

The metalworking remains at Termonfeckin, Co. Louth (17E0663)

Paul Rondelez

Independent Researcher

Macroom, Co. Cork

22 April 2018

Introduction

Archaeological excavations ahead of construction work in Termonfeckin, Co. Louth revealed a series of ditches and pits of late medieval date (Giacometti 2018). Several of these yielded metalworking waste (c. 18kg) consisting of ironworking slag and associated vitrified clay fragments. The waste, which included multiple smithing hearth cakes, is characteristic of secondary blacksmithing activities. The material was dumped away from the place of activity. The type of clay bellows protectors appears to be perforated hearth wall but with unusual characteristics. Perforated hearth walls were the preferred bellows protectors of the Anglo-Norman smith.

Description of the material

The vast majority (over 90%) of the metalworking waste was recovered from the two fills, C34 and C35, within ditch C36. Late medieval pottery was recovered from the fills of ditch C36 and radiocarbon analysis on a charred seed from fill C34 returned a 13th-century date.

The slag was mostly made up of smithing hearth cakes, the characteristic waste from iron smithing activities (Figs 1 and 2). Some of these cakes had more glassy material adhering to one side (Fig. 3). This material has a higher proportion of vitrified clay and indicates where the bellow protector would have been located (see below). The weight of these smithing hearth cakes varied between 0.107kg and 1.218kg with an average weight of 0.356g.

None of the vitrified clay material, which is related to the bellow protectors, consists of the curved edge fragments typically associated with tuyeres. On the contrary, one piece with the vitrification ending in a straight line would point to the bellow protectors consisting of a perforated hearth wall (Fig. 4). Two pieces strongly suggest vertical, 90° edges on both sides of the blow hole (Figs. 5 and 6). If this interpretation is correct, the hearth wall would have straight walls on either side which suggests a broadly box-shaped structure.

Further metalworking waste, both fragments of likely smithing hearth cakes and vitrified clay, was recovered from linear feature C11 running parallel to ditch C34 and ditches C31 and C53 located further to the south¹.

¹ The preliminary stratigraphic report (Jan 2018) mentions further metallurgical waste recovered from large pit C15, recovered during previous testing. This material was not available for study for this report.

Interpretation

The weight values of the Termonfeckin smithing hearth cakes are comparable with sites such as Nobber Bridge, Co. Meath (late 12th to 13th centuries), Killaspy, Co. Kilkenny (13th century) and The Parade (Phase I), Kilkenny (13th to 14th centuries) (Rondelez 2014: 184). As opposed to several other late medieval sites, these did not include the larger smithing hearth cakes, weighing up to several kilograms, which are interpreted as the waste of the processing of the iron bloom. The latter two of the sites mentioned above, and possibly all three, were related to a forge and the amount of material at Termonfeckin suggests the same. This forge was very likely located in close proximity to the excavated site.

There appears to be strong correlation between the type of bellow protectors used and the ethnicity of the smith, with native Irish smiths continuing to use the round-fronted clay tuyeres typical of early medieval Irish smithing while their Anglo-Norman counterparts preferred a perforated hearth wall, a design used nearly universally in late medieval England (Rondelez 2014: 194). The vitrified ceramic material at Termonfeckin points towards the use of perforated hearth wall as a bellows protector which would suggest that, perhaps unsurprisingly, the smith(s) at Termonfeckin were of Anglo-Norman ethnicity. The type of hearth wall, however, appears to be of an unusual box-shaped design.

Conclusions

The metalworking remains at Termonfeckin consist of the dumped waste from secondary blacksmithing which was likely carried out in a nearby forge. The clay bellow protectors appear to consist of perforated hearth wall, albeit of an unusual box-shape. Hearth wall bellow protectors suggest an Anglo-Norman ethnicity of the smith or smiths.

Bibliography

Giacometti A. 2018 *Termonfeckin Preliminary Stratigraphic Report – 17E663*. Unpublished Preliminary Report, Archaeoplan Ltd.

