, mandibles of two immature cattle individuals as well as a mature mandible and elements of lower front and hind legs of juvenile sheep/goat in addition to *c.*50 fragments of highly fragmented classified or unidentified disarticulated elements. One of the cattle mandibles showed a dental development stage (less than 9 months old) consistent with the age established for the young juvenile cattle ABG (less than 7 months old), whereas the classified remains contained a portion of a skull (*pars petrosa*) of an immature large mammal; however it is not possible to establish whether they constituted the same individual.

Disarticulated remains

The assemblage comprised domesticated species: cattle (*Bos taurus*), sheep/goat (*Ovis aries*)/(*Capra hircus*) and an equid (horse, mule, donkey). Cattle was the most common species (NISP: 41; pooled MNI: 6) followed by sheep/goat (NISP: 26, pooled MNI: 5), equid (NISP: 2, pooled MNI: 1) and bird (NISP: 1, pooled MNI: 1). Among bovids the element most frequently represented was the mandible. Among cattle this was followed by relatively frequent proximal radii and ulnae.

The disarticulated bone from Roman contexts only (i.e. excluding bones derived from topsoil), namely the ditches of rectilinear Enclosure 2a and pits [222] and [296] within the enclosure, comprised cattle (NISP: 32), sheep/goat (NISP: 23), equid (NISP: 1) and bird (NISP: 1).

A small fraction of cattle and sheep/goat specimens displayed butchery marks, however, it is possible that the overall poor surface preservation of the bones obscured further evidence of butchery indicators and/or pathological conditions. The relative abundance of mandibles and ulnae, elements of high density, in the assemblage might be the product of survival bias. Dental wear indicated that cattle may have been slaughtered for beef as young or mature individuals. Ages obtained for sheep/goat suggested culling of young adult individuals once they had reached a good carcass size. Frequent young adult large and small bovid remains may indicate an economy based on meat production; however, the small size of this assemblage precludes any firm conclusions. Metric data obtained for Roman cattle and sheep/goat specimens was consistent with measurements obtained from contemporaneous assemblages within the British Isles (University of Southampton 2003).

Charcoal and plant macrofossil

By Elise McLellan

The report summarizes the results of the analysis of charcoal and plant macrofossil remains sampled from Roman contexts during the 2015 excavation. A total of 56 samples were submitted for analysis, 50 from processed bulk soil samples and 6 consisting of hand-picked charcoal.

The most notable remains were nine pea (*Pisum sativum*) seeds recovered a small pit [313] that contained an urned human cremation. Cereals, pulses, fruits and nuts are increasingly being collected from Roman cemetery contexts across Europe, especially from cremation burials (Palmer and Van der Veen 2002). Pulse assemblages from Roman cremations are commonly dominated by faba bean (*Vicia faba*) and lentil (*Lens culinaris*), although pea (*Pisum sativum*) has been previously identified at sites in France (Bouby and Marinval 2004) and Britain (Davis 2000; Kreuz 2000). In London pea remains (*Pisum sativum*) were identified in Roman cemetery cremations (Davis 2000).

A small assemblage of 46 cereal grains was recovered from the site. Most of these, 38 in total, were recovered from the upper fill of pit [222]; this included spelt and hulled barley as well as indeterminate barley grains, indeterminate wheat grains, 22 indeterminate cereal grains, a single glume base tentatively identified as spelt, and two possibly cultivated oat grains. A single wheat grain was recovered from a lower fill of the same pit. Cereal grains were also recovered in isolated occurrences from the fills of other pits within rectilinear Enclosure 2a. These totalled six grains, four of which were poorly preserved and not identifiable, whilst two were tentatively identified as wheat. A single wheat grain was recovered from an upper fill in Enclosure 2a, Ditch group 2.

The cereal species identified at Holme Hall Quarry (spelt and hulled barley) are typical of Roman settlements in the area (Hall and Huntley 2007). Spelt (*Triticum spelta*) and barley (*Hordeum vulgare*) have been identified at several sites in the South Yorkshire and Lincolnshire area, such as at Dragonby (Van der Veen 1996), Staniwells Farm (Allison *et al.* 1990) where malted grain was identified and North Cave near Brough (Allison *et al.* 1997). At Melton (Huntley 1999), also near Brough, hulled barley, spelt and bread wheat were identified in addition to pea (*Pisum sativum*).

Nine weed seeds were identified in six contexts. A total of four wild grass seeds were identified: two indeterminate wild grass seeds and one possible *Festuca* or *Lolium* (fescue/rye-grass) seed were identified in the upper fill of pit [222], which also yielded 38 cereal grains. These seeds probably represent accidental charring of wild grass growing as a weed amongst cultivated crops. An additional possible *Bromus* sp. (brome) seed and a *Spergula arvensis* (corn spurrey) fruit from rectilinear Enclosure 2a, Ditch group 2 are likely also to result from accidental charring of agricultural weeds. A charred *Persicaria amphibia* (amphibious bistort) seed was recovered from an upper fill of Ditch group 2. Amphibious bistort typically occupies slow flowing water or is a weed of wet cultivated land, and also probably represents the accidental charring of an agricultural weed. A *Juniperus communis* (juniper) fruit and two *Vaccinium myrtillus* (bilberry) fruits were recovered from the fills of three separate pits. This may indicate the consumption of wild foods; it is also possible their presence indicates the gathering of cut heathland vegetation, potentially for use as animal bedding.

The identified charcoal species represent a mixture of short-lived and long-lived species typical of a mixed oak woodland. A total of 11 taxa were identified, the most common were oak (37%), Maloideae (18%) and hazel (12%), followed by (in order of abundance) poplar/willow, ash, birch, beech, cherry, elm and isolated instances of field maple and alder. Woodland management practices and selective use of species as fuel could not be identified due to the small amount of charcoal recovered from most features. A large charcoal assemblage was recovered from the cremation pit [313], representing a range of species and likely representing opportunistic use of wood as fuel, rather than the selection of particular species.

Radiocarbon dating

By Alvaro Mora-Ottomano

Four selected organic remains were sampled and submitted to the Scottish Universities Environmental Research Centre (SUERC) Accelerator Mass Spectrometry (AMS) Facility for radiocarbon dating. The samples were measured by AMS as described by Zondervan and Sparks (1997). The radiocarbon results are given in Table 4.3, and are quoted in accordance with the international standard known as the Trondheim convention (Stuiver and Kra 1986). They are conventional radiocarbon ages (Stuiver and Polach 1977). The calibrations of the results, relating the radiocarbon measurements directly to calendar dates, have been calculated using the calibration curve of Reimer *et al.* (2002) and the University of Oxford Radiocarbon Accelerator Unit calibration program OxCal v4.1 (Bronk Ramsey 1995; 1998; 2001). All samples proved to be of Late Iron Age/Roman date (1st to late 2nd/early 3rd centuries AD) and were consistent with the archaeological dating of the features.

Table 4.3. Radiocarbon dates: 2015 excavation.

Feature	Description	Laboratory code	Material	Radiocarbon age	δ13C	Calibrated radiocarbon age 68.2% probability	Calibrated radiocarbon age 95.4% probability
[292]	Roman pit within rectilinear Enclosure 2a	SUERC-67574 (GU40998)	Charred grain: Triticum sp.	1927 ± 29 BP	-23.1 ‰	33–36 cal AD (2.3%) 52–90 cal AD (44.9%) 100–123 cal AD (21.1%)	7–132 cal AD (95.4%)
Ditch group 2	Primary ditch of Roman rectilinear Enclosure 2a	SUERC-67578 (GU40999)	Charcoal: Betula sp.	1925 ± 29 BP	-26.4 ‰	53–91 cal AD (44.2%) 98–124 cal AD (24.0%)	7–133 cal AD (95.4%)
[313]	Roman pit for human cremation	SUERC-67651 (GU40997)	Cremated bone: human	1905 ± 32 BP	-22.4 ‰	64–129 cal AD (68.2%)	24–178 cal AD (91.5%) 189–213 cal AD (3.9%)
Ditch group 4	Recut ditch of Roman rectilinear Enclosure 2a	SUERC-67734 (GU41082)	Animal bone: cattle	1899 ± 32 BP	-22.4 ‰	67–131 cal AD (68.2%)	29–39 cal AD (1.9%) 50–214 cal AD (93.5%)

Chapter 5

The excavations of 2020–22

Introduction

This chapter presents the results of the archaeological strip, map and sample excavations and watching briefs undertaken in March 2020 to September 2022 in four adjacent arable fields across a continuous open area of 25.8 ha (Figs 1.2 and 5.1). This work was conducted by Archaeological Research Services Ltd (ARS Ltd) on behalf of Breedon Aggregates. Fieldwalking and geophysical surveys of these fields were previously undertaken by ARS Ltd in 2014–15 and indicated that there was high potential for archaeological remains dating to the Roman period, and perhaps the Late Iron Age, to survive, including a probable field system, a north–south trackway and enclosures (see above, pp. 13-21, Figs 2.2–2.7).

The four fields investigated in 2020–22 lay on the west side of the north–south orientated Rakes Lane in an area of proposed limestone quarrying known as Cockhill West. They comprised:

- Field N1 (4.7 ha): this occupied the south-east part of Cockhill West and was subject to a strip, map and sample excavation.
- Field N5/N6 (9.6 ha): this formed the north-east and centre-north parts of the area investigated. The eastern half of this field was subject to a strip, map and sample excavation, the western part to a watching brief.
- Field N2/N3 (14 ha): the largest field in Cockhill West, comprising the centre-south and south-west parts of the area. It was subject to a strip, map and sample excavation.
- Field N4 (7.8 ha): the north-western field, which was investigated by means of a watching brief.

Although these fields had a combined area of 36.1 ha, the area of archaeological investigations was limited to the then permitted extraction area of 25.8 ha. The northern and western fringes of the Cockhill West fields were not investigated. The fields in the 2020–22 excavation area were bounded to the west by Cockhill Lane (part of the B6094 road), to the north-west by the M18 motorway, to the north by two more agricultural fields (which lay south of the motorway) and to the south by Long Gate (also part of the B6094), with the existing working quarry beyond (Fig. 1.2).

The Late Iron Age/Roman sub-circular enclosure excavated by ARCUS in 2004 (Enclosure 1, see above, pp. 22-6) was situated *c.*450 m to the south-east of the south-east corner of field N1. The 2015 and 2019 excavations at Cockhill East lay immediately east and north-east of the 2020–22 site on the opposite side of Rakes Lane (see above, pp. 42–68).

A detailed archive report providing comprehensive descriptions of all contexts from the 2020–22 excavations and analysis of the artefacts and the human, faunal and palaeoenvironmental remains recovered is available online through the Archaeology Data Service (Morris 2024).

The archaeological features were cut into natural limestone bedrock. They were typically sealed by modern topsoil and in some lower eastern parts of the site (parts of fields N1 and N5/N6) also by a post-medieval subsoil, both of which were stripped off by machine. An archaeological phased plan of the 2020–22 excavations is presented in Fig. 5.1, with more detailed plans of different parts of the excavation area in Figs 5.2–5.5. The archaeological features included many ditches, which were heavily truncated and largely survived as numerous small lengths of ditch. Whilst nearly all the surviving ditch segments were assigned cut numbers, and are shown in the Figs 5.2-5.5 plans, only those of significance are individually discussed in the text below. Aerial views of the excavations after stripping of the topsoil are provided in Figs. 5.6–5.8.

Prehistoric palaeochannels/palaeovalleys (natural)

Various silt-filled palaeochannels or palaeovalleys were found across the site, cut into and overlying the natural limestone bedrock. These natural features produced no finds indicating human activity or any other dating evidence, having formed as part of outwash

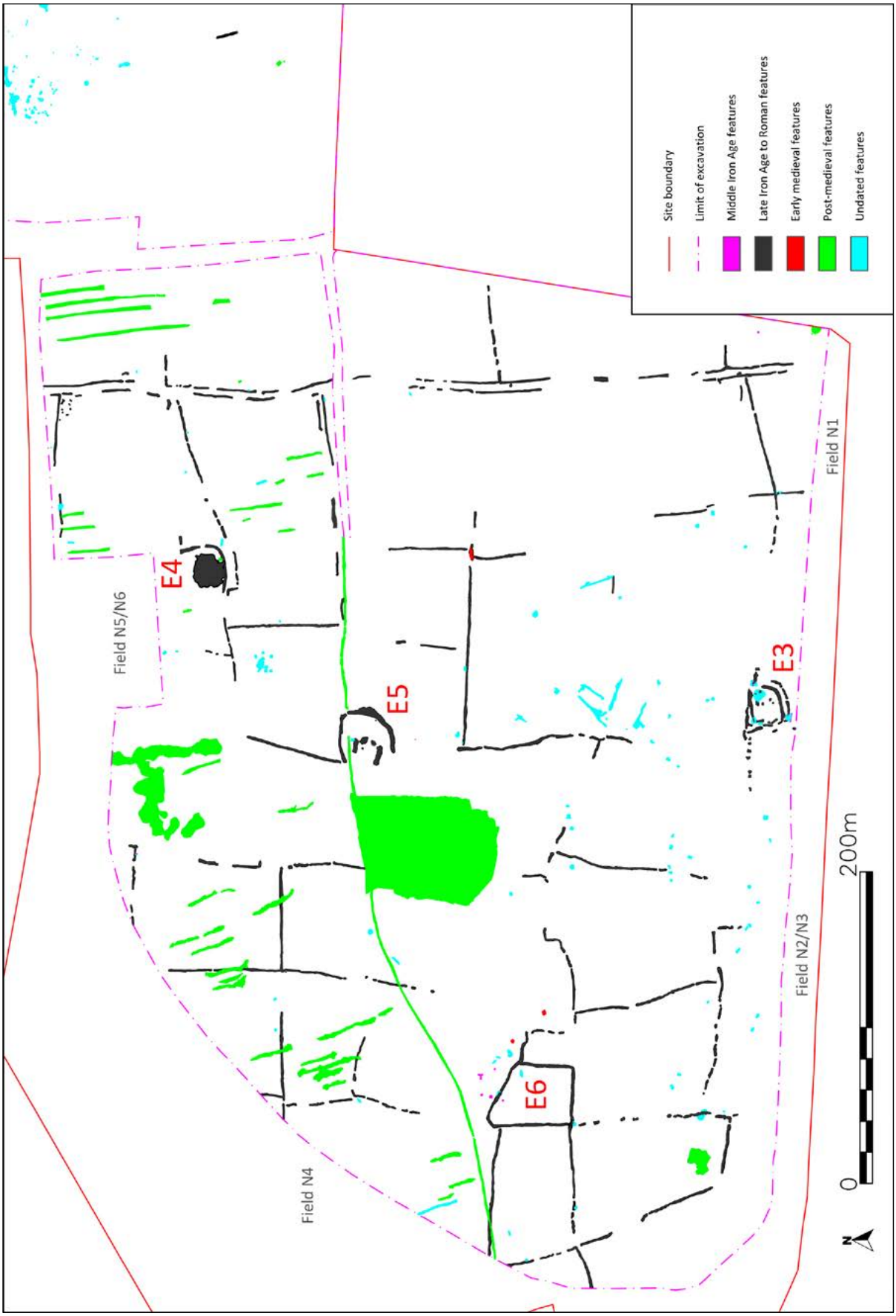


Fig. 5.1. Archaeological phased plan of the 2020–22 excavations at Holme Hall Quarry.

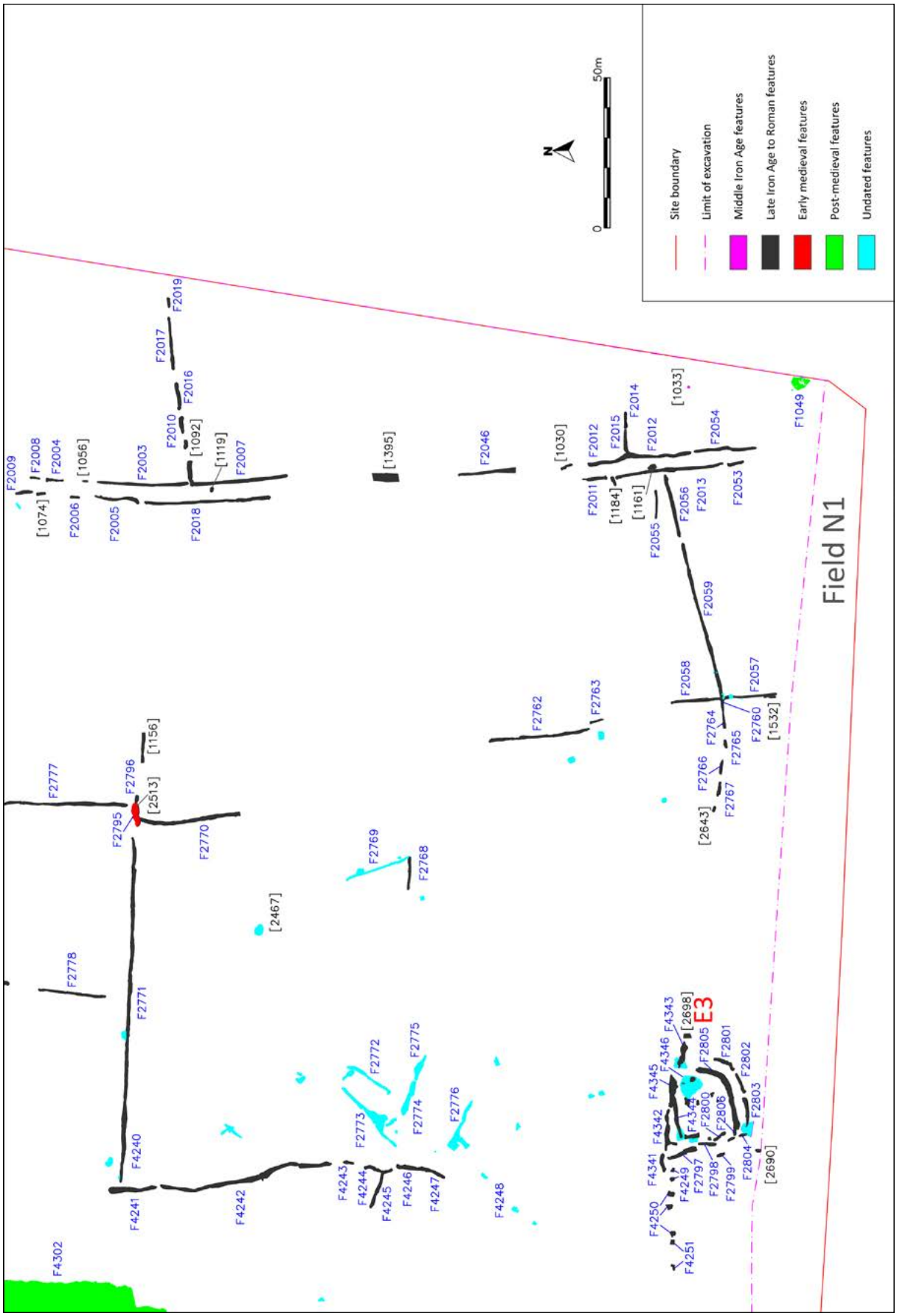


Fig. 5.2. Archaeological phased plan of the south-east part of the 2020–22 excavation area in parts of fields N1 and N2/N3.

Fig. 5.3. Archaeological phased plan of the north-east part of the 2020–22 excavation area in parts of fields N1, N2/N3 and N5/N6.

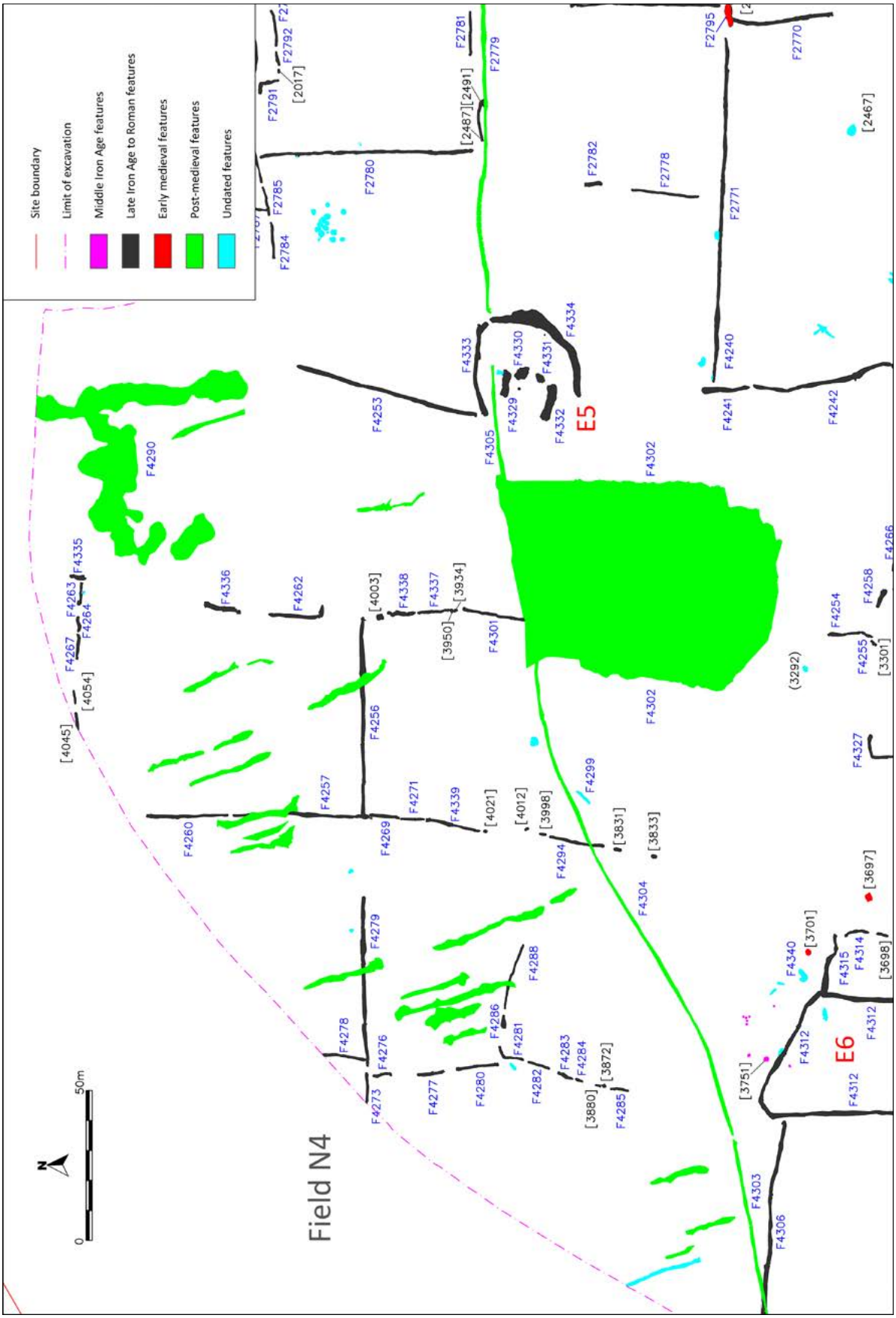


Fig. 5.4. Archaeological phased plan of the north-west part of the 2020–22 excavation area in parts of fields N2/N3, N4 and N5/N6.

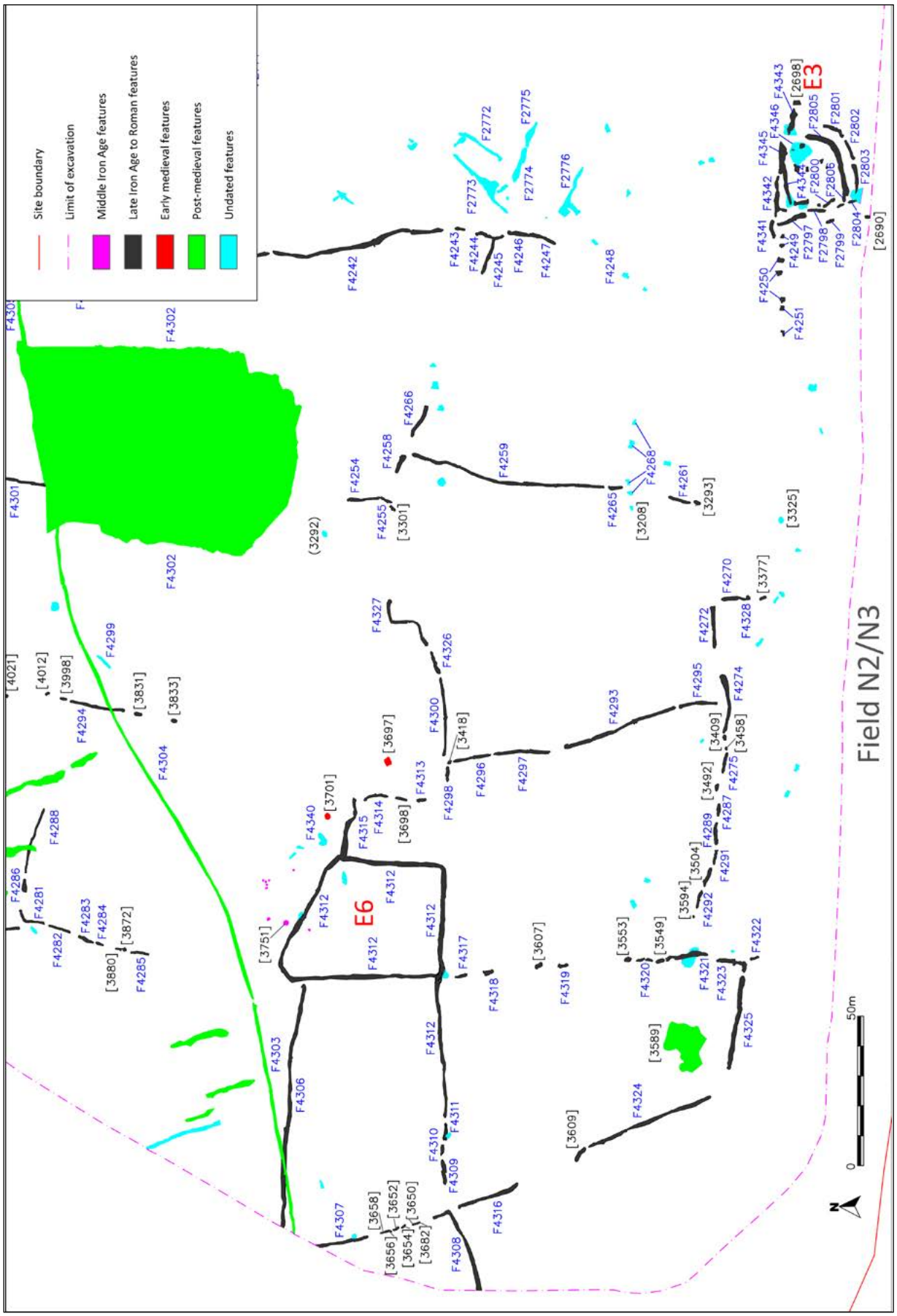


Fig. 5.5. Archaeological phased plan of the south-west part of the 2020-22 excavation area in parts of fields N2/N3, N4 and N5/N6

Fig. 5.6. Aerial view of field N1 after topsoil stripping in 2020, looking south. The ditches of the Late Iron Age to Roman north–south droveway can just be made out running down the centre of the field (from bottom to top), whilst the dark outline of a prehistoric palaeochannel/palaeovalley runs across the field from north-west to south-east to (right to left).

Fig. 5.7. Aerial view of the east part of field N2/N3 after topsoil stripping in 2021, looking north-east.

Fig. 5.8. Aerial view of the west part of the site after topsoil stripping in 2022, looking south-west over fields N5/N6 (foreground, centre), N4 (right) and N2/N3 (top). The green area in the centre of the stripped fields is an infilled post-medieval quarry F4302 in the north part of field N2/N3.

Fig. 5.9. North-west-facing section of prehistoric palaeochannel/palaeovalley F1391. Scales 2 x 2 m in 0.5 m graduations. The line of the top of this section in marked in red next to the L7 label on Fig. 5.10.

deposits as the sands and gravels were laid down during deglaciation in the Palaeolithic period. Several were cut by Late Iron Age or Roman field ditches. Their fills often included rounded river stones/water-rolled pebbles and it possible that similar pebbles found occasionally in the fills of later features may ultimately have derived from the disturbed fills of palaeochannels/palaeovalleys.

A large example was uncovered during soil stripping in field N1 (Fig. 5.6). It appeared to run north-west to south-east across the field for at least 167 m and varied in width between 16 m and 46 m. This feature was picked up in the geophysical survey of 2014–15 (see above, p. 15, Figs 2.2 and 2.3, Anomalies L7 and L7a). A machine slot was excavated through part of this palaeochannel, which was filled with silts and at least 2.72 m deep, although the base was not reached (Fig. 5.9; for drawn sections, see 2020 site archive, Sheets 135–38). Further north-west another possible part of the palaeochannel was machine excavated; this was only 0.40 m deep and it was cut by east–west Late Iron Age/Roman field ditch [1156].

A number of paleochannels or palaeovalleys were also found across field N2/N3, several of which were visible in the geophysical survey of 2014–15 (see above, p. 14, Figs 2.2 and 2.3, e.g. Anomalies C2, C3 and C18). A few possible palaeochannels/palaeovalleys were recorded in field N5/N6 and one in field N4.

The two main palaeochannels/palaeovalleys identified on the site (Anomaly L7 in field N1 and Anomaly C3 in field N2/N3) are labelled on Fig. 5.10, which shows the geophysical survey data in relation to the distribution of prehistoric chipped lithics and Middle Iron Age pits. There appears to be no obvious correlation between the palaeochannels/palaeovalleys and the lithics, apart perhaps for the Mesolithic lithics, which possibly cluster near these features. There is also no clear connection between the palaeochannels/palaeovalleys and the Middle Iron Age pits: Middle Iron Age pit [1033] in field N1 lies some 60 m to the south of channel L7, whilst Middle Iron Age pit [3753] (and the potentially contemporary group of features near this pit) in field N2/N3 lies *c*.150 m to the north-east of channel C3.

Mesolithic to Early Bronze Age

The earliest human activity was evidenced by 42 chipped lithics (all flint) ranging in date from the Mesolithic to the Early Bronze Age (for detailed discussion, see below, pp. 113-16). These were scattered across the site with possible concentrations in the central and west parts of field N2/N3 and in the west part of field N5/N6 (Fig. 5.57). None appeared to derive from contemporary archaeological features. Most were unstratified (presumably recovered during topsoil stripping), with others residual in Late Iron Age to Roman or later features and deposits. One flake fragment came from an undated feature, apparently of natural origin. Further chipped lithics were found during earlier fieldwalking surveys of the excavation area (see above, pp. 11–12, 17–20 and below, pp. 128–9, for an overall summary).

Middle Iron Age

Middle Iron Age features were found in two areas. These features comprised a possibly isolated pit found near the eastern baulk of the excavation in field N1 and a group of features in field N2/N3. The former possibly related to an otherwise unevidenced settlement that lay to the east beyond the area of excavation. The group in field N2/N3 probably related to a small area of occupation, e.g. a structure or structures, on the site itself.

In the south-east part of field N1, about 10 m west of the eastern limit of excavation, was an isolated small sub-circular pit [1033], with a maximum diameter of 0.76 m and a depth of 0.30 m (Figs 5.2, 5.11 and 5.12). It had a flat/concave base and steeply curving sides. The lower fill included frequent charcoal, two heat-affected limestone rocks, fragments of burnt clay oven lining and one small piece of animal bone. The photograph of pit [1033] does not show any evidence for burning of the natural at the base and sides of the pit (Fig. 5.12), which suggests that the burnt material is derived from a nearby former oven or hearth, not from a fire set within the pit. The upper fill contained a moderate amount of charcoal. A piece of charcoal from the upper fill produced a C^{14} date of 359–149 cal BC at 93.6% probability or 359–116 cal BC at 95.4% probability, indicating that the pit dated to the Middle Iron Age.

In the west part of field N2/N3 there was a group of nine or more possibly Middle Iron Age features. These comprised pits, postholes and possibly short ditches over an area of *c*.30m by *c*.20m (Fig. 5.11). This area of features was *c*.500 m to the north-west of pit [1033]. In this group, a single pit, [3751], was radiocarbon dated to the Middle Iron Age (Figs 5.4, 5.5, 5.11, 5.13, 5.32). Pit [3751] was circular, *c*.1.60 m in diameter and 0.52 m deep. It was situated immediately to the north of a Late Iron Age/Roman rectilinear enclosure or small field/paddock, F4312 (Enclosure 6). This pit produced no finds, but a charcoal sample from its upper fill gave a C^{14} date of 387–204 cal BC at 95.4% probability. Two environmental samples were recovered from the pit and these contained minimal quantities of charred plant remains, including those of false-oat grass tubers, which were likely used a tinder (see below, p. 123).

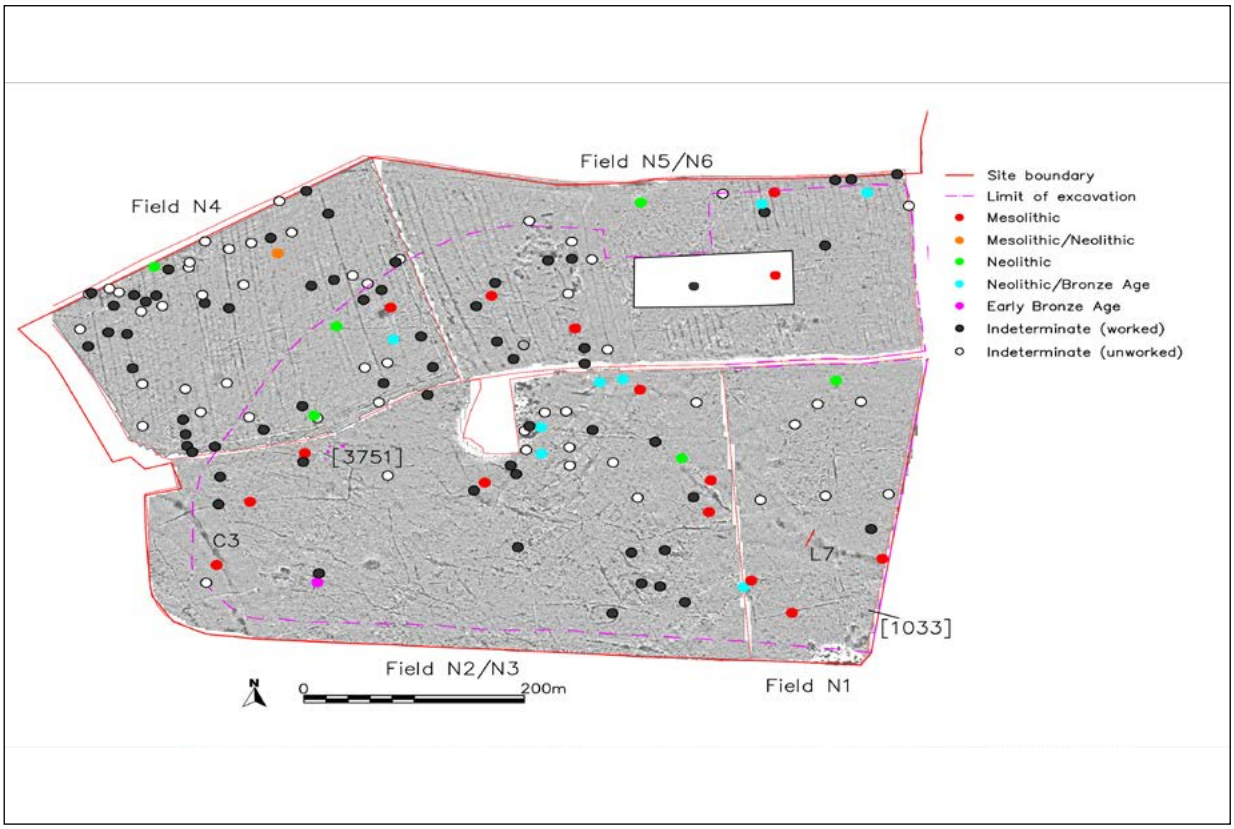


Fig. 5.10. Plan showing the relation of prehistoric chipped lithics (from both excavations and fieldwalking, cf. Fig. 6.2) and Middle Iron Age pits [1033] and [3751] to the two main palaeochannels (C3 in field N2/N3 and L7 in field N1) as recorded in geophysical survey (cf. Figs 2.2 and 2.3). The line of the top of the palaeochannel section shown in Fig. 5.9 is marked on this plan in red next to the L7 label.

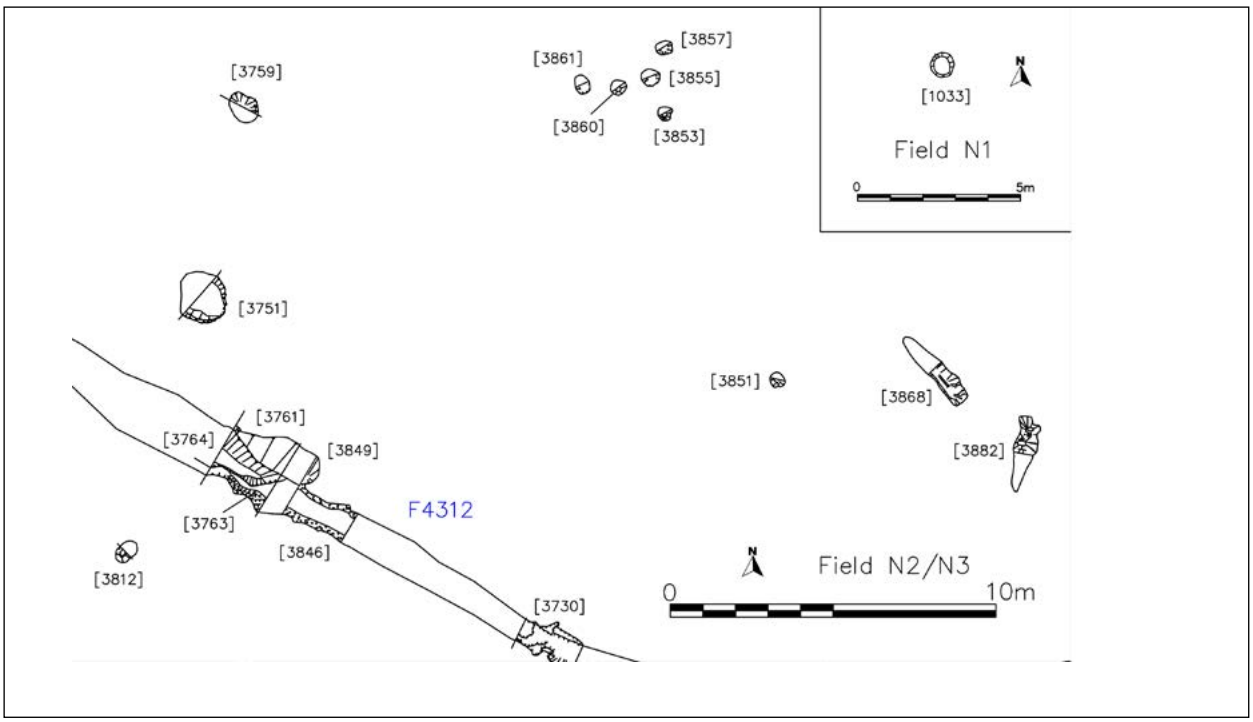


Fig. 5.11. Plans of Middle Iron Age pits [1033] in field N1 and [3751] in field N2/N3. Features near [3751] are also shown; some of these may also be Middle Iron Age in date.

Fig. 5.12. North-facing section of Middle Iron Age pit [1033] containing burnt material. Scale 0.3 m in 0.1 m graduations.

Fig. 5.13. South-east-facing section of Middle Iron Age pit [3751]. Scale 1 m in 0.5 m graduations.

Several possible postholes or small pits, none with finds, lay near pit [3751] (Figs 5.4, 5.5, 5.11, 5.32) and have tentatively been regarded as contemporary with it, perhaps representing a Middle Iron Age structure or structures of some kind: [3759], [3812], [3851], [3853], [3855], [3857], [3859] and [3861].

A short distance further south-east are a number of elongated pits or short ditch segments, which have no finds and do not obviously relate to the Late Iron Age/Roman field system: F4340, [3749], [3868] and [3882]. These features have been regarded as undated, but they may possibly be Middle Iron Age or early medieval; further south-east lies a pit without finds, [3697], which was radiocarbon dated to the late 7th to early 9th centuries AD, and another pit [3701] with a similar fill, perhaps of the same date (see below, p. 97).

Late Iron Age to Roman

Introduction

The principal archaeological features revealed in the 2020–22 excavations were ditches that formed part of an extensive, well-preserved Late Iron Age to Roman rectilinear/coaxial field system, spanning at least 650 m east–west by 495 m north–south (Figs 5.1–5.5). This field system was associated with a north–south droveway, a minor east–west droveway, three curvilinear enclosures and a rectilinear enclosure or small field. These features are discussed in turn below.

Field ditches

Introduction

The rectilinear/coaxial field system was represented by a series of ditches cut into the limestone bedrock. The upper parts of these ditches had evidently been removed by later ploughing, which meant that they typically survived as a series of interrupted segments. In parts of the site some ditches may have been largely or completely ploughed away. It is difficult therefore to make firm statements about the precise layouts and sizes of the original fields. The field ditches were typically aligned approximately east–west and north–south, although there was variation in alignment, especially in

Fig. 5.14. Looking north at the south terminus of Late Iron Age to Roman field ditch segment F2057, [1530], in field N1, with recut [1532] to west (left). Scale 1 m in 0.5 m graduations.

Fig. 5.15. West-facing section of Late Iron Age to Roman field ditch F4272, [3336], in field N2/N3, showing limestone rubble in fill. Scale 0.3 m in 0.1 m graduations.

the west part of the site further away from the north–south droveway. Some key east–west and north–south boundaries, occasionally with offsets, appear to form the boundaries of several different fields, indicating a significant degree of regularity. The fields are typically about 60–90 m wide east–west by 80–100 m north–south, i.e. about 0.5–0.9 ha in area, although there is variation, with smaller and possibly larger fields also present. No clear evidence for different phases of the field system was identified, although parts of a few field and enclosure ditches were recut and the north side of one of the curvilinear enclosures (D-shaped Enclosure 3) was constructed against, and was partly cut into, a pre-existing east–west field boundary. The limited pottery evidence suggests that the field ditches were established in the 1st century AD and filled up into the Roman period.

Field N1

A number of field ditches were found across N1 to east and west of the north–south droveway (Figs 5.1–5.3). The fields along the west side of the droveway appear to have ranged in east–west width between 77 m and 105 m, with the northernmost example possibly being 101 m east–west by 83 m north–south.

Several of the east–west field ditches ran up to the sides of, and were clearly in use with, the north–south droveway. For example, in the central north-east part of N1 (*c*.69 m from the eastern baulk of the excavation), a field ditch appeared to run into and was presumably contemporary with the east ditch of the droveway, segment F2007. In the south-east part of N1, the fill of the west end of field ditch F2015 was apparently cut by a segment of the east ditch of the droveway, F2012; whilst this might suggest that field ditch F2015 pre-dated the droveway, given that the west end of the field ditch curved south to meet the droveway, it is perhaps more likely that the droveway was in fact earlier than or contemporary with the field ditch and that the droveway ditch was recut at this location. A short distance further south-west, field ditch F2056 ran to a point only 1.20 m west of a segment of the west ditch of the droveway, F2055 (Fig. 5.2).

Near the southern baulk of the excavation, north–south field ditches F2057 and F2058 and east–west field ditches F2059 and F2060 crossed at right angles and appeared to be contemporary; the south-west part of their junction/crossing was excavated and this contained a single fill, which indicates that F2057 and F2060 were open at the same time. No certain evidence for any recutting of field ditches was recorded, except for ditch segment [1532], which had a surviving length of 4.00 m and was probably a recut of an infilled part of north–south ditch F2057 (Fig. 5.14).

The fills of the field ditches included virtually no finds, apart from a residual flint end scraper of probable Mesolithic date in F2059 and a probably Roman iron nail and a few fragments of animal bone in F2055.

Five possible shallow pits were cut into field ditches F2057 (one at the junction with F2060) and F2059. None of these pits produced finds and they are regarded as undated.

Field N5/N6

Several field ditch segments were found in N5/N6 (Figs 5.1, 5.3 and 5.4). The fields in the west part of N5/N6 appear to be about 65–85 m wide east–west, although those immediately to the west of the north–south droveway might be considerably wider. Several fields appear to measure about 70–90 m north–south.

