Iron in the time of Anarchy: excavation of a 12th-century village smithy at Cheveley

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Excavations ahead of a housing development in the Cambridgeshire village of Cheveley, near Newmarket, found evidence for a medieval smithy occupied in the 12th and early 13th centuries and built at what was then the edge of the village. Analysis of the distribution of the various types of waste deposited around the site allowed for the identification of different processes and activities being undertaken in different areas. Dating for an apparent hiatus in activity in the mid-12th century suggests a link with the De Mandeville rebellion of 1143–4 when the area was purportedly laid waste.

Introduction

Archaeological excavations were undertaken in 2015 by Headland Archaeology (UK) Ltd on land between 199 and 209 High Street, Cheveley, in eastern Cambridgeshire, close to the Suffolk border about 5km south-east of Newmarket. The excavations were ahead of a development of 15 residential properties by Lightdoor Ltd on a field under pasture directly to the east of the High Street on the south side of the village (Fig 1). It was bounded by the High Street to the west, residential properties to the north and south and further pasture fields to the east. The site is centred at NGR TL 6848 6039 and lies at an elevation of approximately 105m AOD. The site lies on a chalk bedrock with overlying chalky boulder clay <http://www.bgs.ac.uk> and is poorly draining (Fig. 1).

A previous geophysical survey identified little but for three large ferrous anomalies (Boucher 2015). Two of these were written off with obvious modern causes. The third, at the north-west edge of the later excavation area, was not but, by association, was assumed to be of no archaeological significance. In retrospect, it seems, this may not have been the case (see the section 'Patterns in the waste'). An archaeological evaluation followed which exposed ditches, pits and finds which indicated medieval dating and suggested both domestic and industrial activity (Berry and Tierney 2015). A targeted excavation followed between 3rd November and 11th December 2015, after a brief outlined by Cambridgeshire Historical Environmental Team (CHET 2015) and a Written Scheme of Investigation (Headland Archaeology 2015).

Its objectives were to characterise and date the rural medieval occupation and its effect on the local environment with particular reference to the apparent industrial activity. All discrete features were hand excavated, with 50% of all pits and post-holes excavated, 5% of linear features associated with field systems, and minimum of 25% of linear features associated with settlement activity.

The results regarding medieval activity are presented below. There was slight evidence of an early prehistoric presence in the form of a residual lithic scatter, a handful of Iron Age and Romano-British sherds of pottery and evidence for post-medieval land drainage. These have not been further detailed in this account but full details are available in the assessment report (James 2017). OASIS reference is 217188. The site archive has been lodged with Cambridgeshire County Council (accession number ECD4484). The digital archive will be made available on ADS.

The term 'medieval' is defined here as 1066–1485. All dates used in the text are AD. 'Blacksmith' is used herein to refer to a worker specifically of iron, though the term was not recorded before 1376 (Geddes 1991, 182).

Cheveley's history

Village setting

The name Cheveley is a common term for woodland possibly meaning "chaff/wood" i.e. wood with twigs and litter, or alternatively chaffinch wood. A charter of 1022 describes Cheveley as a 'woody township'. It lay some 8 miles south-east from the edge of the Fens, a wetland area now largely drained and reclaimed, but during the medieval period, a network of marshes, waterways, valuable fertile reclaimed land, fisheries and salterns (Creighton and Wright 2016, 252–3). At its heart was an area of dry land, the Isle of Ely, on which was located the abbey and later cathedral of Ely. During the years before and after the Norman Conquest, the woodland along the lower

Figure 1. *Site location.*

slopes of the village was cleared and converted to ploughland (Wareham and Wright 2002, 49–53), but some woodland remained. As recorded for similarly wooded villages, it is probable that villagers took wood for small-scale commercial and industrial purposes. Wood would have been an essential resource for various crafts and industrial purposes such as blacksmiths, potters, charcoal burners, carpenters and sawyers. The harvesting of wood to furnish cottage industry would have been noticed, if not directly managed by the King's high-ranking forest officials (Daniell 2003; Jones and Page 2006, 125).

Origins

Cheveley village probably has origins in the 10th century. The late Saxon period in Cambridgeshire, as elsewhere was a period of village nucleation (Creighton and Rippon 2017). In 1086 it possessed 24 households with a total assessed tax of 10.0 geld units, making it a good-sized village with a relatively large income (Williams and Martin 1992, 520). During this early post-Conquest period the site itself would have been on the southern outskirts of the village on the road that led into the village high street.

The manor made up five-sixths of the township in 1086 but manorial lands seem to have been split at various times and it is not always clear who held which parts of the manor lands and specifically who held the land on which the site sits. Even less clear is who might have been their sub-tenants, holding and working the lands of the estate. The estate seems to have been in royal hands at the time of the Conquest (Wareham and Wright 2002, 46–9) and remained so until at least 1086. By 1086 lands in the area were also held by tenants-in-chief Count Alan and Aubrey De Vere (Williams and Martin 1992, 520; 532; 542). In or shortly before 1130 the king's manor was granted by Henry I to Alain De Dinan, Lord of Becherel who held lands in eastern Brittany neighboring Henry's domain of Normandy (Wareham and Wright 2002; knight-france.com).

It is also possible that the Bishops of Ely held interests at Cheveley in the early 12th century. The See of Ely was first established in 1109. Its bishop's interests in the land was first noted in 1180 but the Pecche family are recorded as undertenants at Cheveley, probably of the bishop's holdings there, from *c.* 1130 onwards. The De Vere family also continued to have interests in the area (Wareham and Wright 2002, 46–9). Both De Vere and the bishop had parts to play in the story of one of the most dramatic events which engulfed the Fens and the surrounding area, a time sometimes known as 'The Anarchy'.

Anarchy in the Fenlands

After the death of Henry I in 1135, the throne was contested between Henry's daughter, the Empress Matilda, and his sister's son Stephen. The former's cause was later taken up by her son, Henry of Anjou (to become Henry II) (Creighton and Wright 2016, 19–32). Cheveley lies in part of the country that was predominantly loyal to Stephen's cause, but it was not to escape bloodshed.

Nigel, the Bishop of Ely, was initially loyal to King Stephen but in 1139 he rebelled against him in favour of Matilda. Stephen moved against Ely via Aldreth in 1140 and Nigel fled westwards (Creighton and Wright 2016, 256). In 1141 the third Aubrey De Vere inherited his father's estate and his sister's husband, Geoffrey De Mandeville, the new Earl of Essex, negotiated the Earldom of Oxford for him. In 1142 Stephen dispatched Geoffrey De Mandeville to disperse Nigel's followers on the Isle. De Mandeville's campaign was needlessly violent and destructive, and he had to be reined in by Stephen to protect the monks (Creighton and Wright 2016, 257–8). In 1143 a mistrustful Stephen arrested both De Mandeville and De Vere and forced them to relinquish their castles. De Vere lost his at Canfield, Essex (Crouch 2004, 279) and De Mandeville lost several in Essex and London, including the Tower (Round 1892, 202–7; Creighton and Wright 2016, 259). De Mandeville (though, it seems, not De Vere) entered into open rebellion in the autumn of 1143, setting up a base at Fordham (along the road from Cheveley to Ely, about halfway between) to secure his supply lines from the east (Round 1892, 209). From there he moved to the Isle of Ely and took it, seemingly, without resistance. From his earlier stay, he was fully aware of the Isle's defenses and strategic position and this became his main stronghold. Mercenaries and malcontents flocked to his banner and he went on to plunder, ravage and burn the surrounding area, including Ramsey Abbey, Cambridge, St Ives and Benwick. He particularly targeted sites with royal connections and strategic locations around the edges of the Fens at the ends of the causeways that led to the Isle (Creighton and Wright 2016, 260–262). However, his need to feed and satisfy his followers meant that he systematically plundered the entire area. Contemporary accounts of the atrocities committed by the rebels are lurid and horrifying (Round 1892,213–4; 217–9; Creighton and Wright 2016, 244;). Round coined the term 'The Anarchy' to describe the period.

King Stephen arrived in early 1144. He held the Bishop of Ely partly responsible for his apparent complicity in the rebellion and seized any of the bishop's lands outwith De Mandeville's control (Round 1892, 214). He built castles at the southern end of the Fen causeways to trap the rebels. One of these, at Burwell, 8 miles north-west of Cheveley, De Mandeville attacked. He was killed there by an arrow shot from the castle (Creighton and Wright 2016, 264).

Later history

The succession of Henry II after Stephen's death in 1154 heralded a period of relative peace and prosperity. However, events elsewhere in the Anglo-Norman empire might have affected Cheveley in that they, on occasion, led to the forfeiture of its manors.

The manor of Cheveley was forfeited in 1168 (Wareham and Wright 2002, 46–9) at which point

it was probably held by Rolland De Dinan, son of Alan. Rolland rebelled against Henry II's deposition of the Duke of Brittany. His castle at Becherel was destroyed and his English estates were forfeited to the crown. He was restored to favour the following year, his estates returned and thereafter remained loyal to Henry (Everard 2000, 55–7). Andrew De Vitre, Rolland's nephew inherited the estate in 1173 (Wareham and Wright 2002, 46–9). Again in 1196 the manor was probably forfeited to the crown when Andrew came into conflict with Richard I over control of the young Arthur, heir to the Dukedom of Brittany and claimant to the English throne. Once again his estates were returned the following year (Everard 2000, 162–3). Between 1199 and 1202 Andrew was in rebellion against King John, in an attempt to put Arthur on the throne of England but it was to end with Arthur's imprisonment and death (Everard 2000, 168–74). Cheveley, nonetheless, ultimately remained part of the family estates.

If the De Veres still held lands in Cheveley it is likely that they would have been forfeited in 1215 when Robert De Vere fell out with King John. De Vere had a part in negotiating Magna Carta and was one of its signatories. His estates were returned when he made peace with the new regime after John's death in 1216 (DeAragon 2004).

The De Dinan's holdings meanwhile, had passed through Andrew's niece, to her husband Richard Marshall. Marshall held considerable lands in both Brittany and England which brought him into conflict with the English crown. During the Anglo-French war of 1224–7 his estates were taken into royal hands for a time. He fell out with Henry III again in 1233, Henry ordering all Marshall's English manors and castles seized and destroyed (Power 2004, 813–4). After Marshall was killed the following year in Ireland (Power 2004, 815), his estates passed through his sister to the Earldom (later Dukedom) of Norfolk (Wareham and Wright 2002, 46–9).

The Pecche family, meanwhile, continued as undertenants of the Bishop's land until at least the mid-14th century. Around this time the village church, St Mary's, and Cheveley Castle were established (Wareham and Wright 2002, 46–9; 53–5). By the mid-16th century the area consisted of a patchwork of fields, predominantly used for paddocks. During the 18th and 19th centuries, the village population gradually increased, probably in response to the emergence and subsequent expansion of local stud farms to serve racing interests in Newmarket.

Buildings, boundaries, drains and clay pits

The archaeological remains discovered amounted to a series of intercutting ditches and foundation cuts with accompanying pits and post-holes (Fig. 2, Plate 7). The cuts have been grouped (G01–G24) linking contexts which clearly belong to the same feature (e.g. belonging to the same ditch) or which appear to belong together based on morphology and spatial distribution (e.g. post-holes which appear to belong to the same structure). Other features, mainly pits, remain ungrouped and these are referred to by cut number prefixed C. A certain amount of plough-truncation was apparent with some features reduced to only a few centimetres in depth. Features were typically filled with deposits of various types of grey-brown silty clay, distinguishable from the yellow-brown sandy clay natural. The fills are mainly differentiated by containing differing quantities of domestic midden and industrial waste. The homogeneity of these fills means that it was difficult, at times, to establish the relationship between features where they intersected, and these interpretations are at times tentative.

Dating and chronology

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The dating and chronology of the site rests on three sources of evidence: stratigraphy, typological dating of artefacts and radiocarbon dating.

Stratigraphic relationships are observable between most of the ditches and a few of the pits. The ditches in the southern and central part of the excavation area all intersected with each other. Two smaller sequences of features at the northern end (G8 and G9; G5, G6 and G7) did not intersect with anything in the main site sequence. Nevertheless it is possible to begin to unpick the relative sequence and formulate a tentative model of the development of the site. Accordingly, the features have been grouped into four phases. Phases 1 and 2 are represented by land management features. Phases 3 and 4 represent two phases of a rectilinear structure with associated features. Most of the pits and all the post-holes are without stratigraphic relationships and have been tentatively assigned phases based on their locations or the contents of their fills.

The artefactual dating rests largely on the 1,073 sherds (7.8kg) of medieval pottery recovered from the site. However, the taphonomic processes that led to pottery deposition were clearly complex. The pottery was the result of secondary deposition of midden material accumulating elsewhere. Most context assemblages comprised small numbers of small sherds, the dating of which rarely follows the stratigraphy. Some features, such as boundary and drainage ditches, remained open for a considerable period. Others, such as foundation cuts or post-holes, were backfilled quickly but material could be introduced either at the beginning of the feature's life, when they were first cut, or at the end, for example when a post was removed for reuse. The lower-intensity activity in the late Saxon period and the relative lack of artefactual material of that period means that its absence in any particular feature cannot be taken as proof that the feature did not originate at this early date. The intensity of activity in the medieval period means that the presence of medieval material in features is not necessarily proof that they are late. The dating for any particular feature should, therefore, be taken with a degree of caution.