Rondelez P. 2014 *Ironworking in late medieval Ireland, c. AD. 1200 to 1600*. Unpublished Doctoral Thesis, University College Cork.

Figures



Fig. 1. Round smithing hearth cake with upstanding rim (fill C33 from ditch C34).

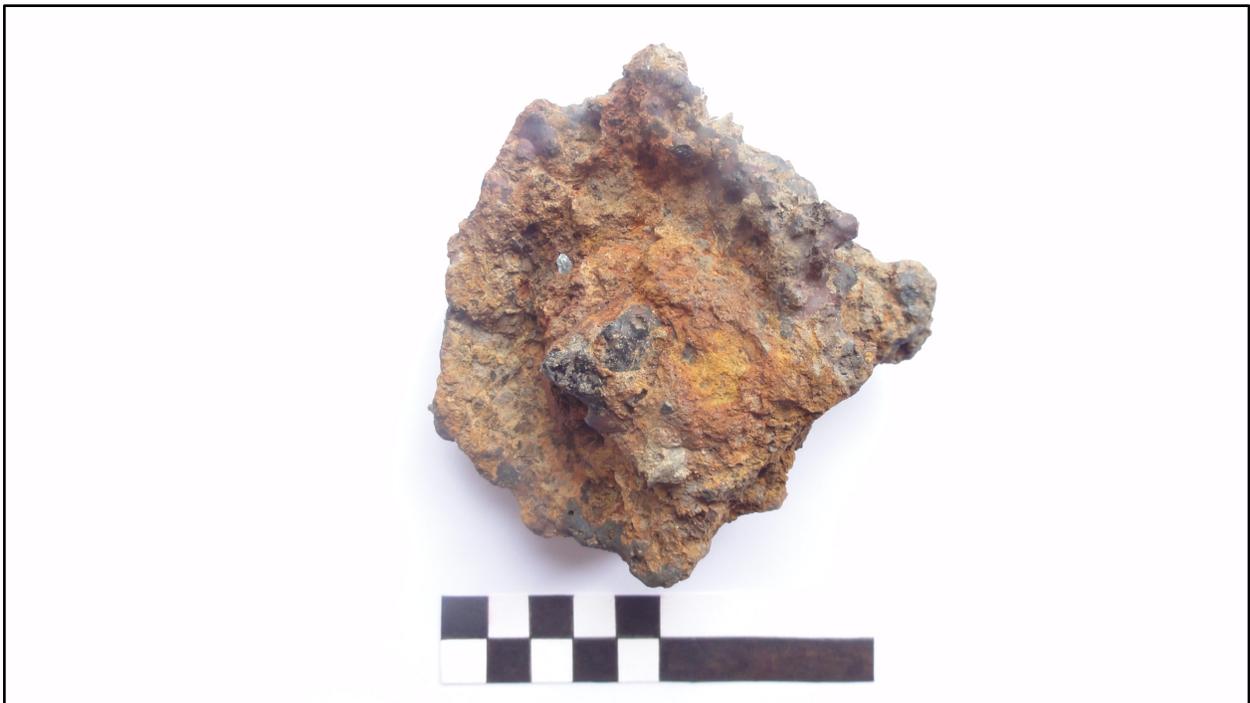


Fig. 2. Small round smithing hearth cake with iron-rich interior and flake hammerscale adhering near the center (fill C33 from ditch C34).



Fig. 3. Elongated smithing hearth cake with strong vitrification on one end (fill C33 from ditch C34).

