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Evaluation of archaeometallurgical residues from Norton Fitzwarren

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Abstract

This small assemblage comprised 7 pieces of residue, totalling 1kg, of which a single smithing hearth cake (SHC) weighed 954g This SHC is large, but not exceptionally so, in comparison with those from other rural medieval assemblages. The remainder of the assemblage comprises two other fragments from SHCs, two slag fragments which are probably also smithing slags and two pieces of non-diagnostic lining slags. Thus the entire assemblage may be from iron working, although the lining slag fragments are not certainly so.

Contents

Methods

The archaeometallurgical residues have been evaluated by brief visual inspection and the use of a lower-powered binocular microscope. Descriptions and interpretations of material are necessarily limited by this approach. This report should not to be taken as a final interpretation of the materials described herein, but is a brief catalogue, description and interpretation of the materials, together with an evaluation of their potential for further post-ex investigation.

Results

A brief catalogue of the materials is presented in Table 1. The materials include residues which are certainly from iron working (blacksmithing; C1, C4, C17) together with dense slag material which is likely to have the same origin (C6, C13) and lining slags (C6) which might be from iron-working, but which could have originated in another high temperature process.

The principal piece is the smithing hearth cake (SHC) from C17, which weighed 954g, but was estimated to be about 95% complete, so the original SHC would have weighed approximately 1kg.

Several of the slag pieces show indications that they were produced in a hearth burning charcoal.

Interpretation

Material such as this indicates a low background of metallurgical activity, such as would be typical in a medieval settlement. The technology implied by the SHC is appropriate for the medieval period and is likely to be the product of fairly heavy smithing work, rather than bloomsmithing.

On Iron Age and Roman sites an SHC weight of 1kg is frequently an indicator of bloomsmithing (the process of reworking the raw bloom to refine it down to bar iron). However, by the Middle Ages such SHC sizes seem commonplace in smithies. The maximum SHC size from Worcester Deansway period 8 (11-13th centuries) was 1490g (mean 492g), for period 9 (13th - 15th centuries) was 1800g (mean 499g) and from Burton Dassett (14th-15th centuries) was 1670g (mean 550g) (McDonnell & Swiss, 2004; McDonnell 1992). On some rural sites the SHCs are rather smaller, for instance at Prior Park ,Cricklade (Young unpublished data; 11th-15th centuries) the maximum SHC size was 794g (mean 329g).

The weight of SHC produced by a smith is a function of many things – the amount of ceramic lost by the hearth, the duration of the work period and the amount of iron being lost to the hearth. This loss is likely t be highest where a significant amount of forge welding is being undertaken, or objects with a large surface area are being worked.

Evaluation of potential

Although further information about the materials could be gleaned through detailed investigation of these specimens, their lack of association with metallurgical features and their small number, means that such further work may add little to the understanding of the site. Further investigation of the residues is, therefore, not recommended.

References

McDonnell, J.G. 1992. *The identification and analysis of the slags from Burton Dasset, Warwickshire*, Ancient Monuments Laboratory Report, 46/92.

McDonnell, J.G. & Swiss, A. 2004. Ironworking residues. pp. 368-378, *in:* H. Dalwood & R. Edwards, *Excavations at Deansway, Worcester, 1988-89: Romano-British small town to late medieval city*. CBA Research Report 139.

context	weight	notes
1	26	very dense slag. Has one maroon extremely smooth surface. Internally shows very long crystals in several cooling zones. At one end shows lining material absorbed into melt. Probably an SHC fragment rather than a smelting slag. Also shows very heterogeneous distribution of vesicles.
4	2	small fragment of dimpled smooth slag – rather similar to the base of the SHC from C17. Internally slightly lobate and vesicular
6	8	maroon-surfaced complex bleb of dense dark slag with multiple charcoal dimples - one with charcoal in. Shows some sand and slate inclusions - probably from contact superficially with loose sediment
	6	rounded bleb of pale greenish glassy lining slag, moderately vesicular
	2	small weathered bleb of greenish lining slag
13	10	irregular dimpled lump of vesicular slag, grey, crystalline, has some charcoal inclusions
17	954	SHC, 135 x (105) x 70mm, shows some lining attachment on proximal side. Concavo-convex deep dense bowl. Base smoothly dimpled, top obscured by concretion, appears to be approx 95% - upper part of one side is missing.

Table 1: Summary catalogue

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