

Ancient Monuments Laboratory  
Report 31/91

MINERAL PRESERVED ORGANIC MATERIAL  
FROM EMPINGTON ANGLO-SAXON CEMETERY  
RUTLAND

Glynis Edwards & Jacqui Watson

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#### Summary

Identification report on organic material preserved by metal corrosion products. About 200 objects were examined at The Jewry Wall Museum, Leicester. The objects were in the main spearheads, shields, knives and buckles. The report is in two sections - a short discussion followed by a catalogue of all the examined material.

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**Mineral Preserved Organic Material from Empingham Anglo-Saxon Cemetery, Rutland.**

Objects from this cemetery were examined at the Jewry Wall Museum, Leicester for traces of organic material preserved in the metal corrosion products. This means that over 200 metal, ivory and antler objects were available for study, and the resulting observations and identifications are presented in the following catalogue organised in grave number order. A summary of the organic material associated with different types of object is presented in figure 1.

	Knives	Spearheads	Shields	Buckles
Wood		31	15	
Alder			3	
Birch		1		
Hazel		13		
Maple			1	
Willow/Poplar		9	4	
not identifiable		5	6	
Leather	46		19	15
Fleece/fur	1			
Horn	42			
Textile	3		1	14
Not identifiable/ not organic	2	3	1	6
Total	59	31	22	31

Fig.1 Summary of the organic material associated with different groups of objects.

Most of the organic materials were identified using a 10x hand lens. All the wood species were confirmed by observing gold coated samples in the Scanning Electron Microscope (Watson, 1988, 65-76), and where this method was used the sample number is quoted in the catalogue.

The textile remains probably do not represent a complete record of the material from this cemetery as much of the copper alloy including the brooches had been cleaned prior to examination and this would have resulted in the removal of any textile which may have been preserved.

Traces of textile were found mainly on iron objects including brooch pins, buckles and chatelaine fragments. These remains were fragmentary and unclear so it was not possible to record weave details in most cases. No samples were taken for identification of the fibres.

The largest group of objects to be examined were the 59 knives, and of these 42 had the remains of horn handles and 46 had evidence for leather sheaths. One interesting knife (33/3) had the possible remains of garments, one of which might have been fleece or fur lined, also preserved on it.

31 buckles were examined, but this number could possibly be expanded and include a number of the plain iron rings with traces of leather or textile which could have served the same purpose. Of the definite belt group though, 15 had evidence for a leather belt, and on 14 of the buckles textile was preserved which may have been part of the belt or belong to adjacent garments.

All the 31 spearheads had traces of mineral preserved wood remaining in their sockets, but only 28 were available for sampling. In seven cases this was so extensive that it was possible to see that the shaft had been fashioned from roundwood, probably coppiced poles. The range of woods represented is surprisingly narrow, hazel (13), willow or poplar (9), birch (1). Leaving 5 unidentifiable but with enough features to suggest that they too might have been hazel, willow or poplar.

Little organic material was preserved on the 22 shields, and only one had any indication of how the grip was attached (30/1 possibly inserted). 19 had traces of leather but only 15 had any evidence of the wooden shield board. Again a narrow group of woods is represented, willow or polar (4), alder (3), maple (1), leaving 6 unidentifiable, and 1 was unavailable for sampling.

A fragment of a lathe turned vessel (29/10) in maple was preserved by copper alloy rivets which may have been used to repair it or to attach a decorative mount on the rim.

Seven of the nine recorded ivory rings were available for study and all turned out to be made from elephant ivory cut from the base of the tusk. It is not possible to distinguish between the different types of elephant ivory on worked pieces.

Three of the 'bone' combs were examined and all were found to have antler tooth-plates rather than bone (MacGregor, 1985, 73-94).

