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Small Finds from Mersham, Kent (ARC MSH98)

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1 SMALL FINDS

by Ian Riddler

1.1 Introduction

A total of 50 objects have been considered in this report. The majority of these are made of iron:

Material	*Quantity*
Antler or Bone	2
Ceramic	2
Copper Alloy	2
Iron	41
Lead	1
Stone	2

The objects are largely of late Saxon or early medieval date and the object dating generally accords with that provided by the ceramics, which would suggest that the early medieval phase belongs to the 11th to 12th century. The textile manufacturing implements are better situated in the 11th century than the 12th century, however.

The post-medieval and unstratified objects have been catalogued, but are not considered in this report.

The following table gives a summary of small finds identification and provenance.

Table 1: Quantification of small finds

SF_ Number	Context	Feature Number	PX_Interpretation	Phase *	Object Identification	Material
0	499	1179	Posthole	Early Medieval	Counter	Pottery
2	353	1099	Ditch-Other	Post-medieval	Strip	Iron
66	318	1023	Pit-Refuse	Early Medieval	Knife	Iron
67	328	1033	Pit-Refuse	Early Medieval	Awl	Iron
69	382	1129	Pit-Refuse	Early Medieval	Strip	Iron
179	370	1036	Ditch - boundary	Post-medieval	Knife	Iron
180	395	1036	Ditch - boundary	Post-medieval	Pin Beater	Animal Bone
181	397	1090	Other	Post-medieval	Nail	Iron
182	399	1046	Ditch - boundary	Post-medieval	Nail	Iron
183	402	1046	Ditch - boundary	Post-medieval	Nail	Iron
184	424	1065	Ditch - boundary	Late medieval	Nail	Iron
219	342	1024	Pit-Refuse	Early Medieval	Quern	Stone
220	347	1025	Pit-Cess	Early Medieval	Knife	Iron
221	367	1044	Pit	Early Medieval	Ring	Iron
222	403	1129	Pit-Refuse	Early Medieval	Loomweight	Pottery
223	422	1063	Pit	Early Medieval	Ferrule	Iron

SF_ Number	Context	Feature Number	PX_Interpretation	Phase *	Object Identification	Material
224	385	1131	Pit-Cess	Early Medieval	Knife	Iron
297	431	1146	Pit-fire	Early Medieval	Flesh Hook	Iron
298	569	1112	Pit-fire	Early Medieval	Rubble	Stone
387	440	1164	Pit-Refuse	Early Medieval	Nail	Iron
388	451	1175	Posthole	Early Medieval	Staple	Iron
389	568	1104	Pit-Refuse	Early Medieval	Fibre processing tooth	Iron
390	568	1104	Pit-Refuse	Early Medieval	Spindle Whorl	Stone
391	632	1070	Ditch-drainage	Early Medieval	Bar	Iron
473	562	1109	Pit-Refuse	Early Medieval	Fibre processing tooth	Iron
474	584	1171	Pit-Refuse	Early Medieval	Sheet	Iron
475	610	1114	Posthole	Early Medieval	Punch	Iron
476	629	1073	Pit-Refuse	Unphased	Sheet	Iron
512	5	1056	Ditch - boundary	Late medieval	Coin	Silver
513	421	1129	Pit-Refuse	Early Medieval	Staple	Iron
514	629	1073	Pit-Refuse	Unphased	Collar	Iron
559	432	1145	Pit-fire	Early Medieval	Axe	Iron
560	432	1146	Pit-fire	Early Medieval	Nail	Iron
561	519	1065	Ditch - boundary	Late medieval	Nail	Iron
582	492	1057	Ditch - boundary	Early Medieval	Nail	Iron
583	478	1065	Ditch - boundary	Late medieval	Nail	Iron
584	527	1152	Pit-Refuse	Early Medieval	Mount	Iron
643	497	1056	Ditch - boundary	Late medieval	Nail	Iron
644	600	1161	Pit-fire	Early Medieval	Sheet	Iron
687	350	1166	Pit-Refuse	Early Medieval	Knife	Iron
689	362	1167	Pit	Early Medieval	Strip	Iron
690	383	1131	Pit-Cess	Early Medieval	Sheet	Iron
691	383	1131	Pit-Cess	Early Medieval	Nail	Iron
692	383	1131	Pit-Cess	Early Medieval	Mount	Copper Alloy
694	403	1129	Pit-Refuse	Early Medieval	Comb	Antler
695	422	1063	Pit	Early Medieval	Nail	Iron
696	440	1164	Pit-Refuse	Early Medieval	Nail	Iron
699	570	1111	Pit	Early Medieval	Nail	Iron
700	570	1111	Pit	Early Medieval	Nail	Iron
701	573	1101	Pit-Refuse	Late Saxon	Pin	Copper Alloy

* based on site phasing

1.2 Items by functional categories

1.2.1 Dress Accessories

Pin

A fragment of the shaft and point of a pin (SF 701) is too small to be identified to type. It came from a small pit of late Saxon date in the south-east part of the enclosed area.

Mount

Part of a copper alloy mount (SF 692) for a circular fitting came from a Phase 3 pit context. The means of attachment of the mount are unclear but a small fragment of mineralised textile on the reverse suggests that it may have come from costume. Beyond hooked tags, strap ends, large disc brooches and pins, there are comparatively few late Saxon or early medieval dress accessories, and it is possible that the mount comes from a book cover, although it may equally have formed part of a simple pendant (as Webster and Backhouse 1991, nos 35-7).

1.2.2 Personal Equipment

Comb

Two small conjoining fragments of the antler connecting plate of a composite comb (SF 694) came from one of the larger rubbish pits within the area of domestic settlement. They indicate that one side of the comb had five teeth per centimetre, and that the connecting plate was decorated by two bands of four vertical incised lines, cut with a saw. The connecting plate is flat and rectangular in section. There is a broad resemblance with combs produced at Canterbury of middle Saxon date (Riddler forthcoming A) and the comb is possibly a double-sided composite; but it is too small to be securely identified to type.

1.2.3 Household Equipment

Knives

Five knives were retrieved from Phase 3 contexts. Two of these (SF 224 and 687) consist merely of small fragments of tangs. Two further knives (SF 1 and 693) include small fragments of their blades, indicating in each case that these have straight backs. Too little survives, however, to identify them to type. One example (Sf 220) has a distinct shoulder to the end of the blade, and a groove running parallel with the back. A similar groove, inlaid in this case with copper alloy, is visible also on the remaining knife (Sf 66), which is almost complete.

