REPORT ON THE EXCAVATION OF A ROMANO-BRITISH AISLED BUILDING AT LITTLE HAY GRANGE FARM, OCKBROOK, DERBYSHIRE 1994–97

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MIKE BUTLER & SUSAN EBBINGS

TRIBUTE

This report is dedicated to the memory of Barrie Wilson, whose enthusiasm, commitment and considerable efforts involving all aspects of this project were paramount in ensuring its success.

INTRODUCTION

The site is situated 80m above sea level within a field formerly known as Thack Meadow, approximately 2km north-east of Ockbrook village (SK 437375). It is sited near the head of a shallow valley formed by the Ock Brook, a tributary of the River Derwent (Fig. 1). The geology is Mercia Mudstone (previously called Keuper Marl) with cappings of Boulder Clay and glacial drift on the high ground to the east and west of the site. On the southern boundary of the excavated area, the Mercia Mudstone is overlain by a deposit of fluvio-glacial alluvium. Bands of skerry stone are contained within the Mercia Mudstone. A short distance to the north-east of the site, the Mercia Mudstone is terminated by outcrops of Waterstones and Bunter Sandstone.

The Roman road from *Derventio* (Little Chester) to Trent Lock passes the site 4km to the south-west, and a Medieval route known as the Portway, believed to be prehistoric in origin passes 2km to the north-east. The site, however, is the first Romano-British building located on Mercia Mudstone deposits to be recognised and excavated in south-east Derbyshire and proves that rural settlement in this locality during the Roman period

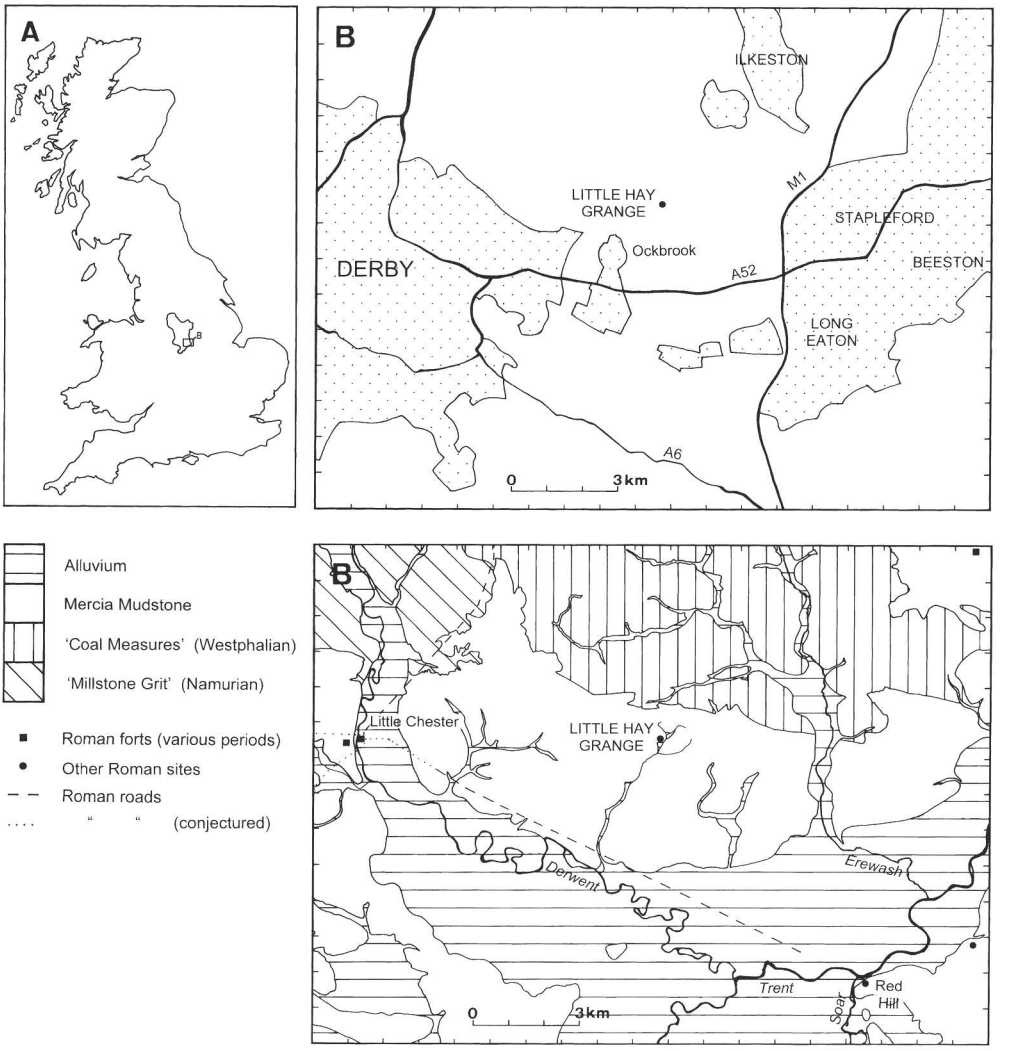


Fig. 1: Ockbrook, Little Hay: location maps.

was not confined to the more easily worked alluvial soils of the Trent and Derwent Valleys, as was once believed.

DISCOVERY OF THE SITE

A Romano-British site was suspected here when fieldwalking revealed Romano-British pot sherds and quernstone fragments mixed with sandstone rubble, brought to the field surface by plough action. A metal detector survey was then undertaken in an effort to pinpoint the location of a possible building by noting concentrations of nails and other metallic artefacts. This did not prove totally effective, but nevertheless sufficient artefacts were discovered to prove the existence of an occupation site during the 2nd century AD

and to indicate the general area in which the site was situated. The more notable finds were a coin of the emperor Vespasian, AD 69/79, another of the empress Lucilla Verus, AD 161/169, two fibulae of the 2nd century AD (Fig. 10.3 and 4), a gilded and decorated bronze stud (Fig. 11), two lead spindle whorls, lead weights and scraps of sheet lead (Fig. 14), some of which were folded to form plugs. Permission from the owner and tenant farmer was then obtained to dig trial holes in which remains of stone wall footings were discovered.

These structures were being demolished by modern ploughing and in view of their importance it was decided that a full scale archaeological excavation should be undertaken in order to identify and record the structures before further damage was sustained. An Excavation Committee was then formed from members of the Derbyshire Archaeological Society, the Ockbrook and Borrowash Historical Society and the Ilkeston and District Local History Society, to ensure that sufficient funding and resources were available to undertake an extensive archaeological excavation.

Throughout this text it may help to refer to Tables 1 and 2 as well as the plan (Fig. 2) of the building to clarify feature (F) and context (C) numbers and please note that the first zero of the context numbers has been omitted for simplification. The site archive is deposited in Derby Museum.

THE EXCAVATION

Permission obtained, the topsoil was removed mechanically from the area where probing and trial trenching indicated structures. A grid of 2m squares was then set out and the surface underlying the plough soil cleaned off. This revealed stone structures and alternating broad bands of contrasting soil patterns which were roughly parallel and orientated in a north-east/south-west direction. These bands, between 3 and 3.5m wide, were considered to be residues of a Medieval ridge and furrow plough system, despite their being situated outside the area covered by the Ockbrook village open-field system. They consisted of strips of worked Mercia Mudstone alternating with strips of infill which, though derived from the Mercia Mudstone, had a much sandier composition and colour. Excavation of these strips revealed a truncated Medieval ridge and furrow system, the sandy material being the infill of the furrows. This infill also included small quantities of pebble and stone fragments, a silver penny of Edward I, abraded pottery sherds ranging from the 13th to 17th century and an occasional Romano-British sherd. Analysis of this infill by flotation, indicated an 18% sand content against 1% for the alternating strips of Mercia Mudstone. Clearly sand had been incorporated during the Medieval period to improve and lighten the heavy marly soil. The site was progressively stripped of this Medieval furrow infilling to reveal features in the underlying surface.

The base of the Medieval furrows had penetrated into the underlying subsoil which varied from Mercia Mudstone containing bands of skerry stone at the northern limits of the excavation, to a mixture of Mercia Mudstone alternating with layers of a breccia-like material. The latter consisted of small angular fragments of skerry mixed with round quartzite pebbles weakly cemented together with iron oxides, which had tinged the material a yellowish/orange colour. At the southern extremity of the excavation, this material was overlaid by a yellowish sandy clay mix of alluvial material containing tiny specks of a black substance.

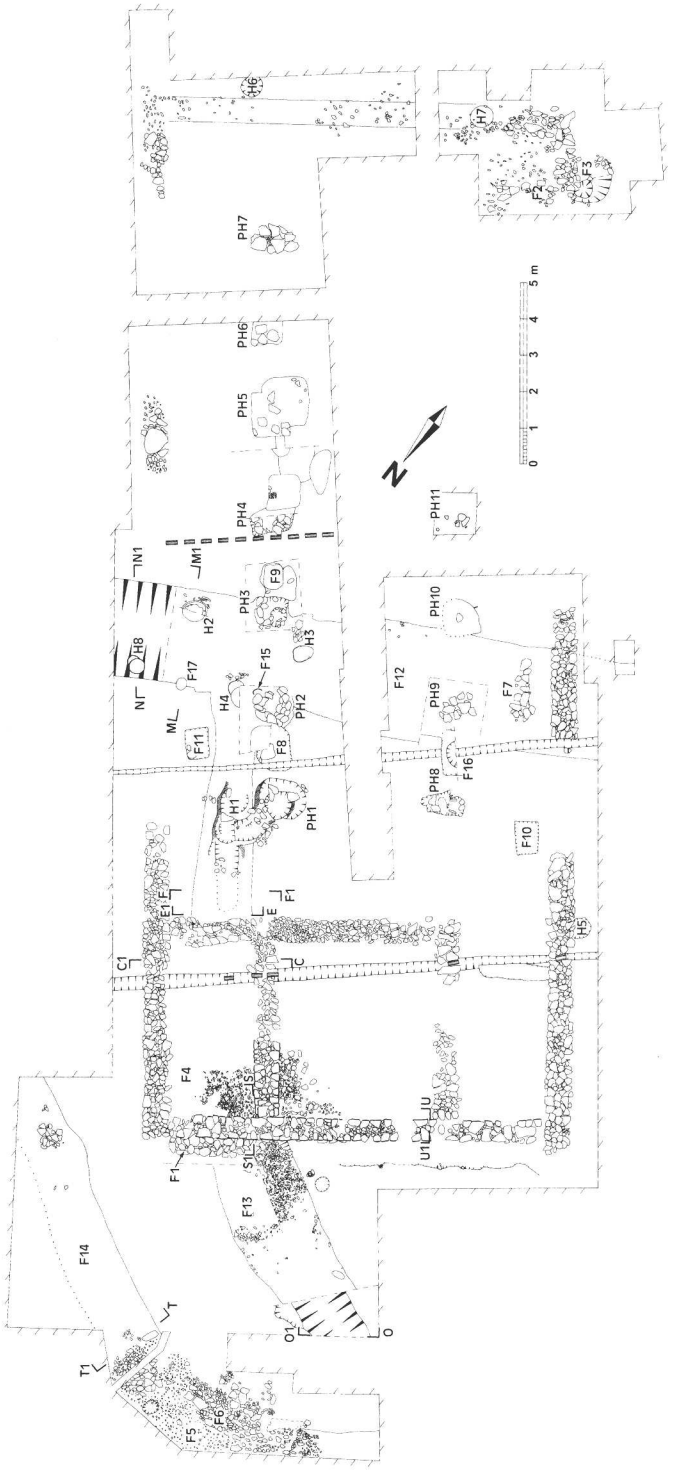
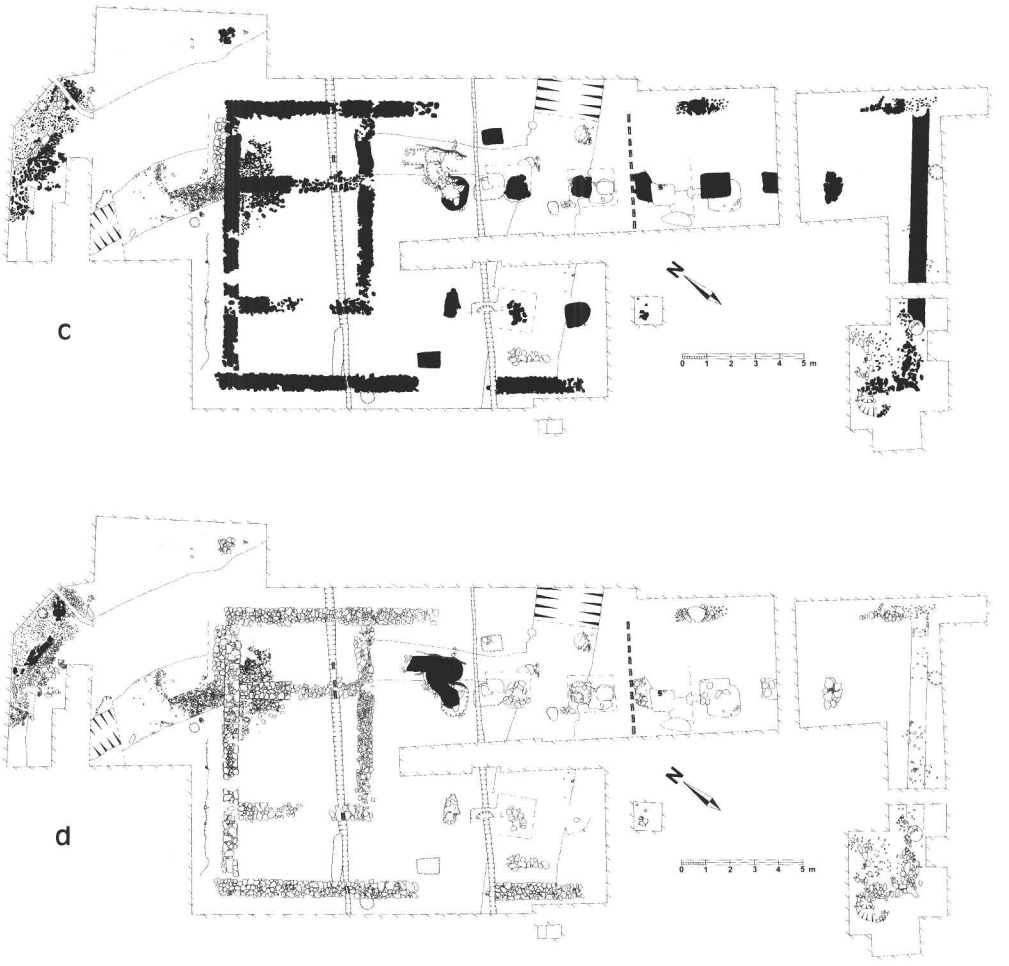


Fig. 2: Ockbrook, Little Hay: site plan.

Fig. 3: *(above and facing)* Ockbrook, Little Hay: phase plans. Heavy shading denotes phased features: 3a — Phases 1 and 2 (Middle and Late Iron Age); 3b — Phase 3 (Transitional Iron Age to Roman); 3c — Phase 4 (2nd century aisled building); 3d — Phase 5 (Late Roman and Post-Roman).

The alternate bands of worked Mercia Mudstone were found to be the corresponding ridges of the plough system, the crests of which had been sheared off by modern ploughing but the remaining material consisted of 40–60mm of worked Mercia Mudstone merging into natural Mercia Mudstone subsoil. This layer had been produced mainly by the initial stage of Medieval ploughing during ridge formation and before the inclusion of the sand dressing. At the ridge/furrow junctions the plough activity had exposed earlier ground surfaces which still survived beneath the piled-up plough soil forming the ridges. An occasional bone fragment and some pottery sherds were randomly scattered in these layers but due to their disturbed nature, they cannot be used for dating.

Below the plough-disturbed materials on the ridges were several features, revealed as pockets of differing infills, and in places, spreads of sandstone rubble fragments and



pebbles formed a surface deposit. These features were recorded and selectively excavated. Pottery sherds found in association were mainly Derbyshire ware, grey wares, Little Chester fine wares, Black Burnished ware, and one samian sherd, all dated to the mid to late 2nd century AD. An occasional Iron Age sherd was also present. It was also evident that sufficient sections of the building's wall foundations had survived to enable the main features of the layout to be identified and a ground plan drawn up.

The Aisled Building (Figs 2 and 3c)

The main structure of the site proved to be a stone built, aisled building with external dimensions of 11.95m × 28.9m and a wall thickness of 0.60 to 0.65m (Plate 1). It was aligned with its long axis north-west/south-east. For convenience, the two long walls are described respectively as the eastern and western walls in this report. These were built onto stone rubble foundations, 0.70m to 0.80m wide × 0.30m deep. Some care had been taken in positioning the rubble within the foundation trench of the western wall to achieve a pitched course of stones, angled so as to produce a slight overlap effect. This

pitching has been observed in other Romano-British buildings, e.g. Winterton Buildings B and D (Stead 1976), Dragonby Building 3 (May 1996) and also locally at the Derby Racecourse Cemetery site (Wheeler 1985). This was probably to provide adequate load-bearing properties to the unmortared foundations. The interstitial spaces of the wall had been solidly packed with Mercia Mudstone. The northern wall foundation was constructed to a slightly different design utilising a single course of larger stones narrower than the overlying wall course by 0.15m. This anomaly would be explained if this feature was the base of a sill wall from an earlier structure utilised *in situ* by the builders as a convenient foundation for the north wall of the 2nd century AD aisled building. A 0.12m gap had been left unexcavated by the builders in the subsoil between the north and west foundations, at the north-west corner of the building. Subsidence of this north wall foundation had taken place where it had been constructed over the infill of an underlying Iron Age ditch (F13), and as a result two courses of walling stones had survived here, demonstrating the construction technique used in the later north wall. Onto the solid stone foundation, a 50–80mm thick layer of Mercia Mudstone had been spread to act as a bed for the stones forming the wall proper. This was constructed in random-sized, roughly shaped blocks of coarse sandstone laid out in twin rows so as to present a flat vertical surface on the outer and inner faces of the wall. The irregular shaped cavity between the twin rows of stones was then filled by packing small cobbles and chippings of sandstone mixed with earth into the void. A further spread of Mercia Mudstone was then added over this course to provide a seating for the subsequent course of stonework, making a rigid structure. Along the outer face of this wall foundation, a single course of rough sandstone blocks (F1) 0.50m wide, abutting and slightly undercutting the main wall, ran for approximately 3m from the north-east corner of the building. Its purpose could not be determined but this too was possibly part of an earlier structure utilised as a foundation for the aisled building. Alternatively, the north wall of the aisled building could have been rebuilt following instability caused by its subsidence into the Iron Age ditch. This might explain the 0.12m gap in the foundation of the wall at its western extremity and the apparent overshoot in the foundations of the northern end of the west wall.

Elsewhere, ploughing had removed the wall courses and foundations to a greater extent and in some sections completely. The south-eastern corner and most of the southern wall foundations of the building were found to be completely ploughed out. Their former positions, however, could still be detected as shallow, dark soil stains, containing chips and fragments of sandstone, in the lighter coloured alluvial subsoil (C053).

At the northern end of the building, internal walling, closely matching the external walls in construction and dimension, had been erected in order to partition off the nave and eastern aisle so as to form two rooms with internal dimensions of 4.3m × 4.9m and 2.5m × 4.9m, respectively. No evidence could be found to indicate the presence of a partition for the western aisle, and it is presumed that this was not enclosed. Short sections of the lowest course of wall stones had survived where the central and southern partition walls had subsided into the underlying infill of the Iron Age ditch sytem. These wall stones abutted the external walling (Plate 2; Sections S-S1 and U-U1 Figs 2 and 4) but their underlying rubble foundations did not link up with the external wall foundations, falling short by 100–150mm. This imples that the internal partition walls

Plate 1: Ockbrook, Little Hay: overall view of the building looking south-east.

were a later addition to the building, but no evidence could be discerned in either the wall structures or floor materials to indicate the time span between the construction of the building and insertion of the internal partition walls. At this point, due to subsidence, sections of the partition wall footings had survived together with the lower course of the wall proper. The width of the footings was 0.70 to 0.75m, but that of the wall 0.60m. This detail was similarly noted at Carsington (Ling and Courtney 1981; Ling *et al.* 1990). At Carsington, Ling and Courtney (1981, 64) favoured the construction of the Site B building walls as having been entirely of stone, based on the volume of wall-stone debris recovered and the likely weight of the tiled/slate roof. Unfortunately at Ockbrook, any such evidence had been robbed or removed. However, the almost exact construction techniques, both in the dimensions of foundations and walls, and in the materials used, make it impossible to rule out walls of stone at least to eaves height, rather than sill walls for a timber-framed structure. Even a thatched roof would have been heavy, and comparing the size of Carsington at 23.8m × 9.2m with Little Hay at 28.9m × 11.95m, Little Hay is somewhat larger. Furthermore, the same foundations were used in the partition walls at Little Hay, which would have been totally unnecessary if only supporting a stud wall.

At the south-west corner, beneath a Medieval plough ridge, approximately 2m of the south and west wall foundation had survived. A few scatterings of pebbles were all that remained of any internal floor materials and plough action had penetrated into any underlying levels. Small abraded fragments of Romano-British pottery and *tegulae* were distributed over this surface and also on top of the plough-scored wall foundations. An occasional fragment of Iron Age pottery was also present.

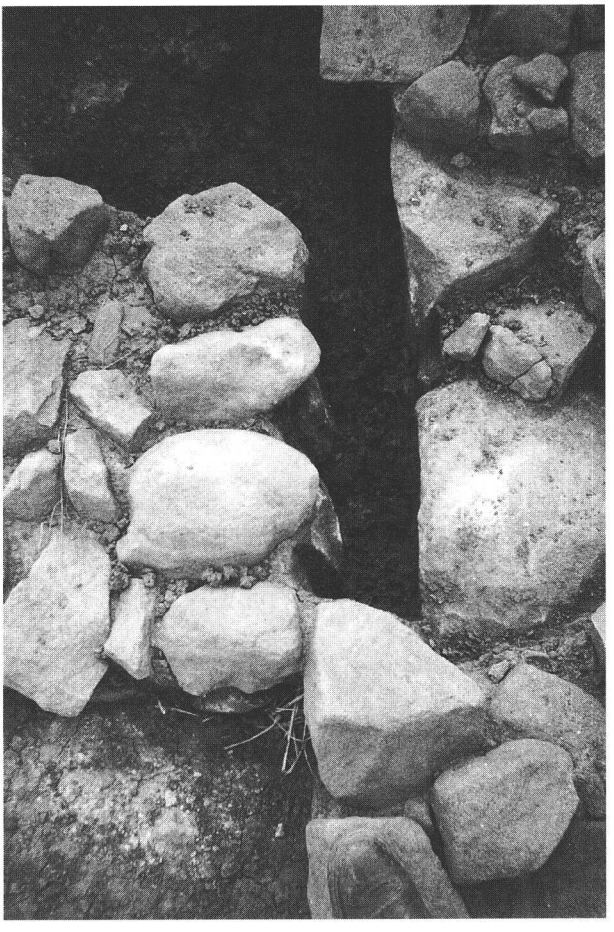


Plate 2: Ockbrook, Little Hay: abutment of internal partition wall to north wall, showing gap inbetween.

At a ridge/furrow junction, 1.5m north of the southern end of the building, was a remnant of walling (F2) aligned parallel to the southern wall of the building and so possibly an internal partition wall. Ploughing had entirely removed its northern face and the remainder of the stonework had likewise been obliterated beyond a point 1.0m away from its junction with the west wall. Outside and abutting the latter at this juncture was a pit or post-hole (F3) indicated by a 1.0m diameter ring of sandstone blocks, the tips of which just protruded through a layer of compacted pebbles (C137) which extended as a surface to the west of the building. Abraded Romano-British pottery and *tegulae* fragments were present on this surface. This post-hole or pit, which slightly undercut the west wall foundation, had an infill composed of loam and pebbles and included small blocks of sandstone, a nail (Fig. 13.6), and abraded pottery sherds of early to mid 2nd century date, including some white flagon ware produced at the Derby Racecourse kilns. Prolonged wet weather flooded the site and brought excavation to a premature end before any definite relationship between these features and the aisled structure could be established, so the possibility remains of these features belonging to an earlier structure.

It was, however, possible to identify levels preserved below the Medieval plough ridge profiles to the south-west of the building. Below the upper layer of sand-dressed late Medieval plough soil (C009) was a layer of loam (C125), in which was incorporated pebbles and some Romano-British abraded sherds and *tegulae* fragments. This material was derived and redeposited from the adjacent furrows, and overlay a deposit of dark brown loam (C136). The upper level of this had been contaminated by ploughing (C133) but the lower level was virtually sterile. This in turn overlay the compacted pebble yard surface (C137) outside the western wall of the aisled structure. This yard overlay mixed deposits which merged into the natural subsoil of alluvial origin overlying the Mercia Mudstone.

A careful search was made over the fragments of all remaining wall foundations and exposed surfaces associated with them, but no trace of any doorway or entrance could be observed. It has to be assumed that they were situated at a higher level than the exposed foundations and therefore obliterated by ploughing.

The roof structure had been supported by seven pairs of substantial posts forming the division between nave and aisles. Stone lined post-pits for these supports were discovered though many had been partially ploughed out. The spacings between them were not equidistant, but varied between 2.5m and 3.5m. The average diameter of each post pit was 1.0m; the best preserved had survived to a depth of 0.9m and the positioning of the packing stones, particularly in post-hole 3 (Plate 3), suggests that these posts had a rectangular section. No evidence of burning was seen in the post-holes, which were filled with a mixture of silty loam, some Mercia Mudstone and small fragments of sandstone, pebbles etc. In some, larger stones had entered the post-hole space from the post-pit, and in a significant number of these pits, stones had been removed from the upper levels on the south-west side of the holes. This could imply that the posts had been carefully dismantled and removed rather than burned or left to decay *in situ*.

Dismantling the building could also explain why all the larger nails found during excavation were either broken fragments or extremely bent and distorted. Not a single example of a large-sized, complete and undistorted nail was recovered from the building, some of which would surely have survived if the building had been burned or left to decay at the end of its useful life. The post-pit infills were mainly composed of sandstone blocks in a matrix of weathered Mercia Mudstone and pebbles. Fragments of *tegulae*, however, were recovered from the upper levels of post-pits 1, 4 and 5, and a fragment of brick from post-hole 2. Also Romano-British pot sherds were found in post-pits 1, 3, 4 and 8, one of which was a sherd from the base of a Form 31 samian bowl and included part of the stamp APOLASTRI. M, belonging to the potter APOLAUSTER or APOLAUSTRUS based at Lezoux, central Gaul, between AD 155 and 185 (B. Dickinson *pers. comm.*). One curious feature was the presence of score marks identical to plough score marks on some of the coarse sandstone packing stones lying undisturbed below Medieval plough depth in post-holes 3, 4 and 7, and one situated within the foundation stones in the east wall. These score marks were in some cases vertical, in others criss-crossed over one face of the stone. It has to be assumed that these stones had been scored by ploughing previous to their use in the building, and could have been retrieved from a ploughed-out previous structure nearby during the Roman period, or from a location where natural sandstone boulders occurred.

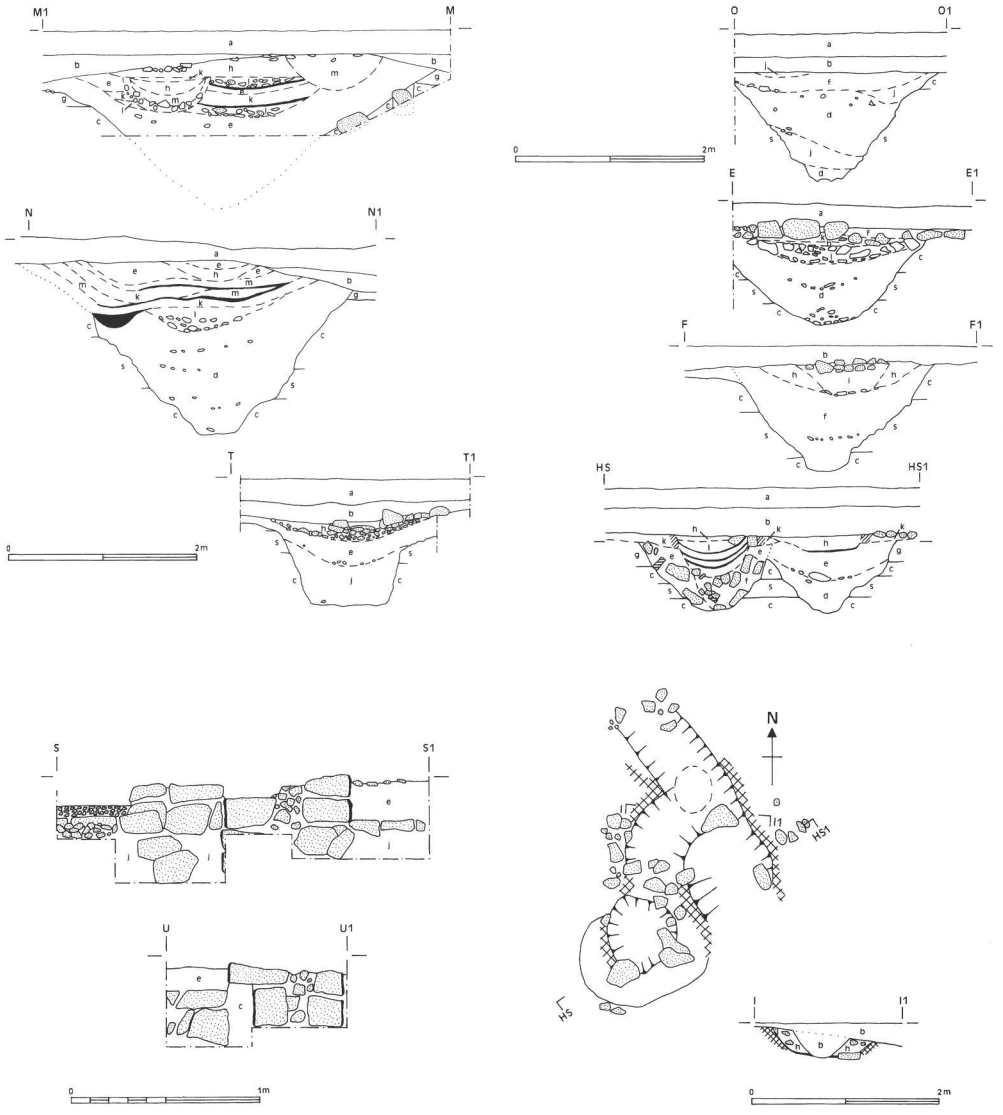


Fig. 4: Ockbrook, Little Hay: section drawings. For key see facing page.