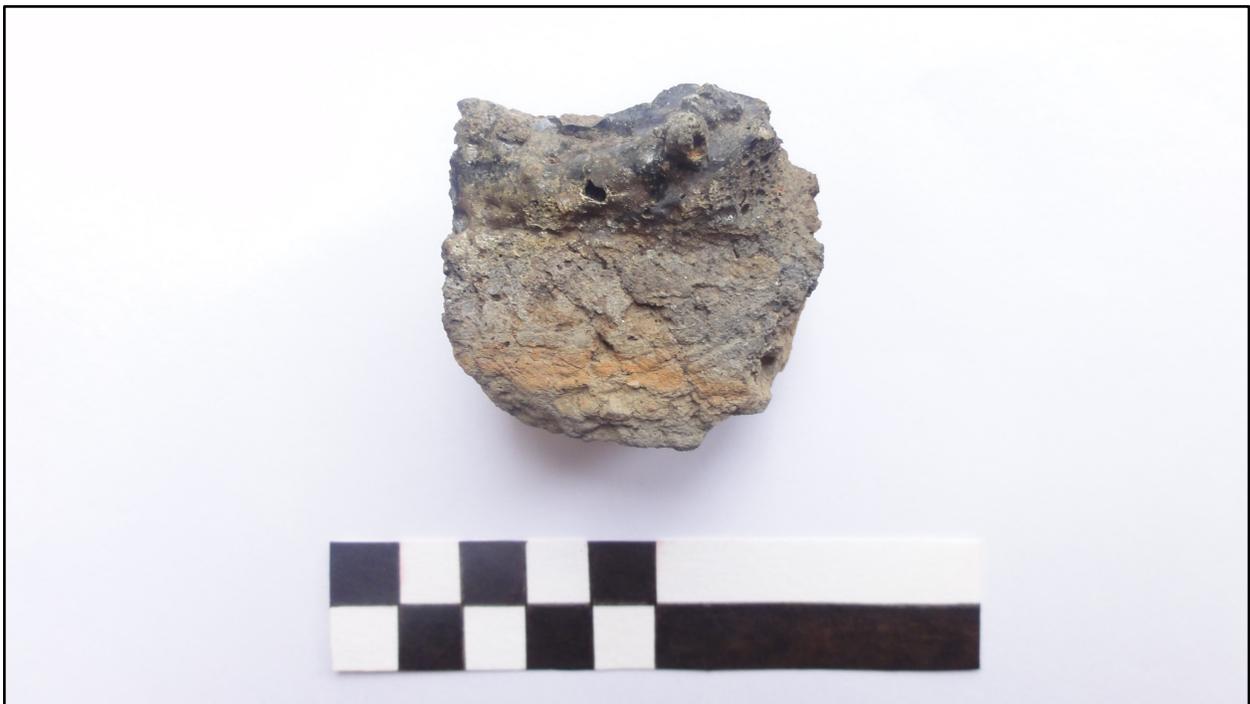


Fig. 4. Fire-hardened clay with vitrification covering the upper half (fill C33 from ditch C34).



Fig. 5. Vitrified clay material with vertical edge on the left side (fill C33 from ditch C34).