The near-complete knife (SF 66) is of angled back form, with the back rising steadily from the shoulder for a little over half of the length of the blade, before descending to the point. This characteristic allows it to be placed within Ottaway's type A2 (Ottaway 1992, 562-4). The type does not occur in England before the late 8th or early 9th century (Evison 1969, 332-3; Ottaway 1992, 564). It continued in use up to the Norman Conquest, and possibly beyond, although examples from 13th century contexts are likely to be residual (Ottaway and Rogers 2002, 2753). Within east Kent knives of type A2 are known from Canterbury, Cheriton, *Sandtun* and Sittingbourne (Driver, Rady and Sparks 1990, fig. 70.137; Blockley 1988, fig. 21.52; Sherlock and Woods 1988, fig. 63.3; Blockley *et al.* 1995, fig. 468.750-1; Riddler 2001a, fig. 43.19; Riddler forthcoming B; Wilson 1964, no. 80). In the north of England angled back knives were popular in the middle and late Saxon periods, extending to 34% of the Anglo-Scandinavian sample from York (Ottaway 1992, 563). Within east Kent, they are even more popular at this time, forming over 50% of the samples from the sites listed above (Riddler forthcoming B).

The groove on one knife (SF 220) runs parallel with the back. Grooves of this type are first seen on east Kent knives during the 6th century, reflecting the situation for England as a whole (Evison 1987, 114; Ottaway 1992, 580; Riddler forthcoming C; but *cf* Cameron 2000, 53). Inlaid grooves, in contrast, are not seen before the middle Saxon period in southern England, and most examples are of late Saxon date (Evison 1964, 34; Fasham and Whinney 1991, 42-3).

A further knife (SF 179) came from a Phase 4 context. Part of the tang and the blade are missing. The tang is broad and leads to a straight back with a parallel cutting edge; the tip of the blade is absent. The blade and edge are likely to have tapered to a point and this knife is of a common medieval form. As a whittle tang knife (rather than a scale tang knife) it is more likely to belong to the 12th or 13th century, than a later date (Ottaway and Rogers 2002, 2753 and 2762).

Ferrule

A fragmentary object (SF 223) from a pit in the northern half of the enclosure consists of a section of thin iron sheet, which originally enclosed a wooden shaft. The object is now bent and distorted but the sheet metal was secured by several small rivets along the length of its seam, and is perforated by a larger rivet towards one end. It is similar to a number of objects from York (Ottaway 1992, 654-6). There are two forms of ferrule, as noted for middle Saxon London (Malcolm, Bowsher and Cowie 2003, 262). The heavier form includes a solid end, with the upper part hammered around the shaft. The lighter form, which is seen here, consists of a thin section of sheet metal attached to a wooden shaft. One or both types possibly served to cover the ends of poles used in skating, although there are problems with this interpretation (Evison 1980, 37 and fig. 20; Ottaway 1992, 655-6; but *cf* Malcolm, Bowsher and Cowie 2003, 262). In his 12th-century description of Moorfields, William Fitz Stephen noted that skaters were 'holding poles shod with iron in their hands' (MacGregor 1976, 62). The more substantial iron ferrules from Dublin are regarded, however, as agricultural dibbers, utilised in an urban environment which nonetheless placed considerable significance on gardening space (Wallace 1995, 207; 2000, 264-5).

Mount

A narrow rectangular sheet metal mount (SF 584) of iron is widened at two points to accommodate rivet holes. A plated iron mount of a similar shape, but lacking the rivet holes, came from Northampton (Williams 1979, fig. 119.82). Mounts of this type were made in both iron and copper alloy, and were probably used on caskets (Coad and Streeten 1982, 235-6; Rogerson and Dallas 1984, fig. 112.51; Rahtz 1969, fig. 49.104).

Iron Ring

A fragment of an undecorated iron ring (SF 221) of circular section, recovered from a pit in the northern part of the site, has a diameter of c. 70mm. Iron rings are common finds in

Anglo-Saxon contexts, occurring both in early Anglo-Saxon graves and in later deposits. The diameter of this ring places it in a larger category, some of which were used as handles for buckets, coffins and chests (Arne 1934, 32 and taf X. fig. 5; Ottaway 1992, 648).

Flesh Hook

A fragmentary iron flesh hook (SF 297) was recovered from one of the smaller pits with metallurgical residues. It consists of two arms of square section, one of which is bent at the lower end; the other has fractured. The arms are joined at the upper end to form a tang, which is incomplete. It is similar to a flesh-hook from Thetford, as well as several examples from York (Rogerson and Dallas 1984, fig. 133.194; Rogers 1993, fig. 643.5043; Ottaway and Rogers 2002, 2805 and fig. 1388.11914). Examples with both two and three prongs were recovered from Faccombe Netherton (Fairbrother 1990, fig. 9.8.400-1).

Quern

The fragment of a discoidal basalt lava quern (SF 219) probably derives from an upper stone with a diameter of c. 420mm. Fragments of basalt lava querns occur commonly in east Kent from the Roman period onwards. In late Saxon Canterbury, Dover and London basalt lava occurs practically to the exclusion of any other stone type (Pritchard 1991, 162-4; Freshwater 1996; Riddler 2001a, 236; Riddler and Walton Rogers forthcoming). The cargo of the Graveney boat, a 10th-century vessel found in the north Kent marshes, included basalt lava quern blanks (Fenwick 1978, 131 and 173).

Along the outer edge of the quern are two notches intended to accommodate cordage. These would have allowed the quern to be rotated in either direction, either as a simple rotary quern or with an oscillating motion. Late Saxon querns tend to have perforations for wooden shafts, rather than cordage fixtures (Parkhouse 1976; Schon 1995; Freshwater 1996, 41). A close parallel is provided by a *Pendelmühl*, or oscillating quern, recovered from a 14th century context at Canterbury, but likely to have been residual in that deposit. It was retrieved from a structure interpreted as a bakery (Frere and Stow 1983, 113-5, 183 and fig. 72.5).

1.2.4 Metalworking Implements

Bar

A rectangular bar (SF 391) with rounded ends came from one of the ditches in the southern part of the site. It is similar to bar iron from York, which has been smelted but has not been prepared for manufacture (Ottaway 1992, fig. 184.1681) and it can also be compared with the Group 2 ironworking blanks from Helgö, which are of square section (Hallinder and Tomtlund 1978, 65-77). As such, it forms important confirmation of the processing of iron on-site to the level of stock material.