The furrows formed during Medieval ploughing had removed from their route all traces of floor surfaces within the building. However, on the ridge positions at the north end of the building, due to the build-up of plough soil, some floor materials, but not surfaces, had survived Medieval plough damage. Unfortunately modern ploughing has truncated these ridges to such an extent that only small patches of floor materials now survive where floor levels have subsided into the infill of underlying features, so remaining below plough level. The best preserved area of flooring material was situated within the room built at the northern extremity of the eastern aisle (F4; Section C-C1 Figs 2 and 5). Here subsidence into an underlying hollowed area — later identified as part of the Iron

Key to stratified layers in Figures 4 and 5:

a Modern ploughsoil
b Medieval ploughsoil
c Natural red clay (Mercia Mudstone Group)
d Weathered red clay
e Weathered red clay/loam
f Weathered red clay/charcoal/small stones
g Gravel
h Brown silty loam
i Gritty grey loam/charcoal
j Weathered red clay/skerry fragments
k Redeposited red clay
l Brown silty loam/stone/charcoal
m Brown silty loam/charcoal
o Burnt red clay
s Skerry (Mercia Mudstone Group)
t Pebbles/sandstone fragments
u Sandstone cobbles

Key to corresponding contexts in Figures 4 and 5:

The contexts are listed in sequence top to bottom as shown in the section drawings, and left to right where the layers are level.

Feature F12

Section M–M1	
a	001
b	009
m	075
h	023
k	051
l	081
h	093
e	076
k	072
m	093A
l	073
e	073A

Section N–N1	
a	001
b	009
e	051
h	083A
e	083
m	084
k	085
m	086
k	087
l	088
d	089A–D

Feature F4

Section C–C1	
a	001
t	007
h	043
u	045
k	047
l	042

Feature F13

Section O–O1	
a	001
b	009
j	119E
f	119
j	119A
d	119B
j	119C
d	119D

Section E–E1	
a	001
f	037
k	051
h	052
l	048
d	055A–B

Section F–F1	
b	009
I	016
h	052
f	055A–B

Feature F14

Section T–T1	
a	001
b	009
h	151B–C
e	151D
j	151E

Feature H1

Section HS–HS1	
a	001
b	009
h	059
h	014
k	019
l	060, 61, 62
e	064, 055A
f	057
d	107

Section I–I1	
b	009
h	014

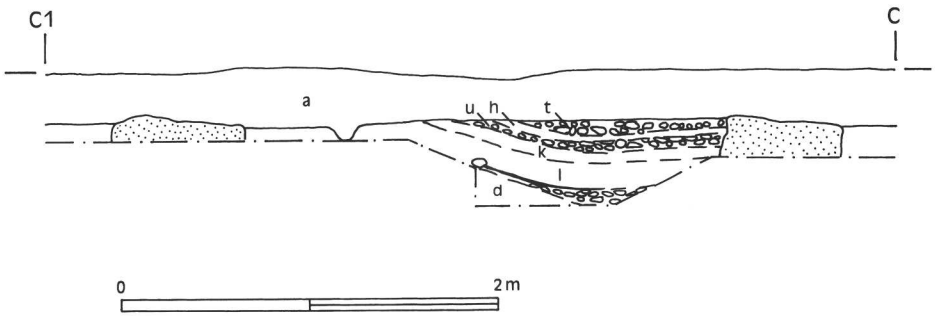


Fig. 5: Ockbrook, Little Hay: section of remaining floor of north-east aisle room (F4). For key see Fig. 4, facing page.

Age ditch system (F13) — had preserved all but the top surface of the floor levels. The floor materials remaining had an upper level of gravel (C007) overlying a mixture of earth, sand and larger pebbles (C039). This mixture in turn overlay a 50–100mm thick layer of brown loamy soil which covered a floor surface of small sandstone cobbles (C044) up to 100mm in size with a smooth worn-looking surface. This surface had sagged into the underlying ditch infill and in order to restore a level surface, a patch of sandstone rubble (C040) had been laid over the sunken area. No subsidence had taken place beyond the edges of the ditch and in consequence the floor material here had been ploughed away. The cobbled floor had been laid over a layer of Mercia Mudstone (C047), which had been used to level up the hollow surface (C042) of the mainly infilled Iron Age ditch. The flooring cobbles were packed against the external and partition walls of the building and did not appear to have been cut through by the foundation trenches. They would, therefore, seem to be contemporary with construction of the partition walls.

The Roof Structure

The massive post-holes suggest that a trussed roof structure was used to span the 11.95m width of the building, but what was it roofed with? Two small pieces of *tegulae* were found by fieldwalking in the vicinity of the site, but from the later Medieval plough soil over the site only a few small shapeless fragments of brick-like material were recovered. Within the excavated levels a total of 17 pieces of broken *tegulae* and 3 pieces of Romano-British brick were recovered (Fig. 18). No recognisable fragment of *imbrex* was found. The scarcity of tile fragments and the diversity of the contexts in which they were found makes any attempt to identify the roofing materials of the building speculative. At the south-west corner of the building, however, very fragmented and abraded pottery sherds and *tegulae*/brick fragments were found within and also externally to the building, incorporated into the early Medieval plough soil which formed the initial stage of ridge development. Similar spreads were also found there on an underlying disturbed surface of cobbling and pebbles forming an external yard (adjacent F3). This yard is thought to be contemporary with the aisled building but positive proof is difficult to establish.

In view of the evidence from post-holes, suggesting dismantling rather than abandonment of the building, the scarcity of roofing materials could be explained if roofing materials had been removed from the site for use elsewhere. If this was the case, only broken tiles would have been left on site. An alternative view is that the roof may have

been thatched, with the tile fragments discovered perhaps originating from an earlier structure on the site. It is interesting, however, that no *imbrex* samples have been recognised. This may be no more than an accident of survival, in view of the small quantities of tile recovered, but it raises a possibility that these few materials may have been used for purposes other than roofing. Many of the fragments found had inclusions of skerry stone in their composition. Locally-made 18th and 19th century bricks also have similar inclusions. Whilst this does not necessarily prove a local origin for the tiles, they were nevertheless made from material obtained from Mercia Mudstone deposits.

The Wall Materials

The stone used throughout the construction of this aisled building, was a medium to coarse-grained sandstone. The nearest source of stone which closely matches this building stone is to be found 2.5km to the north-east, where an outcrop of Crawshawe Sandstone has, through faulting, formed a low escarpment to the south of the Dale Abbey to Stanton-by-Dale road, near to its junction with Hixon's Lane (SK 452385). Comparisons of samples taken from the site and this source have been undertaken by the British Geological Survey and found to have close similarities. The majority of the stones used in the building showed visual evidence of weathering which had occurred prior to their use in the building's construction, and microscopic examination of the samples recovered supported this observation (Lott 1996, report in site archive). It would seem likely that these stones were gathered or prised from exposed faces of the escarpment rather than quarried. It is, however, possible that they could alternatively have been recovered from an earlier structure. Quarrying later took place on this escarpment, particularly during recent centuries.

Ancillary Features

An area abutting the outer face of the north wall of the aisled building had been surfaced with the same type of sandstone cobbling (C002) which had been discovered in the floor levels of the rooms within the northern end of the building. Most of this surface had been ploughed away, but here and there small patches survived up to the northernmost limits of the excavation, notably where they had subsided slightly into underlying hollows, and partially where they abutted the north wall face of the building.

At a position 6m north of the building a larger area of cobbling (F5) had survived where a Medieval ridge had protected it from plough damage. Modern ploughing, however had sheared off this ridge and removed all the surviving section of cobbled courtyard except for an area which had sunk into the subsided surface of the outer Iron Age ditch system (F14). Pottery recovered from the level (C121A) exposed by modern ploughing, directly below the cobbling, was of 2nd century AD date. Sherds recovered directly from the surface of the cobbled area (C121D) were mid to late 2nd century AD. This ties in with the evidence from C022 to indicate a mid to late 2nd century date for the erection of the aisled structure and its associated courtyard. A curved line of sandstone blocks (F6) over this layer possibly represented the wall of a later structure and presumably came from the demolished building. Associated pottery was 3rd to 4th century AD in date.

Sealing feature F1, described above in the section on the Aisled Building, was a 200mm thick layer of mixed Mercia Mudstone and loam (C005) with inclusions of bones, teeth

Plate 3: Ockbrook, Little Hay: post-hole 3, showing arrangement of packing stones suggesting a rectangular-sectioned post. The padstone to the right (F9) is from the earlier building.

and Romano-British pottery. The cobbled surface (C002) in turn sealed this layer. Faint traces of cobbling were discernible on this alignment up to the north-west corner of the building, but it was not possible to distinguish whether these were linked with a possible foundation of an earlier structure or were remnants of the cobbled surface (F5).

Other features were also observed on the site and selectively excavated or sectioned. No definite link with the aisled building or with each other could be established and, though identified, their purpose remains unknown. They are described as follows: three post-holes (F15, F16, F17) were situated along the northern edge of the east-west Iron Age ditch (F12). Each was approximately 0.3m in diameter and they showed up as cylinders of loam/Mercia Mudstone mix in the surrounding medium. F15 had been inserted into the primary fill of the ditch and in turn, post-pit 2 had later partially cut through it. F16 had also been inserted into the primary fill of the ditch, but F17 was inserted into the natural Mercia Mudstone forming the northern edge of the ditch. A short section of wall foundation (F7), 0.4m wide, survived on a ridge positioned 1.0m within the western wall of the building. It could not be proven whether a fragment of Roman brick, lying at its northern extremity, was part of the building material or had been deposited there later by ploughing which had obliterated the wall beyond this point. A second feature (C004) thought to be either a remnant of wall or a patch of cobbled courtyard, had survived over the sunken surface of the outer Iron Age ditch (F14), coincident with a ridge north-east of the building.

Two large sandstone padstones (F8) and (F9; Plate 3) installed in shallow pits, were uncovered below a worked Mercia Mudstone deposit; slightly north of post-hole 2 and

slightly south of post-hole 3, respectively. A similar shallow pit found to abut post-hole 4 could possibly be associated with these, since all were similarly aligned on the aisle/nave partition line and as such may suggest an earlier structure. Remnants of other features survived as amorphous soil stains over the ridge positions. One of these contained a fragment of sheet lead (Fig. 14.10) and others abraded sherds of Romano-British pottery. Other features to the north of the building could be regarded as a line of stake-holes predating installation of the courtyard. A rectangular shaped soil stain (F10) was located and excavated just inside the west wall of the building. Its dimensions were 0.9m × 0.6m × 0.35m deep, and it had been partially cut away by a Medieval furrow. No artefact was found in association but its infill consisted of dark brown loam, charcoal, burnt daub, pebbles and bone fragments. This feature had vertical sides which may once have housed a box-like structure set into the floor. A similar feature (F11) was partially excavated just inside the east wall. It was observed beneath a grouping of sandstone fragments bedded onto loam which sealed its infill of charcoal, dark brown loam, pebbles etc.

The Iron Age Ditch System

Excavation revealed the existence of an Iron Age ditch system beneath the aisled building and extending beyond the limits of the excavated area (Figs 2 and 3a). It consisted of an east/west ditch (F12) crossing the site, from which a branch (F13) extended in a north-westerly direction, to continue beyond the northernmost limit of the excavated area. Sections cut across these ditches at E-E1 and M-M1 (Figs 2 and 4) revealed similar profiles and infill deposits. Both ditches had a 'V' shaped section with a squared base slot and each was cut through a seam of skerry stone within the Mercia Mudstone subsoil. In addition, F12 and the southern extremity of F13 had been cut through a band or surface deposit of breccia. It is estimated that the original ditches would have been 2.0m or so wide and 1.25–1.5m deep and are most likely interpreted as enclosure ditches. Erosion of the ditch sides had ultimately increased their width to 2.7–3m.

The eroded material filled the ditches for up to two-thirds their depth and was divided into at least three layers. These were indicated by sagging lines of pebbles incorporating charcoal, animal bones and some Middle Iron Age sherds. Observations on steeply sloping trenches cut into the Mercia Mudstone on site have shown how rapidly their sides crumble away when exposed to frost action. After one winter's exposure only, material can accumulate at the base and fill up to a third of the depth.

It seems quite probable that the following sequences formed the primary infill of the ditches, where sectioned. Rapid accumulation of material from the ditch sides formed at the base of the ditch during the first winter onto which a sprinkling of occupational debris was deposited throughout the remainder of the year. This was then sealed by the following winter's deposition of eroded material onto which more occupational debris found its way during the remainder of the year. This sequence continued until erosion of the sides of the ditch had reduced their slope to such an extent that significantly diminished amounts of eroded material formed at the base and, with the assistance of vegetation protecting the slopes, stability was eventually achieved. No evidence of re-cutting was observed.

The upper fill of both the F12 and F13 ditches varied along their length. In places deliberate infilling had clearly taken place. This infill consisted of broken-up fragments

of skerry and clean Mercia Mudstone. Only an occasional sample of bone, tooth, charcoal fragment or pottery was present in this infill. Elsewhere natural processes had silted up the ditch but at one location at least in each ditch, an elongated hollow, several metres in length, had been used for fire associated activities over a period of several decades at least (Sections M-M1, N-N1, E-E1, Fig. 4). The sequence of infills in these hollows was as follows: firstly a quantity of small sized, skerry stone slabs were found scattered loosely over the hollow surfaces of the primary infill (C073A in M-M1 and C055A in E-E1). Mixed with them was a deposit of brown silty soil and this merged with a quantity of pebbles up to 120–150mm in size (C073), many of which had been crazed or shattered by heat. Quantities of charcoal, burnt daub and animal bones were mixed amongst the pebbles and fragments of Late Iron Age pottery. The pebbles were predominantly quartzite, but some fragments of stone resembling types found at Charnwood were also present, as were some sandstone fragments. A ring-headed iron pin (Fig. 12.1) and a fragment of slag were found in the F12 ditch in this deposit.

These pebbles were in turn sealed with a layer of brown silty soil (C076) which was largely sterile but from the surface of which Iron Age wheel-turned pottery and coarse hand-made wares, animal bones, charcoal spreads (C081), daub and an occasional coal fragment were found. From the eastern extremity of the F12 ditch, a La Tene III derivative one-piece brooch (Fig. 10.1) and a Corieltauvian Iron Age coin, (Plate 5) dated between 40 BC and 10 AD, were recovered from the pebble strewn loamy layers (C088, C089). This suggests a late 1st century BC/early 1st century AD date for this context. The layer was later sealed by deposits of Mercia Mudstone and loam (C083A) which equates to context C023, which underlay the cobbled floor surface (C022) of the 2nd century AD building. From context C023 a Colchester derivative bronze *fibula* (Fig. 10.2) was recovered.

In the F12 ditch considerable disturbance had been caused by the insertion of several hearths into the silty soil (C076) overlying the Mercia Mudstone spreads within the west and central section. Associated with them were charcoal spreads (C081), and a narrow gully filled with charcoal, daub and an occasional bone and pebble in a mix of silty material. Undoubtedly there had been further disturbance of this layer from activities leaving little or no trace. It must also be acknowledged that some faint features were unrecognised by the excavators working in drought conditions, which eventually forced postponement of the excavation here until better conditions prevailed. A patchy layer of Mercia Mudstone (C072) had been spread or had accumulated over level C077 and hearth H2 had been inserted through this layer. A further thin spread of Mercia Mudstone had sealed the sunken ashy infill of this hearth feature. Elsewhere within F12, this Mercia Mudstone layer sealed hearths H3, H8 and possibly H4. On top of this Mercia Mudstone was a deposit of loamy material (C023), contaminated by further spreads of marl and loam (C022), which contained sizeable unabraded fragments of Derbyshire ware, Grey ware and Black Burnished ware pottery sherds, plus one tegula fragment. On top of this had been deposited the sandstone cobbles which formed the floor of the 2nd century AD building. Small patches only of this cobbling had survived, notably over sunken areas, one of which was hearth H2. Elsewhere the cobble remnants were scattered over surfaces disturbed by plough action. Mixed amongst these cobbles were further quantities of late 2nd–early 3rd century AD Romano-British pottery.

Outside the limits of the 2nd century AD building, a section O-O1 was cut across the F13 ditch at the northernmost extremity of the site. This section of ditch is situated beneath a Medieval furrow which had removed the upper level of the ditch infill, otherwise it retained the same 'V' shaped profile and squared base as found elsewhere on its alignment, and was similarly cut through a seam of skerry stone. Below the Medieval plough soil, the infill differed from that observed in Section E-E1 of F13. It consisted of worked Mercia Mudstone material containing a few flakes of charcoal, two solitary Middle Iron Age sherds and a small fragment of animal jaw bone. Otherwise it was sterile. These deposits alternated with totally sterile Mercia Mudstone mixed with large quantities of skerry stone fragments and it is possible that these infills are the result of deliberate back-filling of the ditch shortly after excavation. One feature of this section, however, was the presence of small erratic tunnels of approximately 80mm diameter, burrowed throughout all levels of infill and filled with Medieval plough soil. These are most likely to be rodent holes of Post-Medieval date.

A shallow trench was then excavated across the projected alignment of the F12 ditch on the western edge of the excavated area. The presence of the ditch was confirmed by an infill of worked Mercia Mudstone showing up against natural deposits of Mercia Mudstone on its edges. Its upper profile could just be made out in section. A few abraded Romano-British sherds were recovered from the infill surface directly below the Medieval plough soil, which contained a mixture of abraded Romano-British and Medieval sherds.

The presence of layers of heat-shattered pebbles filling hollowed surfaces along some sections of the partially infilled Iron Age ditch system suggests cooking activity — either in roasting pits or for heating large containers of water. The later insertion of small bowl-shaped hearths into these localities could mean continuation of such activities in this area but using different cooking methods. The use of enclosure ditches for this type of feature has been recognised on other sites. On a recent excavation of a Late Iron Age/Roman site on a gravel quarry at Scrooby Top, near Bawtry, Nottinghamshire (Davies 2000), nearly 5000 fire-cracked pebbles were recovered from the main enclosure ditch, midden and pits. They were found mainly in the southern enclosure ditch, and as at Ockbrook, were associated with pottery sherds and charcoal, although the animal bones have not survived at Scrooby due to the acidic nature of the soil. Similarly three later hearths were discovered in the same area of the ditch, again suggesting continued cooking activities. Alternatively it is conceivable, that the stones were used for the production of steam for sauna purposes. Either way the hollowed feature of the almost silted-up ditches would have been selected for heat retention purposes.

Hearth Features

Within the F12 ditch system remnants of four hearth features (H2, H3, H4 and H8) were identified situated within, or adjacent to, the hollowed-out sections of the upper fill (Figs 2 and 3b). Ground disturbance had affected feature H4 and to a lesser extent H8, but it is possible in the case of H3 and H2 to relate these hearths to the surrounding stratification, and to place them chronologically as post-dating the deposit of silty loam (C081) overlying the shattered pebble layer and pre-dating the 2nd century building floor materials.

Hearth H3 was first sectioned and then fully excavated to reveal a sub-circular, bowl-shaped hollow 0.57m × 0.49m × 0.17m deep. It had a 20mm thick lining of grey reduced

clay with a sooty outer surface. On the eastern edge small patches of oxidised orange coloured clay were present in the otherwise grey reduced lining. Its infill consisted of a mixture of dark brown silty soil and charcoal. No artefacts were present. A short length of square-sectioned gully was situated immediately east of this hearth. The infill comprised a mixture of dark brown loam and charcoal, burnt daub and fragments of animal bones, and petered out into a shapeless spread of mainly charcoal material east of the feature. The hearth had been sealed by a deposit of brown silty soil, charcoal and burnt daub (C081), and over this a layer (C051) of worked Mercia Mudstone had been spread. This layer immediately underlay the scattered debris and loam of the 2nd century AD floor materials.

Hearth H8 consisted of two overlapping features (C091, C096) of similar size and construction to H3. These had been cut into the northern edge of the F12 ditch and had been distorted by lateral pressure subsequent to their use. They had also been disturbed by later activity. Much charcoal was present in their fill and a Flavian/Trajanic pottery sherd was recovered. These hearths had been sealed by a layer (C087) of mixed Mercia Mudstone and loamy material.

Hearth H4 had been disturbed considerably but consisted of two, possibly three, bowl features which intersected each other and were mainly distinguishable by traces of black sooty, circular rings 15mm thick and 0.55m in diameter, which formed the circumference of each bowl feature. A Late Iron Age pottery sherd was recovered from the upper hearth area, and also a cow tooth. Disturbance to these features had occurred when post-pit 2 was constructed. An additional feature H5, thought to be a similar hearth, was also discovered outside the ditch system adjacent to the exterior of the west wall of the building. This feature showed as a circular-shaped, charcoal filled depression. It had been cut into and its eastern extremity removed, when the western wall foundation of the 2nd century building had been constructed.

Hearth H2, 0.8m × 0.65m, had been inserted through a layer (C072) of worked Mercia Mudstone deposited over the mix of charcoal and dark brown silty loam (C077) covering the layer (C073) of heat shattered pebbles to the east of post-hole 3 (Section M-M1, Fig. 4). At the base of the hearth these pebbles had been exposed. The hearth lining had been constructed from pebbles and Mercia Mudstone which then became burnt to a red oxidised colour. Traces of the lining of an additional hearth were observed as a concentric arc of red burnt daub to the south of the main hearth lining. Within the main hearth, the infill varied from a gritty ashy layer at the base, containing a Flavian/Trajanic pottery sherd, through a grey/brown humic material in the middle, containing another Flavian/Trajanic sherd, to a marl-loam mix top fill. A thin deposit of Mercia Mudstone (C051) sealed this infill, over which was a brown loamy soil (C023) directly underlying the remnant of the coarse sandstone floor material (C022) of the 2nd century AD building.

Three other hearths were located elsewhere in the excavation. H7 was a shallow bowl-shaped feature 0.80m × 0.70m × 0.30m deep. This was beneath the plough-exposed base of the south wall. Sealed beneath the lip of this hearth, and likewise beneath the base of the 2nd century building wall foundation trench, was a small padstone. The hearth's infill consisted of charcoal, grouped pebbles and skerry fragments with soot-blackened upper surfaces. A few fragments of calcined bone were also present, but no artefacts were found in association. A similar hearth H6 was revealed towards the south-east corner of

Plate 4: Ockbrook, Little Hay: the corn-drier (H1), looking north.

the building. This was situated just outside the building and abutted the southern edge of the wall foundation trench.

The hearths discussed so far are all of a similar size, date and infill and, with the lack of industrial evidence, are best interpreted as domestic cooking ovens.

Hearth 1

A larger composite installation (H1, Figs 2 and 3d; Section HS-HS1 Fig. 4; Plate 4) had been constucted and inserted into the upper level of F13, within the northern aisle. Medieval ploughing and stone robbing had destroyed all but the bases of the structures which consisted of two adjacent fire chamber/stokeholes with associated flues. The easternmost fire chamber (C014) was approximately 1m in diameter with a saucer-shaped section. Its walls (C058) had been baked to a depth of 175mm showing as a bright orange surface, grey-white core and maroon outer band. A sill stone remained *in situ* in its northern sector (Section I-I1, Fig. 4) from which a flue had been constructed. Three other stones which had escaped Medieval plough disturbance were positioned around the periphery and would originally have supported a superstructure. The infill of C014 consisted of brown loam with quantities of charcoal, small fragments of burnt daub and stone rubble, and also contained sherds of Black Burnished ware, a sherd of a grey

colour-coated Nene Valley rouletted beaker and Derbyshire ware, all dated to the 3rd century AD. From this fire chamber a 'U' sectioned flue (C016) had been cut into the upper infill of ditch F13. It extended approximately 2.5m northwards and terminated 0.5m south of the eastern, aisle room, partition wall (C037). Extensive disturbance by Medieval ploughing and stone robbing had left a channel 0.60m wide. A few stones still remained in situ on its western face but were slightly dislodged and stones had evidently been extracted along its eastern face. It appeared to widen somewhat at its northern extremity but no particular shape could be discerned there due to Medieval plough damage. Scorching and soot- coating in patches were evident along its route. Medieval soil had entered the flue where stones had been extracted and allowed 2nd century AD pottery to contaminate the 3rd century infill of the flue. This fill consisted of brown loam containing much charcoal and burnt daub fragments (C016). Quantities of stone blocks and smaller stone rubble were distributed throughout its length but were more concentrated at the upper levels of the fill. From the base a nail and a fragment of coal were recovered. Pottery in this infill was mainly Derbyshire ware, one large unabraded sherd of which had a pitted, vitrified outer surface. One 3rd century AD sherd of a narrow-necked jar in grey ware was also present.

The western fire chamber/stokehole consisted of a basin-shaped bowl of approximately 0.75m diameter. Its lining was less baked than the eastern chamber. Remains of a stone sill or similar structure was found in the southern sector, and stones up to 300mm in size were present in its upper fill. It had a soot-encrusted lining to which adhered small fragments of burnt daub and a piece of coal. The infill consisted of bands of brown silty loam with charcoal inclusions alternating with 3 bands of charcoal and charred deposits (C060, C061, C062). These contained carbonised grain and weed seeds. This chamber had been installed over the former position of post-hole 1.

A 'U' sectioned flue (C059) emerged from this unit, rising, then curving to join the main flue (C016). Its lining was scorched to a maroon colour and it was heavily coated with sooty deposits. Sandstone blocks up to 300mm in size were present in its infill which consisted of dark brown loam, charcoal and burnt daub. A patch of burnt daub had fallen onto the soot-coated base of C059 at its juncture with C016, but due to Medieval plough disturbance, the exact relationship between the two flues could not be precisely determined. However, during construction, this flue had cut through a patch of existing cobbling overlain with a spread of Mercia Mudstone which was scorched a maroon colour by the hot emissions in the flue and was coated with sooty deposits, which also covered the edges of the cobbles. A fragment of brick with finger-whorl decoration (Fig. 18.1) was recovered from the infill of C059 at its juncture with the fire chamber. Further pieces of brick and tile were present in the infill of post-hole 1 (C057), underlying the chamber, which also contained 3rd to 4th century AD pottery sherds and dislodged packing stones. Although three small pieces of slag were found in proximity to these hearths, they are believed to be residual. No evidence could be found to link the hearth features with any form of metal working activity.

This complex of hearths can best be interpreted as a corn-drier and bears many similarities to features identified as such at Godmanchester, Cambridgeshire and Woodcutts 2, Dorset (Morris 1979). In the east Midlands, an almost identical sized and shaped corn drier was excavated, cutting into Barrow 1 at Willington, Derbyshire (Wheeler 1979, 125). Here, as at Ockbrook, burning of the stokehole lining and

scorching of the flue surfaces had occurred. There were also similarities in the positions of the *in situ* stones and associated pottery again dates to 3rd/early 4th century AD. The relationship between the drier and any associated building however was not established. The 3rd century AD aisled building B, Phase 1 at Winterton, Lincolnshire, in addition to its structural similarities to Little Hay also contained features described by Stead as "heated channels". These were installed in a similar position to those of the corn drier at Little Hay Grange, i.e. in the eastern aisle of the building (Stead 1976, fig. 15). These features (*ibid.* G, H, fig. 18) possess a marked similarity in dimensions, details of construction, scorched areas and infill deposits to the Little Hay corn-drier, although the flue layouts differ in having an independent flue for each stokehole. Stead does not offer an explanation as to their function, although he describes building B as possibly being connected with the processing of cereals.

At Littlehay carbonised grains of spelt, oats, bread wheat and a little barley have been found in the fill of the corn-drier (Table 10). The drying of grain before storage was necessary to discourage germination, mildew, fungus and insect pests. Also spelt, the main wheat used in bread, needed to be dried before it could be threshed (Morris 1979) and drying grain made it easier to grind. Barley could be dried to convert it to malt after steeping in water, for use in beer-making, but there is insufficient barley to suggest this process at Little Hay. The presence of chaff and weed seeds in contexts C060, C061, and C062 suggests that grain was dried before threshing. Other uses noted for corn-driers are drying flax after retting, drying beans, peas and herbs, and the smoking of meat (favoured by the Romans), where the hot air could be directed through the drying chamber (Janett and Wrathmell 1981, 80).

The Outer Ditch

An additional ditch (F14) was identified, centred 3m away from the north-eastern corner of the building (Figs 2 and 3b). Here a short section of detached walling or courtyard had survived plough destruction through subsiding into the ditch infill. East of the building this ditch ran approximately parallel to the north/south Iron Age ditch (F13), to turn westwards around 6m north of the building. South-east of this point ploughing had cut into the top layer of the ditch infill. To the west the top level was preserved beneath a Medieval ridge by dint of the ditch's subsidence, so that its hollowed surface (C151C), composed of compacted sandstone cobbles and chippings, was protected from plough damage. These cobbles (F5) formed part of a courtyard, fragments of which were noted elsewhere within this area to the north-west of the building. Pottery sherds lying directly on top and also embedded into the cobbled surface are dated mid to late 2nd century AD. A dark brown loam (C151B) had accumulated over this sunken surface and amongst this were concentrated spreads of sandstone building rubble. A linear-shaped compaction of sandstone blocks (C151A) was identified amongst these and can be interpreted as a base for a stone wall in which there was a doorway or entrance. Pottery sherds from these contexts are dated to the 3rd to 4th centuries AD. A large Roman nail (Fig. 13.1) was recovered from the infill directly underlying the cobbled surface on the northern edge of this ditch. A section T-T1 (Fig. 4) was taken across the ditch infill at this point to reveal its 'U' shaped cross section, 1.9m wide at the surface, tapering to a 0.80m wide base at a depth of 1.0m. Its primary fill (C151E) consisted of Mercia Mudstone, skerry chippings and a few fire-cracked pebbles. This fill was separated from

the upper infill by a thin scatterinng of pebbles among which were occasional bones, 1st and 2nd century AD Romano-British sherds and charcoal. The upper fill (C151D) consisted of mixed loam with Mercia Mudstone which also contained similar types of material. This was then sealed by the cobbled surface (C151C).

A second section, R-R1, taken further south, adjacent to the isolated patch of stonework, revealed a similar profile. Because of truncation by ploughing the dimensions were smaller, 1.8m wide, tapering to a 0.8m wide base at 0.8m deep. Its upper infill of dark brown loamy material contained large lumps of dispersed sandstone and Romano-British sherds, together with animal bones which included a sheep's mandible, stained green by a small piece of bronze sheeting (Fig. 11) which lay on top of it. The primary infill consisted of loam and Mercia Mudstone. Time did not permit additional excavation to determine whether the stones found embedded in this southern section of the ditch were demolition debris from the aisled structure or from some preceding building.

