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Evaluation of Archaeometallurgical Residues from the M8/N8 Cullahill - Cashel: AR17-20 (E2368)

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Abstract

Material from this site comprised six samples from flot residues and three collections of macroscopic residues. Five of the six flot residues contained no certain archaeometallurgical residues (although they did contain fired clay). The other flot sample and one of the macro-residue assemblages derived from c100 and provided good evidence for iron-working. A second macroscopic smithing residue assemblage derived from c61(which overlies c100) and a single piece of smithing slag was from c54.

C100/c61 may be the remains of a smithing hearth, or just possibly the remains of a waste deposit associated with the smithy.

The smithing activity is probably of earlier medieval age on the basis of the tuyère size.

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Methods

All investigated materials were examined visually, using a low-powered binocular microscope where necessary. All significant macroscopic materials were summarily described and recorded to a database (Table 1). For microscopic residues a general statement of the nature of each assemblage was recorded. As an evaluation, the materials were not subjected to any high-magnification optical inspection, nor to any other form of instrumental analysis. The identifications of materials in this report are therefore necessarily limited and must be regarded as provisional.

Results

The material from c100 and c61 provides a good suite of materials associated with smithing. The tuyère from c100 is a small example of a tuyère with a non-circular cross-section. It is of fairly small size, which tends to be associated with early medieval examples rather than later.

The associated fine slag assemblage is mainly of small slag blebs which form within the fuel bed of the earth, as will the larger spheroids of the micro-residue assemblage. Other particles such as the spheroidal and flake hammerscale may be generated outside the hearth, but are commonly found with hearth deposits.

There is a small fragment of a smithing hearth cake with a thick dense basal crust/bowl in c61 together with examples of other less identifiable slag types.

The isolated slag find from c54 is of a dense slag, likely too to be from an SHC with a thick crust but this remains uncertain.

Flot residues from c71, c72,c76, c121 and c122 gave no evidence for metallurgical activity.

Interpretation

The assemblage from c100/c61 provides good evidence for iron working (smithing) using a technology that is most likely to be early medieval in age. It is therefore quite likely that the smithing was broadly contemporary with the other “fire-pits” which have yielded 9th-11th century 14C dates, but no direct evidence of metallurgical activities.

The deposits of c100/c61 are very likely to represent the remains of a degraded smithing hearth, but could possibly be a waste dump from a smithy. The hearth fines are not likely to have been far from their point of origin.

Evaluation of potential

The limited material from this site means that there is little potential for increased understanding of site activity or of metallurgical processes from further analysis of the residues.

site	*sample*	*context*	*weight*	*no*	*notes*
e2368	59	54	136	1	very dense burr-like piece, coarse grained, shows one prilly/dimpled surface and another appears to have ceramic contact.
e2368	61	61	76	3	probable tuyère sherds
			72	8	slag fragments with lobate form
			56	1	small fragment probably from a fairly thick crust SHC
			106	3	lining slags
			10	1	iron
			126	39	indeterminate fine slag debris
e2368	19	71		assm	stone, fired clay
e2368	20	72		assm	stone, clay
e2368	27	76		assm	stone, clay, BOM, no slag
e2368	32	100		assm	rich hammerscale assemblage, with spheroidal and flake hammerscale, slag flats, blebs and other slag fragments
e2368	60	100	304	1	large piece of face of a tuyère, block probably 140x180mm, hole oval 20x25mm,
			326	45	tiny scraps of various slags, all indeterminate, including lining slags and dense flowed blebs
e2368	46	121		assm	stone, fired clay
e2368	49	122		assm	stone and burnt clay?

Table 1: Summary Catalogue. Assm = flot residue assemblage

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