A fragment of copper alloy (83/11) with plant material wound round the central pin may be all that remains of an amulet similar to two found in the Anglian cemeteries of Sewerby, East Yorkshire (G54/29; Hirst, 1985) and Fonaby, Lincolnshire (G4/5; Cook, 1981). Both these amulets were found to be made from thin shavings of oak wound around a copper alloy pin.

With the exception of the elephant ivory purse rings all the organic materials were readily available in Britain during the Anglo-Saxon period. The narrow range of wood species represented is unusual, it is very surprising to have no examples of ash spear shafts or lime shieldboards in a cemetery of this size.

### References

Cook, A.; 1981

The Anglo-Saxon Cemetery at Fonaby, Lincolnshire.; Occasional Papers in Lincolnshire History and Archaeology 6, 20.

Hirst, S.M.; 1985

An Anglo-Saxon Inhumation Cemetery at Sewerby, East Yorkshire.; York University Archaeological Publications 4; 90, 142.

MacGregor, A.; 1985

Bone, Antler, Ivory and Horn, Croom Helm.

Watson, J.; 1988

"The identification of organic materials preserved by metal corrosion products.", in S.L.Olsen (ed), Scanning Electron Microscopy in Archaeology, BAR International Series 452, 65-76.

## Catalogue

### Grave 3

3/1 Fragment of riveted strap with mineral preserved leather. Fragment of shield boss rim with possible leather on one side.

3/2 Iron spearhead with mineral preserved wood in socket: Corylus sp. (hazel).

B424

3/3 Iron knife with possible mineral preserved horn handle and possible traces of a leather sheath.

3/4 Iron buckle with no identifiable mineral preserved organic material.

### Grave 4B

4B/1 Shield boss with possible leather. No identifiable mineral preserved organic material on the other fittings.

### Grave 6

Iron knife blade with mineral preserved leather sheath, and small knife tang with mineral preserved horn - not sure if the two fragments belong together or are two separate items.

6/10 Iron ring with traces of very degraded textile over the whole of one side. Clearest area of weave at one end 10 X c. 11mm. Only one system visible - Z-spun threads. No weave details.

6/11 Fe buckle fragments with degraded textile on one side. Very crushed, traces of Z-spun threads. On the buckle are faint traces of Z-spun threads.

6/12 Iron buckle with copper alloy plate with mineral preserved textile. On back and to one side of iron buckle Z-spun threads 12mm long, not woven but lying parallel possibly suggesting fringe. This probably overlies a weave.

On the front of the buckle are two layers of textile, a degraded one on top, and a finer one underneath. Z,Z possibly 2/2 twill.

### Grave 10

10/1 Iron knife with mineral preserved horn handle and possible leather sheath.

### Grave 14

14/1 Iron knife with horn handle and leather sheath.

### Grave 16

16A/6 Iron ring with mineral preserved textile that is very degraded and crushed. Possibly Z-spun threads.

16B/1 Iron ring or buckle with traces of degraded textile.

**Grave 17**

17/11 Iron knife with horn handle and possible leather sheath.

**Grave 20**

20/2 Iron ring with crushed textile.

20/3 Copper alloy wristclasp with no organic material remaining.

**Grave 21**

21/1-2 Two spearheads with mineral preserved wood in their sockets, but not available for sampling.

**Grave 22**

22/1 Copper alloy annular brooch with iron pin covered in degraded textile on both sides. One side completely covered, gap of 15mm on other side. Possibly Z-spun threads, no clear weave.

22/7 Miscellaneous fragments of copper alloy with iron preserved organic material possibly leather.

22/11 Iron buckle loop with no recognisable mineral preserved organic material.

22/12 Copper alloy binding with black organic on inside - possibly resin?

22/17 Iron knife with possible leather sheath.

**Grave 23**

23/1-2 Iron stud and buckle loop with no recognisable mineral preserved organic material.