Non-excavation methods used to detect archaeological features

In an attempt to trace the extent of the enclosure ditch systems and to locate other suspected structures outside the confines of the excavation, Trent & Peak Archaeological Trust were commissioned in 1997 to undertake a resistivity survey after crops had been harvested and back-filling of the excavated area had taken place. Using a Geoscan RM4DL10 meter/data logger, reading at 1m intervals, strong signals were received from the ridge and furrow features and from the stone foundations of the back-filled aisled building. Other anomalies detected in the field were less well defined and positive identification by excavation was not possible. The ditch systems were not detected, either at their known positions or on their projected alignments. Known areas of cobbling similarly failed to be positively detected. In view of this, absence of evidence of archaeological features must not be regarded as evidence of absence, but as recognition that for a variety of reasons, archaeological features will not necessarily produce resistivity anomalies of detectable strength. One reason is quoted by Steve Malone in his report (in the site archive) —

> Such heavy clay soils can give variable responses to resistivity, especially where cut features are concerned (Clark 1990, 56).

Competent dowsers were also encouraged to try out methods for detecting buried structures and infilled ditches. Whilst some of their findings were subsequently proven by excavation, much of the information obtained by this method was misleading.

Feature		Contexts
F1	Late 1st/early 2nd cent. building wall and adjacent courtyard	0002, 0004, 0005, 0006
F2	remnants of interior wall, south-west corner of 2nd cent. building	0131, 0132, 0135
F3	Pit, south-west corner of 2nd cent. building	0125, 0133, 0134, 0136, 0137, 0138, 0139
F4	Floor of east aisle room, 2nd cent. building	0007, 0039, 0040, 0041, 0043, 0044, 0045, 0046, 0047
F5	Rubble/cobble courtyard north of building	0121, 0121A, 0121B, 0121C, 0121D

F6	3rd/4th cent. A.D. rough-built structure	0151, 0151A, 0151B, 0151C, 0151D, 0151E
F7	Detached interior section of wall west side of 2nd cent. building	0017
F8	Padstone from late1st/early 2nd cent. building	0092
F9	Padstone from late 1st /early 2nd cent. building	0102
F10	Rectangular pit	0070
F11	Rectangular pit	0056
F12	East/west Iron Age ditch	0022, 0023, 0072, 0073, 0073A, 0074, 0075, 0076, 0077, 0079, 0081, 0083, 0083A, 0084,0085, 0086, 0086A, 0087, 0088, 0089, 0153
F13	North/south Iron Age ditch	0016, 0042, 0048, 0051, 0052, 0054, 0055, 0069, 0117, 0119, 0119A, 0119B
F14	Outer ditch north and west of building	0004, 0150, 0151, 0151A, 0151B, 0151C, 0151D, 0151E
F15	Pre 2nd cent. unlined post-hole cut into by post-hole 2	0152
F16	Unlined post-hole	0124
F17	Unlined post-hole	0126
H1	3rd cent. AD corn-drier	0014, 0016, 0057, 0058, 0059, 0060, 0061, 0062, 0063, 0068
H2	1st cent. AD hearth	0093
H3	,,	0090
H4	,,	0105
H5	,,	0103
H6	,,	0141
H7	,,	0140
H8	,,	0091, 0096
Post-holes of 2nd century Aisled Building:		
PH1	Stone lined post-hole in East aisle cut into by 3rd cent. corn-drier	0057, 0064
PH2	Stone lined post-hole at junction of F12 and F13, east aisle	0024, 0025
PH3	Stone lined post-hole at south edge of F12, east aisle	0122, 0122A
PH4	Stone lined post-hole, east aisle	0094, 0110, 0110A
PH5	,, ,,	0095, 0095A
PH6	,, ,,	0097, 0097A
PH7	,, ,,	0068, 0068A
PH8	Stone lined post-hole, west aisle	0067, 0067A, 0099
PH9	,, ,,	0066, 0066A, 0100, 0101, 0123
PH10	Not excavated	
PH11	Not excavated	

Table 1: Ockbrook excavations; guide to features and contexts referred to in the text.

Contexts referred to in the text which are not associated with a numbered feature

0003	Stones of north wall of building
0008	Medieval ridge crossing nave and aisle rooms
0010	Stones of east wall of building
0011	Robbed-out foundation trench of east wall of building next to corn drier
0013	Stones of west wall of building
0018	Dark grey fill underlying rubble adjacent to wall in east aisle room
0019	Medieval ridge south of nave and aisle rooms
0021	Medieval ridge crossing post-hole 5
0033	Medieval furrow crossing nave and aisle rooms
0034	Medieval furrow between post-holes 1 and 2
0035	Stones of west wall of nave room
0037	Stones of south walls of nave and aisle rooms
0038	Robbed-out foundation trench of east wall of building south of 0011
0049	Mercia Mudstone layer underlying 0033
0050	Sub-floor level, base of south-east corner of the wall
0053	Robbed-out foundation trench of south wall of building
0071	Exposed area of base of medieval furrow near post-hole 8
0080	Medieval furrow crossing post-hole 4
0082	Medieval furrow between post-holes 6 and 7
0098	Cobbled spread — remains of floor in nave room
0115	Surface spread near post-hole 4
0116	Band of skerry rubble in N/S Iron Age ditch
0117	Layer of Mercia Mudstone and skerry mixture overlying 0116
0119	Upper fill of N/S Iron Age ditch at its northern extremity of the excavation
0120	Layer underlying cobbled floor in nave room
0129	Upper fill of E/W Iron Age ditch adjacent to west wall of building
0130	Upper fill of E/W Iron Age ditch adjacent to west wall of building
0142	Pebble scatter on top of medieval ridge south of post-hole 7, possible floor surface
0144	Unidentified channel feature adjacent interior of west wall
0149	Unlined post-hole north of building next to N/S Iron Age ditch

Table 2: Ockbrook Excavations; guide to other contexts.

THE FINDS

Samian by Brenda Dickinson

This small collection of samian is all Central Gaulish. Some of the fragments are too small to date closely, but those with better dating suggest that the material belongs to the second half of the 2nd century. In an assemblage of this size, the absence of decorated ware is not necessarily suggestive of the site's status.

Context	Finds Ref.	Description
0001	Ploughsoil	Form 38, Central Gaulish. Antonine. No bead lip.
,,	,,	Form not identified, Central Gaulish. Hadrianic or Antonine.
,,	,,	Form 31 and a dish fragment, Central Gaulish. Antonine.
,,	,,	Form 31R, Central Gaulish. Mid to late Antonine.

0014	AFT	Two fragments of Form 18/31, more probably 31, Central Gaulish. Hadrianic or Antonine.
,,	AFL	Form 33, Central Gaulish. Antonine
0016	ADO	Form not identified, Central Gaulish. Hadrianic or Antonine.
0022	AFR	Form not identified, Central Gaulish. Hadrianic or Antonine.
,,	AFN	Forms 33(?) and 38 or 44, Central Gaulish. Antonine.
,,	AHD	Two fragments of Form 31, Central Gaulish. Mid to late Antonine.
0066A	AQH	Form 31, with a stamp of Apolauster/Apolaustrus of Lezoux. This also occurs on Form 33 and is found on the rim of a bowl of Form 37 in the style of Casurius from Bewcastle (Stanfield 1935, 182–205). A stamp from one of Apolauster/Apolaustrus's other dies occurs on a decorated bowl from Ilkley, a site whose reoccupation in the later 2nd century is dated by an inscription of the 160s, *c.* AD 155–185.
0121C	BBL	Form 31R, two fragments. Central Gaulish. Late Antonine.

Table 3: Catalogue of samian finds from Ockbrook.

Romano-British Pottery by R. S. Leary

The pottery assemblage comprises three principal elements: a group of Middle to Late Iron Age handmade pottery; Late Iron Age to early Romano-British wheel made pottery; and Romano-British pottery. These groups coincided broadly with the stratigraphic sequence of ditch fills and building and were further subdivided on the basis of the known stratigraphy. In real time, the material can be dated typologically from sometime during the 5th to the mid to late 1st century BC, perhaps very late in that period, to the 3rd to 4th century AD. The assemblage, therefore, provided useful data relating to the development of forms and fabrics, and provides some evidence for the sequence of handmade and wheel made pottery types from an Iron Age site on the Mercia Mudstone that can be compared with the many Iron Age sites on the river gravels. The assemblage also provides useful information about the distribution of the products of the Derby Little Chester and Derbyshire ware kilns, particularly the fine wares and of the degree to which fine and traded wares were available to well-to-do settlements near Derby.

Fabrics and forms

1611 sherds (18348g) of Iron Age to Romano-British pottery were recovered during the excavation and these were catalogued by context group, recording fabric, form, decoration and condition, quantified by sherd count and weight, and rim percentage.

The fabric of the pottery was first examined by eye and sorted into fabric groups on the basis of colour, hardness, feel, fracture, inclusions and manufacturing technique. Samples of the sherds were further examined under an $\times 30$ binocular microscope to verify these divisions. The size of the sample was as large as was felt necessary for each fabric group. It was felt that the Iron Age material was sufficiently significant for Iron Age studies in Derbyshire to warrant petrological examination. Slides were prepared by Southampton University and Ron Firman kindly examined them and prepared a report on them, drawing on his extensive knowledge of local geology (see below).

The fabrics are described by their archive code, in alphabetical order, and their common name or a descriptive name is italicised. Reference is made to The National

Roman Fabric Reference Collection where appropriate (Tomber and Dore 1988). The forms represented in each fabric group are described and quantified.

Colour: narrative description only
Hardness: after Peacock 1977
soft — can be scratched by finger nail
hard — can be scratched with penknife blade
very hard — cannot be scratched
Feel: tactile qualities
smooth — no irregularities
rough — irregularities can be felt
sandy — grains can be felt across the surface
leathery — smoothed surface like polished leather
soapy — smooth feel like soap
Fracture: visual texture of fresh break, after Orton 1980.
smooth — flat or slightly curved with no visible irregularities
irregular — medium, fairly widely spaced irregularities
finely irregular — small, fairly closely spaced irregularities
laminar — stepped effect
hackly — large and generally angular irregularities
Inclusions:
Type: after Peacock 1977
Frequency: indicated on a 4–point scale — abundant, moderate, sparse and rare, where abundant is a break packed with an inclusion and rare is a break with only one or two of an inclusion.
Sorting: after Orton 1980
Shape: angular — convex shape, sharp corners
subangular — convex shape, rounded corners
rounded — convex shape no corners
platey — flat
Size: subvisible — only just visible at × 30 and too small to measure
fine — 0.1–0.25mm
medium — 0.25–0.5mm
coarse — 0.5–1mm
very coarse — over 1mm

Fabrics

The forms in each fabric group are listed after the fabric description and references to illustrated sherds are given.

BB1: *Black burnished ware* 1. 47 (506g). Black or dark grey. Hard with smooth feel and granular fracture. Abundant, well-sorted, medium-sized, subangular quartz. Microscopic examination of the sherds suggested that they were Dorset BB1 (Tomber and Dore DOR BB 1).

Forms: Plain-, bead-, flat- and incipient bead-rim dishes and bowls and a cooking jar (*cf.* Gillam 1976 nos 79, 68, 42 and 4 respectively). The forms date predominantly to the second half of the second century and the early part of the third century. Nos 42, 51, 53 and 54.

BS: *Black sandy wares*

BSA2: Dark grey to black throughout. Abraded sherds look grey rather than brown or black on the surface. Hard, smooth with fairly smooth fracture. Sparse, well-sorted, subangular quartz; moderate, well-sorted, fine, gold mica. Wheel made.

Forms: carinated and cordoned bowls with everted or bead rims predominate. Single examples were also identified of a rusticated jar, a platter and an unusual jar or beaker with slightly rebated rim, a sharp shoulder carination and burnished lattice decoration on the girth. Nos 17–8, 32 and 46.

BSA3: Grey-brown sandy ware. Dark grey-brown with brown margins and grey core. Soft with sandy feel and irregular fracture. Moderate, well-sorted, medium-sized, subangular quartz; sparse, ill-sorted, fine to coarse, rounded, orange-brown, argillaceous inclusions — ?Mercia Mudstone; rare, ill-sorted, fine to medium-sized feldspar, but see petrology report. Almost a grey ware but the margins and core are distinctive. Wheel made.

Forms: as BSA2, carinated and cordoned bowls were identified but to them were added several jars with short, sharply everted rims, two of which were decorated with burnished lattice decoration, an everted rim and a rebated rim, both probably from beakers of unknown form. A near complete lugged vessel was found in context 22/23 with dished, everted rim and lattice burnishing around the central body zone. Nos 15, 36 and 47.

BSB1: Brown sandy ware with small amount of shelly inclusions. Brown-dark brown with lighter brown margins and grey core. Soft with fairly smooth feel and irregular fracture. Moderate, well-sorted, medium-sized, angular quartz; moderate, ill-sorted, fine to coarse vesicles; and moderate, ill-sorted, fine to medium-sized, rounded, orange and brown inclusions.

Forms: Everted rim and bodysherds from bowls or beakers with carinations and cordons, similar to the types made in BSA fabrics. Decoration was limited to burnishing and cordons. No. 19.

CT: *Shelly wares*

CTA1: *Oxidised shell-gritted ware*. Orange with buff core. Soft with smooth feel and laminar fracture. Moderate, ill-sorted, medium to coarse platey vesicles; rare, rounded, orange clay pellets. Possibly handmade.

Forms: body sherd from a wide mouthed vessel, probably a storage jar

CTA2: *South Midlands shelly ware*. Dark brown-black with brown margins. Hard with smooth feel and laminar fracture. Moderate, ill-sorted, medium-sized to fine platey vesicles.

Forms: a bead-rim necked jar and two hooked-rim necked jars, one with rilling on the shoulder. Nos 48 and 56.

CTB1: Dark grey-black. Hard with slightly rough feel and laminated fracture. Abundant, ill-sorted, platey vesicles; rare, medium-sized, rhomboidal vesicles; sparse, medium, rounded quartz.

Forms: scored ware jar, two cordoned bowls and a jar with a triangular rim. Nos 3, 13–14 and 37.

CTB2: Dark grey to buff. Hard with slightly rough feel and irregular fracture. Moderate, ill-sorted, fine to medium-sized, platey vesicles; moderate, well-sorted, medium-sized, subangular quartz; sparse, well-sorted, fine, rounded, red-brown argillaceous inclusions.

CTB2B: CTB2 variant. Orange to buff. Hard with smooth feel and irregular fracture. Sparse, ill-sorted, fine to medium-sized, platey and rhomboidal vesicles; moderate, ill-sorted, fine to coarse, subangular to rounded, red, buff and grey argillaceous inclusions; sparse, well-sorted, medium-sized, quartz. One sherd only with more argillaceous inclusions than usual.
Forms: neckless jars with flat, inturned rims and a complete ovoid jar with upright neck and flattened rim, expanded externally, with scoring over the body and flat base. Nos 10, 12 and 16.
CTD1: Buff to grey-brown. Hard with smooth, leathery and irregular fracture. Sparse to moderate, ill-sorted, fine to coarse, platey vesicles; sparse, ill-sorted, fine to coarse, rhomboidal vesicles; rare, medium-sized, subrounded quartz; sparse, ill-sorted, medium to fine, subrounded, red-brown and grey argillaceous inclusions. Similar to CTB1 but has a distinctive leathery feel and fewer vesicles. Also similar to MM group, especially MM2, but probably has fewer argillaceous inclusions, although these are hard to see.
Forms: necked jars with stubby everted, bevelled bead and triangular rims, and cordoned neck jars with bead-rim and flat-topped, triangular rim. No. 23.
DBY: *Derbyshire Ware* (as Kay 1962, Tomber and Dore 1998, DER CO).
Forms: medium-necked jars with rebated, cupped, rippled cupped, beaded cupped, everted and hooked rims and a narrow-necked jar with outcurving rim.
FLA1: *White ware*. White. Soft with smooth feel and fracture. Sparse, well-sorted, fine, subangular quartz; rare, fine, rounded, red-brown inclusions — probably iron oxides.
Forms: bead-rim from hemi-spherical bowl, bodysherd from rouletted beaker, flagon handles and bases and rim sherd from a jar with blunt everted rim.
FLB: *White slipped ware*. Orange with off-white slip. Hard with sandy feel and irregular fracture. Moderate, well-sorted, medium-sized, subangular quartz; sparse, ill-sorted, medium to coarse, rounded, brown, iron oxides.
Forms: body sherds only.
GG1: *Green-glazed ware*. One bodysherd (1g.) Grey with green glaze. Hard with smooth feel and fracture. Sparse, well-sorted, fine, subangular quartz; rare, fine, brown, iron oxides.
GRA: *Fine grey ware*. As GRA1 but uncertain identification as Little Chester product.
GRA1: *Little Chester fine grey ware*. Light grey, often with pale grey core. Hard with smooth feel and finely irregular or smooth fracture. Sparse, well-sorted, fine, subangular quartz; rare, fine, rounded, black iron oxides.
Forms: carinated and cordoned bowls, wide-mouthed necked bowls, rouletted beakers or small jars with short, everted rims, an indented beaker, short, everted-rim jars, rusticated jars and a hooked rim jar. Nos 40–1, 44 and 49.
GRAN?: *Granitic sherd*. Single body sherd.
GRB1: *Grey ware*. A group of grey fabrics tempered with moderate quantities of medium-sized quartz not otherwise subdivided due to the endless variations in the attributes and impossibility of either consistently identifying subgroups or identifying their sources. Distinctive fabrics are given their own code once recognised and the forms can be diagnostic, particularly in the case of the Derbyshire kiln coarse wares.
Forms: plain-, flat- and flanged rim dishes and bowls, carinated bowls, everted-rim, wide-mouthed jars, inturned, bead and flange bowls, medium-necked jars with everted rims, rusticated jars and narrow-necked jars with everted rims. The carinated bowls were

decorated with zones of burnished decoration such as lattice and zigzag, demarcated with grooves and cordons. The narrow-necked jars had zones of wavy line and lattice burnishing, and undiagnostic body sherds bore dash rouletting, multiple horizontal grooves and lattice or wavy line burnishing. Nos 21–2, 26–8, 30–1, 33, 35, 43, 45 and 50.

GRB2: *Grey ware with quartz and shell inclusions.* Light grey with dark grey core. Hard with rough feel and irregular fracture. Moderate, well-sorted, medium-sized shell; sparse, medium-sized, subangular quartz. Possibly misfired CTB1.

Form: carinated bowl body sherd.

GRB4: *Gritty dark grey ware.* 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.

Forms: short everted rim sherd with slightly dished internal bevel from necked jar or beaker and a body sherd with burnished lattice decoration. No. 39.

GTA10: *Grey ware with clay pellets.* Grey-brown with brown margins and grey core. Hard with rough feel and irregular fracture. Sparse, well-sorted, medium-sized, subangular quartz; sparse, ill-sorted fine to medium-sized, platey vesicles; sparse, ill-sorted, fine to medium-sized, rounded, grey inclusions — clay pellets.

Forms: stubby, everted-rim jar, bead-rim deep bowl and rusticated sherd. Nos 24–5.

MH: *Mancetter-Hartshill mortarium* (identified by K. Hartley).

Forms: smooth hammerhead (AD 240–350), painted, smooth hammerhead (AD 230–300+), multi-reeded hammerhead (AD 240–350) and flanged-rim mortaria (AD 170–220).

MM1A: Orange-buff-brown surface with darker brown core. Hard with bumpy, rather leathery feel and irregular fracture. Moderate, ill-sorted, coarse to fine, subangular to subrounded orange-brown and grey argillaceous inclusions; rare, ill-sorted, medium to fine subangular quartz; rare, ill-sorted, fine to coarse, laminar or rhomboidal vesicles.

MM1B: as MM1A but with moderate, well-sorted, medium-sized, subangular quartz. These two fabrics are similar in all but quartz content.

Forms: MM1A: jars or bowls with simple rounded, almost upright and slightly everted rims. One body sherd bore traces of three incised or scored lines, two intersecting at an acute angle. Another sherd was curiously rounded at one edge ending in a groove and was either curving in to a cordon or, more likely, a grooved base. A sherd from 0055 had an out-turned base. A sherd from F13 primary fill had split in such a way as to suggest slab-built construction. Nos 2 and 7.

Forms: MM1B: a jar with rather flattened rim, pinched out externally and internally, with scoring, a base with a groove just inside the base and several scored body sherds.

MM2: Dark grey-brown, often with red-brown margins and sometimes with patches of buff or light brown surface. Hard with a slightly leathery feel and irregular fracture. The surface characteristically has a rather bumpy appearance. Moderate, ill-sorted, fine to coarse, rounded and subangular, grey and buff argillaceous inclusions; sparse, ill-sorted, rounded, medium-sized, ferruginous inclusions; sparse, ill-sorted, medium to coarse, platey vesicles or cracks; sparse, medium-sized, subangular quartz; rare, fine, mica.

This fabric is virtually the same as MM1A but the colour tends to be brown to grey rather than dark brown and the argillaceous inclusions tend to be yellow-buff rather than

brown to orange. The MM2 group appears to be all wheel thrown but thin sectioning should determine if the same fabric is being used.
Forms: a medium-necked jar with rounded, everted rims, cordoned on neck with vertical combing, a jar with simple everted rim and grooved shoulder and a neckless jar or beaker with flattened bead rim and faint rilling. Nos 20, 29 and 60.

This fabric group has several puzzling features. It is not certain whether the argillaceous inclusions are grog or mudstones or both. The rounded nature of some suggests a mudstone while others have a more angular appearance. The ferruginous inclusions may be ironstone or iron oxides. In addition, the argillaceous inclusions are extremely difficult to see in the darker brown or grey sherds but are suggested by the bumpy surface of the sherds, typical of this group. Fabric MM2 compares well with so-called "Trent Valley ware" which covers several fabrics including grog-tempered wares. It may be that some of these grog-tempered wares are, in fact, of this fabric.
NV: *Nene Valley colour-coated ware.*
NV1: White with dark brown colour coat.
Forms: hunt cup, rouletted beaker, dish, beaker with barbotine decoration, long necked beaker with bead rim, necked jar, flanged bowl, flanged hemispherical bowl and castor box.
NV2: Orange with brown or orange colour coat.
Form: plain-rim dish.
NV3: Nene Valley grey colour-coated ware. White fabric with grey colour coat. Hard with smooth feel and fracture. Moderate, well-sorted, fine, subangular quartz; sparse, fine, rounded, red-brown, iron oxides.
Forms: rouletted beaker body sherds.
OAA1: *Little Chester oxidised fine wares*, as GRA1 but orange.
Forms: flanged, hemispherical bowl and narrow-necked jar. No. 58.
OAB1: *Oxidised sandy ware* as GRB1 but orange.
Forms: bead rim, everted-rim jar, and body sherds with cordons and wavy line combing.
OAC1: *"Pre-Derbyshire" ware.* Orange. Soft with rough feel and irregular fracture. Moderate, well-sorted, medium-sized, subangular quartz; sparse, ill-sorted, coarse to fine, rounded, brown iron oxides; rare, medium-sized, rounded, buff clay pellets.
Forms: cupped-rim jar and possible lid sherd.
OBA1: *Little Chester fine buff ware* as GRA1 but buff.
Forms: everted-rim jar, narrow-necked jar and rouletted sherd.
OBB1: *Oxidised sandy ware (buff)* as GRB1 but buff.
Forms: flanged, hemispherical bowl.
OBC1: *"Pre-Derbyshire" ware* as OAC1 but buff.
Forms: cupped-rim jar and lid sherd.
OXCM: *Oxfordshire cream mortaria* with rose quartz trituration grits (Young 1977). Body sherd only.
Q: *Quartz-tempered wares (handmade).*
Q2: Dark grey-brown, with dark core and sometimes with lighter grey-brown patches on surface. Hard with sandy feel and irregular fracture. Moderate to abundant, well-sorted, medium-sized, subangular quartz; rare, fine, mica; sparse, medium-sized, rounded, brown inclusions; rare, coarse sandstone. This group was initially subdivided

into Q2A and Q2B on the basis of the quantity of quartz inclusions, Q2A having abundant quartz and Q2B having moderate quartz. After closer inspection, it was decided that these fabrics represent a continuum and the fabric groups were coalesced for publication.
Forms: flat, inturned-rim jar with finger tip decoration on upper body and jar with rounded, slightly everted rim. Near complete ovoid neckless jar with rounded rim and pinched out base. Scored body sherds. Nos 5, 8–9 and 34.
Q3: Grey-brown with darker core and irregular surface colour. Soft with very rough feel and irregular fracture. Moderate, ill-sorted, medium to coarse, angular quartz; sparse, very coarse, rounded sandstone; sparse, ill-sorted, fine to coarse, rounded, brown inclusions. Handmade. Two of the sherds in this group contained inclusions that looked granitic.
Forms: jars with rounded, tapered and everted rims and scored body sherds. No. 4.
ROX: *Oxfordshire red colour-coated ware*, body sherd only.
S1?: *Fine shell-tempered ware.* Grey with dark grey core and buff inside surface. Soft with slightly rough feel and irregular fracture. Moderate, ill-sorted, fine shell, occasionally coarse; sparse, medium-sized, subrounded quartz; sparse, medium-sized, rounded, brown inclusions. Finer than the later CTB1 fabric.
Form: tapered rim sherd from jar or bowl. Nos 6 and 52.
SL: *Slag-tempered.*
SL1: Grey with buff or grey, outer surface or grey-brown with grey core and brown-buff margins. Hard with harsh feel and irregular fracture. Abundant, ill-sorted, fine to medium-sized, angular, white, vitrified, fuel ash slag inclusions; sparse, ill-sorted, fine to medium-sized, subrounded quartz; rare, ill-sorted, coarse to fine, rounded, brown argillaceous inclusions; rare, ill-sorted, coarse to medium-sized, rounded, black inclusions; rare, very coarse, sandstone.
Forms: at least one corrugated vessel with cordons and with post-firing perforations apparently randomly spaced. One sherd from a cordoned or corrugated vessel was decorated with burnished acute, lattice decoration. This may have been a separate vessel. No. 11.
SL2: Grey with dark grey core. Hard with smooth feel and irregular fracture. Sparse, ill-sorted, subrounded, coarse to fine quartz and sparse, coarse, vitrified, fuel ash slag.
Forms: small body sherds with uneven surfaces.
SS1: *Coarse sandstone-gritted.* One sherd only. Black with oxidised orange interior surface. Soft with very rough feel and irregular fracture. Abundant, ill-sorted, medium to coarse, subangular quartz; moderate, very coarse, rounded sandstone; sparse, ill-sorted, fine to coarse, rounded, brown inclusions; sparse, fine, mica. Handmade.
Form: an upright, rounded rim sherd from a jar or bowl with a vestigial neck. No. 1.
TS: samian (see Samian Report above).

Illustrated Pottery

Figure 6:
Primary fills:

1 SS1 upright, rounded rim sherd from vessel with vestigial neck. 0055 ALR. Primary fill of F13.
2 MM1A plain rounded rim jar. Handmade. 0107 APS.

3 CTB1 complete scored jar. 0153 BCS. Primary fill of F12.
4 Q3 everted rim sherd. 0119b ASK.

Early sherds in later contexts:
5 Q2B tapered pinched-out rim. 0035/37 AAQ junction of walls.
6 S1 rounded rim from neckless vessel. 0045 remnants of floor.
7 MM1A rounded, pinched out rim. 0015 surface area around post-hole 2.
8 Q2A inturned, flat rim from neckless jar, with possible finger indentations just below rim, 0023 AHN (F12).

Fire-cracked pebble and upper silt layers:
9 Q2A very thick body sherd with four vertical striations, possibly scoring. 0073 ASE.
10 CTB2B flat rim sherd from jar with inturned rim and rilling. 0073/73A ASA.
11 SL1 bodysherd of cordoned and bulging vessel. 0073/73A ASU.
12 CTB2 inturned, flat rim from neckless jar, probably wheel thrown. 0042 AKO.
13 CTB1 rim and bodysherd of cordoned cup. Wheelmade. 0042 AKA.
14 CTB1 bodysherd of cordoned cup or bowl with cordon and burnished body. Probably wheelmade. 0050 XXY .
15 BSA3 bodysherd of cordoned vessel. Wheelmade. 0050 XXX sub-floor level SE corner of building.

Charcoal layers (F12):
16 CTB2 flat rim sherd from jar with inturned rim. 0081 ASD.
17 BSA2 plain, slightly flaring rim from cordoned bowl in fine black ware with brown core and grey margins. 0086 ARR.
18 BSA2 everted beaker rim. 0086 ARL.
19 BSB1 plain, slightly flaring rim sherd, probably from carinated or cordoned beaker or bowl. 0086 AUW.
20 MM2 necked jar with shoulder cordon and vertical combing. 0088 AUG.
22 GRB1 everted rim sherd. 0086 ARB.
23 CTD1 bead rim sherd of native jar. 0081/76 APT.
24 GT grey with brown core and clay pellet or grog inclusions. Rusticated sherd. 0081/77 APU. (Fig. 7)

Figure 7:

Hearths:
21 GRB1 rusticated sherd. 0086 AUG. H8. (Fig. 6)
25 GTA10 everted-rim jar. 0096 ZZT. H8.
26 GRB1 everted-rim jar. 0093 AOA. H2.
27 GRB1 everted rim. 0093A ATH. H2.
28 GRB1 carinated sherd. 0093 ATF. H2.
29 MM2 upright rim of jar or beaker. 0091 ATM. H8.

Layers pre-dating aisled building floor deposits:
30 GRB1 everted rim sherd of beaker. 0084 ARO.
31 GRB1 wide-mouthed everted jar rim sherd. 0083/4 ARN.
32 BSA2 plain, slightly flaring rim sherd of bowl or beaker. 0022/23.

