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Ancient Monuments Laboratory
Report 29/95

MINERAL PRESERVED ORGANIC MATERIAL ASSOCIATED WITH METALWORK FROM EXCAVATIONS ON THE WESTHAMPNETT BYPASS, WEST SUSSEX

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Summary

Identification report of organic material associated with metalwork mainly from the IA and RB cremation cemeteries, but it also includes some objects from the IA settlement and an A/S grave. The report is presented in two parts, a discussion followed by a catalogue of all the material examined from this site. Most of the metalwork seems to be fittings from various types of containers including an IA decorated bentwood box, bucket, lathe-turned vessels and two RB cremation caskets. It was possible to indicate the construction of one of the caskets, and reconstruction drawings are included. The report also includes comments by D de Moulins on the plant material preserved on the ironwork, particularly the IA brooches.

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Mineral Preserved Organic Material Associated with Metalwork From Excavations on the Westhampnett Bypass, West Sussex.

Jacqui Watson

Introduction

The excavations preceeding the construction of the Westhampnett bypass revealed several sites including adjacent Iron Age and Romano-British cremation cemeteries (in Area 2) and an Iron Age settlement (Area 5). The metalwork from these sites was conserved by Margaret Brooks, who noticed the organic material preserved in the corrosion products, and along with Rebecca Montague selected around 30 objects for the study of organic remains.

All the objects were examined using a low-powered binocular microscope which allowed us to distinguish between different materials and record the grain orientation of wood and horn. In two instances samples had to be examined on the scanning electron microscope (SEM) to confirm the wood species (Watson, 1988), and their sample numbers are indicated in the catalogue. The organic material preserved on these objects included wood, horn, leather and various plant materials. The wood species represented include ash, beech, oak, willow and poplar; the last two woods are usually considered as one species as they cannot easily be distinguished microscopically. The plant material was identified by Dominique de Moulins and is represented in the catalogue as [DM]. All these materials would have been readily available throughout the periods represented on this excavation, and specific objects are discussed under period headings.

Iron Age

Most of the finds from Area 2 come from the Iron Age cemetery (c. 80-20 BC), including containers, brooches and an enigmatic item made from wood and horn with iron staples.

One object that was particularly interesting is an iron mount (20184) for an ash box or container that originally had engraved decoration. All that is represented on this fitting are three lines cut with a V-shaped chisel (see fig.1). This single fitting is not complete enough to give a clear indication of the form of this container, but it may have been similar to the bentwood boxes with incised decoration from Glastonbury Lake Village (Earwood, 1993, 42-4). The other container is an iron-bound bucket with oak staves (20613). In addition to the wood, other materials such as possible fleece, straw and a shiny material that could be a resin or even a degraded leaf (see fig.2), are preserved on the ironwork. As this object was found in a grave rather than associated with a cremation, these materials were probably deliberately placed with the burial and may represent a covering.

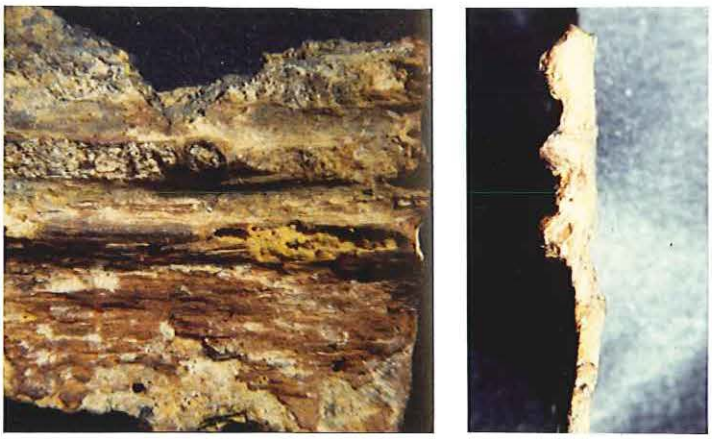

Figure 1. Incised decoration in wood surface, long and in cross section. (Mag. c.4x. WILD 85:7,8)

Figure 2. Resin/plant material preserved on outside of bucket binding. (Mag c.8x. WILD 85:6)

Three possible vessels are represented by groups of iron staples (20002, 20254, 20679). The wood grain preserved on the staples from 20002 (ash) and 20254 suggests that they were lathe-turned bowls that had been repaired. The staples used on 20679 (willow or poplar) may also be the remains of a vessel, the grain and thickness of the object make it unlikely to be a lathe-turned vessel but maybe some other form of container. As there is very little space in the grave for a large container, these fittings may actually derive from the timber or tinder used for the pyre.