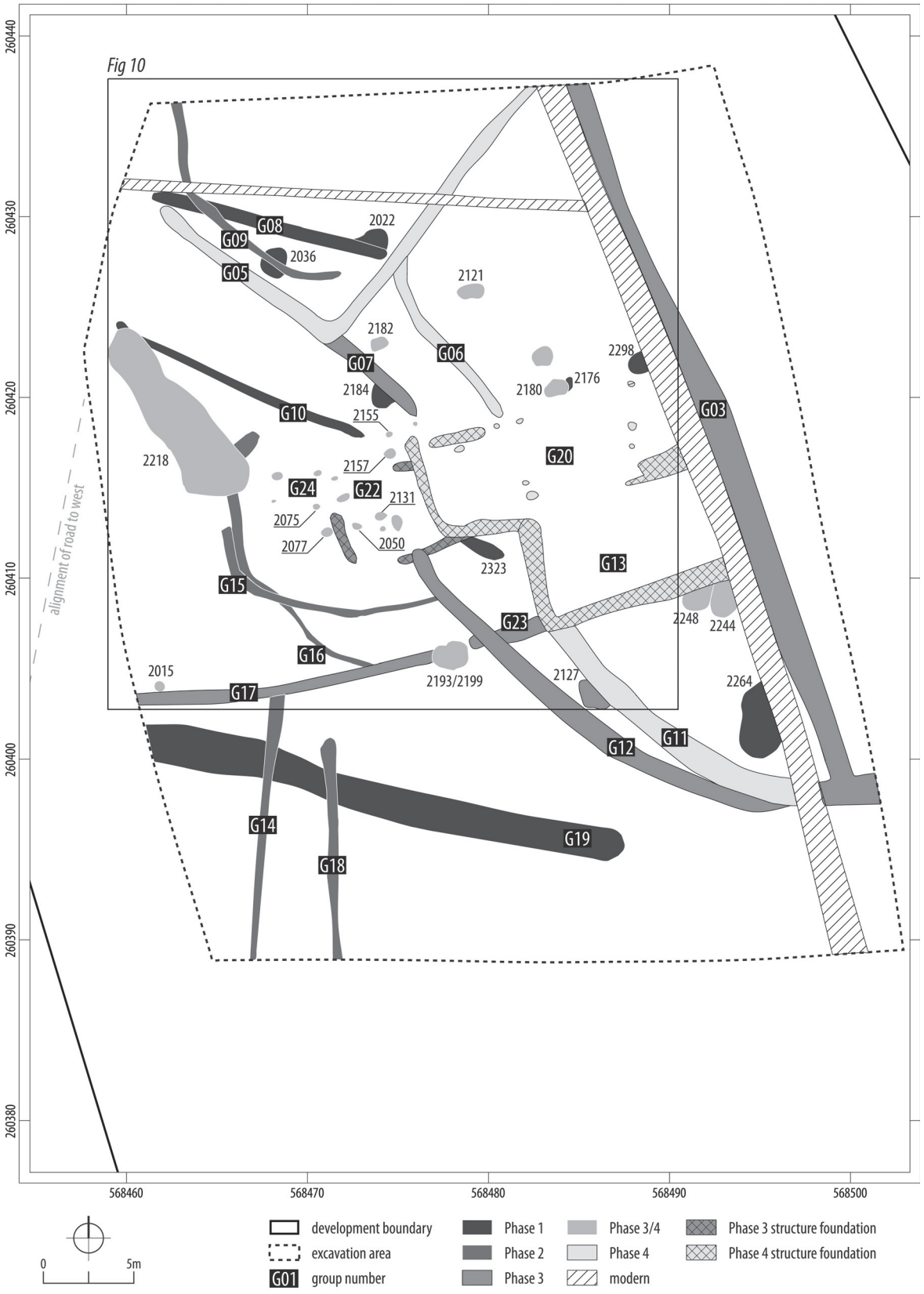

Figure 2. *Site plan. See also Plate 7.*

However, taken more broadly, the pottery can be assumed to have been originally discarded during the occupation of the site and thus the dating of the pottery presumably matches the dating of the structures discovered. The pottery types present suggest occupation began in the early 12th century and continued into the 13th century. An end-date is suggested by the complete absence of 13th–14th century glazed wares. Thus, it seems likely that activity dropped off significantly during the early 13th century with very little later material being deposited after this date.

Radiocarbon dating was used to refine the site chronology. However, there was relatively little material available for dating. Seven dates were obtained, each from single charred cereal grains from five features (Table 1; Fig. 3). The mixing of material from the fills of these features that was evident in the pottery assemblage must also apply in the deposition of these cereal grains. Thus, though the grains themselves can be dated to within a relatively narrow range, their depositional history is likely to have been complex and the grains do not necessarily date the creation or backfilling of these features any more accurately than the pottery. This is most clearly demonstrated in the circumstances of the earliest date (SUERC-79947; ditch G06). The grain is 10th-century but it was associated with a large collection of pottery which suggests this feature was backfilled in the 13th century. A single find of a 10th-century strap end was found in the same feature and it and the grain may have shared a similar taphonomic history.

The remaining six dates form two tight clusters. The first (SUERC-79945, SUERC-79948, SUERC-79950, SUERC-79951; ditches G09, G20, pit 2218) suggests a major period of activity and deposition on site at some point between the mid-11th and mid-12th century. The second (SUERC-79946, SUERC-79949; ditch G13, pit 2218) suggests further activity between the mid-12th and early 13th century.

The radiocarbon dates do not contradict the pottery dating. Their date range begins and ends a few decades earlier than that suggested by the pottery but there is a considerable period of overlap (Fig. 3). Together, they suggest the main period of occupation was between *c.* 1100 and *c.* 1220. The vast majority of material on site could have been deposited during this period.

However, it seems likely that the remains represent two shorter periods of occupation with a hiatus in between. The two tight radiocarbon date clusters would be consistent with this, and there is a suggestion that there was a dip in pottery deposition during the mid to late 12th century. This apparent dip might be illusory, based on the relative scarcity of the defining wares at rural sites in the area, but given the accompanying radiocarbon evidence, a genuine hiatus seems likely. These two potential phases of occupation might equate to the two phases of the rectilinear

Table 1. *Radiocarbon dates in chronological order (all calibrated dates AD, rounded to the nearest 5 years).*

Context	Feature	Context description	Lab code	Material	Uncalibrated	Calibrated 95.4% probability	Calibrated 68.2% probability	δ13C‰
2146	G6	Midden-rich backfill of ditch southern terminus	SUERC-79947	cereal grain: barley	1106 ± 26	885-995	900-925 945-975	-24.6
2040	G9	Secondary silting towards eastern end of ditch	SUERC-79945	cereal grain: bread wheat	952 ± 26	1025-1155	1030-1050 1085-1125 1135-1150	-21.8
2009	G9	Secondary silting towards northern end of ditch	SUERC-79951	cereal grain: barley	927 ± 26	1030-1160	1045-1105 1120-1155	-23.2
2221	Pit 2218	Backfill of ?extraction pit	SUERC-79948	cereal grain: barley	911 ± 26	1035-1185	1045-1095 1120-1140 1145-1160	-24.9
2284	G20	Backfill of central part of southern W-E aligned section of ditch	SUERC-79950	cereal grain: bread wheat	908 ± 26	1035-1190 1200-1205	1045-1095 1120-1140 1145-1165	-22.2
2220	Pit 2218	Backfill of ?extraction pit	SUERC-79949	cereal grain: bread wheat	859 ± 26	1050-1080 1150-1255	1165-1215	-22.3
2090	G13	Secondary silting of central part of western N-S aligned section of ditch	SUERC-79946	cereal grain: bread wheat	848 ± 26	1155-1260	1165-1220	-23.5

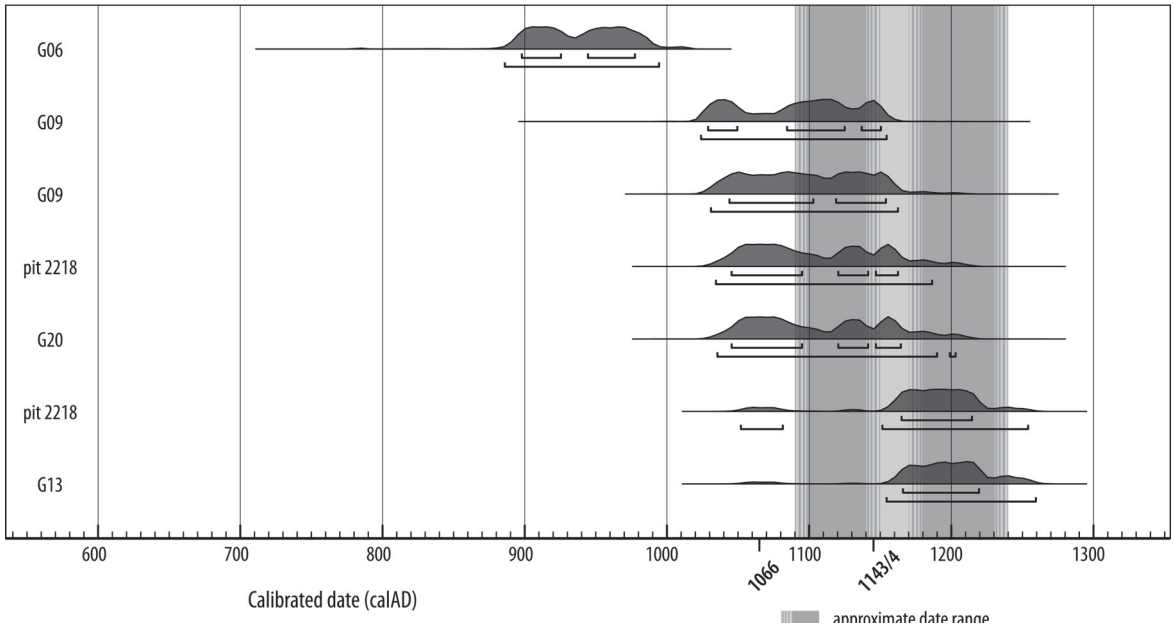

Figure 3. *Radiocarbon dates. Showing dating of the main period of occupation of the site as indicated by the pottery and relationship with historical dating of Norman invasion (1066) and the De Mandeville rebellion (1143-4).*

structure (Phases 3 and 4).

Both artefacts and radiocarbon indicate low level activity at the site from the 10th century onwards. As well as the 10th-century strap end, there are a handful of pottery sherds potentially of this early date, and the radiocarbon dated barley grain. This is in agreement with the historical evidence which suggests the site was located on the edge of a village with 10th century origins. However, none of this earlier material was convincingly *in situ* and most was clearly residual. Development and occupation in the immediate excavation area only seemed to occur a few decades after the Norman conquest and seems to have been relatively short-lived, the area presumably reverting to agricultural land during the 13th century.

Late Saxon/Saxo-Norman ditches and pits (Phases 1–2)

The early features seem to represent land management. They are poorly dated and do not form a coherent pattern and are consequently described only briefly here.

Phase 1 is characterised by three parallel linear ditches (G08, G10, G19) aligned approximately east-west. They are perpendicular to the alignment of the road to the west. There is no evidence that the line of this road has changed since the late Saxon period and thus the ditches may relate to properties or fields laid out along it. They are stratigraphically the earliest features on site but otherwise poorly dated by artefactual remains within the fills which suggest a possible 11th-century date. The dating of G08 is particularly tentative, containing as it did large quantities of iron-working waste which presumably relates to the later smithy, suggesting it still lay open at this later date.

G19 was the largest, 1.9–2.2m wide, surviving to a depth of 0.7m and extending 28m across the southern part of the site from the western limit of excavation. G08 and G10 are smaller, both 13–14m long, *c.* 06.–0.7m wide and *c.* 0.2m deep. They are adjacent to each other about 8.4m part at the north-western part of the excavation area.

There were also seven pits of various size and shape (C2022, C2036, C2176, C2184, C2264, C2298 and C2323), similarly tentatively dated based on artefactual and sometimes also stratigraphic evidence, but they are not necessarily contemporary. Five of the pits, C2022, C2036, C2176, C2184, C2298, were in the northern part of the site, in the vicinity of and to the east of G08 and G10 (C2022, being cut by G08). They were all round or ovoid, 1.1–1.8m across, surviving to a maximum depth of 0.4m. The northern pits have an erratic relationship to G08 and G10 and potentially predate them. Otherwise, the pits form no clear pattern.

Phase 2 is characterised by three C-shaped curvilinear ditches (G09, G15, G16). All are of similar size and form, presumably representing only the south-western side of a larger rounded enclosure, presumably for stock control. They are all relatively shallow (0.10–0.30m deep) and it would thus take relatively minor changes in land morphology to scarp away the north-eastern sides of these features. If roughly circular these would all be in the order of 18m wide. It was considered that they might represent ring gullies from large prehistoric roundhouses that have been almost entirely scarped away. However, the dearth of prehistoric finds from the site (only one sherd of undiagnostic prehistoric pottery was recovered, from the G12 ditch) and the volume of medieval finds recov-

ered from these features make this unlikely. Ditches G16 and G15 intercut and must represent two successive phases of the same enclosure, the later being cut a little to the north of the earlier. The eastern edge of both probably underlay the later rectilinear structure (G13/G20/G22). G09 lay a little to the north of both and may present a later phase of the same enclosure or may have co-existed with either, or indeed with the rectilinear structure itself.