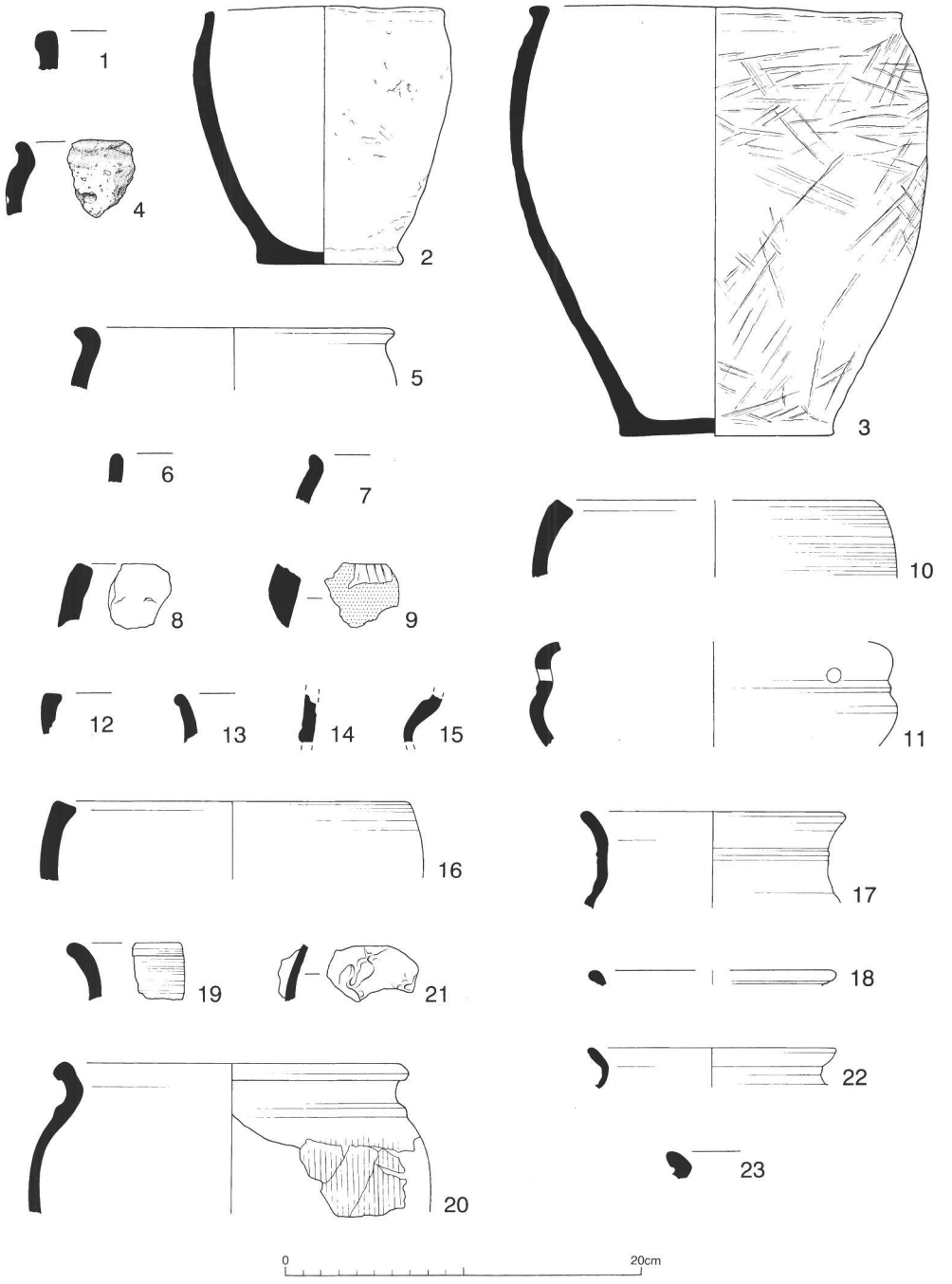


Fig. 6: Ockbrook, Little Hay: pottery nos 1–23. Scale 1:4.

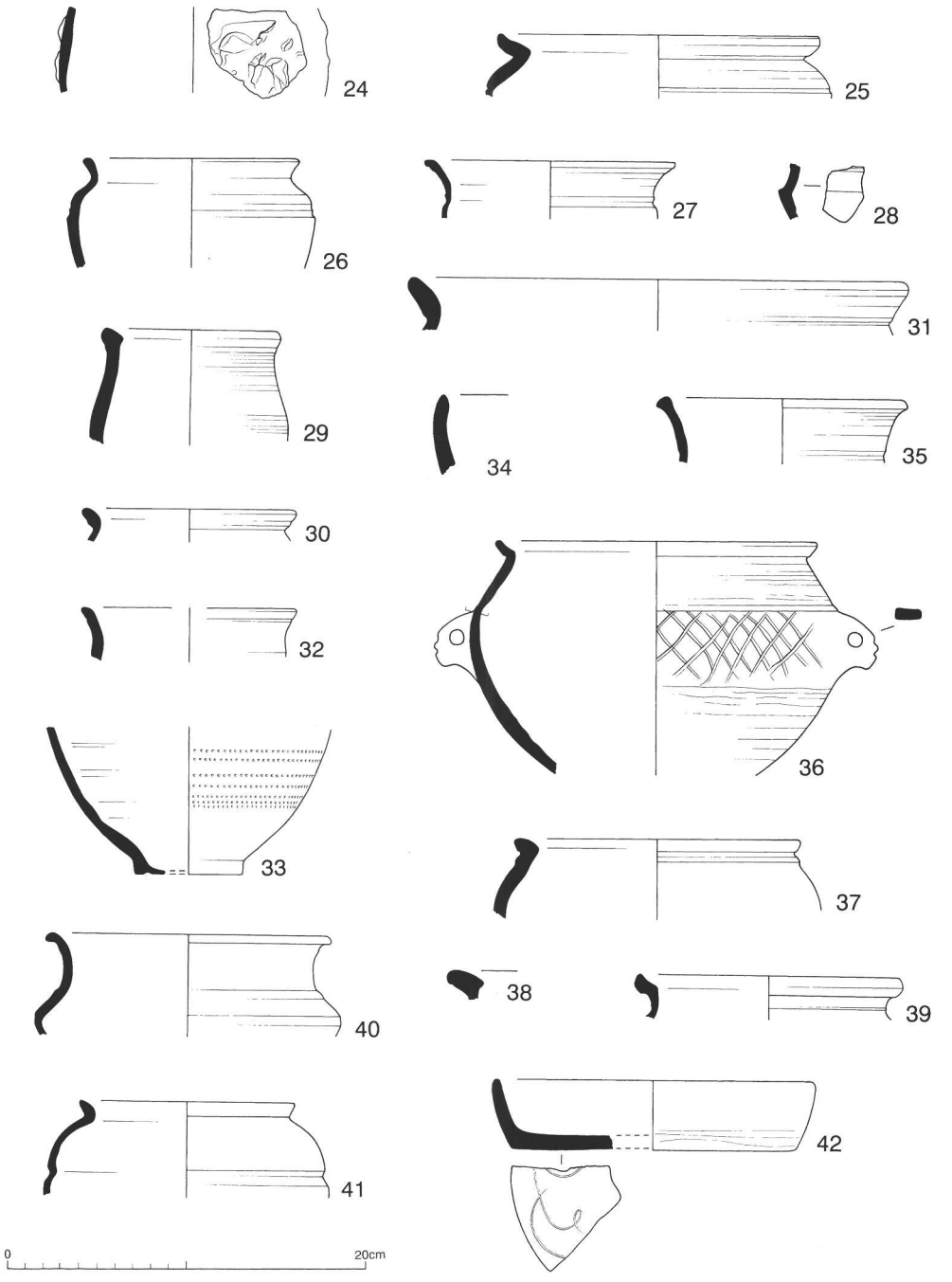


Fig. 7: Ockbrook, Little Hay: pottery nos 24–42. Scale 1:4.

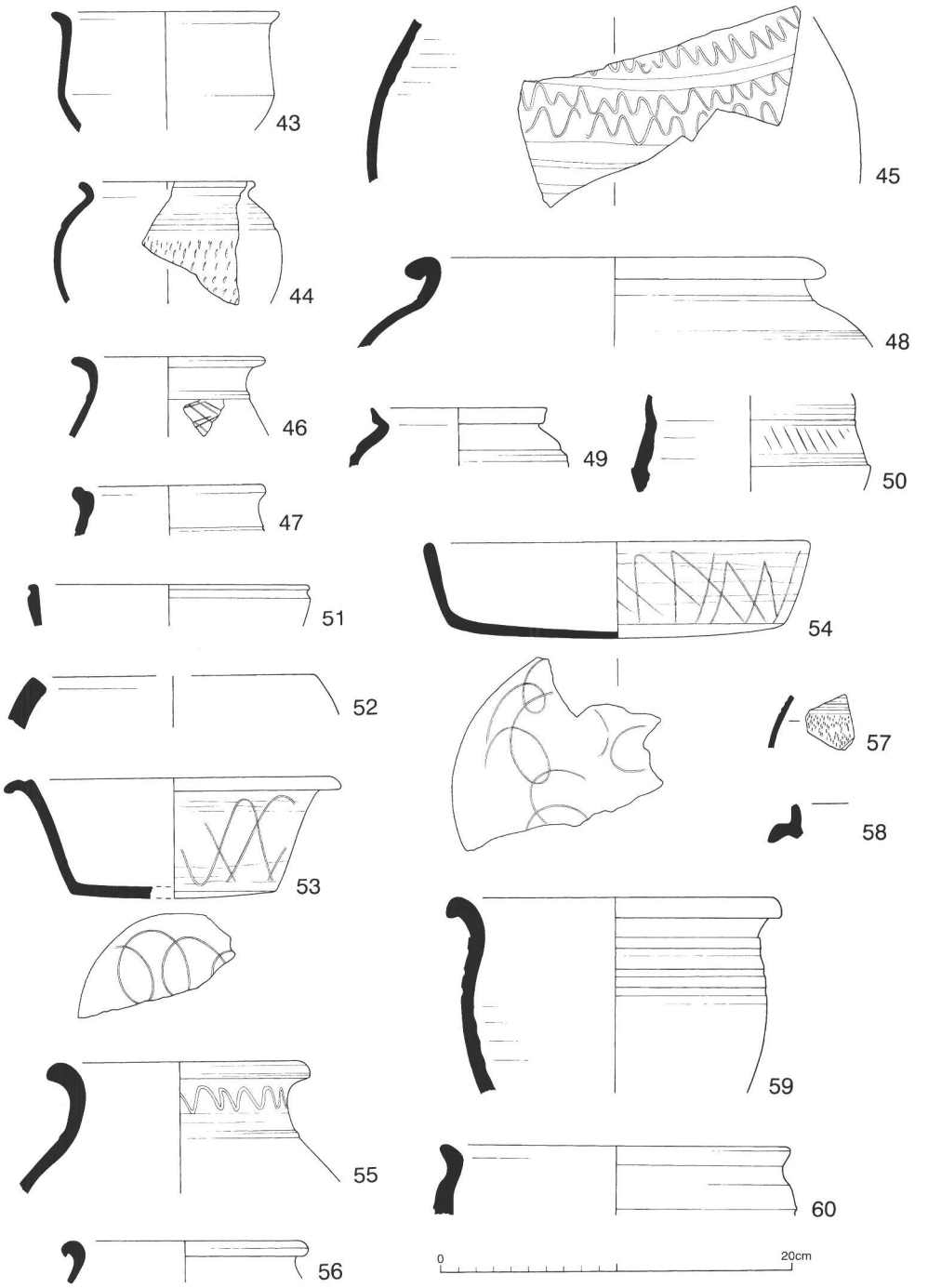


Fig. 8: Ockbrook, Little Hay: pottery nos 43–60. Scale 1:4.

33 GRB1 rouletted jar/beaker sherd. 0023/75 ANJ.
34 Q2 plain rim jar. 0081/23 ANO.
35 GRB1 everted rim. 0023 AOG.
36 BSA3 lugged vessel in black, medium-quartz tempered fabric. 0023 AMP.
37 CTB1 cordoned neck jar. Probably wheel made. 0023 ALI upper fill of section M.
38 GTA10 rather triangular rim with internal overhang. Wheel made. 0023/81 AMX upper fill section M.
39 GRB4 everted rim, necked jar with flat surface inside rim reminiscent of butt beakers. 0023 AHS upper fill of section M.
40 GRA1 wide-mouthed, necked jar with everted-rim. 0023 AMW upper fill of section M.
41 1 short, everted-rim jar with groove outside upper body. 0023 ZZZ upper fill section M.
42 BB1 plain rim burnished dish with burnished loops outside base, sooted externally. 0022/23 upper fill section M.

Figure 8:

Aisled building floor:
43 GRB1 carinated bowl with short everted rim. 0022 AHD.
44 GRA1 everted-rim jar or beaker with rouletted decoration. 0022 AHD.
45 GRB1 bodysherd of jar or bowl decorated with wavy lines. 0022 ZZV.
46 BSA2 fine necked beaker with short, everted rim decorated with single cordon at the neck above zone of lattice burnishing and burnished on the neck. Wheel made. 0022 AGF.
47 BSA3 rebated rim of jar or beaker, with groove just below neck area. Wheel made. 0008 gritstone pebble area in Nave room.

Aisled building post holes and other features:
48 CTA2 necked jar with undercut, rounded rim and faint traces of rilling or multiple grooves on upper body. 0057A post-hole 1.
49 GRA1 everted-rim jar. 0122A AUY post-hole 3.
50 GRB1 carinated bowl with oblique burnished line decoration. 0122A AUH.
51 BB1 grooved rim, splay-walled dish. 0070 rectangular hole. F10.
52 S1 inturned, flat rim jar. 0120 ASY.

Late hearth H1 corn drier:
53 BB1 incipient flanged bowl, burnished all over with burnished intersecting arcs outside the body and burnished loops outside the base. 0014 hearth.
54 BB1 plain rim dish, burnished all over with burnished intersecting arcs outside body and loops outside base. 0014 hearth.
55 GRB1 narrow-necked jar with burnished everted rim and upper body, decorated with neck cordon and burnished wavy lines on the neck area. 0016 hearth XXW.
56 CTA2 bead-rim, necked jar. AFM hearth area.
57 NV3 abraded sherd from thin-walled beaker decorated with multiple grooves and rouletting. 0014 hearth area.
58 OAA1 abraded rim and flange sherd from fine flanged bowl. 0016 ACH hearth area.

Late structure:
59 GRB1 undercut, everted-rim, wide-mouthed jar. 0151A BBX F6.

Unstratified:
60 MM2 everted rim jar. 0004A ANW.

Typological affinities and stratigraphic sequence

For the purposes of analysis, the pottery was divided into groups, relating to the stratigraphic sequence. Group 1 is from the primary ditch fill, group 2 from the upper fill, 2a is specifically in association with the fire cracked pebbles, 3a is from the hearths and charcoal layers, 3b from the silty layer between 3a and 4 or other features pre-dating the aisled building, 4 is the aisled building and associated features, 5 is from later features.

Group 1: Iron Age pottery

Typology

The earliest material typologically comprises handmade, undecorated and scored neckless jars in fabrics CTB1, CTB2, MM1A, MM1B, MM2, Q2A and B, Q3 and SS1 (nos 1–8 and Table 4). One undiagnostic, coarse slag-tempered sherd was recovered from low in ditch 119 and may belong to this group. The body forms appear to be ovoid in profile, although many sherds were small body or rim sherds for which the body profile could not be reconstructed. The flattened rims and some of the plain rounded rims may be from barrel jars. Rim forms comprised upright rounded rims, tapered or rounded, everted rims, rounded, expanded rims and flat rims (nos 2, 4, 1 and 8 respectively). The scored ware jar rims were flattened and rounded externally or flattened, pinched out externally and internally (no. 3), and were found in fabrics MM1B and CTB2 respectively. The rim form contrasted with the rounded and everted rims of the undecorated jars (nos 2 and 4). Undiagnostic scored body sherds were additionally found in fabrics Q2A and Q2B. A Q2A neckless jar with an inturned, slightly rounded, flat rim was present with two fingertip impressions, possibly decorative (no. 8).

These vessel types are amply paralleled on Trent Valley sites (as at Gamston and Willington, Knight 1992, group 2; and Elsdon 1979, assemblage 2), and scored ware generally is found over the south and east Midlands. At Gamston and Willington the plain ovoid jar forms with rounded, flat and everted rims are found in association with scored ware and, sometimes, with small numbers of wheel-thrown jars and bowls (Knight 1992, 50 nos 23–90; Elsdon 1979, nos 37, 43, 60, 61, 71, 75, 77–8). At Gamston, groups with wheel-thrown vessels are dated to the late 1st century BC to earlier 1st century AD, but undecorated ovoid jars are imprecisely dated to the latter half of the 1st millennium BC if other types are absent, and even scored ware is given a date range of 5th or 4th century BC to later 1st century BC and 1st century AD. At Willington group 2 is given a similar date range in the 4th to 2nd centuries BC with a possible extension into the 1st century AD or later. The precise form of the scored ware jars is not matched at Gamston or Willington, although similar jars are illustrated (*cf.* Knight 1992, no.6). The flattened, rounded or pinched out form with scoring is present at Holme Pierrepont in association with a wheel made cordoned sherd (unpublished report by S. Elsdon).

Parallels for both the plain and scored ovoid jars with plain, rounded rims, everted and flat rims may be identified at Weekley, Northamptonshire, in contexts spanning the

FORM/FABRICS	Q2	Q2A	Q2B	Q3	SS1	MM1	MM1B	MM2	MM2?	S1?	CTB1	CTB2	CTB2?	CTA1	CTD1	SL1	CTB2B	BSA2	BSA3	BSB1
Handmade jars																				
Pinched out base						1														
Flattened rim, pinched out							13													
Flattened rounded rim											40									
Rounded rim	33	1	1			1				1										
Rounded and expanded rim					1															
Everted rim			2	1		2														
Flat rim		1							1											
Wheel thrown jars																				
Flat, inturned rim												2	1				1			
Short, stubby everted rim															1					
Cordoned neck, upright rim															1					
Bevelled bead rim															1					
Short everted rim								2												
Cordoned neck, expanded rim								7												
Cordoned neck, bevelled rim								1	1											
Flattened, expanded rim											1				2					
Rusticated																		6		
Lugged, rebated rim																			46	
Storage jar														1						
Platter																		4		
Bead rim											1									
Carinated, cordoned bowls																				
Carinated bowl																		1		
Everting rim																			1	
Early type											1					11				
Everted rim, early type																		1		
Bead rim, early type											1					1				
Later type																		4		
Everted rim, later type																		6	10	
Bead rim, early type																		7		1
Cup																				1
Beakers																				
Everted rim																			1	
Rebated rim																			1	
Everted rim with burnished lattice zone																		4		

Table 4: Ockbrook early fabrics and forms (using sherd counts).

2nd to 1st century BC and mid 1st century AD, in which case also associated with wheel-thrown vessels (Jackson and Dix 1988, figs 31 nos 42–3 and 46, from pre-belgic groups, and fig. 37, nos 98–9, 110 and 113, dated to the mid 1st century AD). Similarly at Wakerley, Northamptonshire (Jackson and Ambrose 1979, nos 5, 8, 13, 23, 27, 62, 70, 93–4), scored ware with everted rims and a flat-rim jar are present from group 1, dated to the 2nd century BC, and continue into pre-Belgic group 2, and flat, everted and rounded rim jars are associated with wheel thrown "belgic" forms of the mid 1st century AD. At Whitwell, Rutland, scored ware jars with everted, flat and rounded rims are associated with undecorated jars with rounded and flat-topped rims and are dated to 400–100 BC, although a possible extension into the early Roman period is acknowledged (Todd 1981, fig. 12).

Both locally and in the Midlands generally there is, therefore, evidence for both scored and undecorated jars of this type from the pre-belgic period to as late as the mid 1st century AD. Knight notes a rise in popularity of the ovoid jar form rather than the ellipsoid or barrel form during the second half of the 1st millennium BC, coupled with a decline in finger decoration (1992, 50). Only one sherd, a flat-rim jar, possibly of ellipsoid form, bore any finger impression, so ephemeral it may be accidental, and where it could be judged, most of the jars seemed to be of ovoid form. The stratigraphic position of these types, appearing in the primary silt of the ditches, together with their relationship with later wheel made types which accompany them in the middle and upper ditch fills (Table 5), suggests that this group is pre-Belgic in date but did not predate the arrival of wheel made vessels by very long.

The fabrics can also be paralleled on Derbyshire and Nottinghamshire sites. At Gamston the ovoid jar types were being made in quartz and shell-tempered wares while at Willington quartz-tempered wares were used (Knight 1992, 40–1; Elsdon 1979, 162–3). At Holme Pierrepont, Nottinghamshire (unpublished) quartz, argillaceous and shell tempering was identified, and at Thurvaston (unpublished) and Swarkestone, Derbyshire (Elliott and Knight 1999), quartz and argillaceous tempering was used for undiagnostic Iron Age and late Iron Age types respectively.

Stratigraphy

The earliest stratigraphic groups came from the primary fills of F12 and 13. Phase 1 material from F13 comprised handmade ovoid jars with rounded rims in fabrics SS1, MM1A and Q2, including the complete profile of a MM1A jar, with everted rim sherds from two MM1A and Q2A jars from the junction of the primary and later silt layers. This assemblage points to a pre-Belgic date for the ditch. A complete scored CTB1 jar, along with sherds of Q2A and a scored sherd of MM1B, was recovered from uncontaminated, primary fills of F12 and these also belong to this phase.

Group 2: Late Iron Age–Conquest type pottery

Typology

Typologically later material was found in the middle and upper fills of the ditches. This is designated group 2A when in association with the fire cracked pebbles, preceding the phase 3 hearths, and group 2 when in the undifferentiated upper layers. This material comprised sherds of Iron Age type (as above) and wheel-thrown sherds of Late Iron Age

Fabric	Primary fills of ditches	Fire cracked stone and secondary silt	Undistinguished upper ditch fills	Charcoal layers and hearths	Post-hearths and pre-building layers	Floors, walls and yards of aisled building	Features and layers post-dating aisled building	Total sherd counts
Fabric	Group 1	Group 2a	Group 2	Group 3a	Group 3b	Group 4	Group 5	
Q/SS	40.9%	13.0%	9.1%	7.1%	3.9%	1.8%	0.7%	82
MM1	10.2%	5.7%		3.5%	7.7%	1.3%	0.0%	46
MM2		10.1%	9.1%	10.6%		0.6%	0.7%	25
CTB1/S1	46.5%	21.6%	9.1%	2.4%	7.6%	2.3%	0.7%	97
CTD		10.1%		3.5%	0.5%	1.1%		17
SL		18.8%	27.3%	1.2%	0.5%	0.6%		27
BSA2		1.4%		25.9%	2.4%	3.4%		46
BSA3		4.3%	9.1%	11.8%	26.2%	0.8%		78
BSB1		2.9%		2.4%				4
GTA10		1.4%		5.9%	0.5%			9
GRA/OA/OB			4.2%	5.9%	%13.9	6.3%	2.1%	96
FL				0.0%	3.8%	0.8%		28
BB1		1.4%			3.8%	4.4%	15.1%	63
GR		2.9%	9.1%	18.8%	23.9%	19.5%	28.8%	364
OAB/OBB		1.4%		1.2%	1.4%	4.0%	0.7%	42
OAC/OBC						4.6%	7.2%	57
DBY			18.2%		2.9%	42.0%	30.2%	430
CTA2						0.6%	1.4%	5
NV/?ROX						1.0%	4.3%	30
Mor			9.1%		0.5%	1.5%	3.6%	38
DR20					0.5%			1
TS						2.3%	2.9%	23
Other						0.6%		3
	97.6%	99.2%	%100.1	100.2%	100.0%	99.5%	98.4%	1611

Table 5: Ockbrook pottery relative quantities by group (using sherd count values)

to early Roman type (Table 5). Shell, argillaceous and fine quartz-tempered fabrics (CTB1 and 2, CTD1, MM2 and BSA1 and 2) predominated with a small amount of slag-tempered ware. The shell and argillaceous tempered wares relate to the Iron Age pottery in fabric but tend to be reduced rather than oxidised or partially oxidised. The quartz and slag-tempered wares were finer than the Iron Age quartz and slag-tempered sherds. Some of the forms relate to Iron Age handmade types, the flat-rim jars and simple everted-rim jars, but are given a different treatment. The flat rims, in CTB2, are inturned and the body is rilled (nos. 10, 12 and 16). The everted rim, in MM2, is more pronounced and defined and the jar body bears a shoulder groove (as no. 20). A rather squared, thickened rim also appears on CTB1 and CTD1 jars, often with a shoulder groove (as no. 23) and a number of jars, some rilled or combed, with cordoned necks and bead, slightly everted or thickened upright rims in MM2 and CTD1 fabrics were identified. The BSA and SL wares were used to make a range of cordoned and carinated bowls, beakers and a possible platter.

Jars

The shift from handmade to wheel-thrown coupled with the replacement of scoring with combing, rilling and shoulder grooves, the rim forms and the introduction of neck cordons can be related generally to coarse wares in the Late La Tene ceramic tradition found in southern England. Birchall, for example, identified a typologically early group at Aylesford characterised by shoulder corrugations and combing (Birchall 1965, 248 and type Va, nos 73–9) and suggested a pre-Caesarian date. Knight (1984, 63–71) relates this group to an early group in the Nene Valley and Northamptonshire and suggests a date in the latter half of the 1st century BC. A number of corrugated/cordoned jar forms, some with combing, are identified by Thompson and dated (1982, type B2 in contexts dated from the 1st century BC to mid 1st century AD with an early bias). Similarly the inturned, flat-rim jar with rilling is present in the southeast of England with a thickened rim (*cf.* Thompson 1982, type C7–3) and Pollard dates it to the late 1st century BC to 1st century AD (1988, fig. 12 no. 2).

These south-eastern types are not, however, close parallels with the vessels found here, rather they are likely to be part of the same stylistic tradition or trend. Neither need they be of precisely the same date since the south-eastern Late La Tene ceramics developed independently of those in the Midlands, and even in the south Midlands the material culture suggests quite different social conditions may have prevailed affecting the rate of change. Similarly in Lincolnshire, at Old Sleaford, cordoned jars occur in the pre-coin mould group in phase 1, dated to the late 1st century BC, but combed jars are dated to phase 2, to the first half of the 1st century AD (*cf.* Elsdon 1997, 107 and no. 43). In Dragonby Ceramic Phase 6, dated second half of the 1st century AD, jars with neck cordons and regular combing occur and a possible proto-type jar with neck cordon and vertical facets is illustrated from phase 5 (May 1996, 416, type 16 and *cf.* phase 5 no. 36). At Leicester, a pre-Belgic group, dated somewhere between the late first century BC and AD 30, included handmade, rilled and combed jars, a jar with a shoulder bulge, similar to the beginning of a cordon, and plain-rimmed shouldered, ovoid jars. These dated examples provide analogues and, at times, parallels for the cordoned and combed vessels, and present the possibility of a date range for them beginning in the second half of the 1st century BC.

Locally at Willington, Derbyshire, wheel made sherds were present in very small numbers in group 2 and they, and the regularly combed sherds are dated to the Late Iron Age with a date as late as the early 1st century AD mentioned (Elsdon 1979, 163–4 and 170). These late sherds include a rim sherd from a cordoned neck jar in a oxidised ware with sand and orange-brown inclusions, ?argillaceous, a combed sherd in a reduced sandy ware and a neckless jar with slightly inturned, internally bevelled rim in a sandy ware (*ibid.* nos 70, 67 and 117), all types comparable to the Late Iron Age types identified. At Gamston, Nottinghamshire, wheel-thrown vessels are dated to the later 1st century BC to early 1st century AD, largely by reference to groups in Lincolnshire, and include ovoid jars with well-formed, bead and short everted rims, all shell-tempered and wheel-thrown cordoned bowls, both in sandy wares (Knight 1992, nos 2, 15, 16, 45, 46, 49 and nos 22 and 47 respectively). No combing was identified and the associated material comprised handmade Iron Age jars of ovoid form, including scored ware. This suggests that wheel-thrown cordoned bowls and simple bead and everted-rim jars, sometimes with neck cordons, appeared in the Midlands alongside scored ware and the contemporary plain wares, initially in small quantities. Similar associations of cordoned neck jars, handmade Iron Age jars and wheel-thrown beakers or cordoned bowls have been identified on sites in the brickwork plan field system, Nottinghamshire at Dunston's Clump (Leary 1987, 44 and 48; and Eaton, unpublished), and Holme Pierrepont (Guilbert, Fearn and Woodhouse 1994, fig. 3 and unpublished groups with shell-tempered combed storage jars and everted-rim bowl and argillaceous-tempered everted-rim jar like Trent Valley ware); also at Scratta Wood, Derbyshire (combed ware, cordoned neck jars, bead and flat, upright-rim jars, unpublished report by Leary) and Whaley, Derbyshire (Radley 1967, fig. 6 nos 18–19), all broadly dated from the late 1st century BC to early 1st century AD. An interesting outlier at Pickburn Leys in south Yorkshire was associated with a carinated and cordoned bowl with zones of lattice decoration, and a bead-rim jar, and given an early 1st century AD date, tentatively (Sydes and Symonds 1985). Thus a survey of the local sites supports a date range of about 100 years from the mid 1st century BC in accordance with national dating trends.

However, there is strong evidence for the continuation of "native" jar forms after the Conquest and as late as the 2nd century AD in Lincolnshire (*cf.* Darling 1984, 89) and this may well be the case elsewhere in the Midlands. At Rampton, Nottinghamshire, a Neronian-early Flavian date was suggested for the cordoned neck jars (Ponsford 1992, fig. 19 nos 4, 7 and 8), while at Margidunum Todd illustrates similar cordoned neck forms in "Trent Valley" ware, a ware very similar to the argillaceous ware group, in deposits dated AD 50–75 (1969, fig. 14 nos 9–10). At Osmanthorpe vexillation fortress, bead-rim jars with shoulder cordons in shelly ware are given a Neronian date (Bishop and Freeman 1995, fig. 8 nos A6.8 and A8.4). The Trent Valley ware range identified by Todd includes the everted-rim jar with shoulder groove and a number of corrugated, rather than cordoned jars (1968 fig. 1 nos 2–3). These were found in large numbers at Margidunum in contexts dated from 50–100 AD. Study of samples of this ware in Nottingham University fabric collection suggests Todd included a range of several "native" fabrics and recent excavations at Hoveringham suggests an earlier, possibly pre-Conquest, start date and a later end date in the mid second century. Thus both in

Lincolnshire and Nottinghamshire, some of the jar forms may continue, perhaps in better fired fabrics.

In Derbyshire, evidence for the continued use of these types is rather scarce because the army chose to produce its own pottery or imported wares. What little evidence there is suggests that the shelly combed wares and the reduced quartz-tempered wheel-thrown wares were utilised to some extent in the pre-Flavian and early Flavian period (*cf.* at Strutt's Park, Dool *et al.* 1985, fig. 10 nos 18, 21 and 22; and Little Chester, North-West Sector, fig. 39 nos 1, 2 and 5; and at Chesterfield, Ellis 1989, fabrics 13, "belgic ware" used for everted-rim jars, carinated bowl and platters and 14, combed ware). At Derby and Chesterfield these wares contrast with those cited from the rural sites in hardness of firing and evenness of colour production and in the absence of precise parallels for the cordoned neck jar form. Thus present evidence, albeit scanty, suggests that the simple bead and everted-rim jar forms and the combed storage jars may have continued into the early Roman period, although they were not utilised greatly by the army, with a tendency towards harder and better fired fabrics, while the cordoned neck jars may have only continued to be used on civilian sites in the early Roman period.

