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Evaluation of archaeometallurgical
residues from Mahee Castle, Co. Down
AE/02/79

Evaluation of metallurgical residues from Mahee Castle, Co. Down AE/02/79

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Abstract

This small assemblage includes a piece of glazed limestone, which is likely to have been vitrified accidentally, and is not related to glass working. A small piece of a fairly small smithing hearth cake was probably produced in a charcoal-fuelled blacksmithing hearth, but is not particularly diagnostic of age. Relatively recent tumble contained a small piece of clinker probably from a coal fire, which was not necessarily industrial.

Contents

Abstract	1
Methods	1
Results	1
Interpretation	2
Evaluation of potential.....	2

Methods

The specimens have all been examined in hand specimen and under a low-powered binocular microscope. Where required the specimens have been cleaned. None of the material has been cut, or subjected to further detailed analysis. Interpretation of the material is therefore limited, and made on the basis of its overall form and texture.

Results

The assemblage comprises three pieces of residue, of which one is broken in two.

SF#409 (C1028) is a fragment of white rock (5.20g), with a transparent to greenish glaze on three of its faces. The original rock is quite coarse grained, but mainly finely silicified, white, with yellow, softer zones of partially decalcified rottenstone. The whole has the appearance of a partially silicified limestone. Soft white material bearing large rounded quartz grains adheres to the surface in several areas, and this is interpreted as mortar. The glaze covers three of the facies of the wedge-shaped rock and appears, although this is not certain, to involve vitrification of the mortar residues. In some areas the clear glaze bears long needle-shaped crystals of a white mineral. The piece is interpreted as a fragment of mortared stone that has been heated to sufficiently high temperature for the mortar residues and fuel ash to combine to produce a glaze.

SF#312 (C1007) is a small rounded bleb (3.23g) of a low density slag or clinker with a vitrified surface. The surface layer varies from dark, and rich in small quartz grains at one end of the piece to maroon and smooth at the other. A distinctly rectilinear indentation on one face may be impression of tongs or a poker (and a tiny flake of hammerscale material imbedded in the vitrified layer may indicate spalling of the oxidised surface of the tool. The abundance of quartz grains on the surface and the low density suggest this is a piece of stone or hearth lining accidentally incorporated into the fuel of a hearth. The colouration of the piece strongly suggests that this is residue from a coal hearth, and a bleb such as this might be equally likely in an "industrial hearth" (particularly a blacksmith's hearth) or in a domestic coal fire.

SF#363 (C1023) is a piece, broken in two, of extremely dense iron slag. The piece (102g) constitutes a fragment 40x45mm of a smithing hearth cake up to

35mm thick. The lower face is not well preserved, but shows some fine organic material. The upper face is irregular, but smoothly lobate, with a raised bleb of lining-dominated slag in the centre of the piece. The body of the slag is moderately vesicular, dense, and homogeneous. The lower part of the slag shows a few tubular vesicles. One lateral face shows some remains of what appears to be a mineralised charcoal inclusion.

Interpretation

The three pieces come from stratigraphic horizons widely separated in the history of the site. The vitrified limestone piece (SF#409) derives from levels associated with the later part of the occupation of the tower house. Little can be said about this piece except that it is not glass slag (*contra* field identification), and probably represents accidental firing of a stone fragment.

The fragment of smithing hearth cake (SF#363) derives from collapse dating to late 17th-18th century and is entirely compatible with that age, although a dense hard slag lump such as this might well be residual.

The small piece of clinker (SF#312) was recovered from tumble of possible 19th-20th century date. Clinker from coal burning is most likely to be post mid-18th century.

Evaluation of potential

The material in this assemblage is not likely to be able furnish significant extra information from any further analysis.

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