Punch

A small, delicate iron punch (SF 475) has a burred end and includes a fractured blade (visible only on a radiograph), which might explain why it was discarded. The blade tapers to a point on two faces only, allowing it to be defined as a chasing punch (Werner 1981, 43). The punch came from a posthole in the southern part of the excavation, within an area thought to have been associated with metalworking. Ottaway noted that small punches of this form are rare in England, and he suggested that they were used in working non-ferrous metals, echoing the conclusion of Werner (Ottaway 1992, 517 and fig. 197.2210-1, 2214-5 and 2218-9; Werner 1981, 43). Similar punches are known also from Shakenoak and Tattershall Thorpe (Brodribb, Hands and Walker 1972, fig. 42.197; Hinton 2000, fig. 22.11-13).

Iron Strips

Three iron strips are likely to be offcuts from ironworking. One has an irregular width (SF 69) and tapers towards one end with a sinuous profile, in a similar manner to a strip from Ramsbury (Evison 1980, fig. 23.27). The other piece is a small fragment of irregular shape (SF 689), retrieved from the sieving programme. Neither strip came from a part of the site associated directly with ironworking. A third strip (SF 2) was recovered from a post-medieval context.

1.2.5 Woodworking Implements

Axe

The socket loop of an iron axe (SF 559) came from one of the small pits with ironworking residues. The socket is rectangular and the neck of the axe is quite thin and tapers from the socket. This suggests that the axe may have had a T-shaped blade and was used for the trimming of timber, although a splayed blade is also possible (Ottaway 1992, 527; Nørlund 1948, taf. XXXIX). The axe has fractured across the socket, in a similar manner to several examples from York, and it may have been collected for recycling (Ottaway 1992, fig. 203).

1.2.6 Leatherworking Implements

Awl

A complete iron awl (SF 67) came from one of the small pits in the domestic area of the site. It has a narrow tang and a tapering point of square section, and it conforms with the definition of awls provided by Ottaway (1992, 552). Its elongated form is similar to examples from Faccombe Netherton, Ramsbury, Shakenoak, Thetford and Urach (Fairbrother 1990, fig. 9.1.47-61; Evison 1980, 37 and fig. 21.9-13; Brodribb, Hands and Walker 1972, fig. 52.315; Rogerson and Dallas 1984, fig. 120; Koch 1984, 141 and taf. 38.11-14). The tang was probably enclosed within a wooden handle originally, and the awl may have been used in leatherworking or in working other organic materials, including bone and wood (Ottaway 1992, 552).

1.2.7 Textile Manufacturing Implements

Four of the five objects of this category come from Phase 3 contexts. The pin-beater is, however, residual in its late medieval context and all five objects are likely to be of early medieval date. The loomweight and the pin-beater are both object types that went out of use during the course of the 11th century, whilst the other objects cannot be closely dated. The five objects were distributed across the area of domestic occupation and further to the south, within pits that contained metallurgical debris. The pin-beater came from the fill of a northern ditch. Taken together, they provide good evidence for domestic rural occupation, using locally obtained materials whilst still forming part of the widespread distribution network for siltstone spindle whorls.

Loomweight

The loomweight (SF 222) is of bun-shaped form, following the definition of Hurst (1959, 23-5 and fig. 6.3) and it has a diameter of approximately 100mm. Its diameter is similar to that for the bun-shaped loomweights from *Sandtun*, which varied between 90 and 110mm (Riddler 2001a, 241). Those from Dover, however, fall into groups that are either larger or smaller than this sample (Philp 2003, 77). The loomweight came from one of the larger pits (1129) within an area of domestic occupation. Bun-shaped loomweights first occur in Anglo-Saxon England in the 9th century and were out of use within urban contexts by the mid-11th century (Biddle 1990, 227-8; Walton Rogers 1997, 1753). Excavations at Dover provide a broad index for their use in east Kent. They are present within Hut S11 at the Burial Ground site, within a building dating to the 9th or 10th century (Philp 2003, 50-1, 77 and figs. 28 and 61) but there are no examples from 10th or 11th century structures nearby, or from the excavations of 12th and 13th century properties at Townwall Street, although copious quantities of textile implements came from that site (Philp 2003, 51-7; Riddler and Walton Rogers forthcoming). The warp-weighted loom may have continued in use for a longer period within rural settlements but it probably went out of use in east Kent during the course of the 11th century. The bun-shaped loomweights from the kilns at the East Gate in Rochester were assigned to the first half of the 12th century (Harrison 1972, 144 and 156) but the associated ceramics could be earlier in date, and merit reconsideration (John Cotter, pers comm.). Within east Kent, examples are known also from Canterbury, as well as Saltwood and *Sandtun* (Riddler 2001a, 241-4 and fig. 47; 2001b, 268; Willson 1985, 234 and fig. 2.30).

Fibre Processing Teeth

Two fibre processing teeth (SF 389 and 473) were recovered from separate pits in the southern part of the site. Both pits were filled with copious quantities of metallurgical residues, and they belong to Phase 3. They are relatively short (80 and 85mm) and are rectangular in section, which suggests that they are from a flax heckle rather than a woolcomb (Walton Rogers 1997, 1731). Those from *Sandtun* and Cheriton, in contrast, came from wool-combs (Riddler 2001a, 240; Riddler forthcoming B).

Spindle Whorl

The spindle whorl (SF 390) is lathe-turned and has been produced from a fine grained siltstone. It was almost certainly made at or near *Sandtun*, where waste from their manufacture has been recovered (Riddler 2001a, 238 and fig. 46). The weight of the spindle whorl, at 28g, suggests that it was used to produce textile, rather than cordage. Siltstone spindle whorls dominate assemblages of textile implements from east Kent of 8th century or later date. They are known from Canterbury, Cheriton, Dover and *Sandtun* (Blockley *et al.* 1995, 1170-2; Sherlock and Woods 1988, fig. 60.68; Riddler 2001a, 237-8 and fig. 46; 2001b, 281; Riddler and Walton Rogers forthcoming). The spindle whorl can be assigned to Walton Rogers type A2 (Walton Rogers 1997, 1736). This is one of the more common types in east Kent, encompassing most of the examples from *Sandtun* but only a quarter of the whorls from Townwall Street, Dover. In general, type A whorls belong to the late Saxon period and the Dover examples, of 12th century date, are amongst the latest to be seen in east Kent (Walton Rogers 1997, 1736-7; Riddler and Walton Rogers forthcoming). This example came from a pit within Group 13, in the southern part of the site.