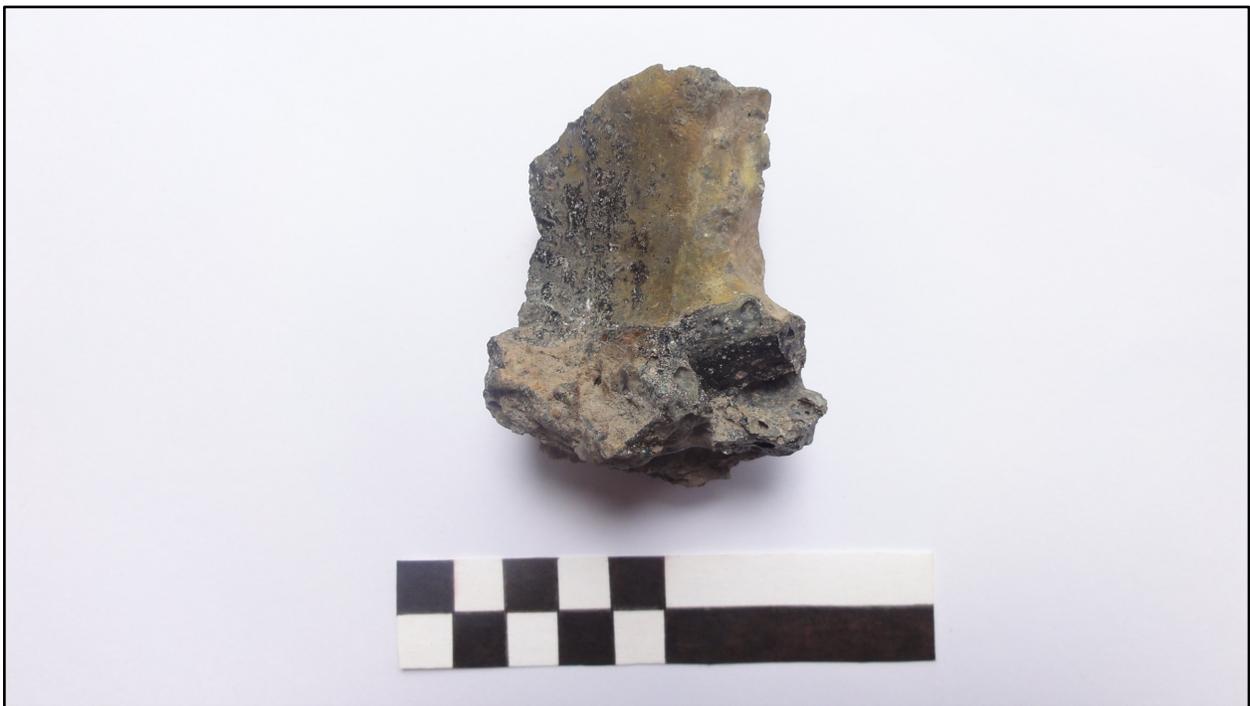


Fig. 6. Vitrified clay material with vertical edge on the right side (fill C33 from ditch C34).

Catalogue (non-metalworking waste in italics)

Cut	Fill	Feature type	Description	Weight (g)
11	12	Ditch	Four fragments (two fitting) of dense to rather dense slag. Likely smithing hearth cake.	182
31	57	Ditch	Two weathered pieces of vitrified clay material	34
31	57	<i>Ditch</i>	<i>Lump of oxidized iron, probably a heavily weathered iron object</i>	43
31	59	<i>Ditch</i>	<i>Large iron-rich stone. Natural</i>	
33	34	Ditch	Oval, rather dense SCH. Has two largish stones embedded in its side. Both top and base are rather irregular. One end of the upper side shows greyish, more fluid slag, undoubtedly influenced by the clay bellows protector	1218
33	34	Ditch	Nearly circular, rather dense SHC. Rusty lower side and slightly convex upper surface. More fluid on one side indicates the location of the clay bellows protector	1012
33	34	Ditch	Very well formed, rather dense SCH with rather smooth base and concave upper side showing a rim of slag. Inside the rim is a larger area of fluid slag and a smaller patch of rusty material	999
33	34	Ditch	Oval, rather dense SHC. Rather flat, rusty lower surface with inclusion of a large stone. Upper surface is flat and mostly smooth	784
33	34	Ditch	Irregular lumpy, rather dense SHC. On more parts encrusted with rusty material with frequent inclusions of small stones.	670
33	34	Ditch	Fractured irregular, rather dense SHC. Irregular upper and lower surfaces with rusty patches. Interior has frequent entrapped air cavities	574