A couple of short ditch segments that don't line up with or obviously relate to other field ditch segments have

been regarded as undated (F2022 and F2042), but one or both of these might be remnants of disturbed Late Iron Age/ Roman field ditches.

Only one field ditch cut into an earlier feature. This was east–west ditch segment F4263, which cut a possible tree throw that produced no finds. A possible posthole, 0.60 m in diameter and 0.16 m deep, was also noted in the base of the same ditch segment, but it seems likely that this feature actually related to rooting from the immediately adjacent tree throw.

Three of the east–west field ditches in the east part of N5/N6 clearly ran out from the north–south droveway and were in use with it. In one of these cases, a segment of the east ditch of the droveway, F2026, turned east at an approximate right angle and ran directly towards east–west field ditch segment F2033. In another case, a segment of the west ditch of the droveway, F2043, turned to the west at an approximate right angle and continued as field ditch F2044 (the fills at and on either side of the angle appear to be the same/contemporary). A third field ditch, comprising segments [1277], F2030, F2036, F2034, F2041, etc., ran west-south-west from the west side of the droveway, although in this case no junction with the droveway was observed. This ditch seems to have respected Enclosure E4 and ran around it to the south (Fig. 5.3).

Fig. 5.16. Late Iron Age to Roman north–south droveway, north-north-west-facing section of east ditch segment F2003, [1058], in field N1. Scale 0.5 m in 0.1 m and 10 mm graduations.

In the western part of N5/N6, the westernmost recorded part of east–west field ditch F4256 was cut by north–south field ditch F4257. As these two ditches intersected approximately at right-angles and both appeared to form part of a structured field system, it seems most likely that they were in use together. The base of F4256 had perhaps silted up prior to the recutting of F4257. Field ditches were clearly being recut in this part of the site: the eastern part of F4256 and the north end of field ditch F4269 (which represented the continuation of F4257 immediately south of its junction with F4256), were both recut. Further east, part of north–south ditch F2780 appears to have been recut after a fill had developed.

A small amount of pottery was recovered from only five field ditch segments in N5/N6. This includes: a single body sherd of South Yorkshire greyware of broad Roman date from a primary fill of F2029 (discussed with the north–south droveway, below, p. 83-4); 212 body sherds of Lincolnshire wheelmade shell-tempered ware (G16), probably from a single vessel of 1st- to mid 2nd-century AD date, from [3934]; 58 sherds from a North Lincolnshire shell-tempered ware wide mouth jar of 1st- to mid 2nd-century AD date (G15/03; Fig. 5.45) from a second/upper recorded fill in F4338; five body sherds of Dorset Black-burnished ware, with acute lattice decoration suggesting a Hadrianic (early to mid 2nd century) date, from a second fill in F2791; and a rim of a South Yorkshire greyware bowl datable to the mid 2nd century (R112/21) from F2039. F2039 also included a few small nodules of possible iron smithing slag (see below, p. 118).

[3934] was a short ditch segment or pit that formed part of a north–south field boundary with F4301 and F4337, etc. (Fig. 5.4). It was situated *c*.65 m west-north-west of horseshoe-shaped Enclosure 5. The fill of this feature included a fragmentary pottery vessel, described in the

previous paragraph, as well as a few small fragments (3 g) of cremated human bone (from a skull and limb(s)). It is tempting to suggest that these bones were originally buried in the pottery vessel and were subsequently disturbed, but no association between pot and bones was noted in the site records and the low weight and poor condition of the bones suggests that they were probably redeposited in the ditch/pit (see below, p. 119). A C^{14} sample from the human bone gave a date of 22–204 cal AD at 95.4% probability. A few fragments of animal bone were found in some other field ditches.

Only a handful of later features were cut into the field ditches: in the north-eastern part of the excavation area near the northern baulk, F2020 and F2021 were both cut by a big undated pit (Fig. 5.3). The east end of F2041, to the east of Enclosure 4, was cut by an apparently modern rooting disturbance (Fig. 5.3). The fill of part of north–south field ditch F2780, to the south-west of Enclosure 4, was cut by a probable tree throw. North–south field ditch F4301, to the west of Enclosure 5, was cut to the south by a large post-medieval quarry pit, F4302 (Fig. 5.4). In the west part of N5/N6 several post-medieval furrows appear on plan to have cut across some of the field ditches.

Field N2/N3

A large number of field ditch segments were found in N2/N3 (Figs 5.1–5.5 and 5.15). The Late Iron Age/Roman fields in N2/N3 are typically about 60–90 m wide east–west by 80–100 m north–south, although one irregular field narrowed to 45 m and another widened to 98 m east–west, whilst a field in the west part of the site, immediately west of a rectilinear enclosure/small field (Enclosure 6), was only 43–54 m north–south.

A few other ditches found in N2/N3, which appeared to have unusual alignments or positions in relation to both Late Iron Age/Roman and post-medieval features. For example, ditches F2772–6 to the north of Enclosure 3, formed two possible conjoined paddocks over a *c.*40m by 30m area and were aligned very differently to the adjacent coaxial fields, being north-east to south-west and perpendicular to that. Other lesser examples included F4248 (running south-west from F2776), F4268 (north-west of Enclosure 3) and F4299 (north-east of Enclosure 6). In the absence of further dating evidence these have been regarded as undated, but some may possibly have been Late Iron Age/Roman.

Seven of the Late Iron Age/Roman field ditches in N2/N3 were cut into palaeochannel or palaeovalley deposits (see above, p. 77; not recorded on figures). Others were also cut into features apparently of natural origin, which produced no finds: east–west ditch F2768 cut a narrow north-west to south-east aligned feature, F2769, which was probably a natural water channel rather than a ditch; part of curvilinear ditch F4327 was cut into a palaeosoil, which had a surviving depth of 0.20 m; whilst four ditches, F2770, F2771, F4240 and F4328, were cut into possible tree throws (the tree throws are not labelled on plan).

A few possible postholes were found in the bases of field ditches and might represent posts that were set in the ditches. These comprise: an example at the south end of north–south ditch F2770 and another in the base of the same ditch, *c.*23 m further north; one in the western terminus of east–west ditch F4240; one in the south side of east–west ditch F4306; and another in north–south ditch segment F4313.

There is evidence that parts of several field ditches were recut: the western terminus of curvilinear ditch F4245 was recut; parts of east–west ditch F4289, north–south ditch F4321 and north–south ditch F4326 were possibly recut; and the fill of the north end of north–south ditch segment F4328 was cut by the south part of ditch segment F4270, which lay on the same line as F4328 and presumably represented a recutting of the northern part of this ditch.

Few finds were recovered from the field ditches. The fill of one part of F4308 on the west edge of the site, produced sherds of a jar (G34/04) in Iron Age/native North Lincolnshire grog-tempered ware, datable to the 1st to mid 2nd centuries AD; 56 base sherds in a similar fabric (G34.1) were found in the fill of the same ditch about 7 m further west. Field ditch F4345, which was infilled prior to being cut by the north ditch of D-shaped Enclosure 3 (see below, p. 85-6), and field ditch F4343, which was located on the north-east side of the D-shaped enclosure, also both included body sherds in Iron Age/native tradition (fabrics G17 and G34.1 respectively). Other field ditches contained only occasional sherds of pottery with a broad late 1st- to mid 3rd-/4th-century date: F2770 included a body sherd of Roman oxidised ware (fabric O15); F4242 had four sherds of whiteware (W01); F4315 had two sherds from a jar (R112/05) in South Yorkshire greyware; and [3833] had a piece of Roman brick and a base sherd in whiteware (fabric W01).

The only other finds were two iron nails from F4255; residual chipped lithics from F4255, F4311 and F4321; and a few fragments of poorly preserved animal bone. A farthing of George II dated 1727–60 and a fragment of oyster shell were recovered from upper fills of F4342 and F4343 respectively, which had clearly been disturbed by post-medieval ploughing. A brown-glazed pot sherd dating to the late 18th-century or later in F4259 was presumably also intrusive (identified by Phil Mills).

Some of the field ditches were cut by later features. The fill of east–west field ditch segment F4345 was cut by the east part of the north ditch, F4344, of the Late Iron Age/Roman D-shaped Enclosure 3 (see below, p. 85-6). The north part of the fill of north–south field ditch F2770 and the fills of adjacent east–west field ditch segment F2796 were cut by F2795, a wear hollow associated with a radiocarbon-dated early medieval pit, [2513], which is set in the hollow (see below, p. 97). East–west field ditch F4306 was cut at an angle by the post-medieval ditch marking the northern boundary of field N2/N3, F4303 (see below, p. 99). Two field ditches, F4307 and F4311, were cut by otherwise undated possible tree throws, which could possibly have represented trees contemporary with the field boundary.

Field N4

Several field ditch segments were found in N4 (Figs 5.1 and 5.4). Three of the fields in N4 appeared to be about 80 m wide east–west and one of these was between 45 m to at least 52 m north–south. North-west to south-east field ditch F4278 (partly in the north-west baulk of the excavation) and east–west field ditch F4279 appear to have been constructed at the same time and shared the same fill at their junction. Only two body sherds of pottery were recorded from the field ditches, both South Yorkshire greyware (fabric R112) of broad Roman date from the same fill of F4280. A scrap of copper-alloy sheet was found in [3872] and an iron nail shaft in F4285. The post-medieval northern boundary of field N2/N3, F4304 (see below, p. 99), almost certainly cut across the line of north–south ditch F4294; however, the intersection of these ditches was not excavated so their precise stratigraphic relationship was not recorded.

North–south droveway

A north–south droveway, represented by a series of ditch segments, was recorded running across the full lengths of fields N1 and N5/N6 over a distance of 489 m (Figs 5.1–5.3, 5.6 and 5.16). It ran approximately along the 90 m AOD contour on ground sloping gently down from west to east. The droveway was 3.1–5.5 m wide between its ditches.

The droveway ditches were disturbed by later ploughing and they survived as a series of fairly shallow interrupted segments. Their fills often included limestone blocks, probably derived from the collapse or clearance of stone-faced earth or earth and rubble banks that ran alongside the ditches. No finds of any kind were recorded from the ditches, presumably indicating a low intensity of occupation in the surrounding area, and no certain evidence for their recutting was observed. A single possible posthole was found in the base of a segment of the west ditch of the droveway in field N5/N6, F2009.

A probable area of wear, [1119], lay within the droveway in field N1. Within the wear hollow (which had surviving dimension of 1.69 x 1.04 m and a depth of 0.08 m) there were ten fragmentary iron nails, probably hobnails of Roman date (see below, p. 117, Fig. 5.64). These hobnails could have derived from a single discarded or lost shoe and indicate that the droveway was in use during the Roman period. Another possible wear hollow or pit, [1161], was recorded 170 m further south within the droveway. This second possible wear hollow was 2.70 x 1.80 m and 0.40; it produced no finds.

The droveway was in use with a system of field ditches, which has been described above (pp. 79-83). No certain entrances into the droveway from the adjacent fields were observed in N1; however, a short ditch segment [1184], 3.20 m long east-north-east to west-south-west, lay in an apparent gap in the west side of the droveway and perhaps represented part of an entrance. Another possible entrance in the west side of the droveway might be represented by a *c*.2 m gap between droveway ditch segments F2005 and F2018, with the southern end of F2005 appearing to curve round towards the west; this gap lay immediately north of the approximate point that east–west field ditch [1156] would meet the droveway if its line is projected further east.

In field N5/N6, there are several possible interruptions in the droveway ditches, which might represent entrances into the droveway from the adjacent fields; however, we should bear in mind that some of these apparent gaps could be a result of disturbance by later ploughing. One entrance is almost certainly indicated by the presence of a narrow east–west droveway (discussed in detail below, p. 84), which ran west from the north–south droveway for at least 22.80 m, possibly heading towards the Late Iron Age/Roman horseshoe-shaped Enclosure 5.

An elongated pit or curvilinear ditch [1266], which was situated 4.00 m to the east of an apparent gap in the east ditch of the north–south droveway in field N5/N6, could perhaps have been part of a structure that controlled access to/from the droveway. The upper fill of this feature contained a couple of sherds of South Yorkshire greyware (fabric R112) of broad Roman date.

A curvilinear ditch segment, F2029, which ran generally west from the west side of the droveway for 6.29 m in N5/N6, was situated only 4.10 m north of field ditch F2030, which ran west-south-west from the droveway. Ditch F2029 could perhaps form the northern side of another entrance in the droveway, possibly providing access to/from the Late Iron Age/Roman quarry

enclosure (Enclosure 4) *c.*90 m further to the west. The primary fill of F2029 included a single body sherd of South Yorkshire greyware.

The fills of three droveway ditches in N5/N6, F2000, F2001 and F2025, were cut by later features, which all appeared to be natural tree throws with no finds.

East–west droveway

A minor east–west droveway, defined by two ditches *c.*3 m apart (F2047 and F2049), was recorded running west from the north–south droveway for at least 22.80 m in field N5/N6 (Fig. 5.3). A copper-alloy terminal of probable mid 1st- to mid 2nd-century AD date (see below, pp. 116-17, Fig. 5.61) was found in the top of an unexcavated part of the fill of the north ditch, F2049. This terminal was rectangular and one face was decorated with grooves and ridges. Its function is uncertain, but it may have been a ferrule from a spear or staff, or a fitting from a chariot or cart.

On the northern edge of the north-east corner of field N2/N3, a few ditch segments were found (Fig. 5.3) which possibly represent the western continuation of the east–west droveway in field N5/N6. These segments were recorded up to 145 m west of the north–south droveway and appeared to be heading in the direction of horseshoe-shaped Enclosure 5, which is 59 m further west.

The possible droveway ditch segments recorded in field N2/N3 produced no finds. They lay immediately north of and ran approximately parallel to a post-medieval ditch, F2779, which marked the northern boundary of field N2/N3 (see below, p. 99), thus they technically lay along the southern edge of field N5/N6. The easternmost of the possible droveway segments, F2781, was 14.39 m long and lay 3.30 m north of F2779. Further west, was another possible droveway segment, at least 14.00 m long, comprising [2487] and [2491]. The east end of this ditch segment, [2491], appeared to curve towards the south, where it was cut by the post-medieval ditch, F2779. Another possible droveway ditch segment [2489], which was not planned, but was recorded on a section (site archive, S-1305, Sheet 323), lay *c.*1.15 m to the north of [2487].

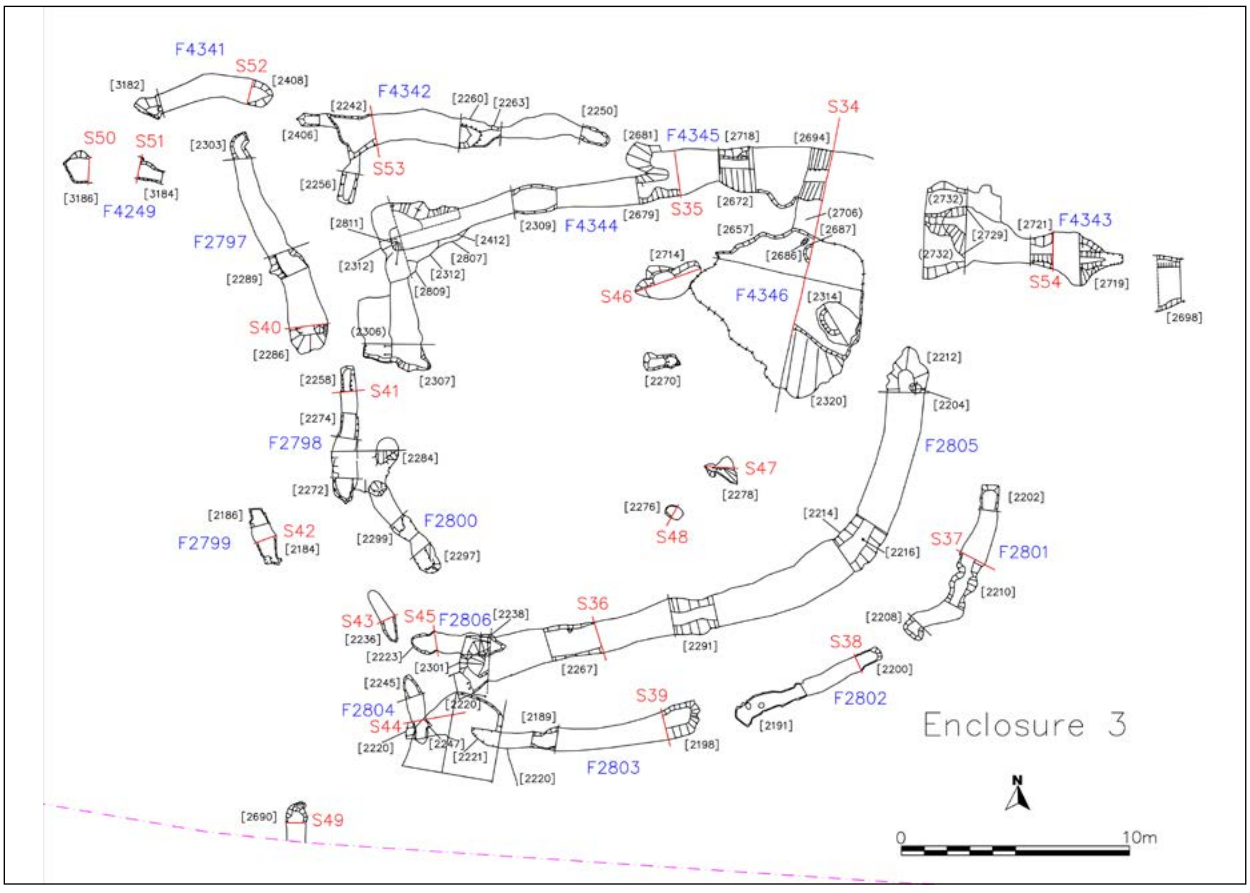


Fig. 5.17. Plan of the Late Iron Age to Roman D-shaped Enclosure 3 in field N2/N3 (for sections, see Fig. 5.18).

Enclosures: introduction

Three curvilinear enclosures were identified in the 2020–22 excavations, all quite different from each other (Fig. 5.1). They comprised: a double-ditched D-shaped enclosure in field N2/N3 (Enclosure 3); a sub-circular ditch enclosing a limestone quarry pit in field N5/N6 (Enclosure 4); and a horseshoe-shaped enclosure with outer and inner ditches in fields N2/N3 and N5/N6 (Enclosure 5). A possible rectilinear enclosure or small field was also recorded in the west part of field N2/N3 (Enclosure 6).

D-shaped enclosure (Enclosure 3)

The geophysical survey of 2014–15 identified a clear double-ditched D-shaped enclosure in the south-east part of field N2/N3, with the north side of this enclosure appearing to be formed by a possible east–west linear field boundary (see above, p. 14, Figs 2.2 and 2.3, Anomaly group C8). The D-shaped enclosure was revealed by excavation in 2021, which confirmed that the north side of the enclosure was constructed against, and was partly cut into, a pre-existing east–west field boundary ([2698], F4343, F4345, F4342, F4341). The D-shaped enclosure was formed by a series of ditch segments (Figs 5.1, 5.2, 5.5, 5.17–5.21). Its outer ditches enclosed an overall area of about 30 m east–west by 22 m north–south (*c*.0.06 ha), and its inner ditches an area of about 20 m east–west by 17.5 m north–south (*c*.0.03 ha). Parts of some of the ditches of this enclosure were possibly recut (e.g. F2805 and possibly F2797).

The north ditch of the enclosure, F4344, ran west-south-west to east-north-east and lay at an angle relative to the adjacent field boundary, which at this point ran west-north-west to east-south-east. The east part of F4344 was cut into and ran along the south side of infilled field boundary ditch F4345 (Figs 5.17 and 5.18, Sections 34 and 35). This indicates that part of the east–west field boundary (F4345) had been cleared away, presumably

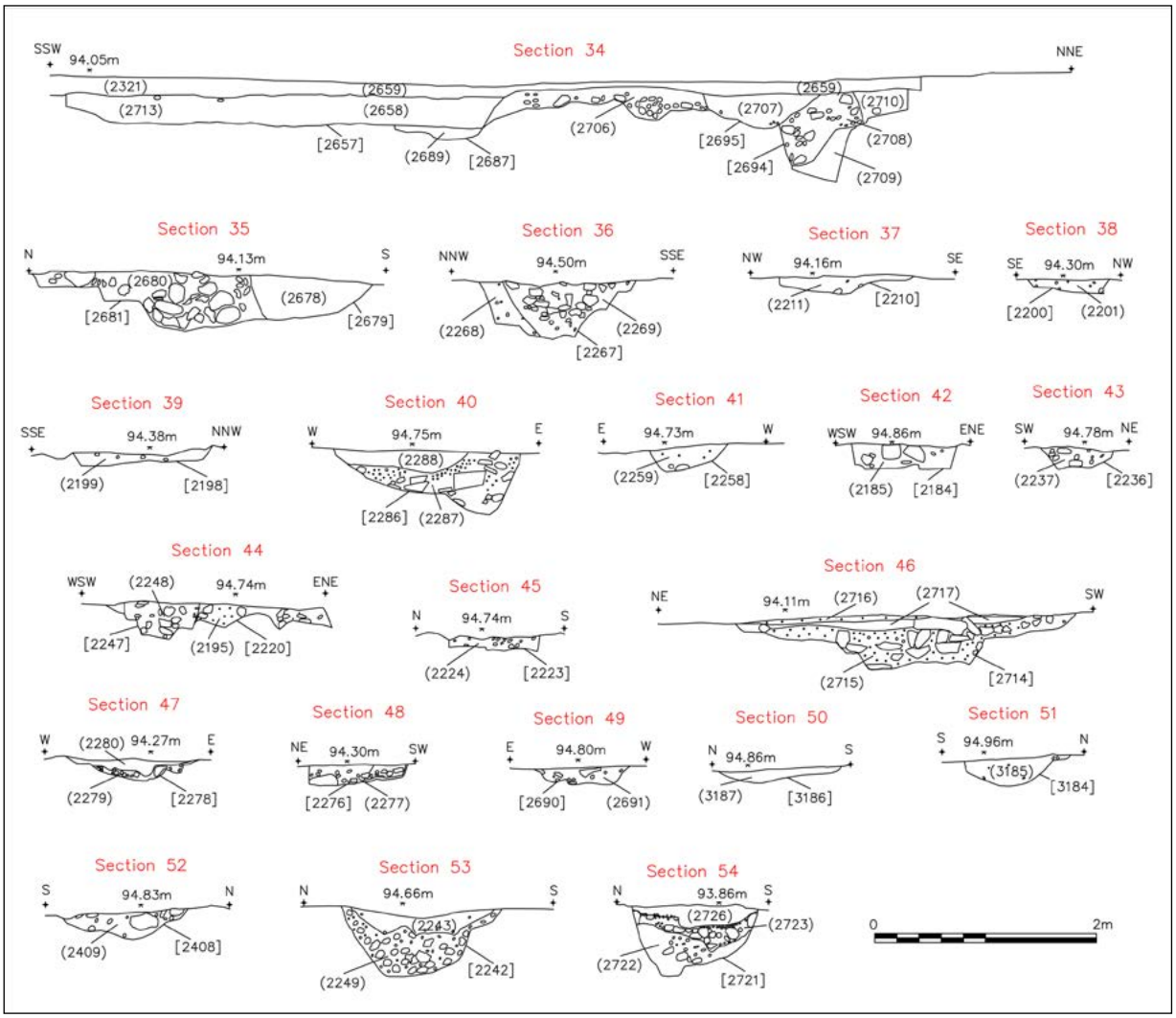


Fig. 5.18. Sections of the Late Iron Age to Roman D-shaped Enclosure 3 and of nearby field ditches (for section lines, see Fig. 5.17).

Fig. 5.19. Aerial view of Late Iron Age to Roman D-shaped Enclosure 3 following topsoil stripping and under initial excavation, looking south-east.

deliberately, prior to the construction of the enclosure. The enclosure was, however, clearly constructed against the line of the field boundary, suggesting that the wider boundary probably remained in use with the enclosure. It is unclear whether any other adjacent segments of the field boundary (e.g. ditch segments F4341 and F4342) were cleared or modified when the enclosure was constructed; the line of the field boundary in this area may have been adjusted slightly at this time, as suggested by the position of F4249 to the south-west of and on a different line to F4341. There may possibly have been an entrance from the north leading into the north-west part of the enclosure between ditch segments F4344 and F2797.

The north ditch of the enclosure, F4344, had moderately sloping sides with a wide flat base (Fig. 5.20). It was at least 19.50 m in length and had a surviving maximum width of 1.20 m and depth of 0.40 m. Its fill comprised red-brown silt with a few small limestone inclusions and had probably been disturbed in at least one place by post-medieval ploughing. The west end of F4344 was cut into the fill of a large, undated, circular possible pit ([2312]/[2410]), which was about 1.10 m in diameter and 0.60 m deep and was itself cut into, and may be related to, an earlier natural feature, [2807], possibly a tree throw.

The eastern and southern sides of the D-shaped enclosure were clearly defined by a large curvilinear inner ditch, F2805, and a smaller curvilinear outer ditch formed by three segments, F2801–3. The distance between the inner and outer ditches was *c.*3 m. It is possible that the area between the inner and outer ditches served as a corral or paddock for livestock. The outer ditch of the enclosure appeared to stop well short of the east–west field boundary (F4343) to the north. There was also a sizeable gap of *c.*4 m between the north terminus of the inner ditch of the enclosure and the field boundary. This suggests that there was an opening from the east into the north-east part of the enclosure.

The inner ditch of the southern and eastern sides of the enclosure (F2805) had a curving length of *c.*27 m. It typically had a surviving width of 1.40–1.80 m and depth of 0.50–0.75 m, with an irregular flat base and steep/moderate irregular/stepped sides. In one place a single possible stake-hole, [2216], was cut into natural limestone at the base of the ditch. An initial ditch silt

included some river-worn stones and charcoal. There were hints that the ditch was in places partially cleaned out/recut following the initial silting, e.g. in the fills of [2267] and [2291] (cf. Fig. 5.18, Section 36; Fig. 5.21). The upper and main fill of the ditch included many large limestone blocks, perhaps derived from the collapse or clearance of a stone-faced earth or earth and rubble bank that lay on the inner (north) side of the ditch (Fig. 5.21).

The outer ditch of the southern and eastern sides of the enclosure was formed of three segments, F2801–3, over a total curving distance of *c*.27.90 m. Features 2801–3 typically survived only 0.70 to 1.20 m in width and 0.11–0.17 m in depth. They had flattish or slightly rounded bases with steep sides and were filled by red/yellow-brown silt with occasional limestone. The west end of F2803, [2221], was cut into the fill of a large undated pit or natural feature [2220] that produced no finds. Two possible stake-holes [2192] and [2196] were cut into the base of F2802.

On the west side of the enclosure, the northern part of the inner ditch was probably represented by [2809] and [2307], which ran south for *c*.5 m from the western terminus of the north ditch of the enclosure, F4344. [2809] had a surviving width of 0.60 m and a depth of only 0.09 m. It had concave sides and a flat base and was cut into the fill of the undated pre-enclosure pit [2312]. Some 3 m to the south lay [2307], which had a width of 1.20 m and a depth of 0.26 m. [2307] had steep sides and a wide flat base and it was cut partly into the fill (2306) of a possible tree throw.

The northern part of the outer ditch of the west side of the enclosure was formed by F2797, a north-north-west to south-south-east aligned ditch segment, which lay 3.00 m to the west of [2307], and 3.80 m to the west of the western terminus of F4344. Feature 2797 was *c*.10 m in length, 1.68 m wide and 0.56 m deep, with an uneven/irregular base and gradually/moderately sloping sides cut into the natural limestone. It was filled by red/yellow-brown silt, typically with much limestone; the upper part of the fill had possibly been disturbed by post-medieval ploughing. There is evidence for a possible recut in one section of this ditch [2286] (Fig. 5.18, Section 40). Feature 2797 ran up to the line of the east–west field boundary, but had no stratigraphic relationships with any of the field ditch segments.

The geophysical survey of 2014–15 appeared to indicate that the south-west part of the D-shaped enclosure also had inner and outer ditch segments (see above, p. 14, Figs 2.2 and 2.3, Anomaly group C8); however, the various short ditch segments revealed in the excavation of this area were difficult to interpret.

North–south ditch segment F2798 lay a short distance to the south of and between the south ends of F2797 and F4344. Feature 2798 was *c*.6.00 m long, 1.02 m wide and 0.28 m deep. It had an irregular flattish base and was filled by red-brown silt with some limestone blocks, which were possibly deposited into the ditch from the west (i.e. in the unpublished section for [2272]). It is

Fig. 5.20. Late Iron Age to Roman D-shaped Enclosure 3, east-north-east-facing section of north ditch F4344, [2309]. Scale 0.3 m in 0.1 m graduations.

Fig. 5.21. Late Iron Age to Roman D-shaped Enclosure 3, west-south-west-facing section of curvilinear inner ditch segment F2805, [2267]. Scale 1 m in 0.5 m graduations.

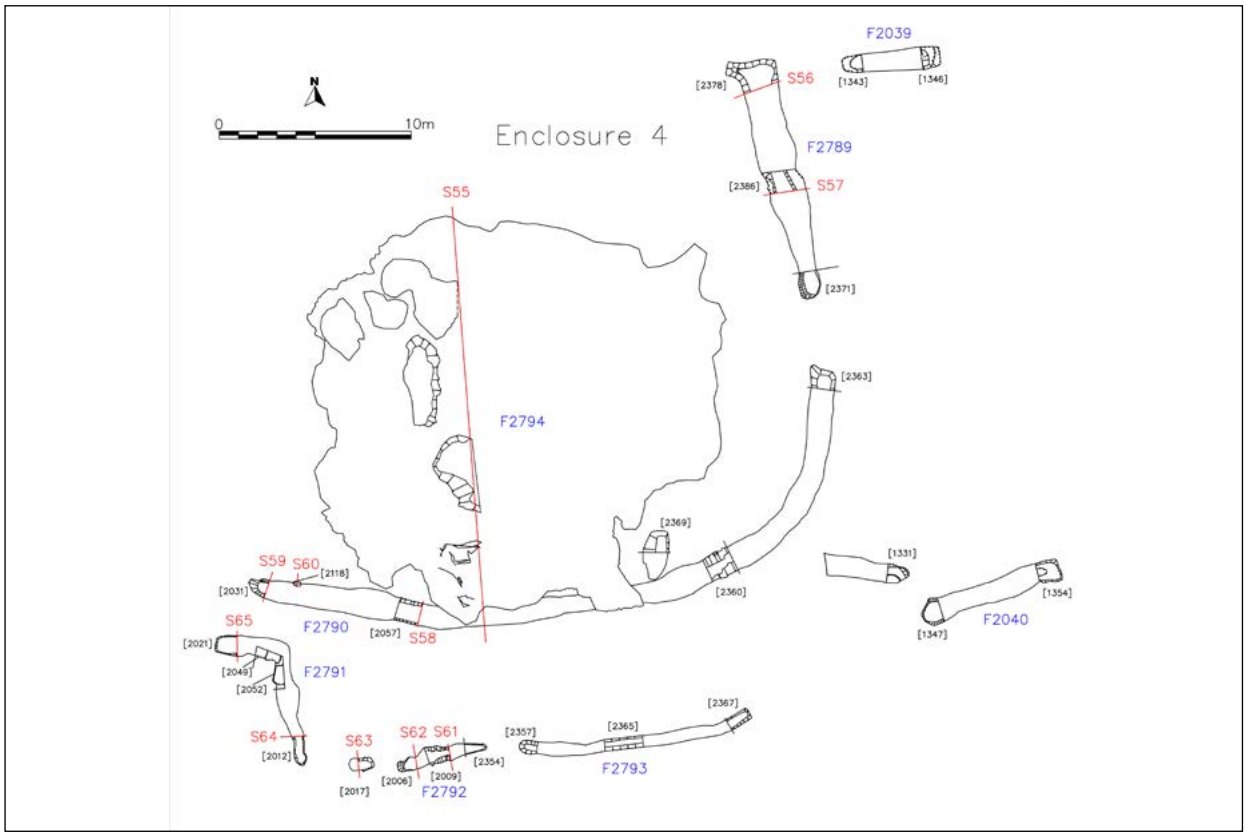


Fig. 5.22. Plan of the Late Iron Age to Roman sub-circular Enclosure 4 (ditches F2789 and F2790) and Roman quarry (F2794) in field N5/N6 (for sections, see Fig. 5.23).

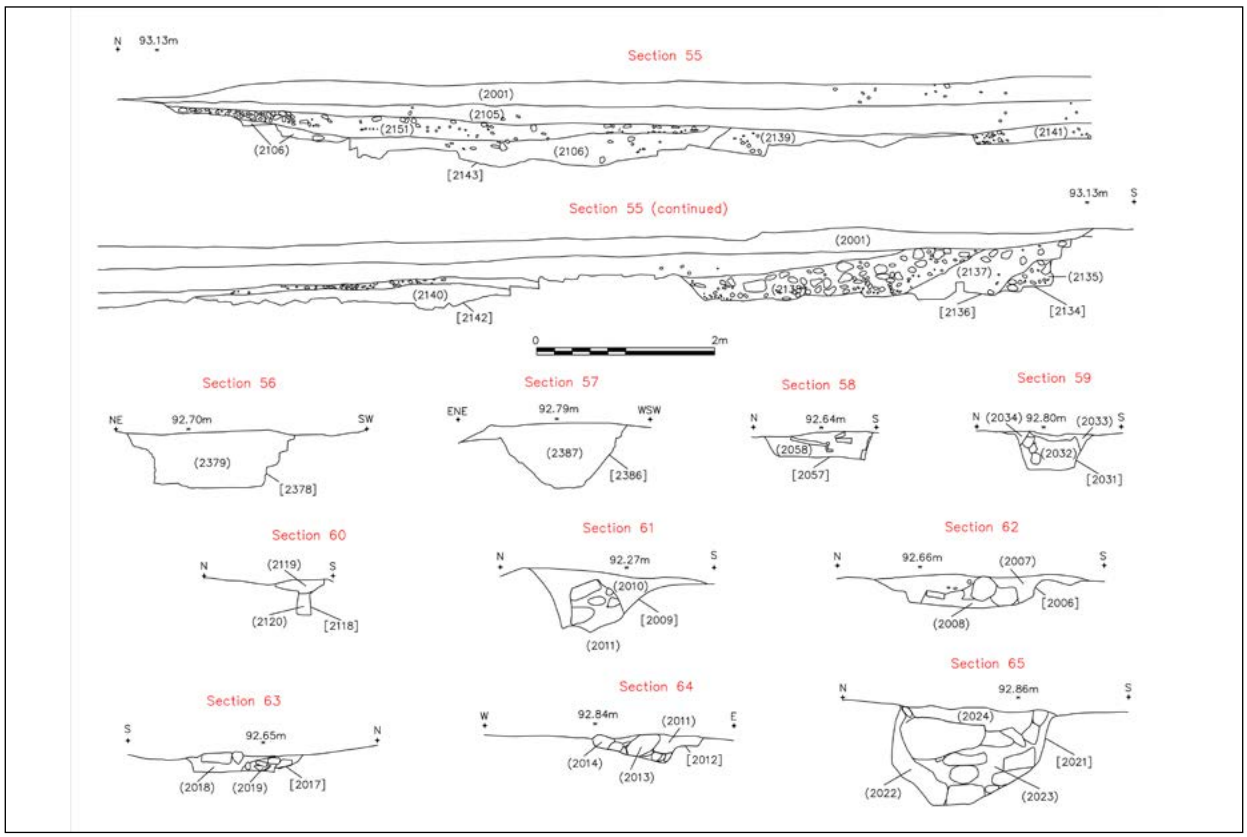


Fig. 5.23. Sections of the Late Iron Age to Roman sub-circular Enclosure 4 and Roman quarry and of nearby field ditches (for section lines, see Fig. 5.22).

Fig. 5.24. West-south-west-facing section of Late Iron Age to Roman sub-circular Enclosure 4 ditch F2790, [2360]. Scale 1 m in 0.5 m graduations.

difficult to make sense of F2798 as an enclosure ditch. One possibility is that F2798 was actually part of a north–south field boundary that ran south from the east–west boundary; F2798 might therefore have pre-dated the enclosure and may have been filled in when the enclosure was constructed. Feature 2798 appeared to line up with ditch segment [2256], which extended south from east–west field ditch F4342, and perhaps also with ditch segment [2690], which lay 13.2 m to the south. If this interpretation of F2798 is correct, the D-shaped enclosure would have been located in the north-west corner of a pre-existing field. There was, however, no clear trace of a north–south boundary in this area on the geophysical survey of 2014–15.

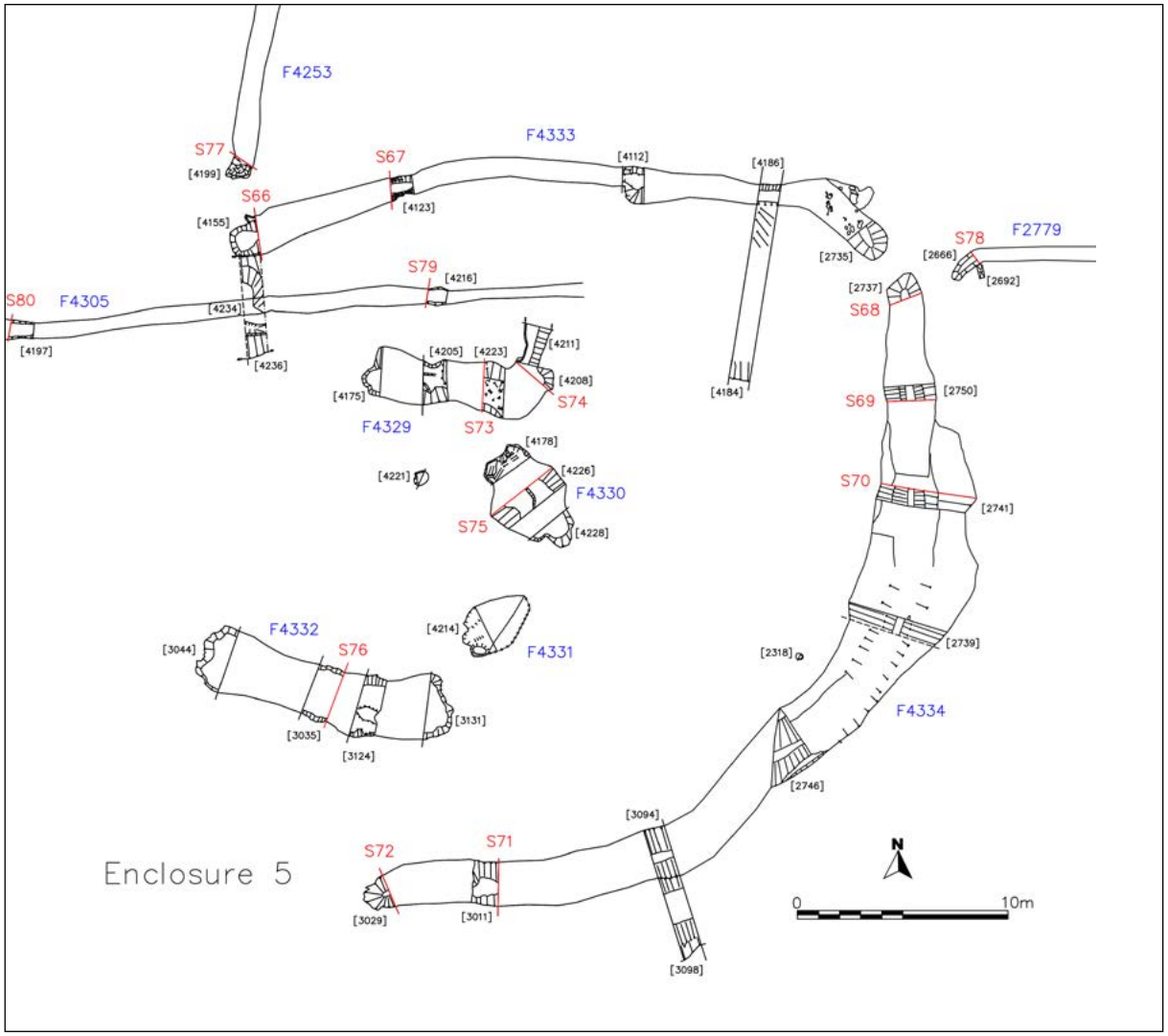
Immediately to the south-east of F2798 was another ditch segment, F2800. This was 0.95 m wide and 0.37 m deep and it was aligned north-west to south-east. It had an uneven flattish base and its fill comprised yellow-brown sandy silt with many large limestone blocks. [2815] might represent the north extension/terminus of F2800, which would give this segment an overall length of 4.80 m. A possible pit or disturbed ditch segment [2284], filled with brown sandy silt with many limestone blocks, was situated *c*.0.75 m further north. Feature 2800, [2815] and [2284] might have been parts of the inner ditch of the west side of the enclosure.

Three more short ditch segments, F2799 (to the south-west of F2798), [2236] and F2804 (both to the south of F2800) are all aligned north-north-west to south-south-east and may also have formed parts of the western ditches of the enclosure.

Immediately to the east of these south-western features lay F2806, an east–west aligned ditch segment cut partly into the western terminus of F2805, the inner ditch of the south side of the enclosure, after it had been infilled to a depth of at least 0.50 m. Feature 2806 was 4.10 m long, 0.88 m wide and 0.14 m deep, with a flat base and near vertical sides. It perhaps represented a partial recutting/redefinition or modification of the inner ditch of the enclosure, possibly on the south side of an entrance into the south-western inner part of the enclosure.

A few features were found within the eastern half of the enclosure (Fig. 5.17). These included four probable

Fig. 5.25. Working shot, looking south-east over part of Roman quarry pit F2794 in Enclosure 4 during excavation.



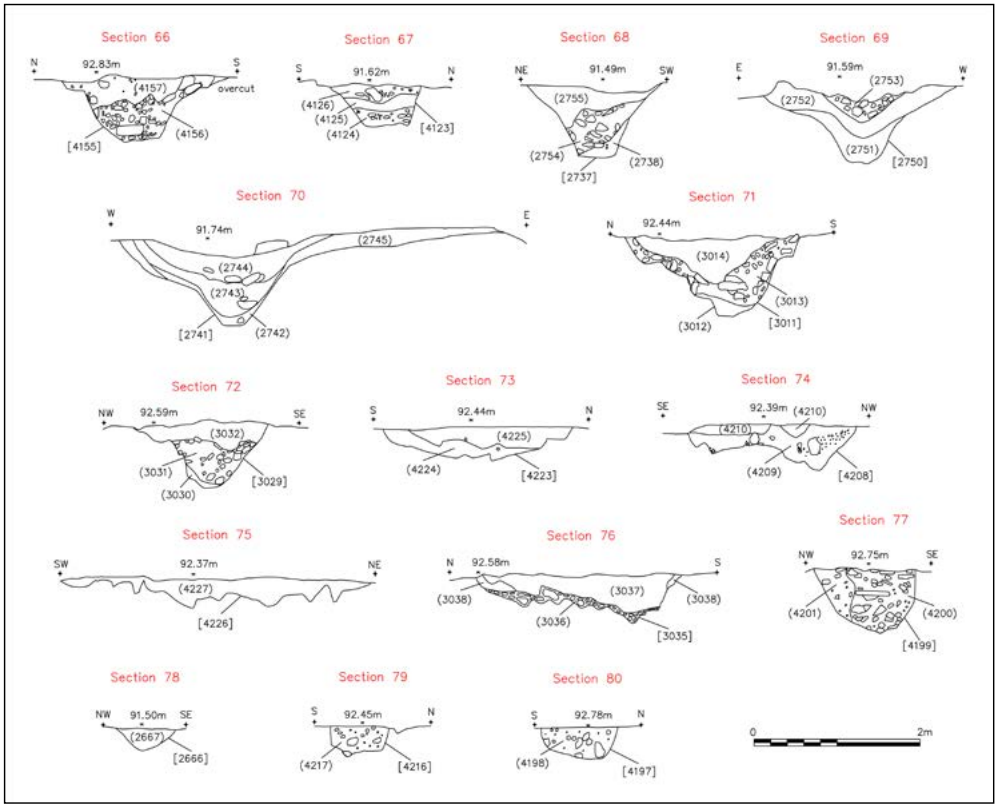


Fig. 5.26 (above). Plan of the Late Iron Age to Roman horseshoe-shaped Enclosure 5 in fields N2/N3 and N5/N6 (for sections, see Fig. 5.27).

