

**Channel Tunnel Rail Link
Union Railways (South) Ltd**

Project Area 440

MERSHAM, KENT.

ARC MSH 98

**DETAILED ARCHAEOLOGICAL WORKS
INTERIM REPORT**

Contract S/400/SP/0009/P484A*

**Canterbury Archaeological Trust
11 October 1999**

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**Canterbury Archaeological Trust
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1. INTRODUCTION

- 1.1** Canterbury Archaeological Trust Ltd (CAT) was commissioned by Union Railways (South) Ltd (URS) to undertake detailed archaeological investigations on land situated to the south of the church of St. John the Baptist, Mersham, Kent. This work formed part of an extensive programme of archaeological investigation carried out in advance of the construction of the Channel Tunnel Rail Link.
- 1.2** The site (Figure 1) is centred on URL grid point 85180/19290 and NGR grid point TR05183929. Its total area was 0.995 hectares. The site was specified for detailed excavation. The excavation was undertaken by CAT during December 1998 and January 1999.

1.3 Location

- 1.3.1** The site (Figure 2) is located to the south of the boundary wall of the church of St. John the Baptist and to the north of the embankment of the London to Folkestone railway line. It is limited in the east by a tree-lined field boundary fence and in the west it comes to an end some 60m east of, and parallel with, Church Road.

1.4 Geology and Topography

- 1.4.1** The site occupies a slight spur on the edge of the Hythe Beds, a distinct formation of lower cretaceous lime and sandstones (British Geological Survey Sheet 305/6). The land drops away to the south and west onto low-lying Atherfield and Wealden Clays. A very sandy ragstone outcrops at the site and many of the fragments show banding due to slight textural changes in the size of their sand grains (dominantly medium to coarse).
- 1.4.2** The solid geology was capped in most places by a distinctive and very localised deposit, up to 50mm thick, consisting of a red/brown, weakly calcareous, sandy clay. This in turn was capped by pale orange/brown sandy clay, loessic drift material that blankets the Hythe Beds throughout the area.
- 1.4.3** The central, northern and eastern areas of the site occupy a relatively flat plateau that slopes gradually from north to south. The ground drops away more steeply along the southern and western edges of the site. The land has been ploughed to a depth of 0.25m-0.30m, as evidenced by a relatively homogeneous topsoil horizon. The truncated nature of all features located in the 'plateau' area suggests that this ploughing has caused relatively deep erosion of the underlying deposits. The level of the truncated natural varies from 63.70m to 61.10m OD in the plateau area and to a low point of 57.85m OD in the south-western corner of the site.

1.5 Background

- 1.5.1** The modern village of Mersham contains three separate areas of historic interest. The northernmost of these is defined by a conservation area, but is situated some 500m north of the site. A second area, however, is located immediately north of the site. It consists of the church (Grade I listed), with its surviving medieval west window and graveyard (Grade II), and to the west of the church, Court Lodge, an important hall

house (Grade I) and its associated barn (Grade II*). The church was first recorded in 1040 and was rebuilt in the twelfth century. Court Lodge dates to the early to mid fourteenth century when it came under the control of the monks of Christ Church, Canterbury. To the south of the site, and separated from it by the cutting of the London to Folkestone railway line, is The Forstal, a widely spread group of eleven buildings of historic interest, seven of which are listed (Grade II).

- 1.5.2** Previous discoveries in the area include an important group of at least three early Anglo-Saxon burials found in 1828 during road mending 'on Bower Farm'. The grave goods, which include brooches, a buckle, a sword, a spearhead, and a knife, are now in Canterbury Museum. They probably date to the sixth or seventh centuries. Further evidence of burials of the same period comes from two buckles and an oblong ornament (gilt set with garnets) discovered in the parish before 1852, and a globular cinerary urn found before 1853.
- 1.5.3** In 1967 medieval settlement activity was discovered east of the parish church in the field situated to the west of Bower Lane (TR05483928) following quarrying operations for ragstone undertaken along Bower Lane. Hearths, wells, and pits were discovered. A large quantity of pottery sherds, believed to date to the thirteenth and fourteenth centuries, were recovered, along with quantities of small iron artefacts. To the east of this site lies Bower Farmhouse, a timber framed hall house dating to c. AD 1500 (Grade II*).
- 1.5.4** The CTRL Environmental Statement (URL 1994) and subsequent geophysical prospection identified the area to the south of the parish church as of potential archaeological interest. The Museum of London Archaeological Service (MoLAS) undertook a trial trenching evaluation of the area in 1997.
- 1.5.5** Nine trenches were cut across the paddock situated to the south of the church, an area of approximately 2 hectares; archaeological features were found in seven of these. Twelve of the features contained cultural material including slag and pottery. Most of the pottery was believed to date to the thirteenth century.
- 1.5.6** The most significant finds were retrieved from pits and ditches located in the central southern area of the field. Iron slag, derived chiefly from smelting, was found in large quantities, as were ironstone, daub and cinders. Post-holes and beam-slots identified suggested that timber buildings were associated with this ironworking activity. The Wealden iron industry was of considerable regional importance during the Roman, Anglo-Saxon, medieval and post-medieval periods, yet the pre-industrial evolution of the industry is only poorly understood. For this reason an area centred on the metalworking features identified during the evaluation, and covering most of the paddock, was identified for detailed archaeological excavation.
- 1.5.7** Following the completion of the excavation further evaluation work was undertaken in the field immediately to the east. A continuation of a ditch found running along the southern side of the site was identified, but no further evidence of metalworking was found.