Some of the brooches have organic materials preserved on them, but this is mainly cremated bone, and some plant stems. One fragment of iron (50095) from the settlement has the remains of charred plant material preserved in the corrosion including a possible barley grain (DM).

In context 20056 a group of staples were found that were thought to have joined two pieces of wood together. Closer examination of the organic material preserved on them indicated the use of horn on top of wood, and there was no indication of a joint. Also there was no indication of the actual size of the complete object, but if a single piece of

Figure 3. Horn preserved on iron staple. (Mag c.4x. WILD 85:3)

Figure 4. Cross section of wood preserved on iron staple. (Mag c.8x. WILD 85:4)

flattened horn was used it would be not much larger than 25cms in length. The grain of the horn is always along the axis of the staples (see fig. 3) which would fit in with them being mounted across the circumference of the horn. Horn when heated becomes very plastic in nature, and can be flattened under pressure or formed into a new shape (MacGregor, 1985, 66-7). The horn for the main part is mounted onto the cross section of a diffuse porous wood (see fig.4), which could also be limited in its length by the width of the tree which could be around 35cms. Unfortunately none of this helps in identifying what the original object was, except to say that the iron staples were mounted on a horn inlaid piece of wood approximately 10mm thick. The object does not appear to be unique within the cemetery as there are similar staples from context 20470, where the horn is mounted on a piece of cross section willow or poplar about 11.5mm thick.

Romano-British

The main objects from the Romano-British cemetery in Area 2 (c. AD 70-150) are the casket fittings which may have been used as containers for cremations (20740, and possibly 20393). The most complete example is the one from 20740 which has the hinges, lockbolt, nails and the possible remains of a drop handle. The casket was basically made from beech boards, 7-10mm thick, nailed together. Most of the nails were recovered during sieving whole earth samples from each grave, so there is no indication of the original size of the box. But the nails themselves do seem to be of a type in which the heads lie flush with the wood surface, and are therefore ideal for the construction of boxes that are to be covered in leather. This construction is paralleled by the cremation

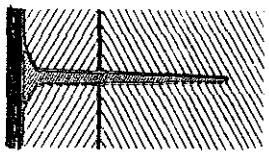

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Figure 5. The construction of a casket corner from Trier (Dewald and Eiden, 1989)

