



YORK ARCHAEOLOGICAL TRUST

CONSERVATION LABORATORIES

Burdale BUR 06

Assessment of Finds for

Dr Julian Richards, University of York

by

Ian Panter

02/08/06

ABSTRACT:

This report concerns the assessment of metal artefacts recovered during excavations by Dr Julian Richards at Burdale. A separate report has been written on the conservation of the bone comb that was also recovered. Estimates and recommendations for further work are included.

1. INTRODUCTION

28 artefacts were delivered to the York Archaeological Trust Conservation Laboratory on 28th June, 2006 for assessment. The artefacts consist of 27 iron objects and 1 lead alloy object. The condition of the various classes of material is summarised and indicators of unusual preservation noted. The potential of the assemblage for further analysis and research is discussed, and recommendations made for further investigative conservation and long term storage.

2. AIMS AND OBJECTIVES

This report aims to meet the requirements of MAP2 (English Heritage, 1991) to produce a stable site archive. This has involved X-radiography and an assessment of the condition, stability and packaging of the finds. Standard YAT procedures were followed; 27 metallic recorded finds were assessed and (with the exception of Lead alloy) X-rayed on 2 plates (x6633-6634). An assessment of each find is presented in the tables in the Appendix.

3. PROCEDURES

The iron objects were X-rayed using standard Y.A.T. procedures and equipment. One sheet of film was used, and each plate was given a reference number in the YAT conservation laboratory series. The X-ray number was written on each recorded find bag. Each image on the radiograph was labelled with its recorded finds number. The plates were packaged in archival paper pockets.

All finds were examined under a binocular microscope at X20 magnification. The material identifications were checked and observations made about the condition and stability of the finds, and recorded in section 4 below.

4. CONDITION ASSESSMENT SUMMARY

4.1 Metals

a. iron: overall the condition of the iron objects was fair to good, and no active corrosion was observed. Most objects had a minimal covering of soil and the typical orange/brown corrosion products. In some objects (sfs 70, 200, 204, 205 and 215) traces of mineral preserved organics (mpo) were observed. The X-rays showed that substantial metal cores survived for the majority of the objects.

b. lead alloy The lead alloy was in fairly good condition, active corrosion should be kept at bay by dry storage and removal of paper and card (sources of organic acids) from its vicinity (Cronyn, p207).

5 STATEMENT OF POTENTIAL

This report was written without seeing the site, and without the benefit of discussion with other members of the project team.

5.1 Indicators of preservation

The lack of bulky corrosion crusts suggests that the burial environment was benign. Mineralisation was occurring particularly along worked edges or broken/fractured regions.

5.2 Evidence of technology, craft or industry

Several objects are indicative of wood or leather working. Two knives (Sf 2 and 215) are drawknives which are similar to those used for de-fleshing hides and skins (see Ottoway and Rogers p2731). However, both blades are finer than those used for leatherwork and may have been used for fine woodworking. The presence of mineral preserved organic material along the back of blade 215 is puzzling and would benefit from further investigation. Two awls (sf 70 and sf 305) could also be used in leatherworking.

6 RECOMMENDATIONS

Recommendations for further work are highlighted in bold in the tables.

6.1 Further Investigative Conservation

a. Investigation for research purposes: Further investigative conservation is proposed for the following finds to aid identification and clarification: sfs 70, 157, 200, 201, 203, 204, 205, 209, 211, 215, and 294 (individual recommendations can be seen in the assessment table below).

b. Further work only if requested: Selected items could have corrosion removed fully for publication or display, quotes for the items selected can be arranged individually to suit your requirements.

6.3 Packing and Long Term Storage

a. Packaging on arrival at the lab: All finds were well-packed in suitable sealed containers to provide the appropriate desiccated and damp environments.

b. Long-Term Storage. The metal finds should be stored in a desiccated environment at less than 15%RH. The desiccated environment will need to be maintained.