Two linear north-south ditches (G14, G18) at the southern edge of the site may be contemporary. They are narrow (0.40–0.65m wide) and survive to only 0.09–0.17m in depth. They are approximately parallel to each other and the road and are about 3m apart, running from the southern limit of excavations towards the rounded enclosures. They may represent a droveway that peeled off the road to funnel stock into the enclosures.

The features contained varying, though typically sparse, quantities of midden material (Table 5), including pottery, animal bone, fired clay and cereal grains but negligible quantities of material related to ironworking, suggesting they may predate this activity. G09 contained the largest quantity of midden material including two radiocarbon-dated cereal grains (Table 1) and pottery which suggests the feature lay open until at least the later 12th century. It contained a quantity of fired clay and charcoal but there is nothing specific to link this to metalworking and it might be of domestic or structural origin.

The medieval structure and associated features (Phases 3–4)

This period represents the most intensive period of activity on site and is clearly related to the occupation and use of the rectilinear structure (G13/G20/G22) found in the centre of the excavation area. Two phases of the structure are discernible, the second (Phase 4) being constructed about 5m further east than the first (Phase 3). The nature and distribution of the finds and environmental remains recovered from the site indicates with reasonable clarity that the structure functioned as both domestic dwelling and blacksmith's forge. This evidence is detailed below, following a brief description of the archaeological remains.

The structure and associated features are clearly aligned differently to the earlier field boundaries. It is not immediately clear why this should be as it would have been at an angle to the road. However, the remains do still seem to respect the boundary represented by ditch G19. None of the Phase 3–4 features cross this line and there is no evidence of occupation to the south of it.

The **Phase 3** structure is represented by foundation trenches marking part of the southern and western walls and a shorter length of the northern wall (G22, Fig. 2). The western foundation trench was truncated to almost nothing, surviving to 0.05–0.08m in depth. The structure is approximately 5m wide north-south and at least 5m long east-west, though its eastern end is obscured by the later Phase 4 building. However, it appears to have extended no further east than ditch G03, giving it a maximum length of 20m.

Various post-holes within and to the north and west of these walls may or may not belong to this phase of the structure. There is no clear pattern to them, but they have been all been grouped under G24 based on their location. It is probable that these represent activity at various phases.

Four large ditches (G03, G12, G07 and G17/G23) appear to be contemporary. G17/G23 is on the same alignment as the structure itself and runs a little to its south and may represent a boundary. There seems to have been a gap left between G17 and G23, possibly as a gateway. This was potentially as much as 2m wide though later pit C2193/2199 obscures its dimensions.

Two ditches (G07, G12) running out from the north and south sides of this building are also clearly related to its occupation. G12 runs south-east from the southern wall. G7 runs north-west from shortly outside the northern wall. G12 has been interpreted as a drainage ditch largely due to its size (1.30m wide, 0.58m deep) and location in relation to other later ditches. Its three fills suggest a complex sequence of silting and backfilling. Its south-eastern end meets the end of north-south ditch G03. The relationship between ditches G12, G11 and G03 was unclear during excavation and they were assumed to be broadly contiguous. It seems likely that G03 represented a drainage ditch, not least because it follows almost the same line as the modern drainage ditch immediately to its west. No archaeological features were found to the east of this ditch and it would thus seem to represent the boundary of the medieval activity.

Ditch G03 would, then, have been a main drainage ditch running along the back end of the properties along the road. Ditch G12 would have led from the structure to the main drain and presumably was used to dump household waste water and sewage. It contained the largest proportion of midden material from this phase (Table 5). The relative dearth of organic remains within it is disappointing. Had the deposits within remained waterlogged they would no doubt have revealed much about the activity within and around the structure.

Ditch G07, to the north, was narrower. It may have provided the footing for some kind of fencing. Primary silting was noted in one section suggesting it lay open for a period of time, but it contained far lesser quantities of midden than G12.

Between them, G07 and G12 demarcate and control access to the land behind the structure (from the perspective of the road). Assuming G03 represents the eastern limit of the property then this land would in effect have been no more than a back yard.

Small quantities of midden material were found in most of these features, with the largest quantities in G12, G23 and also in pit C2127 adjacent to G12. However very little material from any of them could be connected to the activity of the smithy which might imply the site was not functioning as such at the time the building was constructed. This stands in marked contrast to Phase 4 (see below). A single horseshoe nail

was found in ditch G23. And there was a small cluster of slag (212g) spread between the small northern foundation trench and two adjacent G24 post-holes C2155 and C2157 directly to the north. The post-holes may relate to the second phase of the structure.

The **Phase 4** structure looks very similar to its earlier incarnation with a rectilinear building (G20) and accompanying boundary/drainage ditches to north and south (respectively G06 and G11), but the whole complex had been moved about 5m to the east. Given that G03 still represented the eastern boundary of this occupation this would in effect have shortened the available space. This may be the reason for a southern extension, G13, demarked by another foundation trench.

The structure itself is represented by more substantial foundation trenches and various post-holes, defining a rectangular space (G20) and a more substantial continuous foundation trench delineating a shorter rectangular extension to the south (G13). Various post-holes within G20 imply internal partitions. The lack of such features within G13 might suggest this was a yard rather than enclosed structure but the more substantial nature of the foundations might imply the reverse was true and G20 might represent a more open workshop area, possibly roofed or part roofed, possibly open-fronted to the north, while G13 represented an enclosed dwelling. The modern drainage ditch to the east has removed the end of the structure but assuming it ran up to earlier drainage ditch G03 then the maximum length of the building was about 15m and combined, G13/G20 have a north-south width of about 12m.

Ditches G11 and G06 seem of a similar nature to G12 and G07 respectively. The southern G11 curves round to meet G03 and was presumably used for drainage, possibly also a boundary. G06, like G07, was less substantial and may represent a fence line. Both are in similar positions in respect to the Phase 4 structure as their earlier incarnations were to that of Phase 3.

Why this whole complex should have been moved back 5m is unclear. The drainage ditch G11 might have been the first feature cut, suggesting that drainage might have been the primary concern. It is possible that there was a hiatus of activity between the two phases (see above) and it was easier to rebuild slightly offset from the remains of the original building.

Domestic midden and smithy-related waste were found in all of these Phase 4 features, in most of them substantial quantities (Table 5). The quantity of remains does not necessarily suggest greater activity during this time, but rather as the second phase of occupation, the foundation features were cut after waste material had already been accumulating on site for some time and elements of this midden were then inevitably redeposited into the backfill of the foundation features. The foundation cuts G20 and G13 contained the greatest quantities, followed by G06. G11 contained midden but surprisingly little, less than the earlier G12, and almost nothing was found in G03, implying efforts were made to keep these clear for drainage. Combined, the material from these features accounts for around half the domestic midden recovered from the site and a substantial proportion of the smithy-related waste.

Various other features clearly or probably relate to this phase of occupation but cannot be placed firmly in either Phase 3 or Phase 4.

The most significant of these is pit C2218. It was very large, 11m by 3m wide and 1.24m deep. It was steep sided and contained a series of fills which included quantities of midden. It seems likely that the pit was dug to extract clay for the construction of domestic and metalworking hearths and for construction of and repairs to wattle and daub structures. The fragmentation of the pottery that accumulated within it suggests that it was not used as a primary midden dump. Since its location made it otherwise very convenient for the disposal of household waste, this suggests there was an ongoing need for the extracted clay throughout the life of the building, consistent with its use for industrial purposes.

Three pits, C2180 immediately outside the north wall of structure G20, and C2244 and C2248 immediately outside the south wall of G13, were of a similar nature to each other. These were wide shallow-sided scoops, 1–2.4m wide and 0.1–0.3m deep. Possibly these were worn by habitual activity in the same area.

Intercutting pits C2193 and C2199 which cut the end of ditch G17 were of a more substantial nature, 0.68m deep with steep sides indicating it was more than a hollow worn by access between the two ditches. Its function is unclear though it seems to fill the gap between G17 and ditch G23.

Lost, dumped and broken things

For the purposes of description and discussion, the finds and environmental material have been classified as either domestic midden or smithy waste. The domestic material is predominantly pottery and animal bone with some cereal grain and broken querns. The smithy waste is made up of slag, fired clay, charcoal, stone tools and ironmongery. The distinction, in reality, would not have been so clear cut. The industry and domestic activity were conducted within the same space, the structure serving as both workshop and dwelling for the smith and his family. While none of the pottery appeared to relate to metalworking directly, for example, in the form of crucibles, pottery vessels may have been used for transporting water for the forge as well as for cooking purposes. Fired clay could derive from domestic hearths or wattle and daub structures as well as smithy features and likewise fuel ash slag can be formed within domestic hearths and ovens and is not necessarily related to industry. Ironwork might equally relate to the structure of the house and the household tools used within it as to the stock and scrap iron kept by the blacksmith. Charcoal very clearly had a place in both spheres, both as remains of domestic wood fires and as a fuel source in its own right to fire the forge.

However, the domestic/industrial distinction is a useful one for present purposes in that it allows spatial patterns of waste disposal to be discerned which in turn allows speculation about activities undertaken in different areas.

One find, a late Saxon strap end, does not fit neatly into either category. It presumably represents a chance loss and may be either residual or a curated heirloom as it dates approximately two centuries earlier than the fill of the feature in which it was found. This find is described first, followed by sections on the domestic and industrial waste. The distribution of this material is shown in Table 5 and Fig. 10 and is discussed later. Finds recovered during trial trenching are not included in the overall quantifications and are only referred to where they add anything of note.

Late Saxon strap end

A cast openwork strap end (Fig. 4) was found in the southern terminus of ditch G06. It was associated with a barley grain that returned a radiocarbon date of 885–995 (SUERC-79947) and a large collection of later pottery which suggests the earlier finds are residual in a feature backfilled after the late 12th century.

The strap end is made of copper alloy. It is tongue-shaped with one curved end, the other straight with rivets for attachment to a strap which does not survive. The openwork ornament appears to show a winged creature from above. Typologically it belongs to Thomas type E1, predominantly of 10th-century date and found widely distributed across south and east England, including Winchester and York, with a cluster in East Anglia (Thomas 2000 map 27). The decoration on these strap ends features plants, animals and birds. A recent discovery from Northamptonshire features a pair of birds on a plant scroll (Naylor 2019 410–12). As a well-made and decorative object, the strap end may well have been of some age when discarded.

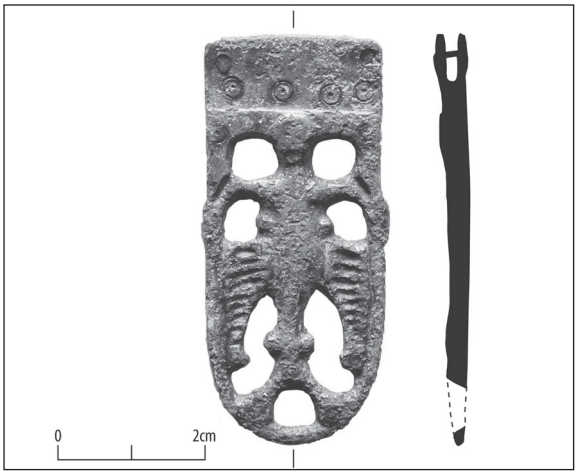

Figure 4. *Strap end. Copper alloy. Southern terminus ditch G06.*

Domestic midden

The midden material represents food waste in the form of bones and cereal grains and food processing tools in the form of querns. The various vessels, containers and utensils of wood, leather, basketry, ceramic and metal that would have been used within the household are represented only by pottery.

Meat and fish
Sheila Hamilton-Dyer
The animal bone assemblage amounted to approximately 4.5kg, or 346 specimens. Overall, it was in good condition. Burnt material is rare. Gnawing, butchery and other details are clearly visible on most bones. Just over 40% of the individual specimens could be identified to taxon with sheep/goat the highest proportion at 20.8%. Much of the indeterminate material is of also of sheep-size, mainly limb shaft fragments together with some rib and vertebral fragments. Cattle bones number half the amount of sheep/goat, at 10.4% (though contribute a greater proportion by weight). Pig accounts for 5.2% and horse 2.6%. A dog axis, hare tibia shaft and two bird bones are also present. Of note were several fish remains, mostly eel and herring vertebrae recovered from pits C2121 and C2180 to the north of the structure. Fish are rarely recorded in rural assemblages but this is probably a factor of preservation and excavation methodology. The fish bones here were only recovered during sample processing.

Sheep/goat mandibles with ageable teeth number at least eight; there are also three of pig and one of cattle. Despite the number of remains and the good condition of the bones very few metrical data are available. Butchery was noted on a few bones but canid gnawing is common and is likely to have obscured some marks along with the destruction of measuring points and epiphysial fusion data.

The assemblage appears to consist of mixed domestic and general waste with bones often available to dogs.

Bread and porridge

Grain
Laura Bailey
Plant remains were only recovered during sample processing and their distribution is thus affected by the sampling methodology. Samples were taken from 64 contexts selected for potential for environmental or artefactual remains. These represented most ditch groups, most pits and a representative sample of post-holes. There were no waterlogged deposits and organic remains were only preserved through charring. Remains recovered were mainly of cereals, with a few weeds.