**Grave 26**

26B/1 Spearhead socket with mineral preserved wood: Salix sp. (willow) or Populus sp. (poplar). made from coppiced timber.  
B396

26C/1 Shield fittings with mineral preserved organic material. Leather between wood and rim. Board has radial surface of Alnus sp. (alder).  
B397

Grip is covered in plant stems on inside and degraded textile on the back with traces of weave at the edges. There appear to be two layers extending over the whole of this side of the object. The upper layer has degraded and lost detail. Under this at the edge is an area 18mm X 3-4mm. Z,Z?, possibly 2/2 twill. Also seems to be traces of a coarser weave at one end.

26C/2 Spearhead with mineral preserved wood in socket:  
Corylus sp. (hazel) from coppiced timber.  
B398

26C/3 Spearhead with mineral preserved wood in socket:  
Corylus sp. (hazel) from coppiced timber.  
B399

26C/4 or 5 Iron knife with mineral preserved horn handle and  
leather sheath found in same bag as 26B/1

#### Grave 27

27/1 Copper alloy brooch with trace of textile preserved on the  
iron spring.

27/6 Iron buckle loop with possible remains of  
leather belt and very degraded textile on both sides.

27/7 Iron knife with horn handle and possible leather sheath.

27/8 Iron ring with traces of very degraded textile.

27/9 Fragments of iron buckle loop with mineral preserved  
textile on both sides, some Z-spun threads.

#### Grave 29

29/1 Shield boss with leather and mineral preserved wood:  
Salix sp. (willow) or Populus sp. (poplar).  
B400

29/6 Spear socket with mineral preserved wood: Corylus sp.  
(hazel).

29/7 Iron knife with mineral preserved horn handle and leather  
sheath.

29/10 copper alloy rivets with mineral preserved wood: possibly  
Acer sp. (maple). The grain orientation of this fragment  
suggests that it originally came from a lathe-turned vessel.

Iron bucket bindings with no organic material remaining.

#### Grave 30

30/1 Shield boss and grip with mineral preserved organic  
material. Has inserted wooden grip with leather on outside.  
Leather between wood and rim. Not enough wood to identify the  
species.

#### Grave 31

31A/1 Shield boss and fittings with mineral preserved leather  
and wood. The wood species could not be identified.

31A/3 Iron knife with mineral preserved horn handle and  
leather sheath. Crushed textile on blade tip.

31B/1 Shield boss in fragments with mineral preserved organic material. Leather between wood and rim. Shield board made from Salix sp. (willow) or Populus sp. (poplar).

B402

31B/2 Spearhead with mineral preserved wood in socket: Corylus sp. (hazel) from coppiced timber.

B403

31B/3 Iron knife with possible leather sheath.

#### Grave 32

32/4 Iron buckle loop with traces of leather belt.

#### Grave 33

33/3 Iron knife with horn handle. On one side of blade is compressed textile probably from garments and on the other side is an area of hair probably from a fleece or fur lined garment.

#### Grave 34

34/5-6 Miscellaneous iron with no recognisable mineral preserved organic material.

#### Grave 35

35/1,2-5 Fragments of shield boss and studs with possible mineral preserved leather.

35/3 Spearhead with mineral preserved wood in socket from coppiced timber, but species not identifiable.

B404

#### Grave 36

36/1 shield boss with mineral preserved leather and a small fragment of wood preserved on rim but not enough to identify species.

36/2 Spearhead with mineral preserved wood in socket: possibly Salix sp. (willow) or Populus sp. (poplar) from coppiced timber.

B405

36/3 Small iron buckle with traces of leather belt.

#### Grave 37

37/1 Copper alloy cruciform brooch with traces of textile preserved on the iron spring.

37/8 Chatelaine group. Iron knife with mineral preserved horn handle and possible leather sheath. Iron ring with possible leather.

**Grave 39**

39/8 Iron knife with mineral preserved horn handle and possible leather sheath.

**Grave 40**

40/9 Elephant ivory purse ring with copper staining.

40/10 Iron ring with no mineral preserved organic material.