7. RESOURCE REQUIREMENTS

The following costs are based on the objects identified in section 6.1 above and may not reflect the aims and objectives of the project. It is recommended that requirements for further conservation are discussed with the project director.

| | |
|--|----------------|
| Investigative conservation (see section 6.1) | £726.00 |
| Materials | £58.00 |
| Conservation report | £100.00 |
| Administration | £80.00 |
| <i>ESTIMATED TOTAL COST (excluding V.A.T)</i> | £964.00 |

8. REFERENCES

Bertholon, R., A Descriptive Method for Metallic Corrosion, unpublished work in prep., ref SOMA, Conservation and Restoration Department, University of Paris 1 Pantheon-Sorbonne, 2000.

Cronyn, J. M., The Elements of Archaeological Conservation, Routledge, 1990.

English Heritage, Management of Archaeological Projects, 1991.

Ottaway, P. and Rogers, N., Craft, Industry and Everyday Life: Finds from Medieval York, The Archaeology of York, AY17/15, CBA, 2002

Appendix: Assessment Tables

1. Iron

| X-ray | RF | Context | Description | Assessment |
|-------|-----|---------|-----------------------|---|
| 6634 | 2 | 1000 | Fe Drawknife? | Possible drawknife for wood or leather working. Thin covering of soil and a few lumps of orange/brown corrosion. Overall good condition. <u>X-ray</u> : solid core of metal remaining, corrosion along blade edge. Recommendation: no further work required |
| 6633 | 4 | 1000 | Fe Shear blade | Minimal covering of soil and orange/brown corrosion, overall good condition. <u>X-ray</u> : corrosion along blade edge, otherwise good core of metal surviving. Incised line in blade parallel to back. Recommendation: no further work required. |
| 6634 | 8 | 1001 | Fe Knife | Covering of soil and minimal orange/brown corrosion products. Condition good. <u>X-ray</u> : thick core of metal surviving, some corrosion in places. Recommendation: no further work required |
| 6633 | 26 | 1010 | Fe Knife blade | Covered in thin layer of soil and orange/brown corrosion products with some areas corroded away. Overall condition fair. <u>X-ray</u> : mineralisation occurring along blade edge. Recommendation: no further work |
| 6633 | 53 | 1029 | Fe Strip | Fe strip covered in soil and dark brown corrosion products. <u>X-ray</u> : shows object to be very mineralised in places, little sound metal remaining. Fair condition. Recommendation: no further work |
| 6633 | 70 | 1046 | Fe Awl | Minimal soil and corrosion covering, traces of mineralised organic remains around tang. <u>X-ray</u> : good solid core of metal surviving, some areas of mineralisation. Recommendations: investigate and identify organic remains |
| 6633 | 123 | 1088 | Fe Knife | Fragment of knife covered in soil and orange/brown corrosion products, and traces of mineralised grass or straw. <u>X-ray</u> : shows little solid metal surviving, condition is poor. Recommendation: no further work |
| 6634 | 157 | 1000 | Fe Object | Unidentified object with minimal soil and corrosion layer, although some areas of orange/brown corrosion crust. Surface pitted in places. <u>X-ray</u> : reveals possible non ferrous wire wound around one end (14 turns) and good solid core of metal remaining. Recommendation: investigate possible wire around object. |
| 6633 | 199 | 6200 | Fe Suspension loop | Minimal corrosion and soil covering, some patches of yellow and orange/brown corrosion. <u>X-ray</u> : well preserved core of metal, but mineralisation of attachment plate. Overall preservation is good. Recommendation: no further work. |