2 SUMMARY OF RESULTS

- 2.1** The principal discovery made during the excavation was an early medieval metalworking site. Pits backfilled with iron slag, ditches cut to bring water to the site, and a southern boundary ditch, all dating to the period AD 1050-1200 (most probably AD 1050-1125), were excavated. The western boundary ditch probably also dates to this time.
- 2.2** A significant proportion of the early medieval features contained late Anglo-Saxon artefacts. This suggests that the origin of the industry may have lain in the period AD 850-1050. Small quantities of mid Anglo-Saxon and earlier material were also found, but these are thought to be entirely residual.
- 2.3** Following the abandonment of the site the southern boundary ditch was retained, while a smaller, parallel, ditch was added in the north. A low-level renewal of activity appears to have taken place during the period 1475-1500, but this ended by AD 1775. Horticultural features excavated at the eastern end of the site are probably contemporary with this later activity.

2.4 Periods represented

- 2.4.1** The following periods were represented:
- Iron Age and Romano-British
 - Anglo-Saxon: Mid (c. AD 750-850)
Late (c. AD 850-1050)
 - Early medieval (c. AD 1050-1200)
 - Post-AD1200: Medieval (c. AD 1200-1450)
Late med. (c. AD 1450-1550)
 - Post-AD 1550: Post-med. (c. AD 1550-1775)
Late post-med. (c. AD 1775-1900)

Iron Age and Romano-British

- 2.4.2** Evidence of the earliest activity in the area consists of small quantities of struck flints, and Iron Age and Romano-British pottery fragments. Although the dating evidence from two of the excavated features (Figure 3) was solely Iron Age, and from one solely Romano-British, all this material is believed to be residual.

Mid Anglo-Saxon (c. AD 750-850) and Late Anglo-Saxon (c. AD 850-1050)

- 2.4.3** Likewise the evidence of mid Anglo-Saxon activity in the area is sparse and probably entirely residual.
- 2.4.4** However, evidence of late Anglo-Saxon activity, although also mainly residual, is more abundant. Six pits scattered around the central-southern metalworking, area of the site (Figure 3) contained finds dating entirely to this time. One of these pits (93) was the earliest in a sequence which appear to have been used exclusively for the disposal of iron slag.

- 2.4.5** Associated settlement activity is suggested by the presence of pottery sherds and animal bone fragments, while craft activity is indicated by a small and dispersed collection of Anglo-Saxon textile implements; these were all recovered from pits associated with the early medieval industry.

Early medieval (c. AD 1050-1200)

- 2.4.6** Whatever the nature and layout of the earlier industry may have been, the excavated evidence relates predominantly to a metalworking site of the period AD 1050 - 1200. Most activity appears to fall within the narrower date range of AD 1050 - 1175.
- 2.4.7** The greatest concentration of activity is in the central-southern area of the site (Figure 3), where a large oval pit, possibly a water-storage tank, and a number of large pits backfilled with soils containing iron slag, are located. Three 'V' shaped ditches lead from the higher ground to the east of the site and terminate in this area. The ditches could have held structures such as wooden channels or ceramic pipes designed to feed water into the main industrial area in a controlled manner.
- 2.4.8** Very high concentrations of tap slag were found in three pits, which formed a group located on the eastern side of this area (though the earliest of these may date to the late Anglo-Saxon period). They appear to have been cut specifically to dispose of such material. Generally the spread of pits containing iron slag extends northwards and eastwards from the working area, but not to the south or west. In the south a large ditch appears to mark the limit of the site. At its western end the ditch curves round to the north where, unfortunately, it appears to have been removed by a post-medieval ditch cut along the same line (Figure 4).
- 2.4.9** It is probable that the workers undertaking the iron production at the site lived as well as worked in the area. Many of the pits contained pottery and animal bone fragments, while 10 pits were identified as having been used for the disposal of cess.
- 2.4.10** A second phase of activity is indicated by the construction of a ditch, parallel to the western boundary ditch, which runs southwards away from the church. The ditch cuts the backfilled remains of the three, 'V' shaped, ditches which had been cut to bring water to the site, but does not necessarily post-date the abandonment of the industry. The ditch appears to mark the limit of the industrial area in the east as none of the large slag-filled pits lie beyond its boundary.

Medieval (c. AD 1200-1450) and late medieval (c. AD 1450-1550)

- 2.4.11** There is almost no evidence of activity at the site during the period AD 1200-1475, though the southern and western boundary ditches must have remained visible as they were re-cut and backfilled during subsequent periods of occupation.

Post-medieval (c. AD 1550-1775) and late post-medieval (c. AD 1775-1900)

- 2.4.12** The southern boundary ditch appears to have been re-cut during the period AD 1550-1775 (Figure 4). At about the same time a smaller, parallel ditch was cut across the northern part of the site. This ditch is also parallel to the boundaries of the churchyard and Court Lodge Manor House. A gap in its centre appears to mark the

position of an entrance or gateway. This entrance lies close to the position of the now backfilled eastern boundary ditch of the early medieval site.

