1.1 Metalwork

By Ian Scott

Introduction

1.1.1 This assessment considers the metalwork recovered during excavations at White Horse Stone (ARC WHS 98), West of Boarley Farm (ARC BFW 98) and Pilgrim's Way (ARC PIL 98), and during subsequent watching briefs (ARC 410/99 and ARC 420 58+200-59+500). The metalwork group from cremation 6131 is excluded as it is assessed separately (see below section 5.2).

1.1.2 The bulk of the material was hand-recovered during excavation. A small number of items were recovered from soil samples; the samples were not taken for the purposes of finds recovery.

1.1.3 The metalwork was recorded in accordance with the original Fieldwork Event Aims (see Section 2.2) and can be expected to contribute to aims 6, 11 and 13.

Methodology

1.1.4 The complete metalwork assemblages were scanned and quantified by number, and a preliminary identification made of all objects and fragments; some very small fragments have not been quantified by number (see Tables below). The assemblages are not large and therefore it was not necessary to sample. All the metalwork had been x-rayed previous to assessment.

1.1.5 The fieldwork event, event code, context and, where relevant, the special, or small, find number were recorded. This information together with a basic quantification of the assemblage by number and preliminary identifications of the components of the assemblage, were entered onto a database to create the basic dataset.

1.1.6 A small assemblage of 7 blades and tools from White Horse Stone (ARC WHS 98) context 6131 is not included in this report, but is assessed as a separate exercise.

Quantification

Table 5.1.1: White Horse Stone (ARC WHS 98): summary of metalwork

Context	Sf . No.	Material	Count	Period	Comments
u/s		Fe	1	MD; PM	Horseshoe fragment with broad web tapering to narrow branch. Extant horseshoe nails.
2103		Fe	1		Strip with at least 1 nail. From a soil sample <2>
2185		Fe	2		Nail fragments. From soil sample <12>
2212	11	Fe	1		Riveted clamp/junction
2261	30	Other	1		Very smooth, but slightly irregular - possibly natural nodule.
4005		Fe	1		Small ring fragment. From soil sample <38>
4007	1046	Cu Alloy	1		Small cast ring of oval cross-section, possibly worn on one side
4030		Fe	1		Nail or wire fragment. From soil sample <47>
4144	1084	Cu Alloy	1		Small cast fragment.
4563		Fe	1		Nail. From soil sample <247>
5316		Fe	1		Nail. From soil sample <742>
6033		Fe	1		Small unidentified fragment, possibly slag
6064		Fe	1		Horseshoe nail
6085	113	Fe	1		spike or staple cut from sheet
7013		Cu Alloy	1		rivet. From soil sample <650>
7013		Fe	2		nails. From soil sample <650>
7079		Fe	1		spike or nail. From soil sample <678>
7080		Fe	1		nail. From soil sample <681>
7206		Fe	3		nails. From soil sample <927>
9019		Fe	1		possible nail, or wire, fragment
		Total	**24**		

Table 5.1.2: Pilgrim's Way (ARC PIL 98): summary of metalwork

Context	Sf . No.	Material	Count	Period	Comments
366		Fe	1		horseshoe nail
366	3	Fe	1		head of a T-shaped staple
366	4	Fe	1	MD; PM	possible horseshoe nail head
366	7	Fe	1		large flat head of a staple or holdfast
368	2	Fe	1		nail head
368	8	Fe	1		tapering object with steps or cross bars, narrowed at both ends. Not yet identified
498		Fe	4	MD; PM	nails and horseshoe nails
500		Fe	5	MD; PM	nails and horseshoe nails
500		Fe	1		strip, no nail holes
500		Fe	n/a		fragment of slag?
500		Fe	1	MD; PM	fragment of heel of horseshoe, no calkin
502	5	Fe	1	MD; PM	horseshoe nail
502	6	Fe	n/a		small fragment
608		Fe	1	MD	horseshoe fragment, with 3 rectangular nail holes, no calkins or fullering.
		Total	**19**		

Table 5.1.3: White Horse Stone WBSDS: summary of metalwork

Context	Sf . No.	Material	Count	Period	Comments
663		Fe	n/a		fragments, unidentifiable

Table 5.1.4: West of Boarley Farm (ARC BFW 98): summary of metalwork

Context	Sf . No.	Material	Count	Period	Comments
1010		Fe	1		tapering point or spike, of round section. Broader end has constriction. Possible a rake tine or heckle tooth
1021		Fe	n/a		small fragments. From soil sample <02>
1021		Fe	n/a		small fragments. From soil sample <02>
1037		Fe	n/a		small fragment. From soil sample <04>
1037		Fe	n/a		small fragment. From soil sample <04>
1131		Fe	1		tip of knife blade
1137		Fe	1		heavy plate fragment.
1137		Fe	n/a		small fragments. From soil sample <47>
1144		Fe	n/a		small fragments. From soil sample <46>
		Total	**3**		