Fig. 5.27. Sections of the Late Iron Age to Roman horseshoe-shaped Enclosure 5 and of nearby field ditches (for section lines, see Fig. 5.26).

pits: [2270], [2276], [2278] and [2714]. There was also a large pit or tree throw of uncertain date, F4346, which cut through (2706), a layer apparently equivalent to the fill, (2708), of Late Iron Age/Roman field ditch F4345 (cf. Fig. 5.18, Section 34). Three features ([2314], [2686] and [2687]) cut into natural limestone beneath F4346 might represent pits or postholes of Late Iron Age/Roman date, or simply areas of rooting relating to the possible tree throw.

The evidence indicates that the D-shaped enclosure was established at some point in the 1st century AD and was possibly out of use by the late 1st to mid 2nd centuries. Small quantities of pottery belonging to the Lincolnshire/Trent Valley Iron Age/native tradition, datable to the 1st to mid 2nd centuries, were found: in the fill of field ditch F4345, which was cut by the north ditch of the enclosure; in the ditches of the enclosure itself, F2805 and F4344; and in possible pits within the enclosure, [2276], [2314] and [2714]. No certain Roman pottery of late 1st-century AD or later date was associated with the enclosure, although a rim of an Iron Age/native tradition North Lincolnshire shell-tempered jar (G15/01), datable to between AD 70 and the mid 2nd century, came from one of the possible pits within the enclosure [2714]. A C^{14} sample from charcoal in another possible pit within the enclosure [2687] produced a date range of 5–125 cal AD at 91.1% probability, or 35 cal BC to 125 cal AD at 95.4% probability, which is entirely consistent with the pottery. A fragmentary burnt clay loom weight and a fragment of a mussel shell were also noted in fills of the north ditch of the enclosure, F4344. The general lack of finds from Enclosure 3 and the sparse amount of internal features may indicate that it was used to corral stock.

Fig. 5.28. Working shot, looking south-west over the east part of the Late Iron Age to Roman horseshoe-shaped Enclosure 5, showing a possible entrance into the north-east part of the enclosure, represented by a gap between excavated ditch segments F4333 and F4334.

Fig. 5.29. Late Iron Age to Roman horseshoe-shaped Enclosure 5, west-facing section in western terminus of north outer ditch segment F4333, [4155]. Scale 1 m in 0.5 m graduations.

Fig. 5.30. Late Iron Age to Roman horseshoe-shaped Enclosure 5, looking south-south-west at outer ditch segment F4334, [2750], showing limestone rubble in fill. Scale 1 m in 0.5 m graduations.

Fig. 5.31. Late Iron Age to Roman horseshoe-shaped Enclosure 5, east-facing section of inner ditch segment F4329, [4223]. Scale 2 m in 0.5 m graduations.

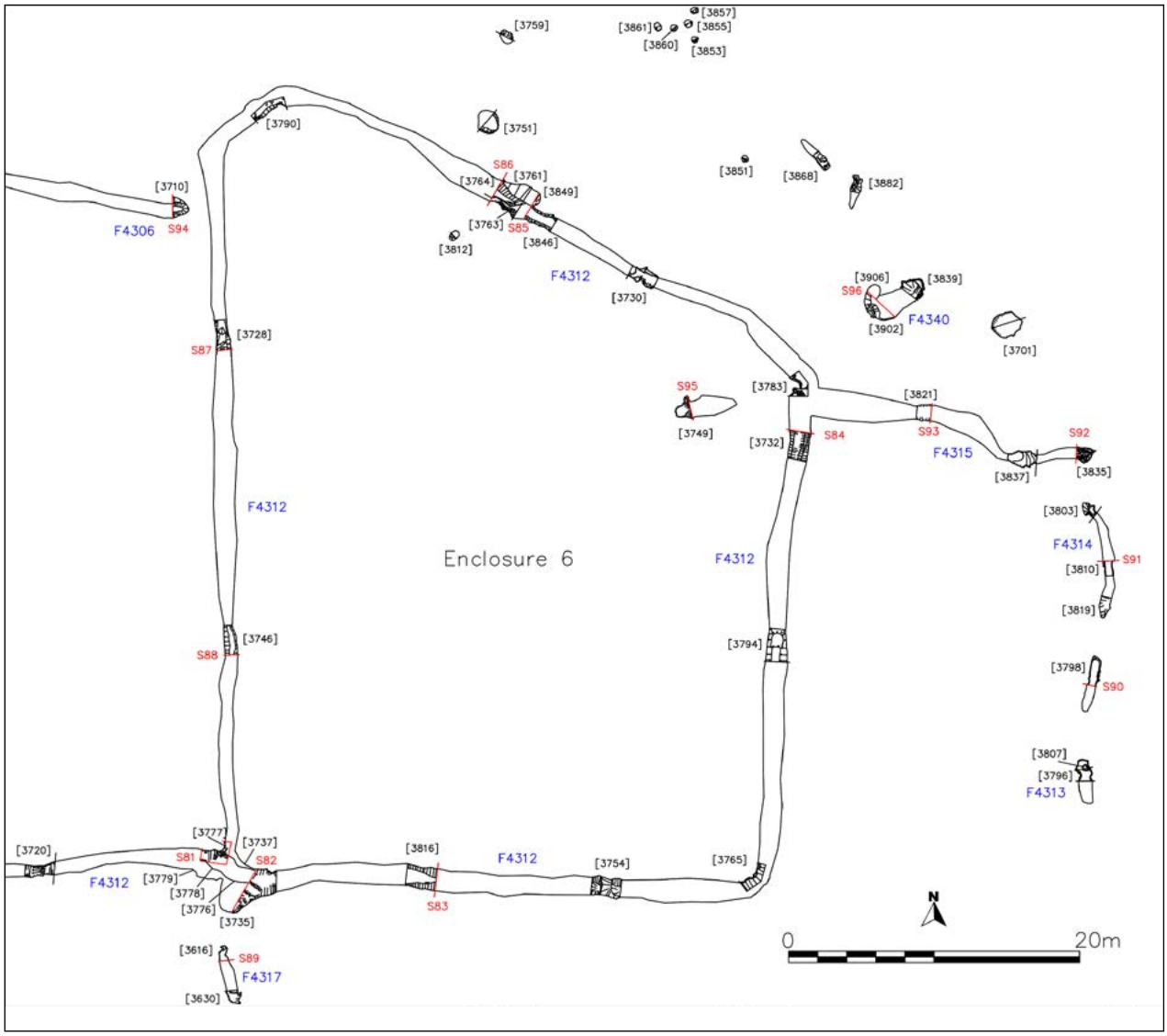


Fig. 5.32. Plan of the Late Iron Age to Roman rectilinear enclosure or small field F4312 (Enclosure 6) in field N2/N3 (for sections, see Fig. 5.33).

Sub-circular enclosure (Enclosure 4) and quarry

Two segments of a curvilinear ditch probably representing the south and east sides of a Late Iron Age/Roman sub-circular enclosure (Enclosure 4; F2789 and F2790; Figs 5.1, 5.3, 5.22–5.24) were found in 2021 in the centre of field N5/N6. This ditch likely enclosed an area of at least 29 m east–west by 27 m north–south, perhaps originally *c*.0.07 ha, which included a large Roman quarry pit, F2794 (Figs 5.22; Fig. 5.23, Section 55; Fig. 5.25).

The ditch segment, F2789, forming the north part of the east side of the sub-circular enclosure was 12.80 m long, 1.90 m wide and 0.73 m deep. It had a flat base with steep to moderately sloping sides, cut into natural limestone. The north part of F2789 appeared to turn towards the north-west and the geophysical survey of 2014–15 indicates that F2789 probably had a northern continuation (not found in excavation) that curved round even further to the north-west (see above, p. 15, Figs 2.2 and 2.3, Anomaly R10). F2789 had a single fill of red/orange-brown silt with occasional charcoal flecks and frequent small to large limestone rocks, possibly derived from a bank on the inner (west) side of the ditch. This fill included a few body sherds in Lincolnshire/Trent Valley native/Iron Age tradition pottery, datable to the 1st to mid 2nd centuries AD (fabrics G15 and G34).

The south part of the east side and the southern side of the enclosure were formed by a curving ditch segment, F2790. There was a gap of 3.5 m between the south terminus of F2789 and the north terminus of F2790, which may have represented an entrance in the east side of the enclosure, perhaps providing access to/from the north–south droveway *c*.90 m to the east.

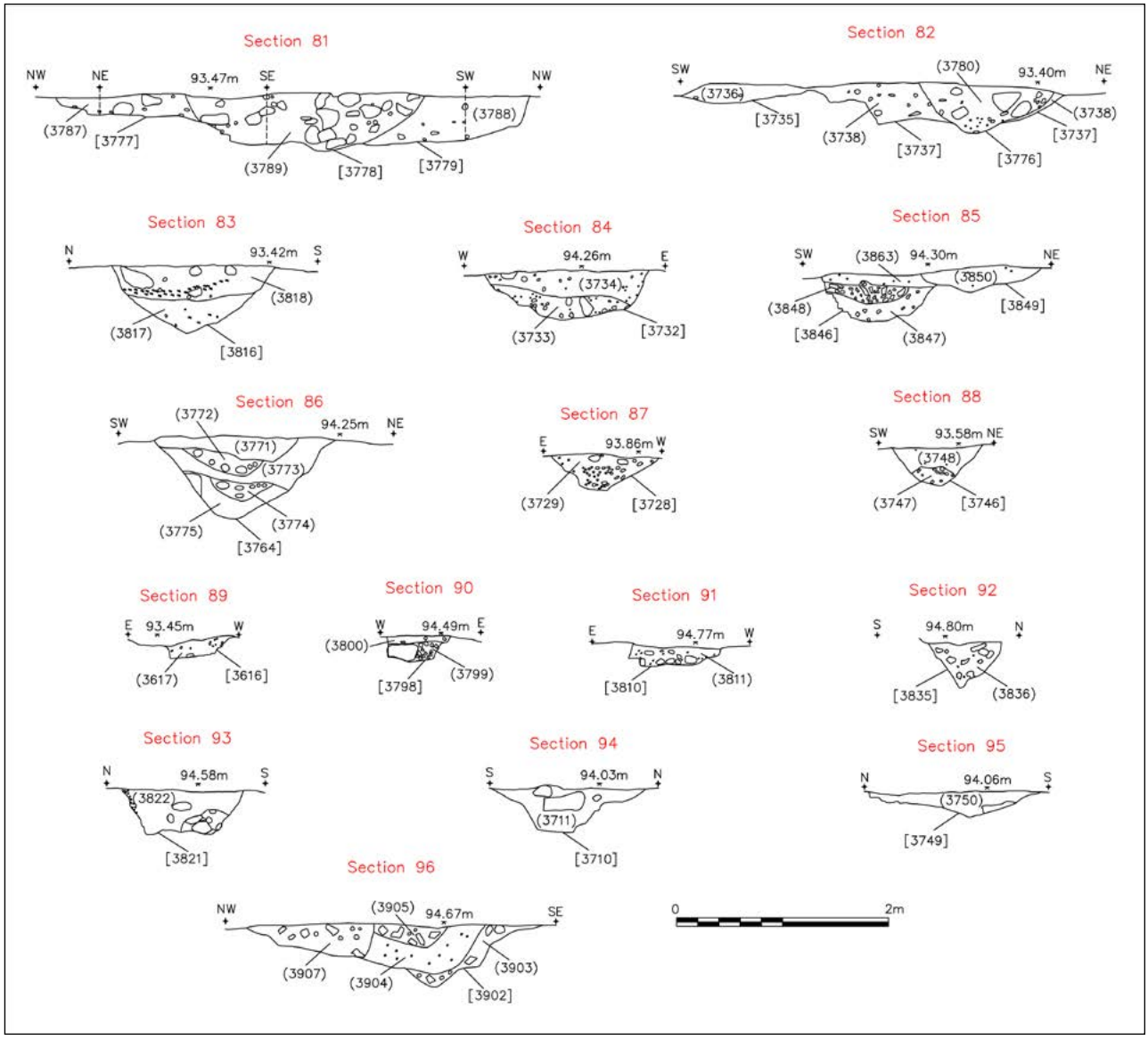


Fig. 5.33. Sections of the Late Iron Age to Roman rectilinear enclosure or small field F4312 (Enclosure 6) and of nearby features (for section lines, see Fig. 5.32).

Feature 2790 was *c*.37 m long, 1.44 m wide and 0.47 m deep, with an uneven/flat base and fairly steep sides cut into natural limestone. It was filled with a variety of orange/yellow/grey-brown silts, typically with many small to large limestone rocks, perhaps from the collapse of an inner bank (cf. Fig. 5.24). The fills contained a few sherds of Lincolnshire/Trent Valley native/Iron Age tradition (fabric G34) datable to the 1st to mid 2nd centuries AD, including rim sherds from a jar (G15/01), but also a South Yorkshire greyware jar of late 2nd- to perhaps mid 3rd-century date (R112/06) from the fill of segment [2360]. A C^{14} sample from animal bone in the same fill gave a date of 55–205 cal AD at 88.2% probability or 26–205 cal AD at 95.4% probability. [2118] was a possible posthole on the inner lip of F2790; it was cut into natural, but had no observed stratigraphic relationship to the ditch itself.

Within the enclosure was a very large sub-circular pit, F2794, 21.30 m east–west by 20.20 m north–south, cut into the natural limestone to a depth of up to 0.70 m (Figs 5.22; Fig. 5.23, Section 55; Fig. 5.25). This pit had gradually sloping sides and an uneven base, which included several large rough cuts, and presumably represented a limestone quarry. The south edge of the quarry was cut into part of the infilled ditch, [2134], forming the south side of the enclosure. This suggests that the quarry, or at least its southern edge, post-dated the enclosure ditch, but the ditch may still have been at least partially open and in use with the quarry: the quarry lay almost entirely inside and generally respected the line of the enclosure ditch and the pottery suggests that part of the ditch was still filling up in or after the late 2nd century, around the time that the quarry was in use.

The quarry (F2794) was filled by a series of grey-brown silts with varying amounts of limestone rocks of various sizes. These fills produced 770 sherds (7423 g) of pottery (four vessels are illustrated on Figs 5.44, 5.45, 5.48 and 5.50), indicating significant occupation in the quarry area, presumably associated with the working of the quarry and/or habitation within the possible pre-existing enclosure with the latter more likely. This pottery was consistent with occupation/deposition in the mid to late 2nd century, perhaps extending into the early 3rd century, with some material possibly dating to the 1st and/or earlier in the 2nd century also present.

The upper fill (2105) of the quarry included an iron nail and a rectangular strip of iron plate, which appears to retain fragments of domed rivets. A fragment of modern glass in the upper fill was presumably intrusive, perhaps due to disturbance from modern ploughing.

The quarry fills also included 179 extremely fragmented and poorly preserved disarticulated animal bones, mostly identified broadly as those of large- and medium-sized mammals, with some loose teeth of cattle, sheep/goat and equid. A cattle tooth from a lower fill (2137) produced a C^{14} date of 154–255 cal AD at 74.7% probability or 130–325 cal AD at 95.4% probability, supporting the mid 2nd- to early 3rd-century pottery dating of the feature.

Horseshoe-shaped enclosure (Enclosure 5)

A curvilinear enclosure with horseshoe-shaped outer and inner ditch segments was found in excavations in 2021 and 2022 in the north-east part of field N2/N3 and in the south part of field N5/N6 (Figs 5.1, 5.3, 5.4, 5.26–5.31). The outer ditch of this enclosure (F4333 and F4334) enclosed an area of at least 0.08 ha, about 32 m north–south by at least 30 m east–west. The outer ditch may have had an opening up to 30 m wide to the west, where it appeared to terminate against the line of a north–south field ditch; the field ditch (F4253) on the north side of the enclosure had a terminus only *c*.2 m from the north-west terminus of the outer ditch of the enclosure and no evidence was found for this field ditch continuing across the apparent enclosure opening. There was also a narrow gap of *c*.1.4 m between outer ditch segments F4333 and F4334 (Figs 5.26 and 5.28), which might represent an entrance into the north-east part of the enclosure that provided access to/from a minor east–west droveway that was found running west from the larger north–south droveway in the direction of Enclosure 5 (see above, p. 84; cf. Figs 5.1 and 5.3). The lower part of the outer ditch of the enclosure typically had a narrow, steep-sided profile, suggesting it may have been a foundation trench for a timber palisade (cf. Knight 2007, 199), although no timbers were noted in excavation. In the western half of the interior of the enclosure there were four shallower ditch segments which seemed to form a smaller horseshoe shape (F4329–32), enclosing an area of about 13 m north–south by 11 m east–west. This inner enclosure also appeared to have an opening, *c*.13 m wide, to the west, but surviving at an angle (facing west-north-west) relative to the opening in the outer ditch.

The outer ditch of the horseshoe-shaped enclosure comprised two curvilinear segments: F4333, which defined the north side of the enclosure, and F4334, which defined the eastern and southern sides (Figs 5.26–5.30). Feature 4333 was about 33 m in curving length, 1.84 m wide and 0.77 m deep. It had a flat base with fairly steep sides, cut into natural limestone. The eastern part of F4333 (marking one side of a possible entrance into the north-east part of the enclosure) had been recut (cf. Fig. 5.26). The ditch was filled with a variety of orange/yellow-brown silts with varying amounts of limestone, indicating two to three distinct episodes of infilling. Some of the fills included large limestone rocks, which might have derived from a stone-faced earth or earth and rubble bank that ran alongside the ditch (Fig. 5.27, Sections 66–7; Fig. 5.29).

Feature 4334 had a curving length of about 47 m, a width of 2.60 m (or up to 4.80 m wide taking into account a shallow lip on the eastern side) and a depth of 1.30 m. It typically had a flattish base with sides varying from gently sloping at the top to steep towards the bottom. It was cut into natural limestone and in one place through the fills of a possible palaeochannel, [3098]. Similar to F4333, F4334 was filled with a variety of red/yellow-brown silts with varying amounts of limestone, again indicating up to three stages of infilling (Fig. 5.27, Sections 68–72; Fig. 5.30).

The four ditch segments (F4329–32) which appeared to form a smaller horseshoe shape in the western half of the interior of the enclosure varied between 2.28 to 3.78 m in width and 0.25–0.57 m in depth (Fig. 5.26; Fig. 5.27, Sections 73–6; Fig. 5.31). They had irregular/uneven bases and sides cut into natural limestone and were typically filled with red-brown clayey silt with occasional small limestone, although F4332 had a distinctive primary fill of limestone rocks up to 0.46 m in depth.

Two other features regarded as possibly Late Iron Age/Roman in date were found within the enclosure (Fig. 5.26): [4221] was a possible small pit or natural feature within the inner part of the enclosure and [2318] was a possible posthole situated in the east part of the enclosure, 1.20 m inside the line of the outer ditch. Neither produced any finds, although [2318] had occasional charcoal. An irregular linear feature, [4211], which apparently cut the northern edge of inner ditch

segment F4329, appeared to be a natural water channel of uncertain date.

The outer ditch of the enclosure, F4334, produced 149 sherds (1504 g) of Late Iron Age/Roman pottery, including: several Lincolnshire/Trent Valley native/Iron Age tradition jars of 1st- to mid 2nd-century AD date (G15/01, G34/01, G34/02 and G34/04; three of which are illustrated on Fig. 5.45); two South Yorkshire greyware rusticated jars of late 1st- to early/mid 2nd-century AD date (R112/02); and a Dorset Black-burnished ware jar of mid to late 2nd-century date (B01/02), which came from a primary fill. This suggests that the enclosure was constructed and occupied to a moderate extent in the 1st to mid/late 2nd centuries AD. A couple of small fragments of possible iron smelting slag were found in a primary fill.

A secondary fill in outer ditch F4334 included charred fragments of proximal radius from an adolescent/adult human and seven more charred bone fragments, possibly also human (see below, p. 119). The relatively good preservation of these bones suggests that they were sealed within their final deposit soon after charring, rather than being redeposited. The poor oxidation of the heat-affected bones suggests exposure to a temperature between 300–*c*.600°C and/or a shorter burning time, i.e. they were not subjected to an efficient cremation process or may not have been formally cremated.

Feature 4334 also contained 172 highly fragmented animal bones, including cattle extremities, loose mandibular and maxillary teeth of cattle, mandibular teeth of a subadult and adult sheep/goat, mandibular canines of a sow, and multiple small fragments of long bones. Two mammal bone fragments were completely calcined, attesting their exposure to temperatures in excess of 600°C. A C^{14} sample from animal bone in a primary fill produced a date of 9–167 cal AD at 93.4% probability, or 9–203 cal AD at 95.4% probability.

A primary fill of inner ditch segment F4329 contained a complete copper-alloy penannular brooch (SF 64; see below, p. 117, Fig. 5.62) of late 1st- to 4th-century date and an incomplete, annular, blue glass bead of broad Iron Age to early medieval date (SF 66; see below, p. 118, Fig. 5.65). As Roman objects, except for pottery, are so rare on this site, it is possible that these two finds may have been specially/deliberately deposited. A fragment of a bone china wall tile of late 18th-century or later date from inner ditch segment F4330 was presumably intrusive.

Rectilinear enclosure/small field (Enclosure 6)

The Magnesian Limestone National Mapping Project of 2005–6 identified only a single possible Iron Age/Roman cropmark in the bounds of the Holme Hall Quarry site: this was the south-east corner of a possible rectilinear ditched enclosure, visible on air photographs taken in 1967 (Fig. 1.3, AR15; Historic England Research Records, Monument no. 1437716; cf. Brown 2015, 6, 13, 14, 16, 24, Fig. 7a, AR15). The geophysical survey of 2014–15 revealed that this 'enclosure', which lay in the west part of field N2/N3, was quite extensive and might in

Fig. 5.34. Aerial view of Late Iron Age to Roman rectilinear enclosure or small field F4312 (Enclosure 6), looking north.

Fig. 5.35. Late Iron Age to Roman rectilinear enclosure or small field F4312 (Enclosure 6), east-facing section of its south ditch, [3816]. Scale 1 m in 0.5 m graduations.

fact have been a small field or paddock (see above, p. 14, Figs 2.2 and 2.3, Anomalies C4, C5, C5a). The 'enclosure' (defined by an apparently continuous ditch F4312) was excavated in the west part of field N2/N3 in 2022. It was *c*.36.5 m east–west internally, *c*.52 m north–south internally on its west side and *c*.34 m north–south on its east side, with an internal area of 0.17 ha (Figs 5.1, 5.4, 5.5, 5.32–5.35). The ditch of the south side of the enclosure continued west as a field boundary (also recorded as F4312), indicating contemporaneity with the wider Late Iron Age/Roman field system.

The 'enclosure' ditch, F4312, had a maximum surviving width of 1.62 m and a depth of 0.79 m. It typically had an uneven/flat (or in some cases V-shaped) base and steep sides cut into the natural limestone (cf. Fig. 5.33, Sections 81–8; Fig. 5.35). Part of the south side of the south-west corner [3737] was also cut into the fill of a probable tree throw [3735]. The south-west corner of the enclosure had been recut, presumably to redefine/clean a part of the ditch that had silted up. The recutting ([3776] and [3778]; Fig. 5.33, Sections 81 and 82) was 1.28 m wide and 0.55 m deep; it was orientated west-north-west to east-south-east and cut through fills of: the south ditch of the enclosure [3737]; the west ditch of

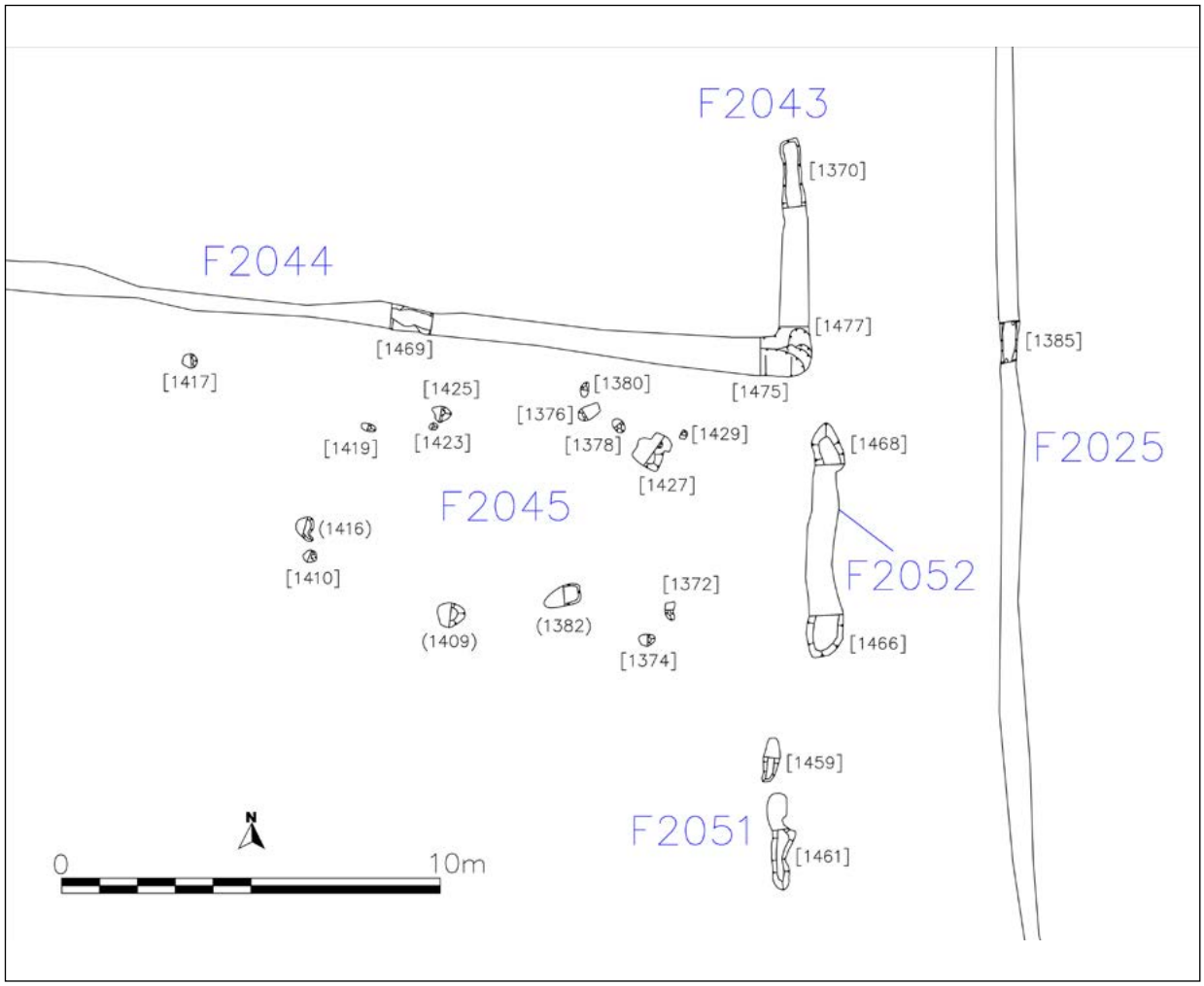


Fig. 5.36. Plan showing possible Roman posthole structure F2045 in field N5/N6 (for location, see Fig. 5.3).

the enclosure [3777]; and the field boundary running west from the south-west corner of the enclosure [3779]. The fills of the central part of the north ditch of the enclosure [3763] and [3846] were cut by a possible tree throw [3761] = [3849] of uncertain date.

A notable assemblage of Roman pottery (129 sherds; 1139 g) was found with charcoal in the two fills of the central part of the south ditch of the enclosure, [3816], probably indicating small-scale occupation in the immediate vicinity during the late 1st to mid 2nd century AD. The lower of these two fills included: body sherds of Dorset Black-burnished ware; a rim of a South Yorkshire greyware jar of late 1st to early/mid 2nd-century AD date (R112/02); and rims from two North Lincolnshire greyware jars of broad Roman date. The upper fill included a body sherd of a Dressel 20 olive oil amphora (A01) and a sherd of Central Gaulish samian. An animal bone from the upper fill produced a post-medieval C^{14} date and was probably intrusive.

Only a couple of features were found inside the enclosure, neither of which contained any finds: a possible posthole or pit, [3812], regarded as possibly Middle Iron Age in date (see above, p. 79), and an irregular possible pit, [3749], regarded as undated due to its proximity to features of Middle Iron Age and early medieval date (see above, p. 79, and below, p. 97).

To the east of the enclosure/small field was a smaller area, *c.*20 m east–west by *c.*30 m north-south, enclosed on three sides by ditches, but apparently open to the south where it joined a large field (Figs 5.5 and 5.32). It is unclear whether this was an irregular northern extension of the large field, or if was a small sub-enclosure that would originally have been enclosed on all sides, perhaps by a fence or ditch disturbed by later ploughing.

Possible pen for animals or shelter

In the north-east part of field N5/N6, a possible structure, F2045, was formed by 14 possible postholes (Figs 5.3 and 5.36). These appeared to form a sub-oval or sub-rectangular structure, 10.00 m east–west by 5.70 m north–south, which was neatly situated in the north-east corner of a Late Iron Age/Roman field, immediately to the west of the north–south droveway. The possible postholes were typically between 0.20 and 0.50 m in diameter and 0.10 to 0.15 m in surviving depth. Their sides were steep and concave and their bases slightly rounded.

The placement of this structure suggests a Late Iron Age/Roman date. No finds were recovered from the constituent possible postholes and a natural origin for their formation (either from rooting or water penetration) was thought possible during excavation, although their arrangement appears too regular for this suggestion. If it was a Late Iron Age/Roman structure, a function as a pen for animals or a shelter for people and/or livestock travelling on the adjacent north–south droveway is perhaps most likely. Another possible posthole, [1417], was found 4.7 m to the west-north-west of F2045 and may be related to/contemporary with it.

Early medieval

A few early medieval features were identified in field N2/N3 on the basis of radiocarbon dates; there was no pottery or other identifiable finds of this period. These features comprised: a pit containing burnt material, [2513], set in a hollow, F2795, worn into the fill of a Late Iron Age/Roman field ditch in the north-east part of field N2/N3 (Figs 5.2, 5.37, 5.38); and another pit containing burnt material, [3697], possibly associated with a nearby similar pit, [3701], in the west part of field N2/N3 (Figs 5.4, 5.5, 5.37, 3.39).

In the north-east part of field N2/N3, F2795 was a wear hollow, 7.70 m east–west by 1.52 m north–south and 0.18 m deep, over the north part of the fill of north–south field ditch F2770 and over the fills of east–west field ditch segment F2796. The fill of this wear hollow included frequent charcoal. Pit [2513] was set in, and appeared to cut into, the east end of the hollow (Figs 5.37 and 5.38). This pit was oval, *c.*1.5 m east–west by *c.*0.8 m north–south and 0.20 m deep. The base of the pit was filled with grey-brown silty clay with occasional rounded pebbles and daub/burnt clay. The second fill of the pit was a grey-brown silty clay, which included frequent charcoal and several unidentified fragments of burnt clay, possibly derived from the lining of a former nearby oven or hearth. A C^{14} sample from charcoal in a primary pit fill produced a date of 885–994 cal AD at 95.4% probability.

In the west part of field N2/N3, was a sub-oval pit, [3697], the fill of which contained a large amount of charcoal (Figs 5.37 and 5.39). None of the natural subsoil was burnt and this burnt soil would have derived from elsewhere, presumably from a nearby former hearth. A C^{14} sample (charcoal) from this pit produced a date of 670–778 cal AD at 83.6% probability or 670–825 cal AD at 95.4% probability. A similar pit [3701], also including frequent charcoal, was recorded *c.*25 m to the north-west and may be contemporary (Fig. 5.39).

A short distance west of [3701] are a number of elongated pits or short ditch segments, which have no finds and do not obviously relate to the Late Iron Age/Roman field system: F4340, [3749], [3868] and [3882] (Figs 5.4, 5.5, 5.32). These features have been

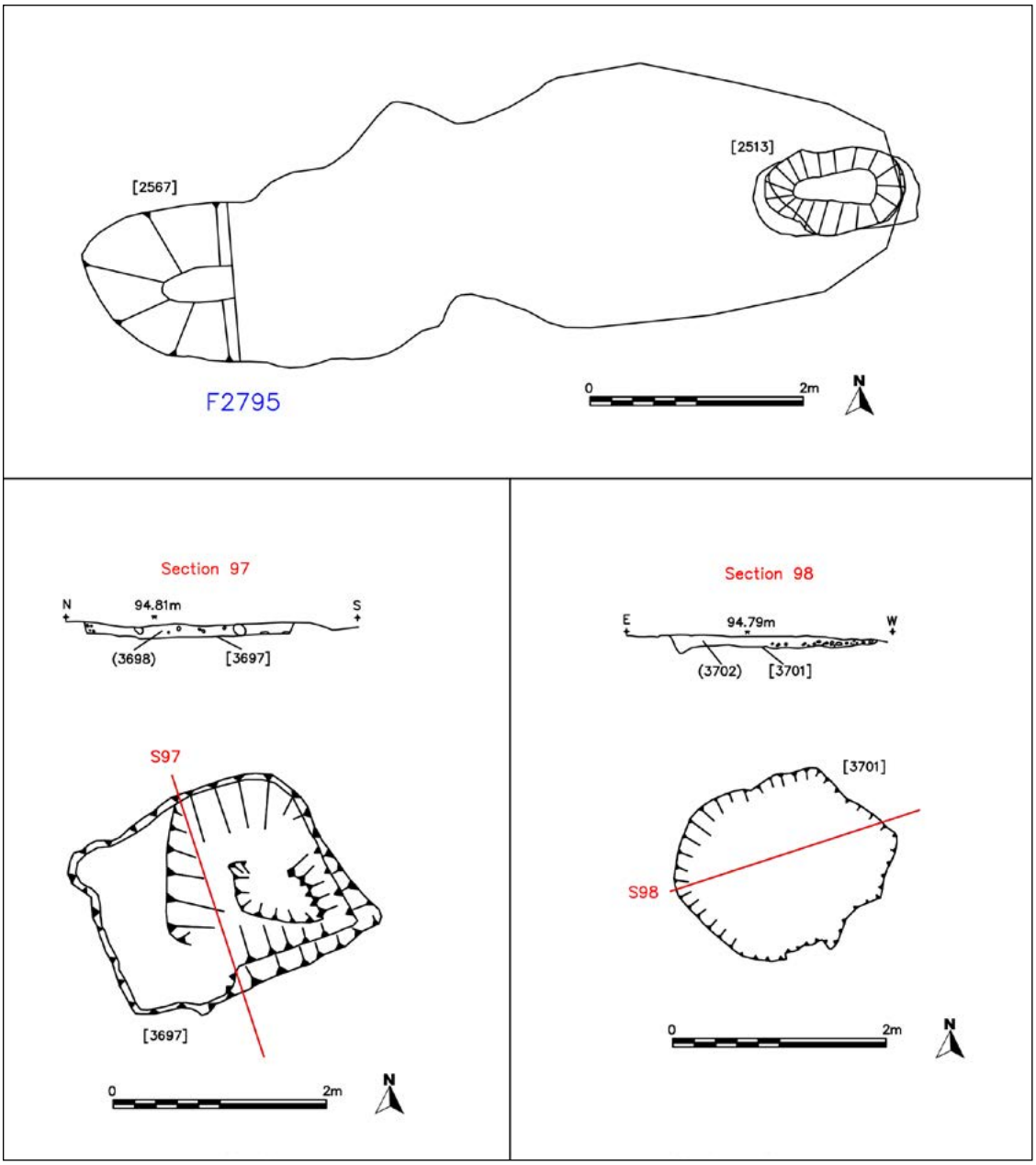


Fig. 5.37. Plans and sections of early medieval features in field N2/N3.

Fig. 5.38. Looking north at an early medieval pit containing burnt material, [2513], in field N2/N3. Scale 2 m in 0.5 m graduations.

Fig. 5.39. Looking east at an early medieval pit containing charcoal, [3697], in field N2/N3. Scale 1 m in 0.5 m graduations.

regarded as undated, but they may possibly be Middle Iron Age or early medieval; further north-west lies a pit radiocarbon dated to the Middle Iron Age and a number of postholes perhaps of the same date (see above, pp. 77, 79).

Post-medieval

Boundary ditch

The northern boundary of field N2/N3 (also known as Common field) was represented by a curvilinear ditch, recorded as segments F2779 and F4303–5, that ran approximately west-south-west to east-north-east for about 480 m (Figs 5.1, 5.3–5.5, 5.26, 5.27, Sections 78–80). This boundary ditch cut into various earlier features, including: palaeochannel/palaeovalley deposits; Late Iron Age/Roman east–west field ditch F4306; and a possible ditch of an east–west Late Iron Age/Roman droveway, [2491]. The line of the boundary ditch also cut across the Late Iron Age/Roman horseshoe-shaped Enclosure 5 and north–south Late Iron Age/Roman field ditch F4294, although no precise stratigraphic relationships were observed in these two cases.

The boundary ditch included a few sherds of: Fine Red Stoneware, possibly of 17th- or 18th-century date, Late Blackware and Mottled ware of 18th-century date and a sherd of a porcelain cup or bowl of probable 19th-century date (see below, p. 113). A fill of the ditch also included a fairly complete juvenile pig skeleton, which showed woven bone of the mandible, suggestive of inflammation relating to either infection or trauma, likely active at the time of death and implying a natural fatality (see below, pp. 119–120).

The northern boundary of N2/N3 is clearly shown on Jefferys' map of The County of York, engraved in 1771 and published the following year (Jefferys 1772, Sheet 8), and on all later maps, including the 1811 map of Cockhill Common (Brown 2015, Fig. 2; Doncaster Archives DD/BW/E8/64), the 1815 enclosure plan of Cockhill Common (Brown 2015, Fig. 3; Doncaster Archives RD/DON/2/294) and the Edlington tithe map of 1840 (Brown 2015, Fig. 5; Doncaster Archives DD/BW/E8/55). This demonstrates that the boundary dates back at least to the late 18th century, but its date of establishment is not known.

Plough furrows and pits

A clear series of north–south and north-north-west to south-south-east plough furrows of probable post-medieval date, was identified across fields N4 and N5/N6 in the geophysical survey of 2014–15 (see above, p. 15, Figs 2.2 and 2.3). Several of these were recorded in the excavations and are shown in green on Figs 5.1, 5.3, 5.4. A few in field N5/N6 were archaeologically investigated with slots dug across them. Some of them were sealed by a post-medieval subsoil as well as by the modern topsoil. The fill of one furrow contained a sherd of post-medieval glass.

These furrows respect and align with the boundaries of field N5/N6. Whilst a medieval origin for the furrows cannot be ruled out, it seems likely that they post-dated the enclosure of this area (initially as a series of smaller fields) in the first half of the 19th century, as shown on the Edlington tithe map of 1840 (Brown 2015, Fig. 5; Doncaster Archives DD/BW/E8/55). The area north of field N2/N3 is not shown as enclosed on earlier maps, such as Jefferys' 1771 map of The County of York (Jefferys 1772, Sheet 8), the 1811 map of Cockhill Common (Brown 2015, Fig. 2; Doncaster Archives DD/BW/E8/64) or the 1815 enclosure plan of Cockhill Common (Brown 2015, Fig. 3; Doncaster Archives RD/DON/2/294).

Other post-medieval features in field N5/N6 included a small possible pit or plough furrow, [1015], situated to the east of Late Iron Age/Roman north–south droveway segment F2001 (Fig. 5.3); the fill of this pit or furrow had a brown-glazed post-medieval pot sherd (ident. Phil Mills). A small possible pit [2369] was also found next to Roman quarry F2794 in the south part of the sub-circular Enclosure 4 formed by F2789 and F2790 (Fig. 5.22). This pit was evidently post-medieval in date as its fill contained a sherd of Late Blackware datable to the 18th century.

Quarries and lime kiln

In the north-west part of field N5/N6 was a large, irregularly-shaped limestone quarry pit, F4290, up to 2.10 m in depth and covering an area of more than 71.10 m north–south by 62.00 m east–west (Fig. 5.4, cf. Fig. 5.8). The fills of the quarry included a sherd of Brown Salt Glazed Stoneware datable to the 18th century and a residual medieval sherd of Reduced Sandy ware datable to the 13th to early 14th century, probable iron smithing slag and several animal bone fragments and teeth. This quarry is not shown on any historic maps, suggesting that it may have been out of use and completely filled by the late 18th century and certainly by 1840 when the detailed Edlington tithe map was produced (Brown 2015, Fig. 5; Doncaster Archives DD/BW/E8/55).

Another large sub-rectangular limestone quarry pit, F4302, 88.53 m north–south by 60.60 m east–west, was present in the centre-north part of field N2/N3 (Figs 5.4 and 5.5; grassy area on Fig. 5.8). The north side of the quarry followed the line of and cut into the northern boundary ditch of the field, F4304 and F4305. The quarry was excavated by machine and was filled with a mixture of post-medieval/modern agricultural and

Fig. 5.40. Looking south-east at mid nineteenth-century lime kiln F1049 in field N1.

domestic waste. No other archaeological features were noted within it. This quarry is not depicted on Jefferys' 1771 map of The County of York (Jefferys 1772, Sheet 8). It is shown on the 1811 map of Cockhill Common (Brown 2015, Fig. 2; Doncaster Archives DD/BW/E8/64), on which it is labelled 'Quarry', but is omitted from the 1815 enclosure plan of Cockhill Common (Brown 2015, Fig. 3; Doncaster Archives RD/DON/2/294). It is also present on the Edlington tithe map of 1840 (Brown 2015, Fig. 5; Doncaster Archives DD/BW/E8/55) and on the 1854 Ordnance Survey map at 1:10,560 scale (included in Brown 2015), on which it is labelled 'Cockhill Quarry (limestone)'. It is shown as a feature on all subsequent Ordnance Survey maps published prior to the excavation (see Brown 2015), but is labelled 'Old Quarry' on maps produced in the 1890s, suggesting that it had gone out of use and was probably partially infilled by this time.

A much smaller sub-oval quarry [3589] was recorded in the south-west part of field N2/N3 (Fig. 5.5). This is not shown on any historic maps, suggesting it was probably in use and completely infilled in or before the 18th century. A post-medieval date is considered most likely, although no dating evidence was recovered and an earlier date is possible.

An irregular post-medieval quarry pit was found in the south-east corner of field N1. A lime kiln, F1049, was set in the base of the quarry (Figs 5.2, 5.40, 5.41). This kiln was roughly 4.7 m in diameter and had a recessed entrance passage, about 1.7 m long and 1.0 m wide, facing north-west. The interior of the kiln was sub-circular with a diameter of *c*.2.1 m. A well-preserved archway of large, roughly dressed limestone blocks bonded with pink silty clay marked the stoke-hole of the kiln; the archway was set on a floor of limestone slabs, the largest slab measuring 0.45 x 0.35 x 0.15 m. The walls of the kiln were up to 2.0 m in width and were constructed of large, roughly dressed limestone blocks with no bonding, surviving up to 11 courses and 0.70 m in height.

The walls of the interior of the kiln and the inner face of the archway were heavily affected by heat and a layer of compacted lime was found on the floor (Fig. 5.41). The lower fills of the kiln and stoke-hole, associated with its use, included heat-affected limestone and lime ash. The upper fills related to the backfilling/disuse of the kiln. The fills of the wider quarry pit area, which presumably also post-dated the disuse of the kiln, included a few fragments of 18th- to 19th-century glass bottles.

Lime kilns were used to manufacture lime (calcium oxide) by burning calcium carbonate, in this case limestone, at temperatures above 900°C (Historic England 2018, 1). Lime could be used for soil improvement, or it could be mixed with water to produce hydrated lime (calcium

hydroxide), which formed the basis of plasters, mortar, concrete, and limewash (lime also had a variety of other uses).

Only the base of the kiln in field N1 survived and it would originally have been considerably higher (cf. Historic England 2018, 3, Fig. 3). Its interior was barrel- or funnel-shaped, suggesting that it was probably a flare kiln, rather than a more efficient draw kiln (Historic England 2018, 3, Fig. 3). Flare kilns most commonly consisted of an open-topped cylindrical combustion chamber and a hearth, with one or more draw-holes or stoke-holes at the base. The hearth was set at and immediately inside the stoke-hole. A vault of stone blocks, resting on an internal ledge in the upper part of the kiln, was built over the hearth and the charge of limestone or chalk was stacked above this. This meant that the fuel was not in direct contact with the charge and so good-quality lime, unmixed with ash, was produced. The fire needed to be stoked for several days for all the limestone to be calcined and the kiln then had to cool down completely before it could be partially dismantled to extract the lime (Historic England 2018, 2); the kiln could then be reconstructed and reloaded with a fresh charge if required.