- 2.4.13** A series of shallow trenches (Figure 4), believed to be horticultural features, was cut in area located between the southern and northern ditches at around the same time, though dating is based on only a handful of sherds. These features were only exposed at the eastern limit of the excavation.
- 2.4.14** The western boundary ditch (Figure 4) was cut during the late post-medieval period, almost certainly as a recut to a ditch which originally marked the boundary of the Anglo-Saxon / early medieval ironworking site. It was finally backfilled some time after 1780-1825, when a ceramic field drain replaced it. No subsequent activity is indicated.

2.5 Feature types

2.5.1 In total 561 individual contexts were recorded during the excavation, of these 307 represent deposits and 254 cuts or interfaces. One hundred and eighty-eight separate archaeological features were recognised. These included pits, ditches, post-holes, and the shallow 'horticultural' features located along the eastern side of the site. A site matrix has been drawn to show the stratigraphic relationships between the individual contexts.

2.5.2 The approximate numbers of features of the different types were as follows:

- Ditches: to mark boundaries 6
to transport water to the site 3
- Pits for the burial of domestic waste 70
for cess 10
for the disposal of slag 3
for storing water 1
miscellaneous 25
- Post-holes 30
- Horticultural features 30
- Miscellaneous 'trenches' 10

Ditches

2.5.3 The six boundary ditches help to define land divisions within the area of the excavation, and their relationships with other landscape features such as the boundary walls of the church and manor house. The southern ditch was the only one to show evidence of having been re-cut, though soil conditions at the time of excavation made visual identification of such activity very difficult.

2.5.4 Three smaller 'V' shaped ditches ran from outside the area of excavation in the east, to terminate in the central, south-eastern area of the excavation. They are interpreted as having been used to transport water to the main working area of the metalworking site, possibly by means of wooden ducts or ceramic pipes. The ditches form a sequence - the central ditch cuts the northern one, and the southern one cuts the central; this provides useful information about the longevity of industrial activity at the site.

Pits

- 2.5.5** The pits most commonly represented on the site typically contain soils mixed with moderate quantities of iron slag and domestic waste such as pottery and animal bone fragments. Their depth and sizes vary considerably. Some of the largest are concentrated in a small group located in the central-western area of the site. The evidence suggests that a small resident population was living, as well as working, in the area of the site. Evidence for textile manufacture, a household activity at this time, was recovered from a small number of these pits.
- 2.5.6** About ten pits appear to have been cut as latrines. They are deep and narrow, possibly in order to fit below a timber superstructure, and typically have sides which are heavily stained green.
- 2.5.7** Three pits, located just to the east of the main working area of the site, contained very dense concentrations of iron slag, mainly tap slag. They appear to have been cut for the primary purpose of disposing of this material. Interestingly the earliest of these contains material datable to the late Anglo-Saxon period.
- 2.5.8** To the south-west of the area where the main water ducts terminate, close to the junction of the southern and western boundary ditches, a large oval pit was examined. This feature had been backfilled with soil and pieces of roughly hewn ragstone, and there was no evidence to suggest its primary function. However, the position of the feature indicates that it may have formed part of the industrial processes taking place. One suggestion is that it was originally lined, and acted as a tank for the storage of water.
- 2.5.9** Approximately 25 pits were excavated that could not be placed into any of the above categories. Generally they were small and irregular and contained redeposited brickearth-like material mixed with a small number of finds.

Post-holes

- 2.5.10** Approximately 30 post-holes were excavated. These ranged from narrow cuts representing single post-pipes, to quite large holes packed with ragstone rubble. Generally the smaller posts were located in the central-southern area of the site, while the larger, ragstone packed, features were located in the north. No distinct structures can be formed by examining the distribution of these posts.

Horticultural features

- 2.5.11** These features were located along the southern edge of the site. They consisted of shallow, oblong, features with rounded ends and bases. It is assumed that they were cut as a result of horticultural activity, and originally extended over a larger area.

Miscellaneous 'trenches'

- 2.5.12** A group of narrow, non-linear, trenches, ranging in length from 1.5m to 7m were identified during the excavation. They are distributed across the entire site, and there are not necessarily any connections between them.

2.6 Artefactual remains

The ironworking assemblage

Range

2.6.1 Over 563kg of debris identified as ironworking residue was recovered during the excavations at Mersham. Most of this was hand-retrieved from the 50% of each deposit excavated. Samples taken for wet sieving also yielded slags, in particular micro-slags such as hammerscale. The greatest bulk of material was tap slag, the evidence for smelting, though a range of other material, including smithing slag was also present. The assemblage can be broken down into the following categories:

- Tap slag
- Dense slag
- Furnace walls
- Roasted ore
- Smithing hearth bottoms
- Hammerscale

Condition

2.6.2 The condition of the material was generally very good.

Quality

2.6.3 Although the site(s) of the furnaces were not located, the slag from pits and other features gives an excellent picture of the range of ironworking activities carried out at the site. The comprehensive sampling policy adopted means that variations in the distribution of different types of slags can be examined across the site.

Tap Slag

2.6.4 Tap slag represents the majority of the slag present. The largest concentrations were found in pits 91, 92, and 93, which appear to have been cut primarily for the disposal of such material (Figure 3). Some pieces are exceptionally large and the fact that they were carried away from the smelting area to be dumped implies the furnaces were probably located nearby.