Bowls and beakers

Little overlap of fabrics was observed between the jars and bowls/beakers, except for two CTB1 sherds from cordoned bowls. The CTB1 vessels and the SL1 bowl are likely to be earlier in date. The bead-rim cordoned bowls in CTB1 were thicker bodied and their burnishing facetted, contrasting with the thin-bodied delicacy and smooth finish of the BSA2/3 vessels. They compare well with Late Iron Age cordoned bowls from Gamston, Nottingham (Knight 1992, nos 22 and 47, both in quartz-tempered fabrics), dated to the late 1st century BC to early 1st century AD by reference to Lincolnshire sites (May 1996, type 10, appearing in stage 7). This general form of cordoned bowl is dated from the late 1st century BC to mid 1st century AD in south-eastern England, with increasingly Romanised fabrics and treatment (*cf.* Thompson 1982, type E1–1; and Hawkes and Hull 1947, type 212).

The SL1 bowl with bulges between cordons compares with vessels from the south-east of England dated to the early to mid 1st century AD (Hawkes and Hull 1947, type 218, dated AD 10–65; Thompson 1982, types B3–1 and D2–1, suggests begin in early 1st century AD and become increasingly Romanised through the 1st century AD), and with bowls in Northamptonshire dated to *c.* AD 30–55/60 (Jackson and Ambrose 1978, 175, group 3a, nos 51 and 54 in shelly wares; Williams 1974, Moulton Park group 2). In Lincolnshire, Elsdon dates both the plain cordoned bowls and those with bulges to the first half of the 1st century AD, but shelly cordoned bowls with shoulder bulges continue at Old Sleaford into the early Roman period (1997, 107 and figs 62, 74–5 and fig. 79 no. 396 in a pit dated Neronian to early Flavian). The form is not common on Derbyshire and Nottinghamshire sites. An unpublished cordoned and carinated bowl with shoulder bulge, of a slightly different form, was found at Holme Pierrepont with scored ware jars in a reduced quartz-tempered ware, and a group of necked and carinated bowls from Gallows Nooking Common included one with a slight shoulder bulge.

Slag tempering has been identified at Gamston, Aslockton and Parson's Hill, Bingham, all Nottinghamshire, used for Iron Age handmade jars, including scored ware (Knight

1992, nos 11 and 21; and Knight *pers. comm.*), but in all cases is coarse, contrasting with SL1.

The BSA bowls were finer, evenly fired with well-formed rims and cordons. BSA2 and 3 merge into one another from dark brown to dark grey. In form, the vessels compare with the Flavian-Trajanic series made at Derby Racecourse (Brassington 1971, nos 1–13) but the dark brown colour of BSA2 compares better with pre-Flavian types at Strutt's Park, Derby, (Dool *et al.* 1985, fig. 10 nos 21 and 30) and at Chesterfield (Ellis 1989, nos 43 and 45, platter), while the BSA3 vessels compare with pre-Flavian material from Margidunum (Todd 1969, fig. 9 no. 7 and fig. 11 no. 17). The fabric group has also been identified by the author at Hoveringham (unpublished undiagnostic sherds), Holme Pierrepont (unpublished, used for butt beakers and cordoned cups), Dunston's Clump (Leary 1987, table 1, BSA1 used for cordoned cups and butt beaker copies in 1st–2nd century contexts), all Nottinghamshire, and Chapel Farm, Shardlow, Derbyshire (unpublished cordoned cups in group with shell-tempered jars and BSB jars with everted rims, one rilled). The other forms made in this fabric group, along with associated material on other sites and its dating on military sites, suggest a date range in the 1st century AD, perhaps continuing into the early Flavian period. The pre-Conquest cordoned bowls from Gamston are similar in fabric and form to some of the BSA2 bowls (no. 12 from the upper fill of F12, 0086 AUW) but most of the BSA2 and 3 vessels compare better with post-Conquest material.

Stratigraphy

Pottery of Late Iron Age to Conquest period type was identified from the upper fill of F13 (119, 42 and 52, nos 12–15), including a CTB2 neckless jar with inturned flat rim, cordoned bowls in CTB1, BSA3 and BSB1 from the ditch sections within the building, from the silty loam layer 042, overlying fire cracked boulder layer 048, both sealed by a deposit of Mercia Mudstone 047, which, in turn, underlay the flooring materials of the aisled building, and an everted rim in Q3 and body sherds of SL2, CTD1 and MM2 from the ditch section to the north. Only one sherd, an SL2 body sherd, was recovered from the lower fills of F14 below the courtyard, but material from the hollow surface included a cordoned bowl sherd of fabric SL1 with burnished lattice decoration, suggesting some contemporaneity with the other ditches. The pottery assemblages suggest these ditches were more or less stable by the Roman period.

Layers in F12 relating to its deliberate infilling with pebbles (0073 and 88A, nos 9–11) contained pottery of this type including the SL1 cordoned bowl with shoulder bulges, two CTB2 rilled, flat-rim jars, a CTB1 rectangular-rim jar with shoulder cordon (*cf.* no. 60), CTB1 and BSB1 cordoned bowls and sherds of BSA, BSB, GTA10 and scored Q2A. The forms suggest a date in the first century AD, possibly with some post-Conquest sherds represented by fabrics BSB and GTA10. Later activity is represented by the pottery from the silty layers overlying the pebbles (0076 and 88A). These layers contained cordoned neck jars in MM2 and CTD1, a flat-rim MM2 jar, a fine grey ware cordoned bowl (as nos 20, 8 and 17), two grey wares sherds and two fine oxidised Romano-British sherds, suggesting silting continued into the second half of the 1st century AD.

Group 3: Early Roman

Typology

A gradual refining of both fabrics and forms seems to have taken place at some stage in the early Romano-British period. The occurrence of large, unabraded sherds of jars and bowls in Late Iron Age forms in the late ditch fills in association with classic Romano-British pottery in small quantities characterises this phase (Table 5). The BSA fabrics seem to be better fired in these later groups and the bowls better formed while the jars are more uniformly reduced and tend to be harder fired (nos 17–19). Romano-British wares are restricted to rusticated grey and BSA wares, an undiagnostic oxidised fine ware sherd and a GTA10 sherd (no. 25).

Everted-rim jars, wide-mouthed necked jars and carinated bowls in fine and medium grey ware compare well with the products of the Derby Little Chester kilns dating from the Flavian to Antonine period (Table 5, nos 22 and 26–8; *cf.* Brassington 1971, nos 1–11, 26–33 and 153–171). Although well represented in the Flavian-Trajanic period, these forms seem to have continued to be made into the Antonine period (Dool *et al.* 1985, tables 4, 6 and 7). To these fine grey wares may be added a small group of white wares that include bodysherds from flagons, an everted-rim beaker and a bead-rim hemispherical bowl. These too are likely to come from the Derby Racecourse kilns where the manufacture of white ware flagons is likely and the production of white ware flanged hemispherical bowls and carinated bowls, identified in kilns 1, 5 and 8 (Dool *et al.* 1985, 91 and tables 7; Brassington 1971, no. 82, 191 nos 40–1, Brassington 1980, no. 375). Some of the oxidised OA/OB wares also compare to Derby Racecourse products and study of the forms, such as flanged hemispherical bowls, everted-rim beakers and ovoid narrow-necked jars (*cf.* Brassington 1971, nos 37–112, 145–50 and 178), confirms this identification. Only a small number of "pre-Derbyshire" ware sherds were identified and, where identifiable, these were in classic Derbyshire ware forms, implying that this ware may not have been purchased during the pre-Antonine period.

Although many of the Derby Racecourse forms represented were current in the Flavian-Trajanic period, the absence of early pre-Derbyshire ware forms and the early calcite-gritted rebated-rim jars found in the Flavian-Trajanic period at Derby (Dool *et al.* 1985, no. 63), taken with the evidence of the stratified sequence (see below) suggests there may have been a break in activity during that period. This might also be supported by the absence of any mortaria pre-dating AD 140, although the absence of traded wares could, alternatively be a reflection of the function or status of the site.

In addition to the Derby Racecourse wares, some of the GTA10 and BSA3 vessels may date to this period. Two vessels, a BSA3 lugged, rebated-rim jar and a GTA10 club-rim jar (nos 36 and 38), both from 0023, compare with post-Conquest types. The GTA10 jar form is unlike the "Trent Valley" ware vessels and compares better, in form and fabric, to a series of jars found in Lincolnshire in the late first to second century and made in grey ware thereafter (*cf.* Stead 1976, fig. 74 nos 7–12, fig. 76 nos 37–8 and fig. 83 no. 87, dated from Neronian/early Flavian to Antonine contexts). The BSA3 lugged jar is very unusual altogether. The fabric suggests an early date, since the other forms in this ware were of first century AD date (see above). Lugged jars appear in pre-Conquest contexts at Dorket Head (Turner 1997, fig. 9 no. 31) and Dragonby (May 1996, 414, type 7 with similar rebated rims, from the late first century BC), but these are undecorated and far less elaborate. Romano-British lugged jars were made in the

Lincolnshire kilns at Dragonby and Roxby, dated late first to early second century and Antonine respectively (Stead 1976, fig. 64 no. 6 and fig. 67 no. 38; May 1996, kilns 4 and 5, figs 20.32–33 nos 1435 and 1439), where wavy line burnished decoration is used, and a lattice burnished example occurs among the kiln waste from pit 2567, dated to the Trajanic-early Hadrianic, at Dragonby (May 1996, fig. 20.35 no. 1498). Although the Dragonby vessel is given a later date in the Antonine period, on the basis of its handle construction and general form, Swan does note its local pre-Conquest ancestry and the Romanised fabric used in this group. Elsewhere in the east Midlands, lugged jars are present in the south Yorkshire kiln groups, often with lattice burnishing (Buckland *et al.* 1980, type F); at Little London, some with lattice decoration (Oswald 1937, nos 25–30) and at Market Rasen, with wavy line burnishing (Samuels 1983, fig. 180 no. 87), both Lincolnshire; and at the kilns at Lea and Newton-on-Trent, Nottinghamshire, undecorated (Field and Palmer-Brown 1991, fig. 16 nos 46–7 and fig. 17 no. 7). These examples all contrast with the jar from 0023 in having fat everted or bead rims, plain lugs and a more globular profile.

Another possible comparison, particularly in view of the Hadrianic date of the context, is the BB1 lugged jar range. These compare well in terms of decoration type and zoning, dating from the 1st to mid 3rd century (Holbrook and Bidwell 1991, 105–6), and a BB1 example, with zigzag burnishing on the neck is known from Melandra and given a Hadrianic-Antonine date (Petch 1949 fig. VIII no. 69; Gillam 1976, 64). There is, therefore, sufficient evidence to suggest a date in the early 2nd century AD for this vessel, perhaps the Hadrianic period, but no close parallels could be identified.

The latest deposits in this phase see the introduction of BB1 ware from the southwest of England (no. 42). A date after AD 120 for the introduction of BB1 to the North is still upheld by recent research and evidence suggests it was not common until the later 2nd century (Holbrook and Bidwell 1991, 92–3). At Derby Little Chester BB1 ware was present from the Hadrianic period but was most numerous in the late 2nd century (16% of assemblage) when changes in the pottery supply mechanisms and the end of the monopoly of the Derby Racecourse potters may have resulted in an opening for an increase in sales (Dool *et al.* 1985, 116–23). Similarly at Melandra small quantities of BB1 were present in the Hadrianic group from the stream deposit but in the later mansio deposit, dated some 20 years later, BB1 was present in larger quantities than at Derby, half of the jars and bowls being in BB1 ware (Webster 1971, 101 and 107). At Chesterfield, present evidence suggests BB1 appeared in the Hadrianic period in small quantities with a rise to around 8–14% of the assemblage in the Antonine phases (Ellis 1989, table 6 and unpublished report by author on material from Vicar's Lane). At Brough-on-Noe, BB1 accounts for some 22% of the assemblage in the early Antonine period but drops to 6% by the late second to early third century (Leary 1993, 84 and 118–121). Thus the appearance of BB1 in small quantities accords with the evidence for contemporary ceramic supply to the military suggesting some degree of articulation with those arrangements.

Stratigraphy

Group 3A

The charcoal-rich layers and interleaved layers of Mercia Mudstone in F12 (0081, 0084, 0086 and 0087), overlying the pebble and silty layers with Late Iron Age and small

amounts of Romano-British pottery, represent an episode of activity apparently connected with hearths constructed in the ditch hollows and cut into the silty layers (Table 5). These charcoal-rich layers contained Late Iron Age types such as an inturned, flat-rim CTB2 jar, a combed, cordoned-neck jar in MM2 and cordoned bowls in BSA2 and 3, and later sherds of Romano-British type such as a GRA rusticated sherd, a GTA10 sherd and sherds of fine and medium grey ware, including rusticated sherds (nos 16–20, 22–24). These later sherds confirming a post-Conquest date in the second half of the 1st or the beginning of the 2nd century AD for this episode.

The hearths, overlain by the Mercia Mudstone layer and cut into the silty layer, contained pottery of the same date as that from the silty and charcoal-rich layers in the ditches and may be related to them. Hearth 2 (0093) contained a fine grey ware everted-rim jar and a cordoned bowl of Flavian-Trajanic type and may be the latest in the hearth series (nos 26–8). Hearth 3 (0090) contained sherds of MM1A, MM2 and Q2A only but a gully in near proximity, possibly associated, yielded an OAB1 body sherd so a date contemporary with hearth 2 is possible. Hearth 4 (0105) contained a group of Iron Age body sherds of Q3A, MM1B and SL1, perhaps redeposited, and three BSA3 sherds from the lugged rebated-rim jar in layer 0023 (no. 36). Hearths 5, 6 and 7 yielded no pottery and hearth 8 (0091 and 6) contained a MM2 rilled jar with thickened, upright rim, bevelled internally, a GTA10 ovoid jar with everted rim and grooved shoulder (nos 25 and 29) and a rusticated grey ware sherd suggesting a comparable date to the other hearths and layers in the second half of the 1st century AD or the beginning of the 2nd century AD.

Group 3B

A mixed loamy layer (0023 and 0083) overlay these deposits in F12 and the floor of the aisled building in turn overlay 0023. The material from 0023 contrasted with that from 0083 in that Derbyshire ware, present in the classic cupped-rim jar form in 0083, was absent and a date before the inception of this industry is suggested. The date of this deposit is further narrowed to in or after the Hadrianic period by the presence of three sherds of BB1, one with acute lattice burnishing. Derbyshire ware is, on present evidence, dated from the early Antonine period onwards. At Derby Little Chester it appears in Antonine phase 3 in small quantities (Dool *et al.* 1985, 115), and the occurrence of a mortarium in Derbyshire ware in a form dated to AD 100–140 and in the style of G. Attius Marinus (*ibid.*, 111 no. 71) gives a terminus ante quem for the use of this fabric at least as early as AD 140. At the Racecourse kilns Hartley identified another mortarium made in a Derbyshire ware-type fabric which she dated to AD 135–90 (Brassington 1980, no. 563), suggesting that the development of this fabric may have taken place in association with the mortaria makers around AD 140. Its absence in context 0023 therefore suggests a date in the Hadrianic or very early Antonine period.

Layer 0023 contained 130 sherds, including seven Iron Age sherds in Q2 and SL2 and 12 sherds in the Late Iron Age-early Romano-British fabrics BSA2 and CTB1 (nos 8 and 30–42). These sherds may be redeposited from the earlier ditch layers or adjacent earlier occupation layers. The rest of the group included large grey ware sherds of everted-rim jars, including rouletted examples, an everted rim probably from a carinated bowl, a rouletted beaker, wide-mouthed bowls and a white ware base, and all compare with products of the Little Chester kilns. A large proportion of the BSA3 lugged jar (no. 36)

mentioned above was recovered from this layer and the small, club-rim sherd (no.38) in GTA10 is similar to a form found more commonly in Lincolnshire and dating from the late 1st to 2nd century. The small GRB4 rim (no. 39) is of unknown form but relates better to early Romano-British or Late Iron Age butt beaker rims (Hawkes and Hull 1947, form 116). Some grey ware sherds with a round dimple are not paralleled at Derby. At Newton on Trent this form is present in kilns dated to the early 2nd century (Field and Palmer-Brown 1991, fig. 16 nos 29–30). The small numbers and abraded nature of the Iron Age sherds suggests these types did not continue in use here as late as the Hadrianic period. Their complete absence in layer 0022 would support this. The generally smaller and more abraded nature of the sherds compared to those in 0022 is best interpreted as an accumulation layer over the abandoned hearth level, in the ditch hollow, during the Hadrianic period.

Other features with pottery identified as possibly dating to the pre-building phase were 0152, 0017, 0004, 0092, 0070, 0056, 0120 and 0139. Contexts 0017, 0004, 0056, 0070 and 0139 contained sherds of Derbyshire ware so should be near contemporary or later than the building. Earlier pottery alone was found in post-hole 0152 (a grey ware rusticated sherd), sub-cobbled surfaces 0120 (an inturned, flat-rim CTB2 jar and scored bodysherd of Iron Age date, no. 52) and 0142 (two MM1B sherds from a scored ware jar with upright, pinched out rim) and under the padstone 0092 (a sherd of MM1A of Iron Age date). However, the small numbers of sherds preclude any certainty in attributing these features to a structure pre-dating the aisled building.

Group 4: mid to late 2nd century

Typology

This typological group is characterised by the presence of Derbyshire ware, small amounts of non-local wares such as samian, mortaria and BB1 wares and grey wares. Derbyshire ware can be dated with some degree of confidence from the early Antonine period *c.* AD 130–40 (see above). Many of the groups of this period were disturbed or continued to receive ceramic debris into the 3rd or 4th centuries so reconstruction of their make-up in the 2nd century is hampered. Material from the floor remains and walls comprised a handful of Iron Age sherds, small quantities of Conquest period material (BSA2 and 3 cordoned bowls and CTD1 cordoned neck and everted-rim jars), and white ware sherds, *c.* 5% BB1 (a flat-rim bowl and a plain rim dish of late 2nd to early 3rd century type, Holbrook and Bidwell 1991, type 56.1b), 37% Derbyshire ware (hooked and cupped-rim jars and one narrow-necked, outcurving-rim jar), 5% "pre-Derbyshire" ware (cupped-rim jars and narrow-necked, outcurving-rim jar) and 27% grey wares (carinated bowls, plain rim dishes, small numbers of short everted-rim jars and wide-mouthed jars with bead rims, sherd from wide-mouthed or narrow-necked jars with wavy line burnishing, a rusticated sherd and one lipped, everted rim from a medium-necked jar). A small number of oxidised sherds were also present, including a short everted rim, part of a narrow-necked jar and some bodysherds with wavy line combing. Much of the reduced and oxidised wares were of Derby Racecourse type but some sherds, including fragments from wide-mouthed jars with wavy line burnish or combed decoration (*cf.* no.45), compared better with vessels from Lumb Brook Derbyshire ware kilns (Brassington and Webster 1988). Sherds of Mancetter-Hartshill mortaria dating

after AD 140 were recovered from the courtyard north-west of the aisled building (0121A and B) and the floor of the east aisle room (0007). Some NV1 beaker sherds were identified in contexts 0022 and 0137, and were present from the mid to late 2nd century phase 3 at Derby (Dool *et al.* 1985, table 10; Langley and Drage 2000, 211).

Groups from Derby Racecourse suggest Derbyshire ware was used initially in phase 3 with reduced and oxidised wares in types typical of the late Derby Racecourse kilns (carinated, cordoned bowls, flanged hemi-spherical bowls, everted-rim bowls with burnished lattice, everted-rim jars and rebated-rim jars), BB1 necked everted-rim jars and flat-rim bowls, some white ware ring-necked flagons, roughcast ware beakers, Antonine samian and mortaria from Mancetter-Hartshill and Derby Racecourse. By phase 4 at Derby, rather more Derbyshire ware jars appeared, at the expense of the Racecourse grey ware jars, and there is a suggestion that a relative increase in BB1 wares and Racecourse bowls may represent the response of those potters to a dislocation in the pottery market caused by the Derbyshire ware producers. Reduced and oxidised wares from the Derbyshire ware kilns were also present in small numbers by the late 2nd century (Dool *et al.* 1985, 100 no. 108) The aisled building group compares well with Derby Little Chester phase 4 in terms of proportions of Derbyshire ware, BB1 and grey ware and non-local wares like NV1 and 3, but had much less specialist wares, such as samian and mortaria (Table 5, *cf.* Dool *et al.* 1985 phase 4, 26% Derbyshire ware). These proportions are brought into line rather more with Derby phase 4 if associated deposits, including the yard and post-hole fills are added. Only one sherd of amphora was recovered from the site, from 0139, a pit underlying floor 0137. The large quantities of Derbyshire ware also compare with the late 2nd to 3rd century group at Brough-on-Noe (Leary 1993, 81 table 1, 24% Derbyshire ware). In vessel types, the presence of grey ware carinated bowls and small numbers of the earlier 2nd century everted-rim jar type compares with the increase in Racecourse bowls noted in phase 4 at Derby, and the introduction of plain-rim dishes in BB1 and grey ware is also paralleled at Derby phase 4 (nos 42 and 54, *cf.* Dool *et al.* 1985, tables 6 and 7, nos 174 and 114; Langley and Drage 2000, 212). A small number of grey and oxidised ware body sherds, including one from a necked, wide-mouthed jar and some combed sherds, compared with material from the Lumb Brook kilns (as no. 55, *cf.* Brassington and Webster 1988, nos 26 and 45A). The absence of later coarse wares, sherds of Dales ware or imported colour-coated ware from the Moselle Valley, and the small number of Nene Valley colour-coated ware, may indicate occupation did not continue far beyond the 2nd century

Stratigraphy

Contexts 0023 and 0022 provide the most powerful dating evidence for the aisled building. The complete absence of Derbyshire ware and presence of BB1 in 0023, contrasting with its relative abundance in 0022, dates layer 0023 to between 120 and 140 AD. Pottery from the floors within the building and the walls suggest occupation dated from the mid or late 2nd century. The excavator suggests the posts of the aisled building were dismantled so sherds from their fills cannot be used to date their construction with any certainty. Derbyshire ware was recovered from the post-pit of post-hole 1 and post-space of post-holes 1 and 8, the remaining post-holes containing redeposited Iron Age pottery and grey ware sherds. Post-pit 1 also contained large sherds of a CTA2 necked jar with undercut, rounded rim and traces of faint rilling or grooves (no. 48). The rim

form is similar to the products of kilns at Bourne and Knaith, Lincolnshire, which are seldom rilled but do sometimes bear multiple grooves on their upper bodies (samples in Nottingham University Museum). These kilns are dated by Swan to the late 3rd/4th century on typological grounds (1984, fiche 436) and such jars appear at Derby in the late 2nd to early 3rd century deposits (Dool *et al.* 1985, table 5). Similar forms are given a mid 2nd to early 3rd century date in the Nene Valley (Perrin 1999, fig. 70 nos 429, 431, 434 and 435). This would suggest that the posts might have demolished by the end of the 2nd or early in the 3rd century, which agrees with the material accumulating on the floor deposits.

Pottery from outside the building suggests that the remains of a courtyard to the north, above F14, were broadly contemporary with the aisled building. Sherds below the cobbled surface outside the north wall included Derbyshire ware (0005), suggesting some contemporaneity. 121A contained Derbyshire ware, a sherd from a Mancetter-Hartshill mortarium post-dating AD 140 and the cobbled area, 0121D, contained Derbyshire ware.

Group 5: third to fourth century

Typology

The latest material from the site comprised late 2nd to 3rd century shell-tempered ware jars, the ever present Derbyshire ware jars, late coarse wares such as flanged bowls, bead and everted-rim wide-mouthed jars and narrow-necked jars (nos 55 and 59; and *cf.* Todd 1968b, types 1, 2 and 4 and Brassington and Webster 1988, nos 26–32 and 40–44), and BB1 plain-rim and incipient flanged-rim bowls and dishes and a cooking jar, all of late 2nd to 3rd century type (nos 53–4; and *cf.* Gillam 1976, nos 4, 42 and 79; and Holbrook and Bidwell 1991, 95, 98–9). Late fine wares included Nene Valley pentice moulded beakers, a wide-mouthed jar, flanged bowl, Dr 38 copy, a "Castor box", sherds of Oxfordshire red colour-coated ware, and Mancetter-Hartshill hammerhead mortaria of the late 3rd to 4th centuries (*cf.* Gillam 1970, nos 278, 282 and 280).

The shell-tempered jars are paralleled at Derby in features dated to the 3rd/4th centuries (Dool *et al.* 1985, 101 nos 124 and 103, no. 145, table 5; Langley and Drage 2000, 201, table 8, not illustrated from context 1261). Several of the coarse ware vessels compare well with grey and oxidised coarse wares from the Derbyshire ware kilns such as those at Lumb Brook. The wide-mouthed and narrow-necked jars are similar in form, decorative techniques and fabric, and a sherd of a flanged bowl from the topsoil also compares with products from these kilns (Brassington and Webster 1988, no. 35). Typological affinities with the Derby Racecourse kilns and a consideration of site stratigraphy suggested a date range from the mid second to third centuries for this pottery, although comparison with ceramic developments in adjacent areas of the east Midlands suggests that the wide-mouthed and narrow-necked jar types may have continued to be made into the 4th century (Todd 1968b).

Stratigraphy

The composite hearth H1 yielded numerous sherds of pottery including large portions of two BB1 dishes and a large neck and rim sherd from a GRB1 narrow-necked jar. A date in the early or mid-third century may be suggested for the BB1 dishes on account of the wall angles, the incipient bead rim on the flanged bowl and the burnished intersecting

arcs (nos 53–4, *cf.* Gillam 1976, nos 43 and 79). The narrow-necked jar (no. 55) compares better with grey ware jars from the Derbyshire ware kilns than those from Little Chester, as does a grey ware rim sherd from a wide-mouthed jar. A large part of a Derbyshire ware jar was also found. The rest of the pottery comprised small sherds but included two sherds from a bead-rim jar in CTA2 (no. 56), similar in type and date to the jar from post-hole 57, and also a rouletted sherd in NV3, possibly from a rouletted beaker of late 2nd or early 3rd century date (no. 26; *cf.* Howe *et al.* 1980, nos 32–4). Other small sherds included second century types such as two abraded samian sherds, a Little Chester type everted-rim jar and also an abraded flanged bowl OAA1 sherd (no. 58), similar to the Derby Little Chester range and dating to the Hadrianic-Antonine period (Dool *et al.* 1985, 95 no. 36). These may have accumulated around the area while the hearth was in use and been swept in from the surrounding area on its disuse but relate to activity taking place before its abandonment.

Layers overlying the cobbled yard north of the aisled building, 121C and B, contained material as late as the late 3rd or 4th century, including two possible sherds of Oxfordshire red colour coated ware, a Nene Valley beaker similar to those of late third or fourth century date (*cf.* Howe *et al.* 1980, no. 55). An overlying feature, 151A, contained a large fragmented grey ware sherd from a wide-mouthed jar with hooked rim and outbent neck of the type made at Lumb Brook kilns (Webster and Brassington 1988). Material from the upper fill of F14, in 0151, 0150 and 0150D, also contained sherds from a similar wide-mouthed jar form and a Mancetter-Hartshill mortarium rim of AD 170–220.

There is no securely stratified pottery that has to be dated later than the early 3rd century. All the later material comes from unstratified deposits in the plough soil. This includes several hammerhead and reeded-rim mortaria sherds of late 3rd to mid 4th century (as Gillam 1970, nos. 278, 282 and 280); colour-coated jars and bowls of late 3rd and 4th century date, as well as a Hunt cup sherd of the late 2nd or early 3rd century (Howe *et al.* 1980, nos 26–7, 76, 79, 83 and 89) and a sherd from an Oxfordshire cream mortarium, unlikely to reach here before the second half of the 4th century (Dool *et al.* 1980, 125). The grey ware included flanged bowls and the heavier wide-mouthed, everted-rim jars and narrow-necked jars with burnished wavy line decoration so typical of the 3rd and 4th centuries (*cf.* Todd 1968b). Thus the topsoil deposits demonstrate that pottery was still accumulating on the site in the later 3rd and 4th centuries and included fine traded wares. Although no structural elements can be securely attributed to that phase, the pottery implies continued activity of a relatively high status in the vicinity of the excavated area.

Petrology of Ockbrook sherds: summary and interpretation by R. Firman and R. S. Leary

A limited amount of funding for thin-sectioning was made available by the Derbyshire Archaeological Advisory Committee and Dr. Ron Firman, a geologist very experienced in the geology of the area, kindly agreed to examine and report on this material. The funds were used primarily to section the prehistoric fabric groups, since this material added significantly to our knowledge of Iron Age ceramics for this part of Derbyshire and adequate petrological definition would form a firm foundation for future work. In addition a small amount of Conquest and early Roman material was submitted for

comparative purposes and with a view to using the data in comparison with work on other collections. Delays due to the volume of work at the thin sectioning laboratory meant this report could not be incorporated in the pottery report but comments by R. Leary on the significance of Dr. Firman's findings in terms of the pottery are presented here in italics.

Introduction

Ockbrook is situated between the pottery clays of the Westphalian Coal Measures to the north and the Mercia Mudstones (formerly known as the Keuper Marl) to the south. If pottery found at Ockbrook was made locally, these, together with spreads of glacial till (boulder clay) and possibly alluvium, are the most likely sources of raw materials. Between the Coal Measures and the Mercia Mudstones are outcrops of Sherwood Sandstone (formerly known as Bunter Sandstone) which may have provided sand, used as a filler by Iron Age and Romano-British potters. Fragments and grains from these sandstones are also incorporated into the glacial tills and alluvium so the presence of medium to coarse sandy material does not necessarily mean that it was deliberately added by the potter.

All potential sources are lithologically very variable, though there are distinctive common features and tendencies which can provide clues to the likely provenance when interpreting the petrology. For example Coal Measure clays tend to be rich in refractory minerals and organic matter, are often fossiliferous and tend to be more uniformly fine grained than the Mercia Mudstones. In contrast the latter pottery clays tend to consist largely of highly oxidised, finely laminated alternations of siltstones and mudstones, lacking the organic matter, fossils and refractory minerals, and relatively rich in dispersed carbonates. In practice this results in pottery from the Coal Measures requiring higher firing temperatures and usually having denser, more refractory and often darker fabrics. Conversely where Mercia Mudstones are used, a porous, lighter coloured fabric can be produced at lower temperatures. Typically the fabric of a ceramic made from Mercia Mudstone consists largely of tiny, probably wind blown, quartz grains set in an apparently amorphous reddish brown to almost black ground mass. Within this matrix there may be round or ovoid sectioned dark, fine-grained former mud pellets and lighter, often greenish angular silt grade clasts, representing fragmented siltstone beds. In addition, some of the opaque manganese/iron concretions which commonly form in Mercia Mudstone soils (Bridges 1986) may have been incorporated into the pottery clay. Where all these features are present Mercia Mudstone pottery can be confidently distinguished from fabrics made from Coal Measures clay despite contamination from material added by the potter or inadvertently incorporated. More usually, however, insufficient diagnostic data prevents definitive identification of the precise strata, and even where this can be identified the precise location cannot because of the considerable lateral extent of most British strata.