Cereal grains were predominantly of bread/club wheat (*Triticum aestivo-compactum*) with a small number of oats (*Avena* sp.) and hulled barley (*Hordeum vulgare*). One of the barley grains was radiocarbon dated to the late Saxon period (Table 1), though others dated to the medieval period. These cereals were particu-

larly abundant in certain features close to structure G13/G20, namely in the southern terminal of G06 directly north of G20; from the southern foundation cut of G20; and pit C2193/2199 slightly west of G13.

Very few 'weed seeds' were present in the assemblage. They included a small indeterminate legume (Fabaceae), stinking chamomile (*Anthemis cotula*), cleavers (*Galium aparine*), buttercup (*Ranunculus* sp.) and knotgrass (*Polygonum* sp.). These are all species common in arable fields and disturbed ground (Stace 2010; Pelling 2012).

The charred plant remains provide some evidence for agricultural practices and crop choices in the vicinity during the medieval period. Bread wheat was a common cultivar in the Saxon period and is the most common wheat found in the medieval period (Moffett 2006). It was found to be the main cereal type at several sites in Ipswich, Suffolk (Murphy 1987). The low frequency of cereal chaff and crop weeds suggest that cereals had been winnowed and sieved to get rid of small weed seeds prior to being charred (Jones 1990).

Flour

Julie Franklin with lithological identifications by Fiona McGibbon

In the Saxon and early post-Conquest period, flour was often ground domestically by hand using rotary querns. Remains representing a minimum of three rotary querns were found. The lack of stone outcrops in Cambridgeshire means that all the stones would have had to be imported to the site from outside the local area.

The most complete of the querns represented about a quarter of a quern (Fig. 7A), though it is not clear if it represents the upper or lower stone. It was made of 'Millstone Grit', the nearest source being Derbyshire. As the name suggests, it was commonly used for querns and millstones. It is ideally suited to the purpose, as it retains its rough milling surface and wears slowly (Wastling 2009, 245). It is known to have been used since the Saxon period. The Cheveley quern had a secondary use, after it was broken, as a sharpening stone (discussed further in the section 'Tools'). It was found in the southern terminus of ditch G06.

Other quern remains were far more fragmentary. The most distinctive was represented by hundreds of very small fragments (total 1097g). Two of these have flat surfaces, one smoothed from use. The finds are otherwise unrecognisable as artefactual. They are probably Niedermendig lava fragments from the Eifel region of western Germany, part of the considerable trade in such quernstones which existed from at least the 7th century into the medieval period (Watts 2006, 1–2). The querns are thought to have been imported partly finished. The lightness of the stone made it relatively easy to transport and the vesicular texture was good for grinding, though the stones were brittle and wore quickly. It is quite common to find them in archaeological contexts, as here, in advanced states of fragmentation (Wastling 2009, 248). The pieces were concentrated in the centre of the site spread through several features at the northern side of structure G20, G24, post-hole C2157 and pit C2218. The pieces may all belong to the same quern, though may represent more.

Another quern fragment was found in a pit during trial trenching. It was only represented by a small piece of stone fragment with one flat grinding surface, but the distinct concentric striations identify it as a rotary quern fragment. It was made of a porphyritic andesite, the closest source for which was probably Cumbria, with other potential sources in mainland Europe.

The two most common types of stone used for querns during the Saxon and medieval periods are Eifel (or Rhenish) lava and Millstone Grit. One or both types are found among most quern assemblages of the period. Lava querns are typically the more common of the two, though the rate at which the stone fragments might have inflated the number of finds. At Flixborough, for example, there were 229 finds of lava, and seven of Millstone Grit (Wastling 2009). In excavations in Norwich (Smith and Margeson 1993) and Colchester (Buckley and Major 1988) all the finds were of lava with no Millstone Grit. Both were found in York in varying proportions (Mainman and Rogers 2000, 2479–84; Ottaway and Rogers 2002, 2799; Rogers 1993, 1321–9). It is assumed that lava querns were the more desirable, or that, despite their distant origin, transporting the relatively light stones by river and sea was easier than transporting the heavier Millstone Grit querns overland (Wastling 2009, 246).

Where other stone types are used, these are typically of more local origin, for example Yorkshire stone in York (Mainman and Rogers 2000, 2479), Gloucestershire, Dorset/Hampshire and Oxfordshire/Bedfordshire stone in Winchester (Ellis and Sanderson 1990, 295). The finding of remains of a quern sourced possibly from Cumbria or Europe on a Cambridgeshire site is therefore of note, as closer sources of usable stone were available.

Cooking pots, bowls and pitchers

Paul Blinkhorn

The pottery assemblage appears entirely of a domestic nature, consisting mainly of unglazed jars, many of which were sooted, showing that they had been heated, probably used for cooking. All the wares are typical of the region. Fabric codes and dating are defined in Table 2.

The small assemblage of early pottery is dominated by Developed St Neots Ware (DNEOT), and Thetford-Type Ware (THET), though most were found residually in later contexts. A sherd of Roman pottery was found in pit C2036 (Phase 1) possibly reused in a Saxon context. It had several post-firing drilled holes and may have been reused as a strainer (Fig. 5).

The fabrics grouped together as MSW include a range of wares with similar sandy fabric, many of which are likely to have originated in Suffolk. At present, a type-series does not exist for the medieval pottery of Suffolk, and detailed fabric analysis is beyond the remit of this project (Table 2).

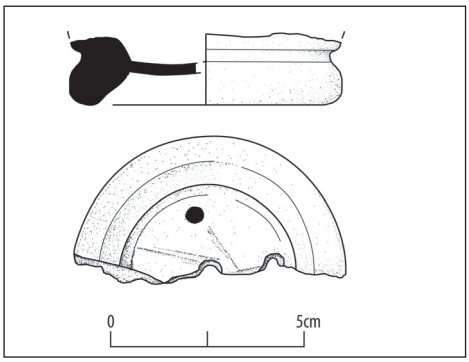

Figure 5. *Fragment of a Roman base-sherd with several post-firing drilled holes. Orange fabric with grey surfaces. Pit C2036.*

The rim assemblage is dominated by jars (85% of EVE, 5.14/6.03), along with smaller quantities of bowls (9%, 0.57/6.03) and just two jug rims (3%, 0.21/6.03). Both the jug rims are unglazed and have relatively large rim diameters and are thus more typical of earlier medieval pitchers than the "classic" high medieval jug.

Many of the jar rims are simple forms typical of the earlier medieval tradition of the region (e.g. Jennings 1981, fig. 14)(Fig. 6B). Other early medieval forms and decoration such as a sherd from a vessel with finger-tipped shoulders, and a few thumbed "piecrust" rims were also present. The St Neots Ware (DNEOT) assemblage comprised jars and inturned rim bowls which are typical of the tradition, but there were also three rim sherds from cylindrical jars, a specialist cooking vessel of Saxo-Norman to early medieval date (Blinkhorn 2010). All the Stamford Ware (STAM) is in a fine white fabric with most of the sherds having a thin yellow glaze. These sherds are typical of the later (11th–12th-century) products of the tradition (Kilmurry 1980). It is possible that, in fact, all the pottery deposition is 11th-century or later, potentially all post-Conquest, though the conservatism in the forms and fabrics of the early wares (THET, STAM, DNEOT) means this cannot be known.

A single small fragment of a MSGW rim sherd with a pulled pouring lip from the main G20 foundation cut may be a fragment of a specialist cooking vessel such as a pipkin or skillet (Fig. 6A), but such vessels are very rare in the region before the late 13th–14th century (e.g. Cotter 2000, 104). However, a few examples of Hertfordshire Greyware pipkins with lips are known from St Albans and London, where they date to the late 12th–14th century, with most being mid-late 13th century (Blackmore and Pearce 2010, 156). Such pottery is likely to be part of the MSGW tradition. Lipped skillets were also rare products of that industry (*ibid*. fig. 95). An example from London is dated to the first decade of the 13th century (*ibid*. 162). The relatively late date of this sherd suggests it was introduced to this context at the end of the structure's life.

Smithy waste

The smithy-related material included various types of waste in the form of slags, hammerscale and fired clay, some with slagged surfaces. Charcoal has also been placed in this section though it clearly relates to both domestic and industrial activity and its distribution does not clearly follow either category. Only two tools of use within the forge were recovered, both of stone. A good quantity of ironwork was also recovered and includes objects which were unlikely to have been used within the domestic setting of the smith's house. The distribution of this material is discussed in 'Patterns in the waste'.

Fuel

Laura Bailey

Charcoal was the main fuel of the medieval iron industry, it is capable of achieving greater temperatures than wood. Coal was also known to have been used (Huggins and Huggins 1973, 135; Tylecote 1981, 44) but none was in evidence at Cheveley. Charcoal

Table 2. *Saxon and medieval pottery type series. Fabrics listed in approximate chronological order. Recorded using the system of codes and chronologies suggested by Spoerry (2016). The numeric codes are those used by the author. For Shell-Dusted ware see Cotter 2000, 39-41.*

Fabric (Spoerry)	Fabric (Blinkhorn)	Fabric Description	Dating	Sherds	Wt. (g)	EVE
THET	F102	Thetford-type ware	10th–12th	50	398	0.02
STAM	F205	Stamford Ware	900–1200	5	27	0.00
DNEOT	F200	Developed St. Neots Ware	1000–1200	72	361	0.29
MSW	F302	Medieval Sandy Ware	12th–14th	652	4394	3.24
SHW	F330	Shelly Coarseware	1100–1400	41	457	0.20
HEDIC	F305	Hedingham Coarseware	m12th–m14th	15	206	0.41
MEL	F300	Medieval Ely Ware	m12th–15th	1	36	0.00
MSGW	F301	Medieval Sandy Grey Ware	L12th–14th	236	1895	1.87
-	F304	Shell-Dusted Ware	L11th–e13th	1	4	0.00
	Total			**1073**	**7778**	**6.03**

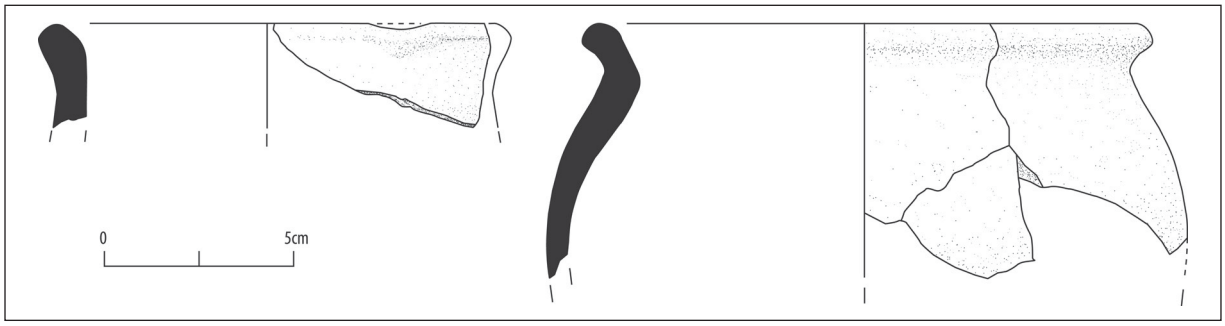

Figure 6. *Medieval pottery: A. Pipkin/skillet rim, fabric MSGW, uniform grey fabric; B. Complete jar rim, fabric MSW, light grey fabric with light brown surfaces, light, even sooting on the shoulder and outer rim bead, G13 foundation cut.*

was widely distributed across the site and was found in almost every environmental sample processed and all those from Phase 3–4 features. It was particularly abundant in the western terminus of ditch G05 where it is associated with large quantities of industrial waste and in pit C2015 which contained nothing else. The charcoal was generally heavily fragmented. Where preservation allowed the charcoal was categorized as either oak or non-oak. Both were observed. That found in pit C2015 was all of oak, that in G05 mostly oak.

Hearth rakings
Julie Franklin, Roderick Mackenzie and Paul Blinkhorn
No *in situ* metalworking hearths were found at the site. All the material found would have been raked out of the hearths and discarded. Ironworking waste products accrue where residues from hearth lining, fuel and iron collect to form a slag mass or slag cake that solidifies when the hearth cools. Residues at the base of the hearth would have been periodically cleared out to stop the tuyere becoming blocked. These slag cakes vary in size and form (Tylecote 1981, 43). Hammerscale is also scattered around the anvil. All the material described here relates to high temperature processes of some kind, though some, such as the (non-slagged) fired clay and fuel ash slags, might derive from food processing or other activities. The overall quantifications for the different types of material are shown in Table 3.

Table 3. *Quantification of slags, fired clay and other high temperature residue.*

Type of material	Wt. (g)
Possible iron smithing slag	1751
Undiagnostic slag	1628
Possible fuel ash slag	284
Fired clay with slagged surface	414
Fired clay	2565
Hammerscale	1
Total	**6643**

The assemblage contains fragments of slag which suggest iron was being forged either in, or close to, the area excavated. The number of fragments of smithing hearth slags recovered is perhaps not reflected in the relatively small amount of smithing micro-residues recovered, but these may have been lost to truncation, or the blacksmith's hearth, where micro-residues would have accumulated, may have been located just outside the excavated area. The assemblage also contains fragments of slag that are undiagnostic of their production source, although they do appear to relate to ferrous rather than non-ferrous metal production.

There were also fragments of what appear to be slagged hearth lining and fuel ash slag, which may have originated from the clay lining of a blacksmith's hearth. There was a larger collection of fired clay that was not slagged. Most of the fired clay was in a soft fabric with moderate to dense chalk inclusions and occasionally white flint. The vast majority were small somewhat abraded fragments with no structural features. A few larger sherds with flat or curved surfaces were present, but all were without internal withy impressions. The uniformity of fabric suggests the pieces may derive from a single structure, possibly, given the absence of withy impressions, an oven, or domestic or metalworking hearth.

