

Report on the metalworking remains from Portmarnock, Co. Dublin (19E0303)

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Introduction

During archaeological excavations ahead of construction works at Portmarnock, an Early Medieval double-ditched enclosure with associated features was uncovered. A small amount of waste from smithing activities (391g) was recovered from various ditch and recut fills, including smithing hearth cakes and a tuyere fragment. No feature could be identified as the smithing hearth, suggesting it could have been removed due to more recent activity.

Description of the materials

Fill C347, one of the secondary fills of inner enclosure ditch C5, yielded a weathered smithing hearth cake (275g) (Fig. 1) and a vitrified ceramic tuyere front fragment (Fig. 2). The tuyere fragment part of its blowhole preserved which could be estimated to have had an original diameter of c. 12mm. On its front face, the tuyere had slag adhering below the blowhole, part of its so-called 'slag beard'.

Single fragments of slag were also recovered from basal fill C381 and tertiary fill C438 of the same inner enclosure ditch. Radiocarbon analysis on a fragment of a yew bucket found at the base of ditch C5 returned a date broadly spanning the second half of the 7th century and the first half of the 8th century.

Basal fill C352 of recut C273 of ditch C5 yielded a well-formed smithing hearth cake (860g) (Fig. 3). A hazelnut shell from upper fill C341 within recut C273 returned a radiocarbon date ranging from the late 7th to the late 9th centuries.

Multiple samples of fine grained residues, from various fills within ditch C5, recut C273 as well as various internal features, were checked for hammerscale but all contained only naturally magnetic materials.

Conclusions

The metalworking at Portmarnock (19E0303) points to low-level blacksmithing activities carried out at the early stages of use of the enclosure and possibly continuing to its final stages. The blacksmithing, evidenced by slag fragments, smithing hearth cakes and a ceramic tuyere fragment (391g in total), is characteristic for Early Medieval forging. The lack of any hammerscale in the residue samples from fills which had magnetic materials means that the location of the hearth or hearths where the forging took place could not be identified and could have been removed due to later activity.

Limited forging in association with Early Medieval enclosures has been observed in several cases, with the site of Portmarnock, Station Road (6kg) (Rondelez 2018) as a very nearby example and others within the same county at Glebe (5.2kg) (Young 2003), Ballybane (780g) (Rondelez 2017) and Ballymakaile (531g) (Rondelez 2020). As it is unlikely that the occupants or users of these enclosures would not only have had the skills required but also the bellows and tools required for the task of blacksmithing, this small-scale smithing possibly points to the presence of itinerant smiths in Early Medieval times.

Bibliography

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Young T. 2003 *Metalworking residues from Glebe Ringfort, County Dublin (Site 43 00E0758)*. GeoArch Report 2003/06. Unpublished specialist report, the author.

Catalogue (non-metalworking material in italics)

Cut	Fill	Sample	Feature	Description	Weight (g)
4	92	24	Ditch	<i>[Soil sample] No magnetic or other metalworking material</i>	
5	87	42	Ditch	<i>[Soil sample] Very occasional magnetic natural stone fragments</i>	
5	93	293	Ditch	<i>[Soil sample] Some magnetic natural stone fragments</i>	
5	94	245	Ditch	<i>[Soil sample] Very occasional magnetic natural stone fragments</i>	
5	347	171	Ditch	Weathered and oxidised, rather dense flattened smithing hearth cake	275
5	347	171	Ditch	Ceramic tuyere front fragment with adhering slag ('slag beard') with partially preserved blow hole (original diameter c. 12mm)	59
5	359	180	Ditch	<i>[Soil sample] Occasional magnetic natural stone fragments</i>	
5	381	194	Ditch	Weathered flattish rather dense piece of slag with cavities after charcoal	46
5	438	290	Ditch	Weathered, irregular rather dense fragment of slag	11
100	102	31	Pit	<i>[Soil sample] Very occasional magnetic natural stone fragments</i>	
137	165	57	Pit	<i>[Soil sample] Very occasional magnetic natural stone fragments</i>	
213	214	85	Shallow cut	<i>[Soil sample] Some magnetic natural stone fragments</i>	
273	79	136	Ditch recut	<i>[Soil sample] Occasional magnetic natural stone fragments</i>	
273	274	134	Ditch recut	<i>[Soil sample] Occasional magnetic natural stone fragments</i>	

273	275	135	Ditch recut	[Soil sample] Very occasional magnetic natural stone fragments	
273	296	131	Ditch recut	[Soil sample] Very occasional magnetic natural stone fragments	
273	341	257	Ditch recut	[Soil sample] Some magnetic natural stone fragments	
273	346	199	Ditch recut	[Soil sample] Occasional magnetic natural stone fragments	
273	352	244	Ditch recut	Well formed, rather dense smithing hearth cake with a rather smooth base and an upstanding rim at the upper surface. Cavities after charcoal. Some adhering shell fragments are post-depositional (not related to ironworking)	860
273	352	173	Ditch recut	[Soil sample] Very occasional magnetic natural stone fragments	
273	396	282	Ditch recut	[Soil sample] Some magnetic natural stone fragments	
461	457	303	Pit	[Soil sample] Some magnetic natural stone fragments	

Figures



Fig. 1. Weathered smithing heart cake from fill C347 in ditch C5



Fig. 2. Ceramic tuyere fragment with partially preserved blowhole from fill C347 in ditch C5



Fig. 3. Smithing hearth cake with adhering shell fragments from fill C352 in ditch recut C273