In the following discussion possible provenances are suggested based on the untested premise that the Ockbrook pottery was made near to Ockbrook, but this is not necessarily so. A full sherd by sherd account of the petrology is lodged with the archive. References to illustrated sherds are given at the end of each section.

Petrology

Eight fabric groups, identified by visual inspection aided by binocular microscope, were identified by R. Leary: SL, Q, SS, BSA, BSB, MM, CT and GT. Some difficulties were encountered with the definition of the CT and MM groups visually and the definition of several subgroups was attempted. These were characterised by variations in the relative quantities of the inclusions distinguishable (platey and rhomboidal cavities, quartz and red/brown and grey, soft clay or mudstone inclusions) but tended to merge with one another. Subgroups were also defined for SL, Q, BSA and MM on the basis of coarseness of inclusions. 25 sections were submitted for petrological analysis, using a polarizing microscope, to test and clarify these visual characteristics and to obtain information about the internal structures, textures and mineralogy of the sherds. Broadly this confirmed most of the fabric groups suggested by R. Leary. The variability detected in the CT group was reflected in the sections but the subgroups suggested macroscopically were not always upheld.

MM fabrics (five sections)

All five sections have a broadly similar texture and mineralogy. In all, the coarser fraction (up to 0.5mm) tends to consist of rounded monocrystalline strained quartz grains, with rare or absent feldspar and tiny, commonly lath-shaped sections of white mica. All exhibit ovoid sectioned dark fine grained mud pellets. However, only three (APS MM1A, ATM MM2 and AZJ MM1B) show the typical Mercia Mudstone ground mass with small (<0.02mm) sharply angular quartz. In AXE MM2 and 0005 MM2 this feature is obscured by the presence of well-graded plentiful coarser fracture. In addition polycrystalline quartz grains, possibly chert or orthoquartzite or both, are more numerous and angular siltstone clasts are present as well as the dark cognate inclusions (mud pellets) common to all MM fabrics. These two samples are also much more porous and have many cracks.

There is a case, therefore, for splitting these MM fabrics into two subgroups but this may not be possible for hand specimens without the aid of thin sections. Tentatively it is suggested that all five samples were made from weathered Mercia Mudstones, APS, ATM and AJZ from exposures in which coarser silty fractions were absent and AXE and 0005 from exposures in which more silty and sandy beds were present.

Sherds sectioned:
APS MM1A, handmade jar with plain rim, no. 2, group 1 F13.
ATM MM2 upright rim of jar or beaker, no. 29, probably wheel-thrown, group 3a, hearth 0091.
AZJ MM1B, unpublished scored sherd respectively, group 3b, 0142.
AXE MM2, part of cordoned and combed jar. no. 20, probably wheel-thrown, group 3a, 0086.
0005 MM2, bodysherd, group 4, cobbles 0005.

The difference between MM1A and MM1B did not appear on the thin section and although it may be real, it may be best seen as a variant, perhaps resulting from variations in the clay source. The difference between MM1 and MM2 is borne out by thin section, technological and chronological differences (most of the MM2 group seems to be wheel thrown and

later). It is interesting that the fabric differences seen macroscopically (colour and feel) are not the same as those seen in thin section (more coarser fraction including polycrystalline quartz and angular siltstone clasts). Comparison between MM2 and the formally related "Trent Valley" ware group would be instructive. The only sherd similar to this ware was ZZT GTA10 no. 25 (see below) for which thin section analysis suggested a possible glacial source.

SS fabrics (one section)

This fabric is petrologically quite distinct. Not only are there numerous sandstone inclusions but these sandstones are feldspathic and, uniquely amongst the Ockbrook slides, contain microline as well as the more usual perthite feldspars. The grain size (0.3–0.8mm), the mineralogy and the friability, shown by the frequency of similar grains in the matrix of the sherd, and by evidence for partial disintegration of the clasts all suggest a derivation from the Triassic sandstones close to Ockbrook, namely the Lenton Abbey Formation (formerly the Lower Mottled Sandstones. Berridge (in Frost and Smart 1979) reported feldspathic sandstone in this formation and this seems the most likely and nearest source to Ockbrook (e.g. Dale Abbey), though whether such sand was deliberately added or, say, part of a glacial cover is debatable. Apart from the sandstone clasts and grains derived from them the rest of the fabric differs from the MM fabrics in lacking both cognate inclusions and siltstone clasts. A weathered glacial till incorporating both Coal Measure shales and Lenton Abbey Formation sandstone thus seems the most likely source near Ockbrook.

Sherd sectioned: ALB handmade expanded rim sherd, no. 1, group 1 F13, 0055 primary fill.

Q fabrics (four sections)

Although all four have similar bimodal textures and mineralogy, the coarser fraction of Q3 (ASK) is an order of magnitude bigger and contains much more polycrystalline quartz grains of (?) chert and quartzite as well as quartz and K-feldspar discrete grains. This supports its classification as a sub group within Q. In the other three samples (AVW, AAQ and ANO) the coarser fraction, set as usual in an apparently amorphous ground mass studded with tiny angular quartz, ranges in size from 0.1 to 0.5mm with mostly monocrystalline grains of strained quartz and k-feldspar which tends to be more angular than in the MM fabrics. Rare tiny sections of white mica have been observed in two of the three sections and variable amounts of dark cognate inclusions occur in all Q fabrics sectioned though no siltstones have been noted. One sample, AAQ is sufficiently overburnt for partial melting to have occurred, the resulting glass being represented by brownish, isotropic, interstitial material.

Like the MM fabrics, if made near Ockbrook, these seem likely to have been made from weathered Mercia Mudstones with an admixture, probably of glacial till.

Sherds sectioned:
ANO Q2 plain rim jar, no. 34, group 3b, 0081/23.
AAQ Q2 tapered pinched out rim jar, no. 5, group 4, 0035/37.
AVW Q2 plain rim jar, not illustrated, group 4, 0025 ph 2.

ASK Q3 everted rim no. 4, group 1, F13 primary fill.

Thin section analysis confirmed the macroscopic divisions.

BS fabrics (four sections)

Petrologically the only features all four sections have in common is the absence of polycrystalline quartz grains and presence of mica, and the fine apparently amorphous ground mass with tiny (0.2mm) angular quartz grains; the latter feature being common to almost all Ockbrook sherds examined optically. Otherwise no two BS fabrics have all other features in common.

BSA2

In AGF the size of the coarser grains range from <0.05–0.25mm making the contrast with the finer grained fraction less obvious, and, though the shapes of the grains vary, it contains, almost uniquely amongst the Ockbrook specimens, Na (i.e. plagioclase) feldspar recognised by its multiple twinning as well as K feldspar and mica. AGF also has several dark ovoid inclusions. ARL BSA2 is even finer, has only K feldspar and even these are sparsely distributed. It is also micaceous and has an abundance of dark cognate inclusions.

BSA3

Sections of BSA3 and BSB exhibit little in common with BSA2 confirming their division into separate fabrics. 23 (BSA3) is much coarser, the rounded to subangular quartz grains being up to 1mm in length and apparently neither feldspars, mica or cognate inclusions are present.

BSB

In AUW (BSB) the coarse fraction grains are angular and include both quartz and K feldspar (perthite). Dark ovoid fine grained inclusions also occur but the feature which distinguishes this section from all others from Ockbrook is the presence of numerous voids, sometimes partly filled with low relief minerals, shaped like spines. Although not identifiable, there is little doubt that these voids were formerly occupied by fossil non-calcareous spines, such as sponge spicules, the nearest source of which would be marine bands in the Coal Measures north of Ockbrook. The BSB fabric is thus microscopically distinct from the four BSA and GRA fabrics in possessing traces of fossils.

Possibly some of the other BS fabrics may be made from Coal Measure sediments though much more research is needed. There is no unequivocal evidence of added material.

GRA

A fifth thin section, initially classified as having a BS fabric and now thought to be an example of early grey ware, has a similar mineralogy and texture to AGF BSA2. The grains of the coarser fraction are, however, less angular and contain an enigmatic opaque rectangular inclusion which might be a piece of overburnt pottery added as grog. Unlike AGF BSA2 it has no cognate inclusions.

Sherds sectioned:
AGF BSA2 everted-rim beaker, no. 46, group 4 0022.
ARL BSA2 everted beaker rim, no. 17, group 3a 0086.
23 BSA3, lugged vessel, no. 36, group 3a, 0023.
AUW BSB, beaker rim, no. 19, group 3a 0086.
ASC grey ware

These fabrics were difficult to classify macroscopically because they were almost grey wares and fell into the category which used to be called "transitional", being typically brown to black in colour and predominantly quartz tempered with some shell or argillaceous inclusions. The variety of inclusions additional to quartz noticed by the author in this fabric group throughout Derbyshire and Nottinghamshire suggests the group includes several individual fabrics which are not always distinguishable macroscopically (cf. Ellis 1989, 105 "belgic" ware, where a Doncaster source is suggested). The thin section analysis confirms the fabric divisions, although the two BSA2 fabrics are not identical, and confirms the suspicion stated elsewhere that BSB1 was related to the CTB fabric group (Leary 1994, 34 and unpublished report on Holme Pierrepont pottery). In addition, the analysis confirms a close relationship between the early Roman grey ware of Flavian-Trajanic type and the "transitional" pre-Flavian material which should be followed up with future analysis of the later wares, particularly the earliest Derby Racecourse wares (currently being carried out by R. Firman as part of the Lumb Brook project). Although the source of the BSA wares was uncertain an interesting connection was made with the SL wares (see below). The forms made in SL1 certainly suggest near contemporaniety with the BSA vessels so this would be a significant link.

CT fabrics (six samples)

This group is characterised by its coherence and consistency of petrography. All are bimodal with mostly monocrystalline quartz in the coarse fractions and some polycrystalline grains in one sample (ASA CTB2B). All except AMT CTD1 have a greater or lesser amount of fossils. Feldspars are apparently absent or rare and mica more common though undetected in one section (AWE CTB1). Despite these broad similarities there are marked differences both in the cognate inclusions and fossil content. Moreover in at least two sections (BBA CTB1 and AWE CTD1) some of the inclusions are probably grog rather than cognate inclusions since they exhibit sharp and sometimes concave fractures. AYV CTD1 thin section has no cognate inclusions; ASA CTB2B has both siltstone and fine grained ovoid inclusions, the latter being typical of most of the Ockbrook samples. In contrast BBA has irregular shaped dark patches. An exceptionally strong preferred orientation of both shells and mica is exhibited by BBA CTB1 suggestive of wheel throwing rather than hand moulding. In contrast the very shelly AYV CTD1 components show very little or no preferred orientation

But it is the unexpected fossil content which is arguably the most important feature and justifies the separate grouping. Although shells such as mussels are known to have been crushed and deliberately added to pottery clay as a filler, the shell content of these sherds looks as if it was part of the original fossil content of the pottery clay with probably only the larger fossils removed before the clay was moulded. Various lines of evidence support this view, the strongest being the lack of pristine shapes expected of

freshly crushed shells and the presence of faunal assemblages typical of the Carboniferous rather than the Romano-British period. In AYV CTD1 in particular, which has about 30% fossil content, there are, in addition, fragments of unidentifiable shell fish, tiny pieces of bryozoa, and at least one foraminifera; a marine assemblage more likely to be encountered in the Lower Carboniferous (Dinantian) basin facies which outcrops north-west and north of Mackworth (11km WNW of Ockbrook) than in rare thin marine strata (marine bands) in the Coal Measures nearer to Ockbrook. None of the fossil fragments in the other three slides can be identified sufficiently precisely to distinguish between marine Dinantian faunas and those in the freshwater sediments of the Westphalian Coal Measures which outcrop nearer to Ockbrook. It may be noted, however, that like that from AYV CTD1, the shell fragments in BBA CTB1 are calcitic, albeit partly dissolved periferally and internally, whereas those from the ASA CTB2B and AWE CTD1 are represented by voids partly filled with a low relief fibrous mineral, possibly chlorite or serpentine. Spines similar to those of AUW BSB also occur as well as shelly fragments in AWE CTD1 so there might be a case for including this BS in particular with the CT group 2 fabrics. ASD CTB2 thin section exhibits only two possible shell fragments in contrast to an estimated 30% by volume in AYV CTD1. Arguably the considerable differences in fossil content and species indicate that the potter used fossiliferous clays "as found" and did little other than removing the largest fossils. In as much as AMT CTD1 contains no detectable fossils there is a case for not including it amongst the CT fabrics

Sherds sectioned:
BBA CTB1 necked jar, not illustrated, group 2a F12.
ASD CTB2 flat, inturned-rim jar, no. 16, group 3a context 0081.
ASA CTB2B flat, inturned-rim jar, rilled, no. 10, group 2a, 0073A.
AWE CTD1 everted-rim, cordoned neck jar, not illustrated, group 2a F12.
AMT CTD1 bodysherd from handmade jar with everting rim, not illustrated, group 2a F13.
AYV CTD1 necked jar with rather triangular rim, not illustrated, group 4 feature 0007B.

Thin-section analysis did not confirm the suggested subdivisions arrived at macroscopically. This was sometimes due to the position of the section taken. For instance, AMT displayed clear vesicles macroscopically but no voids appear on the section. The presence of larger quartz grains in the CTB2 sections, noted in the archive thin-section report, probably accounts for their sandier feel macroscopically and that subdivision may be maintained. Similarly BBA CTB1 seemed to have less of the larger more noticeable quartz grains which would account for its macroscopic fabric definition, although the presence of grog went undetected. The CTD1 category seems the least satisfactory and further work on the definition of fabrics within this group should be anticipated, although subdivision may not be possible macroscopically.

Group 1 GT fabrics (two sections)

Petrologically these two sections do not show a coherent range of micro structures, textures or mineralogy that would justify their grouping into one fabric group solely on the basis of this microscopic analysis. Whereas one section, ZZT GTA10, shows bimodal textures (ie a "gap" in size distribution of the transparent grains), APU GTA10 is poorly

sorted, there being no obvious "gap" in the size distribution from the smallest to the largest grains. Moreover all grains in the latter section, irrespective of size, are more angular and again, exceptionally amongst these Ockbrook fabrics, contain the Na-feldspar, plagioclase as well as the more usual K-feldspar (*cf.* ABC BSA2 and AGF BSA2). ZZT has an average number of K-feldspar grains for Ockbrook sherds and both sections contain polycrystalline quartz, and are characterised by an apparent lack of mica.

An analogous disparity is shown by the cognate inclusions. Both contain dark fine grained inclusions but there is no consistency of shape. In APU all are ovoid and in ZZT some of the dark cognate inclusions have ragged edges suggestive of "pull apart" structures such as might occur in landslips or induced by a potter when pulling apart and remodelling clay. The more competent siltstone clasts occur in both thin sections — unlaminated in APU and laminated in ZZT.

In view of the considerable variability of petrography it must be concluded that these were either made in different localities or from a highly variable source such as a glacial till. The poorly sorted characteristics of APU suggests an alluvial rather than a glacial source.

Sherds sectioned:
APU GTA10 rusticated sherd, no. 24, group 3a 0081/77.
ZZT GTA10 everted-rim jar, no. 25, group 3a, 0096.

Very few sherds in these fabrics were present on the site but their relation to "Trent Valley" ware, particular ZZT which falls into that group typologically, justified their inclusion here. The petrological difference between them supports the typological one, since "Trent Valley" ware is rarely used for rusticated ware and it is felt that ZZT probably relates to a hard "Trent Valley" ware fabric, GTA7, identified at Aslockton (unpublished report by author) whereas the GTA10 fabric has been identified in both Lincolnshire and north Nottinghamshire in the deep, bead-rim bowl form. Again further work on this fabric group should clarify these issues and this small amount of work has shed light on a likely line of enquiry in relation to the "Trent Valley" ware and the Lincolnshire/north Nottinghamshire group.

SL fabrics

These are unique amongst the Ockbrook fabrics in having broken fragments of glassy material. They are comparable in size (0.2 to 5.0 mm long) and shape to those described from Iron Age contexts at Gamston, near Nottingham (Allen *et al.* in Knight 1993, 40–41). Possibly with more and larger vesicles (gas bubbles) and with similar fluidal structures and buff/brown colour and slight devitrification, they exhibit no significant difference to the Gamston vitrified material. There, though it was noted that such glassy material could form from a variety of industrial processes such as glass making, smelting or pottery production (e.g. overburnt pottery), or accidentally in hayrick fires or the burning of wattle and daub buildings, it was concluded that at Gamston the vitreous material found on site was most likely to be vitrified fuel ash — (aka fuel ash slag, Firman and Mortimore in Knight 1993, 73). Although the precise means by which the glassy material was produced is unproven, there can be little doubt that it was crushed and deliberately added to the pottery clay. The possibility that these are naturally occurring vesicular glass shards resulting from explosive volcanic activity is unlikely since those

reported by Francis et al. (1968) from Derbyshire Coal Measures outcrop near Ripley mines and boreholes are an order of magnitude smaller than those in Ockbrook and Gamston pottery, and moreover tend to be altered and set in a largely carbonate matrix quite unsuitable for pottery manufacture. There, therefore, seems little doubt that the glassy temper of this Ockbrook ceramic is man made and man crushed.

The matrix in which the glassy shards are set is much the same as other Ockbrook pottery fabrics eg ARL BSA2, though there are differences in detail between the two "slag" tempered pottery thin sections, notably in the amounts and size of the added glassy material; those in SL2 being much more numerous and larger than in the SL1 fabric.

Sherds sectioned:
ASU SL1 cordoned bowl, no. 11, group 2a F13 0042.
ARQ SL2 handmade bodysherd only, group 2 F13 0119D.

See comments under group BS.

Conclusions

These twenty five thin sections of Ockbrook pottery sherds exhibit a wide range of textures, mineralogy and, where present, fossil assemblages. This diversity strongly suggests that a wide diversity of pottery clays were used, which in turn implies manufacture at a number of different localities. The petrological evidence is consistent with clays from weathered Coal Measures, Mercia Mudstones, glacial tills and alluvium, all of which outcrop within 5km of Ockbrook. The fossil content of at least one sherd (AYV CTD1) implies a somewhat more distant source, at least 11km from Ockbrook. However, it needs to be emphasised that similar pottery clays exist elsewhere and the Ockbrook pottery was not necessarily made locally.

There is no petrological evidence of any sophisticated techniques of enhancing the properties of the clay using, for example, levigation tanks though there is unequivocal evidence of added crushed glassy material in the SL fabrics. Sand also, presumably to improve its workability, may have been added to the clay to produce SS fabrics, though the possibility that this might be a natural mixture resulting from glaciation should not be discounted. Probable grog was detected by its shape in two thin sections of CT fabrics, though given that the texture and mineralogy of this crushed pottery is virtually identical to the ceramic in which it is set, the amount of grog in Ockbrook pottery may well have been underestimated.

The petrographical evidence, therefore, points to the Ockbrook pottery having been made with a variety of materials in a number of different localities using different, though relatively unsophisticated techniques when preparing and, if deemed necessary, tempering the clay with additives. Structural differences, ranging from a strong preferred orientation to almost random arrangements, suggest differing moulding techniques were employed.

The earliest material divided almost equally between a Mercia Mudstone and Carboniferous source with two distinct fabrics, groups Q and MM, emerging from the Mercia Mudstone source. The typologically earliest piece sourced to the Carboniferous deposits was the distinct AYV sherd and may suggest these early vessels were made from clay deposits

located at a greater distance from Ockbrook than some of the later CT wares. It was unfortunately not possible to thin section the complete CT vessel from group 1. From group 2 a wider range of pottery sources emerge including some material from existing sources but adding vessels utilising alluvial and glacial deposits as well as material from the known kilns at Derby. The analysis has revealed elements of continuity in the utilisation of clay resource locations from the late Iron Age through into the pre-Flavian period at a time when great technological and typological changes were taking place, particularly in the MM and CT groups. Further research and analysis will be required to identify the sources for the BSA group and their relation to the clay sources used for early grey ware. The surprising discovery that some Conquest period combed, cordoned neck jars (as AXE no. 20), in a fabric related to the "Trent Valley" ware group, were utilising the comparable clay sources to that used to make Iron Age handmade, plain-rim jars shows a high level of continuity. The one definite jar in a "Trent Valley" ware form (GTA7 ZZT no. 25), however, is quite different in fabric, both macroscopically and petrologically and further research and analysis of this fabric group is required.

Glass by Caroline Jackson

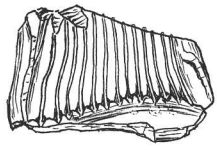
There are five fragments of glass, two of which are illustrated (Fig. 9). All fragments are Roman, although there is only one diagnostic fragment from a blue-green bottle which would indicate a date of late1st to late 2nd century. However, these are ubiquitous in the Roman world.

1 One part shoulder and lower handle fragment of blue-green prismatic or cylindrical bottle (handles are the same on both types). Reeded handle with simple lower attachment. Handle section *c.* 55 × 7mm. Late 1st–late 2nd century. These vessels are used as transport or storage containers and are widespread throughout the Roman empire. Context 001 ploughsoil.

2 One blue-green fragment base/rim of vessel. Sharp carination. 17 × 12 × 1–4mm. Context 0014. H1 Corn-drier.

3 Two fragments of green flat ?window glass. One surface rough/abraded. 21 × 12 × 1mm and 15 × 7 × 1mm. Not illustrated. Context 007. F4 Aisle room, top of pebble floor.

4 One green unidentified body fragment of vessel. Few bubbles. 13 × 8 × 1mm. Not illustrated. Context 001 ploughsoil



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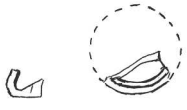

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Fig. 9: Ockbrook, Little Hay: glass fragments. Scale1:2.

Plate 5: Ockbrook, Little Hay: the Corieltauvian coin enlarged to twice actual size.

The Corieltauvian coin and its background by Susan Ebbins

The Iron Age coin is identified by Jeffrey May as a South Ferriby type (Allen's type P-Allen 1963, pl. VII), uninscribed stater of base gold (Plate 5). It would have been made by the Corieltauvi during the period of 40 BC to AD 10 and was recovered from the eastern extremity of the east/west Iron Age ditch (context 0088, Section N-N1 Fig. 4). It was found in the same context and within 1m of the flat, one-piece bow-form brooch (Fig. 10.1), and at the base of the loam layer which sealed the elongated oval feature strewn with heat-affected stones, charcoal and bones.

British Iron Age staters owe their origins to the Gallo-Belgic coins made by the tribes of northern France and imported into southern England from the mid 2nd century BC (De Jersey 1996). These in turn had been influenced by Philip II of Macedon staters displaying the head of Apollo with laurel wreath on the obverse and horses and chariot with rider on the reverse. The Gallo-Belgic type C, made between the early 1st century BC and 60 BC, inspired many of the British indigenous coin types which followed. Thanks to Derek Allen's meticulous recording of around 360 Corieltauvian coins, and the work of both Henry Mossop from 1965 to 1988 and Jeffrey May in recording new finds in the east Midlands, the number has now risen to around 2500. The main area of distribution of Corieltauvian coinage stretches from the River Humber down to the rivers Trent and Nene, including the modern counties of Lincolnshire, south Nottinghamshire, part of Leicestershire and Northamptonshire with thin spreads up into north Nottinghamshire, Yorkshire and across into Derbyshire. To what extent this reflects the tribal boundaries is debatable. Finds of this type are heavily concentrated in Lindsey towards the Humber, but there is no coin evidence of a pre-Roman settlement of the Corieltauvi at Lincoln, although this may have been obliterated or hidden by later development, or just not recorded.

'South Ferriby types' are named after a hoard of over 100 uninscribed gold and silver coins washed out of the right bank of the Humber in 1908 at South Ferriby, an important river crossing. On the obverse the laurel wreath is normally enlarged to fill most of the flan together with relics of the original design. However, South Ferriby types were minted in such numbers that the obverse dies broke up or became so worn that little or no detail remains on the obverse. This is the case with the Ockbrook coin. On the reverse the horse

is left-facing and its body is portrayed in a series of crescents. There is usually a star below the horse on the O and P types, the top of which can just be seen on the very edge of the Ockbrook coin. The rider is stylised and is represented by a pole with a double hook at the top and large pellets on either side. After approximately AD 10 the tradition of inscribing the coins with rulers' names began, and more of the original elements of the design were lost.

Approximately 75km south of South Ferriby, at Old Sleaford, many fragments of clay moulds used to produce pellets for making coin blanks, and parts of clay crucibles were recovered during excavations in 1960–61 (Elsdon 1996, 51–67). Since then pellet moulds have also been found at Leicester and coin blanks at Owmby and North Ferriby (Redcliff), East Yorkshire. If we can interpret this evidence as locations of Corieltauvian minting activities, it would seem that minting was not centralised to one place.

Various methods of manufacture for staters have been expounded; pouring blobs of molten metal onto a suitable flat surface before striking, or casting them in moulds using nuggets, granules or powdered metal, then either heating in an oven or blowing air through a tube over hot charcoal to fuse the metal (Van Arsdell 1989, 47). The flan would then be placed on the concave obverse die and struck with the convex reverse die. This action on the cooled metal produced characteristic splits around the circumference of the coins, as on the Ockbrook example. Whichever way they were made, the weight of each coin would have to be carefully controlled and skill would be needed to combine the metals in the correct proportions. Sometimes dies were larger than flans, resulting in some of the detail being lost, as on this example.

The Corieltauvian type P was one of Allen's British type K group, the mean weight of which was 5.4g (May 1995, 11–12). The present weight of the Ockbrook coin is 4.22g. The mean gold content of the type P was around 34%, with 22% silver and 44% copper (J. May *pers. comm.*). To determine the metal content of the Ockbrook coin, an ICP/OES (Inductively Coupled Plasma/Optical Emissions Spectroscopy) metal analysis test was carried out in October 1999 by the Environmental Impact Analysis Group at the University of Derby, the results of which are summarised in Table 6.

The full report is in the site archive and the following comments are quoted from the conclusions:

> Judicious mathematical correction was applied to the ICP/OES analytical results of metallic elements from the outer matrix since the results did not account for any non-metallic material adhering to the surface, for example, compounds of metal salts (chloride, carbonate, sulphate, etc.) or carbon. Insignificant correction was required to be applied to the ICP/OES results of the inner matrix — which is not surprising since the metals were effectively protected from the external environment.
>
> - The coin is mainly composed of silver, gold, and copper.
> - The outer matrix approximate ratio is 28% silver, 23% gold and 42% copper.
> - The inner matrix approximate ratio is 21% silver, 18% gold and 56% copper.
>
> Note that the silver : gold ratios are almost identical in both outer and inner matrices. Since copper in the exposed outer matrix may have been converted to soluble salts, copper effectively may have been lost to the environment prior to finding the coin. This would account for the major difference in copper content of the outer and inner matrix. Accordingly, the inner and outer matrix originally may have been identical.

Parameter	Outer matrix	Inner matrix
Silver (%)	27.758	21.425
Aluminium (%)	0.485	0.432
Arsenic (%)	0.000	0.000
Gold (%)	23.121	18.429
Boron (%)	3.438	1.281
Barium (%)	0.093	0.033
Bismuth (%)	0.066	0.000
Calcium (%)	0.803	0.346
Cadmium (%)	0.046	0.030
Cobalt (%)	0.054	0.028
Chromium (%)	0.059	0.022
Copper (%)	41.552	56.303
Iron (%)	0.346	0.323
Potassium (%)	0.317	0.098
Lithium (%)	0.066	0.014
Magnesium (%)	0.154	0.088
Manganese (%)	0.049	0.014
Sodium (%)	0.738	0.266
Nickel (%)	0.095	0.157
Lead (%)	0.219	0.209
Selenium (%)	0.000	0.000
Tin (%)	0.006	0.002
Strontium (%)	0.069	0.019
Zinc (%)	0.466	0.481

Table 6: Corrected metal analysis of Corieltauvian coin drillings.

The presence of Boron in a noticeable amount is probably attributable to its position in an environment containing significant quantities of charcoal and wood ash.

The coin would, therefore, seem to be a somewhat debased version of the stater. The tri-metallic system of alloying gold, silver and copper was a skill at which the Iron Age moneyers excelled and it allowed a wide range of colours and different levels of resistance to tarnishing and corrosion. During the 1st century BC, the gold content was reduced considerably and from the period of the Gallic Wars (60 BC onwards) very gradual modifications were made by the addition of fixed proportions of silver and copper so that the colour of staters remained constant (Cowell 1992, 232; Hazelgrove 1993, 39). However, by around 30 BC the silver was being reduced as well and staters were becoming more debased.

The Ockbrook coin is of base gold, and as such appears to belong more to the classes of copper alloy and gold-plated versions of the better quality gold issues, but there has been much debate as to whether they are official issues or deceitful forgeries. They appear in varying quality; most of them are of copper alloy with gold plating. Others are of silver or of more debased gold. Due to Iron Age expertise at die-making and metal-working, it is difficult to differentiate between some of those made deliberately as copies, and 'official' staters which in the very Late Iron Age became quite debased. Allen (1963, 35) observed that some forgeries of South Ferriby types were struck from official dies, of which there

are examples in the British Museum. Copies have been discovered as far away as Colchester, Silchester, Cirencester, Warwickshire Worcestershire as well as in the main Corieltauvian distribution area, and as May has noted (1992, 106, 109, 111), in the Yorkshire East Riding the majority of staters recorded were base copies. Two plated forgeries even appeared at the Romano-Celtic temple on Hayling Island (Briggs, Haselgrove and King 1992, 15). The fact that some reached major centres in the south and that some were found in post-conquest contexts (Allen 1963, 21) suggests that they were still circulating right up to the conquest period, and had become to some extent, an accepted form of tender between the Gallo-Belgic wars and the setting up of the Roman coinage system, when there was possibly a shortage of gold from the continent. Perhaps the Romans allowed this to continue in outlying areas in which they had little interest, but suppressed it along the Roman roads as they advanced and prior to setting up new Roman centres. It has also been suggested that copies and forgeries were circulated alongside the official currency as tokens of exchange, but all interpretation of the proceedings of this period have to remain conjectural.