Tools
Julie Franklin with lithological identification by Fiona McGibbon
No iron smiths' tools were recovered. Iron tools such as hammers, tongs, chisels or setts and punches (e.g. Goodall 1981, 51) would have been valuable and taken when the site was abandoned or recycled when broken. Only two tools were recovered, both of stone, both well-used for sharpening.

The first is a piece of broken quernstone (Fig. 7A). It is made from fine-grained sandstone with glassy quartz, muscovite, chalky white occasional grains (most likely altered feldspar), probably 'Millstone Grit'. The piece represents approximately a quarter of the circumference, probably of the lower stone of a rotary quern. Smoothed but unevenly rounded outer edge, part of inner hole present. Thicker towards central hole. Edge bevelled and use wear on smaller, face. Two long fin-

ger-sized grooves worn into smoothed surface, suggesting secondary use as sharpening stone. It has an outer diameter of *c.* 250–320mm, central hole diameter *c.* 140mm, thickness 47–50mm and weighs 1133g. It was found in G06 ditch southern terminus. The scarcity of stone in the local area would have meant that stone tools would have been valued and reused where possible. Two long rounded grooves have been worn into the surface. Sharpening grooves are commonly found on whetstones where they are worn by the repeated sharpening of points. These grooves are most commonly V-shaped in section, but U-shaped grooves have been noted (e.g. Wastling 2009, 236) and reflect different point profiles. The grooves on the quern are unusually wide and were possibly made by sharpening a specific kind of tool.

The second tool (Fig. 7B) was a purpose-made whetstone made from psammitic garnet mica schist, 'ragstone'. It is a long stone with wedge-shaped section, both faces smoothed through use, one more so than the other. It measures 165 by 53mm and is 26mm thick. It was found in G20 south-eastern foundation cut. Whetstones were used in the production of edged tools and weapons to create sharp edges. They were also used by consumers to sharpen tools and weapons, blunted by use. It was made from a type of schist known as 'ragstone' and commonly used for whetstone production. Its nearest sources would have been the Scottish central highlands or Scandinavia. There was a well-established medieval trade in this kind of stone from a quarry in Eidsborg, in southern Norway. The trade to Britain seems to have begun with Scandinavian settlement in the 10th century, they are the most common types of whetstone found on medieval sites (e.g. Moore and Oakley 1979; Crummy 1988, 77; Margeson 1993, 197 Rogers 1993, 1315). Coarser-grained whetstones are also found at this period and it is thought were used for initial sharpening, the finer grained ragstone then being used to fine the cutting edge (Rogers 1993, 1315).

Finished products and scrap iron
Julie Franklin

There were 29 finds of ironwork which can be linked to the period of use of the smithy with reasonable clarity though few can be dated with any more accuracy (Table 4). All are typical products of medieval smiths (Goodall 1981; Goodall 2011). Perhaps surprising is the lack of horseshoes and agricultural tools, though iron finds would routinely have been recycled as scrap so the remaining finds may not be representative, but rather smaller items, accidentally lost, used on site (e.g. as part of the building fixtures) or scrap iron left when the site was abandoned.

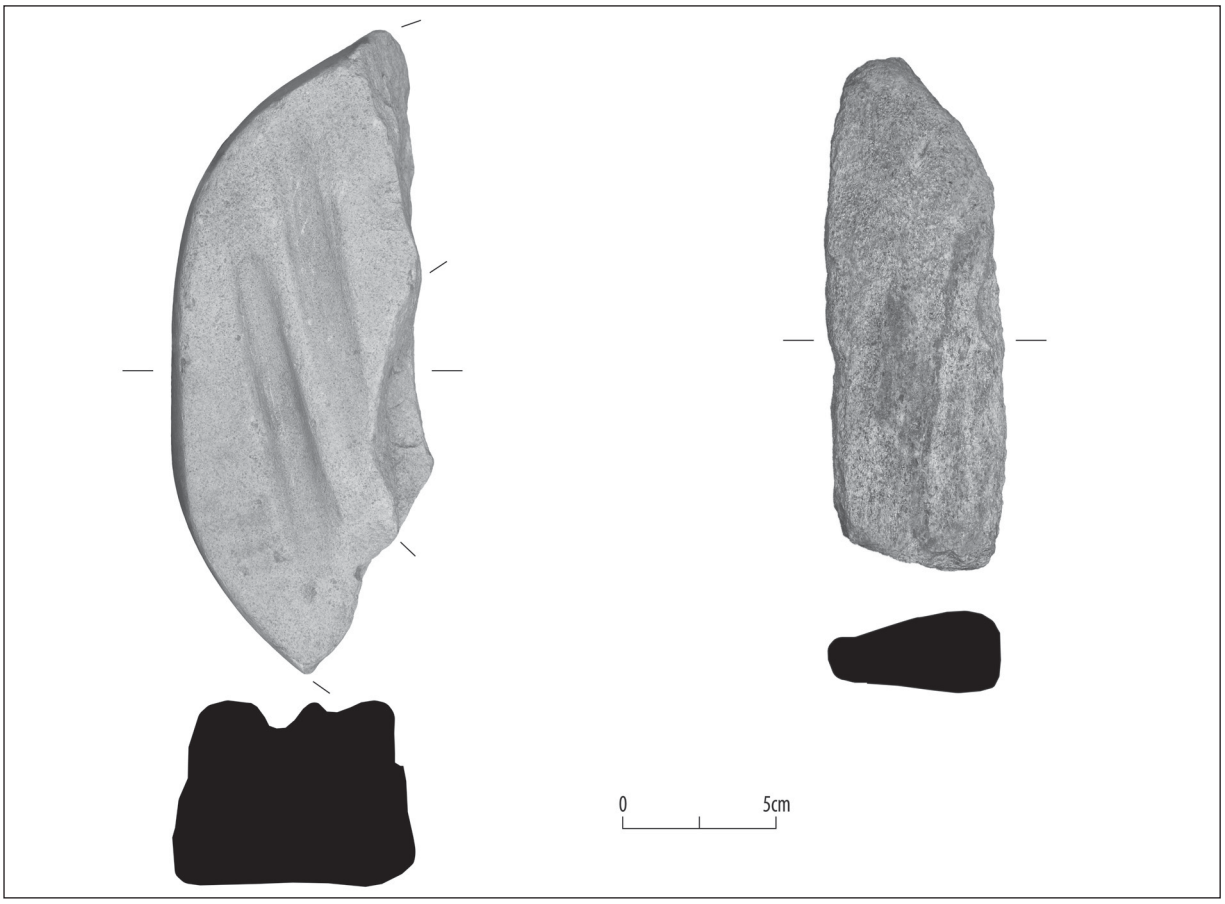

Figure 7. *Stone tools: A. Quern. Fine-grained sandstone G06 ditch southern terminus; B. Whetstone. Psammitic garnet mica schist, 'ragstone'. G20 south-eastern foundation cut.*

Table 4. *Ironwork associated with the smithy.*

Type of object	No.
Buckle?	1
Knife	1
Padlock bolt	1
Padlock slide key	1
Horseshoe nail	2
Woodworking nail	16
Staple	1
Part forging?	1
Fragmentary/unidentifiable	5
Total	**29**

The most distinctive items of the ironwork were part of a barrel padlock (Fig. 8A) and slide key (Fig. 8B), both found close to the G13/G20 structure. The two types of find were used in conjunction, though the form of the key bit and padlock spring spines suggests that this particular key would not have unlocked this padlock. The padlock bolt has a single spring spine with two springs, it possibly had a round closing plate. The stump of a broken U-loop is decorated with curling finials on all four sides. It bears the remains of copper plating on the U-loop and part of the spring spine. It was found in the G13 foundation cut. The mechanism is relatively simple, but it was once finely decorated and copper plated. The latter would have provided a certain amount of protection from rusting when used in an exterior setting, for example to secure a door or shutter. It belongs to Goodall Types A or B (Goodall 1990). The slide key has a straight shank with looped terminal. The stem is set centrally to the bit. The bit is damaged. It measures 97mm long and was found in the G03 drainage ditch. The key is of simple construction and lacks the wide flattened area close to the terminal and the recurved tip of the terminal loop that are commonly noted on other keys. Otherwise it is fairly typical (cf. Goodall 1990, 1005–6, Type B; Ottaway and Rogers 2002, 2876–7).

Part of a whittle tang knife was found in the G13 foundation cut. The tip of blade and tang were missing but the knife had a thin blade, worn on the edge and a whittle tang. Too little remains to classify it further.

Two horseshoe nails were found, one in the G13 foundation cut (Fig. 9), the other in ditch G23. Both were of the same fiddle key type typically used in conjunction with Clark's Type 2 horseshoes (Clark 1995, 86–7). The nails are most likely to date to between the mid-11th and mid-13th century (*ibid*, 92). The G13 nail was unused. The shank of the G23 nail was broken, possibly on extraction.

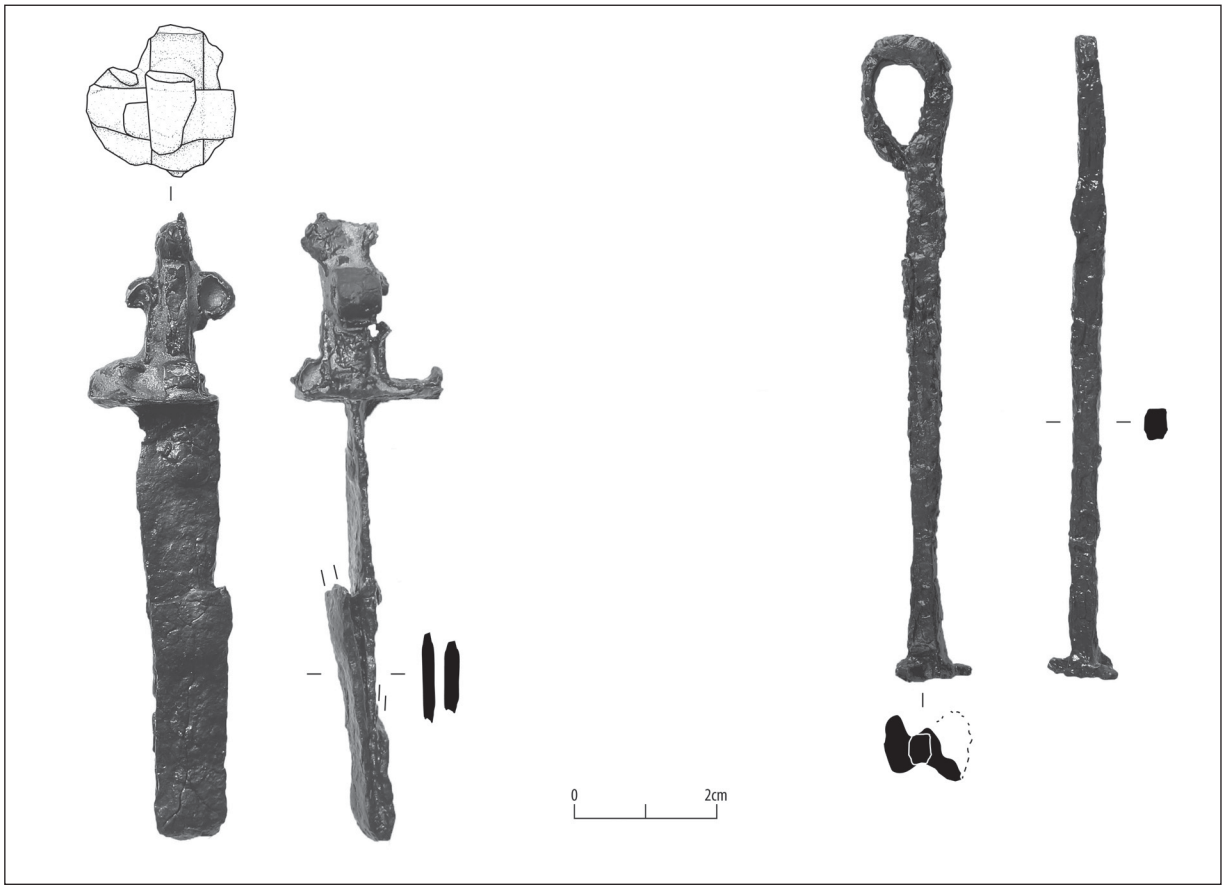

Figure 8. *Iron padlock and key: A. Padlock bolt. Iron; B. Padlock slide key. Iron Both close to G13/G20 structure.*

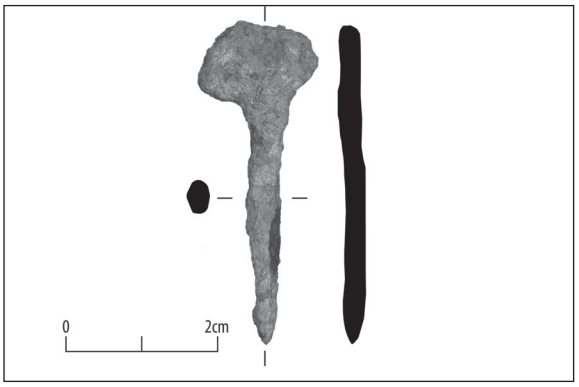

Figure 9. *Horseshoe nail with 'fiddle key' head. Iron. Complete, unused. L42, G13, foundation cut*

The only other identifiable iron finds were a staple and an L-shaped length of iron which may be part of a broken buckle. A fragment of strip with one end tapering to a short, pointed tang found in G05 might be a part-forged object. There were also a handful of woodworking nails, the staple medieval ironwork product.