The quarry in field N1 is not shown on historic maps of the first half of the 19th century, such as the 1811 map of Cockhill Common (Brown 2015, Fig. 2; Doncaster Archives DD/BW/E8/64), the 1815 enclosure plan of Cockhill Common (Brown 2015, Fig. 3; Doncaster Archives RD/DON/2/294), or the Edlington tithe map of 1840 (Brown 2015, Fig. 5; Doncaster Archives DD/BW/E8/55). It is first depicted on the 1854 Ordnance Survey map at 1:10,560 scale (included in Brown 2015), on which it is shown at the north-west angle of the junction of Rakes Lane and Long Gate and is labelled 'Limestone Quarry'. This quarry is also visible on a late 19th-century plan of Cockhill Farm (Brown 2015, Fig. 6; Doncaster Archives DD/BW/E8/32) and on Ordnance Survey maps at 1:2500 scale from 1892 to 1961–2, but it is not shown on the 1969 edition or on subsequent editions. The maps suggest that the quarry was probably worked in the 1840s and/or 1850s, although an earlier date is possible if we assume that a small quarry may not have been included on the early maps. No trace of the lime kiln is present on any map, but it was presumably constructed shortly after the quarry had been dug, probably in the mid 19th century. Although the quarry is shown on maps up to the 1960s, it was most likely largely infilled after the disuse of the lime kiln (which was partly preserved by the infilling), with the upper part of the quarry perhaps surviving as a depression thereafter.

Undated features

Several probable ditch segments and pits were found in the excavations that could not be dated with any certainty (Figs 5.1–5.5, blue). These were typically cut into limestone bedrock and sealed by modern topsoil. Various probable natural features of uncertain date were also recorded including sinkholes, minor water channels, tree throws and rooting deposits (Figs 5.1–5.5, blue).

Fig. 5.41. Looking north-west at the heat-affected interior of mid nineteenth-century lime kiln F1049, showing the archway of the stoke-hole.

Specialist reports

Specialist reports for the 2019–22 excavations are presented below. In these reports, material from the 2019 excavation in field N7 (see Chapter 4, above, pp. 42-58) has been integrated with material from the 2020–22 excavations (as in the detailed specialist reports for the 2019–22 excavations included in the archive site report: Morris 2024). Finds from context numbers between 101 and 533 are from the 2019 excavation; finds from context numbers between 1001 and 4346 are from the 2020–22 excavations.

Roman pottery

By the late Phil Mills

Introduction

The 2019–22 excavations produced a total of 3625 sherds, 39,308 g, of Roman pottery from stratified contexts, including 267 rims (with a rim equivalent of 3939), 97 bases (with a base equivalent of 2298) and 2 handles. The material was studied following the pottery standard (Barclay *et al.* 2016) and recorded using the Warwick Museum/Oxford Archaeology recording

Table 5.1. Roman pottery from the 2019–22 excavations by area and feature group (NoSh = number of sherds; Wt = weight in grams; MNR = minimum number of rims; RE = rim equivalent; BE = base equivalent; MSW = mean sherd weight, calculated as Wt/ NoSh).

Area/feature group	NoSh	Wt	MNR	RE	BE	MSW
Field N7 (2019)						
Rectilinear Enclosure 2b ditches	1827	22580	127	2272	1221	12.36
Pit group F511	95	1291	9	142	99	13.59
Structure F528 and nearby pits	81	1088	11	119	74	13.43
Field ditches	56	1000	1	50	20	17.86
Other	83	1477	11	143	128	17.8
Total	**2142**	**27,436**	**159**	**2726**	**1542**	**12.81**
Field N5/N6						
Enclosure 4 ditch	30	214	2	26	0	7.13
Quarry pit F2794 within Enclosure 4	770	7423	87	798	493	9.64
Field ditches	279	616	2	32	0	2.21
Total	**1079**	**8253**	**91**	**856**	**493**	**7.65**
Field N2/N3						
D-shaped Enclosure 3	45	288	1	7	90	6.4
Horseshoe-shaped Enclosure 5, ditch F4334	149	1504	9	183	92	10.09
Rectilinear Enclosure 6, ditch F4312	129	1139	4	126	56	8.83
Field ditches	67	452	2	32	25	6.75
Other	12	80	1	9	0	6.67
Total	**402**	**3463**	**17**	**357**	**273**	**8.61**
Field N4						
Field ditch	2	156	0	0	0	78
Grand total	**3625**	**39,308**	**267**	**3939**	**2298**	**10.84**

Table 5.2. Roman pottery from the 2019–22 excavations by fabric code (NoSh = number of sherds; Wt = weight in grams; MNR = minimum number of rims; RE = rim equivalent; BE = base equivalent).

Fabric code	NoSh	NoSh %	Wt	Wt %	MNR %	RE %	BE %
A01	5	0.1%	789	2.0%	0.0%	0.0%	0.0%
B01	98	2.7%	1190	3.0%	6.7%	5.6%	3.5%
B03	126	3.5%	1078	2.7%	1.1%	0.4%	1.0%
G10	40	1.1%	300	0.8%	0.7%	0.3%	2.1%
G108	123	3.4%	1662	4.2%	1.5%	1.5%	2.5%
G108.1	11	0.3%	91	0.2%	0.0%	0.0%	0.0%
G15	163	4.5%	1225	3.1%	1.9%	2.0%	0.0%
G16	212	5.8%	250	0.6%	0.0%	0.0%	0.0%
G17	6	0.2%	97	0.2%	0.0%	0.0%	0.7%
G34	189	5.2%	2354	6.0%	6.0%	6.2%	4.7%
G34.1	71	2.0%	412	1.0%	0.0%	0.0%	2.4%
M41	14	0.4%	300	0.8%	1.1%	1.0%	0.0%
O02	3	0.1%	33	0.1%	0.0%	0.0%	0.0%
O11	98	2.7%	720	1.8%	1.5%	4.0%	3.8%
O15	5	0.1%	452	1.1%	0.0%	0.0%	0.0%
O31	16	0.4%	155	0.4%	0.4%	0.6%	0.0%
R01	24	0.7%	272	0.7%	0.4%	1.7%	0.0%
R02	29	0.8%	136	0.3%	0.0%	0.0%	0.0%
R03	4	0.1%	204	0.5%	0.0%	0.0%	3.1%
R11	35	1.0%	154	0.4%	0.0%	0.0%	0.0%
R112	2260	62.3%	26,486	67.4%	77.5%	73.7%	73.7%
R12	3	0.1%	24	0.1%	0.0%	0.0%	0.0%
R394	76	2.1%	640	1.6%	0.7%	2.8%	0.0%
S10	1	<0.1%	25	0.1%	0.0%	0.0%	0.0%
S20	7	0.2%	152	0.4%	0.4%	0.2%	1.7%
W01	6	0.2%	107	0.3%	0.0%	0.0%	0.4%
N	**3625**	**3625**	**39,308**	**39,308**	**267**	**3939**	**2298**

system (Booth 2000). Table 5.1 shows the Roman pottery by feature group. The pottery from each feature has been briefly described above in the main excavation reports in Chapters 4 and 5 (for further details, see the archive report: Mills 2024).

Fabrics

Introduction

Table 5.2 shows the breakdown of the Roman pottery from the 2019–22 excavations by fabric code. The fabric codes were based on a type series already used in the region.

Class A, amphorae

A01 Baetican Dressel 20 amphora fabric, Tomber and Dore 1998, BAT AM.

Amphorae are low at 0.1% by number of sherds, in line with a rural settlement. The group comprises five body sherds of Dressel 20 amphorae only. Amphorae are present in the field ditch (F200) representing the northern continuation of the east ditch of rectilinear Enclosure 2b in field N7 and in the south ditch of the rectilinear enclosure or small field/paddock F4312 (Enclosure 6) in field N2/N3.

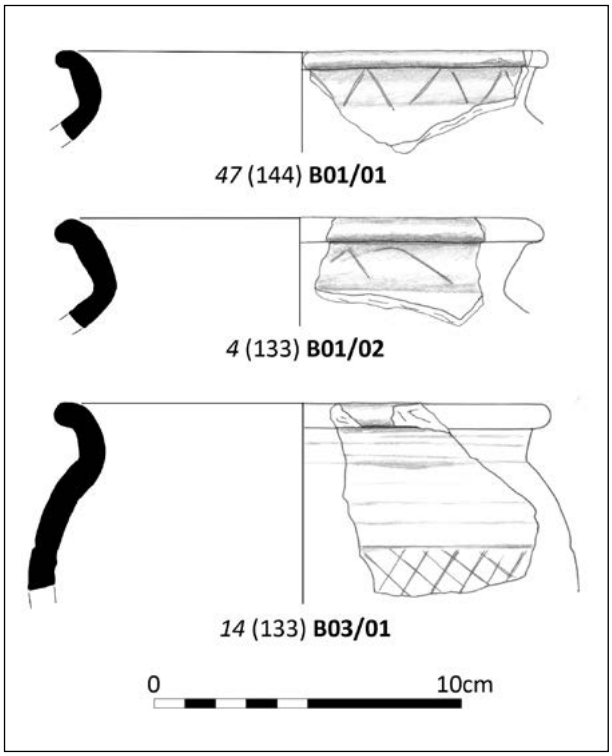


Fig. 5.42. Roman pottery: black-burnished ware vessels.

Class B, black-burnished wares

- B01 BB1 Dorset Black-burnished ware, Tomber and Dore 1998, DOR, BB1.
- B03 Rossington Bridge BB1. A handmade black-burnished ware with common moderate sand inclusions.

These comprise Dorset BB1 (B01) at 2.7% by number of sherds and Rossington Bridge BB1 (B03) at 3.5%, although the former may include some B03 given the difficulty in visually distinguishing between the fabrics. Class B is present in all larger feature groups, apart from D-shaped Enclosure 3. It is present at the highest levels in rectilinear Enclosure 2b in field N7, mainly from its north ditch segment F338, where the level is very high at 12.4% by number of sherds. The B01 vessels represented are mainly jars, which is in line with BB1 supply in the 2nd century. The identifiable B03 material comprises jars only, also of 2nd-century date.

- B01/01 A Gillam 1976 type 2 jar, MC2. 3 examples, drawn piece from rectilinear Enclosure 2b ditch F338, fill (144).
- B01/02 A jar with an everted out curving rim, Gillam 1976, No 3, M–LC2. 8 examples, drawn piece from rectilinear Enclosure 2b ditch F338, fill (133).
- B01/03 A flanged rim bowl. 5 examples, not drawn.
- B01/04 A flanged rim dish, Hadrianic–Antonine. 1 example, not drawn.
- B03/01 A jar with an everted out curving rim, with acute lattice burnishing as Gillam 1976 type 2-3, MC2. 2 examples, drawn piece from rectilinear Enclosure 2b ditch F338, fill (133).

Class G, gritted wares

- G10 Dales shelly ware, Tomber and Dore 1998, DAL SH.
- G108 Reduced Derbyshire ware, Tomber and Dore 1998, DER CO.
- G108.1 Oxidised Derbyshire ware, Tomber and Dore 1998, DER CO.
- G15 North Lincolnshire shell-tempered ware This is a reduced fabric with abundant fossil shell inclusions.
- G16 Lincolnshire wheelmade shell-tempered ware. This is a wheelmade grey gritty ware with common coarse shell inclusions,
- G17 Lincolnshire coarse shell-tempered ware. This is a handmade grey gritty ware with common coarse shell inclusions.
- G34 North Lincolnshire grog-tempered ware. A handmade fabric with grey core and dark grey brown margins and surfaces; common subrounded grey grog temper.

Dales ware G10 dates to the 3rd and 4th centuries. It forms 1.1% of the assemblage by number of sherds, all from field N7 where it forms 1.9% of the pottery. Derbyshire ware G108 and G108.1 is important from the mid 2nd century and declines sharply in the 3rd century. It comprises 3.7% of the assemblage by number of sherds, 0.2% in field N2/N3, 2.5% in field N5/N6 and 4.9% in field N7. Trent Valley/Lincolnshire wares date to the 1st century AD and continue to the mid 2nd century. The fabrics include G15, which comprises 4.5% of the assemblage by number of sherds, G16 at 5.8%, G17 at 0.2% and G34/G34.1 at 7.2%, giving an overall level of 17.7%; these wares comprise 44.0% of the

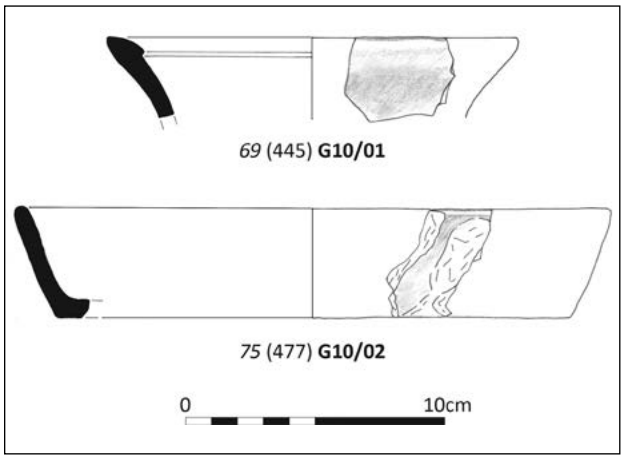


Fig. 5.43. Roman pottery: Dales ware vessels.

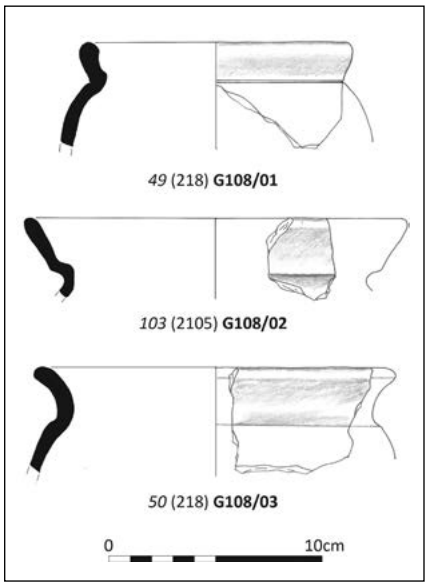


Fig. 5.44. Roman pottery: Derbyshire ware vessels.

pottery from field N2/N3, 42.4% from field N5/N6, but only 0.1% from field N7. This suggests that fields N2/N3 and N5/N6 were the main focus of 1st-century AD activities, with occupation in field N7 being a later development. Interestingly, the proportion of Iron Age/native tradition fabrics recovered from the 2015 excavations in field N8 is much higher (27.0%) than that from the immediately adjacent field N7, perhaps indicating that occupation in field N8 also began earlier than in field N7.

- G10/01 A jar with a Dales rim, LC2–MC4. 1 example, drawn piece from posthole [444], fill (445).
- G10/02 A simple rim dish. 1 example, drawn piece from pit [476], fill (477).
- G108/01 A Derbyshire ware jar with a strongly lid seated slightly beaded rim, as Gillam 1939, Fig. 2, No. 1. 2 examples, drawn piece from rectilinear Enclosure 2b ditch F338, fill (218).
- G108/02 A Derbyshire ware jar with lid seating and long slightly concave rim. As Gillam 1939, Fig. 3, Nos 4–5. 1 example, drawn piece from Enclosure 4 quarry pit F2794, fill (2105).
- G108/03 A Derbyshire ware jar with an everted out-curving rim, beaded at tip. 1 example, drawn piece from rectilinear Enclosure 2b ditch F338, fill (218).
- G15/01 A jar with a thick, triangular in section rim, cf. Darling and Precious 2014, native tradition, Fig. 70, No. 696, cf. Rowlandson 2016, No. 12, AD 70–MC2. 3 examples, drawn piece from horseshoe-shaped Enclosure 5 ditch F4334, fill (2748).
- G15/03 A wide mouth jar with a thick, triangular in section rim with slight internal beading, Darling and Precious 2014, Nos 693, 700; Rowlandson 2016, Nos 11, 12. 2 examples, drawn piece from field ditch F4338, fill (3991).
- G34/01 A jar with a slight neck, lid seated bead rim, perhaps cf. Darling and Precious 2014, IAGR, Nos 805–6. 2 examples, not drawn.
- G34/02 A jar with a strongly everted rim, Darling and Precious 2014, IAGRB, No. 821. 1 example, drawn piece from horseshoe-shaped Enclosure 5 ditch F4334, fill (2752).
- G34/03 A jar with a triangular in section rim, with incised decoration, Darling and Precious 2014, IAGRB, No. 822. 1 example, drawn piece from Enclosure 4 quarry pit F2794, fill (2137).
- G34/04 A jar with a triangular in section rim and slight internal bead, with groove girth, Darling and Precious 2014, IAGRB, No. 857. 7 examples, drawn piece from horseshoe-shaped Enclosure 5 ditch F4334, fill (2743).
- G34/05 A wide mouth jar with a squared bead rim and internal lip, cf. Darling and Precious 2014, IAGRB, No. 841. 2 examples, not drawn.
- G34/06 A wide mouth jar with a bifid bead rim. 1 example, drawn piece from rectilinear Enclosure 2b ditch F200, fill (515).

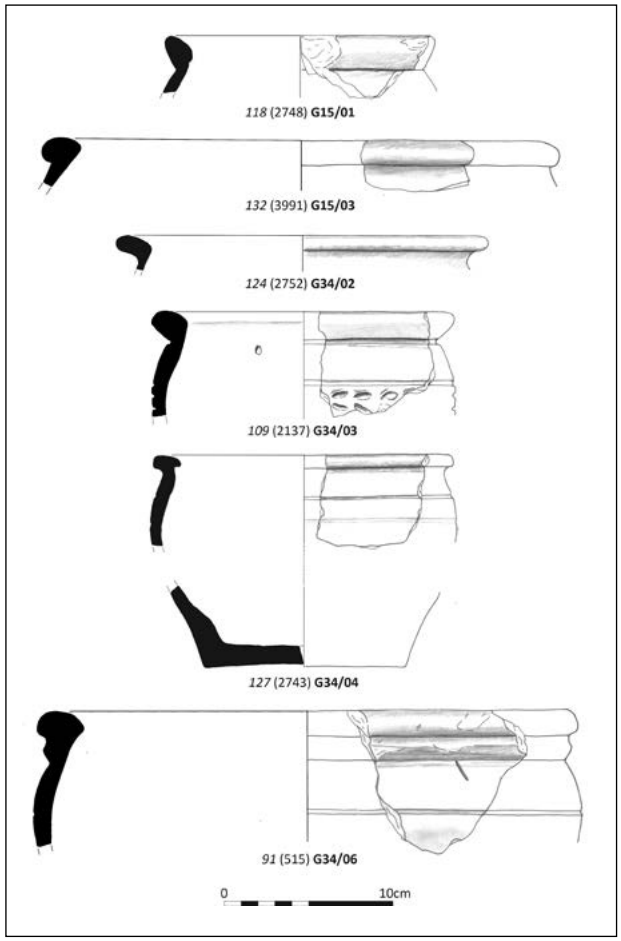


Fig. 5.45. Late Iron Age/Roman pottery: Trent Valley/Lincolnshire Iron Age/native tradition vessels.

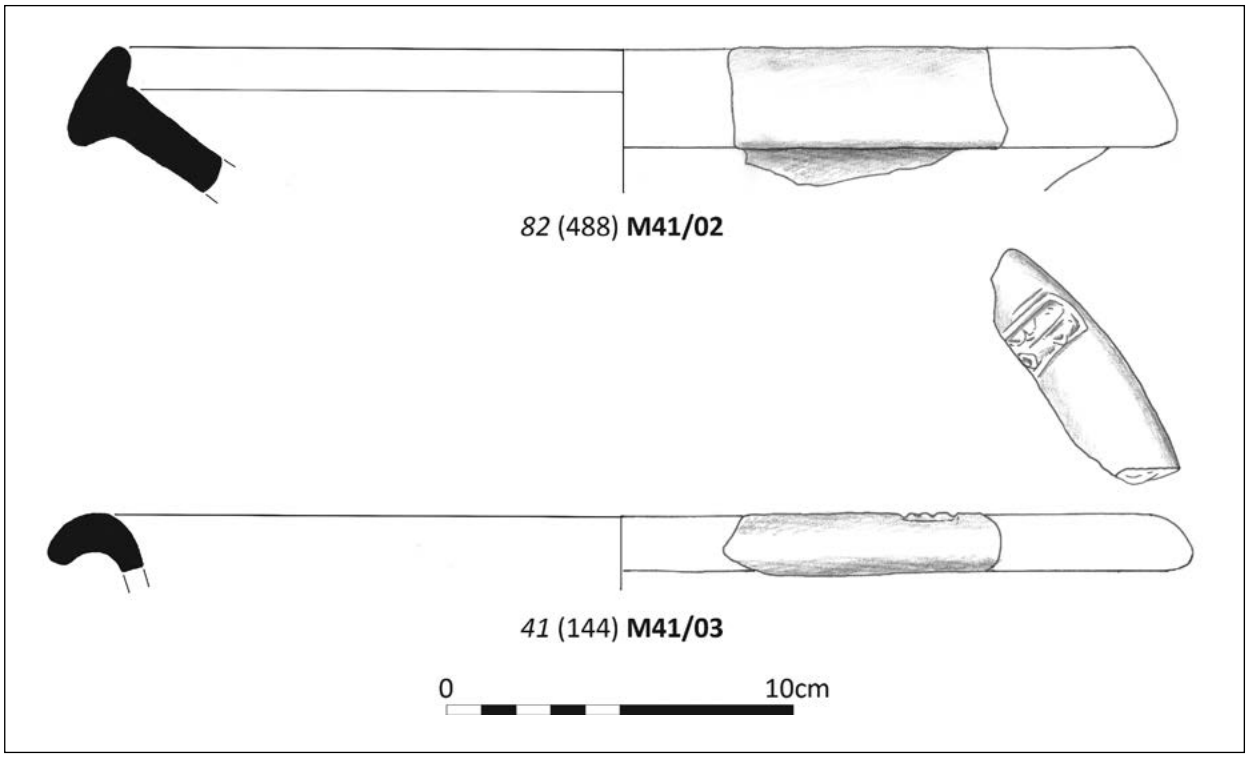


Fig. 5.46. Roman pottery: mortaria.

Class M, mortaria

- M41 White-slipped South Yorkshire mortaria. An oxidised mortaria fabric with common fine sand inclusions and sparse black grits.
- All the mortaria noted are South Yorkshire products, occurring at 0.4% by sherd count overall, coming only from fields N7 and N5/N6, where they occur at 0.5% and 0.4% respectively.
- M41/01 A bead and flange rim mortarium with bead higher than flange, Hartley 2001, Fig. 35, No. 3. 1 example, not drawn.
- M41/02 A white-slipped wall-sided mortarium, Hartley 2001, Fig. 35, No. 28, C3–C4. 1 example, drawn piece from pit [473], fill (488).
- M41/03 A bead and flange rim mortarium stamped, Hartley 2001, trademark 54, Fig. 33, 11. 1 example, drawn piece from rectilinear Enclosure 2b ditch F338, fill (144).

Class O, oxidised wares

- O02 A hard orangebrown fabric; perhaps a little very fine sand temper and common fine mica.
- O11 South Yorkshire oxidised ware. A pale red fabric with a grey core with common medium sized sand and occasional black iron stone.
- O15 A softish buff fabric; common fine sand temper, occasional red ironstone inclusions and some mica.
- O31 A local sandy red fabric with common to abundant sand.

Oxidised wares are present at 5.1% in field N7, 0.8% in field N5/N6 and 0.7% in field N2/N3.

- O11/01 A constricted necked jar with an everted thickening rim, Buckland *et al.* 2001, Gb 244.

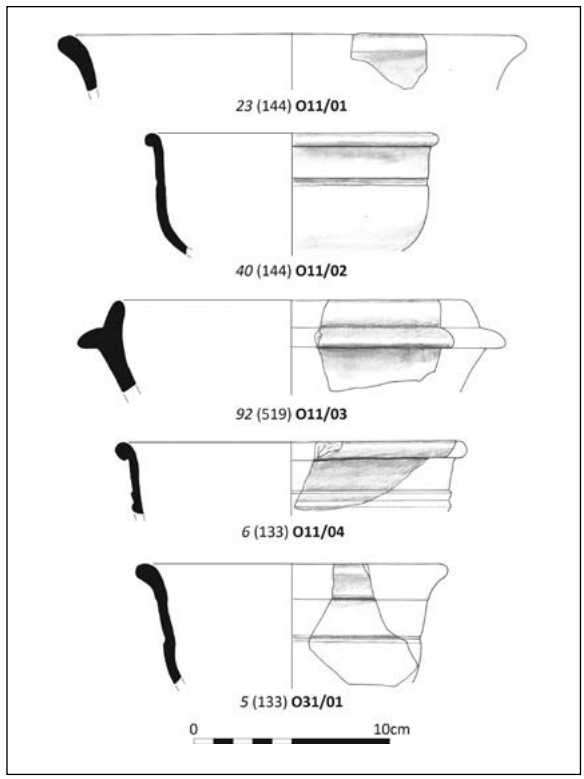


Fig. 5.47. Roman pottery: oxidised wares.

1 example, drawn piece from rectilinear Enclosure 2b ditch F338, fill (144)

- O11/02 A hemispherical bowl with a bead rim and groove on upper body, Samian Drag 37 copy. 1 example, drawn piece from rectilinear Enclosure 2b ditch F338, fill (144).
- O11/03 A Drag. 38 copy flanged bowl. 1 example, drawn piece from pit [518], fill (519).
- O11/04 A drag 37 derived bowl with undercut bead rim double groove on girth. 1 example, drawn piece from rectilinear Enclosure 2b ditch F338, fill (133).
- O31/01 A hemispherical bowl, derived from Drag. 37. 1 example, drawn piece from rectilinear Enclosure 2b ditch F338, fill (133).

Class R, reduced wares

- R01 Fine sandy greyware This is a hard greyware with common translucent and white quartz.
- R02 Clean greyware. A hard, greyware with a 'crisp' break; some black ironstone? inclusions.
- R03 A hard fabric with dark grey core, whiteish margins and brown surfaces; occasional moderate sand temper and occasional calcareous inclusions.
- R11 Coarse sandy greyware. A hard greyware; common moderate sand temper. This group almost certainly includes fabrics from more than one source.
- R112 South Yorkshire greyware. A reduced fabric with grey core, margins and surfaces, with common moderate sand temper.
- R12 A greyware with a brown core with common rounded quartz.
- R394 North Lincolnshire. A reduced fabric with grey core, orangebrown margins and black surfaces, with occasional shell fragments and ooliths and very occasional large red ironstone.
- R394 North Lincolnshire reduced ware. A reduced ware, with abundant sand and sparse grog.

The vast majority of the Class R material is South Yorkshire greyware (SYGW) R112 at 62.3% of the overall pottery total, with minor components of probably fine SYGW R01 at 0.7% and Lincolnshire grog-tempered Roman ware R394 at 2.1%, with a small amount of other reduced wares noted, none higher than 1%. R394 is noted only in the rectilinear enclosure or small field/paddock (F4312/Enclosure 6) in field N2/N3. As with most reduced wares the largest component is jars, but there is a relatively high level of tablewares (dishes and bowls). Grey wares are present in field N7 at 77.5% by number of sherds, in field N5/N6 at 52.0% and in field N2/N3 at 49.9%. This perhaps reflects the paucity of earlier activity in field N7 (as represented by Iron Age/native gritted wares, Class G) compared to fields N2/N3 and N5/N6.

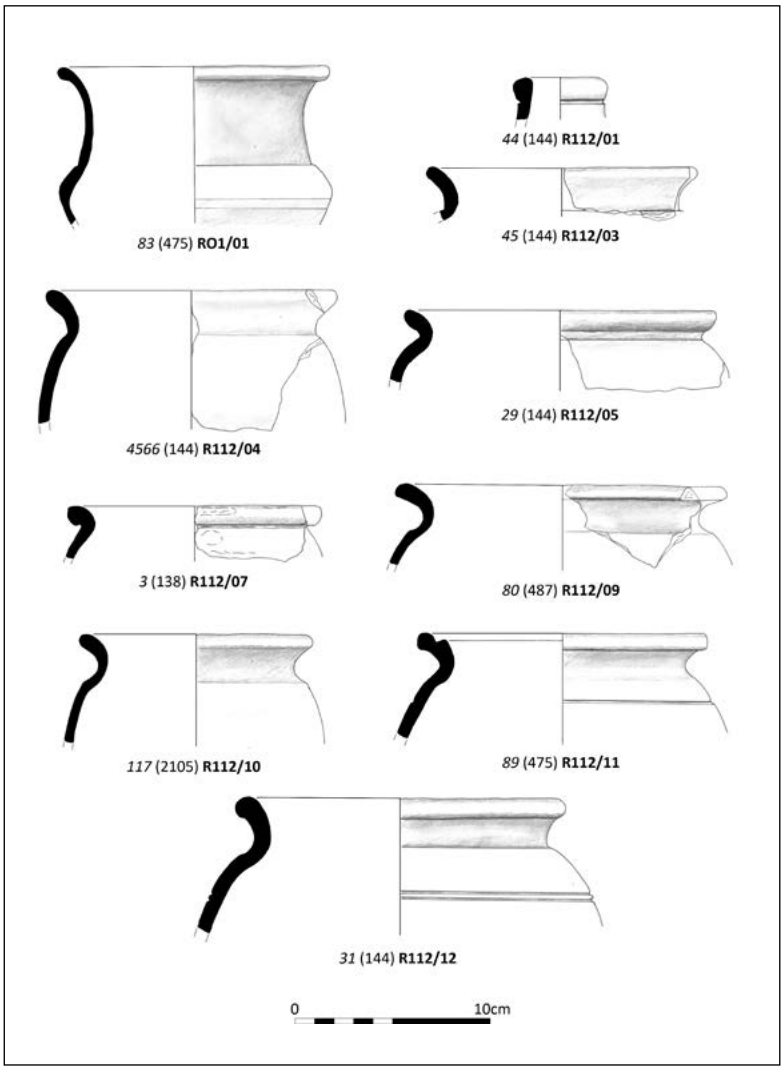


Fig. 5.48. Roman pottery: greyware necked jars, jars and a flagon.

- R01/01 A long necked carinated jar with everted thickening rim Gillam 1970, No. 177. 1 example, drawn piece from rectilinear Enclosure 2b ditch F502, fill (475).
- R112/01 A flagon with a bead rim, Buckland *et al.* 2001, No. 229. 1 example, drawn piece from rectilinear Enclosure 2b ditch F338, fill (144).

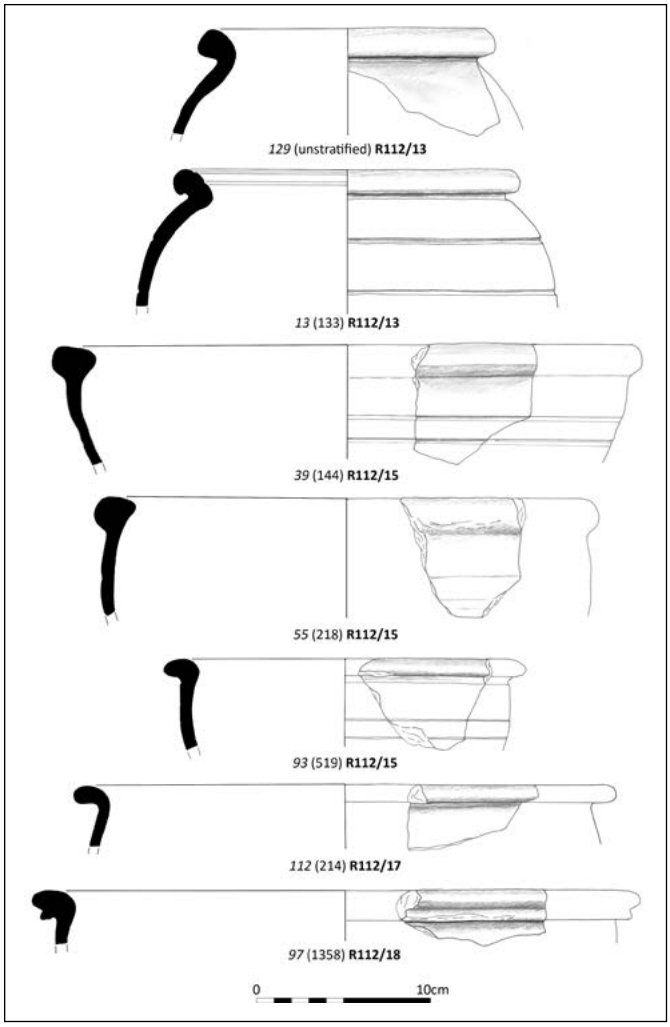


Fig. 5.49. Roman pottery: South Yorkshire greyware necked jar and wide mouth jars.

- R112/02 A jar with a straight everted rim and rusticated body, Buckland *et al.* 2001, No. 167. 8 examples, not drawn.
- R112/03 A necked jar with an everted out curving rim, Buckland and Dolby 1980, E.56, possible BB1 copy, MC2–EC3. 32 examples, drawn piece from rectilinear Enclosure 2b ditch F338, fill (144).
- R112/04 A jar with an everted out curving rim, BB1 copy MC2-C3. Buckland and Dolby 1980 E.59. 14 examples, drawn piece from rectilinear Enclosure 2b ditch F338, fill (144).
- R112/05 A jar with a strongly everted out curving rim, Buckland and Dolby 1980, E.68. 19 examples, drawn piece from rectilinear Enclosure 2b ditch F338, fill (144).
- R112/06 A jar with an everted out curving rim, Gillam 1976, No. 3, BB1 copy, MC2-MC3.Buckland and Dolby 1980 E.71. 11 examples, not drawn.
- R112/07 A jar with an everted out curving thickening rim. Buckland and Dolby 1980, E.82. 15 examples, drawn piece from rectilinear Enclosure 2b ditch F338, fill (138).
- R112/08 A jar with a bead rim Buckland and Dolby 1980 E.84. 6 examples, not drawn.
- R112/09 A jar with a cavetto type rim, BB1 copy Gillam 1976, No. 8; Buckland and Dolby 1980, E.85, MC2–MC3. 1 example, drawn piece from pit [470], fill (487).
- R112/10 A jar with a straight everted rim with double lid seating Grooves, Buckland and Dolby 1980, No. 97. 1 example, drawn piece from fill of Enclosure 4 quarry pit F2794, fill (2105).
- R112/11 A jar with an everted out curving rim, with deep lid seating Buckland and Dolby 1980, Class Eb. 1 example, drawn piece from pit [474], fill (475).
- R112/12 A large jar with an everted rim, Buckland and Dolby 1980, F.134. 1 example, drawn, from rectilinear Enclosure 2b ditch F338, fill (144).
- R112/13 A necked large jar with a beaded rim, Buckland and Dolby 1980, F.140. 1 example, drawn (unstratified, SF 55).
- R112/14 A wide mouth jar with a bead rim, with two grooves on upper lip, cf. Buckland and Dolby 1980, No. 186. 3 examples, drawn piece from rectilinear Enclosure 2b ditch F338, fill (133).
- R112/15 A wide mouth jar with a beaded rim and inner lip, Buckland and Dolby 1980, H.188. 21 examples, drawn pieces from rectilinear Enclosure 2b ditch F338, fills (144) and (218), and from pit [518], fill (519).
- R112/16 A wide mouth jar with a slightly undercut bead rim, Buckland and Dolby 1980, Hb.198. 4 examples, not drawn.
- R112/17 A wide mouth jar with a flanged rim, Buckland and Dolby 1980, Hd.207. 4 examples, drawn piece from Enclosure 4 quarry pit F2794, fill (2141).
- R112/18 A wide mouth jar with a bifid rim. 1 example, drawn piece from post-medieval plough furrow [1357], fill (1358).
- R112/19 A beaker with an everted rim, Buckland and Dolby 1980, D.44. 10 examples, drawn piece from rectilinear Enclosure 2b ditch F338, fill (218).
- R112/20 A beaker with a stubby everted rim, Buckland and Dolby 1980, B.52. 3 examples, drawn piece from pit [476], fill (477).
- R112/21 A flange rim bowl, Buckland and Dolby 1980, C.23, Hadrianic–Antonine. 9 examples, drawn piece from probable natural solution hollow (433).
- R112/23 A bowl with an undercut flange rim, Buckland and Dolby 1980, C.28. 3 examples, drawn piece from Enclosure 4 quarry pit F2794, fill (2137).
- R112/24 A bowl with a grooved tip, Buckland *et al.* 2001, No. 86. 2 examples, drawn piece from pit [470], fill (487).

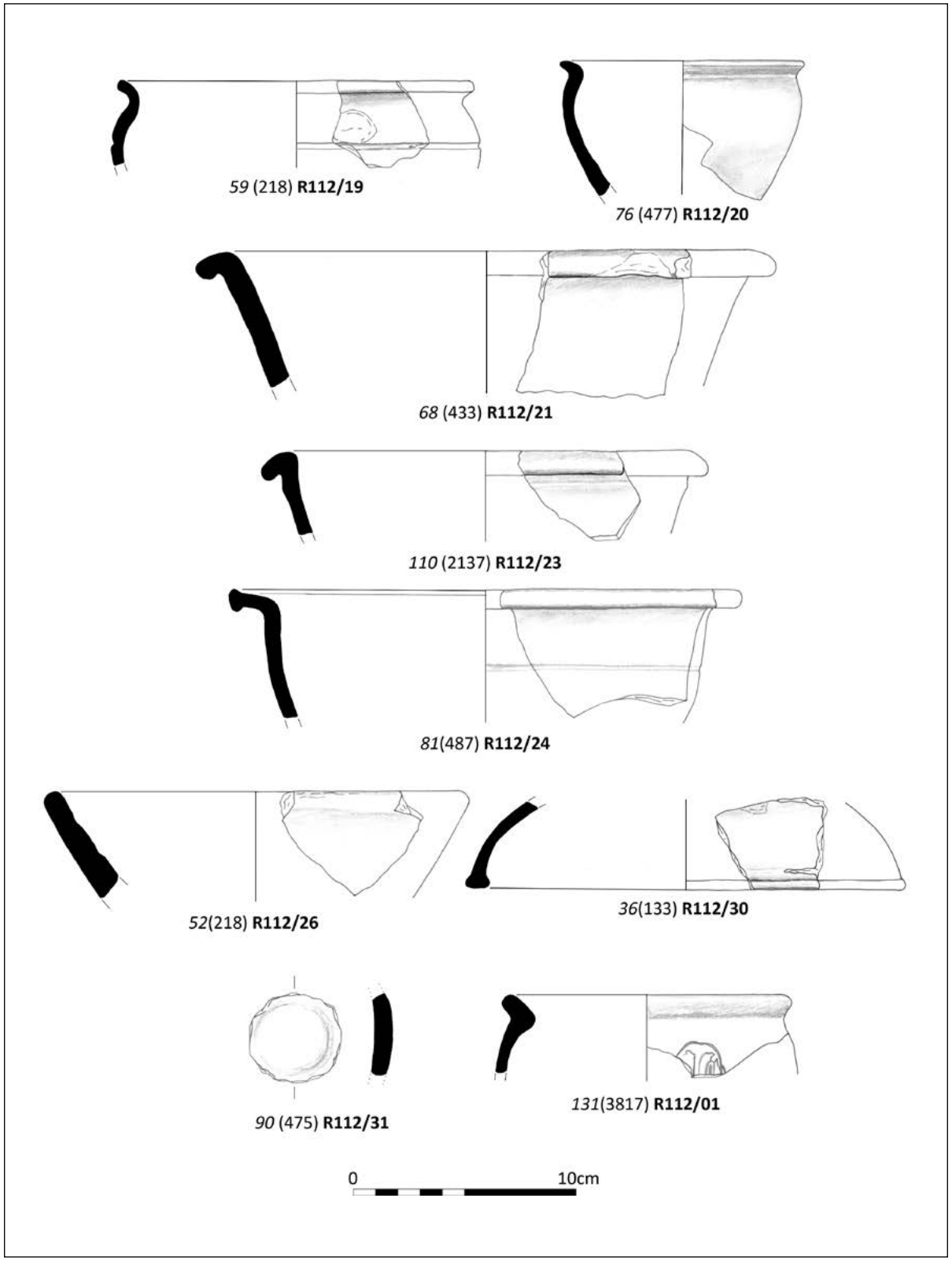


Fig. 5.50. Roman pottery: South Yorkshire greyware beakers, bowls, dishes, lid and counter.

- R112/25 A developed bead and flange rim bowl, AD 270+. 5 examples, not drawn.
- R112/26 A straight sided dish with a simple rim. Buckland and Dolby 1980, B.9. 1 example, drawn, from rectilinear Enclosure 4 ditch F338, fill (218).
- R112/27 A curving walled dish with a simple rim. 1 example, not drawn.
- R112/28 A groove rim dish, Buckland and Dolby 1980, B.10. 9 examples, not drawn.
- R112/29 A flange rim dish. 2 examples, not drawn.
- R112/30 A lid with a beaded tip. 3 examples, drawn piece from rectilinear Enclosure 2b ditch F338, fill (133).
- R112/31 A counter 33.5 mm in diameter, 7 mm thick. 1 example, drawn piece from pit [474], fill (475).
- R394/01 A jar with a short straight everted rim, Darling and Precious 2014, No. 974. 2 examples, drawn piece from rectilinear enclosure or small field/paddock F4312 (Enclosure 6), fill (3817).

Class S, samian

S10 South Gaulish samian. A single sherd (25 g) of ?South Gaulish samian bearing a stamp, probably of Caratus, whose products have previously been noted in Doncaster (Dickenson 1986). From ?late Roman pit [478] within Enclosure 2b in field N7 (Fig. 5.51).

Fig. 5.51. Stamp on a ?South Gaulish samian sherd from pit [478] located within rectilinear Enclosure 2b in field N7.

Fig. 5.52. Rubbing of a sherd of decorated Central Gaulish (Lezoux) samian (Drag. 37 bowl) from late Roman pit [470] located within rectilinear Enclosure 2b in field N7.

S20 Central Gaulish samian. There are seven sherds (152 g), all from Lezoux (Puy-de-Dôme, France), including a rim from a Central Gaulish Drag. 37 bowl (Fig. 5.52), which Dr Gwladys Monteil suggests is a piece by the Quintilianus i group, datable to AD 125–55, or perhaps to AD 145–55 in view of a link of a figured type (the Triton) to Laxtucissa, from whom Quintilianus i may have commissioned moulds (Hartley and Dickinson 2011, 308). This piece came from late Roman pit [470] in group F511 within rectilinear Enclosure 2b. Two other sherds came from pit [476] (also in F511) and another from the north ditch (segment F338) of Enclosure 2b, whilst two pieces were recorded from the quarry pit F2794 within Enclosure 4 in field N5/N6 and one from the rectilinear enclosure or small field/paddock, F4312 (Enclosure 6), in field N2/N3.

Class W, whitewares

W01 A clean whiteware fabric with moderate black iron stone.

There is only a small amount of material in the class present, all in fabric W01, occurring only as body sherds from the horseshoe-shaped Enclosure 5 in field N2/N3.

Discussion

Figure 5.53 shows the overall date distribution of the vessels with a given date range of 160 years or less by rim equivalent from the 2019–22 excavations. There is a 1st-century AD start date with a peak in the mid to late 2nd century, an early 3rd-century decline and a small amount of material after the late 3rd century.

There is some variation in the dating of the Roman pottery in the different areas excavated in 2019–22. Figure 5.54 shows the date distribution of pottery with a restricted date range from the 2019 excavations in field N7. This indicates a late 1st-century AD start, a peak in the mid to late 2nd century, a decline in the early 3rd century, a slight rise in the late 3rd century and a small amount of material possibly of 4th-century date. Figure 5.55 shows the breakdown of pottery for field N5/N6. This has a 1st-century AD start date, rising gradually in the late 1st century, peaking in the mid to late 2nd century and declining in the early to mid 3rd century. Figure 5.56 shows the date distribution for pottery in field N2/N3. This also has a 1st-century AD start point, with a late 1st- to early 2nd-century peak, followed by a tail off in the mid to late 2nd century. Only two body sherds of R112 of broad Roman date, were recovered from field N4 and no Roman pottery was found in stratified contexts in field N1.