As recorded Iron Age coin finds of any type are extremely sparse in Derbyshire (only around 5), in spite of the more intense excavation of the Trent Valley in recent years, the Ockbrook coin can be viewed, official or not, as a welcome inclusion in the developing pattern of east Midlands Iron Age activity.

Thanks go to Mark Taylor and David Parker for the Metal Analysis Test and also many thanks to Jeffrey May for sparing the time to read and correct this paper.

Brooches (Fig. 10)

All are made from copper alloy:

1 Early to middle 1st century AD. This is undecorated and forged from a single wire. It has a spring of 4 coils and its curved bow is flattened and tapers towards the foot, with a plain catchplate. Part of the coil and the pin are missing.

A very similar example was found in the excavations at Dragonby and described as a 'flat triangular bow form' derived from a La Tene III prototype (May 1996, 238, fig. 11.3 no. 34). This type has a distribution over most of southern and eastern Britain. Another parallel appears in Hattatt (1985, 24, fig. 9 no. 243) from Owmby, Lincolnshire.

Feature 12, Context 0088. Upper fill of Iron Age ditch.

2 Late 1st to early 2nd century AD. Colchester derivative. It is also known as a dolphin brooch due to the humped shape of the bow, and is plain apart from incised lines at the ends of the elongated wings and on the foot.

This type was recorded by Mackreth (1985, 286, fig. 125 no. 16), when a similar brooch was recovered from the Little Chester defences. An unusual feature of this and the Ockbrook example is that the axial bar seems to have been inserted into the slotted tubular wings, and the wings and spring have then been clamped around it. This may be a repair of the hinged version. The slot is now filled with corrosion products from the bar, and the pin is missing. This modification of the pin assembly from hinged to sprung has been noted elsewhere by Hattatt on a similar dolphin brooch from East Anglia (1985, 77, fig 31 no. 357).

Feature 12, Context 0023. Roman levels of Iron Age ditch.

3 Late 1st to 2nd century AD. Colchester derivative. The wings are short with beaded borders at each end and there are curved mouldings at the junction of the bow and wings.

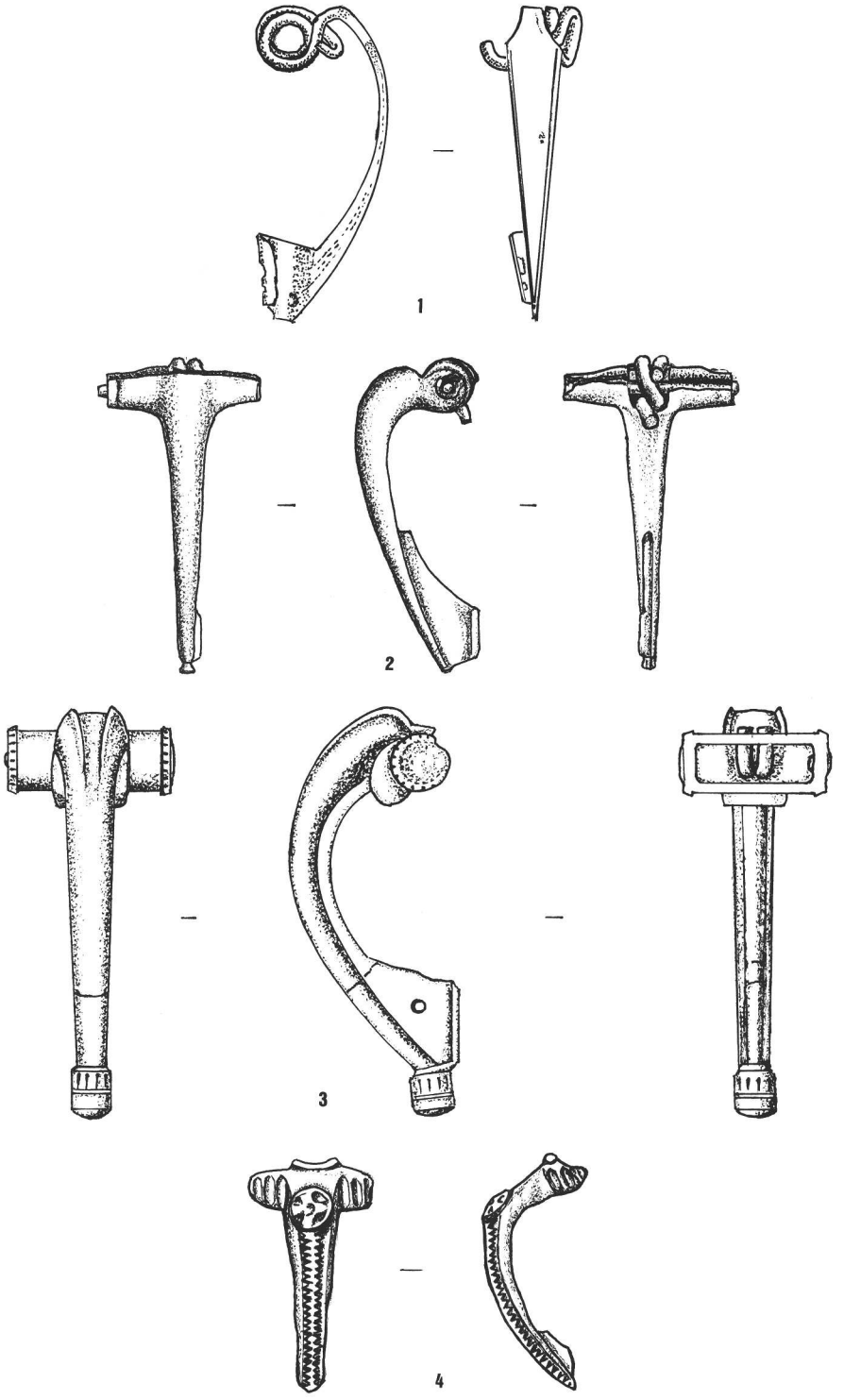


Fig. 10: Ockbrook, Little Hay: brooches. Scale 1:1.

The bow tapers to a foot knob with a beaded cross-moulding. The spring and pin are missing.
Two similar types are recorded from Derby, one by Mackreth (1985, 282, fig. 123, no. 4) from Derby Racecourse and another by Brassington (1993, 39, fig. 10, no. 1) from the 1926 Little Chester Excavations. The latter was dated AD 100–150. May (1996, 252, fig. 11.8) also illustrates similar examples and refers to them as 'dolphin brooches of sprung form'.
Context 0001. Unstratified topsoil.
4 2nd century AD. Headstud Brooch. It is a hinged pin variety. There are the remains of a loop on the head, and the wings are stepped up towards the bow, at the top of which is a circular stud with a cross motif . Down the centre of the bow is a ridge with fluting on either side. The catchplate, hinged pin and moulded foot are missing.
Collingwood (1969, 288, fig. 103 no. 42) reported a very similar brooch from Corbridge, and a more local example is represented by Mackreth (1985, 288, fig, 126, no. 23) from the Derby Racecourse. The closest parallel, however, is an identically shaped and decorated brooch from Winterton, Lincolnshire (Stead 1976, 200, fig. 101 no. 27) although this did have green enamel decoration on the bow, which is not evident on the Ockbrook example.
Context 0001. Unstratified topsoil.

Other copper alloy objects (Fig. 11)

Gilded stud

The stud is of sexfoil design with a central ring and dot motif from which a line of tiny punched rings radiate outwards towards another ring and dot at the end of each petal. Some of the gilding has worn away, showing corrosion-pitted surfaces on the underlying bronze. The lower petal has snapped off halfway across — perhaps whilst being purposely prised from its seating. Its front face is around 20mm in diameter, and the square-sectioned shank at the back is 15mm long. This is longer than those normally fitting onto leather and it was therefore probably fastened to something with a wooden framework; suggestions from the excavation team have included a timber-framed shield or horse saddle, a travelling chest, or various items of furniture. However, since the stud was recovered from unstratified topsoil, in which some Medieval items have also been found, its proximity to the building could not be positively attributed to the Roman period.

A photograph and drawing were sent to Catherine Johns at the Romano-British Antiquities Dept. of the British Museum who replied that she and her colleague were certain it was not Roman, and passed on the details to the Medieval & Later Antiquities Dept. for their perusal. Their curator agreed that it could have come from a wooden chest, casket or from furniture and thought that it may be 17th century. Our own research has not yet produced a parallel among the many different types of stud and thus we are unable to date this item positively.

Folded fragment

The fragment is 34mm long, 15mm wide and slightly less than 1mm in thickness. Part of the upper edge is folded outwards and part of the lower edge is folded inwards, the lines along which it is folded being roughly parallel. It has a shiny and smoother appearance

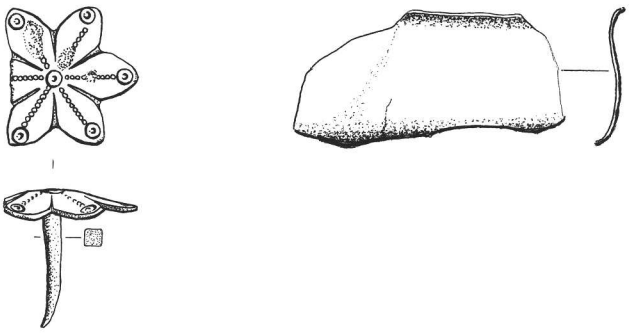


Fig. 11: Ockbrook, Little Hay: other copper alloy objects. Stud to left and fragment to right. Scale 1:1.

on one side and is more dull and matt on the other, but the whole surface is covered by green corrosion products.

A small sample was taken from the object by Dr. David Hulse of the School of Engineering at the University of Derby for further examination. An X-Ray analysis was carried out from which Dr. Hulse concluded that the composition of the metal was around 90% copper, 8% tin and 2% phosphorus, including insignificant amounts of other elements. He also took photographs (held in the site archive) at $\times 200$ magnification of the surface of the cross-section, showing the equi-axed grains of the metal with annealing 'twins' (sets of two short parallel lines within the grains), and was able to deduce from these characteristics that the metal had been hammered into shape, with intermittent annealing during its working. Furthermore the curvature of the fragment had been produced during its manufacture and not incurred by accidental damage.

The object was excavated from the fill of the external ditch outside the north-east corner of the building (Feature 14, Context 0150). When found it was in direct contact with a sheep's mandible which was stained green by the corrosion products of the bronze. It is impossible to say from what this derived; bronze was used for bowls, jugs and other domestic containers during this period, also for mounts on horse trappings, as bindings on wooden vessels, and in various personal implements.

Miscellaneous iron objects (Fig. 12)

1 Ring-headed Pin, 144mm long with a round-sectioned tapering stem. These are ubiquitous items from Romano-British sites. Manning (1981, 195, fig. 76) remarks that 'they were probably driven into wood or walls and held rings or other pieces of ironwork' and quotes one from Woodcuts (Pitt-Rivers 1887, pl. XXVII, 3) which was found still retaining a ring in the eye. However, May (1996, 307, fig. 11.41) comments that they 'would have had many uses' and refers to them as loop-headed spikes. Partridge (1981, 115, fig. 61) states that the pins from Skeleton Green would be impossible to drive into woodwork without distorting their heads and that the ends (as on the Ockbrook example) are rounded, rather than sharply pointed. He sees them as locking-pins on wooden carts and harnesses, shackle pins, and securing pins for small doors or gates. The writer also views this example as a multi-purpose implement, and suggests another use as a fixing pin to secure a yoke harness assembly on oxen.

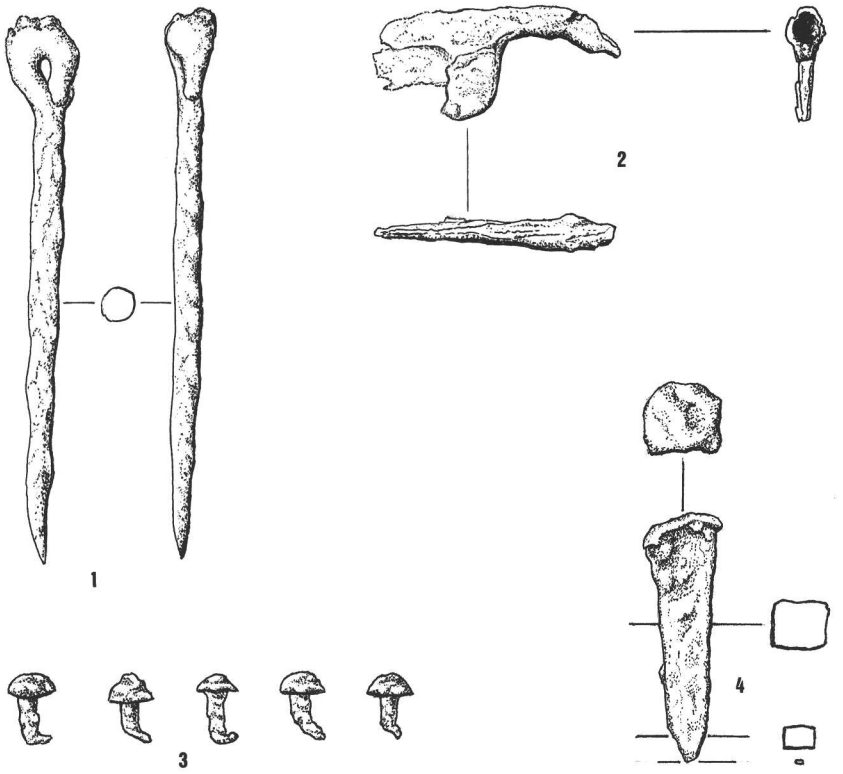


Fig. 12: Ockbrook, Little Hay: miscellaneous iron objects. Nos 1, 2 and 4 Scale 1:2; no. 3. Scale 1:1.

Feature F12, Context 0073, upper fill of Iron Age ditch.

2 Unidentified fragment of socketed tool, knife or implement. Broken at both ends. Length 65mm.

Feature F12, Context 0023, Roman levels.

3 Hobnails, between 11 and 12mm in length. Roman hobnails have been recorded *in situ* on various sites, such as those from the Butt Road cemeteries at Colchester (Crummy 1983, 51–53) and their relationship to and patterning on the *caligae*, *calcei* and *soleae* shoe types at Bar Hill on the Antonine Wall are well-discussed in Robertson (1975, 59–82).

At Ockbrook three single hobnails were found in various Roman contexts, and a cluster of eleven were under the courtyard floor near to the 1st century building wall at the north-east corner of the site (Feature F1, Context 0002). Unfortunately none of the leather remained and we can only interpret these as representing the discarded remains of a shoe or sandal.

4 Smith's punch, length 65mm. It has a battered head and a rectangular-sectioned stem tapering to a point. Very similar examples are shown from Dragonby (May 1996, 294, fig. 11.33 no. 26); from Newstead (Curle 1911, pl. LXVI); and in a hoard of blacksmith's tools from Silchester (MacWhirr 1982, pl. 12).

Unstratified topsoil.

Roman nails (Fig. 13)

Various examples of Roman nails are illustrated in Manning (1972, 187, fig. 69) from Verulamium, in May (1996, 306, fig. 11.40) from Dragonby and in Curle (1911, pl. LXVII) from Newstead. Representative samples from Ockbrook are listed below. The remaining 29 pieces are fragmental and are retained in the site archive. The nails are all heavily corroded and have been measured including concretions. They fall into the two main types described by Manning (1972) as follows:

Type 1 with a square sectioned, tapering stem, the larger specimens having a round, conical or pyramidal head, often flattenned by hammering, the smaller examples having an almost flat head.
Type 2 with a rectangular sectioned, tapering stem and a triangular head with marked shoulders, but of the same thickness as the stem. The top of the head is often rounded by hammering.

Fig. no. in Figure 13	length (mm)	context	feature no.	details
Type1				
1	135	0151	F14	
2	148	unstratified		bent with point missing
3	95	unstratified		bent
4	62	0022	F12	
5	45	0007	F4	
6	45	0139	F3	end missing
7	72.5	0016	H1	bowed
8	75	0014	H1	bent
Type 2				
9	95	unstratified		shank clenched over
10	85	0022	F12	end missing
11	95	0022	F12	bowed and point missing
12	102.5	unstratified		bent

Table 7: Roman nails from Ockbrook

Metal composition of the nails

A nail from the Roman levels was submitted to Dr. David Hulse of the School of Engineering at the University of Derby for examination, and a longitudinal section was cut from the nail and examined under an optical microscope. He observed that the metal was quite 'clean', i.e. the slag inclusions were fairly low, when compared with samples from recent studies on late 18th and 19th century nails made at Belper. He also examined the nail on the Scanning Electron Microscope, and by X-Ray Energy Dispersive Analysis (prints retained in the site archive), which showed that the Roman example had very low levels of iron oxide, phosphorus, sulphur and carbon, and was therefore of good quality iron compared to the Belper samples.

Hardness tests were then carried out, using the Vickers pyramid diamond system with a 20 kilos load, with results recorded as 92.3 and 95.2. Dr. Hulse stated that this is fairly low for nails in general, but would be expected in such a pure metal. It was agreed that nails of this softness would be more suitable to be driven into 'green' wood rather than hard seasoned timber.

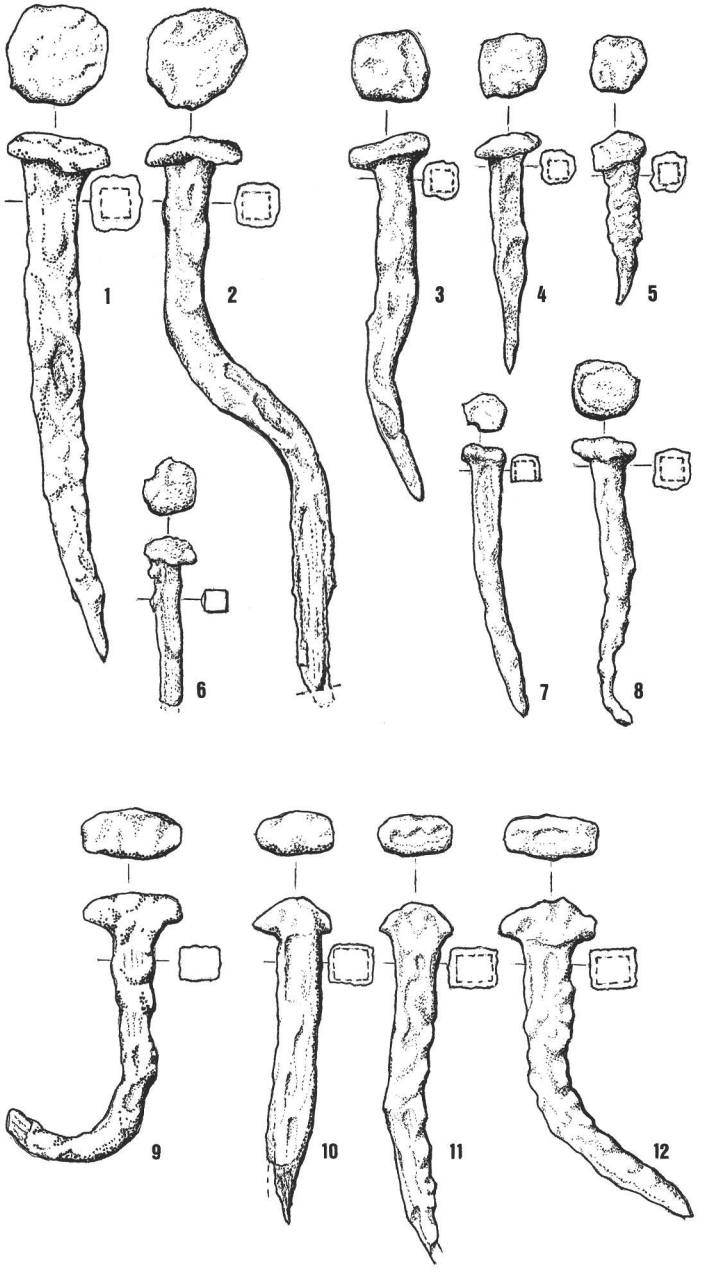


Fig. 13: Ockbrook, Little Hay: Roman nails. Scale 1:2.

Lead objects by Jane Cowgill (Fig. 14)

Other items not illustrated were one flat, circular and one square objects(possible weights); one fragment of a possible loom weight with one convex and one flat side; and 59 assorted fragments of lead waste, totalling 878g in weight.

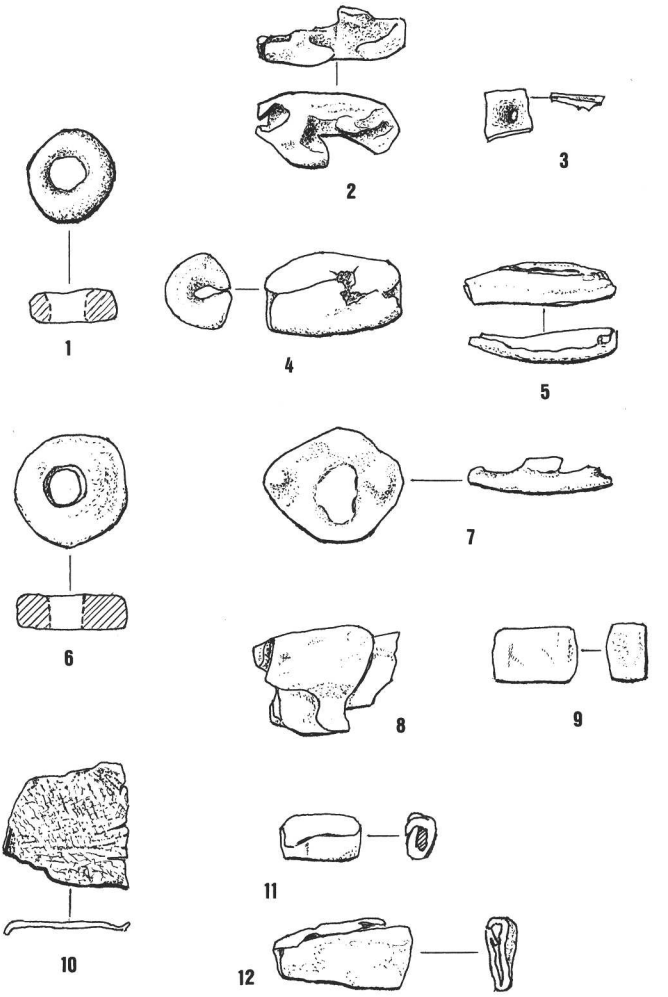


Fig. 14: Ockbrook, Little Hay: lead objects. Scale 1:2.

	Weight(g)	Description	Date
1	**24**	**Spindle whorl or possible weight**	**Possible Roman or later**
2	26	Molten waste	?
3	<1	Washer	?
4	62	Fishing weight	?
5	12	Fishing weight/sheet waste	?
6	?	Spindle whorl or possible weight	Probable Roman
7	30	Possible pot repair*	Likely Roman
8	22	Scrap**	?
9	30	Possible weight	?
10	12	Scrap/probable cast sheet fragment**	?
		Context 0115	

11 12	Fishing weight/rolled sheet waste	?
12 14	Scrap**	?

Table 8: Illustrated lead objects from Ockbrook

Notes to symbols:

? All finds may be Roman in date, although lead waste and loom weights of similar shapes may be found in many periods, from Roman to present day. Only no. 10 was recovered from a stratified context.

* *Lead pot repairs are usually Roman in date, and are generally used on cheap or local pottery types.*

** *Scrap fragments were commonly retained for recycling.*

Fired clay and daub (Fig. 15)

1 Fragment of fired clay 110mm long, varying thickness between 20 and 40mm, with a smoothed curved edge. Creamy pink to reddish in colour with grey patches where reduced. Fairly soft and powdery. Found in east/west Iron Age ditch (F12), but unstratified. Possibly from the dome of an oven structure (*cf.* May 1996, fig. 13.6)

2 Fragment of daub 70mm long, varying thickness between 5 and 10mm. Pinky-orange in colour, soft and powdery with Ironstone inclusions. Unstratified

3 Fragment of daub with 2 cylindrical holes passing through with smooth inner surfaces, probably wattle impressions. Approximately 60mm long. Diameter of holes *c.* 115mm. Buff to red with dark grey patch. Hard fired with sparse sand inclusions. Topsoil.

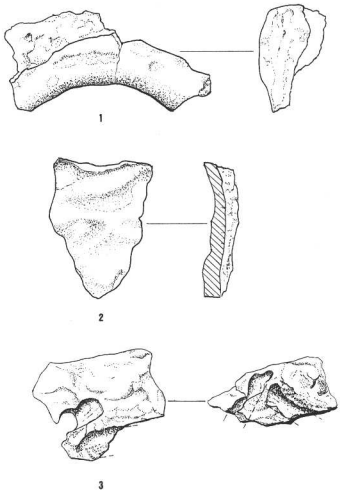


Fig. 15: Ockbrook, Little Hay: fired clay and daub. Scale 1:4.

Flints by Andrew Myers (Fig. 16)

The flint assemblage is considered to be Mesolithic unless otherwise stated. The flints apart from nos 2 and 10 are translucent brown in colour and are probably derived from Trent floodplain gravel deposits. Nos 2 and 10 are opaque grey and possibly originate

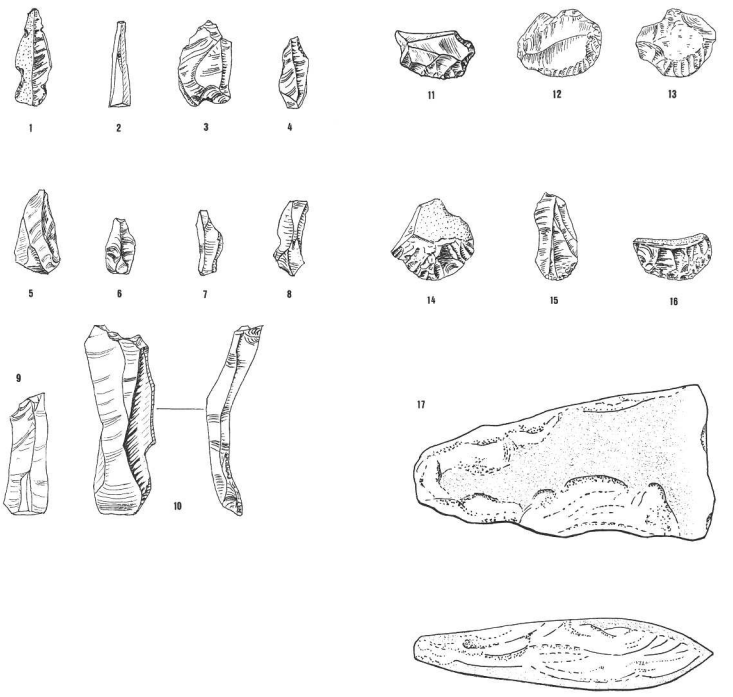
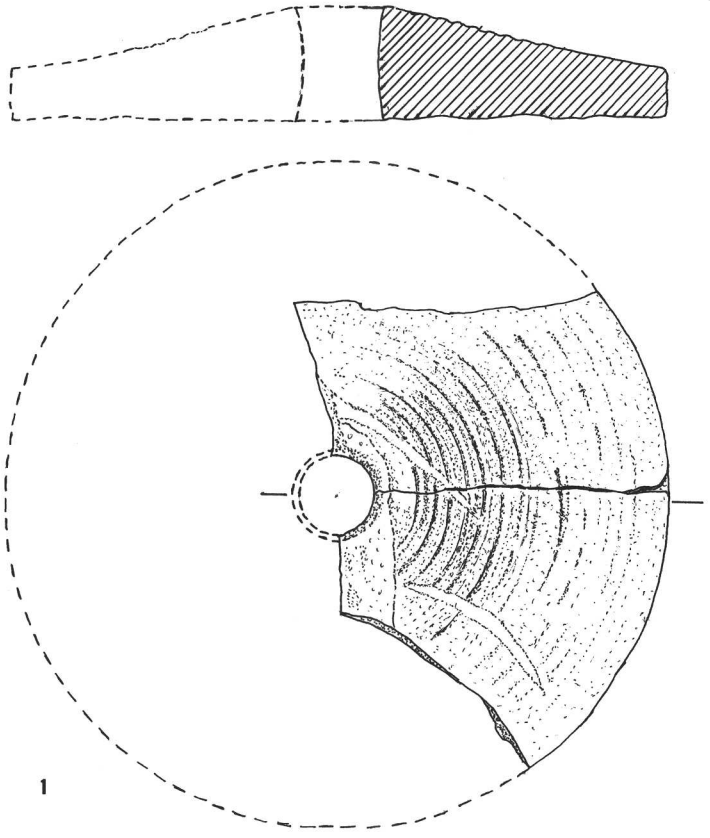


Fig. 16: Ockbrook, Little Hay: flints and stone axe. Scale 1:2.

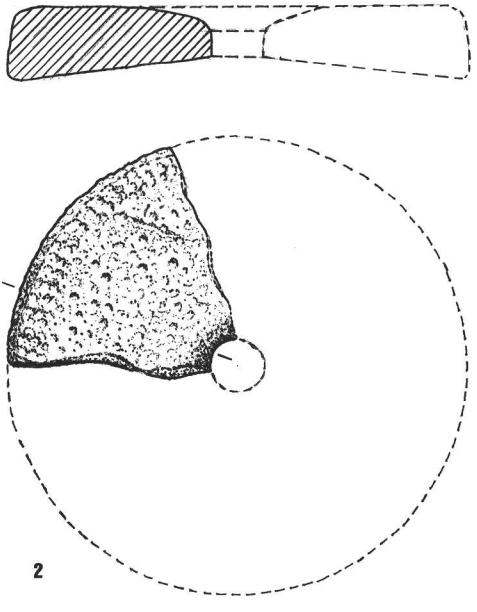
from the Lincolnshire Wolds. The ones with the bluish patination may have been heat-affected. The width to length ratios of the blades and flakes are between 1:4 and 1:2. Microliths are notably absent in this collection of flakes, blades and scrapers.