The assemblage is similar to that found at other smithy sites. At the Cambridgeshire DMV of Houghton there were horseshoes, horseshoe nails, padlocks, keys and an arrowhead (MHI 2019b, 78). At Bramber Castle too, there were horseshoes and horseshoe nails, and also scrap metal and antler trimmings suggesting production of finishing touches such as knife handles (Barton and Holden 1977, 38). There was no evidence for secondary finishing crafts such as this at Cheveley, though if using predominantly wood, this would not have survived.

Patterns in the waste
Julie Franklin and Roderick Mackenzie

The distributions of the various domestic and industrial remains described above are depicted in Table 5 and the latter's spread across the site is shown in Fig. 10. Study of the distribution of this material is limited, to an extent, by the horizontal truncation and hence lack of *in situ* floor deposits. The industrial waste is relatively little in comparison to the likely waste material generated by the smithy. At Waltham Abbey, for example, 170kg of waste was recovered (Huggins and Huggins 1973, 141), at Brandon 'just under 416kg' (Tester *et al.* 2014) and at South Witham it was 'several hundredweights'. The waste is likely to be a small fraction of that generated, the rest having been scattered as the site was plough-truncated. Only that which had sunk into negative features was preserved. Patterns involving quantification of the waste material therefore may well be misleading as the distribution may reflect taphonomic rather than ironworking processes. However, it is a fair assumption that material was not deposited far from where it was produced. There is, for example, no particular reason to carry slag across the site to dump it any distance from the forge, as long as the immediate working floor was kept reasonably clean. It is also assumed that the makeup of the various concentrations of waste are broadly representative.

Assuming, then, that the distribution is broadly representative of the processes undertaken in the various parts of the site, the most notable feature revealed by plotting it out is the apparent disassociation of the smithing slag from the smithing products. The largest concentration of slag, including all the diagnostic smithing slag, was found toward the north of the site, mostly in a very tight cluster at the north-western corner of the excavation area, at the far west of ditches G05 and G08. There was also a distinct concentration of charcoal associated with this. However, the majority of everything else was found scattered in and around the G13/G20 structure. This material included the domestic midden, the ironwork and the sharpening tools. While some high temperature waste was found associated with the building, it included far higher proportions of fired clay and lesser quantities of slag.

It is possible that these two areas of waste concentration represent smithing activity at two different phases. There is, after all, no particular reason why smithing should have been undertaken in the same place throughout the life of the smithy, particularly as this seems to have occurred in two successive phases with a hiatus in between. However, the differences in the nature of the material suggests this is a genuine distinction in the processes undertaken in these two areas. It seems likely that the initial processes of forging and shaping of iron were undertaken at the north-west of the site, possibly in the open or a relatively ephemeral structure, possibly within a structure just outside the excavation area. The large ferrous anomaly noted in just this location, at and beyond the north-west corner of the excavation area appears, in retrospect, to be of some significance and may mark the focus of ironworking or a large dump of related material. It is noteworthy that the only iron object found at this northern end appears to be partly forged. It would also be of considerable benefit to remove the heavier and more pyrotechnical processes as far as possible from the domestic, limiting the potential damage that might be wreaked by unruly sparks from the forge.

Processes undertaken at structure G13/G20, on the other hand, clearly included sharpening and possibly also cold working, copper plating, and perhaps related crafts such as creating, decorating and fixing handles and scabbards. Many of these processes require good light, as may have been found in the possibly partly open G20. It would also have been beneficial to undertake them away from the heat, smoke, soot and noise of the forge. It is probable that some of these were undertaken by the women and children of the household in conjunction with childcare and general domestic activities. The structure was probably also where farriering took place, the two horseshoe nails

Table 5 (continued on next page). *Distribution of domestic and smithy waste, showing each feature assemblage as a proportion of the whole for the stratified assemblage with concentrations highlighted. Total quantification calculated as proportion of only stratified and grouped material.*

0-5%% , 5–10% , 10–15% , 15–20% , 20–25% , 25–30% , >30% .

**The majority of the G24 material both industrial and domestic was found in C2155 and C2157, with lesser quantities of domestic waste in C2050, C2075, C2077, C2131 and negligible or no material in other features*

Location in relation to structure	Feature		Phase	Domestic midden					Smithy waste							
				Pottery (includes ?Saxon & RB sherds)		*Animal bone*	*Cereal grains*	*Other finds*	*Charcoal*	*Slags*	*Fired clay*	*Slag + fired clay*	*Tools*		*Ironwork*	
				% sherds	*% wgt*	*% NISP*	*abundance*	-	*abundance*	*% wgt*	*% wt*	*wt (g)*	*% no*	*notes*	*% no*	*notes*
north	G08	small linear ditch	1-2	1.2%	0.5%	3.4%	none	-	none	43.6%	2.7%	1283	-	-	-	-
	C2022	pit	1-2	0.2%	-	1.6%	not sampled	-	not sampled	-	-	0	-	-	-	-
	G09	curvilinear ditch	1-2	6.5%	3.7%	8.7%	common	-	common	-	19.7%	474	-	-	-	-
	C2036	pit	1-2	0.2%	0.9%	1.9%	not sampled	-	not sampled	-	-	0	-	-	-	-
	G05	ditch	3/4	0.6%	0.4%	0.6%	common	-	abundant (mostly oak)	20.8%	1.6%	621	-	-	3.7%	part forging?
	C2218	pit	3/4	1.8%	3.4%	1.9%	common	-	common	0.4%	3.0%	84	-	-	-	-
	G10	small linear ditch	1-2	0.7%	0.9%	0.3%	rare	-	occasional	-	0.1%	2	-	-	3.7%	nail
	C2184	pit	1-2	-	-	-	not sampled	-	not sampled	-	-	0	-	-	-	-
	G07	N-S ditch	3	0.8%	1.2%	2.2%	not sampled	-	not sampled	-	0.1%	3	-	-	-	-
	C2182	pit	3/4	0.1%	0.2%	0.3%	not sampled	-	not sampled	-	-	0	-	-	-	-
	G06	N-S ditch	4	15.3%	17.7%	4.7%	abundant	Saxon strap end	common	8.0%	2.4%	283	50.0%	reused quern hone	-	-
	C2121	pit	3/4	0.3%	0.2%	0.9%	rare	-	common	-	-	0	-	-	-	-
	C2298	pit	1-2	0.2%	0.1%	-	none	-	common	-	-	<1g	-	-	-	-
	C2176	pit	1-2	1.1%	0.3%	-	rare	-	common	-	0.2%	6	-	-	-	-
	C2180	pit	3/4	0.6%	0.5%	2.5%	rare	-	common	-	0.4%	9	-	-	-	-
east	G03	drainage ditch	3	0.2%	0.5%	0.6%	not sampled	-	not sampled	-	0.4%	10	-	-	3.7%	slide key
centre	G20	structure	4	20.9%	17.9%	10.3%	abundant	lava quern fragments; rare hazel nutshell	common	14.0%	16.6%	791	50.0%	whetstone	33.3%	padlock bolt, staple, blade, strip, nails
	G13	structure	4	19.4%	26.0%	20.2%	occasional	-	rare	0.3%	6.4%	163	-	-	11.1%	knife, horseshoe nail, nail
	G22	structure	3	0.4%	0.1%	-	rare	-	occasional	5.1%	0.4%	151	-	-	-	-

Table 5 continued. *Distribution of domestic and smithy waste, showing each feature assemblage as a proportion of the whole for the stratified assemblage with concentrations highlighted. Total quantification calculated as proportion of only stratified and grouped material.*

0-5%% , 5–10% , 10–15% , 15–20% , 20–25% , 25–30% , >30% .

Location in relation to structure	Feature		Phase	Domestic midden					Smithy waste							
				Pottery (includes ?Saxon & RB sherds)		*Animal bone*	*Cereal grains*	*Other finds*	*Charcoal*	*Slags*	*Fired clay*	*Slag + fired clay*	*Tools*		*Ironwork*	
				% sherds	*% wgt*	*% NISP*	*abundance*	-	*abundance*	*% wgt*	*% wt*	*wt (g)*	*% no*	*notes*	*% no*	*notes*
centre/ west	G24*	post-holes	3/4	4.9%	1.8%	7.2%	various	lava quern fragments	various	2.5%	6.5%	226	-	-	3.7%	fragment
	C2323	pit	1-2	0.8%	0.5%	0.9%	none	-	occasional	-	4.2%	101	-	-	-	-
west	G15	curvilinear ditch	1-2	1.2%	1.0%	0.6%	rare	-	rare	-	0.5%	13	-	-	3.7%	fragment
	G16	curvilinear ditch	1-2	2.1%	3.6%	0.6%	not sampled	-	not sampled	-	0.0%	1	-	-	-	-
	C2015	pit	3/4	-	-	-	-	-	abundant (oak)	-	-	-	-	-	-	-
	G17	E-W ditch	3	0.2%	0.3%	0.6%	not sampled	-	not sampled	-	-	0	-	-	-	-
	C2193/2199	pit	3/4	1.8%	2.6%	2.8%	abundant	-	common	5.3%	2.5%	209	-	-	7.4%	-
	G23	E-W ditch	3	2.5%	1.6%	5.0%	not sampled	-	not sampled	-	0.5%	12	-	-	3.7%	horseshoe nail
south	C2244/2248	pit	3/4	0.9%	0.9%	1.2%	not sampled	-	not sampled	-	-	0	-	-	-	-
	C2264	pit	1-2	0.1%	0.1%	-	not sampled	-	not sampled	-	-	0	-	-	-	-
	G11	N-S drainage ditch	4	4.0%	2.5%	8.4%	rare	-	occasional	-	7.1%	171	-	-	-	-
	C2127	pit	3	2.3%	2.6%	4.7%	common	-	common	-	5.6%	135	-	-	25.9%	nails
	G12	N-S drainage ditch	3	8.6%	7.8%	7.8%	none	-	occasional	-	18.7%	449	-	-	-	-
	G19	boundary ditch	1-2	0.2%	0.1%	-	none	-	rare	-	-	0	-	-	-	-
	G18	linear ditch	1-2	0.2%	-	-	occasional	occasional hazel nutshell	common	-	0.2%	5	-	-	-	-
	G14	linear ditch	1-2	-	-	-	not sampled	-	not sampled	-	-	0	-	-	-	-
Total weight				**1015g**	**7514g**	**321g**				**2799g**	**2403g**	**5202g**	**2g**		**27g**	

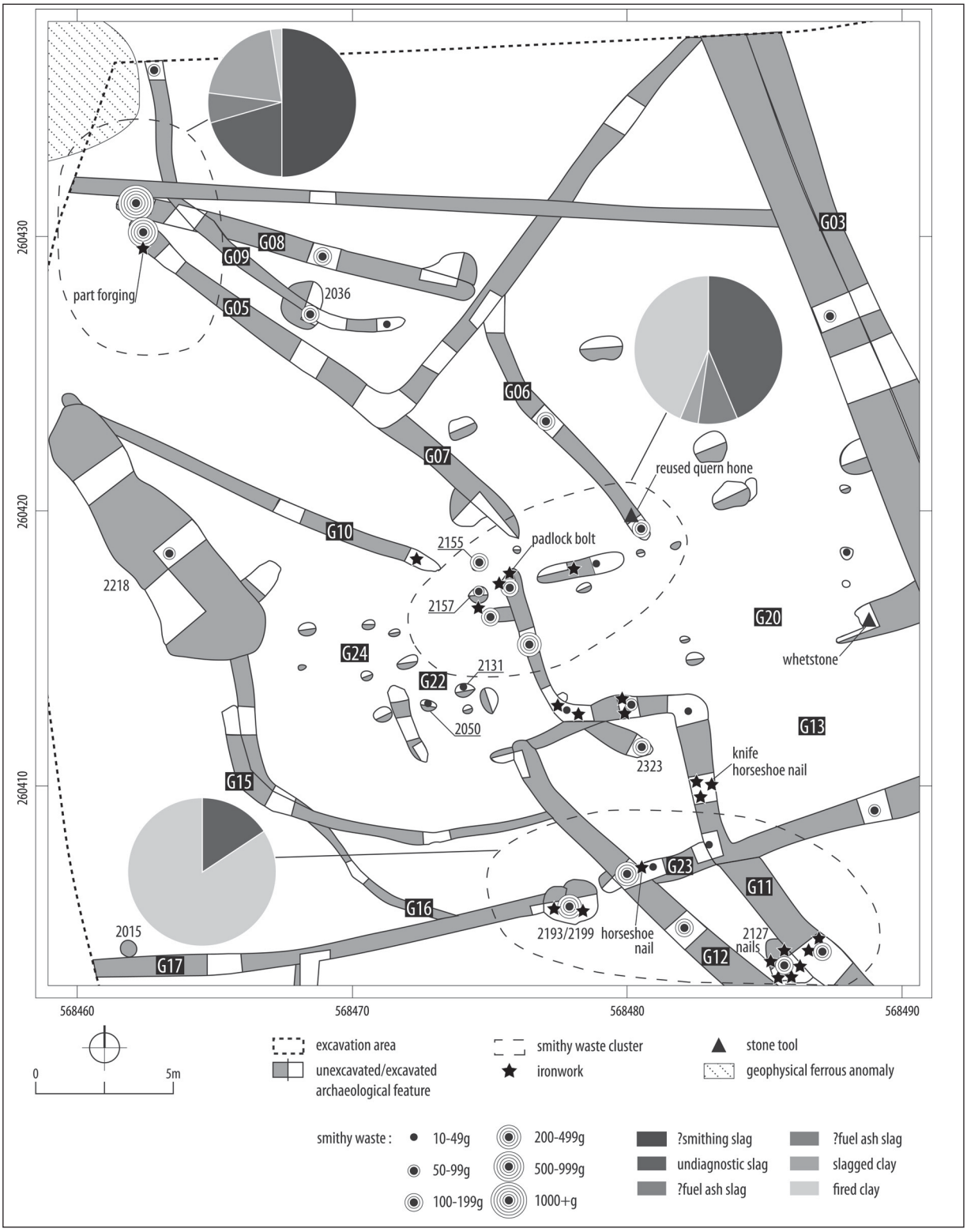

Figure 10. *Distribution of smithy waste. Showing waste material in cuts containing more than 10g of material.*

being found at the western end of G13, and it would have been the better place to display stock and serve customers.