Dense slag

2.6.5 This slag was found in small quantities. It is similar to tap slag but lacks the flowed surface.

Furnace walls

2.6.6 Fragments of the furnaces walls were found and indicate these were at least 30-40mm thick and extremely solid. If the base of the furnaces were originally set below ground level one would expect to have found *in situ* evidence of them during the excavation.

Roasted ore

- 2.6.7** Some soil samples taken on site and some slag samples contained small ferruginous, sandy stones - often magnetic - which may be the roasted ore used for the smelting. The identification of this material as ore is not certain and specialist (geological) identification will be required.

Smithing hearth bottoms

- 2.6.8** The most diagnostic slag of smithing is the *smithing hearth bottom* which formed in the bottom of the hearth, below the tuyere. The size of the smithing hearth bottoms ranged from quite substantial to rather small, indicating that sometimes smithing was carried out for a longer period than at other times, before the hearth was cleared out.

Table 1 - Smithing hearth bottoms

	range	mean	Standard-deviation
weight (g)	74-2310	568	496
length (mm)	55-160	111	27
breadth (mm)	45-130	86	24
depth (mm)	20-150	46	23

A piece of slag found in one context had formed around the tuyere. The tuyere had been removed but the slag had already taken shape around it. It was also noted that the fuel used for both smelting and smithing was charcoal, which was present amongst the slag and was sometimes incorporated in the smithing hearth bottoms. The large number of hearth bottoms present indicated smithing - and not purely smelting - was definitely taking place.

Hammerscale

- 2.6.9** These are the micro-slags (not visible to the naked eye when in the soil) produced by smithing which are not often recovered. The hammerscale recovered from the environmental samples revealed that as well as either bloom smithing or high temperature welding, secondary smithing (ordinary hammering of flat pieces of iron) was certainly taking place on the site. Other pieces of hammerscale had sometimes been cemented to but not absorbed by the smithing hearth bottoms on which they fell and could be seen when the smithing hearth bottoms were measured.

The pottery assemblage

Range

- 2.6.10** A total of 296 pottery sherds was recovered. These can be broken down, roughly, into the following period divisions:

- Iron Age and Romano-British 7%
- Anglo-Saxon: Mid (c. AD 750-850) 4%
- Late (c. AD 850-1050) 16%
- Early medieval (c. AD 1050-1200) 56%
- Post-AD1200: Medieval (c. AD 1200-1450) 2%
- Late medieval (c. AD 1450-1550) 5%
- Post-medieval (c. AD 1550-1775) 8%
- Late post-med. (c. AD 1775-1900) 2%

Condition

- 2.6.11** Generally the condition of the pottery was fair to poor. Many of the sherds were small and worn. There were no whole vessels, and it will be possible to reconstruct only a few complete profiles.

Quality

- 2.6.12** Although the quality of most of the pottery types recovered from Mersham is unexceptional, many sherds are of previously unknown types, particularly in terms of their fabrics. Undoubtedly they are mainly local. Dating of these, particularly of the plain bodysherds, can at present only be tentative. The featured sherds (i.e. rims, bases, etc) are of better quality and are more easily dated. There are no obvious continental or regional imports present and the pottery is of a predominantly local, utilitarian character.
- 2.6.13** The local types, mainly sandy-shelly wares, are of remarkably simple even crude manufacture; they appear to perpetuate the tradition of Saxon hand-made pottery well into the early medieval period. Some of these wares are similar to, but much cruder than, the twelfth- or early thirteenth-century products of the Ashford Potters Corner kiln and may be the products of an earlier stage of this industry.

Iron Age and Romano-British

- 2.6.14** The Iron Age and Roman sherds are probably all residual. The Iron Age material is a coarsely flint-tempered ware. The Roman material comes from a variety of sources.

Anglo-Saxon

- 2.6.15** The mid Saxon (*c.* AD 750-850) material is fragmentary but definitely present. It includes a sherd from a rare burnished boss-decorated vessel of eighth-/ninth-century date, probably copying Canterbury products. It is not impossible that one or two sherds could be of Early Saxon, perhaps fifth-/sixth-century date. Late Saxon (*c.* AD 850-1050) material is more abundant but also rather poorly preserved in most cases (usually occurring as isolated sherds) but a few useful featured vessels survive.

Early medieval (*c.* AD 1050-1200)

- 2.6.16** The dating emphasis of the early medieval pottery - the largest group of wares from the site - is narrower than the bracket range given above and most likely confined to the years *c.* AD 1050-1100/25. Early medieval pottery alone accounts for well over one half of the total site assemblage and consists almost entirely of hand-made cooking pots and one or two probable spouted pitchers (for serving liquids, etc). All the vessels are unglazed but one of the spouted pitchers (probably twelfth century) has rouletted decoration.

Post AD 1200

- 2.6.17** The post-1200 assemblage is small and scrappy but suggests renewed activity on the site from *c.* AD 1450 onwards. It includes local and Wealden coarsewares.

