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Assessment of residues from Maidenhead [18E0236]

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Abstract

The submitted samples comprised approximately 120g (2 pieces). One item was a fragment of probable blacksmithing slag, the other was a fragment of vesicular slag (probably a fuel ash slag) that may not have been of metallurgical origin.

Contents

Abstract 1

Contents 2

Methods 2

Description of the assemblage 2

Discussion 2

Further work 2

Reference 2

Table 1. Summary Catalogue 3

Methods

All materials were examined visually, using a low-powered binocular microscope where required. As an assessment, the materials were not subjected to any high-magnification optical inspection, not to any form of instrumental analysis.

The identifications of materials in this report are therefore necessarily limited and must be regarded as provisional.

This assessment was conducted in July/August 2021 and was commissioned by IAC.

Description of the assemblage

General

The submitted material comprised just two fragments of pyrotechnological residue

Iron smithing residues

A single fragment (118g) from a smithing hearth cake (SHC) was recovered from context (4) (sample s#27). The morphology of this piece does not permit determination of whether it represents most of a small example or it is just a small fragment of a large SHC. The fragment is 22mm thick and carries a clast of metallic iron near its upper surface. The base is dimpled, with adhering grains from the hearth floor as well as lining-slag droplets.

The piece appears to have been charcoal- (rather than coal-) fuelled, and is therefore unlikely to be modern, but the item is not otherwise indicative of age.

The presence of metallic iron near the upper surface is suggestive that the piece is more likely to be from blacksmithing than from the process of bloomsmithing during iron production.

Possible FAS

A single small (1.5g) fragment of low-density, vesicular, glassy slag was recovered from context (231) (from sample s#112; from which a radiocarbon determination that calibrates to AD674-774 has been obtained, UBA 45034).

Vesicular slags of this type are generated by the entrapment of gas evolved from a very viscous slag (typically a partial melt). Although such materials may be generated from the reaction (and partial melting) of the lining in a metallurgical hearth, they are also generated in a wide range of non-metallurgical settings (most notably in cereal-drying kilns; see Young 2020, 55-56 for a full discussion of possible origins). The occurrence of a single piece as here does permit determination of origin, nor is it indicative of age.

Discussion

The assemblage is too limited to provide much information on the site's activities.

Further work

The assemblage from Maidenhead does not have significant potential to yield additional useful information from further analysis, so none is therefore recommended. Unless the archaeological context of the residue finds raises particular questions, then the material is of low significance for retention.

Reference

YOUNG, T.P. 2020. The slag. *pp.* 51-56 *in:* Niall Sharples (ed.) *The Economy of a Norse Settlement in the Outer Hebrides; Excavations at Mounds 2 and 2A, Bornais, South Uist*. Oxbow Books.

Table 1: summary catalogue of materials. Weights in g. SHC = smithing hearth cake, FAS = fuel ash slag.

context	sample	wt.	no.	description
c4	s#27	118	1	dense iron slag crust, dimpled with stones and lining slag blebs on base, vesicular rusty, probably rather smooth top, max 22mm thickness, upper surface has dense lump rich in metallic iron. Unclear if fragment from crust of large SHC, or part of small SHC
c231	s#112	1.5	1	lobate, vesicular, glassy lining slag or FAS

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