Table 5.1.5: Boarley Farm WBSDS: summary of metalwork

Context	Sf . No.	Material	Count	Period	Comments
24	2	Cu Alloy	1		oval plate, incomplete, in pieces, slightly curved, with at least 1 nail hole
12		Fe	1		no nail holes
21		Fe	5	MD; PM	nails and horseshoe nails
21		Fe	4	MD; PM	nails and horseshoe nails
24		Fe	3	MD; PM	incl. Horseshoe nail
24		Fe	1		Nail
24		Fe	1		Nail
24	3	Fe	1		binding strip or corner reinforcement, with at least one nail hole
24	4	Fe	1		possibly a blade
24		Fe	1		binding or edge reinforcement
24		Fe	1		narrow strip, no nail holes
24		Fe	1		spike or nail. Square section at point, rounded section towards head
34		Fe	1		Nail
34		Fe	3		Nails
34		Fe	1	RO	brooch, fragment of bow and spring; 1stC AD
34		Fe	10		Nails
34		Fe	1		spike?
34		Fe	1		Ferrule

Context	Sf . No.	Material	Count	Period	Comments
42		Fe	2	MD; PM	horseshoe nails
54		Fe	1		Nail
66	5	Fe	1		strip, no nail holes
34		Other	1		heavy egg-shaped object, heavily encrusted, natural?
		Total	**43**		

White Horse Stone (ARC WHS 98)

1.1.7 The assemblage (Table 5.1.1) comprises 24 items, including 3 copper alloy pieces, 20 iron pieces and a possible natural nodule (Special No. 30, context 2261). The majority of the ironwork comprises nails or horseshoe nails. Other finds include a horseshoe fragment, a riveted clamp or junction and spike or staple. A group of early Iron Age metalwork, from cremation 6131, has been assessed separately (0).

Pilgrim's Way (ARC PIL 98)

1.1.8 The assemblage (Table 5.1.2) comprises 19 pieces of iron and is dominated by horseshoe fragments and horseshoe nails.

White Horse Stone WBSDS (ARC 410/99 57+500 - 58+950)

1.1.9 The assemblage (Table 5.1.3) comprises a small number of very small undiagnostic fragments and has not been quantified.

West of Boarley Farm (ARC BFW 98)

1.1.10 The assemblage (Table 5.1.4) comprises 3 iron objects recovered by hand during the excavation and small fragments, possibly of hammer scale, recovered during the processing of soil samples. The latter have not been quantified by number. These samples were not taken for the purposes of recovering finds or metalworking debris.

1.1.11 Boarley Farm WBSDS (ARC 420 58+200 - 59+500) A total of 42 items of iron, and a probable natural nodule (Table 5.1.5), were recovered during a watching brief on the Boarley Farm section of the Channel Tunnel Rail Link. The main categories of finds comprise nails and horseshoe nails. One find of note was a fragment of the bow and part of the spring of an iron brooch.

Provenance

White Horse Stone and Pilgrim's Way

1.1.12 The material from White Horse Stone was recovered for the most part from pit fills and from ditch fills. Nails were recovered from pit 7205 (context 7206) which contained charcoal, slag, and burnt clay. Most significantly a nail was recovered from a sample (no. 742) from the lower fill (5316) of posthole 5315 attributed to the Neolithic house. The Pilgrim's way metalwork comprised in large part horseshoe fragments and horseshoe nails, some of which derived from deposits (498 and 500) overlying a cart track 496. Other material was derived from tree-throw holes (contexts 368 and 608) and pits and stakeholes. The material from the watching brief was undiagnostic and insignificant in quantity.

West of Boarley Farm

1.1.13 The assemblage from West of Boarley Farm was very small and derived exclusively from pit fills. No independent dating of the pits was available, but the assemblage lacks diagnostic objects. The Boarley Farm watching brief produced the largest assemblage of metalwork. Most derived from two pits, 23 (context 24) and 35 (context 34). Pit 23 is probably medieval in date and the finds recovered include a corner binding (sf 3), a possible blade (sf 4) and spike. Pit 35 produced nails and a ferrule, and most interestingly a small fragment of a Iron Age or Romano-British iron brooch.

