

Report on the metalworking features at  
Matthewstown, Fenor, Co. Waterford (12E0140)

## Description and interpretation of the residues

During excavation ahead of construction at Matthewstown, Fenor, Co. Waterford, a single feature containing metalworking residues was encountered. This consisted of an isolated small pit (024) with steep edges, measuring 0.3m diameter and 0.12m deep.

This feature contained just under 5kg of slag of two different types. One type has solidified vertically as drippy fragments (Fig. 1) with some pieces showing right-angled imprints. The other slag consists of more friable material with some drippy or globular part and with inclusions of fragments of heat-affected clay (Fig. 2).

A piece of organic material from the fill of the feature returned a radiocarbon date ranging from the middle of the first century BC to the late first century AD (95.4% confidence).

The remains are consistent with the most common type of early Irish iron smelting furnaces: the slag-pit furnace (Rondelez 2018). This type of furnace consists of a pit above which a clay shaft was constructed. The pit was filled with organic material, generally pieces of split timber, and the shaft with iron ore and charcoal. During smelting, the bloom of iron formed at the base of the shaft while the slag descended into the underlying pit, replacing or solidifying around the organic material. Directly under the bloom, the slag formed a so-called furnace cake which is generally friable material and often does not survive. The inclusions of heat-affected clay in the Fenor material are undoubtedly furnace wall fragments.

While around the turn of the millennium, Irish slag-pit furnaces are commonly found in pairs, isolated examples are still encountered, such as at Tinvaun 2, Co. Kilkenny (Kyle and Coghlan 2012) and Ballynamona 2, Co. Cork (Hegarty 2011).

There is no evidence as to which type of iron ore was used. The amount of iron produced can only be very roughly estimated as several factors would be in play but would be have conceivably been a few kilograms.

## Conclusions

The metalworking feature uncovered at Fenor consists of the remains of a slag-pit furnace used in the first century BC or AD. It was used only once and would have provided a limited amount of iron to the smelter.

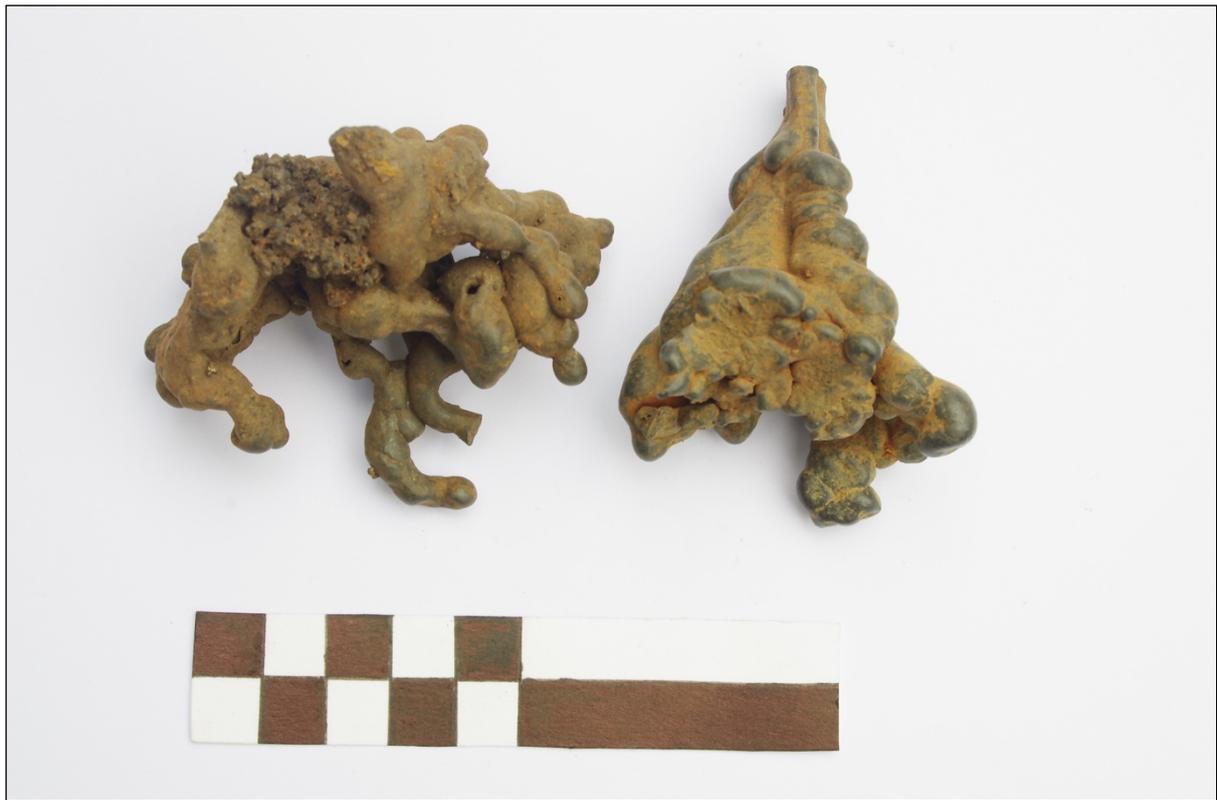
## Bibliography

Hegarty L. 2011 Archaeological Excavation Report E2429 - Ballynamona 2, Co. Cork. *Eachtra Journal*, Issue 10

Kyle J. and Coghlan T. 2012 *Final excavation Report. Tinvaun 2, Co. Tipperary (E3680)*. Unpublished excavation report, Irish Archaeological Consultancy.

Rondelez P. 2018 The Irish bowl furnace: origin, history and demise. *Journal of Irish Archaeology*, XXVI: 101-116.

Figures



*Fig. 1. Vertically solidified slag from furnace pit (024)*



*Fig. 2. Friable furnace cake with inclusions of heat-affected clay (024)*