33	34	Ditch	Elongated, irregular, rather light SHC. Rather smooth lower surface. Upper surface is irregular with vitrification at one end indicating the location of the clay bellows protectors.	533
33	34	Ditch	Small, dense oval SHC. Lower surface is rather smooth and rusty. Upper surface is irregular with upstanding rims in places. The concave middle part is rusty and shows frequent charcoal impressions	445
33	34	Ditch	Rounded, dense SHC. Smooth lower surface with substantial protrusion. Upper surface has upstanding rims. Concave part is rusty and has a largish rusty lump at one end. A piece of flake hammerscale is embedded within the rusty part	436
33	34	Ditch	Very irregular, rather dense SHC. Lower part is nearly tapered into a point and shows frequent charcoal impressions. Upper surface is rusty and irregular	420
33	34	Ditch	Thin, irregular, rather dense SHC with smoothish upper and lower surfaces	391
33	34	Ditch	Flat, rather dense SHC with rather large rusty limp adhering to its base. The upper surface has a runny texture and part of it vitrified, indicating the location of the clay bellows protectors	380
33	34	Ditch	Partial (c. 60%) of a dense rounded SHC. Lower surface is irregular. Upper surface is nearly flat with rusty patches. Interior is free of air bubbles.	379
33	34	Ditch	Irregular, rather dense SHC. Appears to be a small round SHC with a large rusty lump attached to its upper surface	293
33	34	Ditch	Small rounded and dense SHC. Irregular lower surface and a layer of highly vitrified slag overlying the upper surface	286
33	34	Ditch	Dense, rusty-coloured SHC. Irregular lower surface and smooth upper surface	274

33	34	Ditch	Partial (c. 80%) of concave/convex, rather dense SHC. Smoothish lower and upper surfaces	274
33	34	Ditch	Irregular, rusty SHC with charcoal particles embedded in its surface	268
33	34	Ditch	Partial (c. 85%) dense irregular bun-shaped SHC. Interior has occasional air bubbles	263
33	34	Ditch	Partial (c. 40%?) dense SHC. Smooth upper and lower surfaces. Interior is free of air bubbles	256
33	34	Ditch	Semi-circular, rather dense SHC. Smoothish lower and upper surfaces. Upper surface is maroon-coloured and shows flow structure	238
33	34	Ditch	Irregular, rather light SHC. Partially vitrified upper surface	236
33	34	Ditch	Small, roundish irregular SHC. Nearly half of the upper surface is vitrified, most likely due to presence of clay bellows protectors	221
33	34	Ditch	Small irregular, rather dense SHC. Irregular upper and lower surfaces which are 'split' at one end, surrounding a large cavity	220
33	34	Ditch	Rusty, irregular bun-shaped and rather dense SHC	219
33	34	Ditch	Small dense SHC with blob of vitrified material adhering to upper surface	198
33	34	Ditch	Partial (c. 80%) rather dense, concave/convex SHC. Upper surface is smooth and maroon-coloured	181
33	34	Ditch	Irregular, rather light SHC. Upper surface shows some flow structure	181
33	34	Ditch	Small, dense SHC with upper surface smooth and mostly maroon-coloured	163
33	34	Ditch	Partial (c. 40%) dense rounded SHC. Upper surface is partially vitrified, partially rusty.	157
33	34	Ditch	Partial (c. 60%) rusty, rather light, concave/convex SHC	153

33	34	Ditch	Rather light, irregular SHC with highly vitrified upper surface	146
33	34	Ditch	Small bun-shaped rather light SHC	124
33	34	Ditch	Irregular, rather light SHC with rusty and maroon-coloured surface areas	123
33	34	Ditch	Partial (c. 50%) rather dense, rusty coloured SHC	122
33	34	Ditch	Small, rather dense, irregular SHC	114
33	34	Ditch	Broadly triangular, rather light SHC. Lower surface has slight flow structure, while upper surface is highly vitrified	107
33	34	Ditch	Forty+ pieces of slag. Mostly small or partial SHCs	4323
33	34	Ditch	Twenty-two pieces (two fitting) of vitrified clay material. xxx	684
33	35	Ditch	Six pieces (two fitting) of rather light slag, some forming flattish cakes	299
53	54	Ditch	Two small pieces of rather dense slag	30
Total weight of metalworking waste				18111