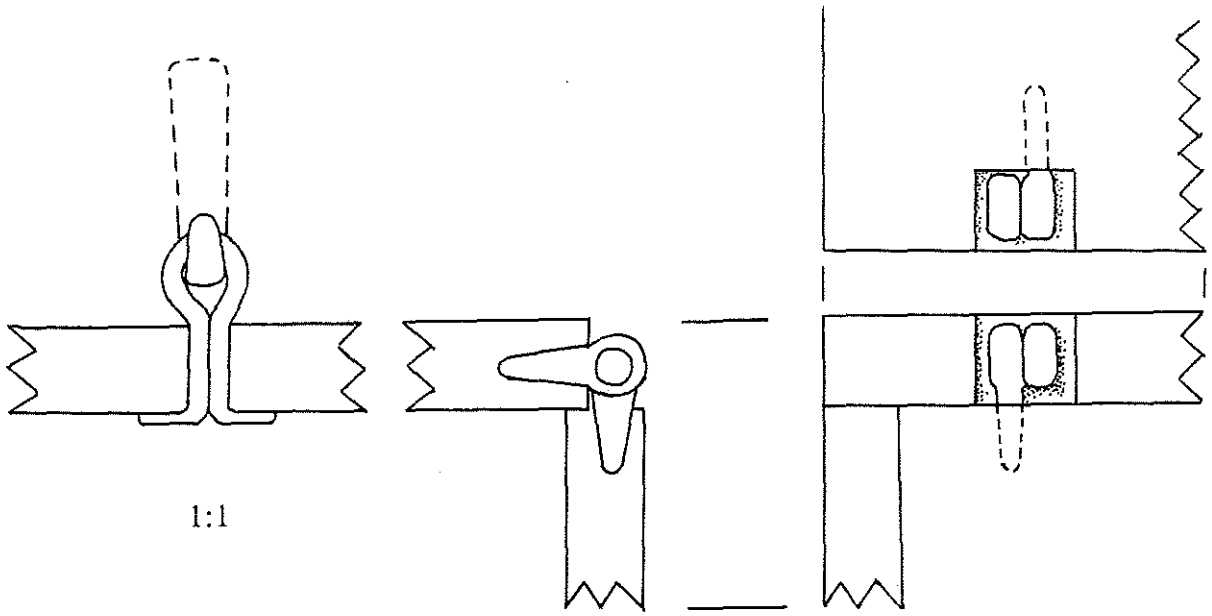

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Figure 6. Hinge arrangement of casket from 20740.

casket from Godmanchester (under examination in the AML, and also made of beech) and another from Trier in Germany (Dewald and Eiden, 1989) (see fig.5). The set of the hinges indicate that the lid was made from a single piece of wood (see fig.6), 11.9mm thick with a radial surface from the split spiked loop used to attach a drop handle(?). The lid would have been notched in order to accomodate the hinges and still be supported by the back of the box. The same type of hinges were used on the caskets from burials XLV and LIX at Skeleton Green (Borrill, 1981).

The four nails from 20393 seem to make up one corner of casket made of radial surface oak boards approximately 11mm thick. It also appears to have been leather covered.

Anglo-Saxon

A small number of Anglo-Saxon graves were also identified in Area 2 but the only object of a definite Anglo-Saxon date was a spearhead that had been hafted with ash cut from mature timber, and this was a common choice for Anglo-Saxon spear shafts. The spearhead was not actually found in a grave but is likely to have been placed in one originally.

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Catalogue

Context in bold type, and SF No. in normal

Area 2 Cemeteries

20002 27621 IA
3 iron staple fragments with mineral preserved wood, possibly *Fraxinus* sp. (ash). The preserved grain suggests at least one of these was mounted on the cross section, so could possibly be a vessel repair.

20011 27013 A/S
Iron spearhead with mineral preserved wood in socket, *Fraxinus* sp. (ash) from mature timber. A solitary plant stem is preserved in magnetite on one side of blade.

20047 27041 pyre
Iron joiners dog with only small fragments of charcoal present in the iron corrosion. The fragments are in a random orientation, and therefore unlikely to be part of the original beam.

20056 27044 IA grave
Iron razor with mineral preserved organic material on one side, probably leather.

20056 27685-9 IA
5 iron fittings with mineral preserved organic material, including horn and wood, there is not enough wood to sample for identification other than to say it is probably a diffuse porous species.

20076 27541
Iron brooch with mineral preserved organic material, probably bone.

20168 27123 IA
Iron brooch with plant stems on pin [DM].

20184 27572 IA
4 pieces of binding strip, most with mineral preserved wood possibly *Fraxinus* sp. (ash). The strip was mounted on a tangential surface piece of wood, with the grain perpendicular to the axis of the binding. The wooden object itself is more likely to have been a box or flat sided item rather than a lathe-turned vessel. One piece has remains of 3 parallel lines cut into wood surface with a V-shaped chisel c. 1.8mm wide and 1mm deep, and approximately 2mm apart.