Pin-beater

The fragment of the central part of a pin-beater (SF 180) came from a post-medieval context, within one of the northern boundary ditches. The object type is resolutely Anglo-Saxon, however, and is residual in that context. The fragment stems from the central part of the object and it has an oval section, which widens slightly towards one end. Double-pointed pin-beaters are relatively common objects from Anglo-Saxon contexts in east Kent and examples are known from Canterbury and *Sandtun*, in particular (Riddler 2001a, 240 and fig. 47; 2001b, 267-8). Most of these pin-beaters are of early or middle Saxon date, with fewer from the late Saxon period. The latest examples of double pointed pin-beaters come from 11th century contexts (Walton Rogers 1997, 1755).

1.2.8 Recreation

Counter

A fragmentary discoidal counter (context 499) has been cut from the base of an East Gaulish Samian vessel. It has been trimmed by knife to form a disc c. 72mm in diameter. It was retrieved from a posthole or small pit. Ceramic discs of this type have been retrieved from a number of east Kent sites, including Canterbury, Dover and *Sandtun* (Blockley *et al.* 1995, 1172-3 and 1184; Riddler 2001a, 250; Riddler and Walton Rogers forthcoming). The smaller examples of 20-50mm diameter are usually of Roman date, whilst the larger pieces with diameters up to 75mm, as here, often come from late Saxon and early medieval contexts.

Detailed considerations of the sequences of such counters from Colchester, Lincoln and York have led in each case to the conclusion that they served as gaming counters (Crummy 1983, 94-5; Mann 1982, 14; Ottaway and Rogers 2002, 2950-2). Examples from York with diameters in excess of 70mm have, however, been regarded as pot lids, although they are too small to fit medieval ceramics (Ottaway and Rogers 2002, 2951-2). Late Saxon examples include both those cut from contemporary fabrics – of ceramics or tile – and re-used Roman examples (Riddler 2001b, 280).

1.2.9 Structural Fittings

Nails

The majority of the nails come from early medieval contexts (Table 2). The majority can be ascribed to Mould's type 1, the most common type in post-Roman contexts (Mould 1979, 149). Type 2 is similar, but with a domed head, rather than a round, square or rectangular disc. Type 4 nails have rectangular heads and shanks and type 6 nails are large, heavy examples, with the head seemingly hammered from the shank.

Table 2: Iron Nails, by Phase and Type

Type	Context	Sub-Group	Phase	SF
	440	1164	Early medieval	387
	422	1063	Early medieval	695
	570	1111	Early medieval	699
1	432	1146	Early medieval	560
1	492	1057	Early medieval	582
1	570	1111	Early medieval	700
4	440	1064	Early medieval	696
Horseshoe Type C	383	1131	Early medieval	691
1	424	1065	Late medieval	184
1	519	1065	Late medieval	561
6	478	1065	Late medieval	583
2	497	1056	Late medieval	643
	399	1046	Post-medieval	182
1	397	1090	Post-medieval	181
1	402	1046	Post-medieval	183

Staples

Both staples (SF 388 and 513) are U-shaped, with rectangular cross-section and long arms in relation to the upper bar. The arms are parallel in one case, and slightly splayed in the other.

1.2.10 Miscellaneous Implements

Collar

A complete iron collar (SF 514) is rectangular in section and is secured by a single iron rivet. It can be distinguished from iron rings by its size and section, and by the presence of the rivet. The form is unlike Roman water pipe collars (cf Blockley *et al.* 1995, 1074 nos 713-8). A collar with two rivets was recovered from Faccombe Netherton (Fairbrother 1990, fig. 9.8.452).

Iron Sheet

Small sections of thin iron sheet were recovered from four separate contexts, dispersed across the site. Two of the fragments are pierced by rivets (SF 644 and 690) and they may have been used as binding straps, whilst others could be offcuts (SF 474, 476) from ironworking (Ottaway 1992, 501-3).

1.3 Catalogue of illustrated finds

The number (W-) visible at the end of each catalogue entry refers to the unique record ID which can be found in the database. The illustrations are broken down in functional categories.

1.3.1 Catalogue

Personal Equipment (Fig. 1)

SF 694, Cxt 403. Two small fragments of a connecting plate for a single or double-sided composite comb. Both pieces are decorated by four vertical saw-incised lines. 5 teeth per cm. AD 500-1100. W-45

Household Equipment (Fig. 1)

SF 66, Cxt 318. Short tang widening to distinct shoulder and choil. Straight cutting edge, angled back, inlaid groove on both sides parallel with back. AD 600-1100. W-50.

SF 179, Cxt 370. Broad tang, end part missing. Tang widens to shoulder, no choil. Straight back, fragmentary worn cutting edge. Tip of blade missing. AD 500-1300. W-51.

SF 220, Cxt 347. Tang and part of blade. Tang widening to shoulder, no choil. Blade straight back, as survives, worn sinuous cutting edge. AD 500-1300. W-52.

SF 219, Cxt 342. Fragment of discoidal basalt lava quern derives fron an upper stone. Two notches intended to accommodate cordage, are visible along the outer edge. AD 800-1200. W-1.

SF 584, Cxt 527. Thin, narrow rectangular mount, widened around two rivet holes. Now bent in section across one of the rivet holes. Survives as two fragments. AD 900-1200. W-16.

Metalworking Implement (Fig. 2)

SF 391, Cxt 632. Rectangular iron bar of square section with one rounded end. Fractured at other end. AD 800-1100. W-2.

SF 475, Cxt 610. Small iron punch with narrow blade, rounded and burred end, tapering in section to rounded point. Small, delicate implement. AD 600-1100. W-57.

Woodworking Implement (Fig. 2)

SF 559, Cxt 432. Fragment of axe, formerly attached to perpendicular wooden handle. Part of attachment loop survives, of rounded rectangular section, leading to fragmentary stump of implement blade. AD 800-1100. W-48.

Leatherworking Implement (Fig. 2)

SF 67, Cxt 328. Long slender awl tapering to either side from square-sectioned centre. 47mm taper to one side forming tang, 37mm to other side, also of square section, leading to sharp point. AD 600-1100. W-47.