The Small Finds

Range

2.6.18 Ninety-seven small finds were retrieved from the excavation, 63 of which were made of iron. They can be listed as follows:

<i>Non ferrous artefacts</i>		<i>Ferrous artefacts</i>	
• Objects associated with Anglo-Saxon textile working		• Awl	1
Spindle whorl	1	• Knife blades	5
Double-pointed pinbeater	1	• Other artefacts:	
Loomweight	1	Buckle Frame	1
Fibre processing teeth	2	Horseshoe	1
• Antler comb fragment	1	Implements	2
• Quern fragment	1	Nails	24
• Copper alloy ring fitting	1	Staples	2
• Copper alloy wire	1	Ring fittings	3
• Silver coin	1	Strips	3
• Lead waste	1	Sheets	11
• Flint artefacts	25	Unidentified objects	8

2.6.19 Good quality artefacts associated with the production of leather goods and textiles were recovered. Other domestic items include a fragment of a quern and part of an antler comb.

2.6.20 The proportion of iron artefacts in the assemblage, in particular the knife blades, is higher than might normally be expected, which suggests some of them may be the products of the ironworking industry present at the site (though the horseshoe and buckle frames are post-medieval). No blacksmith's tools or other artefacts associated with the production of metal artefacts were discovered, but some of the strip and unidentified iron may be elements of smelting products. The non-ferrous metal artefacts are not significant.

Condition

2.6.21 The condition of the objects recovered is generally good. Although heavily corroded most of the iron objects showed up well under x-radiograph.

Quality

2.6.22 Although the quantity of small finds recovered from the excavation was small, they were of good quality and have the potential to add to our understanding of the site, in particular to the range of activities undertaken there.

2.6.23 The objects have been provisionally dated, and that dating compared with the pottery spot-dating for the site. No major differences have resulted.

Objects associated with Anglo-Saxon textile working

2.6.24 A loomweight, two fibre processing teeth, a siltstone spindle whorl and part of a double-pointed pinbeater were recovered. All of these appear to be of Anglo-Saxon

date. The loomweight is of the bun-shaped type, which does not appear to be any earlier than the ninth century and which, according to typologies devised for Yorkshire, was effectively out of use by the end of the tenth century. Greater precision in dating is not really possible, although it does appear that siltstone spindle whorls, which are made at or near West Hythe, were not widely traded until the ninth century.

Objects associated with other domestic activities

- 2.6.25** The iron awl has a square-sectioned shaft and it may have been used for leather working. The quern fragment was of basalt lava and could be of Anglo-Saxon or medieval date. The Antler comb is typical of domestic assemblages of the same period.

Knife blades

- 2.6.26** An Anglo-Saxon date can be tentatively suggested for two of the knives, which are of a characteristic 'angled-back' form. This particular type of knife can be seen in East Kent from the seventh century onwards and it lasts to the Norman Conquest. The latest examples have come from thirteenth-century contexts at York and Winchester, but it is likely that these are residual, and the type belongs, effectively, to the Anglo-Saxon period. Locally, examples are known from Canterbury and West Hythe. The two Mersham examples come from contexts with ceramics of eleventh- to twelfth- century date, and the material centres on the eleventh century, which agrees well with the knife forms. Of the remaining blades one is probably post-medieval.

Flint artefacts

- 2.6.27** A total of 25 struck flint artefacts has been recovered from the excavations. This includes a blade core (probably Mesolithic), an incomplete leaf-shaped arrowhead (Neolithic), a scraper and a possible gun flint. The remainder consist of knapping waste.

Ceramic building material and daub

Range

- 2.6.28** Fragments of the following were found:

- Roman brick and tile 4
- Medieval roof tile 315
- Post-medieval brick 7
- Post-medieval floor tiles 1
- Daub 357

Condition

- 2.6.29** The condition of the material is very poor, virtually all the CBM (apart from the complete brick) was in a fragmentary and abraded state, and only a few of the daub pieces bear diagnostic or interesting features.

Quality

- 2.6.30** The quality of the CBM assemblage is generally poor, with very few different fabric types or tile forms being present. The largest tile assemblage was the medieval roof tiles, but it consisted entirely of plain fragments. No glazed examples were present. 357 daub pieces weighing 6.810kgs were retrieved from the excavation. Of these only 11 (396gms) bear wattle impressions or flat surfaces; the remainder are devoid of any diagnostic features.

2.7 Palaeo-environmental and economic evidence

Animal bone remains

Range

- 2.7.1** Fragments of animal bone were retrieved by hand from 28 of the deposits examined during the excavation. Other material was retrieved from the environmental samples; these were taken from the 50% of the features that were not hand sampled. The environmental samples were wet sieved onto nested 2mm and 1mm meshes. The 2mm fractions from each sample were sorted in their entirety. A low power microscope was used to examine a representative portion of the 1mm residues.
- 2.7.2** The hand-retrieved assemblage subdivides into a quantity of butchered and fragmented bone, and a horse burial. The material recovered from the environmental sampling includes a wider range of types. Bones of large mammals and fish were common in a number of samples, while highly fragmented large mammal bone, rodent, bird, amphibian and fish bones were present in small amounts in many others. Some of the fragmentary mammal bone had been burnt.

Condition

- 2.7.3** With the exception of the horse burial the condition of the animal bones recovered was poor. The majority was in a rather fragmentary condition.

Quality

- 2.7.4** Very few measurable bones are present and ageing evidence (from epiphyseal fusion and tooth attrition and eruption) is very limited. However, most of the material comes from pits apparently associated with the early medieval metalworking, and as such it provides valuable information on the diet of the individuals associated with the industry.