The Saxon strap end was found at the southern terminal of ditch G06 associated with this distribution of craft and domestic-related material around the structure. Its taphonomy is unclear, particularly in view of its association with a 10th-century cereal grain, though it is possible it was curated as scrap material for use in the smithy. There is no direct evidence for non-ferrous metalworking there though the copper plating noted on the padlock suggests copper had a use within it.

The distribution of domestic midden is very much focused on Structure G13/G20, with the foundation cuts containing the majority of the material (Table 5). The picture is clearly relatively skewed by the size of these features and the relatively large volume of material excavated and sampled from them, but the quantities of material found in the features surrounding the structure, most particularly the southern end of ditch G06, the northern end of ditch G12 and postholes C2155 and C2157 clearly show that this structure was the focus of domestic activity. Primary midden deposition probably occurred somewhere in the vicinity of the structure, perhaps in a specific location to the north, west or south, possibly in changing locations over time. The drainage ditches do not seem to have been habitually used for dumping solid waste at least, while they were needed for drainage. The fact this material was accumulating above ground on site is most graphically demonstrated by the gnawing of the animal bones by dogs. Its redeposition within the features associated with the construction of the Phase 4 structure and the mixture of the pottery dating suggests this is the redeposition of material that accumulated during the occupation of the Phase 3 structure, mixed with material redeposited during the life of the Phase 4 structure. Its deposition within these features suggests the structure was dismantled at the end of its life and the timbers re-used rather than being left to decay *in situ*. High temperature waste found with the midden towards the south of the site includes far higher proportions of fired clay and relatively little or no slags and is thus more likely to relate to domestic hearths, ovens or other food processing or pyrotechnical processes.

One final observation is a small concentration of fired clay in G09 where it crosses the northern excavation limit. This is some distance from the centre of domestic activity, but contains a disproportionate concentration of charred cereal grains. Potentially this area might have been used for corn-drying.

Conquest, Anarchy and the countryside

The Norman Conquest marks a historical watershed. It resulted in new castles, monasteries, cathedrals, parks and forests, a new monarchy, aristocracy, language, architectural style, and military system. However, archaeologically, away from the castles, abbeys and other high status sites, it is often elusive (Mahany and Roffe 1982, 216; Daniell 2003, 16; Creighton and Rippon 2017). The problem revolves, firstly, around accurately dating any changes noted archaeologically when pottery, the most commonly available tool for dating archeological deposits, changes little over the decades around the Conquest. Secondly, it is in identifying Conquest-related change within a general pattern of change in the countryside. Did the Normans cause change in the patterns of rural life, did they accelerate change that was already happening or would it have happened anyway? The smithy at Cheveley was clearly established within a few decades of, or a generation or two after, the Conquest. Can this be seen as related to the Conquest? The expansion might be seen as the overlaying of a new order on the fields and properties at the southern edge of the village, yet although it is built on a different alignment, there is no evidence that the structure ignores earlier property boundaries.

The period between the 8th and 12th centuries is characterized by the nucleation of farmsteads into villages (Christie and Stamper 2012, 197; Creighton and Rippon 2017). These were initially fairly irregular in layout but later became more orderly. This village planning happened at different periods in different villages, some pre-Conquest, some immediately post-Conquest (e.g. Chesterton, Cambridgeshire, Creighton and Rippon 2017), some well after. But given the spread of dating for these changes, there is no reason to link all late 11th-century change directly with the Conquest (Creighton and Rippon 2017). At Wharram Percy, for example, different parts of the village were laid out at different times between the 10th and 13th centuries.

At Raunds, a deserted medieval village in Northamptonshire, a similar pattern is noted to that seen at the Cheveley site. A late Saxon system of boundary ditches, plots and stock enclosures is overlain by more intensive 12th-century domestic occupation with associated midden build up (Chapman 2010, 61–5).

The post-Conquest period saw a population explosion. Between 1086 and *c.* 1300 it is thought the population of England rose threefold (Platt 1978, 92). In Cambridgeshire, it may have been greater still. Despite a possible dip in population during the mid-12th century (see below), it is estimated that overall there was a 350% increase between 1086 and the early 13th century, thereafter the population rise slowing down or declining (Hallam 1981, 102–3). Many Cambridgeshire villages expanded over this period (Taylor 1983, 153–8). The development of the site on the southern edge of Cheveley can be seen as fitting this general pattern of expansion. Its eventual abandonment might fit with a period of population decline.

With population increase came the expansion of agriculture to less favourable areas, for example into drained wetlands (Creighton and Rippon 2017), but it was otherwise organised on similar grounds of strip cultivation in open fields to the preceding Saxon model (Oosthuizen 2006). The move from cattle-

based husbandry to the predominantly sheep/goat-based medieval economy was a change which began in the pre-Conquest era; likewise the rise of wheat over barley. Both trends in crops and livestock are reflected among the remains recovered from Cheveley. The finding of fish remains among the Cheveley midden material is unusual, but only in that such remains are rarely preserved or recovered on rural sites. The consumption of fish in the village should present no surprise, even of marine fish, some 40 miles from the coast. Eels had been trapped in the Fens since prehistory and many villages and manors had their own fishponds which were kept stocked. A considerable increase in sea fishing in north-western Europe has been documented from around AD1000 (Barrett *et al*. 2011). This was possibly driven by an increase in population and by the demands of the Church which proscribed the eating of meat on particular days of the week, certain saints' days and during the whole of Lent. Fish was preserved as saltfish using salt extracted from the east coast salt marshes, and as hard stock fish which had to be soaked for several days before it was edible and then transported for sale inland.

As elusive as the Conquest is in rural archaeology, it did have one direct and distinct consequence that is arguably observable at the Cheveley site, namely the introduction of milling restrictions. After the Norman conquest querns were widely prohibited as tenant farmers were obliged to use manorial mills to grind their grain. Some continued to use rotary querns with permission, for use with other foodstuffs such as malt, while others used them illegally (Watts 2006, 3; Smith and Margeson 1993, 202). The finding of the remains of three broken querns at this site is potentially the direct result of this. The querns may have been deliberately broken to render them useless and either discarded or reused within the workshop. Since the querns share the same midden deposition as other waste material discarded on site, this must have happened during the site's period of occupation. It therefore provides dating evidence for this watershed in the local area to between *c.* 1100 and *c.* 1220.

The events of 1143–4 when the De Mandeville rebels wrought destruction across the Fens and the surrounding lands are equally elusive archaeologically due, once again, to the problems of dating archaeological remains accurately enough to tie them to any particular historical event.

They were met with particular outrage at the time, even by a people inured to poverty and warfare. Gruesome contemporary accounts of the destruction speak of a countryside bereft of people or animals, thousands dead, corpses left lying for want of anyone to bury them and extreme scarcity of food (Creighton and Wright 2016, 244; 263; Round 1892, 217). The veracity of these accounts and the real impact on the area has been much debated. However, the impact on the Fenlands of this systematic plundering is likely to have been severe due to their finely balanced ecology and the need for maintenance of its drainage systems (Creighton and Wright 2016, 275). The autumn timing of the beginning of the rebellion is also significant in that harvests (which were reportedly poor to begin with, Round 1892, 218) would have been carried off or destroyed leading to famine. Creighton and Wright (2016, fig. 8.6b) map the area of destruction and Cheveley lies comfortably within it. It has been speculated that nationwide the population declined by 2–3% during the entire period of the Stephen-Matilda succession conflict (Creighton and Wright 2016, 247). In the Fenlands in the 1140s the decline is likely to have been far more severe.

The blacksmith and the village smithy

The place of the blacksmith

In Anglo-Saxon times, the smith was held in the highest esteem and "treated as an officer of the highest rank" above both the meadmaker and the physician (Tylecote, 1981, 42) and throughout the medieval period and beyond the role was at the centre of much mythology and superstition. The post-Conquest period saw an increase in the use of iron (Birrell 1969, 100). It was increasingly used in the building trade for nails and other fittings and there were many large Norman building projects. Horseshoes came into regular use. The increasing human population needed greater quantities of agricultural tools and knives. The demand for iron from all levels of society meant that the smith held a position of great responsibility, that they formed a link between the peasantry and the ruling classes and that metalworking was no longer confined to higher status sites (Geddes 1991; Miller and Hatcher, 2014). By the 13th century most villages had their own smith (Birrell 1969, 100).

At this period the village smiths are likely to have operated as part-time specialists, possibly seasonally, with the bulk of their stock production undertaken during quiet spells in the agricultural year (Arribet-Deroin 2013, 460; Jouttijärvi 2009). Possibly they were only called into service when the need arose either in the form of large orders from wealthy clients (Birrell 1969, 100), during the harvest, or on demand according to local need, such as tool repair and farriering the horses of passing travellers. They most probably combined their smithing service with small-scale farming. It is possible that the Cheveley smithy itself was a temporary structure and was only constructed to fulfil one such large order, such as ironmongery for the construction of a manor house, or horseshoes for a military campaign and was thereafter abandoned, a cycle which potentially happened twice.

Intensive survey in and around the Cambridgeshire village of Bourn (about 35km to the west of Cheveley) found archaeological finds relating to widespread iron smelting and smithing, though with no *in situ* remains (Baxter 2008, 119–55). However, accompanying historical research into manorial records provided useful insights into the organisation and status of medieval smithing work. Smiths were retained

by the manor at Bourn to shoe horses and maintain the ironwork on the plough and thus minimise lost ploughing time. There is no mention of a forge and it is possible that the smith took his equipment out into the fields and worked alongside the plough teams. It is not clear how manorial smiths were paid in the 12th century, and it may have been in corn, land grant or benefits such as the right to dig ore or cut timber on the lord's land.

The location of the forge on the edge of the village but on the main road appears to be typical. Medieval-era written records suggest smoke and noise emanating from the smithy, not to mention the considerable fire-risk attached to them, ensured they are relegated to the village boundaries (Geddes 1991, 75). At the same time, it is also easily located by, and accessible to, potential customers from the village and those traveling the road into or out of the village.

The smith's resources

The fact that Cheveley is described as a 'woody township' is possibly key in terms of its acquiring a smithy. Wood was a key resource for the iron industry. Charcoal was needed in large quantities to fuel smelting furnaces and forges (Steane 1984, 217; Sauder and Williams 2002, 127), to the extent that the industry has often been blamed for deforestation (Birrell 1969, 92; 104). Recent studies, however, on iron smelting centres, have suggested that the charcoal needs of the industry were met through careful woodland management, for example, using large oak branch-wood, rather than felling whole trees, allowing regeneration (Crew and Mighall 2013; Fyfe *et al.* 2013). However, times of lesser centralised control could lead to greater woodland destruction (Crew and Mighall 2013). It is likely that the use of the woodland at Cheveley would typically have been closely supervised by manorial staff. However, the events of the mid-12th century certainly qualify as a period of lesser centralized control and it is probable that the proper management of woodland resources was not a priority at this point. Charcoal burners were probably working in the woods around the village but it is possible that the charcoal was being made by the smiths themselves (Steane 1984, 222–3; Birrell 1969, 96–98). Oak was the wood of choice but other woods, such as birch and hazel could also be used (Crew and Mighall 2013; Fyfe *et al.* 2013). Unfortunately, the charcoal remains at Cheveley were too little and too fragmented and too poorly stratified to identify any factors of woodland management or if woodland destruction might have been a factor in the abandonment of the smithy.

Water was also a vital resource though was probably not hard to come by on a clayey site where drainage appears to have been a more pressing issue.

Iron was clearly the other major resource needed and this would have come from two main sources: bar iron from iron smelting centres and scrap iron collected from the local area and over the course of work at the smithy (e.g. from discarded horseshoes). Several of the iron objects found at the site are broken and may have been part of a store of scrap iron. There were no identified pieces of bar iron. Iron smelting was generally a more specialist process and was undertaken close to sources of iron ore (HE 2015, 5; Tylecote 1981, 43). The main centres of iron production in medieval England were the Forest of Dean and the Weald of Kent/Sussex (Steane 1984, 217), but local smaller scale iron smelting was probably also practiced, sometimes by blacksmiths themselves. At the smithies at Godmanchester and Waltham Abbey, there is evidence for small-scale smelting attached to the smithy (Webster and Cherry 1975, 259–60; Huggins and Huggins 1973). There is no evidence for smelting at Cheveley, though this is not to say it was not undertaken there.