Textile Manufacturing Implements (Fig. 3)

SF 180, Cxt 395. Middle section of a pin-beater, probably of double pointed form. Oval section, slight polish. AD 400-1000. W-8.

SF 222, Cxt 403. Fragment of a ceramic loomweight including part of central perforation and outer surface on one side. Numerous inclusions of quartz < 1mm, sparse larger inclusions of white quartz and ironstone. Abraded outer surface. AD 800-1000. W-7.

SF 389, Cxt 568. Fibre processing tooth, circular section, lightly curved in profile, sharp point. AD 500-1100. W-5.

SF 473, Cxt 562. Fibre processing tooth, circular section, lightly curved in profile, sharp point. AD 500-1100. W-6.

SF 390, Cxt 568. Lathe turned whorl of Hythe Beds siltstone. Decorated by incised circle on lower face, three concentric circles about perimeter and two on upper surface. AD 600-1100. W-9.

Recreation (Fig. 3)

Cxt 499. Part of a ceramic counter, cut from the base of a Samian vessel (CAT Code R43, Central Gaulish Samian). Circumference heavily trimmed by knife, most of glazed surface no longer present. AD 800-1100. W-11.

Miscellaneous Implements (Fig. 3)

SF 514, Cxt 629. Flat, rectangular-sectioned collar, possibly for a pipe, with traces of a small nail passing through the flat surface. AD 0-2000. W-13.

SF 298, Cxt 569. Irregular-shaped segment of stone rubble of fine-grained limestone. AD 0-2000. W-20.

1.3.2 Typologies used for the Catalogue

Koch, U., 1984 *Die Metallfunde der frühgeschichtlichen Perioden aus den Plangrabunden 1967-1981,* Der Runde Berg bei Urach V, Heidelberg

Clark, J., 1995 *The Medieval Horse and its Equipment, c. 1150 - c. 1450*, Medieval Finds from Excavations in London 5, London

Ottaway, P., 1992 *Anglo-Scandinavian Ironwork from Coppergate,* The Archaeology of York. The Small Finds 17/6, York

Hurst, J. G., 1959 Middle Saxon Pottery, *Medieval Archaeology* **3**, 13-31

The Iron Nails, in G. H. Smith, The Excavation of the Hospital of St. Mary of Ospringe, commonly called Maison Dieu, *Archaeologia Cantiana* **95**, 148-52

Walton Rogers, P., 1997 *Textile Production at 16-22 Coppergate*, The Archaeology of York 17/11, London

2 THE SLAG

by Phil Andrews

2.1 Introduction

Approximately 460 kg of ferrous metallurgical residues and associated debris was recovered from Mersham (MoLAS evaluation: ARC MSH97 / CAT excavation: ARC MSH98), on the north-eastern fringe of the Weald. It is estimated that this material represents approximately 10 % of the site total as most features were only 50 % excavated and much of the slag collected was not retained for assessment and analysis. Probably all of the metallurgical residues and debris can be assigned to the Late Saxon and early medieval periods, specifically the 11th – early 12th centuries, and provides evidence for both iron smelting and smithing / forging (bloom consolidation) on or in the immediate vicinity of the site. No furnaces, hearths or associated structures survived, and this may be attributable to the later truncation of deposits which is estimated to have been generally in the order of 0.1 – 0.3 m, but in places as much as 1.5 m.

Evidence for iron smithing is commonly found on Anglo-Saxon and early medieval sites, but traces of smelting are rare. Within the Weald the only smelting site identified from these periods is the mid-Saxon site at Millbrook in the Ashdown Forest, Sussex, which is radiocarbon-dated to the early 9th century (Tebbutt 1982). There is, however, extensive evidence for smelting in the Roman period and also from the 13th century onwards, particularly in the 16th century, before the Wealden iron industry's eventual demise in the 18th century (Cleere and Crossley 1995). The site at Mersham is important because not only does it provide evidence for both smelting and smithing, but this evidence comes from the poorly-understood early stage in the development of the medieval iron industry of the Weald.

2.2 Methods of analysis

Two pits at Mersham contained particularly large quantities of metallurgical debris: pit 1161 – 186.90 kg and pit 1160 – 51.43 kg. Both pits were 5 0% excavated and 10 % samples (by volume) of the material recovered were retained for assessment and analysis. The material retained represents, therefore, approximately 5 % of the metallurgical debris present in these two features – estimated at *c* 3.75 tonnes and *c* 1 tonne respectively. Virtually all of the remaining pits were 50 % excavated and all of the debris recovered was retained. Much smaller percentages of the ditches were excavated, and relatively little material was therefore recovered. A total of approximately 430.84 kg of ferrous metallurgical debris was recovered by these means during excavation, and a further 31.60 kg of material was collected during the evaluation (MoLAS 1998). The latter has not been studied for this report, but the relatively small quantity involved is unlikely to provide any new information. In addition, small quantites of hammerscale were identified in 42 flotation samples taken from features seen to contain large quantities of metallurgical debris.

A sub-sample of a little over 115 kg of the retained material was examined and catalogued (by Lynne Keys) as part of the assessment phase (URS 2001, 55-62). It was thought at the time that this represented just under 20 % of the material (then estimated at over 590 kg). Subsequent quantification and study of the remainder, however, indicates that the sub-sample represented around 27 % of the total, rather more than the estimate.

All of the retained metallurgical debris has been examined visually and categorised on the basis of morphology, density, vesicularity and colour for the purposes of this report.

2.3 Quantification

The quantities and other information relating to the different types of debris are listed, by context, in the site datasets. A summary of this information is provided by period in Table 3.