40/11 Iron knife with mineral preserved horn handle and leather sheath.

40/13 Iron chatelaine fragments with mineral preserved leather and degraded textile on the length of the pieces. No weave or spin.

40/20 Iron buckle and copper alloy plate with mineral preserved leather belt. On curve of copper alloy plate with iron tongue, area 8 X 7mm textile, Z,Z tabby? Count 7,7, on 5mm. Also traces on buckle loop but no clear weave in this area.

**Grave 41**

41/2 Iron knife with mineral preserved horn handle and possible leather sheath.

**Grave 42**

42/9 Iron ring with possible mineral preserved leather.

42/10 Iron knife with possible horn handle. No evidence for a sheath.

42/11 Iron buckle plate with copper alloy headed rivets has remains of leather belt on inside surface c.3.1mm thick.

**Grave 43**

43/1 Shield boss with possible leather on rim.

43/2 Iron knife with remains of leather sheath but no indication of handle.

43/3 Iron buckle with possible remains of leather belt.

**Grave 45**

45/1,2-5 Shield boss, studs and grip. Leather and wood preserved on the studs, but not identifiable.  
B406

45/6 Iron spearhead with mineral preserved wood in socket:  
Corylus sp. (hazel).  
B407

45/7 Iron knife with possible horn handle and leather sheath.

45/9 Comb with tooth-plates which appear to be made from antler with possible bone side-plates.

**Grave 46**

46/8 Elephant ivory purse ring.

46/11 Iron fragments with no recognisable mineral preserved organic material.

**Grave 48**

48/11 Iron knife with horn handle, but no evidence for a sheath.

**Grave 49**

49/9 Iron chatelaine with very slight traces of textile on ring.

49A/1/2 Copper alloy annular brooches with traces degraded Z-spun textile on detached fragment of iron pin.

**Grave 50**

50/11 Iron knife with horn handle. A few remaining flakes in the box possibly indicate that the knife originally had a leather sheath.

**Grave 53**

53/1 Iron knife with mineral preserved horn handle and possible leather sheath.

**Grave 56**

56/1 Iron shield boss with mineral preserved wood on rim, board made from Acer sp. (maple) with a tangential surface.  
B408

56/2 Iron spearhead with mineral preserved wood in socket: Salix sp. (willow) or Populus sp. (poplar).  
B409

**Grave 58**

58/1 Iron knife with leather sheath but handle uncertain.

**Grave 59**

59/1 Shield boss with traces of wood, but not available for sampling.

59/6 Iron spearhead with mineral preserved wood in socket, but not available for sampling.

59/7 Iron knife with traces of horn handle and fibrous organic on blade possibly textile.

**Grave 60**

60/1 Fragment of iron knife blade with possible mineral preserved leather sheath.

**Grave 61**

61/5 Iron knife has been cleaned and no organic material remains.

**Grave 63**

63/3 Iron knife with mineral preserved horn handle and possible leather sheath.

**Grave 64**

64/2 Iron knife with possible leather sheath, but no evidence for handle.

**Grave 66**

66/1 Iron spearhead with mineral preserved wood in socket: Salix sp. (willow) or Populus sp. (poplar).

B410

66/2 Iron knife with horn handle and leather sheath.

**Grave 67**

67/10 Comb with antler tooth-plates, but it is difficult to tell whether bone or antler was used for the side-plates.

67/12 Chatelaine fragments including an iron buckle with remains of leather belt on tongue. Degraded textile on both sides of buckle loop. Similar traces on other chatelaine fragments.

**Grave 68**

68/6 Iron buckle with possible traces of leather belt.

**Grave 69**

69/1 Cruciform brooch with traces of thread on the iron spring.

69/12 Iron ring with mineral preserved organic material but not identifiable.

**Grave 73**

73/1 Cruciform brooch with traces of textile on the iron pin.

73/12 or 85B Elephant ivory purse ring.