| | | | | |
|------|-----|------|---------------|--|
| 6634 | 200 | 6194 | Fe Knife | Covered in stony soil and areas of hard orange/brown corrosion products. Traces of mineral preserved organics on tang. <u>X-ray</u> : thin core of metal survives, blade edge and parts of tang mineralised. Overall condition is fair. Recommendation: investigate and identify mpo |
| 6633 | 201 | 6197 | Fe Pin | Pin appears in good condition with minimal surface corrosion and adhering soil. <u>X-ray</u> : solid core of metal surviving, pin head appears spherical, although to naked eye looks faceted. Recommendation: investigate head shape |
| 6633 | 202 | 6198 | Fe Hook | Condition good, with minimal corrosion products. <u>X-ray</u> : solid core of metal surviving. Recommendation: no further work |
| 6634 | 203 | 6199 | Fe Object | Possible bell, encrusted with soil with charcoal flecks and orange/brown and dark brown corrosion products. <u>X-ray</u> : areas of well preserved metal and areas of mineralisation. Possible plating along one edge. Recommendation: investigate possible plating |
| 6633 | 204 | 6197 | Fe Knife | Appears in good condition, minimal corrosion products on surface, possible mineral preserved organic traces on tang, and traces of grass/straw on blade. <u>X-ray</u> : Good amount of metal core surviving, incised groove parallel to back of knife. Recommendation: investigate and identify mpo on tang. |
| 6633 | 205 | 6197 | Fe Knife | Covered in soil and large lumps of orange/brown corrosion products, and traces of possible mineral preserved organic remains on tang. <u>X-ray</u> : tip and edge of blade corroded. Recommendation: investigate and identify mpo. |
| 6633 | 208 | 6196 | Fe Knife | Covered in soil and orange/brown corrosion products, fresh break to blade and beginning to flake. <u>X-ray</u> : solid core of metal surviving but corrosion occurring along blade edge and back. Recommendation: no further work required |
| 6633 | 209 | 6196 | Fe Implement? | Thin soil and minimal corrosion products although there are several larger lumps of orange/brown corrosion. <u>X-ray</u> : solid core of metal surviving with corrosion on edges. Overall condition is good. Recommendation: reveal cross sections to aid identification |
| 6633 | 210 | 6196 | Fe Knife | Incomplete with much of blade missing. Thin covering of soil and orange/brown corrosion products, condition is good. <u>X-ray</u> : core of metal survives, some areas of mineralisation. Recommendation: no further work |
| 6634 | 211 | 6199 | Fe Plate | Fragment of plate with thin covering of stony soil and dark brown corrosion products. <u>X-ray</u> : shows much of the object has mineralised with very little sound metal remaining. Possible perforation and ?nail attached to plate. Recommendation: investigate possible perforation and nail. |
| 6633 | 212 | 6196 | Fe Hook | Overall good condition, minimal surface corrosion products, although there are a few areas of yellow/brown corrosion. <u>X-ray</u> : solid core of metal surviving Recommendation: no further work |
| 6633 | 214 | 6196 | Fe Nail | Good condition, minimal soil and corrosion products. <u>X-ray</u> : solid core of metal remaining. Recommendation: no further work |
| 6633 | 215 | 6196 | Fe Knife | Probable leather worker's knife, slicker, with minimal corrosion and adhering soil. Traces of possible mineral preserved organic material along back of blade. <u>X-ray</u> : good condition with corrosion confined to blade edge. Recommendation: investigate and identify mpo. |

| | | | | |
|------|-----|------|-----------|---|
| 6634 | 216 | 6197 | Fe Staple | Good condition, thin layer of soil and orange/brown corrosion products, rectangular cross section. <u>X-ray</u> : some areas of mineralisation, but overall good condition. Recommendation: no further work |
| 6633 | 218 | 6196 | Fe Knife | Thin covering of stony soil and orange/brown corrosion products. <u>X-ray</u> : areas of mineralisation of blade edge and tang, condition fair. Recommendation: no further work |
| 6633 | 292 | 1042 | Fe Nail | Large headed nail with broken tip, oval cross section. Minimal corrosion and soil covering. <u>X-ray</u> : sound core of metal remaining, corrosion occurring at broken end. Recommendation: no further work |
| 6633 | 294 | 1042 | Fe Ring | Covered in bulky stony soil and orange/brown corrosion crust. <u>X-ray</u> : shows penannular ring, possible upturn at one terminal, other possibly broken. Fair condition Recommendation: investigate terminal ends. |
| 6633 | 305 | 1137 | Fe Awl? | Covering of soil and orange./brown corrosion lumps, end has square cross section. <u>X-ray</u> : core of metal surviving, some corrosion at tip, overall condition good Recommendation: no further work |

2. Lead Alloy

| X-ray | RF | Context | Description | Assessment |
|-------|-----|---------|-------------|--|
| n/a | 117 | 1083 | Lead weight | Good condition, thin covering of carbonate corrosion, tool marks visible on one end. Recommendation: no further work required. |