Table 3: Summary of metallurgical material (weights in grams) by period

	Anglo-Saxon	**Early medieval**	**Late medieval**	**Post medieval**	**Unphased**	Total
Tap slag	26,229	192,486	3610	5433	3810	*231,568*
Tap & undiag.	7250	26,430	1260	3390	380	*38,710*
Undiagnostic	14,660	82,745	422	1784	9325	*108,936*
Smithing hearth bottoms	9190 (9 examples)	28,706 (48 examples)	-	-	-	*37,896*
Hearth lining	1342	8087	-	-	-	*9429*
Hammerscale	29	108	-	-	-	*137*
Miscellaneous	-	4169	-	-	-	*4169*
Total	*58,700*	*342,731*	*5292*	*10,607*	*13,515*	***430,845***

Miscellaneous comprises ‘dense slag’ (3596g), cinder / fuel ash slag (343g), ore? (134g) and ?bloom fragment (96g)

2.4 Technology

2.4.1 Ore roasting

Before roasting, the ore would need to have been cleaned, perhaps by washing, in order to remove gangue (waste / unwanted material). A relatively large pit (1113) in the south-west part of the site, with three intercutting ditches apparently feeding into it from the north-east, could have served as a pond or reservoir to provide water for washing ore as well as quenching blooms. There is, however, no evidence for ore roasting having been undertaken on the site, and no pieces of roasted or unroasted ore were certainly identified. It is possible that the evidence (hearths and dumps of material discarded because it was too small or otherwise unsuitable) has been removed as a result of subsequent truncation, although roasting may have taken place further away, closer to the ore source. Roasting or calcining was carried out prior to smelting in order to oxidise the ore, remove water, and help break it down into smaller pieces which increased the surface area thereby improving both the effectiveness of the roasting process and the efficiency of the smelting operation. The roasting was undertaken on simple hearths constructed on the ground surface, using wood rather than charcoal as fuel, and the end product – following hand-cobbing (breaking using a hammer) - was walnut-sized pieces of roasted ore ready for smelting.

2.4.2 Iron smelting

Substantial quantities of tap (smelting) slag were present on the site, all occurring as dumps in pits or as residual material in later (Phases 3 and 4) features, and totalling 231.57 kg. No surface spreads or dumps were present, presumably because any such material had been removed or redeposited as a result of later truncation of the site.

This slag was generally characterised by having a 'ropey' surface formed as the slag flowed out of the furnace and cooled. It sometimes occurred in large plates, and some was porous and bloated. There was also a considerable quantity of fragmentary platey tap slag which is likely to have been broken up when it was removed from around the furnaces and redeposited. Most of the debris classified as 'tap and undiagnostic' (38.71 kg) is also likely to derive from smelting, as may a substantial proportion of the 'undiagnostic' material (108. 94 kg). Occasional pieces of dense slag may have been tap slag or fragments of furnace bottoms which remained in the furnaces after smelting, although some may have derived from the consolidation of iron blooms (bloom or primary smithing). At least one piece of this dense slag had a part-hemispherical surface with traces of furnace lining, and probably represents a lump of slag which remained in the base of the furnace and was not removed by tapping.

Smelting slag was recovered from both Late Saxon (26.23 kg) and early medieval (192.49 kg) features, representing 45 % and 56 % respectively of the period totals. Because the technology used was the same in both periods there is no morphological or other differences in the debris represented, and in any case the division is likely to be artificial in that the ironworking probably represents a single, continuous phase of activity on the site. The majority of smelting slag came from Late Saxon pit 1160 (26.22 kg) and adjacent early medieval pit 1161 (119.46 kg).

No furnace remains were identified within the excavated area, though these are likely to have lay on or in the immediate vicinity of the site. It should be noted, however, that a geophysical survey undertaken as part of the evaluation also failed to locate any anomalies which could be interpreted as hearths or furnaces (MoLAS 1998), and perhaps the relatively shallow remains of such features have been truncated. It is unlikely that the metalworking debris, restricted to a relatively tightly-defined area within the site would have been transported very far from where it was produced. In addition to the slag, some hearth or furnace lining was also recovered (1.34 kg from Late Saxon contexts and 8.09 kg from early medieval contexts), including at least two fragments with the remains of tuyere or blowing holes where the nozzle of the bellows entered the furnace of hearth. In neither case is it certain whether these tuyeres came from smelting furnaces or smithing hearths, though the latter is thought more likely.

The nature of the slag indicates that shaft furnaces were utilised from which the molten slag was tapped, rather than the Continental non-tapping type represented by the mid-Saxon Millbrook furnace (Tebbutt 1982) in which the slag dripped into a pit below the furnace and formed a block or cake (*schlackenklotz*). The latter type of furnace was introduced into parts of eastern and southern England by the Anglo-Saxons, but was replaced in the 9th or 10th centuries by a re-introduction of the slag-tapping furnace (Cleere and Crossley 1995, 42-3). At Ramsbury in Wiltshire the earliest Middle Saxon furnaces also appear to have been of this type, and were subsequently replaced by a slag-tapping shaft furnace (Haslam 1980). There are examples, however, of later non-tapping furnaces, in particular that at Alsted, Surrey which is of 13th century date (Ketteringham 1976), but these furnaces differ in form and operation to the earlier non-tapping type.

It seems improbable that the many pits on the site at Mersham were dug specifically for the disposal of metallurgical debris, though they did incidentally serve this function, particularly pit 1161 which is estimated to have contained approximately 3.75 tonnes of ironworking debris. However, the clay which came from the digging of these pits could have been used in the construction of hearths and furnaces, as well as in daub for buildings.

Ironworking debris providing evidence for both smelting and smithing was recovered from five Late Saxon features, with the vast majority – 51.434 kg (including smithing hearth bottoms, see below) coming from pit 1160. Three small pits nearby (21, 90 and 247) each produced 1 – 5 kg of tap and undiagnostic slag.

A large number of early medieval features also produced ironworking debris, again representing both smelting and smithing, which on ceramic grounds might be assigned to the later 11th and early 12th century. This debris came from much the same area as the Late Saxon material, in the western half of the site, and within the area enclosed by the ditches. The majority of this early medieval ironworking debris – 186.901 kg (including smithing hearth bottoms, see below) came from pit 1161; this cut Late Saxon pit 1160 and there is, therefore, the likelihood of some degree of mixing and redeposition of earlier material in the later pit. Of the total from pit 1161, 119.464 kg is tap slag and a further 38,758 is undiagnostic. In addition, pit 1153/1152 produced 37.320 kg of ironworking debris, and pits

1073, 1172, 1178 and 1162 each produced 5 – 10 kg, all of which lay in the vicinity of pit 1161. A further 24 early medieval pits each produced 1 - 5 kg of ironworking debris.

The end product of smelting was a bloom, a spongy mass of iron containing some slag, which was then ready for bloom consolidation or forging - primary smithing, to expel the impurities. Whereas the melting point of iron is 1540°, a temperature not achieved in medieval furnaces, the unwanted slag could be liquified and removed by hammering at 1150°.

2.4.3 Iron smithing / forging

Relatively large amounts of smithing or forging slag were recovered. The slag was characterised by a somewhat amorphous, vesicular, sometimes cindery appearance with no obvious flow structure, although some pieces had 'dribbles' on their upper surface. An unknown proportion of the undiagnostic slag (108, 936 kg) is likely to derive from iron smithing.