73/13 Iron tool with rectangular section has no identifiable organic material.

73/14 Iron knife with horn handle and possible leather sheath.

73/16 Iron buckle and copper alloy plate with traces of crushed and degraded textile preserved around the loop.

73/19 Copper alloy binding fragments with leather preserved in one.

73/21 Riveted iron strap with mineral preserved leather on one side.

73/22 Iron chatelaine with faint traces of textile on some fragments.

**Grave 74**

74/1, 3-5 Shield boss, grip and studs with leather between the wood and rim. Not enough wood to identify species.

74/6 Spearhead with mineral preserved wood in socket: Salix sp. (willow) or Populus sp. (poplar).  
B411

74/7 Iron knife with mineral preserved horn handle and leather sheath.

74/9 Iron buckle with remains of very crushed and degraded textile.

**Grave 75**

75/1 Iron spearhead with mineral preserved wood in socket, but not identifiable.  
B412

75/3 Iron knife with leather sheath, but no indication of the handle.

75/4 Iron buckle with remains of leather belt in the centre of the loop by the tongue. Also traces of degraded textile on the back and around the edge of the loop.

**Grave 77**

77/1 Iron spearhead with mineral preserved wood in socket: Corylus sp. (hazel) probably from coppiced timber.  
B413

77/2 Iron knife with horn handle and possible leather sheath. Associated with this was another spearhead with mineral preserved wood in socket: Corylus sp. (hazel).  
B414

**Grave 79**

79A/6 Iron knife with leather sheath and possible horn handle.

79A/7 Iron nail with no mineral preserved organic material.

**Grave 80**

80/7 Iron knife with horn handle and possible leather sheath.

**Grave 81**

81/7 Iron knife with possible horn handle.

81/8 Iron buckle and copper alloy plate with textile probably preserved on the back of the buckle, but still covered with soil.

**Grave 83**

83/6 Elephant ivory purse ring.

83/9 Miscellaneous fragments of copper alloy some decorated. Probably comprises of 3 strap ends but little indication as to what they were mounted on - traces of Z-spun threads around the iron rivet on one. Other fragments are probably associated with the ivory purse ring although the organic material preserved around the iron rivet on one is indistinct.

83/11 Iron buckle and copper alloy plate but no remaining organic material.

83/11 i. 2 copper alloy plates riveted together to hold in place coil of organic material which under high magnification appears to be a piece of plant stem. This is probably an amulet similar to the ones found in the Anglian cemeteries of Sewerby, N. Yorkshire and Fonaby, Lincolnshire.

B425

**Grave 84**

84/1 Iron spearhead with mineral preserved wood in socket: Salix sp. (willow) or Populus sp. (poplar), probably from coppiced timber. Also has 2 copper alloy bands, c.11mm wide, inside the socket inserted between the wood and iron, but they may only cover the socket opening. B426

84/2 Iron knife with horn handle and traces of leather sheath.

**Grave 85**

85A/2 Copper alloy annular brooch with textile traces preserved on remains of iron pin.

85A/3 Copper alloy annular brooch with slight textile traces on remains of the iron pin. On the detached piece of pin there are slight textile traces of possible Z-spun threads.

85B/16 Iron knife in a fragmentary condition, has a leather sheath but no sign of tang.

85B or 73/12 Elephant ivory purse ring.

85B/? Iron chatelaine, knife and two rings with mineral preserved organic material. On the small ring is an area of crushed and degraded textile around outside, extending inside at

one point at least. The larger ring has textile preserved on one side. There are traces of textile on other fragments of chatelaine.

**Grave 86**

86/1 Iron spearhead with mineral preserved wood in socket:

Salix sp. (willow) or Populus sp. (poplar).

B427

86/2 Iron knife with mineral preserved leather sheath and possible horn handle.