Illustrated pieces:

1 Notched primary flake.
2 Blade with retouched bulbar end.
3 Incomplete tertiary flake
4 Incomplete tertiary flake
5 Complete tertiary flake
6 Complete tertiary flake
7 Incomplete tertiary flake
8 Complete tertiary flake
9 Blade with retouched bulbar end
10 End scraper on blade with retouched notch
11 Side and nosed scraper
12 Thumbnail scraper. Late Mesolithic to Neolithic.
13 Thumbnail scraper with bluish patina. Late Mesolithic to Neolithic.
14 Broken scraper
15 Flake showing platform isolation scars
16 Secondary flake with bluish patina



1



2

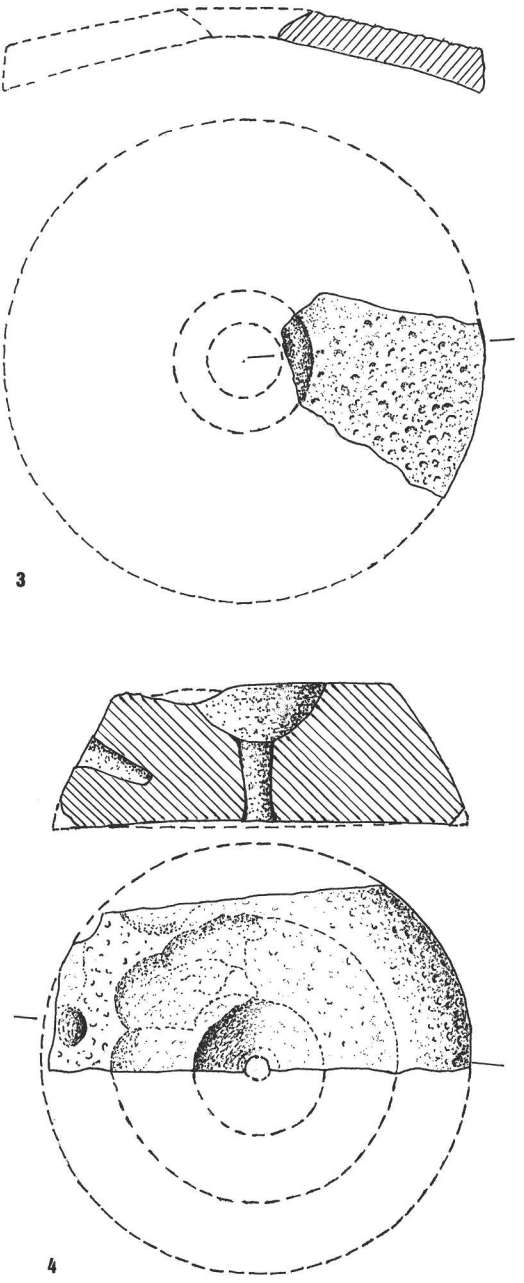


Fig. 17: *(facing and above)* Ockbrook, Little Hay: quernstone fragments. Scale 1:6.

Stone axe by Mark Edmonds (Fig. 16.17)

This is a fine, and unusually complete stone axe with evidence for extensive reworking. The axe measures *c.* 77mm in length with a cutting edge *c.* 38mm in diameter, tapering down to a narrow but nonetheless rounded butt. Although much of the artefact is covered by flake scars, a ground surface can be identified on both of the principal faces.

In raw material terms, the axe is likely to be Group VI, originating from the central fells of Cumbria, probably in the vicinity of Great Langdale. Provenance is not always so easy to determine on the basis of macroscopic inspection alone, not least because of the weathering that often alters and obscures the surface appearance of the stone from which a particular item is made. In this case, however, a series of small flake scars running in from the cutting edge have cut through the weathered/patinated surface, revealing stone with the characteristic colour and composition of Group VI. This attribution could be checked through thin sectioning and petrographic analysis, but seems unnecessary and perhaps unwarranted in this case.

With such a small artefact, it would be difficult to cut a core or section without destroying the piece altogether. In technological terms, the axe speaks volumes. Traces of grinding on both of the principal faces and on the lateral edges suggest that it started life as a larger axe/adze which was ground over much if not all of its surface. This suggestion is supported by close inspection of the bevel on the cutting edge. The angle and direction of the bevel suggests that the cutting edge was itself originally larger and wider, being worked down through resharpening or reworking after breakage. That this process was 'ongoing', and not just a single instance, is suggested by the fact that some of the flake scars on each surface have ridges which show signs of subsequent grinding/smoothing. Similar traces are also visible on both lateral edges. This would be consistent with a pattern of use, resharpening and reworking repeated over time; a blade kept close and used repeatedly.

One other feature is worthy of note. Seen in plan, the blade has two notches, opposite each other *c.* 55mm down from the cutting edge. These have been formed by slightly deeper and more abrupt flakes being removed from either side. Both appear to cut through traces of grinding. Whether these notches are related to hafting is difficult to determine. This seems likely, but another possibility is that these indentations allowed the blade to be tied and suspended from some sort of line. This is by no means unique. Indeed there are a number of small heavily reworked axes that appear to have ended their lives as pendants, some even perforated to allow suspension. Where tools could also have biographical qualities, this 'afterlife' may have been of some importance, the significance of an object persisting long after it had ceased to have any utility.

Quern stones (Fig. 17)

1 Fragment of lower stone of rotary quern, comprising two portions, approximately 33% of whole stone. Buff coloured, medium-grained Millstone Grit with an estimated diameter of 52.3cm. Thickness of stone at circumference is 3.6cm and at the centre 9cm. The pivot-bearing hole is 6cm in diameter. The sloping upper face bears concentric score marks, but the outer surfaces are not dressed.
From the ploughsoil over the 2nd century AD building (C0001), found amongst wall-stone fragments.

2 Fragment of upper stone of rotary quern, approximately 25% of whole. Coarser-grained Millstone Grit. Estimated diameter 35cm. Thickness at circumference 5.5cm and at centre 3.5cm. Diameter of hopper hole 5cm. Upper and vertical faces are heavily pecked and the lower surface is concave.
From the ploughsoil close to the building (C0001).
3 Fragment of upper stone of rotary quern, approximately 15% of whole. Millstone Grit material as for no. 1. Estimated diameter 37.5cm. Thickness at circumference 3.5cm and at centre 2.75cm. Diameter of hopper hole estimated at 6cm. Upper and vertical faces are heavily pecked and the lower surface is concave.
From the ploughsoil 15m north-west of the building (C0001).
4 Fragment of upper stone of Hunsbury quern, approximately 50%. Pinky orange, very coarse-grained Millstone Grit. Estimated diameter 33cm. Its remaining height is 11.5cm but it is very worn. The diameter x depth of the hopper is 12cm × 6cm and diameter of the hopper hole 2.8cm. The diameter x depth of the handle socket is 2.75cm × 6.5cm. The sloping sides and upper surface, including the hopper are heavily pecked. The lower surface shows extensive wear from use, the main wear having occurred on the handle side, giving a 'lop-sided' effect. This can also be seen on a similar Hunsbury quern from Midway, near Swadlincote (Leahy 1979, 55), and on an example from Long Eaton, which is on display in the Erewash Museum, Ilkeston.
Found immediately adjacent to the exterior of the north-east corner of the building (F1, C0002).

Brick and tile

Not all fragments have been illustrated. Those which appear in Fig. 18 are noted in Table 9.

The brick fabric is an orange-coloured, sandy coated and rather soft earthenware containing abundant small particles of skerry stone inclusions. It is probably made from local clays of the Mercia Mudstone deposits.

The fabric of *tegulae* 1 to 12 is orange-coloured, sandy-coated soft earthenware with inclusions of small particles of skerry stone and occasional haematite grit. Sandy particles can be loosened from the surfaces by rubbing. As with the brick fabric, it probably has a local origin.

The fabric of fragment 13 was different in that it had no skerry inclusions but had abundant small quartz grits and a hard reddish core and surfaces. It had a fused sanded surface on the upper face with no loose particles and was of notably denser material than the other examples. It possibly derives from the Coal Measures further north, or from the Leicestershire coalfields.

Description	Length × height × thick. (cm)	Feature	Context
Brick fragments:			
1 Brick fragment with finger-grooved whorls decorating the upper surface. (Fig. 18.1) This type of marking has been found on *pilae* as well as *tegulae* (Brodribb 1979, 217).	10 × 8.2 × 4.2	H1	0059
2 Brick fragment. Fabric and colour as 1.	11 × 9 × 4	F7	0017

3 Brick corner fragment in slightly harder fabric,otherwise as 1 & 2. Fire-blackened stains on surfaces. (Fig. 18.2)	15.5 × 13.5 × 4.6	PH2	0024
4 Brick fragment. Fabric and colour as 1 and 2. Two outer faces reduced to a buff-grey colour.	11.5 × 8 × 4.6	PH1	0064
Tegulae fragments:			
1 Flanged fragment. (Fig. 18.3)	13 × 10 × 2.2	F12	0022/23
2 Flanged fragment	12.5 × 7 × 2.3	F12	0022
3 Flanged lower right corner fragment, showing cut-away interlocking feature. (Fig. 18.5)	8 × 6 × 3	PH2	0024
4 Flanged lower right corner fragment showing cut-away interlocking feature. (Fig. 18.4)	8 × 5 × 3	PH4	
5 Body fragment	7 × 6 × 2	south of PH5	0021
6 Body fragment	6 × 6 × 2	,,	0021
7 Body fragment	9 × 5 × 2.1	Unstratified	
8 Flanged fragment	8 × 6 × 2	Unstratified	
9 Body fragment	10 × 5.5	Unstratified	
10 ,,	7 × 5 × 2	F5	0121
11 ,,	8 × 5 × 2	PH1	0064
12 ,,	7 × 5 × 2.1	F2	0132
13 Body fragment, hard-fired with chamfer on lower face and part of tile edge remaining (possibly upper left-hand corner of tile).	8 × 7 × 2.1	Unstratified	

Table 9: Brick and tile fragments from Ockbrook.

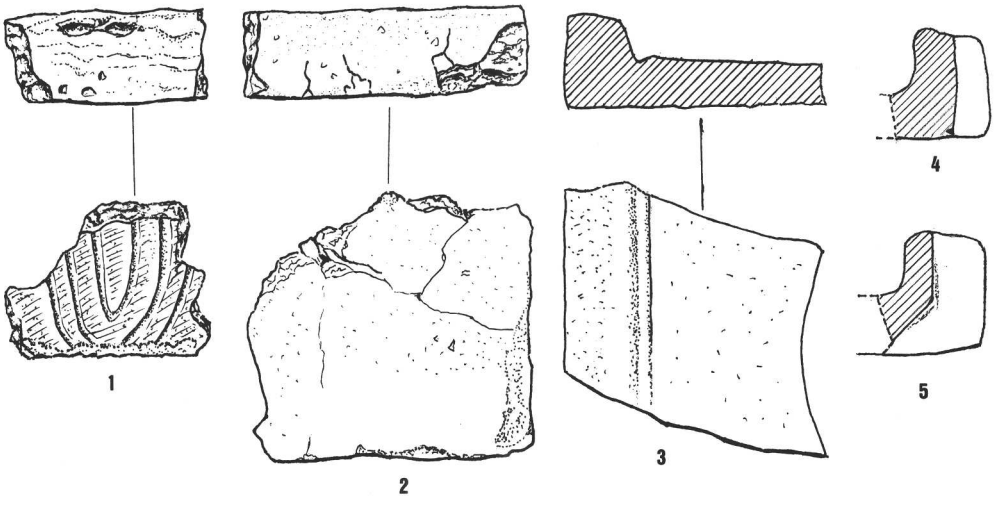


Fig. 18: Ockbrook, Little Hay: brick and tile fragments. Scale 1:4.

Plant remains by Pat Wagner

Methods: Hand processing of samples (using the 'wash over' technique) with 1cm and 300 micron mesh sizes for the collection of the course and fine floating material and a

1cm mesh for the heavy residue. Material dried at room temperature and then scanned/sorted by eye and with the use of a low powered microscope ($\times 40$ magnification).

Discussion: The samples contain carbonised plant material in a good state of preservation. The samples taken from the hearth deposits (0060, 0061 and in addition sample 0062) contain quite large quantities of plant material, dominated by cereal grains, and including chaff fragments and some seeds of wild plants. These samples are useful as they are taken from primary contexts. The other samples contain less material.

Context	Feature	Contents
0016*	H1 fill of corn-drier	3x wheat grains (*Triticum* sp.) + fragments; 3x wheat chaff (*Triticum* sp. glume base) + fragments (not very diagnostic — Emmer/Spelt?) 2x indeterminate cereal grains + fragments weed seeds: 1x sedge (*Carex* — (trig.)) 1x ribwort plantain (*Plantago lanceolata*) + frags. wild plants *c.* 10 items in total
0022*	F12 mid-2nd cent. level E/W I/A ditch	cereal fragments 2x fragments small Viceae (Fabaceae) + maximum 1 whole indeterminate fragments of plant material <10 items (approx.) in total
0039*	F4 floor of E aisle room	Chickweed (*Stellaria media*) — uncharred
0042*	F13 base of fill, N/S I/A ditch south edge of F4	Charcoal rich sample (1–2g) Some indeterminate fragments — including 1x rhizome fragment
0042*	F13 ditto	1x wheat grain (*Triticum* sp.) + fragments 1x grass (*Poaceae*) /cereal culm base 1–2 grass (*Poaceae*) /cereal culm node 1x chaff (*Triticum* sp. glume base) indeterminate fragments mostly non-quantifiable (NQ) (some animal bone fragments too) 5 items (+ fragments) <10 in total
0052*	F13 upper fill N/S I/A ditch, north of corn-drier	1x Glume base (*Triticum* sp.) Various culm fragments cf. heaths (Ericaceae) 1x grass (Poaceae (*Danthonia* size)) 1–2 indeterminate seed *c.* 5 items in total
0055*	F13 primary fill	A little bit of charcoal
0060	H1 fill of corn-drier	Cereal rich — dominantly wheat Mostly: spelt (*Triticum spelta*) some: bread wheat (*Triticum aestivum*)

		some: oat (*Avena* sp.) less common: barley, hulled (*Hordeum* sp.) < 10x chaff (spelt glume base & bread wheat. Rachis) wild plants: 15–20 smaller seeds (including Labiatae; *cf.* Rosaceae & legume (Viceae)) Summary: Mostly spelt grain (+ some chaff — < 10); bread wheat and oat common; a few smaller seeds (*c.*20) including Viceae, Labiatae & *cf.* Rosaceae *c.* 300 items in total
0061	H1 ditto	Cereal rich mostly bread wheat some spelt; a little spelt chaff (< 10) some oat; a little barley wild seeds — *c.* 40–50 in total (richer than context 0060) *Bromus* sp.; Cruciferae (incl. Raphanus); legume/viceae (*Vicia* sp.) More charcoal than context 0062 *c.* 200 remains/items in total
0062	H1 ditto	Cereal rich (less well preserved than contexts 0060 and 0061, many grains fragmentary) Mostly spelt (*Triticum spelta*), bread wheat (*Triticum aestivum*) and oat (*Avena* sp.) Approx. 30 + x Spelt chaff Wild species: Poaceae, including *Bromus* sp. and other species Hazelnut shell Charcoal fragments A generally more mixed deposit: refuse from different sources — charcoal, nutshell and grain 200–250 remains/items in total
0090*	H3 1st cent. hearth	1x cereal indeterminate *cf.* Barley 1–2 Grass (Poaceae) indeterminate seed fragments 1x culm node *c.* 5 items in total
0093	H2 1st cent. hearth	Indeterminate fragments mostly non-quantifiable Rhizome and culm (Ericaceae?) weed seeds: 1x grass (Poaceae) 1x knotgrass?(*Polyganum aviculare* agg.)

Table 10: An assessment of the carbonised plant remains from Ockbrook; results of 'scan' (= mostly sorted, as sample small)*

CONCLUSIONS

The site and its environs had an obvious attraction for farming communities during both the Iron Age and Roman periods. Field walking over the Mercia Mudstone and Boulder Clay soils surrounding the site produced evidence for this in a widespread scattering of

Romano-British sherds. Concentrations found with an occasional fragment of quern stone were spaced out at an average of 0.8km (half a mile) to 1.2km (three-quarters of a mile) apart and are suggestive of settlement sites. Five Hunsbury type beehive querns have also been discovered within the same area. Evidence for even earlier exploitation of these soil types was revealed by the discovery of flint artefacts and flakes and one reworked greenstone axe (Fig. 16.17), suggesting that some clearance of the woodland had taken place by the Middle Iron Age. The landscape was well colonised during the Late Iron Age and throughout the Roman period, with individual farmsteads spaced out at approximately the same distances as the post-Enclosure farms which feature in the landscape today. Occupation of the site itself can be divided for convenience into 5 major phases (Fig. 3):

Phases 1 and 2 — Middle and Late Iron Age

Medieval and modern ploughing over the site had penetrated and mostly removed the Iron Age ground surfaces which would have contained evidence of structures. As such, positive evidence for Iron Age occupation within the imposed limits of the area excavated was restricted to the enclosure ditches and their infills, together with any other sunken feature. Some Iron Age sherds were, however, scattered amongst Romano-British sherds on relict surfaces exposed by ploughing. The trench sections taken across the enclosure ditches revealed at all levels the bones and teeth of cattle, horses, sheep and pigs (catalogue of the animal remains in the site archive). In all 473 samples were recovered and were examined by ARCUS at the University of Sheffield. Of these 292 were identifiable, 52% being from cattle, 40% sheep or goat, 7% pig and 1% horse. Four samples only are thought to be from wild animals. Butchery marks and evidence of gnawing by carnivores (presumed to be dogs) were noted on a great many of the bones, and 96% of the animals were in excess of 4 years old when slaughtered. This would be the age at which the animals reached maturity during the Iron Age and Roman periods (May 1996, 154). With regard to the cattle, no autumn culling of young surplus stock for home consumption would appear to have been carried out here and this would imply that either sufficient winter fodder was available to raise the animals to full maturity before slaughter or that surplus young livestock were being taken to market. Since we do not have data on the ratio of female to male bones, it cannot be established whether the main purpose was for dairy (with cheese and butter) production or for beef. Some cattle would be utilised as draught animals for pulling ploughs and carts and would not be slaughtered until the end of their useful working lives. Evidence to date from cattle jaws from Roman London, Roman forts and urban sites show the vast majority being killed at over 5 years of age, and some living to 15 years or over (Rackham 1994, 48–51). The fleece could be taken from the sheep between 2 and 6 years after which the wool quality would have deteriorated.

The primary fills also contained sherds of handmade Ancaster-Breedon scored ware, which has its origins in the 5th to 4th centuries BC. The secondary fills, marked by a preponderance of fire-cracked pebbles, contained wheel-turned pottery sherds of Aylesford-Swarling type and other Late Iron Age handmade pottery. An iron ring-headed pin (Fig. 12.1), a La Tene III derivative one piece brooch (Fig. 10.1) and a Corieltauvian Iron Age coin (Plate 5) of South Ferriby type were also found in association.

The limited evidence prevents full knowledge of the type, extent and status of this Iron Age settlement. Sterile deposits of brown silty loam sandwiched between occupational spreads and debris in the upper ditch fills, may indicate breaks in the continuity of occupation. Aerial photographs to date have not revealed crop marks suggestive of ditch systems. Geophysical surveys taken around the site, even over the projected alignment of ditches exposed by excavation, have not produced positive evidence. Such evidence as we do possess from finds points to the inhabitants having a standard of living above mere subsistence level, and that trade, possibly with an associated monetary system, operated within the rural economy and way of life of this Iron Age community. Evidence obtained by field walking in the locality reveals, by the distribution of potsherds, that arable land surrounded each habitation site during the Roman period. This arable land, however, rarely extended beyond 100–150m from each site, and it is reasonable to assume this was also the case during the Iron Age. Coupling this information with the bone analysis we may conclude that mixed farming rather than specialisation was practised here during the Iron Age and Roman periods.

Phase Three — Transitional Iron Age to Roman Period

The Late Iron Age levels, within the ditch infills, were sealed by spreads of Mercia Mudstone into which several bowl-shaped hearths were inserted (H2, H3, H4, H8). Similar hearths were also discovered on surfaces protected by Medieval ridges, or the structure of the 2nd century AD building (H5, H6, H7). Pottery associated with these features indicates a late 1st to early 2nd century AD date, but no evidence to indicate their purpose was discovered. Other features which may have belonged to this period include post-holes F15, F16 and F17, post-hole or pit F3, padstones F8 and F9, remnants of stone walling F1 and possibly F7 (undated), which suggest the presence of a building predating the 2nd century AD aisled structure. The outer ditch (F14) may also have belonged to this period. Both during and after this period natural resources of the surrounding area were exploited and quarried stone and coal were used on the site.

Phase Four — The Second Century AD Aisled Building

At some time during the mid 2nd century AD the aisled building was constructed together with a courtyard outside its north wall. The evidence for this came from C022, where large quantities of unabraded sherds dating to the mid 2nd century AD were found embedded in a matrix of loamy soil directly underlying the ploughed-out floor levels of the aisled building and above the east/west Iron Age ditch infill (F12). This evidence was reinforced by the later discovery of similar pottery sherds directly underlying and also directly in contact with the surviving cobbled surfaces of the north courtyard (F5). This courtyard sealed both the north/south Iron Age ditch (F13) infills and also the outer ditch (F14). A pebble-strewn area, suggesting a yard, was also located to the west of the building. The building itself appears to have been demolished during the 3rd century AD. The purpose for which it was used cannot be determined, because of the total destruction after centuries of ploughing of the associated archaeological levels. The building was, however, built to a Roman pattern with wall construction methods matching walls excavated on the Derby Racecourse Cemetery site (Wheeler 1985), *Navio* (Brough) (Jones and Wild 1968), Carsington (Ling and Courtney 1981) and Dragonby (May 1996,). Concentrations of surface finds could indicate there once existed other

buildings slightly to the north-east and west of the excavated building, which if contemporary, would indicate a larger farm complex.

This aisled building was in all likelihood a barn, providing storage capacity for agricultural produce and living accomodation for staff at the north end. This is a standard arrangement, well discussed by Smith (1963) and others. The Ockbrook building falls into Hingley's (1989) "developed aisled house" group which includes examples such as North Wanborough, Hampshire, Mansfield Woodhouse, Nottinghamshire, Stroud, Hampshire, Norton Disney, Lincolnshire, and Winterton B and D, Lincolnshire, some becoming more sophisticated than others. The 3rd century AD aisled building B, phase 1 at Winterton, although larger than Little Hay Grange, has similarities in its wall size, foundations and aisle posts. No evidence for housing livestock, e.g. drains or cattle stalls, was detected at Ockbrook. Grain drying was carried out on the premises and continued until after the building was either converted or demolished. It is interesting to note that, apart from two undateable lead spindle whorls from the topsoil over the northern courtyard, no evidence pertaining to female occupation (e.g. combs, pins, needles, beads, loom-weights or infant burials) was found.

Since this aisled building is the first Romano-British rural dwelling to be discovered and excavated in south-east Derbyshire, it is not yet known whether or not it is typical of Romano-British farmsteads in this locality. As discussed earlier, although larger, it does possess similarities in methods of wall construction to the Roman building excavated at Carsington (Ling and Courtney 1981; Ling *et al.* 1990). However, Carsington is not an aisled building, and was divided into three by cross-walls with several rooms, one of which contained an underfloor heating system. Tentative dating of occupation there is mid 2nd to 4th centuries AD with possible earlier buildings on the same site relating to the 2nd and 3rd centuries, and the excavated building and amenities belonging to the late 3rd/4th centuries. The other Romano-British building excavated in Derbyshire is at Roystone Grange (Hodges and Wildgoose 1981). Phase 1 of this was a simple, sub-rectangular, undivided aisled structure, 20m x 12m at its widest, with only remnants of dry-stone walling (probably timber-built). Its erection was dated to the early to mid 2nd century and its demolition to the 3rd to 4th century. Although both sites were probably occupied at the same time as Little Hay, and Roystone is seen as a farmhouse, no real parallels can be drawn. Fieldwalking in the Ockbrook area to date has revealed the suspected sites of at least six other dwellings within a 1.6km (1 mile) radius of Little Hay and there may yet be more. Only one of these sites, however, has produced a quantity of ploughed-up stone rubble sufficient to indicate the possibility of another building as substantial as the one excavated as Little Hay.

The question of the relationship of all these sites arises. Pottery analysis will help to establish whether or not they are contemporary. Future fieldwork may also help to determine whether they were independent holdings or whether Little Hay, with its substantial building, was the hub of a larger farm unit, with several smaller, more flimsy, satellite dwellings in the peripheral areas of the farmland perhaps to house herders and their livestock. Who then were the occupants of Little Hay? Were they the Romanised descendants of the Iron Age peoples formerly occupying the site, or had entirely different people taken over, such as time-expired soldiers and their families from the fort at *Derventio*? Whoever they were, the finds, which included samian ware and fragments of glass utensils, suggest that they had a comfortable, though not luxurious lifestyle.

The quantity and variety of lead finds from the vicinity of the site (only a selection is illustrated in Fig. 14), are similar to many finds from Romano-British sites, and illustrate the widespread use of lead during the Roman period, even on sites of modest affluence. Lead must therefore have been abundant and cheap. This situation could have arisen if the state's need for silver production was the underlying driving force for exploiting Britain's lead ore resources. If this was so, then the lead produced would be a by-product of the silver production and not vice-versa. Since the proportion of silver contained in the lead ore was very small, intensified efforts to maximise the production of silver would automatically produce large quantities of surplus lead. Silver is known to have been extracted from lead in Derbyshire and the Mendips during the Roman period, when pigs of lead were produced marked EX ARG (*argentum*) at the end of the stamp, which De la Bedoyere (1989, 54) suggests implies that it is a product 'of the silver works'. He quotes examples from Mansfield, Nottinghamshire and Syde, near Cirencester. The term EX ARG is interpreted generally to mean that the silver had already been extracted (e.g. Hodges 1991, 71). The Romans had perfected the technique of efficient silver extraction from lead, so that only 0.01% of the silver remained (Singer *et al.* 1956, 44). There was a large demand for lead for new monumental buildings and villa buildings in the 2nd century, for purposes such as guttering, pipes, roofing, bath-houses, tanks as well as many domestic uses. This meant that extra lead, after the silver had been removed, would always find a market, and it is thought that the finds of lead pigs at Brough on Humber (e.g. Hodges 1991, fig. 53) are evidence for its export to the continent from Derbyshire.

Phase Five — The Late Roman and Post-Roman Period

At some time during the 3rd century AD the aisled building appears to have been dismantled but activity within its confines continued. A corn-drying type of structure (H1) was in use, built over a position formally occupied by an aisle post of the 2nd century AD building. In the 3rd or early 4th century AD, a crude wall or building with a gap, possibly a doorway, was erected within the north courtyard area utilising stones from the demolished building.

What was the relationship between the rural community at Little Hay and the military and civil settlements nearby (Fig. 1). Littlehay can be regarded as being within the hinterland of the military and civil settlement at Little Chester (*Derventio*), 8km to the west, and its economy would be closely linked with this centre. Another economic link could have existed with the little known or understood Romano-British settlement at Redhill, Ratcliffe-on Soar. This was situated 10km to the south-east at the confluence of the Rivers Trent and Soar, directly opposite the present known terminus of the Roman road from Little Chester to Sawley. This road passed within 4km of the Little Hay site. Is it possible that local farming communities experienced an economic boom during the Antonine period (AD 139–192) when new defences believed to enclose 7 acres were constructed at *Derventio* (Wheeler 1985b, 302), and re-garrisoning by the Roman army provided a burgeoning market for produce? The two coins found within 50m of the Little Hay building; one of Vespasian which continued in use to the early 2nd century, and one of Lucilla Verus minted around AD 165 would appear to bear this out. If so it would have led to a rapid expansion of production and profit in the mid to late 2nd century AD and consequent enlargement of farm units and changes in organisation. Was the aisled building constructed in response to such developments?

The eventual withdrawal of the garrison in the early 3rd century (Wheeler 1985a, 63; 1985b, 303) would have produced the reverse effect and it is notable that no 3rd or 4th century coins have been found in the vicinity. Contraction of farming activity would have ensued, reducing the need for larger units, which could have become redundant and possibly degenerated into small holdings. Future fieldwork in this locality will attempt to detect differences in type and size of structures and the affluence of occupants of sites known to exist in the 2nd century AD compared with those occupied during the 3rd and 4th centuries. It is hoped this will lead to more understanding of the factors influencing settlement patterns locally. Surface pottery finds around the site confirm continuity of use in some form up to the end of the 4th century AD, after which it was abandoned. The 3rd/4th century AD occupants, however, still used good quality pottery which included Oxfordshire and Nene Valley wares. There is still a need to know the density of occupation in this area and also what influence soil type and water availability had on the choice of sites, and if at all possible some indication as to how the land was partitioned and managed throughout this period.

Cultivation ceased and was not reintroduced until the 13th century AD, most likely by the canons of Dale Abbey who were granted land in this area. The canons of Dale are the ones most likely to have carried out improvements to the heavy marl soil by dressing it with sand from the Bunter Sandstone deposits found close to the abbey. Similarly they would have dressed these Bunter Sandstone soils with the heavy Mercia Mudstone in order to body it up. The hollows of many marl pits existed until recently on the hill slopes to the north-west of the excavation. No habitation was ever built on this site again, and apart from the two monastic grange sites of Boyah and Little Hay, no farmsteads were reintroduced into the immediate neighbourhood until the years following the 18th century Parliamentary Enclosure Awards.

So why, after centuries if not more of cultivation of this and other suspected sites in the area, were they then abandoned and left devoid of cultivation and settlement for a thousand years? If some disaster had wiped out or displaced the inhabitants, surely others would have replaced them in time, for the soil had not lost its fertility. Other factors not as yet understood must have been responsible.

What did emerge, however, in the succeeding centuries was a radically different type of settlement from the independent isolated farmstead, as nucleated villages were established within compact and intensely cultivated communal field systems. Cultivation of outlying areas was abandoned to become wasteland in which rough grazing of the villagers' livestock took place, but by the 12th century much of this area had become parkland (Clark 1977, 17; Saltman 1967, 62).

To conclude, our excavation and fieldwalking activities have now been successful in establishing that in addition to extensive Roman and Iron Age settlement taking place on the alluvial soils of the river valleys, equally extensive settlements were established on the heavier Mercia Mudstone soils and impinged onto Boulder Clay deposits on the higher ground. Hopefully this excavation and fieldwork will provide the interest and stimulation for others to follow and continue the work. A question to be resolved is - what settlement pattern, if any, existed in south-east Derbyshire on the varied soils derived from the Coal Measures to the north of the Mercia Mudstone deposits? Were these soils as attractive for settlement or not? Unfortunately total destruction of vast areas of ground surface by open-cast coal mining in the second half of the 20th century

has greatly restricted the opportunity for finding evidence which could answer this question. Coal, however, was found during excavations in 1st and 2nd century contexts at Little Hay, at the fort of Little Chester (Maurice Brassington *pers. comm.*) and at Great Wilne (Palfreyman, unpublished). Iron ore also may have been obtained. Whether or not coal extraction was linked to any settlement sites is an open question. Future lines of study may reveal whether these soils were cultivated or still largely covered by woodland during the Roman period and thus fill present gaps in our knowledge of the Romano-British landscape and rural settlement pattern in south-east Derbyshire.

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