The most diagnostic type of slag derived from smithing is the 'smithing hearth bottom' (SHB), a hemispherical cake of slag which formed below the tuyere and was periodically removed to allow the hearth to work more efficiently. A total of 57 smithing hearth bottoms were recorded, nine from Late Saxon contexts and 48 from early medieval contexts. In each case, the number represents a similar proportion of the overall weight of ironworking debris from that period, suggesting that there were no major changes in the amount of smelting and smithing between the late saxon and the early medieval periods. All of the nine Late Saxon smithing hearth bottoms came from pit 1160, but the three densest examples amongst these may actually be furnace hearth bottoms derived from smelting. Early medieval pit 1161 produced 32 examples, pit 1065 produced four examples and the remaining 12 smithing hearth bottoms of this period were all found singly in other pits. The smithing hearth bottoms ranged from 106 g to 1766 g in weight, with an average of 665 g, and were generally between 80 mm x 60 mm x 25 mm (minimum) and 160 mm x 130 mm x 60 mm (maximum) in size. There are a small number which are made up of one smithing hearth bottom fused on to the top of another, and there is one example where three are fused together.

Plate hammerscale (recovered from the 0.5 mm sieved fraction) was present in quite large quantities in several of the samples, and lesser quantities of spheroidal hammerscale were also noted. Some fragments of hearth lining (or furnace) were present, normally found adhering to smithing hearth bottoms but, as noted above, only two pieces with the remains of tuyere holes were recorded. Both pieces are perhaps more likely to have derived from forging / smithing hearths rather than smelting furnaces as although heavily burnt, neither showed any evidence for vitrification which is more likely to occur in the sustained higher temperatures reached during smelting. Although neither of the holes was complete, the surviving fragments indicated diameters of *c* 25 mm.

It is considered most likely that the smithing debris derived from forging or bloom consolidation (primary smithing), but some may derive from the manufacture of finished objects (secondary smithing) (McDonnell 1989, 373). Bloom consolidation involved repeated heating and hammering of the 'spongy' iron bloom produced in the smelting furnace in order to expel slag entrapped in it. This resulted in a dense, comparatively pure bloom of iron perhaps weighing in the order of 14 kg (30 lb). However, the recovery of a rectangular iron bar from a medieval (Phase 3) ditch in the southern part of the site may indicate a subsequent stage of iron production, in which the bloom was converted into smaller bars or rods, perhaps for trade or distribution to smiths further afield. Bloom consolidation would have taken place in hearths, sometimes known as string hearths, set into the ground or at waist level which, in either case, are unlikely to have left any trace on this site. Nor is there any surviving evidence for sheds, shelters or windbreaks which have been found elsewhere associated with hearths and furnaces. For example, the simple windbreak at the 9th century site at Millbrook (Tebbutt 1982), and the more extensive 14th century building and enclosure at Minepit Wood, Sussex (Money 1971), though this too had relatively insubstantial foundations.

2.5 Discussion

The site at Mersham lies on the north-eastern edge of the Weald, an area well-known for its extensive, large-scale ironworking industry in the Roman, medieval and early post-medieval periods. The success of the industry was based on readily accessible supplies of ore, matched by the availability of wood for charcoal production for use in the furnaces and hearths. Evidence for smithing is commonly found on Anglo-Saxon sites including, for example, in Kent the more than four tonnes of mid-Saxon ironworking debris from Christ Church, Canterbury (eg Houliston 1997), but evidence for smelting is rare. Late medieval sources suggest that iron production was centred in the northern and central parts of the Weald, whilst known Roman iron working sites tend to concentrate in the southern Weald (Cleere and Crossley 1995, 95, figs 19 and 27). However, the general lack of evidence for activity in the intervening period may reflect a lack of research, and the reasons that determined the location of the earlier and later industries may not necessarily be pertinent to the Late Saxon and early medieval industry. There is, of course, the alternative possibility that there was very little iron production in the Weald between the 4th and 13th centuries AD. Apart from a 9th century mid-Saxon smelting site known from Millbrook in the Ashdown Forest (Sussex) towards the southern edge of the Weald (Tebbutt 1981; 1982), the evidence comprises two documentary references of the late 7th and late 11th centuries respectively. The earlier reference is to an iron mine at Lyminge and the later one to a *ferraria* near East Grinstead (Cleere and Crossley 1985, 87). Mersham is particularly unusual in that it has provided evidence for both smelting and smithing, or at least bloom consolidation, in the 11th and early 12th centuries and possibly earlier, in an area where no evidence for iron production has previously been found (see Cleere and Crossley 1985, fig. 4).

The site at Mersham lies on Lower Greensand, close to its junction with the Wealden Clay, approximately 30 km to the north-east of the nearest concentration of bloomery sites which are located on the Ashdown Beds and, to a lesser degree, the Wadhurst Clay. In these latter areas it was the clay ironstone from the Wealden Beds, generally occurring as nodules, but sometimes as layers, which provided the main ore source for the bloomeries and subsequent blast furnaces. No other bloomeries are known in the vicinity of the site at Mersham, but two bloomeries have been recorded in a similar geological location (ie on the Lower Greensand) at Lenham Heath just under 20 km to the north-east (see Cleere and Crossley 1995, fig.4). It has been suggested that at Chapel Farm, one of these sites, the brown sandy ironstone or ‘carstone’ which occurs in the Folkestone / Hythe Beds may have been the ore used (Miles 1974). The outcrop of ‘ragstone’ at Mersham seems likely to have provided the ore source here, perhaps exploited because it was easily accessible. Other possible sources include iron pan which may have occurred locally, or ironstone fragments sometimes found in the patches of sand on the crest of the North Downs between Maidstone and Ashford (Cleere and Crossley 1995, 14-15). Iron mining at this time, prior to the 13th century, is likely to have been at a relatively low level, with ore collected at the surface or from shallow workings, rather than the larger pits which are characteristic of the more intensive exploitation seen in the 13th and 14th centuries. Whatever the source of the iron ore, it is very unlikely to have been located far from the smelting operation at Mersham.