Butchered and fragmented bone

- 2.7.5** Species identified include: cattle, pig, sheep, goat, dog, cat and horse. These animals are all familiar constituents of early medieval assemblages, as for example at Linacre Garden, Canterbury. Cattle bones were the most numerous in the fragmented assemblage, with pig and sheep both being common.

The horse burial

- 2.7.6** The skull, mandible, backbone (excluding the caudal vertebrae), and ribs were recovered. Elements of the two forelimbs are also present. The animal can be positively identified to horse, *Equus caballus*, from cranial morphology and the occlusal patterns of the teeth as opposed to other equid species or hybrids. All post-cranial bones were fused indicating a mature animal. The 5th and 6th lumbar vertebrae are ankylosed (fused) a condition often interpreted as a work-related change. The animal also exhibited a number of other pathologies including caries on many of the upper teeth, and exostoses on two cervical vertebrae.

Charred plant remains

Range

- 2.7.7** Plant remains were recovered from the environmental samples by carrying out bucket flotation onto 0.5mm mesh before using larger meshes for the recovery of other remains. Thirteen of the samples examined produced moderately sized assemblages of plant remains, although small quantities were recovered from most samples. The remains consisted chiefly of charcoal, which was usually highly fragmented, and charred cereal remains, seeds, and fragments of hazelnut shell. Mineralised seeds were present in a few samples, particularly in sample 1024, which contained mineralised faeces.

Condition

- 2.7.8** Most of the plant remains recovered had been preserved by charring and were in a good condition.

Quality

- 2.7.9** With the exception of the material recovered from sample 1024, which is very good, the assemblage as a whole is of a reasonable quality. Most of the material comes from pits apparently associated with the early medieval metalworking, and as such provides valuable information on the diet and contemporary environment of the individuals associated with the industry.

Mineralised seeds and faeces

- 2.7.10** Mineralised seeds were present in a few samples, particularly sample 1024 which came from one of the fills of one of the larger cess pits. The same deposit also contained mineralised faeces, fish bone, small fragments of large mammal bone, and other biological material. Traces of possible faeces were also recovered from a number of other pits.
- 2.7.11** One sample contained uncharred elderberry (*Sambucus*) seeds. Apart from small fragments of charcoal no other plant remains were present. Elderberry seeds are very resistant to decay and often survive, for example, in waterlogged deposits that have subsequently dried out where other plant remains have decayed.

Invertebrate remains

Range

2.7.12 Invertebrate remains consisted of land snails and slugs as well as shellfish.

Condition

2.7.13 The condition of the invertebrate remains was generally very good, though the land snails were often in a highly fragmented condition.

Quality

2.7.14 The quantity of material recovered was small and its quality mixed. Some useful information on the diet of the individuals inhabiting the site is to be found in the shellfish remains, but the quality of the land snails and slug assemblages is poor.

Land snails and slugs

2.7.15 Apart from a fair-sized assemblage retrieved from one particular ditch (context 353), land snails were not present in sufficient quantities to produce meaningful environmental data. The most numerous species recovered from most of the samples was *Cecilioides acicula* which burrows to depths of up to a metre and is therefore of little use for environmental interpretation. Remains of slugs were more common. The internal shells (slug plates) of limacid slugs were present in a number of samples, and the calcareous granules of arionid slugs were very common in the 1mm fraction of most samples. These can not be identified to species level.

Shellfish remains

2.7.16 Cockle and mussel shell was common in a few samples, but in most of the samples the shellfish remains consisted of small quantities of fragmentary oyster, mussel and cockle shell. Winkle and tellin were recorded in single samples, as were the calcareous tubes of marine annelid worms which are commonly found adhering to shells, and a crustacean claw. These remains provide information on the diet of the occupants of the site.

3 FIELDWORK EVENT AIMS

- 3.1** The aims of the fieldwork event as stated in the WSI were as follows:
- Establish the full extent and morphology and organisation of the ironworking site
 - Recovery of artefact assemblages (especially pottery) to elucidate the sequence of site development; to provide information on the status and economy of the site and data on trade and exchange
 - Recover environmental and other economic indicators if these are found to be present on site
 - Determine the landscape setting of the site and interaction with the contemporary local environment
- 3.2** Although the locations of the furnaces were not found during the fieldwork, evidence recovered has helped to give a clear indication of the extent and morphology of the ironworking site. In particular the work identified the positions of the southern and, by implication, western boundary ditches. All excavated activity associated with the industry lies within the angle formed by these boundaries. Furthermore, the activity is limited by additional, parallel, ditches located in the north and east. Although, these ditches were probably added after the demise of the industry, it seems reasonable to assume they match the positions of the earlier boundaries of the site.
- 3.3** Activity associated with metalworking was focused in the central, south-western, area of the site. It consisted of numerous pits containing slag and other ironworking debris, a large oval pit, possibly used for water storage, and the terminal ends of three 'V' shaped ditches that may have been used to transport water to the site. Activity took place from the late Anglo-Saxon period through to c. AD 1200.
- 3.4** As *in situ* evidence for the furnace or furnaces was not identified in this focal area, or elsewhere on the site, the possibility remains that they were located outside the area of excavation. Unfortunately, the contemporary ground surface is believed to have been truncated by about 0.25m – 0.30m during subsequent periods of activity. As this would have removed any evidence for the bases of such features, which are likely to have been situated at or around ground level, it seems more likely that they were located within the area of excavation, and that their bases were removed as a result of the subsequent ground truncation.
- 3.5** Unfortunately, it has not been possible to identify the plans of individual structures that may have been associated with the industry. Indeed, the absence of the larger pits from the main focal area indicates that the principal metalworking activities could have taken place in the open.
- 3.6** The quantity of datable artefacts recovered during the excavation was relatively small. However, the developmental sequence was not complex and as a result it has not been difficult to assign features to any of the broadly defined periods of occupation. The only real problem is with the 20 or so pits that contain evidence for metalworking but no datable finds. At present these have all been assigned to the early medieval phase, though some may be contemporary with the late Anglo-Saxon occupation of the site.
- 3.7** Examination of the metalworking assemblage has already provided important results relating to the type and range of activities undertaken at the site. The large number of