Conservation

1.1.14 The metalwork is in good condition. Most of the objects appear to be stable and seem to require no remedial conservation.

1.1.15 No additional conservation, either to further investigations or consolidation, is required. Current packaging is adequate for long term storage. The assemblages though small and undistinguished do not include any material that need be discarded.

Comparative material

1.1.16 The assemblages have limited potential, and the comparative material is therefore largely irrelevant. The presence of horseshoes and horseshoe nails in deposits overlying the cart track 496 on the Pilgrim's Way site is comparable to the situation revealed in sections cut through Ermin Street on the line of the A419/A417 in Wiltshire and Gloucestershire (Mudd *et al.* 2000, 261-82; Scott in *ibid*., 403, Figures 7.34-35).

Potential for further work

1.1.17 The potential of these assemblages to address the original Fieldwork Event Aims is strictly limited. The material has no potential to address new research aims.

1.1.18 There is little diagnostic material amongst the metalwork assemblages, and therefore its contribution to the investigation and analysis of the site will rest on individual context groups and their integrity. The limited quantity of material does not reflect poor preservation - the metalwork is quite robust and well preserved - but must reflect the paucity of material discarded. This may be the most significant contribution that the metalwork can make to the understanding of the sites.

1.1.19 The nail apparently from the lower fill (5316) of a Neolithic posthole 5315 at White Horse Stone, needs to be investigated and the potential problem resolved.

1.1.20 Potentially the most interesting group is the small assemblage from Pit 23 of the Boarley Farm watching brief, which may be worth publishing as part of a larger medieval finds assemblage. This will depend upon associated finds and the overall integrity of the contexts.

Bibliography

Mudd, A, Williams, R J, and Lupton, A, 2000, Excavations *alongside Roman Ermin Street, Gloucestershire and Wiltshire. The archaeology of the A419/A417 Swindon to Gloucester Road Scheme*. 2 volumes. Oxford: Oxford Archaeological Unit.

1.2 Metalwork from cremation 6131

By Vanessa Fell

Introduction

1.2.1 This report discusses the group of metalwork found with cremation deposit 6131.

1.2.2 The group of metalwork was recovered from amongst the Iron Age cremation deposit at White Horse Stone (6131) during detailed excavation. This cremation deposit contributes to the Fieldwork Event Aim to study the morphology and of function of, and interaction between the late prehistoric settlement and possible ceremonial features in the area of White Horse Stone, and is of direct relevance to the research objectives for the period 'Farming Communities, 2000BC - 100BC'.

1.2.3 This group was recorded in accordance with the original Fieldwork Event Aims (see Section 2.2), in particular aim 6.

Factual data and quantification

1.2.4 The group comprises an iron knife, a small iron blade, four iron implements (possible awls) and a small ring-headed pin made of copper or silver alloy or iron coated with one of these non-ferrous alloys.

1.2.5 The condition of the ferrous metalwork is exceptional and the presence of possible haematite on the surface of several of the iron objects — characteristic of intensive burning — suggests that at least some of the group was placed on the pyre.

Methodology

1.2.6 The metal artefacts were x-rayed (100%) and their condition assessed visually including potential for long-term survival.

Quantification

1.2.7 The metalwork comprises seven items: a knife, a small curved blade, four awl-like implements and a ring-headed pin.

1.2.8 The blades and implements are made of iron, whereas the ring-headed pin is made of copper, silver alloy, or of iron coated with one of these non-ferrous alloys.

Provenance

1.2.9 The cremation deposit was recovered from a pit (6132- see Figure 6) at the edge of the early Iron Age settlement. Other artefacts associated with the deposit are a whetstone and pottery, of which at least six complete vessels are represented, one apparently containing a large deposit of charred grain. A radiocarbon date of 490-160 cal BC (OxCAl 2σ GU-9088) was obtained on some of this grain (see Section 4.4, Table 4 above).

1.2.10 The pottery is of transitional early to middle Iron Age date.

1.2.11 The condition of the ironwork is exceptional. The chalky accretions are thin and uniform and metal appears to survive extensively. This unusual degree of survival may in part be due to burning since there are traces of red corrosion products suggesting the presence of haematite, usually characteristic of intensive burning. Charcoal or other carbonised matter is also present. The non-ferrous metal pin also

seems to be well preserved but accretions and black deposits or corrosion products obscure the surface.

Conservation

1.2.12 Further archaeological and conservation analysis would not affect the integrity or long-term survival of individual artefacts. Any metallurgical study could cause some damage to individual artefacts and should therefore consider the needs of future typological and other study, in particular with reference to the small cross-sections of the awls and small blade.