20238 27577 IA
Broken nail shank with mineral preserved wood, possibly *Salix* sp. (willow) or *Populus* sp. (poplar).
SEM B724

20251 27171 IA
Iron brooch with mineral preserved organic material and cremated bone fused onto it. The mineral preserved organic material could be plant material or mineral preserved bone, but it is too degraded to be certain. [DM]

20254 27697-701 IA
5 iron staples with mineral preserved wood - not enough to identify species. The grain preserved on these staples suggests that they are repairs to a lathe turned vessel, joining the two halves from the rim and through the base. The vessel was 6.1mm thick at the rim, and 8.5mm at the base.

20393 27218-20, 22 RB
4 nails with mineral preserved wood, 27218 and 27222 have evidence for a joint.
27218 Iron nail which joins a radial surface board, 11mm thick, to an oak board (*Quercus* sp.).
27219 Iron nail head on radial surface oak and possibly with leather over the head.
27222 Iron nail put through a radial surface board c.11mm thick.
These four nails probably form one corner of a leather covered casket.

20470 27623 IA
Iron staple with probable mineral preserved horn next to metal and piercing a cross section piece of wood 11.4mm thick. This arrangement is similar to the group of staples from 20056.

20470 27737 IA
Broken staple with mineral preserved wood, *Salix* sp. (willow) or *Populus* sp. (poplar) and the staple pierces a cross section.

20537 27596 RB
Iron nail with mineral preserved wood, probably *Quercus* sp. (oak).

20613 27603 IA grave
Fragments of bucket bindings with mineral preserved organic material including fleece, straw [DM] and wood.

20613 27329, 30 IA grave
27329 Iron bucket rim with mineral preserved wood on inside, *Quercus* sp. (oak) with a radial surface. The visible lines in the wood are the large earlywood vessels, and the distance between two sets of vessels is one years growth - but not suitable for dendrochronology.
27330 Another fragment of bucket binding, with no wood preserved on the inside but some bone on the outside.

20613 27734-5 IA grave
2 pieces of mineral preserved organic material associated with the bucket bindings, which appear to be fleece with patches a shiny laminating material, possibly plant material or resin [DM].

20666 27364 RB
Complete iron nail with mineral preserved wood on shank, but too degraded to identify

and no sign of join.

20679 27613 IA
8 staple fragments used to join boards at least 19mm thick and probably with a radial surface, probably *Salix* sp. (willow) or *Populus* sp. (poplar). These are unlikely to be part of a vessel, but could be redeposited structural timbers as the grave cuts the pyre site.

20679 27626 IA
Iron staple with mineral preserved wood, possibly *Fagus* sp. (beech)

20704 27627 RB
Iron nail with mineral preserved wood, possibly *Fraxinus* sp. (ash) with radial surface.

20740 RB
Group of box fittings, including small nails, 2 sets of hinges, split spiked loop, and lock bolt, many of the fittings have wood remains. Wood is *Fagus* sp. (beech) -
SEM B725 - 27756

27412 Lock bolt with no organic material remaining.

27616 Split spiked loop that has been put through a radial surface board, 11.9 mm thick. This may have been used to attach a drop handle to the lid.

27750/1 and two others, two sets of iron hinges - see figure 6.

27753 Small iron nail with possible domed head. There is wood preserved on top of the head, and it is quite different to the other nails used in the construction of the casket. This nail was probably inside the casket, and may be a shoe hobnail which are frequently found with casket burials.

27755 Group of iron nails which are triangular at the top rather than having heads. Some have evidence for joints - attaching radial surface boards, 7-10mm thick, to the adjacent sides. In use the top of this type of nail would have been flush with the board surface, which would have been ideal if the box was to be covered with leather or decorative copper alloy mounts.

20749 27628 RB
Iron nail with possible mineral preserved wood, but not enough to identify species.

20732 27615 RB
Iron staple with no mineral preserved organic material.

Area 3 Romano-British site

30076 37525 RB posthole
Fragmentary iron nail with possible mineral preserved organic material, but too degraded to discern the type of material.

Area 5 Mid-late Iron Age settlement

50095 57508 IA settlement
Iron object with no mineral preserved organic material.

50095 57509 IA settlement
Fragment of iron with charred organic material in the corrosion, this includes one piece of pith (central portion of woody stem) and seeds, including a possible barley grain. [DM]