**Grave 89**

89/10 Ivory purse ring with vertical grooves which are typical of elephant ivory that has lost its collagen component and are not necessarily evidence for wear as suggested.

89/13 2 sets of copper alloy strap fitting with iron rivets surrounded by mineral preserved organic material possibly leather.

**Grave 90**

90/5 Iron knife with possible horn handle and leather sheath.

**Grave 91**

91/2 Copper alloy annular brooch with traces of Z-spun threads on fragment of iron pin still attached to brooch. Textile remains on detached fragments of pin. It is very compressed but the pin can be seen to be piercing folds of textile. Z-spun threads.

91/8 Elephant ivory purse ring.

91/10 Copper alloy strap ends with no organic material remaining.

91/13 Iron knife with possible leather sheath but no organic remaining on the tang.

**Grave 92**

92/1, 2-3 Shield boss, grip and studs with mineral preserved leather between rim and wood. Shield board appears to be made from Alnus sp. (alder).

Also in box with studs is an iron strap with crushed and degraded textile which has traces of Z-spun threads, possibly part of a buckle plate.

92/4 Iron spearhead with thin layer of wood preserved in socket: Corlyus sp. (hazel).

92/6 Iron buckle and copper alloy plate with mineral preserved textile around edge of buckle loop. Area 8 x 4mm, Z,Z spun.

**Grave 93**

93/1 Iron knife with possible leather sheath, mineral preserved organic material on tang but not recognisable.

93/2 Iron nail with no organic material.

**Grave 94**

94/1 Copper alloy brooch with textile preserved on the iron pin.

**Grave 95**

95/10 Iron buckle with remains of leather belt.

95/13 Flat iron fitting with mineral preserved leather or compressed textile on both sides.

**Grave 96**

96A/1 Iron knife with possible leather sheath and organic material preserved on the tang but not recognisable.

96A/2 Iron buckle with possible remains of leather belt.

96B/1 Iron knife with horn handle and leather sheath.

96B/2 Iron buckle loop with mineral preserved leather.

96C/4 Miscellaneous iron fragments, probably part of a buckle and copper alloy riveted plate which has leather preserved on one side.

**Grave 97**

97/2 Iron knife with mineral preserved horn handle and leather sheath.

97/3 Iron buckle and plate with remains of possible leather belt.

**Grave 98**

98/1 One shield stud with mineral preserved wood: Alnus sp. (alder).

B430

98A/2 Iron spearhead with mineral preserved wood in socket: Corylus sp. (hazel).

B431

98A/3 Iron buckle with preserved organic material, but not recognisable.

98B/1 Copper alloy annular brooch with slight textile traces on remains of iron pin on brooch. On detached fragments textile traces on both sides of the larger piece and on one side of the smaller.

98B/2 Copper alloy annular brooch with iron pin, traces of degraded textile preserved on the remains of the iron pin - Z-spun threads. Possible area of human skin on the back of detached piece of pin.

98B/13 Iron knife, cleaned and no organic material remains.

98B/14 Iron buckle with degraded textile.

98B/15 Iron buckle and plate cleaned, no organic material remains.

98B/18 Three sets of copper alloy strap ends and a set of mounts which may be associated with the ivory purse ring.

98B - Iron frags lying at D on upper arm bone of skel B with crushed and degraded textile preserved on one side of both fragments.

**Grave 99**

99/1 Iron knife with mineral preserved horn handle and leather sheath.

99/2 Iron nail with no organic material.

**Grave 100**

100/3 Copper alloy annular brooch with traces of degraded textile preserved by the iron pin.

100/12 Iron knife tang with mineral preserved horn.

100/10 Iron knife with no organic material on the tang, but possible leather on the blade.

**Grave 104**

104B/1 Iron spearhead with mineral preserved wood in socket: Salix sp. (willow) or Populus sp. (poplar).  
B433

104B/2 Iron knife with mineral preserved horn handle.

104B/3 Iron buckle with organic material probably the remains of crushed textile.