The earliest pottery noted was North Lincolnshire/ Trent Valley gritted and calcareously-tempered Iron Age/native tradition wares. These are dated from the beginning of the 1st century AD and continue until the mid 2nd century. This mirrors the expansion of Class E (transitional, early or 'Belgic') and shell-tempered wares in the 1st century AD in Leicestershire (Evans and Mills 2011), replacing temper traditions in the west of the county which had been in use since at least the

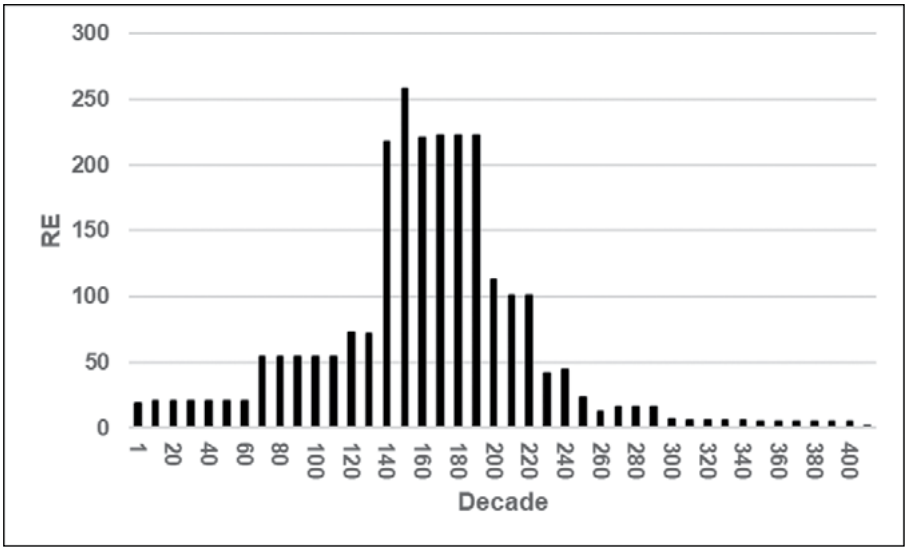


Fig. 5.53. Date distribution of Roman pottery vessels with a restricted date range by rim equivalent (RE) from the Holme Hall Quarry excavations of 2019–22.

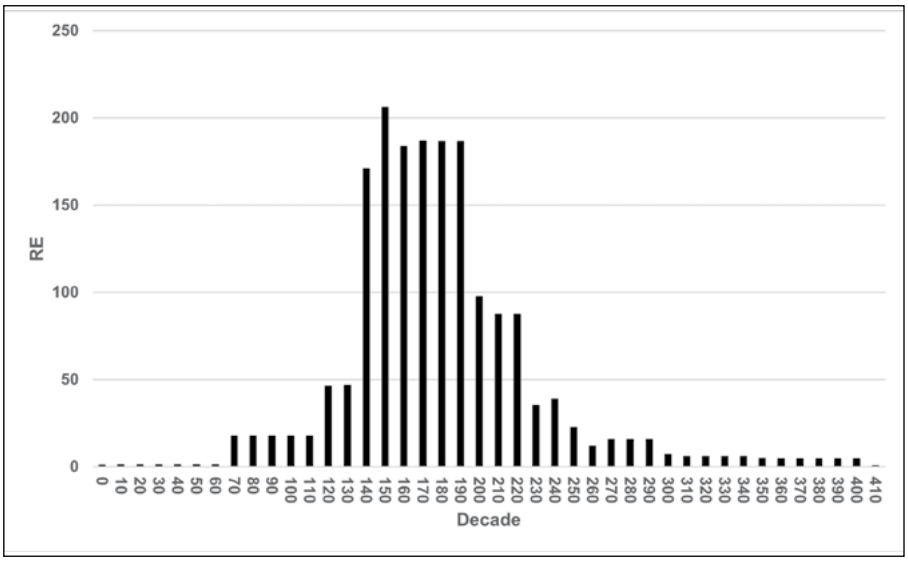


Fig. 5.54. Date distribution of Roman pottery from field N7.

Early Iron Age. This may reflect the growing importance of the Corieltavi (a people who inhabited Lincolnshire, Leicestershire and surrounding areas) in the Late Iron Age. In the case of Holme Hall Quarry, this is perhaps less dramatically indicated as the local area is largely aceramic during the preceding Middle Iron Age. In Leicestershire, Iron Age pottery supply is noticeably greater on sites close to rivers. The relative proximity of the Rivers Don and Torne to Holme Hall Quarry may have facilitated the supply of pottery to the site in the Late Iron Age.

The absence of any Roman pottery from D-shaped Enclosure 3 in field N2/N3 suggests that this was one of the earliest settlements in the area of investigation and is unlikely to have continued long after the Roman conquest. Other features with only 'native' tradition fabrics include field ditch F4338, Enclosure 4 ditch F2789 and field ditch [3934] in N5/N6 and field ditch F4308 in N2/N3.

These native tradition wares occur alongside Roman fabrics at rectilinear Enclosure 2b in field N7, in the quarry pit F2794 and the surrounding Enclosure 4 ditch (F2790) in N5/N6 and at horseshoe-shaped Enclosure 5 in N2/N3; it seems probable, therefore, that occupation of these features began in or continued beyond the late 1st century AD. As noted above, the relative lack of native tradition wares in field N7 (where they form only 0.1% of the pottery by number of sherds) compared

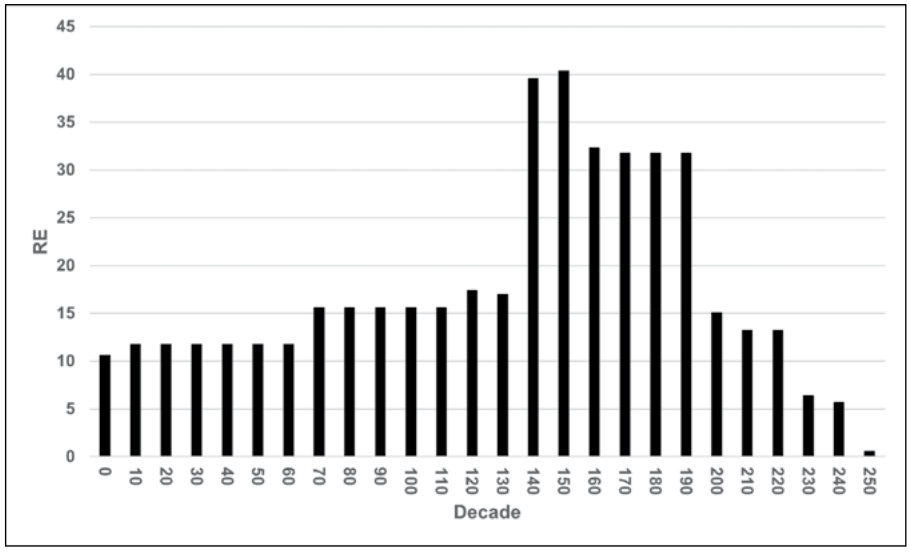


Fig. 5.55. Date distribution of Roman pottery with a restricted date range from field N5/N6.

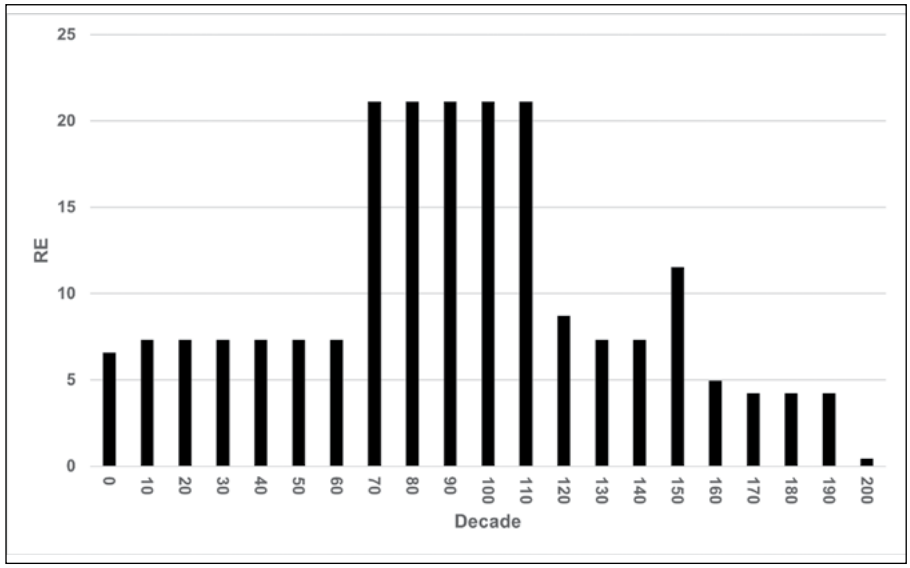


Fig. 5.56. Date distribution of Roman pottery with a restricted date range from field N2/N3.

to other areas, such as N2/N3, N5/N6 and N8 (2015 excavations), suggests that significant occupation in N7 may have begun later than in other areas.

Field ditch fills with only Roman tradition pottery, so likely to have been open in the late 1st century AD or later, include those of F2770, F4242, F4259 and F4315 in N2/N3. Field ditches F2039 and F2791 in N5/N6 had pottery of the mid 2nd century or later in their fills.

The main period of activity on the site is in the Antonine period (mid to late 2nd century), with the main source of supply being the South Yorkshire industries, possibly arriving via the River Don, but also by the suggested Roman road between Templeborough and Doncaster (Margary 1973, Road 710c). Wider connections are attested around this time by the presence of Dorset BB1, Central Gaulish samian and South Spanish olive oil amphorae (although these amphorae have a broader date range).

Outside of rectilinear Enclosure 2b in field N7, none of the features appear to continue past the early 3rd century. The field/enclosure system might have gone out of use by this date (or the lower surviving parts of the ditches had silted/filled up by this time). The N7 area declines in the early to mid 3rd century, but several pits and postholes (including groups F511 and F528) within Enclosure 2b contain late 3rd-century pottery. Pottery supply does not appear to continue long into the 4th century.

Jars comprise 76.1% of the overall assemblage by minimum number of rims (and 79.5% by rim equivalent), including 17.6% (19.2%) wide mouth jars, which may be associated with dairy farming. Tablewares (bowls and dishes) form 16.5% (13.6%) of the assemblage and beakers 4.9% (4.8%). These figures are firmly within the rural range (Evans 2001b). Only jars are noted in horseshoe-shaped Enclosure 5. There is greater functional diversity in the quarry pit F2794 within Enclosure 4, with mortaria (1.1% by minimum number of rims) and tablewares (14.8%) suggesting the preparation and consumption of food (the remainder of the pottery, 84.0%, was jars). The north ditch (segment F338) of rectilinear Enclosure 2b in field N7 has 0.9% mortaria, 8.9% tablewares and 5.9% beakers. The widest functional diversity is found in the late Roman pits and postholes within Enclosure 2b. Pit group F511 has 11.1% mortaria, 55.5% tablewares and 21.1% beakers, whilst possible structure F528 and other pits in the same area have no mortaria or dishes, but 36.4% bowls and 17.6% beakers. This suggests a focus of food consumption within Enclosure 2b, especially during the late Roman period, and perhaps indicates that special events such as feasting may have taken place here.

Samian forms 0.2% of the assemblage by number of sherds and there are no other fine wares. This is within the lower range for fine wares on a rural site. In field N8 (2015 excavations) samian is at a similar level of 0.3% by number of sherds, but a British fine ware (Nene Valley colour-coated ware) is also present at 1.8%.

Evidence of sooting was present on 5.9% of the 2019–22 assemblage by number of sherds. The highest levels are from rectilinear Enclosure 2b, suggesting concentration of food preparation there: 9.9% of sherds in north ditch segment F338 had sooting; 17.0% of sherds in west ditch segment F502; 7.4% of sherds in pit group F511; but only 1.2% of sherds in structure F528 and in nearby pits.

Medieval and later pottery

By C. G. Cumberpatch

A small quantity of medieval and later pottery was recovered from the 2021–22 excavations, comprising thirteen sherds, weighing 126 g, representing a maximum of ten vessels. The pottery assemblage lacks any real internal consistency or coherency and appears to consist of stray finds deposited over a long span of time, perhaps as a result of casual refuse disposal or manuring. While it indicates activity during the medieval, early modern and recent periods, this activity does not seem to have been very intense or localised.

Only two sherds of medieval date were recorded, one residual in the fill of post-medieval quarry F4290 and another unstratified. The stratified sherd was not positively identifiable to a specific type, but resembled a type of Reduced Sandy ware which is relatively common in and around Doncaster. The unstratified sherd was of Coal Measures ware type but not quite identical to the Coal Measures Whiteware type known from Firsby Hall Farm and Rawmarsh (Cumberpatch 2004).

Early modern pottery (*c*.1720–*c*.1840) was represented by sherds of Late Blackware, Mottled ware and Brown Salt Glazed Stoneware in the fills of post-medieval features. Late Blackware is one of the commonest types of vernacular tableware found in South Yorkshire and was made in a number of local potteries (Cumberpatch 2014). Mottled ware was also made widely throughout the county from as early as 1709. Of the two sherds of stoneware one, the handle of a mug or tankard was of typical 18th-century type although the second sherd could be somewhat later.

Burnt clay and ceramic building material

By the late Phil Mills

A total of 161 fragments, 551 g, of burnt clay was collected as bulk finds from stratified contexts. Fragments of oven lining came from a Middle Iron Age pit [1033] and a fragmentary loom weight was noted from the north ditch F4344 of the Late Iron Age/early Roman D-shaped Enclosure 3. Unidentifiable fragments derived from Roman pit [473], early medieval pit [2513] and an undated pit. The finds are consistent with domestic activities related to cooking and textile production.

Six fragments, 367 g, of ceramic building material (CBM) were recovered. Roman material included a brick/tile from Late Iron Age/Roman field ditch segment/pit [3833] in field N2/N3 and an unidentified fragment from an unstratified context (2020 excavations). The brick from (3834) has a concave surface and may have been brought to the site for use in a work surface rather than for construction. Later material consists of a roof tile, which from the fabric is likely to be of post-medieval date, and two wall tiles, one of late 17th-century or later date, the other in a late 18th-century or later bone china fabric. These finds are typical of rural scatter of the post-medieval or later period.

Chipped lithics

By Robin Holgate

In total, 45 chipped lithics weighing 85.35 g were retrieved, ranging in date from the Mesolithic period to the Early Bronze Age (Table 5.3). About two-thirds of the lithics (n = 30) came from the topsoil, subsoil and unstratified deposits and the remainder were residual within the fills of either natural, Late Iron Age/Roman

or post-medieval features. Although none appear to derive from contemporary features, the majority of the lithics are considered to reside relatively close to the original place where they were discarded. Possible concentrations of lithics are evident in the central and west parts of field N2/N3 and in the west part of field N5/N6, perhaps indicating areas of settlement or other closely defined prehistoric activity (NB more precise analysis of the findspots of the lithics from the topsoil and unstratified deposits has been undertaken since the publication of the archive report (Holgate 2024), as reflected in Table 5.3 and Fig. 5.57). Pieces from all periods are distributed across all excavated areas.

The blades, bladelets, crested blade and a narrow rod microlith (Fig. 5.58) probably date to the Late Mesolithic period (*c*.6500–4200 cal BC). The leaf-shaped arrowhead and possibly some of the flakes and blades date to the Early Neolithic period (*c*.4200–3700 cal BC), whilst the edge-trimmed blade and an end scraper fabricated on a blade could date to either the Mesolithic or Early Neolithic period. The remaining debitage and implements are likely to date to the Middle–Late Neolithic period/Early Bronze Age (*c*.3400–1600 cal BC), with the thumbnail scraper probably dating to the Beaker period/Early Bronze Age.

The lithic raw material is predominantly dark brown and dark grey-brown flint consistent with origination from the various till deposits of eastern Yorkshire (Brooks 2001). One piece (a flake from field N7) consists of dark grey chert, which does occur naturally

Table 5.3. The lithic assemblage: 2019–22 excavations.

Field/area	**No. of chipped lithics**	**Descriptions and probable dates**
N7	3	1 blade fragment (Mesolithic); 1 flake fragment (Late Neolithic/Early Bronze Age) 1 flake fragment
N1	3	1 bladelet fragment (Mesolithic); 1 end scraper (Mesolithic); 1 flake (Mesolithic)
N5/N6	10 (+1 fire-fractured flint)	2 blade fragments (Mesolithic); 1 narrow rod microlith (Mesolithic); 1 core (Late Neolithic/Early Bronze Age); 4 flake fragments; 2 shattered pieces; 1 fire-fractured flint
N2/N3	21	1 blade (Mesolithic); 2 blade fragments (Mesolithic); 1 bladelet (Mesolithic); 1 knife fragment (Late Neolithic/Early Bronze Age); 1 flake (Late Neolithic/Early Bronze Age); 1 miscellaneous retouched flake fragment (Late Neolithic/Early Bronze Age); 1 scraper fragment (Late Neolithic/Early Bronze Age); 1 flake (Late Neolithic/Early Bronze Age); 1 thumbnail scraper (Early Bronze Age); 6 flake fragments; 5 shattered pieces
N4	4	1 crested blade (Mesolithic); 1 leaf-shaped arrowhead fragment (Early Neolithic); 1 flake (Late Neolithic/Early Bronze Age) 1 flake
Unknown (2022 excavation)	4	1 edge-trimmed blade fragment (Mesolithic); 1 side scraper (Late Neolithic/Early Bronze Age); 1 flake, ?edge-trimmed (Late Neolithic/Early Bronze Age); 1 shattered piece
Total	**45** **(+1 fire-fractured flint)**	

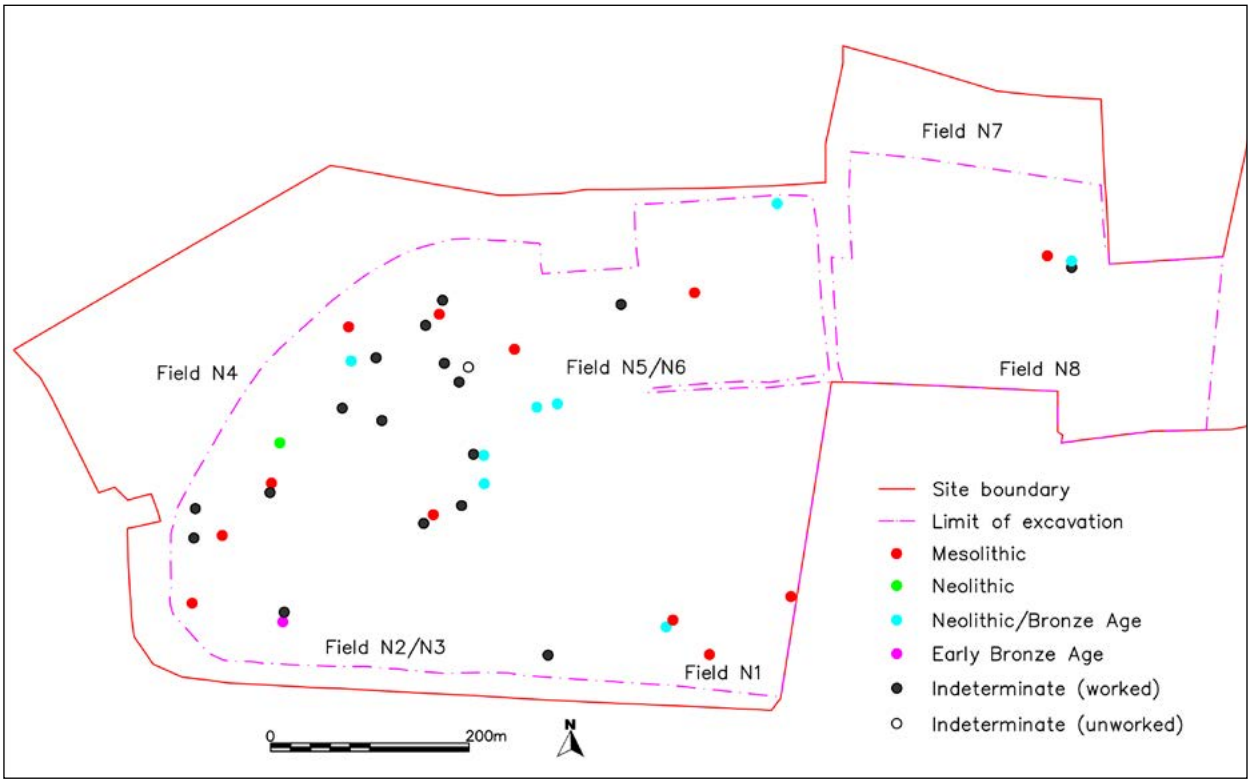


Fig. 5.57. Distribution of prehistoric chipped lithics found in the excavations of 2019–22.

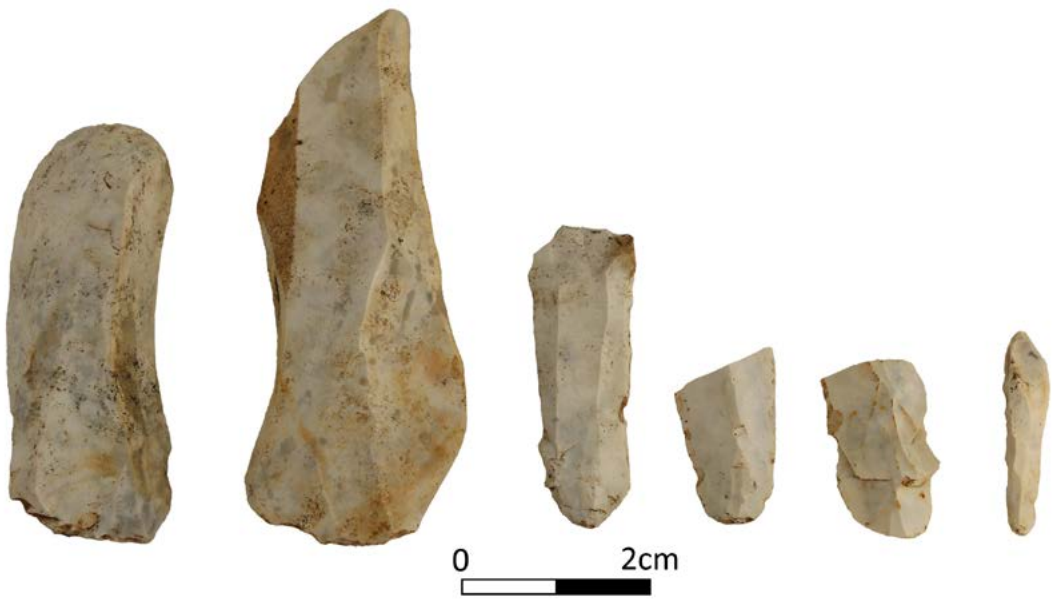


Fig. 5.58. Mesolithic flints recovered from the 2020–22 excavations: end scraper (far left), blade fragments and microlith (far right).

within the underlying magnesian limestone and could therefore have derived from the site. Two-thirds of the assemblage has white or blue-white patination, whilst one of the flint blades is fire-fractured.

Two main strategies were pursued on working flint at the site. The first involved detaching blades and bladelets from cores using mainly soft hammers; care was taken to prepare the platform edge of the cores by abrasion prior to flaking and the width of butts on the resulting removals was minimal. This flint-working technique was in common usage during the Mesolithic and Early Neolithic periods. The second flint-working strategy, which was in common usage from the Middle Neolithic period onwards, involved detaching flakes from cores using hard, probably stone, hammers without abrading the platform edges of the cores in between detaching each flake. Further details on flaking and manufacture can be found in the archive report (Holgate 2024).

The Mesolithic–Early Neolithic debitage, edge-trimmed blade, end scraper and projectile points are likely to have been discarded whilst a specialised set of activities, for example hunting and initial processing of animals, was undertaken by a hunter-gatherer group visiting the site, potentially on more than one occasion. The Middle Neolithic–Early Bronze Age debitage, along with the small quantity of scraping and cutting implements, indicates that the site continued to be a focus for undertaking specific tasks, for example food processing and/or certain craft activities potentially associated with domestic activity taking place at or near the site, during the third and early second millennia BC

Coins

By Peter Guest

Two coins were found in the excavations. The first of these is a radiate of Claudius II (SF 84; *RIC* 18), datable to AD 268–70, found in pit [480], part of pit group F511, within rectilinear Enclosure 2b in field N7 (Fig. 5.59); traces of silver wash were present on both sides. The second, is a farthing of George II (SF 11), datable to 1727–60, from a post-medieval plough disturbance in the top of the fill of Late Iron Age/Roman field ditch F4342 in field N2/N3.

Fig. 5.59. Roman coin (SF 84), a copper-alloy radiate of Claudius II, AD 268–70, from the fill of late Roman pit [480] located within rectilinear Enclosure 2b in field N7.

Copper-alloy objects

By A. Croom

Four copper-alloy objects were found in the excavations: a spiral ring, a rectangular terminal, a scrap of sheet and a penannular brooch. All came from contexts of Late Iron Age to Roman date.

Fig. 5.60. Iron Age to Roman copper-alloy spiral ring (SF 4) from north ditch segment F338 of Roman rectilinear Enclosure 2b in field N7.

The spiral ring (SF 4) comprised an oval loop with three spiral coils, made from thin wire of rectangular cross-section, tapering at both ends (Fig. 5.60). Int. L: 24 mm; W: 21 mm; wire W: 1.5 mm; Th: 1 mm. It was found in north ditch segment F338 of Roman rectilinear Enclosure 2b in field N7. This could simply be a short length of wire, coiled and ready for use, but the fact that each end is tapered, one in thickness as well as width, suggests it could be a spiral finger or toe ring. Such spiral wire rings were most common in the Iron Age, continuing in use during the Roman period in small numbers. The use of thin wire with a rectangular cross-section can be paralleled on a child's ring at Thorpe Thewles, Co. Durham (Allason-Jones 1987, Fig. 50, No. 4). The internal diameter of the Holme Hall Quarry example would indicate use by a man (Swift 2017, 165, Fig. 4.2), although it could possibly be a toe-ring: an example found in a Middle Iron Age burial at Wetwang, East Riding Yorks., was of a similar size and made of wire almost as thin (2 mm: Dent 1984, 174, burial 400).

The rectangular terminal (SF 9; W: 30 mm; H: 20 mm; B: 4–7 mm) was found in the top of the fill (unexcavated) of the north ditch F2049 of a Late Iron Age/Roman east–west droveway in field N5/N6. It was part of a ferrule or finial decorated on one face with grooves and ridges of hemispherical and triangular cross-section (Fig. 5.61).

Fig. 5.61. Late Iron Age to Roman copper-alloy terminal (SF 9) found in the north ditch of a Late Iron Age/Roman east–west droveway in field N5/N6.

There is the base of a hollow socket at the top. The terminal is very similar to a more complete example found at Catterick Roman town (Croom 2021, 494, No. 1736, RF no. 8353). The use of a rectangular motif with grooves and ridges can be found on horse harness such as the side-ring of a three-link horse bit found near Llandudno, Conwy (Portable Antiquities Scheme no. NMGW-7642E7) and a strap junction from South Yorkshire (Mills 2000, 28, No. C38). The use of angular 'geometric' designs is seen as a late development in Iron Age art, and the Holme Hall piece probably dates from the mid 1st to the mid 2nd century AD. The exact function of these objects is unclear. The punched attachment holes on the Catterick example suggest it was attached to wood rather than metal. Use as a spear or staff ferrule is possible, although the fact it was designed to be seen mainly from one side would make it unusual. It could be a fitting from a chariot or cart (possible suggestions include a yoke terminal or a fitting for a pole to wrap the reins round when not in use), or perhaps the foot of a linchpin, albeit one of wood rather than the more usual iron shanks.

The sheet (SF 45) is a thin, incomplete and roughly T-shaped scrap (L: 31 mm; W: 16 mm; Th: 1 mm). It came from pit [3872], which is probably a segment of a Late Iron Age/Roman field boundary in field N4. The date and function of the sheet are unknown.

The penannular brooch (SF 64; D: 27 mm; Th: 2 mm; pin L: 35 mm) came from the primary fill of inner ditch segment F4329 of Late Iron Age/Roman horseshoe-shaped Enclosure 5 in fields N2/N3 and N5/N6. The brooch is complete and has flattened knobs with a single, beaded collar (Fig. 5.62). The humped pin has a deep groove on the section where it is coiled round the loop and a shallower groove down the length of the pin. It belongs to Booth (2014) Type A8 and Mackreth (2011) Type PEN k3.a. This is a long-lived design, with the first Type A8s appearing in the late 1st century AD and continuing until the end of the 4th century (Booth 2014, Appendix 3.3.2). Although Type A brooches have a very widespread distribution, those with A8 terminals are most common between the Tees and the Wash (Booth 2014, Appendix 2.11). As this brooch is complete, it is possible it was deliberately deposited in the ditch. An incomplete glass bead of Iron Age to early medieval date was found in the same context.

Fig. 5.62. Roman copper-alloy penannular brooch (SF 64) from the primary fill of inner ditch segment F4329 of Late Iron Age to Roman horseshoe-shaped Enclosure 5 in fields N2/N3 and N5/N6.

Ironwork

By Gary Taylor and Mike Wood

A knife with the back of the blade in line with the tang (Fig. 5.63), 99 mm in overall length, was found in north ditch segment F338 of Roman rectilinear Enclosure 2b in field N7. A similar knife was recovered from Housesteads Roman fort in Northumberland and was considered to be like others of late Iron Age to early Roman date (Manning 1976, 38, Fig. 22, No. 137). Another very similar example was found in a 2nd- to 3rd-century context at a Roman villa at Aiskew, North Yorkshire (Gerrard and Gerrard 2022, 140). Other Roman knives with the tang and blade back in line have been found at Colchester (Crummy 1983, 110–11) and at Aldborough Roman town in North Yorkshire (Bishop 1996, 86–90). The Holme Hall Quarry knife probably served a domestic function during the Roman period.

A group of ten rather fragmented nails, probably hobnails of Roman date (Fig. 5.64), were recovered from a possible pit or area of wear [1119] within the Late Iron Age/Roman north–south droveway in field N1. These hobnails could have derived from a single discarded or lost shoe.

Nine other iron nails, probably indicating structural activity, were found in the excavations, six from Late Iron Age/Roman contexts and three from post-medieval contexts. The Roman nails comprise: a

Fig. 5.63. Roman iron knife from north ditch segment F338 of Roman rectilinear Enclosure 2b in field N7.

probable nail shaft from pit [508] within rectilinear Enclosure 2b in field N7; a fragmentary smithed iron nail with a rectangular-sectioned shaft, tightly bent/curved over towards the point suggesting that it would have clenched timber, found in field ditch F2055 in field N1; a highly corroded and fractured example, which would broadly fit into the Manning (1985a) Type 1 category from the upper fill of quarry F2794 in field N5/N6; two square-shafted nails from the primary fill of probable field ditch F4255 in field N2/N3, [3277]; and another corroded nail fragment that could broadly fit within Manning (1985a) Type 1 from field ditch F4285 in field N4.

Other iron objects from Late Iron Age/Roman contexts include a small iron bar of unidentified nature from field ditch [159] in field N7 and a rectangular strip of iron plate, which appears to retain fragments of domed rivets from the upper fill of quarry F2794. Similar strips are known from Roman sites such as Castleford (Cool and Philo 1998, 137, Fig. 49, No. 129) and are of uncertain function.

Fig. 5.64. Probable Roman hobnails, iron, from a possible pit or area of wear [1119] within the Late Iron Age/Roman north–south droveway in field N1.

Metalworking debris

By Roger Doonan

The assemblage of metalworking debris comprised 11 fragments (330 g) of slag from five contexts: three of Late Iron Age/Roman date and two of post-medieval date. None of the slag examined was of a diagnostic form but it was almost certainly derived from ferrous metallurgy, most likely iron smithing. Four dense irregular lobate nodules from Roman posthole [500], situated within rectilinear Enclosure 2b in field N7, formed 85% of the assemblage by mass (280 g), highlighting the insignificant quantities recovered from excavations. The two other Late Iron Age/Roman contexts producing slag comprised horseshoe-shaped Enclosure 5 ditch F4334 (2 small platy fragments; 1 g) and field ditch F2039 (3 small angular nodules; 17 g). The limited size of the assemblage, its extensive distribution, and the lack of diagnostic forms prevent any substantial conclusions being drawn other than it is unlikely that metallurgical practices were a significant activity at the site.

Glass bead

By A. Croom

An incomplete, translucent, cobalt blue annular bead (SF 66; D: *c.*18 mm; W: 4–7 mm; Th: 3–5 mm) with a wide perforation was found in the primary fill of inner ditch segment F4329 of Late Iron Age/Roman horseshoe-shaped Enclosure 5 in field N2/N3 and N5/N6 (Fig. 5.65). The bead is of uneven width, and has striations on its surface. Monochrome annular beads are difficult to date as they were used over a long period. Blue examples were one of the most common types in the Iron Age and were particularly popular in Yorkshire, but continued in production throughout the Roman period and into the early medieval period (Guido 1999, 47–8; Foulds 2014, Figs 6.40 and 6.44). This example was found in the same context as a complete Roman penannular brooch.

Fig. 5.65. Iron Age to Roman glass bead fragment (SF 66) from the primary fill of inner ditch segment F4329 of Late Iron Age/Roman horseshoe-shaped Enclosure 5 in fields N2/N3 and N5/N6.

Post-medieval glass

By Gary Taylor

A total of 12 pieces of glass weighing 204 g were recovered, all from bottles probably dating between the mid 17th and 19th/20th centuries. Features producing glass included a plough furrow and a quarry pit.

Clay tobacco pipe

By Mike Wood

A single stem fragment of a clay tobacco pipe (snapped just before the bowl) was found in the plough-disturbed upper fill of an undated large pit or tree throw [2320], which is situated within the interior of Late Iron Age/Roman D-shaped Enclosure 3 in field N2/N3. The fragment was decorated with thorns, a style known from 19th-century pipes. It had a bore of 4/64".

Burnt human bone

By Milena Grzybowska

Burnt human bone fragments, none apparently *in situ* within a burial urn, were recorded in three contexts from the 2020–22 excavations, all Late Iron Age to Roman in date. Cremated bone was found in a context datable to the 2nd to early 3rd centuries in north ditch segment F338 of Roman rectilinear Enclosure 2b in field N7 and in Late Iron Age/Roman field ditch segment [3934] in field N5/N6; the cremated bone from the latter context was radiocarbon dated to 22–204 cal AD at 95.4% probability. The cremated human bone from these two contexts was mostly white, indicating that temperatures in excess of 600°c were reached (Shipman *et al.* 1984; Holden *et al.* 1995). They were characterised by poor surface preservation and extreme fragmentation of skeletal elements, as well as a very low total weight of bone (22.3 g and 3.3 g respectively) that fell well below the average expected weight of a complete cremation burial (1001.5 g to 2422.0 g: McKinley 1993). Any post-depositional disturbance would certainly result in volume reduction but, considering the poor condition of the bone, it is more likely that the two assemblages were redeposited and represent accidental inclusions within their respective deposits.

Charred bone (2.1 g) was also found in ditch F4334 of Late Iron Age/Roman horseshoe-shaped Enclosure 5 in field N2/N3. This had probably been exposed to temperatures varying between 300°C to *c.*600°C and/or a short burning time, implying these human remains were not subjected to an efficient cremation process or may not have been cremated. This charred bone had good preservation, suggesting that it was relatively quickly sealed within its final deposit.

Despite low overall weight (22.3 g), all major areas of the body (skull, torso and limbs) were noted in the cremated bone from rectilinear Enclosure 2b ditch F338, as well as small skeletal elements. The cremated bone from field ditch [3934] included cranium and limbs, whilst the charred bone from horseshoe-shaped Enclosure 5 ditch F4334 comprised upper limb and unidentifiable remains. No reliable ageing or sexing methods were feasible for any of the cremated bone fragments. Each deposit included a minimum of one individual. The size of elements from F338 suggested the inclusion of an adolescent or adult, whereas bone from [3934] could have derived from a juvenile or older individual. Feature 4334 included a fused radius of an adolescent or adult. No metric data were obtained for any of the fragments of burnt bone. Similarly, normal variation traits were unobservable. No pathological changes of bone were identified on any of the elements, although the observability of such was considerably reduced by poor preservation of cortex.

The presence of urned cremation burial [313] from the 2015 excavations (see above, pp. 55, 66) and of presumably redeposited cremated bone recovered from F338 and [3934] in the 2019–22 excavations indicates that between the 1st to early 3rd centuries AD cremation was practiced on, or in the vicinity of, the site.

Animal bone

By Milena Grzybowska

Introduction

Six animal bone groups (ABGs) and 2667 refitted disarticulated specimens (NISP = number of identified specimens) of animal bone were subjected to systematic investigation. This bone was recovered from Late Iron Age/Roman (3 ABGs and 826 refitted fragments), post-medieval (2 ABGs; 1035 refitted fragments) and modern (3 refitted fragments) contexts, and from undated features (1 ABG; 803 refitted fragments). The animal bone from the key features has been briefly described above in the main excavation reports in Chapters 4 and 5 (for further details, see the archive report: Grzybowska 2024). The full methodology used for the analysis of the bone is described in the archive report.

Animal bone groups (ABGs)

Three ABGs were identified from Roman contexts in field N7 (pooled minimum number of individuals, MNI = 1): two, comprising a poorly preserved adult cattle skull and torso, came from fills of pit [164]; the third was a moderately preserved adult cattle skull in rectilinear Enclosure 2b ditch segment F338. Two ABGs came from a fill of post-medieval boundary ditch F2779 and

Table 5.4. Refitted disarticulated animal bone from the 2019–22 excavations, all periods (LT = loose teeth).

	Late Iron Age/Roman	Post-medieval	Modern	Undated
Cattle (bone/LT)	35/26	3/3	0	2/2
Sheep/goat (bone/LT)	19/28	4/15	1/0	6/6
Pig (bone/LT)	4/3	6/2	0	0
Equid (bone/LT)	5/5	1/7	0	0
Large mammal	222	159	0	112
Medium mammal	65	75	1	84
Small mammal	1	1	0	2
Mammal	412	758	1	589
Bird	1	1	0	0
Total	**826**	**1035**	**3**	**803**

represented a fairly complete post-medieval juvenile pig skeleton (MNI = 1), which showed woven bone of the mandible, suggestive of inflammation relating to either infection or trauma, likely active at the time of death and implying a natural fatality. None of the ABGs showed evidence of butchery or gnawing.

Disarticulated bone

Condition and taphonomy

The condition of the bone was mostly poor (88.2%), with a small proportion showing moderate (6.8%), good (2.5%) or very poor (2.4%) surface preservation. The poor condition of the bone was further exacerbated by its high fragmentation, which considerably reduced the information that could be gained from the analysis of the assemblage. Poor condition of bone likely impacted on the observability of taphonomic marks, such as butchery, gnawing and burning, which were detected on a very small proportion of fragments.

Species representation

Late Iron Age/Roman animal bone was characterised by a low taxonomic variability, composed of exclusively domesticated species. Frequencies of main domesticates were based on NISP numbers and MNI numbers. Cattle (*Bos taurus*) was the most abundant species (NISP: 52.6%, MNI = 2), followed by sheep/goat (*Ovis/Capra*) (NISP: 41.4%, MNI = 3), then equid (horse/mule/donkey) (MNI = 1) and pig (NISP: 6.0%, MNI = 1) (Table 5.4; Fig. 5.66). A few remains of long bones of birds and small mammal, unidentifiable to a species, were also found. Among size-classed taxa, large mammals were present in considerably larger numbers than medium mammals (77.5% vs 22.5%), which is consistent with the overall frequencies of domesticates, and the higher fragmentation of bones of large mammals.

Body parts distribution

Skeletal elements derived primarily from extremities (mandibles and feet) with sporadic elements deriving from moderate utility body areas. Considering the overall poor condition of bone and high bone density characterising the skeletal elements most frequently preserved, the high proportion of the latter was likely inflated by preservation bias.

Ageing and sexing

Mandibular tooth wear and eruption datasets were insufficient to construct mortality patterns for bovids, but showed presence in Late Iron Age/Roman contexts

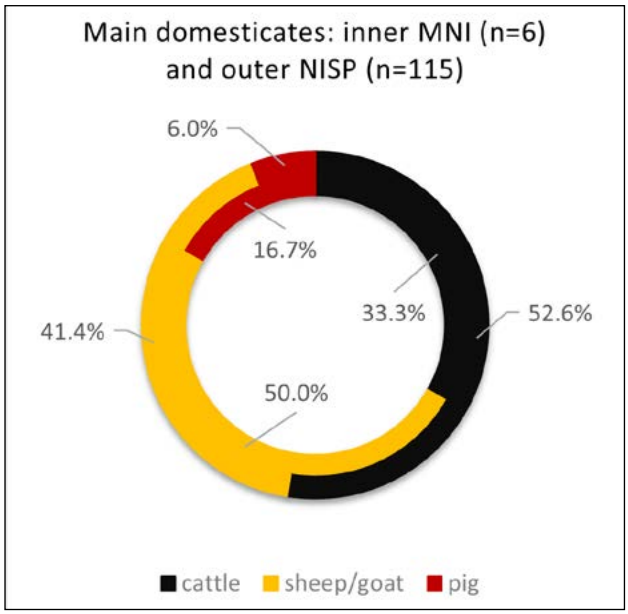


Fig. 5.66. Proportion of main domesticates based on disarticulated bone, Late Iron Age/Romano-British (NISP = number of identified specimens, including loose teeth; MNI = minimum number of individuals).

of immature (8–20 months; n = 1) and possibly adult cattle carcasses, and subadult (2–3 years old; n = 4) and adult (4–8 years old; n = 1) sheep/goat remains. All long bones of cattle (early phase of fusion, n = 5; medium phase of fusion, n = 3) and sheep/goat (early phase of fusion, n = 1; medium phase of fusion, n = 1) from Late Iron Age/Roman contexts were fused. No age data for pigs and equids were observed. No evidence of local breeding was identified. The small size of the assemblage precluded firm conclusions on husbandry practice and the animals may have served primary (meat) and secondary (e.g. wool, milk, manure and traction) purposes.

Measurements

Six Late Iron Age/Roman and four post-medieval disarticulated bovid bones were measurable. A sheep/goat distal tibia from ditch F4334 of Late Iron Age/Roman horseshoe-shaped Enclosure 5 was characterised by small dimensions, perhaps suggesting unimproved stock, similar to that of the Iron Age period; however, no definite conclusions can be drawn from a single specimen. The few cattle specimens that could be measured derived from skeletal elements of animals of small and average size for the period; however, due to the scarcity of measurable material the average size of the bovids could not be established, since any differences may reflect individual variability.

Discussion

During the Late Iron Age/Roman period, cattle seem to have been the most abundant species on site, followed by sheep/goat, then horse and pig. Predominance of cattle, which also has been noted in the previous phase of excavation at Holme Hall Quarry in 2015 (Grzybowska 2016), is characteristic of most of the contemporaneous sites across England (e.g. Albarella 2019), and attests the importance of cattle around the time of arrival of the Roman army during the invasion of Britain (King 1999). Considering meat yield per beast, beef undoubtedly constituted the largest proportion of meat consumed, supplemented by mutton and pork. While no remains of young cattle and sheep/goat were observed from the 2019–22 excavations, recovery of neonatal/juvenile cattle remains from the 2015 excavation suggests that large bovids were bred locally. The small collection of bones from the post-medieval period tentatively indicates that pig and especially sheep/goat had increased by that time relative to cattle.

Marine shell

By Emma Aitken

A total of 13 shell fragments, representing a minimum number of 11 individuals, were collected by hand excavation from four contexts in field N2/N3. Three different marine species were identified: oyster (*Ostrea edulis*), mussel (*Mytilus edulis*), and cockle (Cardiidae). Only one fragment of mussel shell was recovered from a Late Iron Age/Roman context, which was ditch F4344 of D-shaped Enclosure 3. The other shells all derived from post-medieval plough disturbances in undated pit or tree throw F4343, which was situated within the D-shaped enclosure. The quantity of marine shell retrieved suggests that they were not a major food source on the site during the Late Iron Age/Roman or post-medieval periods, but rather occasionally augmented the local diet. The assemblage is too small to make any comments on the likely source of the shells and the nature of the oyster, mussel, and cockle beds.

Charred plant remains

By Emma Aitken

Introduction

A total of 257 environmental samples were collected during the 2019–22 excavations. These samples were taken from a wide variety of feature types from different phases. All samples were assessed in the first instance, with the results of this recorded for each area of the site in the archive report (Aitken 2024). Six of the assessed samples, all from Late Iron Age/Roman contexts in fields N7 or N1, were then selected for further analysis; these results are tabulated in Table 5.5. For methodology, see the archive report.