It may be of significance that the late 7th century documentary reference comprises a charter in which Oswy, king of Kent, granted an iron mine at Lyminge to the Abbot of St Peter’s Canterbury in 689. Although this grant may relate to dependent lands on the Wealden clays (Birch 1885, I, 107), the discovery of ironworking evidence at Mersham, less than 12 km to the west, suggests that it might refer to a location within the vicinity of Lyminge itself. Sparse ores do occur within the Lower Greensand, and Lyminge and Mersham, like Millbrook to the south-west, are on the periphery of the Weald, with iron mining or smelting activity at these sites possibly reflecting the relative inaccessibility of the central part of the Weald. Perhaps this part was largely or wholly abandoned after the Roman period, the ore sources possibly even forgotten. The newly established, small-scale activity of the Saxon and early medieval periods may have exploited ore sources that were less substantial and possibly of poorer quality. However, they were perhaps more easily accessible and, in the case of Mersham at least, close to and within the dependent lands of the church at Canterbury, an important market for iron.

The fact that only one *ferraria* is recorded (near East Grinstead) for the area covered by the Weald in the Domesday survey of 1085 is difficult to explain. Either the ironworking industry was neglected by the compilers of the survey, or the lack of references may indicate that there was little activity in the area at this time. Only discoveries such as that at Mersham will help fill the gap in our knowledge, and it should also be noted in this respect that none of the four pre-Conquest charters relating to Mersham contain any reference to ironworking (URS 2001, 103). The ville had become part of Christ Church Priory's holdings by the time of the Conquest and, although it is listed as a manor belonging to the Archbishop of Canterbury in the Domesday survey, the Priory appears to have regained its authority over Mersham shortly afterwards. The link between Christ Church Priory and Mersham before the Conquest may be significant because of the very large quantity of iron smithing debris (over four tonnes) recovered from mid-Saxon contexts during recent excavations at the Priory (Bennett 1986; Jarman 1996; Houliston 1997). No evidence for smelting has been certainly identified there, and it might be suggested that sites in the Weald, such as Mersham, supplied iron blooms to fulfill the demand for iron from both the church and the town. The significance of this indirect evidence for iron production is increased because of the early, mid-Saxon date, although no contemporary ironworking activity has yet been found at Mersham. The Late Saxon evidence from Mersham suggests a relatively small-scale operation, which expanded in the later 11th century, and supplied iron in the form of blooms (and perhaps also bars and rods) to Canterbury as well as more local markets. The discovery of a bar in one of the later ditches at Mersham may provide evidence for this subsequent stage of iron production, and it is also possible that some secondary smithing - involving the production of finished objects - was undertaken there, as later documentary evidence attests (see below).

There is no evidence for ironworking on the site at Mersham after the early 12th century, and the relatively small quantities of debris from later features is likely to have been residual. However, medieval occupation of 13th – 14th century date was identified to the east of the parish church in the 1960s, and is said to have included iron slag (pers. comm. Richard Helm). Whether this was smelting or smithing slag, or both, is unknown, but it hints at the continuity of the ironworking industry within the settlement, albeit on a different site. This would provide archaeological support for the documentary evidence which records that iron was one of the customary dues known to have been collected, from at least as early as the mid-13th century, by Christ Church Priory from its peasants at Mersham. Furthermore, the documentary evidence confirms that smithing as well as smelting took place there for a smith is recorded in the employ of the Priory at Mersham in 1265-6 (URS 2001, 104).

The apparent development of the local ironworking industry in the 13th century can in part be attributed to the growth of urban settlements at this time and Canterbury, in particular, in this area. There was also an increasing local requirement for agricultural tools for land clearance and cultivation in the Weald. The Weald was an area where, for obvious reasons, forest industries developed – agriculture, woodcutting, charcoal burning, ore mining and roasting and, for specialists, smelting and smithing. Smelting would have generally been confined to the woodland, close to the sources of ore and charcoal, whereas smithing – particularly secondary smithing - would have been undertaken in towns and villages, sometimes by itinerant smiths. However, as the documentary and earlier archaeological evidence attest, the tasks were not always spatially separated. This situation was also seen at Alsted in Surrey where there is evidence for both smelting and smithing in the 13th century, although smelting ceased in the 14th century (Ketteringham 1976). Alsted is also unusual because it lies to the north of the Weald, and ore would have to have been brought to the site. There, smelting and smithing were undertaken in adjacent hearths, and perhaps the smith also produced blooms when sufficient supplies of ore and charcoal were available. Excavations such as those at Mersham and Alsted provide a further indication of the scale and nature of the medieval iron industry of the Weald. With the possible exception of Crawley, there were no major iron production centres as there had been in the Roman period. Instead, many smaller operations were spread over a wide area, most perhaps producing only a few tons of metal annually. Indeed, smelting and smithing iron may have been undertaken seasonally, and been one of several occupations undertaken by the ironworkers.

The quality of the iron manufactured at Mersham in unknown, but the Wealden ores seem to have generally produced a relatively cheap, poorer quality of metal which was quite difficult to smelt and high in phosphorus (Cleere and Crossley 1995, 103). This iron was most suitable for such utilitarian items as nails, horseshoes, wedges and bars, whereas the requirement for higher grade iron was fulfilled by supplies from the Forest of Dean and, particularly, Spain and the Baltic which provided the best quality metal.

When the ironworking industry ceased at Mersham is uncertain. Between 1250 and 1370 the Crown made sporadic but sometimes substantial purchases of iron objects from the Weald, and there were sometimes heavy military demands. For example, in 1242 the keepers of the estates of the Archbishop of Canterbury were requested to make 5000 horseshoes and 10,000 nails for delivery to Portsmouth (Cleere and Crossley 1995, 88). Clearly the industry could supply these demands, though not all need necessarily have come from the Weald and how much could be drawn from supplies of iron held as stock is not known. The Black Death of 1349 may not only have depleted the numbers of ironworkers, but is also likely to have depressed the demand for iron in the area. This may have marked the end of iron production at Mersham, the situation perhaps exacerbated by the depletion of easily available ore and technological developments elsewhere. The later 14th and 15th centuries saw the introduction and spread of the more efficient water-powered bloomery forge, followed in the late 15th century by the blast furnace (Cleere and Crossley 1995, 104-117). If the Mersham ironmaking industry had survived the effects of the Black Death, it is unlikely to have been able to compete with the more efficient water driven processes that were established on other sites in the Weald.

3 ASSESSMENT DATA

The following finds were examined during the post-excavation assessment and were not subjected to detailed analysis. Please refer to the post-excavation assessment report for further details (URS 2001).

Material	Author
Glass	Ian Riddler
Coins	Ian Anderson

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