**Grave 105**

105/5 Iron chatelaine fragments with faint traces of degraded textile.

**Grave 106**

106/1 Iron spearhead with mineral preserved wood in socket: probably Betula sp. (birch).

**Grave 107**

107/7 Iron knife with possible horn handle but no evidence for sheath.

**Grave 108**

108/1 Iron buckle loop with mineral preserved leather.

**Grave 109**

109/5 Iron chatelaine, some objects have extensive areas of crushed and degraded textile, on two sides on some of the shafts, and on both sides of the large iron ring. Only one area clear - Z,Z twill, probably 2/2.

109/6 Iron and copper alloy ring, joined by corrosion. On the underside of iron ring, and around edge, is an area of crushed and degraded textile, Z-spun threads.

109/7 Iron knife with mineral preserved horn handle.

109/8 Tip of second knife with remains of leather sheath.

**Grave 110**

110/1 Iron spearhead with mineral preserved wood in socket:  
Corylus sp. (hazel).  
B432

110/2 Iron knife with mineral preserved horn handle and possible leather sheath.

**Grave 111**

111/1 Fragments of spearhead socket with mineral preserved wood:  
Salix sp. (willow) or Populus sp. (poplar).  
B434

111/2 Iron knife with mineral preserved horn handle and leather sheath.

**Grave 112**

112/3 Iron knife with possible horn handle.

112/4 Small iron buckle with copper alloy plate with traces of the leather belt between the plates. Area of textile on front of buckle 14 X 15mm, Z,S 2/2 twill.

Also studs with wood.

**Grave 115**

115/2 Copper alloy and iron with faint traces of degraded textile on the iron plate. Organic around the copper alloy rivet on the other side.

115/8 Iron chatelaine with faint traces of textile.

115/10 Comb with antler tooth-plate , but difficult to tell whether bone or antler was used for the side-plates.

**Grave 119**

119A/1 fragment of shield boss rim with mineral preserved leather.

119A/2 Iron knife with horn handle but no evidence for sheath.

119B/1 Iron shield boss and studs with mineral preserved organic material. Leather is preserved between wood and the iron rim. Wood species not identifiable.

B435

119B/2 Iron spearhead with mineral preserved wood in socket: possibly Corylus sp. (hazel).

B436

119C/1 Iron spearhead with mineral preserved wood in socket, but species not identifiable.

B437

**Grave 120**

120/1 Copper alloy annular brooch with textile preserved where the pin was.

**Grave 123**

123/1 Iron shield boss with silver overlaid rivets. Mineral preserved leather on underside of rim.

123/4 Iron fastening from waist with traces of fibrous organic material, possibly textile.

**Grave 125**

125/1 Iron spearhead with possible wood in socket.

**Grave 127**

127/1 Disc brooch with textile preserved on the iron pin.

127/11 Iron buckle with mineral preserved wood, probably not enough to identify species. Looks more like some sort of clamp rather than a buckle.

**Grave 128**

128/1-2 Iron shield studs with mineral preserved wood. Possible leather between wood and iron. Shield board made from Salix sp. (willow) or Populus sp. (poplar).

B438

**Grave 129**

129/7 Iron nail with no mineral preserved organic material.

**Grave 131**

131/4 Iron knife with horn handle and leather sheath.

**Grave 132**

132/1 Iron spearhead socket with mineral preserved wood:  
Corylus sp. (hazel).

**Grave 134**

134/3 Iron ring with no mineral preserved organic material.

**Unstratified**

a) Spearhead with mineral preserved wood in socket but not enough to identify species.

d) Shield boss with leather and wood preserved on rim. The shield board appears to be made from Salix sp. (willow) or Populus sp. (poplar).

B416

Also associated is an iron knife with remains of a leather sheath.

e) Shield boss cleaned and no organic material remains. On an uncleaned fragment of the rim leather is possibly preserved.