Preservation of the plant remains was variable, with approximately 70% of the samples recovered from across all five areas of the site being devoid of plant remains and the remaining 30% producing sparse amounts of plant remains. The six samples highlighted for full analysis (Table 5.5) contain the largest number of charred plant remains across the whole site, however, the counts are still relatively low and do not indicate any large-scale crop processing or agricultural practices taking place at the site. The majority of remains recorded during analysis relate to plants that are common food sources and are typically associated with the Roman period (Hillman 1984; Greig 1991).

Field N7 (2019 excavation)

Out of the 71 samples from field N7 dated to the Roman period, four were selected for further analysis (Table 5.5). Sample 13 from segment F338 of the north ditch of rectilinear Enclosure 2b contained a variety of charred weed seeds that are often associated with crop-processing activities. These included such species as black-bindweed (*Fallopia convolvulus*), Celtic bean/pea

Table 5.5. Analysis of charred plant remains from Late Iron Age/Roman contexts (2019–22 excavations).

Area/field		**N7**				**N1**	
Feature type		Enclosure 2b ditch		Pits, group F511		Pit	Ditch
Feature/context		F338		[480]	[473]	[1119]	F2059
Context date		Roman				LIA/Roman	
Sample no.		13	14	84	85	3	33
Cereals	**Common name**						
Hordeum vulgare L. *sl* (grain)	barley	8	-	-	-	-	-
Hordeum vulgare L. *sl* (grain with germination)		1	-	-	-	-	-
Triticum diccocum/spelta (grains)	hulled wheat	1	2	2	1	-	-
*Triticum diccocum/spelt*a (glumes)		-	1	-	-	-	-
Triticum spelta (grains)	spelt wheat	2	4	-	-	-	-
Triticum spelta (glumes)		1	-	-	-	-	2
Triticum sp. (grain)	wheat	4	2	5	2	-	-
Cereal indet. (grains)	cereal	-	-	3	10	5	2
Other food sources							
Prunus spionsa	cherry	-	-	-	-	1	-
Brassica spp. L.	brassica	-	-	-	-	-	1
Vicia faba/Pisum sativum L.	Celtic bean/pea	1	-	-	-	-	-
Pisum sativum	pea	-	1	-	-	-	-
Vicia faba	Celtic bean	2	-	-	-	-	-
Avena sp. (grain)		7	-	-	1	-	-
Other species							
Fallopia convolvulus (L.) À. Löve	black-bindweed	4	2	-	1	-	-
Rumex crispus L. Type	curled dock	-	-	-	-	1	-
Vicia L./*Lathyrus* sp. L.	vetch/wild pea	1	-	-	-	-	-
Vicia sp.	vetch	1	-	-	-	-	-
Lolium/Festuca sp. L.	rye-grass/fescue	-	-	-	-	-	1
Avena L./*Bromus* L. sp.	oat/brome grass	3	2	6	5	-	3
Avena sp. (wild)	oat grass	-	-	-	1	-	-
Bromus sp. L.	brome grass	-	-	3	1	-	-
Rubus sp.	bramble	1	-	-	-	-	-
Arrhenatherum elatius	false-oat grass	-	-	-	-	-	1
Small Poaceae		-	2	-	-	2	-

(*Vicia faba/Pisum* sp.), vetch/wild pea (*Vicia/Lathyrus* sp.), and oat/brome grass (*Avena/Bromus* sp.). The larger headed weed seeds, such as oat and brome grass, are commonly found alongside late-stage crop processing waste (Hillman 1984).

In the same fill of F338 and perhaps associated with burnt human bone from a possible (?redeposited) cremation burial were charred plant remains typical of late-stage crop processing waste material (Sample 14). This could indicate that the leftover waste material from crop processing was used as fuel or tinder for the cremation. Only a small number of burnt bone fragments were noted within the assemblage.

Late Roman pits [473] and [480] in group F511 (Samples 84 and 85) contained a small number of charred cereal grains and weed seeds also typical of those found alongside late-stage crop processing wate material. In this pit, there was a slight increase in the number of oat and brome grass seeds identified suggesting that there may have been a slight change in the environment resulting in the utilisation of grassland.

Fields N1, N2/N3, N4 and N5/N6 (2020–22 excavations)

Middle Iron Age

In N2/N3, two samples were recovered from pit [3751] and contained minimal quantities of charred plant remains, including those of false-oat grass tubers, which were likely used a tinder.

Late Iron Age/Roman

Only four of the 15 samples of this date from N1 contained charred plant remains, including minimal numbers of spelt grains, rye-grass/fescue (*Lolium/Festuca* sp.) seeds, and false-oat grass tuber fragments and stems. Sample 3 from pit [1119] within the north–south droveway contained a single fragment of blackthorn (*Prunus spinosa*) which indicates that there was some utilisation of the local woodland resource. Tuber fragments identified as false-oat grass (*Arrhenantherum elatius*) were noted in Sample 33 from field ditch F2059 which may have been used to create a fire break or as tinder (Stevens 2008).

Of the 29 samples assessed from the Late Iron Age/Roman period in the N5/N6 area of the site, only eight contained very small levels of charred plant remains. The plant remains noted in these assemblages, such as hulled wheat grains and glume fragments, are typical of those associated with crop processing activities. The dominant grain identified in these assemblages was spelt wheat. Due to the low volumes of grains and chaff components identified it is not possible to say that crop processing activities were taking place in this area of the site.

Out of the 102 samples recovered from the N2/N3 area, 75 were assigned to the Late Iron Age/Roman period. A total of 21 samples contained low levels of charred plant remains, most commonly tubers of false-oat grass. Other larger headed weed species were also observed in the assemblages, including rye-grass/fescue, meadow grass/cat's-tails (*Poa/Phleum* sp.), black-bindweed and clover/medick (*Trifolium/Medicago* sp.). The cereal grains identified within the assemblages were poorly preserved and so further species identification was inhibited.

Six samples from ditches are assigned to the Late Iron Age/Roman period in N4, with four containing very small numbers of charred plant remains. The charred remains include those of wheat grains, a possible free-threshing wheat (*Triticum turgidum/aestivum* type) which it is not uncommon to find in Roman assemblages in low quantities, seeds of rye-grass/fescue grass and false-oat grass tubers. The environmental assemblages from field N4 are indicative of wind-blown/dispersed waste material and do not provide any insight into the possible use or function of the ditches associated with the assemblages.

Early medieval

Five samples were recovered from early medieval contexts in N2/N3. Two of these came from pits, with the only charred plant remains recorded being rye-grass/fescue. As this is a larger headed weed species, it is possible that it was collected alongside any wood or tinder used to create a fire, explaining why it is sometimes seen alongside large charcoal deposits. A further three samples were examined from a pit of this period, with only a single indeterminate cereal grain being identified.

Post-medieval

In N2/N3, four samples were recovered from the post-medieval phase, with one being completely devoid of any charred plant remains or charcoal. The remaining three samples all contained low numbers of tuber fragments, including those of false-oat grass.

Discussion

From the limited charred plant remains it can be seen that there is a slight increase in late-stage crop-processing activities in the N7 and N1 areas of the site (Table 5.5). As defined by Hillman (1984), late-stage crop processing is the stage after the first sieving has taken place, when contaminants coarser than grain are removed and what is left in the assemblage is grains, occasional rachis/awn fragments and weed seeds (Hillman 1984). The definitions of crop processing have also been expanded upon by Wilkinson and Stevens who broke down crop-processing activities into eight stages (Wilkinson and Stevens 2003). The remains from the late Roman pits in group F511 meet the criteria for their sixth and seventh stages: medium-coarse sieving and fine-sieving of the remaining material. As the levels of cereal grains are still relatively low, it is likely that the main area of crop-processing activity was located to the east of the site.

North ditch segment F338, of rectilinear Enclosure 2b in N7 contained the largest number of charred cereal grains on the site. Barley was the dominant grain in this assemblage, with grains of spelt wheat also identified. Barley and spelt are the two most common grain species found that are associated with arable farming in Roman Britain (Van der Veen 2014). However, spelt wheat and barley can often be found in assemblages from all periods (Lodwick 2017). The levels of charred cereal grains and cereal components suggest that the crop processing was mainly being conducted on local scale, rather than in 'industrial' quantities. This falls into the category set out by Van der Veen (2007)

Table 5.6. Radiocarbon dating results: 2019–22 excavations.

Feature no.	Description	Laboratory code	Material	Radiocarbon age	δ ^{13}C (relative to VPDB, ‰)	Calibrated radiocarbon age 68.3% probability	Calibrated radiocarbon age 95.4% probability
Middle Iron Age							
[3751]	Middle Iron Age pit	SUERC -123795 (GU65812)	Charcoal: Maloideae pirus	2239 ± 25 yr BP	-25.2‰	377–353 cal. BC (18.4%) 286–228 cal. BC (45.5%) 218–211 cal. BC (4.4%)	387–347 cal. BC (24.9%) 316–204 cal. BC (70.5%)
[1033]	Middle Iron Age pit	SUERC -123782 (GU65802)	Charcoal: Maloideae sp.	2173 ± 25 yr BP	-29.4‰	351–302 cal. BC (38.4%) 209–171 cal. BC (29.8%)	359–276 cal. BC (48.8%) 261–244 cal. BC (2.4%) 235–149 cal. BC (42.4%) 134–116 cal. BC (1.9%)
Late Iron Age/Roman							
[2687]	Possible pit within LIA/ Roman D-shaped Enclosure 3	SUERC -123793 (GU65810)	Charcoal: unknown	1959 ± 25 yr BP	-25.7‰	25–83 cal. AD (52.8%) 97–114 cal. AD (15.5%)	35–14 cal. BC (4.3%) 5–125 cal. AD (91.1%)
F4334	Ditch of LIA/Roman horseshoe-shaped Enclosure 5	SUERC -123792 (GU65809)	Bone: Animal	1942 ± 25 yr BP	-22.2‰	31–41 cal. AD (7.0%) 60–122 cal. AD (61.3%)	9–167 cal. AD (93.4%) 187–203 cal. AD (2.0%)
[3934]	LIA/Roman field ditch segment or pit	SUERC -123797 (GU65814)	Cremated bone: unknown	1932 ± 26 yr BP	-25.0‰ assumed	31–41 cal. AD (5.0%) 60–128 cal. AD (63.2%)	22–204 cal. AD (95.4%)
F2790	Ditch of LIA/Roman sub-circular Enclosure 4	SUERC -123787 (GU65807)	Bone: Animal	1926 ± 25 yr BP	-22.0‰	61–130 cal. AD (63.2%) 144–155 cal. AD (5.0%)	26–49 cal. AD (7.2%) 55–205 cal. AD (88.2%)
F338	North ditch of Roman rectilinear Enclosure 2b	SUERC -123781 (GU65801)	Burnt bone: unknown	1875 ± 25 yr BP	-24.0‰	130–145 cal. AD (14.9%) 154–207 cal. AD (53.3%)	87–93 cal. AD (1.5%) 118–234 cal. AD (94.0%)
F2794	Roman quarry pit within Enclosure 4	SUERC -123783 (GU65803)	Tooth: unknown	1821 ± 25 yr BP	-22.0‰	207–250 cal. AD (58.6%) 295–310 cal. AD (9.7%)	130–145 cal. AD (2.9%) 154–255 cal. AD (74.7%) 285–325 cal. AD (17.8%)
Early medieval							
[3697]	Early medieval pit	SUERC -123794 (GU65811)	Charcoal: Maloideae sp.	1263 ± 25 yr BP	-27.0‰	681–745 cal. AD (62.8%) 760–768 cal. AD (5.5%)	670–778 cal. AD (83.6%) 788–825 cal. AD (11.8%)
[2513]	Early medieval pit	SUERC -123791 (GU65808)	Charcoal: Maloideae sp.	1118 ± 25 yr BP	-25.1‰	894–929 cal. AD (33.9%) 944–978 cal. AD (34.3%)	885–994 cal. AD (95.4%)
Modern							
F4312	Ditch of LIA/Roman rectilinear enclosure or small field/ paddock (Enclosure 6)	SUERC -123796 (GU65813)	Bone: unknown	196 ± 25 yr BP	-21.9‰	1662–1681 cal. AD (17.2%) 1739–1753 cal. AD (11.7%) 1762–1801 cal. AD (32.3%) 1939 cal. AD (7.1%) Date may extend out of range - 196+/-25BP	1650–1690 cal. AD (24.1%) 1728–1809 cal. AD (57.0%) 1921 cal. AD (14.3%) Date may extend out of range - 196+/-25BP
F2805	Inner ditch of LIA/Roman D-shaped Enclosure 3	SUERC -123786 (GU65806)	Mollusca: various	1.0031 ± 0.003 [i.e. post-AD 1950]	-3.0‰ assumed	-	-

as being a consumer site, that is a site growing and harvesting its own crops, as opposed to a producer site, where inhabitants are cultivators and may export part of their crop to the wider area (Van der Veen 2007).

The other areas of the site are mainly reflective of wind-blown/dispersed waste material. This suggests that while there was some form of domestic settlement activity taking place, these areas were on the outskirts of the main centre of such activity.

Charcoal

By Dana Challinor

Eleven samples were provided for charcoal analysis, all from the 2020–22 excavations: ten from the N2/N3 area of the site and one from N1. Most of the samples (n = 7) came from pits and ditches dated to the Roman period, but there were also samples from three pits of early medieval date and from a post-medieval boundary ditch. No specific activities, such as those of an industrial or funerary nature, were associated with the sampled features and the charcoal residues are likely to represent the remnants of spent fuelwood from domestic type fires.

There is remarkable consistency in the charcoal assemblages across the periods at this site, with a similar range of taxa types, suggesting consistency in the resources available. Examining the entire assemblage, Maloideae, probably *Crateagus* (hawthorn) or *Sorbus* (rowan/whitebeam etc.), represents the most abundant taxon (40%) and is also present in 82% of samples, compared to oak which is only 10% in abundance and present in 43% samples. This paucity of oak is unusual since the tree is ubiquitous and provides an excellent fuel source. Moreover, although there is a hint of more oak in the later assemblages, the picture of fuel preference is not markedly different between the Roman and later periods. Notwithstanding the presence of a possible burnt artefact in early medieval pit [3701], the charcoal evidence suggests that the assemblages largely represent the remnants of fuelwood. Regular occurrences of insect tunnels suggest that the wood had been seasoned prior to use, which is consistent with management of fuel supplies for domestic type activities. Moreover, the use of bundles of roundwood, especially from smaller diameter stems, provides a particular type of fuel source: intense (if sufficient wood used), but not long-lasting unless large quantities of wood are consumed. This is suitable for smaller hearths and crop processing activities. There is little evidence at this site for the use of larger trunkwood logs, which would have provided a more sustained, high heat. Whether this reflects preference in fuelwood selection, deliberate avoidance or paucity of mature woodland in the locality (or a combination) is uncertain. In resource terms, the charcoal evidence suggests that fuel supplies were drawn predominantly from woodland marginal areas, hedgerow/scrub, with a notable presence of light-demanding taxa (Maloideae, ash, *Prunus*, birch, dogwood). Hazel, holly and field maple grow well in both open and understorey conditions, although hazel and field maple prefer drier ground, compared to holly, and especially poplar/willow, which prefer wet ground conditions. Poplar/willow and holly are the least well-favoured fuelwoods in the assemblages, requiring long seasoning times and of mid-range calorific value.

In conclusion, the charcoal residues from Holme Hall Quarry indicate the supply of fuelwood from open, scrub type areas, supplemented with some woodland and wetground types. The diversity of taxa types (and the character of the roundwood) is fairly typical for domestic activities requiring less focused fuel selection. That said, there is evidence for the management of firewood supplies and for continuity of resources between the Roman and later periods.

Radiocarbon dating

By Scottish Universities Environmental Research Centre, summarised by Emma Aitken

Of the 12 radiocarbon-dated samples, 2 proved to be of Middle Iron Age date, 6 of Late Iron Age/Roman date, 2 of early medieval date and 2 were modern (Table 5.6). One sample of Late Iron Age/Roman date came from the north ditch (F338) of rectilinear Enclosure 2b excavated in 2019. All other samples came from the 2020–22 excavations. The samples were analysed during December 2023 at Scottish Universities Environmental Research Centre (SUERC), Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow, G75 0QF, Scotland. The methodology employed by SUERC Radiocarbon Laboratory is outlined in Dunbar *et al.* (2016). The uncalibrated dates are conventional radiocarbon ages. The radiocarbon ages were calibrated using the University of Oxford Radiocarbon Accelerator Unit calibration programme OxCal v4.4.2 (Bronk Ramsey 2009; 2020) using the IntCal20 curve (Reimer *et al.* 2020) (Table 5.6). Carbon isotope ($\delta^{13}C$) data was recorded, and where collagen samples (animal and human bone) were submitted, nitrogen ($\delta^{15}N$) and sulphur ($\delta^{34}S$) isotope data was obtained (see the archive report: SUERC 2024).

Chapter 6

Summary and discussion

Introduction

Archaeological excavations and watching briefs encompassing a total area of 35.2 ha were undertaken in 2004, 2015 and 2019–22 prior to northwards extensions of Holme Hall Quarry (limestone). The excavations were preceded by fieldwalking and geophysical surveys in 1993–4 and 2014–15. The 2004 excavation by Archaeological Research and Consultancy at the University of Sheffield (ARCUS) covered an area of 1.1 ha. In 2015 Archaeological Research Services Ltd (ARS Ltd) conducted a strip, map and sample excavation of 5.8 ha, *c*.570 m further north in field N8 in an area known as Cockhill East. In 2019 ARS Ltd undertook a watching brief of 2.5 ha in field N7 adjacent to the north in Cockhill East. In 2020–22 ARS Ltd carried out strip, map and sample excavations and watching briefs in a continuous open area of 25.8 ha covering four fields (N1, N2/N3, N4 and N5/N6) a short distance further west in Cockhill West.

The main features revealed in the investigations were ditches that formed part of an extensive, well-preserved (possibly Late Iron Age to) Roman rectilinear/coaxial field system and associated droveways and enclosures (Figs 6.1). Features and objects from several other periods were also recorded. The following broad phases of activity were identified, which are summarised and discussed below.

- Prehistoric
- Palaeochannels/palaeovalleys (natural)
- Mesolithic to Early Bronze Age
- Middle Iron Age
- Late Iron Age to Roman
- Early medieval
- Late medieval
- Post-medieval
- Undated

Prehistoric palaeochannels/palaeovalleys (natural)

Various silt-filled palaeochannels or palaeovalleys were found across the 2020–22 site, cut/worn into and overlying the natural limestone bedrock (see above, pp. 69, 77, Figs 2.2, 2.3, 5.6, 5.9 and 5.10). These natural features produced no finds indicating human activity or any other dating evidence, having formed as part of outwash deposits as the sands and gravels were laid down during deglaciation in the Palaeolithic period. Several were cut by Late Iron Age or Roman field ditches. The palaeochannels/palaeovalleys varied in size, with an extensive example in field N1 recorded running north-west to south-east across the field for at least 167 m, ranging in width between 16 m and 46 m and with a maximum depth of at least 2.72 m. There are no existing rivers or streams of note in the near vicinity of the site into which the channel belts might obviously have run, but they likely follow the contours generally eastwards towards the River Torne (or an ancient predecessor), which lies *c*.5 km east of the site (cf. above, p. 2), or provided the remnants of the stream channels that delivered the sand and gravel sediment bodies in which they are situated.

There appears to be no clear correlation between the distribution of prehistoric chipped lithics and the palaeochannels/palaeovalleys, apart perhaps for the Mesolithic lithics, which possibly cluster near these features (Fig. 5.10). There is also no obvious connection between the locations of the Middle Iron Age pits and the palaeochannels/palaeovalleys (Fig. 5.10). This is not surprising as these ancient channels were relatively short-lived and date back much earlier than the Mesolithic period, and therefore no association between them and prehistoric activity evidenced on the site is posited.

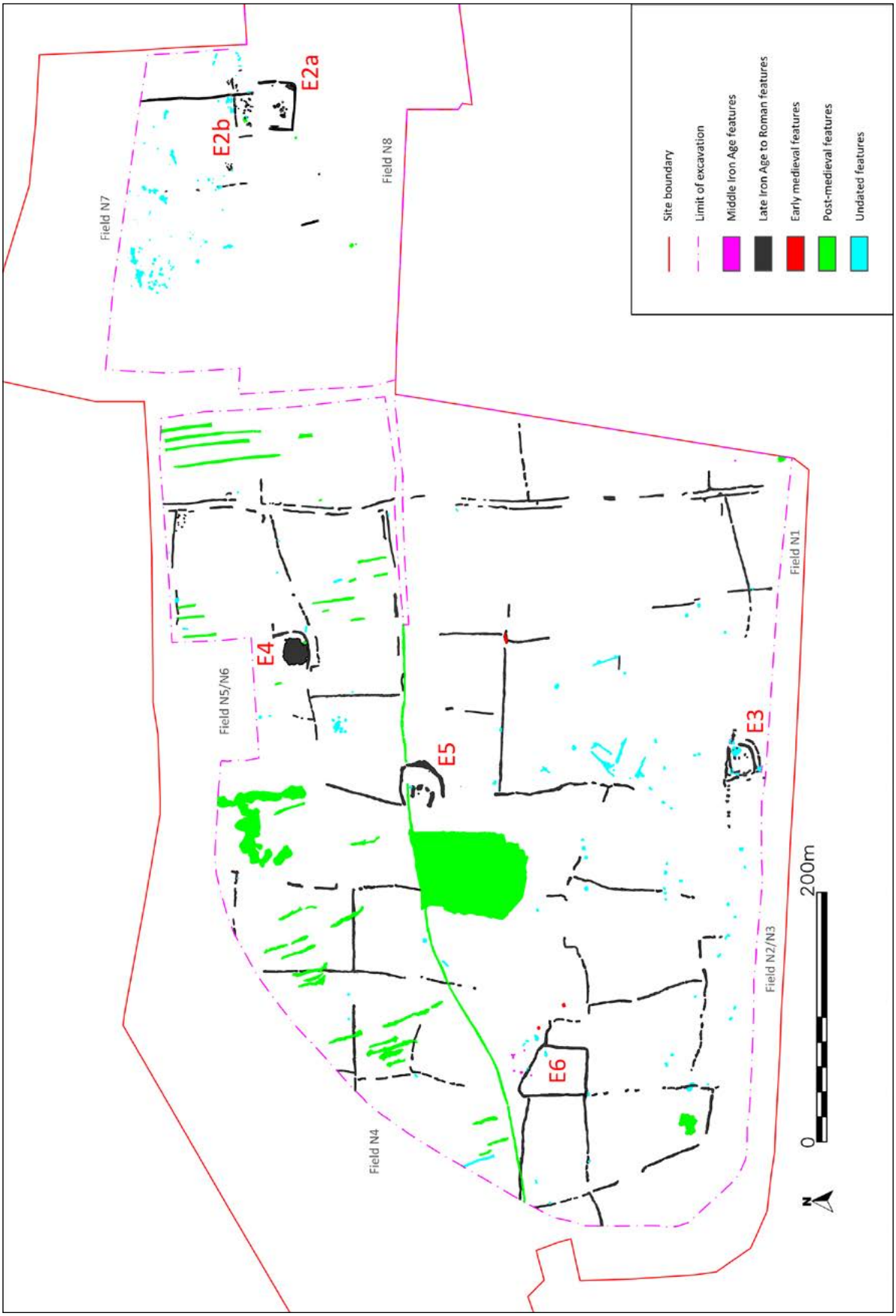


Fig. 6.1. Archaeological phased plan of the Holme Hall Quarry excavations of 2015 and 2019–22.

Mesolithic to Early Bronze Age

The earliest human activity on the site was evidenced by 206 worked and/or chipped lithics (all flint, except two chert flakes) ranging in date from the Mesolithic to the Early Bronze Age. These were found in the fieldwalking surveys of 1993–4 and 2015 and in the excavations of 2004, 2015 and 2019–22 (Table 6.1). The flint raw material is generally consistent with origination from the various till deposits of eastern Yorkshire (Brooks 2001). A further 78 'unworked' flints with no surviving evidence of knapping were recovered during fieldwalking (Tables 2.1 and 2.2) and a fire fractured flint from the 2020–22 excavations. Some or all of the unworked pieces may also have been chipped lithics damaged by subsequent ploughing as flint does not occur naturally in this area.

Most of the excavated lithics were recovered during topsoil stripping. Several pieces from the 2019–22 excavations were residual in Late Iron Age to Roman or later deposits, or came from undated features, apparently of natural origin. None appeared to derive from contemporary archaeological features. There were a few areas of denser concentration in the distribution of lithics across the site, which may indicate areas of settlement or other closely defined prehistoric activity. Concentrations were evident in field N8 in the north-east part of the site (Cockhill East) and in parts of field N2/N3, the west part of field N5/N6 and in field N4 in the north-west part of the site (Cockhill West) (Fig. 6.2). There was also a possible concentration in field S2 in the southern part of the site (Fig. 2.1). No obvious chronological patterns were apparent in the distribution, apart from a possible clustering of Mesolithic lithics near the prehistoric palaeochannels/palaeovalleys (Fig. 5.10).

The majority of the worked/chipped lithics from the site, including all the pieces recovered from the fieldwalking in 1993–4, were of indeterminate prehistoric date; however, several pieces could be dated more precisely, nearly all of which came from the fieldwalking and subsequent excavations in Cockhill East and West in 2015 and 2019–22 (cf. Fig. 6.2).

Probable Mesolithic material includes a blade from the 2019 excavation and 12 pieces from the 2020–22 excavations: five blades, two bladelets, a crested blade, a narrow rod microlith, a flake, an edge-trimmed blade and an end scraper fabricated on a blade. A further nine flints of probable Mesolithic date came from the fieldwalking of 2015: three micro-scrapers and five other scrapers with distinct Mesolithic characteristics, although some of these may date to the Early Neolithic (a double-sided end scraper with generally semi-abrupt although slightly irregular retouch; three end scrapers with semi abrupt retouch and a slight convex-shaped edge; and a semi-keeled convex end scraper with very abrupt parallel retouch), as well as a broken backed blade.

The Early Neolithic is represented by two leaf-shaped arrowheads: one from the 2020–22 excavations and another from the fieldwalking of 2015. Two Late Neolithic oblique arrowheads were also found: one from the 2004 excavation, the other from fieldwalking

Table 6.1. Worked/chipped prehistoric lithics found at Holme Hall Quarry during fieldwalking in 1993–4 and 2015 and in the excavations of 2004, 2015 and 2019–22 (N/W = not walked) (cf. Figs 2.1, 2.6 and 5.57).

Field code	Field size (approx.)	Year(s) of excavation	No. from 1993–4 fieldwalking	No. from 2015 fieldwalking	No. from excavations	Total
S1	33 ha	2004	2	N/W	19	21
S2	6 ha	-	11	N/W	-	11
N1	4.7 ha	2020	1	2	3	6
N2/N3	14 ha	2021–22	2	11	21 (+4 from 2022 excavation, precise findspot unknown)	38
N4	7.8 ha	2022	14	18	4	41
N5/N6	9.6 ha	2020–22	7	8	10	25
N7	5 ha	2019	0	6	3	9
N8	5.8 ha	2015	4	28	15	48
N9	6 ha	-	N/W	N/W	-	-
N10	6 ha	-	1	N/W	-	1
N11	5.3 ha	-	1	N/W	-	1
N12	9 ha	-	4	N/W	-	5
Total			47	73	79	206

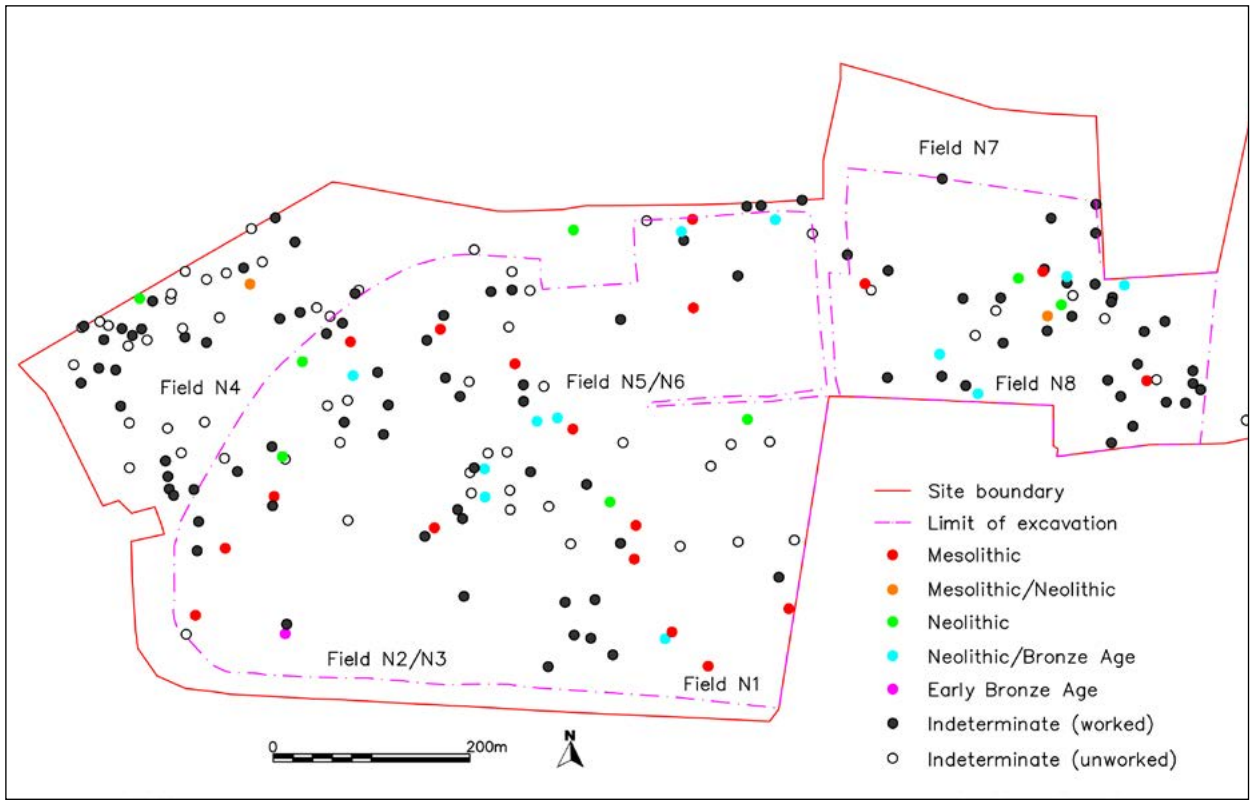


Fig. 6.2. Distribution of prehistoric chipped lithics and unworked flints in the northern part of the Holme Hall Quarry site (Cockhill East and West), showing finds from the 2019–22 excavations and the fieldwalking surveys of 1993–4 and 2015 (cf. Figs 2.1, 2.6 and 5.57).

in 2015. A fabricator, a saw or serrated flake and perhaps also a possible knife from the fieldwalking of 2015 were also datable to the Neolithic. Another possible fabricator, regarded as Late Neolithic to Early Bronze Age in date, was found in the 2004 excavation.

Late Neolithic to Early Bronze Age material comprises a flake from the 2019 excavation and nine pieces from the 2020–22 excavations: a knife, a side scraper, a scraper, five flakes and a core. Neolithic/Bronze Age tools from the fieldwalking of 2015 include three awls/borers and a piercer, as well as three notched pieces on large flakes; notches are found in all periods of prehistory, but these examples appear likely to be of Neolithic and/or Bronze Age date. Two thumbnail scrapers of probable Early Bronze Age date were found in the 2015 and 2020–22 excavations and a third small thumbnail scraper with retouch came from the 2004 excavation.

Some of the Mesolithic to Early Neolithic material is likely to have been discarded during specialised activities, for example hunting and initial processing of animals, undertaken by hunter-gatherer groups visiting the site. The Late Neolithic to Early Bronze Age debitage and scraping and cutting implements indicate that tasks such as food processing and/or certain craft activities potentially associated with domestic activity probably took place at or near the site during the 3rd and early 2nd millennia BC.

The evidence for Mesolithic, Neolithic and Bronze Age settlement in the surrounding region (i.e. in South Yorkshire and adjacent areas of the Magnesian Limestone belt/ridge) principally, although by no means exclusively, comprises relatively numerous surface finds of flint and stone tools (cf. Roberts *et al.* 2010, 17–19, 39–44; Brown 2015, 4–5; Spikins 2019; Cockrell 2019). Although the Holme Hall Quarry assemblage is a palimpsest representing a range of hunting and processing activities through a long time period, it testifies to the attraction of this free-draining area for hunter-gather and early farming groups. The Magnesian Limestone ridge was evidently an attractive locale throughout prehistory and the fieldwalking assemblage from Holme Hall indicates use of the wider ridge-top landscape beyond the Neolithic long cairn burial sites such as the four around nearby Sprotborough (Merrony *et al.* 2017) elsewhere on the limestone ridge.

Middle Iron Age

Two pits found in the 2020–22 excavations were radiocarbon dated to the 4th to 2nd centuries BC, that is to the Middle Iron Age (see above, pp. 77, 79, Figs 5.2, 5.4, 5.5, 5.11–5.13. 5.32). One of these, [1033], lay in the south-east part of field N1, *c.*10 m from the eastern limit of excavation. This pit contained burnt material and a piece of charcoal from its upper fill produced a C^{14} date

of 359–149 cal BC at 93.6% probability or 359–116 cal BC at 95.4% probability. It possibly related to an otherwise unevidenced settlement that lay to the east beyond the area of excavation.

The other pit, [3751], lay *c.*520 m to the north-west in the west part of field N2/N3; a charcoal sample from its upper fill gave a C^{14} date of 387–204 cal BC at 95.4% probability. Several possible postholes or small pits, none with finds, lay near pit [3751] and have tentatively been regarded as contemporary with it, perhaps relating to a small area of Middle Iron Age occupation, such as a structure or structures, on the site.

In South Yorkshire there is very little artefactual material, including pottery, from the Middle Iron Age (as is also the case for the Late Bronze Age and Early Iron Age) and little basis for distinguishing activities of Middle and Late Iron Age date (Chadwick 2020). For this reason, the entire period from *c.*400 BC–AD 70 could be broadly termed 'later Iron Age' (Haselgrove and Pope 2007, 5–6; Chadwick 2020). Iron Age features in the surrounding region are often dated precisely through radiocarbon dating, as at Balby Carr near Doncaster, where an unenclosed settlement of roundhouses, probably dating to the 3rd century BC, was followed by the construction and use of a double-ditched enclosure from the 2nd century BC (Daniel 2016; Chadwick 2020). The radiocarbon-dated pits from Holme Hall Quarry therefore provide a useful addition to our knowledge of the chronology of Iron Age occupation in this area.

As discussed below (p. 138), the Late Iron Age to Roman field system at Holme Hall Quarry was probably established during the 1st century AD (most likely following the appearance of the Roman military in the area from the AD 50s onwards), as evidenced by the appearance of pottery from this date and perhaps also by a number of radiocarbon dates spanning the 1st and 2nd centuries AD; however, due to the aforementioned difficulties in identifying Iron Age activity prior to this date, it cannot be ruled out that the field system may have had its origins in the 1st century BC or earlier (for further information on the establishment of Late Iron Age and Roman field systems in the surrounding region, see below, p. 141-3).

Late Iron Age to Roman

Field ditches

An extensive, well-preserved (possibly Late Iron Age to) Roman rectilinear/coaxial field system, spanning at least 650 m east–west by 495 m north–south, was recorded and sample-excavated across a large continuous area of 25.8 ha at Cockhill West in 2020–22 (see above, p. 79-83, Figs 5.1–5.5, 5.14, 5.15). This field system was associated with a north–south droveway, three curvilinear enclosures (Enclosures 3–5) and a rectilinear enclosure or small field/paddock (Enclosure 6). Excavations a short distance further east, in Cockhill East in 2015 and 2019, revealed another rectilinear enclosure or enclosures (Enclosures 2a and 2b) with associated field ditches to the north and west (see above, pp. 42–57, Fig. 4.3). Including Cockhill East, the field system excavated in 2015 and 2019–22 spanned a distance of at least 910 m east–west by 505 m north–south (Figs 6.1 and 6.3).

This field system excavated at Holme Hall Quarry was represented by a series of ditches typically cut into the limestone bedrock. The upper parts of these ditches had evidently been removed by later ploughing, which meant that they typically survived as a series of interrupted segments. In parts of the site some ditches may have been largely or completely ploughed away. It is difficult therefore to make firm statements about the precise layouts and sizes of the original fields. The field ditches were typically aligned approximately east–west and north–south, although there was variation in alignment, especially in the west part of the site further away from the north–south droveway. Some key east–west and north–south boundaries, occasionally with offsets, appear to form the boundaries of several different fields, indicating a significant degree of regularity. The fields are typically about 60–90 m wide east–west by 80–100 m north–south, that is about 0.5–0.9 ha in area, although there is variation, with smaller and possibly larger fields also present. No clear evidence for different phases of the field system was identified, although parts of a few field and enclosure ditches were recut and the north side of one of the curvilinear enclosures (D-shaped Enclosure 3) was constructed against, and was partly cut into, a pre-existing east–west field boundary. The lack of obvious phasing is important as this suggests that the entire field system could have formed part of a large-scale reorganisation of the landscape with a focus on increasing agricultural production. This reorganisation may have been planned and implemented in a short period, or the fields could have been laid out gradually in stages over a period of time.

The fills of the field ditches often included limestone rocks of various sizes, sometimes large blocks, as did the ditches of the droveway and enclosures. These rocks (presumably obtained originally through ditch digging) may have derived from the decay, collapse or clearance of stone-faced earth or earth and rubble banks that originally ran alongside the ditches (as found preserved *c.*2 km to the north of Holme Hall Quarry at Edlington Wood: Roberts *et al.* 2010, 60; Buckland *et al.* 2017; Chadwick 2020).

Fig. 6.3. Reconstruction drawing: looking south over the field system and associated droveways and enclosures at Holme Hall Quarry in the mid 2nd century AD (by Ada Lewkowicz).

A small amount of pottery was recovered from the fills of the field ditches, indicating a generally low intensity of occupation on the site and suggesting that the field ditches may have been established in or possibly even before the 1st century AD and filled up into the Roman period. The earliest pottery was in the Lincolnshire/Trent Valley native/Iron Age tradition, datable to the 1st to mid 2nd centuries AD. This was found in the fills of two ditches in N5/N6 and two in N2/N3. Other field ditches produced a few Roman sherds, with nothing necessarily post-dating the mid 2nd century, and a handful of other finds, including a small iron bar of unidentified nature, four iron nails and a scrap of copper-alloy sheet.

In contrast to the 2020–22 excavations in Cockhill West, surprisingly little evidence for Late Iron Age/Roman field ditches survived to be recorded further east in the 2015 and 2019 excavations in Cockhill East, a finding also reflected in the results of the geophysical survey of 2014–15. This may be because the Roman levels across much of Cockhill East had largely been removed by later ploughing. In Cockhill West, the Roman features were cut into limestone bedrock and sealed by modern topsoil, but the surviving Roman features in Cockhill East (e.g. Enclosures 2a and 2b) were cut through a natural brown-pink clay colluvial subsoil, which overlay the limestone bedrock; this subsoil was presumably more susceptible to damage by ploughing than the bedrock. It is also possible that the lower lying, poorly draining soils in eastern parts of the site were less attractive for early settlement and farming; indeed a watching brief undertaken during topsoil stripping in field N11 in 2015 (located east of the main excavations of 2015 and 2019) revealed that the ground was wetter than other parts of the site, with the superficial geology consisting of a heavy, thick clay indicating that this area had been an ancient wetland as well being an area where water still pools.

A sub-circular Late Iron Age/Roman enclosure (Enclosure 1) was excavated in 2004, *c.*450 m to the south-east of the 2020–22 excavations in Cockhill West. No Late Iron Age/Roman field ditches were recorded in the 2004 excavation, but a rubble bank, perhaps part of a Roman field boundary was found *c.*29 m west of Enclosure 1. This bank produced a copper-alloy coin of Claudius II, datable to 268–70 (SF681) and Roman pot sherds. Aerial photographs also indicate the wider spread of the Late Iron Age/Roman field system in the Holme Hall Quarry area (see above, p. 4, Figs 1.3 and 1.4; below, p. 143, Fig. 6.5).

Droveways

The north–south droveway was represented by a series of ditch segments running across the full lengths of fields N1 and N5/N6 (2020–22 excavations) for a distance of 489 m (see above, pp. 83-4, Figs 5.1–5.3, 5.6 and 5.16). It ran approximately along the 90 m aOD contour on ground sloping gently down from west to east. The droveway was 3.1–5.5 m wide between its ditches. The majority of Iron Age/Roman trackways in West and South Yorkshire and north Nottinghamshire had a 5–15 m interval between ditches (Roberts *et al.* 2010, 23), suggesting that the Holme Hall droveway was a relatively minor example, probably used for the movement of fairly small numbers of livestock. No passing places were noted (cf. Roberts *et al.* 2010, 26, Illus. 31). The ditches of the north–south droveway contained no finds of any kind, however, a possible pit or area of wear within the droveway included ten probable iron hobnails of Roman date, perhaps deriving from a discarded or lost shoe, indicating that the droveway was in use during the Roman period.

Several east–west field ditches ran out from either side of the north–south droveway, demonstrating that it was in use with the field system. There are a few possible interruptions in the droveway ditches, which might represent entrances into the droveway from the adjacent fields, however, it is noted that some of these apparent gaps could be a result of disturbance by later ploughing. One entrance is almost certainly indicated by the presence of a narrow east–west droveway, *c*.3 m wide, which ran west from the north–south droveway for at least 22.8 m (see above, p. 84, Fig. 5.3), possibly heading towards a horseshoe-shaped enclosure (Enclosure 5). A fill of the north ditch of this small east–west droveway contained a decorated copper-alloy terminal of probable mid 1st- to mid 2nd-century date, perhaps a ferrule from a spear or staff, or a fitting from a chariot or cart (Fig. 5.61).

Enclosures: introduction

A curvilinear (sub-circular) enclosure was excavated in field S1 in 2004 (Enclosure 1) and the southern part of a rectilinear enclosure was found *c*.700 m further north in field N8 in 2015 (Enclosure 2a). The northern part of a rectilinear enclosure was recorded in field N7 in 2019 (Enclosure 2b), immediately to the north of Enclosure 2a, but slightly offset from it. Enclosures 2a and 2b may have been parts of the same enclosure or they could have been separate adjacent enclosures that were originally divided by an east–west boundary not found in excavation.

Three more curvilinear enclosures, all quite different from each other, were identified in the 2020–22 excavations further west. They comprised: a double-ditched D-shaped enclosure in field N2/N3 (Enclosure 3); a sub-circular ditch enclosing a limestone quarry pit in field N5/N6 (Enclosure 4); and a horseshoe-shaped enclosure with outer and inner ditches in N2/N3 and N5/N6 (Enclosure 5). A possible rectilinear enclosure or small field/paddock (Enclosure 6) was also recorded in the west part of N2/N3. Summary descriptions of each enclosure are provided below.

The high ratio of curvilinear to rectilinear enclosures at Holme Hall Quarry appears to be somewhat unusual as curvilinear enclosures constituted only 6.5% of all Iron Age/Roman enclosures recorded as cropmarks in a study of the Magnesian Limestone and its margins in South and West Yorkshire and parts of North Yorkshire and north Nottinghamshire (Roberts *et al.* 2010, 27, Illus. 37). The Holme Hall Quarry enclosures are relatively small in size in regional terms (Roberts *et al.* 2010, 27). At present there appear to be no clear general patterns regarding chronological or functional differences between curvilinear and rectilinear enclosure types (Roberts *et al.* 2010, 27–8, 55–6; Chadwick 2020; cf. Allen and Smith 2016, 25, 28).

Evidence for Roman occupation at the Holme Hall Quarry site, as represented by pottery and other finds, was particularly concentrated at Enclosures 1, 2a and 2b, indicating that these were probably the sites of farmsteads, although no certain structures were found within them. It is likely that the buildings that once stood within these enclosures were constructed with some kind of foundations laid directly on the now plough-truncated ground surface and have therefore left no archaeological trace (Roman-period structural remain are rare on rural sites in this region, cf. Daniel 2024, 117). A considerable assemblage of pottery was also found in the fills of the Roman quarry pit within Enclosure 4, presumably indicating domestic occupation nearby. The other enclosures may have been used principally for livestock.