hearth bottoms present indicates that bloom smithing as well as smelting was being practised, while the hammerscale recovered from the environmental samples shows that high temperature welding and secondary smithing were probably also taking place.

- 3.8** The quantity of iron artefacts recovered was larger than might be expected from such a domestic site, and it is possible some of these may represent the products of the metalworking activity undertaken there. The items include two Anglo-Saxon knives of the characteristic ‘angled-back’ form. Such knives were widely distributed and may well have been intended for trade rather than just local use.
- 3.9** Other evidence for trade relates to items produced elsewhere and imported, for example the siltstone spindle whorls which were produced in the Folkestone area. By better understanding the distribution of such artefacts we are likely to enhance our knowledge of local and regional trade patterns.
- 3.10** One of the most important functions of the finds assemblages has been to indicate that the site had a domestic as well as an industrial status. It seems clear from the ceramic, environmental, and small-finds assemblages that a small resident population was at times present on the site. Pits were cut for the disposal of rubbish and as latrines, and craft activities such as textile and leather working were undertaken. The datable evidence suggests that the domestic activity was contemporary with the industrial activity on site and took place during both the late Anglo-Saxon and early medieval periods.
- 3.11** Large, ragstone-packed, post-pits, which were identified in the northern part of the site, may be from domestic buildings or other non-related structures. Additional evidence for buildings, such as sunken floors, would not be expected as late Anglo-Saxon and early medieval structures in south-east England are usually surface-built.
- 3.12** Although most of the environmental samples taken during the excavation were relatively small, useful evidence was provided on the diet of the population resident at the site. Evidence for the contemporary environment, however, was of lesser value.
- 3.13** The topological and geological location of the site is clearly significant in regard to the industrial activity undertaken there. The proximity of natural resources such as a supply of water, iron-ore bearing clays, and timber, were all undoubtedly important, as was the good drainage offered by the site’s elevated location.

4 SUMMARY OF POTENTIAL

- 4.1** The site has a good potential in regard to two of the questions posed in the CTRL research strategy for the period, ‘Towns and their rural landscapes’.
- c. How were settlements and rural landscapes organised and how did they function?
 - d. How did the organisation of the landscape change through time?
- 4.2** One of the most interesting aspects of the excavation at Mersham in regard to the questions posed in the CTRL research strategy is the close interrelationship it demonstrates between the metalworking site and the surrounding settlement. Rather than dealing with a stand-alone industrial site the excavation reveals one in which evidence for industrial and domestic activities were integrated. Pits originally cut for the disposal of human cess, for example, typically might be backfilled with layers of both domestic and industrial waste. The site appears to have been used during a period which extends from late Anglo-Saxon times through to c. AD 1125 (possibly up to AD 1200). Although the furnaces were not necessarily active on a regular basis throughout this period, it seems that when they were, there was usually an accompanying population resident at the site.
- 4.3** The site itself was integrated within the contemporary settlement at Mersham. It lay just to the south of the church of St John the Baptist, which was first recorded in AD 1040 and rebuilt in the twelfth century. Its southern boundary ditch was parallel with the southern cemetery wall of the church, while its eastern ditch formed a continuation of the western wall of the cemetery. Although the foci of contemporary settlement in the area have not yet been identified, by the thirteenth century one such area had been established east of the parish church in the field situated to the west of Bower Lane (Figure 2). Immediately to the west of the church is Court Lodge manor house, which dates to the early to mid fourteenth century. At this time it was under the control of the monks of Christ Church, Canterbury.
- 4.4** If documentary work is able to increase our understanding of settlement patterns in late Anglo-Saxon and early medieval Mersham, and, in particular to understand what role Christ Church may have played in them, the potential of the site to address questions concerning the organisation of rural settlement patterns will be significantly enhanced.
- 4.5** Fragments of lining recovered during the excavation indicate that the furnaces associated with the site were of substantial construction. This tentatively suggests that smelting was being carried not merely to produce blooms to pay as taxes or to sell elsewhere, but to supply iron for some large undertaking such as the construction of a substantial building or complex of buildings.
- 4.6** The documentary evidence may indicate that the iron was being produced for use in ecclesiastical establishments in Canterbury, a number of which underwent massive rebuilding programmes in the late eleventh and twelfth centuries. Religious foundations often carried out their own iron production from beginning to end, particularly if they had access to ore sources, and ecclesiastical interest in Wealden iron goes back to the middle Anglo-Saxon period. Any evidence which links the manor of Mersham with such a foundation therefore, is potentially of great significance.