Smithy structures and layouts

Most of the research and literature regarding medieval ironworking sites concentrates on iron production and the technology and economics of bloomeries and other smelting sites. Evidence for iron smithing is far more commonplace in the medieval archaeological record. There is hardly a medieval urban excavation without finds of iron slag, and less commonly, tools or bar iron, that indicate smithing in the general vicinity (e.g. Margeson 1993, 174). However, structures with coherent evidence for their use as smithies are harder to come by. The lack of distinctive features in the structure and often internal features of smithies mean that they are often identified mainly from concentrations of waste products. There are several sites in the south-east and East Midlands where smithies have been identified with reasonable certainty (Table 6). In addition, recent work on two exceptionally well-preserved and carefully excavated medieval sites in Jutland, Denmark (13th-century Klosterbakken and 11th-century Viborg Søndersø) produced some very clear evidence of working practices (Jouttijärvi 2009).

There is no particular form of structure associated with this function. Stone construction would clearly have been an advantage in terms of reducing the danger of fire but wooden structures are frequently found. Even at Bramber Castle, the structure was temporary and wooden (Barton and Holden 1977, 38). At Houghton and Goltho, the most directly comparable settings, the structures were wooden post-built with broadly comparable archaeological signatures to Cheveley (MHI 2019a, 110; Beresford 1987, 25). Those in more urban or monastic settings at Godmanchester, Waltham Abbey and South Witham were stone-built (Webster and Cherry 1975; Huggins and Huggins 1973, 137; Mayes 2002, 37; fig 3.22). Floor surfaces survived in some of these. At Godmanchester is was of pebbles (Webster and Cherry 1975), at Waltham, of clay (Huggins and Huggins 1973, 137). At Cheveley it is likely to have been of clay or beaten earth.

In terms of size, the structure at Cheveley is within the variation of those seen elsewhere. It is comparable to that at Goltho which measured 13.2 by 5.8m with a large yard 6.9 by 9m attached (Beresford 1987,

25). There the yard seems to have been the focus of the ironworking activity. Godmanchester too was similar at 9.6m by 4.8m internally, divided into two rooms. The room on the street front was interpreted as the blacksmith's workshop, the room at the back as domestic; the bloomery was in the adjacent building next door (Webster and Cherry 1975). At South Witham the structure was smaller, measuring internally about 6m by 4.2m (Mayes 2002, 37; fig 3.22), though the operation may have utilised other structures in the preceptory complex. At Waltham Abbey, the smithy was a large three-bay aisled building 15.7 by 10.1m externally, with a 5.8m wide lean-to. One large 2m-wide doorway leading into a small compartment was suggested as a doorway and stall for horses and oxen to be brought in for shoeing (Huggins and Huggins 1973, 131).

While the stone-built structures suggest a degree of permanence (for the structure at least, its function could easily change), the wooden structures might have been short lived, possibly very short-lived. This was most clearly demonstrated at Viborg Søndersø which could be accurately dated by dendrochronology and accurately characterised by extremely well-preserved floor deposits. It was shown that the structure was built in 1019 and only stood for six years. It was used for metalworking in four successive winters from 1019/20 to 1022/23, with ironworking being latterly joined by bronze and silver casting and antler working, the structure being left empty over the summer months between. The building was maintained for another year but in 1024 the roof collapsed and in 1025 it was demolished.

Smithy features and practices

The central feature of any blacksmith's forge was the hearth itself. This was typically bowl shaped containing burning charcoal. A tuyere of clay or stone with an aperture was needed to protect the end of the bellows, which was inserted into the fire to raise the temperature. Initial shaping of an item usually involved hot-working and needed hearth temperatures of *c.* 1200°C. Later shaping could be done cold but would need annealing periodically by placing it in the fire to avoid the metal becoming brittle. This required more modest temperatures of *c.* 700°C (Tylecote 1981, 42). Though there were floor level metalworking hearths in the medieval period, they were often constructed at waist height instead which has resulted in few surviving. There is no trace of an *in situ* metalworking hearth at Cheveley and thus this may well have been the case there.

Other features include a 'bosh' or quenching tank, a container of water for cooling tools and products, an anvil (possibly a large boulder of suitable shape), a rail for tools, containers for charcoal and raw iron and a work bench with good access to light for finishing items (Jouttijärvi, 2009; Huggins and Huggins 1973, 135). Many of these features might leave little or no archaeological trace.

A hearth was in evidence at Bramber (Barton and Holden 1977, 38). At Waltham there were two features interpreted as the foundations for waist-height hearths (Huggins and Huggins 1973, 135) and other floor-level hearths. It was suggested that the smaller floor hearths were for heating smaller objects (*ibid*, 137). There were two rectangular floor level stone hearths at Goltho located in an area interpreted as an external enclosed yard rather than within a roofed building (Beresford 1987, 25). At South Witham there was a stone base for a waist-height hearth (Mayes 2002, 37). At Viborg Søndersø the structure began with a floor level central hearth but was replaced a year later with a raised hearth.

Five clay-lined pits at Waltham are suggested as possible quenching tanks. There was also a suggestion of wall benches. Water was supplied from an internal well (Huggins and Huggins 1973, 135–7). A stone-packed post-hole at South Witham was interpreted as a possible anvil base (Mayes 2002, 37). At Viborg Søndersø, a concentration of iron fragments in one corner suggested the location of a box or barrel for storing scrap iron while another feature is interpreted as the base for a work bench for finishing items (Jouttijärvi 2009, 979).

There was nothing found at Cheveley which might represent any of these features, though it is possible that a number of pits may have served as quenching tanks. None was obviously clay-lined though the natural clayey subsoil might have precluded the need for this. It is also possible that the main centre of iron

Table 6. *Archaeologically excavated blacksmith's forges in eastern and south-eastern England.*

Site	Setting	Date	Reference
Godmanchester, Cambridgeshire, near Huntingdon	market town	?medieval	Webster & Cherry 1975
Houghton DMV, Cambridgeshire, near Brampton	village	probable late 11th to 13th-century date	MHI 2019a, 110; MHI 2019b, 78
Waltham Abbey, Essex	Augustinian Abbey	*c.* 1200 possibly into the post-medieval period	Huggins & Huggins 1973, 131-42
South Witham, Lincolnshire	templar preceptory	*c.* 1220 and the c 1300	Mayes 2002, 35-37
Goltho, Lincolnshire	early medieval manor	9th century	Beresford 1987, 25; fig.21
Bramber Castle, Sussex	castle	14th century	Barton, & Holden 1977, 38
Southampton	urban	late 12th to early 13th-century date	Platt & Coleman Smith 1975, 349

forging was just outside the north-west excavation limit, and clearly plough truncation has had its effect.

Cheveley's smithy

Viewing the remains at Cheveley through the lens of the archaeological and historical evidence presented above provides a picture which, despite the horizontal truncation of the site, is very clear. It was occupied for a relatively short period of time, built on a 'green field' site and reverted to one thereafter, so is uncluttered by evidence for earlier and later occupation. The pattern of waste distribution, though not *in situ*, is relatively pristine and can be used to identify where certain processes took place.

The smithy was built on a site at the edge of the village as was the norm, a generation or two after the Norman conquest at a time of increasing population and increasing demand for iron. It was a time of village re-organization which saw Norman laws begin to cut into everyday life, particularly as regards milling restrictions. Whether directly under control of the local manor and its Norman lord or not, it probably had a close relationship with it as regards rights to timber resources. It would have had a pivotal role for everyone in the village from lord to labourer.

The structure was built at an angle to the road but set back from it and at an angle to earlier property boundaries though seemingly still respecting them. It is not clear why this should be. Possibly there were factors affecting its location which are no longer visible, such as tree locations or nearby structures. It may have been part of a larger manorial complex, the remains of which fell outside of the excavation area.

It was occupied for a few decades, possibly two generations, and then was abandoned for a time. The date of this abandonment cannot be dated exactly. The combined evidence of pottery and radiocarbon dating suggest it was around the 1140s or 50s. While this does not constitute proof, the co-incidence with the historical dating of the De Mandeville rebellion of 1143–4 is compelling. The contemporary accounts of the resulting devastation and depopulation would be entirely in keeping with the abandonment of this structure. It seems unlikely the site would have been deliberately targeted. It did not belong to the king and had no obvious strategic value however this was probably not enough to protect it. Round (1892, 213–4) recounts how De Mandeville's men went door to door disguised as beggars to discover who had anything left worth stealing. Any households identified would then be visited by armed men in the dead of night, the residents dragged from their beds and tortured until they revealed the locations of these possessions. A smithy would no doubt have had resources worth stealing. Could this be how the site's Phase 3 occupation came to an end? There are no overt signs of a violent end, but archaeological evidence in the form of burnt structural remains would be largely indistinguishable from some of the domestic and industrial waste that was recovered. Livestock would have been carried off, and any dead would either have been removed elsewhere for burial, or their remains scattered by animals.

Given the site was occupied by a smith and his family an alternative and less grisly theory about the end of the Phase 3 occupation presents itself. Wars need ironwork. Smiths would have been much in demand during the years of the conflict between Stephen and Matilda, for forging and repairing weapons and armour and for making nails and other fittings for the rapidly constructed castles in the area. It is possible that the smith was pressed into service of either King Stephen or De Mandeville. It is also possible that, after repeated military incursions into the Fens, that the smith, seeing the danger that he and his family were in, abandoned his feudal allegiance and offered his services within the safer setting of castle walls (possibly the nearby Burwell Castle, under construction in 1144).

Even if, by good fortune, the village and smithy escaped destruction by fire and sword, the devastation to surrounding lands, destruction of the harvest and resulting famine and depopulation would have rendered it uninhabitable for a time. Possibly the decline in manorial authority which must have affected the area during some periods of the war also resulted in poor woodland management and deforestation and reduction in fuel supply was also a factor.

The site was then reoccupied probably in the 1160s or 70s. The catalyst for this is not clear. It is possible that, a generation after the Anarchy, the population and economy had bounced back to the point where a smith was once again needed at Cheveley and the local resources that had once made it a good location were still present. It is also possible that smithing had been undertaken elsewhere on the estate or the village in the interim but woodland regeneration once again, had made this a viable location. Political events may have played a part in that new ownership may have re-invigorated local industry, for example when the De Dinan estate was temporarily forfeit to the Crown in 1168 or when it was inherited by Andrew De Vitre in 1173, but since the Breton lords of Cheveley probably only ever enjoyed its incomes from afar, it seems unlikely that this had a significant effect on manorial life.

A new structure was built partially over the footprint of the older structure, but set further back from the road, pressed up against the drainage ditch which ran across the back of the plot. There is stronger evidence to link the second phase of occupation (Phase 4) to smithing than the first (Phase 3) and it is possible that the smithing phase was very brief indeed, but simply left the most characteristic and voluminous waste behind. The locations of these remains give some insights into the nature of the work undertaken there.

The structure's position means there is no obvious street frontage workshop and dwelling place behind, as at Godmanchester. The concentration of slag, combined with the geophysical ferrous anomaly in this area suggest that the north-west corner of the site was

the location of the majority of the ironworking, possibly where the hot-working was done. It is possible that any structures associated with this activity lay just outside of the excavation boundary. The lesser concentrations of waste material around structure G13/20 suggests this area was used more for cold working, possibly with annealing hearths there. The hearth might have been located close to the north-west corner of G20. Farriering may also have been undertaken there as well as the sharpening and finishing of items, away from the heat and noise of the main hearth. It is not immediately clear whether G13 was a yard attached to structure G20 or the other way around. The possible open side of G20 might suggest that this was a more likely yard and contained room for horses to be brought in and work space with good light.

An area to the west of the structure was used to extract clay for the construction of metalworking hearths. The clay was probably also used for creating daub for the walls of the structure, for flooring and possibly pit linings and for ongoing repairs.

Again, this occupation seems to have been relatively short-lived, similar in length to the previous occupation, about two generations, until around the 1210s or 20s. Why it was abandoned is unclear though a number of theories present themselves. There are several political events at this time which, though focused elsewhere in the country, might have affected the manor, such as the conflict surrounding Magna Carta in 1215–6, or that between Richard Marshall and the crown in the 1220s. Perhaps the events of 1233 are the most likely in that it is recorded that Henry III ordered Richard Marshall's manors destroyed, rather than simply seized. Thus it is possible that destruction was once again visited on Cheveley. There are also more prosaic considerations. The smithy may only have been intended as a temporary structure related to a specific need for ironwork, for example for a building project such as a new manor house, or to supply a large order from a wealthy patron. Alternatively, the smith may have moved due to drainage issues on site or to allow the woodland to regenerate or because better accommodation was provided elsewhere by the manor. There was a possible population decline in the early 13th century which may have reduced the demand for iron.

The distribution of later finds suggests that the structure was dismantled at the end of its life and the timbers re-used rather than being left to decay *in situ*. Everything of value, including structural timbers, tools and scrap iron would have been taken away. Nevertheless, the lost fragments that remain are enough to tell an eventful story of rural industry and village life. The apparent abandonment of the site at just the time that the area was devastated by the 'Anarchy' of the De Mandeville rebellion provides important archaeological evidence to supplement the historical accounts of the effects of these events on the area.

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