Sub-circular enclosure (Enclosure 1)

The sub-circular (curvilinear) enclosure excavated in field S1 in 2004 measured *c*.34 m east–west by 28 m north–south internally and encompassed an area of *c*.0.07 ha (see above, pp. 22-5, Figs 3.1–3.3). It was defined by a single ditch, broken into several segments on its western side (likely due to truncation by later ploughing), with a considerable break on the southern side of the enclosure that presumably represented an entrance, 7.5 m in width.

Pottery from the fills of the enclosure ditch suggests that it was probably dug at some point in the late 1st to 2nd centuries AD (although a date earlier in the first

century AD, perhaps even in the Late Iron Age cannot be ruled out) and its filling continued into the early third century at least, bearing in mind that the upper part of the ditch was probably truncated and removed by later ploughing. Other finds from the enclosure ditch include a beehive quern stone fragment in Millstone Grit, an iron nail and a copper-alloy edge-binding or repair patch from an organic object.

A considerable number of Roman features were recorded within the enclosure, comprising hearths, a large area of discarded heated cobbles (pot boilers) that had probably been used in cooking, pits, postholes and a short gully, as well as natural hollows and gullies whose fills contained Roman material (see above, pp. 25-6, Fig. 3.2). These features, and the pottery and other finds they produced, indicated fairly intensive occupation within the enclosure during the second to third centuries, possibly extending into the fourth century. No clear evidence of structures was found. Finds from the internal features included a copper-alloy enamelled dragonesque brooch (SF266; Fig. 3.5) of mid/late 1st- to 2nd-century AD date, which came from the fill of an irregular crack in the natural limestone bedrock, and seven pieces of ironwork, comprising a square-sectioned bar (SF981), four fragments from structural fittings (SF202, SF286 and SF287), a hobnail and a nail.

Several Roman features were found outside, but in the vicinity of, the enclosure to the south, south-west and west (see above, pp. 26-8, Fig. 3.1). These comprised: three ovens, Ovens 1 = [171][172], 2 = [232] and 3 = [270]; a quarry/midden, [294]; a cobbled surface, [163]; a rubble bank, [251], possibly representing part of a field boundary; north–south gullies [253] and [264], possibly representing slots for a timber structure associated with Ovens 2 and 3; and various pits, [150], [209], [261], [265], [280] and [291]. All lay within 38 m of the enclosure, except for pit [150], which was situated *c*.56 m to the south. Pottery and other material from these features indicated occupation in the second and third centuries, concentrating in the late second to late third centuries (when most or all of the features were filled) and possibly extending into the early fourth century.

About 28 m south-west of the enclosure was a shallow, sub-circular quarry/midden [294], 6.5 by 5.0 m and *c*.0.30 m in depth. This appears to have been dug as a small quarry targeting a natural limestone ridge. The stone obtained from it is likely to have been used locally, most probably for construction, such as for field boundary banks/walls or oven linings. The quarried void contained in its infilling the highest concentration of Roman artefacts from all years of excavation at the quarry, indicating deliberate deposition of midden material, presumably derived from occupation associated with Enclosure 1. A total of 2871 sherds (25,479 g) of Roman pottery was recovered, constituting 54% of the 2004 assemblage by sherd count and 46.9% by weight. It probably represents an accumulation of material over a 50–75 year period, with a terminal date in the late 3rd century. Other finds from this feature included: a copper-alloy coin of Gallienus, datable to AD 253–60 (SF637); an iron punch (SF414) with a fine point suggesting a role in decoration of non-ferrous metal; six iron nails; six iron hobnails; and an unidentified iron object. Five iron bar and strip fragments representing offcuts from blacksmithing (including SF644, SF645A, SF809A and SF1066), an iron strip (SF645B) folded probably in the process of recycling and a quantity of iron smithing slag together suggest that a blacksmith was working at, or in very close proximity to, Enclosure 1.

Other significant finds from features outside, but close to, Enclosure 1 included a copper-alloy enamelled stud (SF46; Fig. 3.4) of mid/late 1st- to 2nd-century AD date from a deposit overlying cobbled surface [163]; a copper-alloy coin of Claudius II, datable to 268–70 (SF681), from rubble bank [251] and a single piece of Roman glass (SF1060) from a prismatic bottle of mid first to late second-century AD date found in pit [291].

Rectilinear enclosure, southern part (Enclosure 2a)

The ditches of the southern part of a rectilinear enclosure were revealed by excavation in field N8 in 2015 (see above, pp. 45-8, Figs 4.1–4.9). This enclosure measured *c*.36 m east–west and at least 28.5 m north–south (i.e. it had an internal area of *c*.0.1 ha or more), with the north side lying beyond the limit of the 2015 excavation. There was a probable entrance represented by a gap in the ditch on the east side. The enclosure ditches had been recut.

The fills of the ditches contained 536 sherds (5185 g) of pottery, which suggested that the enclosure may first have been dug at some point in the late 1st to mid 2nd centuries AD, with the recutting (Ditch groups 4 and 5) occurring in perhaps the late 2nd or early 3rd century. Two radiocarbon dates obtained from ditch fills are consistent with the pottery dating: a charcoal fragment from a short-lived species (birch) recovered from the primary fill of the north terminus of Ditch group 2 (marking the south side of the entrance into the east side of the enclosure) was radiocarbon dated to 7–133 cal AD at 95.4% probability or 53–124 cal AD at 68.2% probability; whilst a juvenile cow skeleton in the upper fill of the recut terminus (Ditch group 4) was radiocarbon dated to 50–214 cal AD at 93.5% probability or 67–131 cal AD at 68.2% probability.

Other finds from the enclosure ditch fills include occasional small, sub-rounded, fire-fractured pebbles and cobbles in the fills of recut Ditch groups 4 and 5; these pot boiler stones would originally have been used for cooking, presumably within the enclosure, prior to being discarded in the ditch. A quarter of a base fragment of a beehive quern in Millstone Grit was found in the upper fill of the recut north terminus of Ditch group 4 and may have been specially deposited, as might the juvenile cow skeleton from the same context.

Various pits and remains of two kilns of uncertain purpose were found within this enclosure (see above, pp. 48, 52–4, Figs 4.4, 4.11, 4.18). Some of the pits were probably used to dispose of rubbish whilst others had fires set in them, possibly for use as ovens. A single feature is likely to relate to early occupation within the enclosure. This is a relatively isolated circular pit [292] in which a fire had evidently been set; it was situated *c*.3 m north-west of the probable entrance in the east side of the enclosure. A charred grain sample from this pit gave an almost identical date to that from the primary ditch, being radiocarbon dated to 7–132 cal AD at 95.4% probability or 33–123 cal AD at 68.2% probability, indicating an early Roman (or possibly very Late Iron Age) date, but no pottery was recovered from this feature.

Several of the other internal pits and one of the kilns produced pottery of mid to late 3rd-century date, possibly stretching into the 4th century, but other features could not be precisely dated within the Roman period. One of the pits, which included late 3rd-century pottery, also contained the virtually intact base of a rotary beehive quern in Millstone Grit. These features indicate significant late Roman activity within the enclosure and strongly suggest that the enclosure was probably still a feature down to at least the late 3rd century, although the recut enclosure ditches were evidently filling up during the 3rd century. Alternatively (and less likely), the enclosure may have been essentially levelled during the 3rd century with the late Roman features relating to a new, possibly unenclosed, settlement in the same area.

A cremation burial found *c*.40 m south-west of the south-west corner of Enclosure 2a (2015 excavation) is discussed in more detail below (p. 138). This cremation was placed in a jar, datable to the late 1st to 2nd centuries AD, and a skull fragment from it gave a C^{14} date of 24 to 213 cal AD at 95.4% probability, 24 to 178 cal AD at 91.5% probability or 64–129 cal AD at 68.2% probability, almost the same as the C^{14} dates from the ditch fills and the early pit from Enclosure 2a.

Rectilinear enclosure, northern part (Enclosure 2b)

The ditches of the northern part of a rectilinear enclosure were found in 2019 along the southern edge of field N7 and below the hedgerow separating fields N7 and N8 (see above, pp. 48-52, Figs 4.1–4.3, 4.12–4.17). These ditches were clearly offset to the west of, and lay at a slightly different angle to, the southern part of a rectilinear enclosure, which was found immediately to the south in field N8 in 2015 (Enclosure 2a). This offsetting may have related to an entrance or entrances into the enclosure, perhaps from the east and/or west, or the two offset parts may have been separate enclosures, perhaps divided by an unidentified boundary. The part of the enclosure found in field N7 is *c*.33 m east–west and at least 15 m north–south internally (i.e. *c*.0.05 ha in internal area), whilst the part of the enclosure found in field N8 in 2015 is *c*.36 m east–west and at least 28.5 m north–south (*c*.0.1 ha). The overall north–south internal length of the enclosure(s) across both fields is *c*.45–47.5 m and the total potential internal area is *c*.0.16 ha. The east ditch of Enclosure 2b continued north as a field boundary for at least a further 71 m.

A sizeable assemblage of Roman pottery (1825 sherds, 22,577 g) was recovered from the ditch fills of Enclosure 2b, representing 50% of the total pottery from the 2019–22 excavations by sherd count and 57% by weight. The north ditch segment F338 produced by far the most pottery of any feature from these excavations (1521 sherds, 18,691 g), indicating a favoured area for disposal of domestic debris in the vicinity of the north-west part of the enclosure, which is supported by the presence of 270 sherds (3383 g) in the west ditch (F502). The pottery from the enclosure ditches suggests activity principally of the mid- to late 2nd century, probably stretching into the 3rd century. There were also a few vessels of broad 1st- (or late 1st-) to mid 2nd century date. In contrast to Enclosure 2a, no clear evidence for recutting of the Enclosure 2b ditches was identified (perhaps due to their generally very shallow surviving depths), although the east end of the north ditch of the enclosure was possibly recut in the late 2nd century or later.

The relatively high proportion of sherds with sooting from ditch segments F338 (9.9%) and F502 (17.0%) indicates that food was prepared in or near the north-west part of the enclosure. Furthermore, the incidence of pottery vessels for pouring and drinking liquids in F338 suggests proximity to an area of food consumption. The high levels of wide mouth jars in F338 (20.4% by minimum number of rims; 21.3% by rim equivalent) is perhaps also of note, given the apparent association of such vessels with dairy farming (see above, p. 113).

Other finds from the enclosure ditches include a Roman pottery counter, an iron knife and a copper-alloy spiral finger or toe ring.

As in the rest of the enclosure to the south (Enclosure 2a), there was also substantial late Roman activity evidenced (late 3rd century, possibly stretching into the 4th century) within Enclosure 2b (see above, pp. 54-5, Fig. 4.12). About 30 pits and/or postholes were found here, eight of which contained pottery of 3rd- to 4th-century date (with nothing certainly later than the late 3rd century) alongside residual earlier Roman material. Of these eight, five had pottery of late 3rd- to 4th-century date, including one pit, [480], which also had a radiate (coin) of Claudius II, dated 268–70 (SF 84). The other postholes and pits in the north part of the enclosure were probably also late 3rd to 4th century in date, but earlier dates cannot be ruled out for many.

Some of the postholes or pits found in the north part of the enclosure may be structural, but no clear structures can be identified. Several of the pits appear to form the northern side of a circle. This could potentially be part of a roundhouse, although most of the constituent pits in the north-west part of the enclosure are intercut and appear to have been dug for rubbish rather than as postholes. There are also hints of a north-east to north-west aligned structure in the north-east part of the enclosure.

The pottery from the late Roman features within Enclosure 2b (some of which is residual from earlier activity) includes a relatively high proportion of tableware (the highest from any feature group from the 2019–22 excavations), suggesting that food was consumed in this area, possibly in relation to feasting. Furthermore, 7.4% of sherds in the probable rubbish pits in the north-west part of the enclosure, F511, have sooting, perhaps indicating proximity to areas of food preparation.

D-shaped enclosure (Enclosure 3)

A double-ditched D-shaped enclosure was excavated in the south-east part of field N2/N3 (2020–22 excavations; see above, pp. 85-91, Figs 5.1, 5.2, 5.5, 5.17–5.21). Its outer ditches enclosed an overall area of about 30 m east–west by 22 m north–south (*c*.0.06 ha), and its inner ditches an area of about 20 m east–west by 17.5 m north–south (*c*.0.03 ha). The north side of the enclosure was constructed against, and was partly cut into, a pre-existing east–west field boundary. Parts of some of the ditches of this enclosure were possibly recut.

The evidence indicates that the D-shaped enclosure was established at some point in the 1st century AD and was possibly out of use by the late 1st to mid 2nd centuries. Small quantities of pottery belonging to the Lincolnshire/Trent Valley Iron Age/native tradition, datable to the 1st to mid 2nd centuries, were found: in the fill of the field ditch (F4345), which was cut by the north ditch of the enclosure; in the ditches of the enclosure itself (F2805 and F4344); and in three possible pits within the enclosure, [2276], [2314] and [2714]. No certain Roman pottery of late 1st-century AD or later date was associated with the enclosure, although a rim of an Iron Age/native tradition shell-tempered jar, datable to between AD 70 and the mid 2nd century, came from one of the possible pits within the enclosure, [2714]. A C^{14} sample from charcoal (species unknown) in another possible pit within the enclosure, [2687], produced a date range of 5–125 cal AD at 91.1% probability, or 35 cal BC to 125 cal AD at 95.4% probability. The small amount of pottery recovered perhaps suggests a low level of occupation, possibly indicating that the enclosure was principally used for livestock, or it might simply be because little pottery was available to the inhabitants of the site in the 1st century AD when the enclosure was in use. Probably most likely, the thin topsoil was so heavily truncated here that due to subsequent ravages of the plough very little material culture survives in what were very truncated deposits. A fragmentary burnt clay loom weight was also noted in a fill of the north ditch of the enclosure, F4344.

Sub-circular enclosure and quarry (Enclosure 4)

Two segments of a curvilinear ditch, probably representing the south and east sides of a sub-circular enclosure, were found in the centre of field N5/N6 (2020–22 excavations; see above, pp. 92-4, Figs 5.1, 5.3, 5.22–5.24). This ditch likely enclosed an area of at least 29 m east–west by 27 m north–south (perhaps originally *c*.0.07 ha), which included a large limestone quarry pit, 21.3 m east–west by 20.2 m north–south and up to 0.70 m deep. There was a gap of 3.5 m in the ditch of the east side of the enclosure, probably representing an entrance which provided access to/from the north–south droveway, *c*.90 m to the east.

The fills of the enclosure ditch contained a few sherds of Lincolnshire/Trent Valley native/Iron Age tradition pottery, datable to the 1st to mid-2nd centuries, but also a South Yorkshire greyware jar of late 2nd- to perhaps mid 3rd-century date. A C^{14} sample from animal bone in the ditch gave a date of 55–205 cal AD at 88.2% probability or 26–205 cal AD at 95.4% probability.

The south edge of the quarry pit was cut into part of the infilled ditch forming the south side of the enclosure, suggesting that the quarry was perhaps dug within a pre-existing enclosure. The backfills of the quarry pit produced 770 sherds (7423 g) of pottery, the second most of any feature from the 2019–22 excavations

(21% of the total by sherd count; 19% of the total by weight), indicating significant occupation in the quarry area, presumably associated with the working of the quarry and/or habitation within the possible pre-existing enclosure. This pottery was consistent with occupation/deposition in the mid to late 2nd century, perhaps extending into the early 3rd century, with some material possibly dating to the 1st and/or earlier in the 2nd century also present. The pottery largely comprised jars and wide mouth jars, but a mortarium and several pieces of tableware were also present, suggesting that food was prepared and consumed in the quarry area. The upper fill of the quarry included an iron nail and a rectangular strip of iron plate, which appears to retain fragments of domed rivets. A cattle tooth from a lower fill produced a C^{14} date of 154–255 cal AD at 74.7% probability or 130–325 cal AD at 95.4% probability, supporting the mid 2nd- to early 3rd-century pottery dating of the feature. The relatively small size of the quarry (and the fact that no other Roman quarries were identified on the 2019–22 site, although one was found next to Enclosure 1 in 2004) suggests it may have been worked for local purposes, perhaps to provide stone to repair the facing of field banks, or less likely for use in a building or to produce lime.

Horseshoe-shaped enclosure (Enclosure 5)

A curvilinear enclosure with horseshoe-shaped outer and inner ditch segments was found in the north-east part of field N2/N3 and in the south part of field N5/N6 (2020–22 excavations; see above, pp. 94-5, Figs 5.1, 5.3, 5.4, 5.26–5.31). The outer ditch enclosed an area of at least 0.08 ha, about 32 m north–south by at least 30 m east–west. It may have had an opening up to 30 m wide to the west, where it appeared to terminate against the line of a north–south field ditch. There was also a narrow gap of *c*.1.4 m in the north-east part of the outer ditch of the enclosure that may have provided access to/from a minor east–west droveway that was found running west from the larger north–south droveway in the direction of Enclosure 5; the ditch marking the north-west side of this entrance had been recut. The form of the lower part of the enclosure's outer ditch, which typically had a narrow, steep-sided profile, suggests it may have been a foundation trench for a timber palisade, although no timbers were noted in excavation. In the western half of the interior of the enclosure there were four shallower ditch segments which formed a smaller horseshoe shape (F4329–32), enclosing an area of about 13 m north–south by 11 m east–west. This inner enclosure also appeared to have an opening, *c*.13 m wide, to the west, but surviving at an angle (facing west-north-west) relative to the apparent opening in the outer ditch.

The outer ditch produced 149 sherds (1504 g) of Late Iron Age/Roman pottery, suggesting that the enclosure was constructed and occupied to a moderate extent in the 1st to mid/late 2nd centuries AD. A C^{14} sample from animal bone in a primary fill produced a date of 9–167 cal AD at 93.4% probability, or 9–203 cal AD at 95.4% probability.

A primary fill in one of the inner ditch segments (F4329) contained a complete copper-alloy penannular brooch (SF 64; Fig. 5.62) of late 1st- to 4th-century date and an incomplete, annular, blue glass bead of broad Iron Age to early medieval date (SF 66; Fig. 5.65). As Iron Age/Roman objects, except for pottery, are so rare on this site, it is possible that these two finds may have been specially/deliberately deposited.

Rectilinear enclosure/small field (Enclosure 6)

A rectilinear enclosure or small field/paddock was excavated in the west part of field N2/N3 (2020–22 excavations; see above, pp. 95-7, Figs 5.1, 5.4, 5.5, 5.32–5.35). It was defined by an apparently continuous ditch (F4312) and was *c*.36.5 m east–west internally, *c*.52 m north–south internally on its west side and *c*.34 m north–south on its east side, with an internal area of 0.17 ha. The ditch of the south side of the enclosure continued west as a field boundary, indicating contemporaneity with the wider Roman field system. A notable assemblage of Roman pottery (129 sherds; 1139 g), including a body sherd of a Dressel 20 olive oil amphora and a sherd of Central Gaulish samian was found with charcoal in the fills of the central part of the south ditch of the enclosure, [3816], probably indicating small-scale occupation in the immediate vicinity during the late 1st to mid 2nd centuries AD. The other ditch fills produced no finds.

Other structures

Two groups of possible postholes (F310 and F311), perhaps representing parts of small structures of some kind, were recorded in field N7 (2019 excavation), a short distance to the east/north-east of rectilinear Enclosure 2b and to either side of an east–west Roman field ditch (F527). About 22 m to the north-west of Enclosure 2b was another possible small structure (F530) formed of possible postholes densely packed in a sub-circular/horseshoe shape, 4.76 m in length, perhaps with an opening facing north-east. No finds were recovered from these features, but their proximity to the enclosure makes a Roman date most likely (see above, p. 57-8, Figs 4.21 and 4.22, cf. Fig. 4.2).

In the north-east part of field N5/N6 (2020–22 excavations), another possible structure, F2045, was formed by 14 possible postholes (see above, p. 97, Figs 5.3 and 5.36). These appeared to define a sub-oval enclosure, 10 m east–west by 5.7 m north–south, which was neatly situated in the north-east corner of a Late

Iron Age/Roman field, immediately to the west of the north–south droveway. The placement of this structure suggests a Late Iron Age/Roman date, although no finds were recovered from it. A function as a pen for animals or a shelter for people and/or livestock travelling on the adjacent north–south droveway is perhaps most likely.

Agricultural production

The animal bones from Late Iron Age/Roman contexts were poorly preserved and highly fragmented, which hampered analysis. Of the 826 refitted disarticulated bones and loose teeth from the 2019–22 excavations, the vast majority belonged to unidentified mammals of large (n = 222), medium (n= 65), or uncertain (n = 412) size, with one bone of a small mammal and one bird long bone (see above, pp. 119-21). Among the 125 bones and loose teeth identified to species, those of cattle were most abundant (n = 61), followed by sheep/goat (n = 47), equid (horse/mule/donkey) (n = 10) and pig (n = 7); the relative percentages of the main domesticates, cattle, sheep/goat and pig, were 52.6%, 41.4% and 6.0% respectively. Cattle were also most common amongst the identifiable bones from the smaller Roman animal bone assemblage from the 2015 excavation, followed by sheep/goat and with a single bone each of equid and bird (see above, p. 67). A total of 356 fragments of identifiable and broadly classifiable animal bone were recovered from Roman features in the 2004 excavation (see above, pp. 40-1). These comprised bones of cattle (n = 57), sheep/goat (n = 43), horse (n = 2), pig (n = 2), dog (n = 43) and possible red deer (n = 6), as well as unidentified large (n = 156), medium (n = 44) and small mammals (n = 3); the relative percentages of cattle, sheep/goat and pig from the 2004 excavation, were 55.9%, 42.2% and 2.0% respectively. The small sizes of the assemblages precluded firm conclusions on husbandry practice, and the animals represented by the bones may have served primary (meat) and/or secondary (e.g. wool, milk, manure and traction) purposes.

Most of the animal bones from Late Iron Age/Roman contexts came from enclosure ditches, or from features within or next to enclosures, suggesting that animals were primarily concentrated, killed, consumed, or disposed of at or near the enclosures. The generally poor condition of the bone probably reduced the observability of taphonomic marks, but a few bones with traces of butchery came from the ditches of Enclosures 2a, 2b, 3 and 4 and from features in or near Enclosure 1. A small number of burnt bones came from the ditches of Enclosures 2b, 3 and 5, from a possibly late Roman post-hole within Enclosure 2b and from features in or near Enclosure 1. A single object relates to the keeping of livestock: an iron ox goad found in a natural hollow within Enclosure 1 (2004 excavation).

A few cereal grains were recovered from Roman contexts in the 2015 excavation (see above, p. 67), including spelt wheat and hulled barley from late Roman pit [222] within rectilinear Enclosure 2a. Nine pea (*Pisum sativum*) seeds were also identified in a sample from a small pit, [313], south-west of Enclosure 2a that contained an urned human cremation.

Two palaeoenvironmental samples (Samples 13 and 14) from a segment of the north ditch (F338) of rectilinear Enclosure 2b (2019 excavation) produced several charred cereal grains, including barley and spelt wheat (see above, p. 121-5, Table 5.5). These are the two most common grain species associated with arable farming in Roman Britain (Van der Veen 2014). Sample 13, which came from a fill of the ditch that included cremated human bone, also contained a variety of charred weed seeds that are often associated with crop-processing activities. This could indicate that leftover waste material from crop processing was used as a fuel or tinder for the cremation. The relatively low levels of charred cereal grains and cereal components in these samples suggest that crop processing was mainly being conducted on a small scale, that is for local consumption rather than for export to a wider area. Samples taken from two probable rubbish pits with late Roman pottery in the north-west part of Enclosure 2b, [473] and [480], also contained a small number of charred cereal grains and weed seeds typical of those found with waste material of late-stage crop processing (medium-coarse sieving and fine-sieving), as well as oat and brome grass seeds, which indicate that grassland was also utilised (see above, pp. 121, 123).

The samples from the 2020–22 excavations produced only low quantities of charred cereal grains and glumes, suggesting that these areas may have lain on the outskirts of the main areas of crop-processing activity (see above, p. 123). Several samples from Roman features found in the 2004 excavation produced small amounts of grain, but further identification to species level was not undertaken (see above, p. 41).

Fragments from three querns, including two rotary querns in Millstone Grit (one of Late Iron Age/Roman beehive type, the other typical of Roman assemblages in Yorkshire) and a possible later prehistoric trough quern in limestone, were recorded in the 2004 excavation (see above, pp. 35–6). The beehive quern came from a fill in the ditch of Enclosure 1 and the other two from the topsoil. Fragments of two more Late Iron Age/Roman beehive querns in Millstone Grit were found in 2015, one from a fill in the ditch of Enclosure 2a, the other from a late Roman pit, [296], within this enclosure (see above, p. 65). These five querns provide further evidence that grain was being grown and ground to make flour at Holme Hall Quarry in the Late Iron Age/Roman period.

Five kilns/ovens, all possibly of 3rd-century date, were found in the excavations: three to the south of Enclosure 1 (2004 excavation) and two from inside Enclosure 2a (2015 excavation). The lack of metalworking debris, pottery wasters or charred grain recovered from the close vicinity of these features suggests they were unlikely to be metalworking furnaces, pottery kilns or corn driers. It is tentatively suggested that they were ovens, perhaps for baking bread or other foodstuffs.

The limited evidence from the animal bones, palaeoenvironmental samples, querns and possibly the kilns/ovens suggests that the field system at Holme Hall Quarry was used for a mixed farming regime. Wheat and barley were apparently grown on a small scale for local use. Cattle, sheep/goat, horses and pigs were being kept and at least some of these appear to have been consumed on the site; however, during the Roman period it is probable that livestock would also have been supplied to Roman military garrisons in the surrounding region, although there is no direct evidence for this from the site itself.

Non-agricultural production

Only a little evidence for non-agricultural production was recorded in the excavations. A 2nd- to 3rd-century limestone quarry pit was found within Enclosure 4 (2020–22 excavations) and another probable quarry pit, [294], of 3rd-century date, to the south-west of Enclosure 1 (2004 excavation). These were both fairly small and probably for local use. A fragmentary burnt clay loom weight was noted in a fill of the north ditch of D-shaped Enclosure 3, suggesting weaving of presumably woollen textiles. Various bar and strip fragments representing offcuts from blacksmithing as well as smithing slag were found in the vicinity of Enclosure 1, indicating a blacksmith was operating in or near this enclosure; a relatively large assemblage of iron objects was also recovered from around Enclosure 1. A few small nodules of possible iron smithing slag also came from a post-hole within enclosure 2b (2019 excavation) and a handful of tiny slag fragments from the ditch of Enclosure 5 and from a field ditch (2020–22 excavations). There are, in addition, hints of fine metalworking (perhaps bronze-working) in the fine iron punches recovered from the vicinity of Enclosure 1.

Cremations

Four deposits containing burnt or charred human bone fragments were found in the 2015 and 2019–22 excavations (see above, pp. 66, 119). A disturbed/truncated urned cremation burial was recovered from the upper surviving fill of an oval pit, [313], situated *c*.40 m south-west of the south-west corner of Roman rectilinear Enclosure 2a (2015 excavation; cf. p. 55, Figs 4.3, 4.19 and 4.20). The cremation urn was a heavily fragmented jar, datable to the late 1st to 2nd centuries AD (Fig. 4.25, Dwg 4), whilst a skull fragment from the cremation gave a C^{14} date of 24 to 213 cal AD at 95.4% probability, 24 to 178 cal AD at 91.5% probability and 64–129 cal AD at 68.2% probability, almost the same as the C^{14} dates from the ditch fills and the early pit from the adjacent Enclosure 2a.

Small amounts of burnt human bone, probably derived from heavily disturbed or redeposited cremation burials, were recorded in a context datable to the 2nd to early 3rd centuries in north ditch segment F338 of Roman rectilinear Enclosure 2b (2019 excavation) and in Late Iron Age/Roman field ditch segment [3934] in N5/N6 (2020–22 excavations), which was situated *c*.65 m west-north-west of Enclosure 5. Human bone from the field ditch segment gave a C^{14} date of 22–204 cal AD at 95.4% probability.

Charred fragments of human bone were also found in a secondary fill in the outer ditch (F4334) of horseshoe-shaped Enclosure 5 in N2/N3 (2020–22 excavations). The relatively good preservation of these fragments suggests that they were sealed within their final deposit soon after charring, rather than being redeposited. The poor oxidation of the heat-affected bones indicates that they were not subjected to an efficient cremation process or may not have been formally cremated.

These finds suggest that people were being cremated and their remains disposed of within their agricultural landscape not far outside the settlement enclosures, but in only one case was a burial formally deposited in a pottery urn. It is perhaps notable that the burials all appear to have been isolated and no formal burial areas were identified. Roman burials are very rare on rural sites in South Yorkshire, possibly because the burial practices in use left little archaeological trace (Smith 2018, 220, Fig. 6.24; Chadwick 2020; cf. McKinley 2024).

Discussion

The field system at Holme Hall Quarry appears to have represented a large-scale, possibly planned, reorganisation of the landscape and will have served to intensify agricultural production on what were fertile soils situated over limestone. On the basis of the pottery and radiocarbon dates, the field system was probably established during the 1st century AD, likely (but not certainly) after the appearance of the Roman military in the locality, probably from the early AD 50s onwards. Due to the aforementioned difficulties in identifying Iron Age activity prior to this date (see above, p. 130), it cannot be ruled out that the field system had its origins in the 1st century BC or earlier,

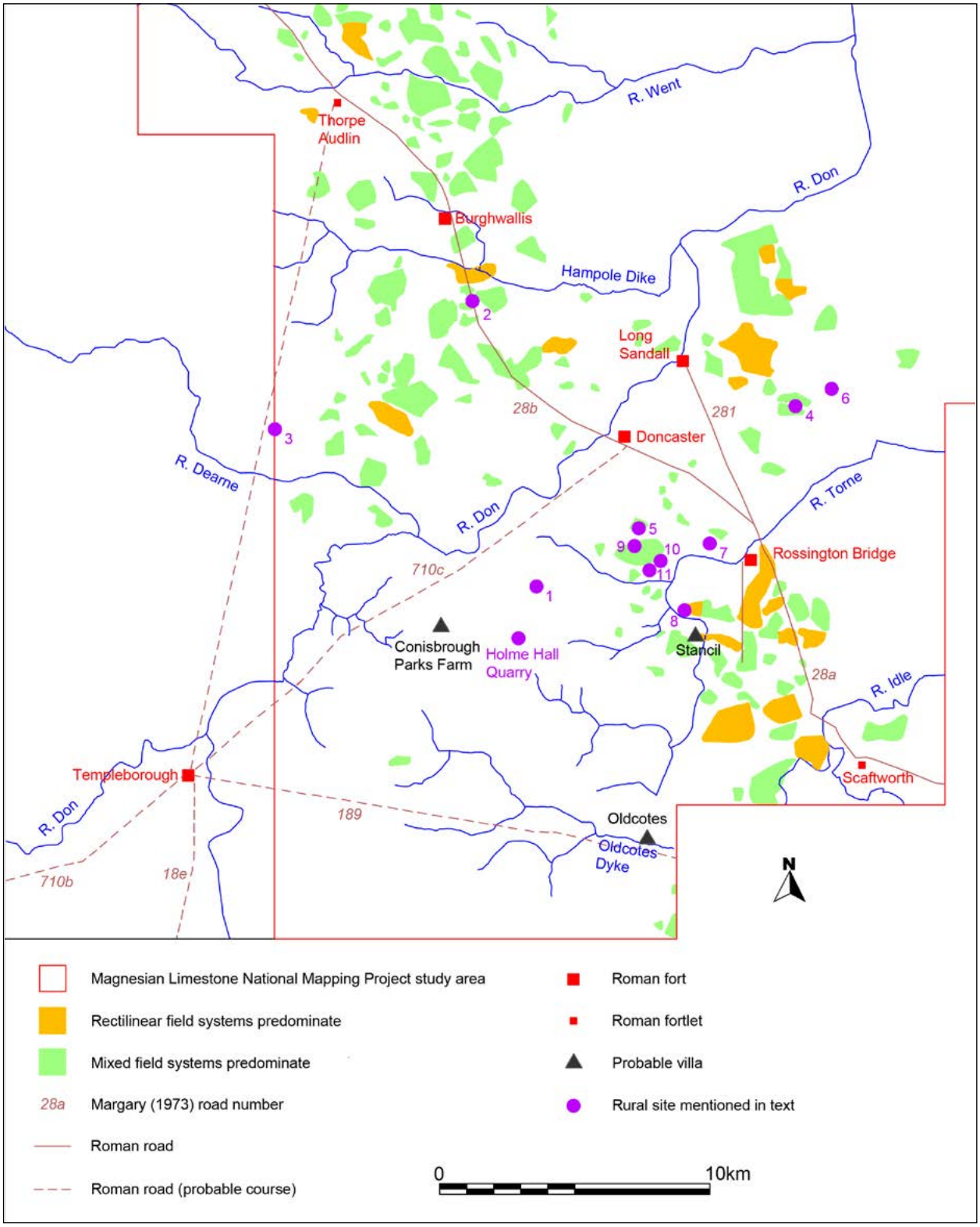


Fig. 6.4. Distribution of Late Iron Age to Roman field system types in the region around Holme Hall Quarry, showing Roman roads, forts, villas and rural sites named in the text (after Roberts et al. 2010, Illus. 26 and 88 with additions). Rural sites named in text: 1 Edlington Wood; 2 Redhouse; 3 Goldthorpe Industrial Estate; 4 Gunhills/West Moor Park; 5 Catesby Business Park; 6 Huggin Lakes; 7 Manor Farm; 8 Rossington Colliery/Rossington Grange Farm; 9 Carr Lodge Farm; 10 the Finningley and Rossington Regeneration Route Scheme; 11 near Rossington.

although this seems unlikely. A few of the enclosures certainly seem to have been constructed early in the Roman period: the rectilinear enclosure(s) found in 2015 and 2019 (Enclosures 2a and 2b) was probably established in the late 1st or 2nd century AD, whilst sub-circular Enclosure 1 (2004 excavation) was possibly built in the late first century AD. D-shaped Enclosure 3 (2020–22 excavations), meanwhile, may have gone out of use by the late 1st century AD.

In the 1st century AD the site lay in a frontier area between two peoples known as the Corieltavi (to the south) and the Brigantes (to the north). On the basis of the distribution of their gold and silver coins, minted from the mid 1st century BC to the time of the Roman conquest in the AD 40s, the Corieltavi inhabited the East Midlands, comprising the modern counties of Lincolnshire, Leicestershire and parts of Nottinghamshire, Northamptonshire and Cambridgeshire. The coin distribution suggests that the western and northern border of the Corieltavi appears to have been approximately the River Trent and the Humber (cf. Cunliffe 2005, Fig. 8.13; Mattingly 2006, 140–1; Cottam *et al.* 2010, 6–8, 17–18, 91–102; website of the Portable Antiquities Scheme website, including data from the Celtic Coin Index, https://finds.org.uk/), but the precise border is not certain and might have lain as far north-west as the River Don (see below, p. this page). The Brigantes (who are not known to have minted coins) occupied most of northern England and may have been a confederation of peoples, perhaps dominated by a group based at a royal residence at Stanwick in the Vale of York (Mattingly 2006, 146, 418–19; cf. Ottaway 2013, 52).

Following his appointment as governor of *Britannia* in AD 47, Publius Ostorius Scapula appears to have extended direct Roman control up to the Rivers Trent and Severn (Tacitus *Annals* 12.31; Mattingly 2006, 101). At this time the Brigantes were still independent, although Roman units were dispatched to kill a few of their members who had engaged in hostilities against Roman interests (Tacitus *Annals* 12.32; Mattingly 2006, 102). The Brigantian queen, Cartimandua, subsequently attempted to maintain good relations with Rome (Tacitus *Annals* 12.36). Following Ostorius's death, the new governor Aulus Didius Gallus (AD 52–7) sent auxiliaries and a legion to intervene in an internal conflict among the Brigantes that involved a threat to Cartimandua from her ex-consort Venutius (Tacitus *Annals* 12.40; Mattingly 2006, 104).

It was perhaps as part of Didius's campaign in the early AD 50s that forts were established up to the line of the River Don, which lay *c*.3.2 km north of the Holme Hall Quarry site. These include an auxiliary fort at Templeborough on the south bank of the Don near Rotherham (*c*.13.7 km south-west of Holme Hall Quarry) and a vexillation (legionary detachment) fort at Rossington Bridge just south of Doncaster and *c*.8.3 km east-north-east of Holme Hall Quarry (Fig. 6.4; May 1922; Bidwell and Hodgson 2009, 8, 91–3, 162; Ottaway 2013, 51; Davies 2016; Leary 2016; Ottaway 2019; Chadwick 2020). Certain dating evidence for the construction of these two forts is, however, lacking and dates of foundation somewhat later in the 1st century AD are possible.

If the area between the Rivers Trent and Don was occupied by the Romans by the early AD 50s, it would almost certainly not by then have been considered part of independent Brigantian territory (Ottaway 2013, 52). Poorly understood linear earthworks known as the Roman Rig or Ridge run south-west to north-east for *c*.27 km on the north side of the Don north of Rotherham/Templeborough. These earthworks may have been designed to be seen from the south-east and might be an Iron Age work defining the southern border of the Brigantes or one of their constituent groups (Chadwick 2020). It is possible that the area between the Trent and Don was Corieltavian territory (as suggested by: Roberts *et al.* 2010, 63; Ottaway 2013, 52; Ottaway 2019; Chadwick 2020); indeed, the presence at the Holme Hall Quarry site of Iron Age/native tradition pottery of 1st- to mid 2nd-century AD date from Lincolnshire and/or the Trent Valley suggests connections with the Corieltavi. There are indications, however, that the Trent Valley may have been a social and cultural boundary in the Late Iron Age and Roman period, as reflected in differences in pottery styles in use in the 1st century AD, as well as in differences in the general character of Iron Age and Roman settlement in areas adjacent to and south of the Trent (which perhaps had more in common with Central and Southern England) compared to areas to the north (Bishop 2000, 5–6; Knight *et al.* 2004, 144–6) and in the apparent paucity of Corieltavian coin finds between the Trent and the Don (website of the Portable Antiquities Scheme website, including data from the Celtic Coin Index, https://finds.org.uk/). This all suggests that in the mid 1st century AD the area between the Trent Valley and the Don may have been inhabited by people who were not necessarily a core part of (but might have been affiliated to) either the Corieltavi or the Brigantes, which the Roman military decided to occupy.

In AD 69 another dispute between Cartimandua and Venutius provided a pretext for the Roman army to begin the conquest of much of what is now northern England (Tacitus *Histories* 3.45; Mattingly 2006, 114–15; Ottaway 2019). Initially, Roman auxiliary troops were sent to Cartimandua's aid, but were obliged to concede the kingdom to Venutius. Following a series of battles during the governorship of Petillius Cerialis (AD 71–4), the Brigantes were eventually defeated and

their territory was garrisoned and incorporated into the Roman province (Tacitus *Agricola* 17; Mattingly 2006, 115). A large number of forts were established in northern England during the late 1st century AD (Jones and Mattingly 1990, Map 4:31; Mattingly 2006, 146–9, Figs 5, 7; Bidwell and Hodgson 2009, 8–15, Figs 3–5; Ottaway 2019).

The Holme Hall Quarry site lay *c*.7.6 km south-west of the Roman fort at Doncaster (Fig. 6.4), which was founded in the late 1st century AD and was probably occupied, perhaps with periods of abandonment, down to the end of the 4th century (Bidwell and Hodgson 2009, 131–2; Chadwick 2020). The possibly mid 1st-century AD fort at Templeborough, which lay *c*.13.7 km south-west of Holme Hall Quarry (Fig. 6.4), was also occupied in the late 1st century and may have been rebuilt in the mid to late 2nd century following a possible phase of abandonment, with further occupation down to at least the late 3rd century (Chadwick 2020; cf. Bidwell and Hodgson 2009, 91–3). As the Holme Hall Quarry site was situated relatively close to two long-lived Roman forts, it very likely lay in an area under direct military supervision throughout the Roman period. This area was probably not under civilian administration by either the *civitas* of the Corieltavi, based at Leicester from the late 1st century AD onwards, or the *civitas* of the Brigantes, which may only have been established in the 2nd century with a small territory centred on Aldborough, north-west of York (cf. Mattingly 2006, 149, 276, 390, 419, Fig. 10).

Field systems similar to the example found at Holme Hall Quarry, often with a regular 'coaxial' pattern formed by boundaries running on common alignments over long distances, are widespread in the surrounding region and throughout much of northern England. They are especially visible as cropmarks in areas to the north and east of the Holme Hall Quarry site: along the Magnesian Limestone belt/ridge in South and West Yorkshire north of the River Don and in adjacent areas of sandstone to the east, stretching south of the River Don into north Nottinghamshire (Fig. 6.4; Riley 1980; Mattingly 2006, 421; Roberts *et al.* 2010, 20–2, 58–9; Hodgson 2012; Ottaway 2013, 53–70; Allen 2016, 272–3; Ottaway 2019; Chadwick 2020).

Derrick Riley (1980) proposed a regional scheme with three types of field system: 'brickwork', 'nuclear' and 'irregular'. Riley noted that 'brickwork' fields, named because of their regular co-axial appearance, were present on the sandstone areas of South Yorkshire and north Nottinghamshire, whilst fields 'nucleated' around enclosures and those more 'irregular' in pattern were most common on Magnesian Limestone and Coal Measures areas (cf. Chadwick 2020). A more recent survey by Roberts *et al.* (2010, 20, 22, Illus. 25–6) argued that Riley's terms were slightly misleading and instead proposed two main types. Riley's 'brickwork' type was adapted to become 'strip' or rectilinear field systems, defined as 'four or more strip fields, no wider than 100 m, divided by long boundaries of at least 400 m length, and [with] the presence of at least one short cross boundary'. These 'strip' or rectilinear fields were mainly identified on the sandstone south of the Don, but are also present in various places on the Magnesian Limestone and Coal Measures north of the river (Fig. 6.4). Roberts *et al.* (2010, 20, 22, Illus. 25–6) second type, 'mixed' field systems, was characterised by fields that were more variable in width and size. Mixed field systems were more common north of the Don, but were present on both sides of this river, often intermingled and contiguous with 'strip' or rectilinear field systems (Fig. 6.4).

Since 1990 many field systems have been recorded in developer-funded excavations, which in South Yorkshire have typically focused on the same areas in which the cropmarks are concentrated (cf. Roberts *et al.* 2010; Hodgson 2012). Excavations have revealed that some of the field systems were established in the later Iron Age, probably from the 4th to 1st centuries BC onwards, but they remained in use into the Roman period (their ditches were often recut), sometimes developing or being modified over the course of time. On some sites field systems appear to have been established during the early Roman period (for chronology of field systems in general, see: Roberts *et al.* 2010, 58–9, 71; Hodgson 2012; Ottaway 2013, 53–70; Daniel 2015, 12–14; Allen 2016, 272–3; Daniel 2019; Ottaway 2019; Chadwick 2020; Daniel 2024, 67–8, 117; Moon 2024). Given the relative scarcity of Iron Age ceramics in South Yorkshire (see above, p. 130) and the potential for field ditches to remain in use and be recut over long periods of time, it can be difficult to distinguish 'Iron Age' field systems from 'Roman'-period fields in this region (Chadwick 2020). Cropmark and excavated evidence show, however, that several large rectilinear and mixed field systems (e.g. around Rossington, cf. Fig. 6.4) are orientated at oblique angles to Roman roads, which presumably cut across and post-date them, thus indicating field systems were well established in parts of the region prior to Roman military occupation (Riley 1980, 25; Roberts *et al.* 2010, 58, 71–2, Illus. 79 and 90).

A substantial part of an extensive field system was found in major excavations between 2000 and 2017 at Redhouse, Adwick le Street (South Yorkshire), *c*.11.7 km to the north of Holme Hall Quarry (Fig. 6.4, No. 2; Preece 2023). The Redhouse site lay on the Magnesian Limestone on the north side of the River Don, *c*.6.6 km north-west of the Roman fort at Doncaster and alongside the Roman road running from Doncaster to Tadcaster (Margary 1973, Road 28b). At Redhouse, a

system of generally quite irregular, long sinuous field ditches and associated enclosures was established in the Late Iron Age, including one noticeably regular sub-square enclosure. This system was partly retained and significantly expanded in the Roman period, when several new fairly regular fields were created and existing large fields were sub-divided by the construction of linear ditches, and new rectilinear and curvilinear enclosures were also created. Only one Roman field ditch appeared to be aligned with (at a right angle to) the Roman road, which was probably constructed in the late 1st century AD. On the basis of the pottery, the peak of activity on the site was in the 2nd century AD with smaller assemblages of 3rd-/4th-century date.