- 4.7** Apart from the metalworking debris, other assemblages have a potential contribution to make in terms of furthering our understanding of rural settlement patterns. This is in addition to their value in enhancing our understanding of the site itself. The importance of the pottery assemblage is that it provides a window into the ceramics of an area of rural Kent where virtually no ceramic research has been conducted previously. Likewise the information on the diet of those settled at Mersham provided by the environmental assemblage is almost the only such information collected for a late Anglo-Saxon / early medieval population living in rural Kent.

APPENDIX 1

ARCHIVE INDEX

ITEM	NUMBER OF ITEMS	NUMBER OF FRAGMENTS	CONDITION (No. of items) (W=washed; UW=unwashed; M=marked; P= initial processing complete; UP=unprocessed; D=digitised)
Context records	561		
A1 plans	119		D
A3 plans	6		D
A1 sections	47		
Small Finds		72	P
Films (monochrome) S=slide; PR=print	8.5		
Films (colour) S=slide; PR=print	9		
Flint (boxes)	1 size 3	25	P
Pottery (boxes)	1 size 2	296	P
Fired clay (boxes)		11	P
CBM (boxes)		3	P
Stone (boxes)	1 size 3	2	P
Metalwork (boxes)	1 size 3	77	P
Glass (boxes)		7	P
Slag (boxes)	20 size 1	3214	P
Human Bone (boxes)	none	-	-
Animal Bone (boxes)	1 size 3 1 size 1	1799	P
Soil Samples (bags)	102		48P
Monolith/kubiena tins			

Key to box sizes

Size 1: large = 540mm x 406mm x 260mm
 Size 2: museum box = 430mm x 300mm x 235mm
 Size 3 : half size museum box = 430mm x 305mm x 100mm

APPENDIX 2**SUMMARY REPORT****Mersham, Kent (TR05183929)**

Detailed archaeological investigations were undertaken by Canterbury Archaeological Trust Ltd on land situated to the south of the church of St. John the Baptist, Mersham, Kent during December 1998 and January 1999. The work was commissioned by Union Railways (South) Ltd, and formed part of an extensive programme of archaeological investigation carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL).

The principal discovery made during the excavation was an early medieval metalworking site. Pits backfilled with iron slag, ditches cut to bring water to the site, and a southern boundary ditch, all dating to the period AD 1050-1200 (most probably AD 1050-1125), were excavated. The western boundary ditch probably also dates to this time.

A significant proportion of the early medieval features contained late Anglo-Saxon artefacts. This suggests that the origin of the industry may have lain in the period AD 850-1050. Small quantities of mid Anglo-Saxon and earlier material were also found, but these are thought to be entirely residual.

Following the abandonment of the site the southern boundary ditch was retained, while a smaller, parallel, ditch was added in the north. A low-level renewal of activity appears to have taken place during the period 1475-1500, but this ended by AD 1775. Horticultural features excavated at the eastern end of the site are probably contemporary with this later activity.

Following the completion of the excavation further evaluation work was undertaken in the field immediately to the east. A continuation of a ditch found running along the southern side of the site was identified, but no further evidence of metalworking was found.

APPENDIX 3

KENT SMR SUMMARY SHEET

Site Name: Mersham, Kent	
Summary: Site initially located by MoLAS, 1997, as part of work commissioned by Union Railways (South) Limited. Excavation, prior to destruction during construction of high speed rail link, carried out by Canterbury Archaeological Trust, 1998. Archaeological features included pits and ditches with much evidence of iron-smelting and working.	
District: Ashford	Parish: Mersham
Period(s): 1. Medieval (Norman) 2. Post-medieval	
NGR Easting: TQ 605175	NGR Northing: TQ 139290
Type of recording: Excavation	
Date of recording: (From) December 1999 (To) January 1999	
Unit undertaking Recording: Canterbury Archaeological Trust	
Summary of Fieldwork Results: Detailed archaeological investigations were undertaken by Canterbury Archaeological Trust Ltd on land situated to the south of the church of St. John the Baptist, Mersham, Kent. The work was commissioned by Union Railways (South) Ltd, and formed part of an extensive programme of archaeological investigation carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL). The principal discovery made during the excavation was an early medieval metalworking site. Pits backfilled with iron slag, ditches cut to bring water to the site, and a southern boundary ditch, all dating to the period AD 1050-1200 (most probably AD 1050-1125), were excavated. The western boundary ditch probably also dates to this time. A significant proportion of the early medieval features contained late Anglo-Saxon artefacts. This suggests that the origin of the industry may have lain in the period AD 850-1050. Small quantities of mid Anglo-Saxon and earlier material were also found, but these are thought to be entirely residual. Following the abandonment of the site the southern boundary ditch was retained, while a smaller, parallel, ditch was added in the north. A low-level renewal of activity appears to have taken place during the period 1475-1500, but this ended by AD 1775. Horticultural features excavated at the eastern end of the site are probably contemporary with this later activity. Following the completion of the excavation further evaluation work was undertaken in the field immediately to the east. A continuation of a ditch found running along the southern side of the site was identified, but no further evidence of metalworking was found.	
Location of Archive	
Bibliography: CAT Excavation Report	
Summary Compiler: Alison Denton	Date: 26 September 1999