1.2.13 The storage requirements for the metalwork are desiccated micro-environments. There are no immediate or long-term conservation or storage requirements other than maintenance of desiccated conditions. Long-term storage requirements for archaeological materials are set out in guidelines for environmental storage (MGC 1992).

1.2.14 This is an important group and should be retained intact.

Comparative material

1.2.15 Iron Age burials with groups of tools are rare, both in Britain and on the continent, and none matches the group from White Horse Stone. The paucity of similar groups may be due to failure to recognise burials, or burials with similar artefacts, for various reasons. A group of 'awls', for example, occurs in the ironwork from Barbury Castle, Wiltshire, found in unknown circumstances (MacGregor and Simpson 1963). Individually, most items may be paralleled in mid and later Iron Age contexts from southern Britain. The ring-headed pin is similar to numerous larger examples in both iron and non-ferrous metals from contexts ranging from potentially earlier Iron Age at All Cannings Cross, Wiltshire (Cunnington 1923) through to later Iron Age in a variety of archaeological contexts across Britain.

1.2.16 It is difficult to establish a function for implements such as 'awls' because such tools could have been used in many crafts. The two blades may provide useful associations.

Potential for further work

1.2.17 The group of material has considerable potential for further work and to address themes concerning chronology, settlement and society, material culture and regionality:

Updated research aims

Chronological issues

- What are the implications of the radiocarbon dating of the metalwork group in terms of understanding the context of the deposit and the typological development of ironwork?

Settlement and society

1.2.18 What was the social significance of the ironwork from the cremation deposit? How typical is it of ritual and burial practices at this particular time? What are the parallels for this type of context? What can the composition of the group tell us about the status, sex or occupation of the cremated individual? What can the metal-working evidence tell us about the status of smiths and the organisation of their craft?

Material culture

- What is the evidence for on-site production? Is the source of the iron from the iron working area and iron artefacts from cremation group 6131 the same? Could these objects have been made on site?
- What were the functions of the metal artefacts and can they be described as a 'kit'?
- Establish the role of the group within the burial and possible ritual sequence. Were they functional artefacts or manufactured for the grave, as microscopic examination of their condition may indicate that they were burnt on the pyre?
- Assess the functional characteristics and qualities of the objects, including the quality of the iron and the skill of the smith.

Regionality

- What are the regional and national parallels for the group of Iron Age metalwork from the cremation deposit? As burials with groups of tools are rare in Britain could its presence suggest further contact with the continent?

Recommended further work

1.2.19 The above research aims may be addressed by a programme of detailed recording for cremation group 6131 to address research aims relating to chronology and stylistic affinities. Technological traits will be addressed by metallurgical analysis including optical microscopy, hardness testing and X-ray fluorescence. A review of published sources will be carried out to identify parallels for the individual artefacts, for the group as a whole and its associated context with the aim of addressing questions relating to chronology, social context, trade and exchange.

1.2.20 Appropriate specific methods are as follows:

- Detailed recording and typological analysis to define the types of individual blades and implements and place the group within firmer functional and dateable context.
- Investigative conservation of individual artefacts, to clarify surface detail at selected areas in order to examine for use/wear of implements and blades, for possible decoration on the ring-headed pin, and to enable scientific analyses (e.g. X-ray fluorescence).
- Examine for traces of mineralised or carbonised organic materials that may have survived from handles, container etc, although the assessment indicates that their survival is likely to be low.
- Scientific analysis (X-ray fluorescence) to identify the metal species of the ring-headed pin and to confirm the possible haematite on the ironwork.
- Metallographic examination (optical microscopy and hardness testing on a metal sample) to investigate methods of manufacture and construction of the ironwork and the quality of the metal used. In particular, the large knife merits examination and is in a suitable condition.

Bibliography

Cunnington, ME, 1923: *The Early Iron Age Inhabited Site at All Cannings Cross Farm, Wiltshire.*
MacGregor, M, and Simpson, DDA, 1963: 'A Group of Iron Objects from Barbury Castle, Wilts', *Wiltshire Archaeological Magazine*, **58**, 394–402.
MGC 1992: *Standards in the Museum Care of Archaeological Collections.* Museums and Galleries Commission.

1.3 Coin

by M Allen

1.3.1 The only coin from this site (ARC WHS98, context 2000, sf20) is a bronze farthing (2.11g, moderate wear, heavy corrosion) of Victoria (1837-1901), dated 1866. This coin was probably deposited no later than 1960, when farthings were demonetised.