Another South Yorkshire parallel comes from Goldthorpe Industrial Estate, set on the Upper Coal Measures *c*.11.8 km north-west of Holme Hall Quarry and *c*.4.5 km north of the River Don (Fig. 6.4, No. 3; Ross 2014). A large-scale excavation here in 2012–13 revealed an extensive rectilinear field system, which appeared to have been laid out as a single event, probably in the Late Iron Age or very early Roman period as pottery of

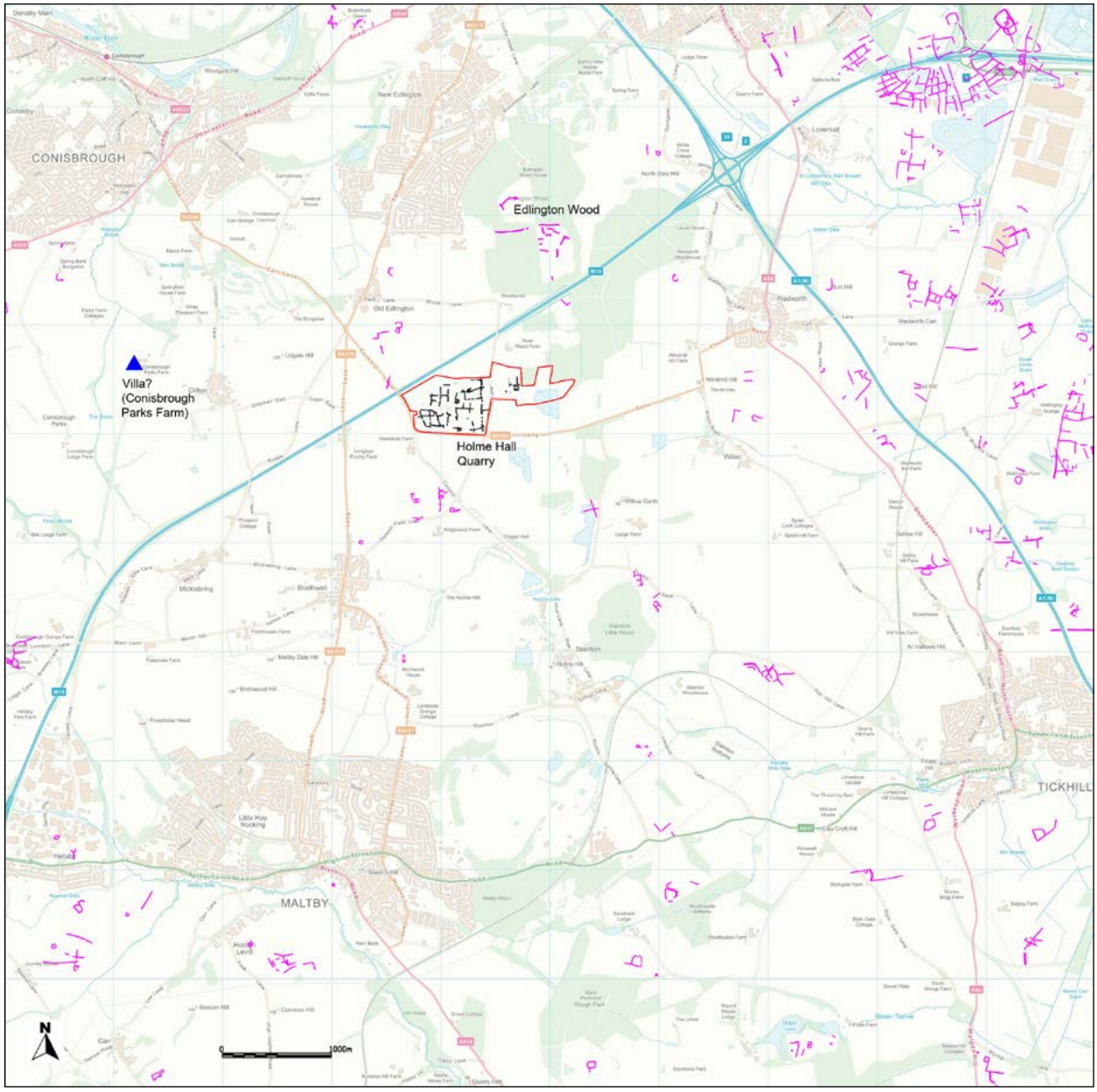


Fig. 6.5. Plan showing cropmark data (magenta) for Late Iron Age to Roman field systems in the area around Holme Hall Quarry (2015–22 site boundary marked in red, with excavated field system in black). The possible villa at Conisbrough Parks Farm is marked with a blue triangle. Cropmark data from the Magnesian Limestone National Mapping Project (© Archaeological Services WYAS; cf. Roberts et al. 2010, Illus. 115). Base map from Ordnance Survey VectorMap® District, which contains public sector information licensed under the Open Government Licence v3.0.

Late Iron Age date was recovered from low within the primary fills of two of the ditches, whilst charred wheat from the primary fill of the outer ditch of a field corner enclosure was radiocarbon dated to 46 BC–AD 76 (Ross 2014, 9, 20).

Several recent excavations in the sandstone areas of South Yorkshire to the east of Holme Hall and to the south and east of Doncaster, have also revealed field systems and associated enclosures of Late Iron Age to Roman date (with pottery assemblages typically suggesting that occupation of these sites peaked in the 2nd and 3rd centuries AD), as at: Gunhills/West Moor Park, Armthorpe (Fig. 6.4, No. 4; Richardson 2001; 2008); Catesby Business Park, Balby Carr (Fig. 6.4, No. 5; Muldowney 2009); Huggin Lakes, Armthorpe (Fig. 6.4, No. 6; Meadows 2010); Manor Farm, Bessacarr, Doncaster (Fig. 6.4, No. 7; Anon 2010); Rossington Colliery/Rossington Grange Farm (Fig. 6.4, No. 8; Moretti 2012; Roberts and Weston 2016); Carr Lodge Farm, Doncaster (Fig. 6.4, No. 9; Stanley and Langley 2013); the Finningley and Rossington Regeneration Route Scheme (Fig. 6.4, No. 10; Daniel 2017); and near Rossington (Fig. 6.4, No. 11; Powell *et al.* 2020). Further field systems have recently been excavated near Rossington (Daniel 2019; Daniel 2024) and at Hellaby, east of Rotherham (Moon 2024).

Prior to the excavations at Holme Hall Quarry, much less evidence of such field systems had been recorded as cropmarks in the immediate vicinity of the site compared to areas to the north (on the Magnesian Limestone belt north of the River Don) and east (on the sandstone south of the Don) (Fig. 6.4; Roberts *et al.* 2010, Illus. 26, 115 and 116). Cropmarks representing fragments of several field ditches, trackways and enclosures had, however, been identified within a kilometre or two to the north and south of the site (Fig. 6.5; cf. Figs 1.3 and 1.4, AR06, AR07, AR09, AR12, AR15, AR20, AR21, AR22, AR26, AR32 and AR36; for further details, see Brown 2015, 6, 23–6, Figs 7a and 7b).

The precise reasons for the appearance of such extensive field systems in the region around Holme Hall Quarry are uncertain and may have varied. One possibility is that some or all were set up by local 'native' people, either initially in the Late Iron Age or early in the Roman period. As in regions further south, such as the Trent Valley (where field systems were certainly developing in the Late Iron Age), this may have been the result of a shift from short- or long-distance cycles of transhumance in a largely unbounded landscape to more permanent agriculture with stricter control of the best agricultural land (Knight 2007, 193, 214). One cause for this could have been pressure from increases in population and livestock during the Late Iron Age and into the Roman period. The appearance of the Roman military in the region from the mid 1st century AD may have played a catalysing role in these processes, perhaps as a result of Roman authorities and/or landowners restricting local people to specific localities and placing obligations on them to pay taxes/supply the Roman army (cf. Mattingly 2006, 361–2).

Another option, which could explain the apparent imposition of rectilinear field systems at some sites such as Holme Hall Quarry early in the Roman period, is that following occupation of the region in the AD 50s onwards, the Roman military may have reorganised land tenure in order to intensify agricultural production to ensure their supply in an initially unstable and potentially hostile frontier zone. It is possible that land in the Holme Hall Quarry area was confiscated or ownership/tenure transferred, with farming taken up by preferred individuals or groups, such as Roman military veterans, rich absentee landlords, or friendly/compliant local 'native' leaders (cf. Mattingly 2006, 353–5, 454–5; Waddington 2017, 51–2). These landowners might then have arranged the imposition of planned systems of fields, possibly hiring/compelling local 'native' people to construct the field systems and work the land or sub-letting to them. In some places hypothesised Roman landowners could simply have overtaken existing Iron Age field systems or have allowed the resident 'native' population to continue to operate and expand such systems so long as they supplied sufficient taxes/rent.

The copper-alloy Stannington diploma found hidden by a boulder on the western side of Sheffield in 1760, probably in former Brigantian territory, *c.*24 km west-south-west of Holme Hall Quarry, represents a grant of citizenship to a Roman auxiliary soldier by Hadrian in AD 124 and indicates that retired Roman auxiliaries may have bought or been granted land elsewhere in South Yorkshire in the early 2nd century AD (Hunter 1819, 18–20; *RIB* II, 2401.6; Waddington 2017, 51, Fig. 31; British Museum, Acc. No. 1857,1127.1).

There is some possible evidence for a resident wealthy land-owning elite in South Yorkshire, although Roman-style rural villas seem to have been rare in contrast to much of Central and Southern England (Hodgson 2012, 44, 45, 48, 54; Allen and Smith 2016, Fig. 2.19; Chadwick 2020). A villa complex may lie at Conisbrough Parks Farm, just 2.7 km to the west-north-west of Holme Hall Quarry (Figs 6.4 and 6.5). This was investigated by the private landowner in 1985 in a pasture field to the south-west of the farm (Buckland 1986, 38; Chadwick 2020; South Yorkshire HER no: 03023/01). Walls surviving up to 1 m in height with internal plaster facing survived directly below the turf. A Roman bath house and aisled building were apparently identified, but little information about this site has been published.

Another likely villa was found at Stancil on the west bank of the River Torne, 6 km east of Holme Hall Quarry, 8 km south-south-east of Doncaster and 3.5 km west of the main road south-east from Doncaster towards Lincoln (Fig. 6.4). At Stancil, part of a rectangular stone-walled Roman building was revealed in excavations in 1938–9 (Whiting 1943; Buckland 1986, 38, Fig. 22; Chadwick 2020). This building contained a hypocaust (for underfloor heating) and a floor of *opus signinum* upon which lay destruction debris, including ceramic roof and flue tiles, decorated glazed floor tiles, and painted wall plaster with floral motifs. Other walls were also found close by, including those of an apse.

A third nearby probable villa was discovered in 1870 at Oldcotes (Notts.), *c.*9.4 km south-east of Holme Hall Quarry (Fig. 6.4); here walls forming at least two rooms were recorded, one of which had a decorative mosaic floor, an apsidal niche and a quarter round plaster moulding around its edges; a second room had a grey tessellated floor; a large number of fragments of decorative paintings on plaster and flanged roof tiles were also recovered from the site (*The Archaeological Journal* 28 (1871), 66–7, 71; Nottinghamshire HER Monument no. 318493, Monument record M4750).

A poorly recorded stone structure was examined in the 1950s at Chapel Holt/Hole, *c.*700 m south of the 2004 excavation at Holme Hall Quarry. The Chapel Holt/Hole structure has been regarded as a possible Roman building (Buckland 1986, 38; Chadwick 2020), but it seems likely to be medieval in date (see above, p. 7, Figs 1.3 and 1.4, HB01/AR28; Brown 2015, 7, 26, 32).

Another relevant site was excavated elsewhere in South Yorkshire at Whirlow, *c.*26 km south-west of Holme Hall Quarry, probably in former Brigantian territory and not far from where the Stannington diploma was found. At Whirlow, a large, ditched rectilinear enclosure, at least 71 m in length and probably of similar width (at least 43 m) was recorded (Waddington 2017). With an estimated area of *c.*0.5 ha, this enclosure was notably larger than other Late Iron Age to Roman rectilinear enclosures known from South Yorkshire, including those from Holme Hall Quarry. A C14 date from a lower fill of the Whirlow enclosure indicated an Iron Age origin, probably in the mid 4th to 2nd centuries BC. The enclosure was subsequently occupied in the Roman period, beginning in the second half of the 1st to early 2nd centuries AD (when a short-lived timber Roman military signal station was also constructed on the ridge top above the site) and apparently abandoned in the late 3rd to early 4th centuries AD. The presence of pewter tableware, glass objects and a range of ceramics, together with a stone-founded rectangular building, stone support block, dressed sandstone block and a possible tessera, are indicative of everyday objects and buildings in the Roman style, which considering the location and dating of the site, most likely imply its occupation by people directly associated with the Roman military. The enclosure may, therefore, originally have been part of a significant Iron Age Brigantian estate, which was requisitioned as part of the Roman military conquest of Brigantia in the late 1st century AD in order to help secure an important cross-Pennine route linking the Humber to Chester in what may have been a hostile and remote environment. It may also have played a role in the production of agricultural goods to supply the Roman army.

Only one other Roman site is recorded within a 4 km radius of Holme Hall Quarry on the Roman rural project database (Allen *et al.* 2015). This is situated on the Magnesian Limestone *c.*2 km to the north at Edlington Wood (Fig. 6.4, No. 1; Fig. 6.5), where at least five D-shaped and sub-rectangular enclosures built of stone and earth banks faced with limestone blocks were found, with three rectangular stone buildings lying a short distance to the north (Corder 1951; Ramm 1973; Sumpter 1973; Chadwick 2020). These banks and buildings were preserved in an area of woodland and had not suffered subsequent damage from ploughing. Recent lidar analyses of the wood indicate that the enclosures formed part of a coaxial field system of low stone banks (Buckland *et al.* 2017). A wide variety of Roman finds were recovered from this site, including eight brooches, two coin hoards in pottery vessels (one of 81 coins down to Philip II, AD 247–9; the second of 528 coins down to Salonina, AD 253–68), plus a third scattered hoard of 59 coins down to Probus (AD 276–82) which may originally have been placed in a calcite jar (fragments of which were found near the coins). Further coins have been found in the vicinity, including an early 3rd-century hoard. These finds suggest a possible religious site/shrine in an agricultural landscape. Another concentration of 3rd-century coin hoards, including a counterfeiter's hoard and another with silver coins and four or five silver bracelets, is known from the north side of the River Don Gorge, near the villages of Cadeby and Sprotbrough, *c.*3 km north-west of Edlington Wood (Chadwick 2020).

During the Roman period, Holme Hall Quarry was a rural site focused on mixed agricultural production of livestock and crops (for details, see above, pp. 137-8), probably for a mix of local consumption and export to nearby Roman forts. Animal bones and charred plant remains are poorly preserved, likely due to the heavy truncation of the site by ploughing and the presence of shallow soils immediately overlying bedrock, but the limited evidence recovered at Holme Hall suggests a similar picture to that obtained from other rural sites in the county. Pasturage was clearly important, with cattle and sheep remains usually the most common in

Iron Age and Roman contexts in South Yorkshire, with some evidence of pig and horse (Roberts *et al.* 2010, 63–4; Chadwick 2020; Higbee 2024; Richardson 2024), although horse was most common in the Roman-period assemblage at Redhouse, Adwick le Street (Gordon 2023). Lipids analysis of 33 pottery sherds from a field system site near Rossington revealed that the majority (82%) were used to process ruminant carcase products, perhaps to produce tallow, with a smaller number (18%), including two cheese press/colander vessels, used to process ruminant dairy products (Dunne *et al.* 2024). Arable farming was also taking place in the region, as indicated by occasional finds of carbonised cereal grains (wheat and barley) and chaff, indicating cereal processing, from a few sites (Roberts *et al.* 2010, 63–5; Daniel 2017, 33–4; Chadwick 2020; Fryer *et al.* 2023; Alldrit 2024; Brown *et al.* 2024; Daniel 2024, 76–9). Late Iron Age and Roman querns are also widespread across Yorkshire (Roberts *et al.* 2010, 64; Chadwick 2020; Mepham 2024).

A little evidence for small-scale non-agricultural production (limestone quarrying, weaving, ironworking and possibly fine metalworking (perhaps of bronze/copper alloy) was also recorded at Holme Hall Quarry (for further discussion, see above, p. 138). Evidence for the small-scale working of iron and other metals has also been recorded on a few other rural sites of Iron Age to Roman date in South Yorkshire (Anon 2010; Stanley and Langley 2013; Doonan 2017; Lortie and Doonan 2017; Chadwick 2020; Fryer *et al.* 2023, 121–3, 130; Mepham 2024, 115; cf. the probably mid/late 3rd-century AD coin moulds from Redhouse, Adwick le Street: Brickstock 2023).

The site was not well served by Roman roads, but would undoubtedly have been well connected, via trackways and droveways, to the network of nearby roads that linked Roman forts in the region (Fig. 6.4). The nearest Roman road was probably the postulated route that ran north-west from Templeborough to Doncaster along the south side of the Don, possibly along the course of the modern A630. This road would have passed *c*.3 km to the north of the site, but there is at present no clear archaeological evidence for it (Margary 1973, 412, Road 710c; Chadwick 2020). The next closest Roman road, also conjectural, ran approximately west-north-west to east-south-east between Templeborough (or nearby) and Littleborough-on-Trent (or nearby); it may have passed *c*.7 km to the south of the site (Margary 1973, Road 189; Roberts *et al.* 2010, 70). Further roads ran west and possibly north and south from Templeborough (Margary 1973, Roads 710b and 18e; Roberts *et al.* 2010, 70; Chadwick 2020). Another probable road is visible as a cropmark, *c*.7.8 km east of Holme Hall Quarry, that runs due south for 3.7 km from near the west side of Rossington Bridge fort (Roberts *et al.* 2010, 68, Illus. 90; Chadwick 2020). The most important Roman road in the vicinity of the site was the example that lay *c*.9.5 km to the east. This ran north-west from Ermine Street, just north of Lincoln, to Doncaster, partly along the line of the modern A638, formerly part of the A1, the medieval and later Great North Road (Margary 1973, 410–12, Road 28a; Roberts *et al.* 2010, 68; Chadwick 2020). At Doncaster another road continued north (approximately along the route of the modern A1) to Tadcaster where further roads led to York, Aldborough, Catterick and Hadrian's Wall beyond (Margary 1973, Road 28b; Hodgson 2012, 43, Fig. 2).

People and livestock will have moved around the Holme Hall Quarry site and the surrounding area using trackways and droveways, like the example found running north–south across the 2020–22 excavation area, which may possibly have linked up with the Roman east–west road 3 km to the north. Sections of other trackways have been noted in aerial photographs only *c*.400 m to the north-west and *c*.400 m to the south of the west end of the 2020–22 excavation (Fig. 1.3, AR07, AR21, AR22; for details, see Brown 2015, 6, 23 and 25, Fig. 7a). Double-ditched trackways, often sinuous, some at least 4 to 5 km in length, were ubiquitous in South and West Yorkshire (hundreds of examples of presumed Iron age to Roman date are known from aerial photographs) and undoubtedly represented the main means of getting around for local communities in the Roman period (Roberts *et al.* 2010, 22–4, Illus. 30; Hodgson 2012, 51; Chadwick 2020). Roads do not seem to have had the significance for movement of goods that they had elsewhere in Southern and Central England (Hodgson 2012, 51).

Occupation of the Holme Hall Quarry site appears to have been fairly low in intensity and was concentrated at a few of the enclosures, especially Enclosures 1, 2a and 2b, which may have been the sites of farmsteads; however, we can see that particularly in the 2nd and 3rd centuries some people in the area had access to considerable amounts of pottery (a total of more than 11,100 sherds, 117.56 kg of Late Iron Age/Roman and Roman pottery were recovered from the various excavations), largely of relatively local production (e.g. from the Doncaster area), but some vessels came from adjacent regions or other parts of Britain, whilst a handful of samian vessels (red glossy tableware) were imported from Gaul and olive oil amphorae from Spain (the latter may have arrived at the site as empty vessels rather than full of oil; cf. Brindle 2017b). Other Roman objects included a few coins (x4, all copper alloy), a glass bead, copper-alloy brooches (x2, dragonesque and penannular types) and other metalwork, with a considerable amount of ironwork found near Enclosure 1. The amount of Roman material from the site was low in comparison to Roman military, urban, and villa sites

and roadside settlements in Yorkshire and elsewhere in Britain, but it is in keeping with other rural farmstead sites in Yorkshire (Allen 2016, 273–6; Chadwick 2020; Daniel 2024).

The site's inhabitants presumably had to give up or sell a proportion of their agricultural produce in order to pay taxes to support Roman military garrisons in the surrounding region (cf. Mattingly 2006, 354, 361–2, 494–6). Alternatively, they might have had to supply agricultural products as rent to a hypothetical landowner, perhaps based at the nearby possible villa at Conisbrough Parks Farm, who then sold on to the military (see above, p. 143, Figs 6.4 and 6.5; cf. Mattingly 2006, 354). Nevertheless, there appears to have been enough surplus for the inhabitants of the site to barter or sell in order to obtain other goods, particularly pottery. Only four Roman copper-alloy coins were found on the site, three in the excavations of 2004, suggesting its inhabitants may have had limited access to money and/or that coins were typically obtained and immediately spent at market centres elsewhere (cf. Brindle 2017a, 274–9). In contrast, the presence of several large 3rd-century coin hoards at Edlington Wood, *c*.2 km to the north of Holme Hall Quarry, and near Cadeby and Sprotbrough, *c*.3 km further north (see above, p. 144), indicates that the local population may have had more access to coinage than implied by the heavily plough-truncated site at Holme Hall. Roman-style dress and personal items also appear to have been rare at the site, perhaps due at least in part to cultural reasons rather than just a lack of access (Allen 2016, 273–6; Brindle 2018, 26–31, 44–7; Chadwick 2020), although this lack of evidence could again have more to do with post-depositional site taphonomy than any real avoidance of *Romanitas*.

The field systems of the region probably went out of use during the later part of the Roman period or during the early medieval period (Roberts *et al.* 2010, 79; Hodgson 2012, 55; Ottaway 2019; Chadwick 2020; Stein 2020; Moon 2024, 13–17, 25). At Holme Hall Quarry, the surviving parts of the field and enclosure ditches typically appear to have been filled by the late 2nd or early 3rd centuries. The upper parts of the ditches may, however, have remained open after this date, only to be removed by later ploughing. Even if the ditches were largely filled by the late 2nd or early 3rd centuries, some field boundaries and enclosures might have survived afterwards as hedges and/or banks (Chadwick 2020; Daniel 2024, 83). As we have seen, numerous late Roman features were found within rectilinear Enclosure(s) 2a and 2b (2015 and 2019 excavations), suggesting that this farmstead/enclosure remained in use down to at least the late 3rd century and possibly into the 4th century. Considerable evidence for occupation down to at least the late 3rd century was also represented by features within and immediately outside the other probable farmstead, Enclosure 1 (2004 excavation). In addition, late 3rd-century activity is known from the settlement at Edlington Wood, *c*.2 km to the north (Corder 1951; Chadwick 2020). No pottery of late 3rd- or 4th-century date was recovered from the 2020–22 excavations at Holme Hall Quarry, but it should be noted that pottery from the stripped topsoil in that area was not systematically retained.

The pottery evidence appears to indicate that occupation of the Holme Hall Quarry site declined dramatically during the 4th century, although low-level occupation down to the late 4th century is indicated by two rims of Huntcliff jars and a rim of a probable double lid-seated jar in Dales ware found in the topsoil in the 2004 excavations. This fits with other Roman rural sites in South Yorkshire, where occupation appears to peak in the 2nd and 3rd centuries, with little clear evidence for pottery post-dating the late 3rd and certainly the mid 4th centuries (Hodgson 2012, 53, 55; Chadwick 2020; cf. Richardson 2008; Daniel 2017; Waddington 2017, 48; Leary 2023, 66, 84, 86; Preece 2023, 145; Rowlandson and Fiske 2024, 101; although see Leary 2024; three mid 4th-century coins were found on a field-system site near Rossington, Henry 2024). The reason for this apparent early/mid 4th-century decline is currently uncertain and it does not appear to be matched further north in West Yorkshire where pottery indicates that similar rural sites were occupied down to the late 4th century and perhaps beyond (Hodgson 2012, 53–4).

One possibility is that the later Roman decline in occupation at Holme Hall Quarry and other similar sites in South Yorkshire was related to the substantial reduction in the British garrison from the mid 3rd century onwards. The number of troops in Britain was reduced from an estimated 55,000 in about AD 210 (the greater part based in northern Britain) down to roughly 18,000 in about AD 390 (Breeze 1984; James 1984; Mattingly 2006, 238–47; Morris 2010, 53, 102, 128, Table 4.1; cf. Bidwell 2017, 302, 304–5). A larger proportion of troops were probably also stationed in Southern Britain towards the end of the Roman period. These changes in troop dispositions may ultimately have disrupted the economy of some sites that were previously heavily involved in military supply. Another possibility is that the South Yorkshire area was affected by unrest and instability at the end of the 3rd or early in the 4th century, perhaps as a result of local uprisings or barbarian incursions that are barely hinted at in contemporary historical sources, but are much better attested elsewhere in the Empire around this time and in Britain later in the 4th century (cf. Mattingly 2006, 230–8; Waddington 2017, 48). This unrest may have led to a decline in population and/or a shift of settlement patterns.

Early medieval

A few early medieval features of 7th- to 10th-century date were identified in field N2/N3 (2020–22 excavations) on the basis of radiocarbon dating (see above, pp. 97-9, Figs 5.2, 5.4, 5.5, 5.37–5.39) and there was no pottery or other identifiable finds of this period. These features comprised: a pit containing burnt material, [2513], set in a hollow, F2795, worn into the fill of a Roman field ditch in the north-east part of N2/N3; and another pit containing burnt material, [3697], possibly associated with a nearby similar pit, [3701], in the west part of N2/N3. A C^{14} sample from charcoal (*Maloideae* sp.) in the primary fill of pit [2513] produced a date of 885–994 cal AD at 95.4% probability, whilst a C^{14} sample (charcoal, Maloideae sp.) from pit [3697] gave a date of 670–778 cal AD at 83.6% probability or 670–825 cal AD at 95.4% probability. A supposed sherd of early medieval pottery was recorded further south-east in 1993–4 during fieldwalking *c*.300 m north-west of the site of the 2004 excavation.

Archaeological evidence of the 5th to 7th centuries is rare in South Yorkshire (Ross 2014, 26–8; Stein 2020) and the county appears to have been possibly aceramic during the 5th to mid 9th centuries, apart from a few probable 6th- to 7th-century pot sherds recorded from Doncaster (Vince 2003; Cumberpatch 2019; Stein 2020). Archaeological evidence of the 8th to 11 centuries is also fairly limited, but includes: a late 7th- to 8th-century cemetery at Adwick le Street (McKinley 2016; Stein 2020); half a dozen or so settlements that have produced pottery of mid/late 9th- to mid 11th-century date, mostly regional imports including shell-tempered ware and Torksey type ware from Lincolnshire (Vince 2003; Cumberpatch 2016); and a handful of other sites and finds, such as stone sculpture (Ross 2014, 28; Stein 2020). The radiocarbon-dated pits with burnt material from Holme Hall Quarry therefore make useful additions to the limited corpus of evidence for early medieval occupation in South Yorkshire. A similar situation occurred in an ARS Ltd excavation *c*.25 km to the south-south-west at Oxcroft Lane, Bolsover (Derbys.), where no pottery or other objects of the early medieval period were found, but two ovens within an associated sequence of timber structures produced C^{14} dates of the 5th to 7th centuries (Halton and Thorpe 2023).

As mentioned above, the Late Iron Age to Roman field systems of the region probably went out of use during the later part of the Roman period or during the early medieval period (Roberts *et al.* 2010, 79; Ottaway 2019; Chadwick 2020; Stein 2020). Some field boundaries may have survived as hedges and/or banks and ditches until well into the early medieval period, even if some were relics and were not necessarily used or maintained (Chadwick 2020). For example, excavations *c*.4.5 km north of the River Don at Goldthorpe Industrial Estate in 2012–13 (cf. Fig. 6.4, No. 3) revealed that the final phase of use of an enclosure in a corner of a late Iron Age to Roman field included several pits, one of which was radiocarbon dated to the mid 4th to mid 7th century, whilst two corn drying kilns, radiocarbon dated to the 5th to mid 6th and mid 6th to mid 7th centuries, were apparently deliberately positioned in the corners of earlier fields, which must therefore have had visible boundaries that were perhaps still in use (Ross 2014). The presence at Holme Hall Quarry of the early medieval pit, [2513], set in a hollow worn into the fill of a Late Iron Age to Roman field ditch may also suggest an association, possibly indicating that part of at least one earlier field boundary was still visible in the early medieval period.

The Late Iron Age to Roman field systems of the region were replaced at some point during the medieval period by an essentially undetectable open field system for which no substantial boundaries tended to be created, the perimeters of fields perhaps being defined by hedges and fences for stock proofing (Roberts *et al.* 2010, vii, 79). In some places, perhaps including parts of the area around Holme Hall Quarry, woodland may have returned (Roberts *et al.* 2010, 85).

Late medieval

No certain high and later medieval features were recorded in the excavations, but very low-level occupation of this date in the vicinity of the site was perhaps indicated by the finding of two pot sherds in the 2020–22 excavations in Cockhill West: a single sherd of Reduced Sandy ware datable to the 13th to early 14th century, which was recovered from the fill of a post-medieval limestone quarry (F4290) in the north-west part of field N5/N6; and an unstratified sherd of late 13th- to 14th-century Coal Measures type ware (see above, p. 113).

Fifteen sherds of possible late medieval pottery were tentatively identified during fieldwalking across Cockhill East and West in 2015, principally from fields N4 and N8 (see above, p. 21). A sherd of Reduced Sandy ware of 14th- to 15th-century date was recovered from a field immediately to the north of the 2019–22 site during fieldwalking in 2020 (Jacklin 2020).

The site was presumably open fields during the high and later medieval period, although it may in part have been wooded. Archaeological sites of this period are, however, known from the immediately surrounding area: the remains of a 13th-century and later hall surrounded by a moat (a so-called moated site), 'Moat Hall', lie *c*.1.5 km to south-south-west of the 2019–22 excavations (Figs 1.3 and 1.4, SM2; Brown 2015, 7, 29–30); and a probable medieval building and underlying

cemetery have been excavated at Chapel Holt, *c*.1 km south of the 2019–22 excavations (Figs 1.3 and 1.4, HB01/AR28; Brown 2015, 7, 26, 32). The important ecclesiastical centre of Roche Abbey (founded 1147) lies just 5 km to the south and the area of Holme Hall Quarry may have formed an important hinterland for this substantial Cistercian foundation.

Post-medieval

No clear evidence of 16th- or 17th-century activity was recovered from the excavations, although a jug strap handle of 16th-century date and three sherds of 17th-century Cistercian ware were found in a field immediately to the north of the site during fieldwalking in 2020 (Jacklin 2020).

Excavated post-medieval features include a ditch representing the northern boundary of field N2/N3, as shown on historic maps of the late 18th century onwards (e.g. Jefferys 1772, Sheet 8; see above, p. 99). This ran approximately west-south-west to east-north-east for about 480 m across the central part of the 2020–22 excavation area and cut across some Roman features (see above, p. 99). The boundary ditch included several sherds of pottery datable to the 17th/18th to 19th centuries and a fairly complete juvenile pig skeleton. A few post-medieval field ditches were also found in the 2004 excavation further south; one of these was depicted on the first edition Ordnance Survey 1:10,560 map of 1854 (O'Neill and Raybould 2007, Illustration 3; also included in Brown 2015), but the other two were not and may have gone out of use before the map was surveyed (see above, p. 29).

A clear series of plough furrows aligned north–south and north-north-west to south-south-east was identified across the northern part of the site (fields N4 and N5/N6) in the geophysical survey of 2014–15 (Figs 2.3 and 2.4; Durkin 2015, 4, 10, 11, Figs 13, 14, 17, 18, 25 and 26). Several of these were recorded in 2020–22, following stripping of the topsoil, and a few were archaeologically investigated with slots dug across them (see above, p. 99). One contained a sherd of post-medieval glass. These furrows respect and align with the boundaries of N5/N6. Whilst a medieval origin for the furrows cannot be ruled out, it seems likely that they post-dated the enclosure of the area north of N2/N3 (initially as a series of smaller fields) in the first half of the 19th century, as shown on the Edlington tithe map of 1840 (Brown 2015, Fig. 5; Doncaster Archives DD/BW/E8/55; for further discussion, see above, p. 99). The dating of ridge and furrow in the wider surrounding region is unclear; a medieval date is often proposed (e.g. Roberts 2019), but much could be post-medieval in date (Roberts *et al.* 2010, 14).

A wall and associated remains (Group 9) found in the 2004 excavation match the location of a small building labelled as 'Cockhill Cottage' on the first edition Ordnance Survey 1:10,560 map of 1854. This building is absent from the Ordnance Survey 1:10,560 maps of 1893–4 and 1902, by which time it had clearly been demolished.

Five large quarry pits were situated along a natural escarpment of limestone which lay across the northern part of the 2004 excavation area (see above, p. 28-9). These contained finds of 18th- to 19th-century date. Only the two westernmost pits, [234] and [236], appear to be shown as a single feature labelled 'Old Quarry (Limestone)' on the first edition Ordnance Survey 1:10,560 map of 1854, but none are visible on the Ordnance Survey 1:10,560 maps of 1893–4 and later. Another even larger quarry pit was located *c*.84 m further south near the south-west corner of the 2004 excavation. Its position corresponds with a pit marked 'Limestone Quarry', which has a track leading to it from the east, on the first edition Ordnance Survey 1:10,560 map of 1854. This quarry is also absent from the Ordnance Survey 1:10,560 maps of 1893–4 and later.

Four more post-medieval limestone quarry pits were found in the excavations of 2020–22 (see above, p. 99-101). Two of these — a large, irregularly-shaped quarry (F4290) in the north-west part of N5/N6, which included a sherd of Brown Salt Glazed Stoneware datable to the 18th century, and a smaller quarry in the south-west part of N2/N3 — are not shown on any historic maps. This suggests that they may have been out of use and completely filled by the late 18th century and certainly by 1840 when the detailed Edlington tithe map was produced. A large quarry pit in the centre-north part of N2/N3 is shown on maps of the early 19th century and later. A fairly small, irregular quarry in the south-east corner of N1 is first depicted on the 1854 Ordnance Survey map at 1:10,560 scale, suggesting it was probably worked in the 1840s and/or 1850s.

The well-preserved base of a limestone-built lime kiln (F1049), probably of flare kiln type, was set in the bottom of the field N1 quarry (see above, p. 100-1, Figs 5.2, 5.40, 5.41). No trace of the lime kiln is present on any map, but it was presumably constructed shortly after the quarry had been dug, probably in the mid 19th century. This quarry was most likely largely infilled after the disuse of the lime kiln (which was partly preserved by the infilling), and a few fragments of 18th- to 19th-century glass bottles were found in its fill. Further small limestone quarries are shown in the vicinity of the site on the 1854 Ordnance Survey map at 1:10,560 scale, with another lime kiln marked next to quarries in woodland to the north-east.

The Holme Hall Quarry area was primarily an agricultural landscape during the 18th and 19th centuries, but limestone was clearly being mined on a considerable scale and lime was being made, likely to fertilise the land and ensure its agricultural productivity. This extractive activity was a precursor to the much larger-scale modern limestone quarrying at Holme Hall, which began in 1948 and expanded massively in the later 20th and 21st centuries (Brown 2015, 8–9).

Undated features

Several other possible archaeological pits, postholes and ditch segments were found across the site, typically cut into limestone bedrock and sealed by modern topsoil (or in a handful of cases, cut by or cut into Roman features), but in the absence of datable finds they cannot be dated with any confidence (see above, pp. 30, 58, 101). Various probable natural features of uncertain date were similarly recorded. These include sinkholes, minor water channels, animal burrows, tree throws and rooting deposits.

Significance of results

The excavations have contributed to the regional research agenda set out in the research frameworks for South Yorkshire. The Mesolithic to Early Bronze Age lithic assemblage from the 2019–22 excavations has the potential to contribute to valuable research on chipped lithic distributions in the region (cf. Cockrell 2019) and provides context for hunter-gatherer activity across the area as well as more extensive use of the landscape by Early Neolithic farmers who built their burial monuments along the Magnesian Limestone ridge (Merrony *et al.* 2017).

The radiocarbon-dated features of Middle Iron Age and early medieval date also provide useful additions to our knowledge of these periods, which are archaeologically poorly represented in South Yorkshire due to the paucity of artefactual material, especially pottery, of these dates (cf. Chadwick 2020; Stein 2020). Without the radiocarbon dates, the Middle Iron Age and early medieval features from Holme Hall Quarry would not have been datable (and indeed more unrecognised features of these periods could potentially be present on the site). This suggests that in future, more radiocarbon dating should be undertaken on similar sites in South Yorkshire in order to increase representation and understanding of Middle Iron Age and early medieval period features that would otherwise go unnoticed.

In particular, the site addressed research aims and objectives for the Iron Age and Roman period (Ottaway 2019; Chadwick 2020) outlined in Chapter 1 (above, p. 9-10). For example, evidence was recovered for the inception of the field system, probably in the 1st century AD and likely early in the Roman period. The lower parts of the field and enclosure ditches had been filled by the late 2nd to early 3rd centuries, but these boundaries (perhaps also defined by banks and/or hedges) did not necessarily go out of use at this time and there is evidence that some of the enclosures remained in use into the late 3rd century, possibly extending into the fourth century. Occupation at the site appears to have focused on the enclosures, especially sub-circular Enclosure 1, which was probably a farmstead with evidence for cooking and for the presence of a blacksmith, and rectilinear Enclosure(s) 2a and 2b, which may also have been a farmstead, with evidence for feasting (the preparation and consumption of food). Curvilinear Enclosure 4 contained a small limestone quarry, although the enclosure may have been created before the quarry and perhaps originally had a different purpose. Other enclosures, such as D-shaped Enclosure 3, horseshoe-shaped Enclosure 5 and rectilinear Enclosure 6, might have been used to corral livestock. Burnt human remains were also found in the fills of the ditches of two enclosures and elsewhere on the site. The droveways provide evidence for past human (e.g. hobnails, perhaps from a discarded shoe were found in a pit within the north–south droveway) and animal movements through the landscape.

Some useful insights into farming practices on the site during the Late Iron Age to Roman period were also gained from analyses of the poorly preserved animal bone assemblage and the palaeoenvironmental samples. These indicated a mixed farming economy no doubt for local consumption as well as for export to nearby Roman military sites. Bones of all three main meat-yielding species were represented and their relative proportions calculated: cattle were most commonly represented, closely followed by sheep/goat, with smaller amounts of pig. Charred grains of spelt wheat and barley were identified at Enclosures 2a and 2b, indicating crop processing, whilst fragments of quern stones found at Enclosures 1 and 2a indicate grinding of grain.

The discoveries made at Holme Hall Quarry also raise further specific questions for future research in the surrounding region:

- How many of the field systems of the region originated in the Late Iron Age and how many were Roman-period establishments? This question may best be answered by obtaining radiocarbon dates from the primary/basal fills of field ditches.
- How many of the field systems were large-scale planned impositions and how many developed gradually over a period of time?

- Who was responsible for the planning, construction and working of the field systems? Who lived in the associated enclosures/ farmsteads?
- Was there a general decline in the occupation of sites and/or the use of field systems in the 3rd or early/mid 4th century?

Concluding remarks

There was some activity on the site in the Mesolithic, Neolithic and Early Bronze Age (scatters of chipped lithics), and then in the Middle Iron Age (pits and a possible structure). The main occupation of the site was during the Roman period (possibly, but unlikely, beginning in the Late Iron Age) when a rectilinear/ coaxial field system with associated droveways and enclosures was imposed across the landscape, similar to those known in areas of South Yorkshire and Nottinghamshire to the north and east. The field system was probably established in the 1st century AD, likely early in the Roman period, as a planned reorganisation of the landscape and will have served to intensify agricultural production on what were fertile soils situated over limestone. The site was focused on mixed agricultural production of livestock and crops, probably for both local consumption and export to nearby Roman military sites.

The surviving parts of the field and enclosure ditches appear to have been filled by the late 2nd or early 3rd centuries, however, the field boundaries may have remained in use (e.g. as hedges and/or banks) into the later part of the Roman period or early medieval period. Numerous late Roman pits and postholes were found within rectilinear Enclosure(s) 2a and 2b, suggesting that this farmstead/enclosure may have remained a feature into the late 3rd century. Considerable evidence for occupation down to at least the late 3rd century was also represented by features within and immediately outside the other probable farmstead, Enclosure 1. There is virtually no evidence for Roman activity on the site in or after the early/mid 4th-century. The later Roman decline in occupation at Holme Hall Quarry and other similar sites in South Yorkshire may have related to the substantial reduction in the British garrison from the mid 3rd century onwards, which perhaps disrupted the economy of sites that were previously heavily involved in military supply, and/or to unrest and instability that was widespread across the Roman empire, including within *Britannia*, at this time.

A few early medieval pits containing burnt material were also identified. There is little evidence for activity during the high and late medieval periods and 16th to 17th centuries, when the site is likely to have been open fields, perhaps in part wooded. The site was primarily an agricultural landscape during the 18th and 19th centuries, but limestone was clearly being quarried on a considerable scale to produce lime for 'marling' the fields and maintaining fertility at the time of the Napoleonic and other wars when agricultural production was being intensified across England. This extractive activity was a precursor to the much larger-scale modern limestone quarrying at Holme Hall, which began after the Second World War.

The archaeological features revealed through excavation on the Holme Hall Quarry site were generally well preserved, despite truncation and fragmentation due to ploughing of the thin soils which immediately overlay bedrock. The excavations published in this volume were certainly worthwhile and in particular contribute to our understanding of the surrounding region in the Roman period, especially in relation to the early Roman takeover and subsequent consolidation of this area within a system of military supply in the mid to late 1st century AD.

List of abbreviations

AMS	Accelerator Mass Spectrometry
aOD	above Ordnance Datum
ARCUS	Archaeological Research and Consultancy at the University of Sheffield
ARS Ltd	Archaeological Research Services Ltd
BAR	British Archaeological Report
CBA	Council for British Archaeology
DG	Ditch group (e.g. DG4)
F	Feature (e.g. F338)
G	Group (e.g. G14)
GMAC	Greater Manchester Archaeological Contracts
GSB	Geophysical Surveys of Bradford
HER	Historic Environment Record
MoLAS	Museum of London Archaeology Service (now MOLA)
OASIS	formerly Online AccesS to the Index of archaeological investigationS
RAF	Royal Air Force
RIB II	see Collingwood and Wright 1990–5
RIC	see Mattingly *et al.* 1923–94
ROMP	Review of Old Mineral Permissions
SUERC	Scottish Universities Environmental Research Centre
WYAS	West Yorkshire Archaeological Services
XRF	X-ray fluorescence

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This volume documents the results from large-scale archaeological investigations at Holme Hall Quarry on the Magnesian Limestone ridge in South Yorkshire. The excavations were preceded by extensive fieldwalking and geophysical surveys which together have revealed multiperiod archaeological remains across an area of landscape where very little archaeology had previously been known. The work set out in this volume adds an important dimension to the archaeology of South Yorkshire and reveals how strip, map and sample excavation can help to fill gaps in knowledge and give a more detailed understanding of the organisation of the early Roman frontier region in *Britannia*.

Scatters of chipped lithics dating to the Mesolithic to Early Bronze Age were uncovered, and also pits and a possible Middle Iron Age structure, but the main occupation of the site occurred during the Roman period when two rural farmsteads were constructed and a field system with associated droveways and enclosures imposed across the landscape. The field system was probably established in the mid-late 1st century AD, early in the Roman military occupation, as a planned reorganisation of the landscape which served to intensify agricultural production of livestock and crops, presumably for both local consumption and export to the Roman military. Numerous late Roman pits and postholes within the two farmsteads suggest the area was occupied until at least the late 3rd century AD, but virtually no evidence was found for Roman activity in or after the early/mid 4th-century, perhaps due to disruption of the previous system of military supply and unrest at this time across *Britannia* and other parts of the Roman Empire.

Features dating to the Anglo-Saxon period were also present, but there is little evidence for activity thereafter until the 18th and 19th centuries. During this period local limestone was quarried and burnt to produce lime for 'marling' the fields to support the increase in agricultural production needed to support the Napoleonic war effort and growing urbanisation.

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