

Interpretation of an iron-rich deposit  
found in a burnt mound trough  
at Coolroe, Co. Mayo (98E0389)

Dr. Paul Rondelez  
Independent researcher  
Wood House, Knocknamuck  
Mitchelstown, Co. Cork

12 January 2015

## Description of the material

During an archaeological intervention ahead of the construction of sewerage infrastructure, three burnt mounds were uncovered in the townland of Coolroe, Co. Mayo (Gillespie 2012). At the centre of the base of the through of one of these burnt mounds a deposit of grainy iron-rich material was found (*ibid.*: 7). This deposit was oval in plan and measured 0.34m by 0.38m and was 0.18m thick (*ibid.*: 13). Some of the material was subjected to XRF analysis (Cahill 2012). The type of analysis, however, only concentrated on the metallic elements and does not give absolute quantitative values. The only relevant conclusion from the analysis data is that manganese occurred at low levels compared to iron. Radiocarbon analysis of a sample of mixed organic material from the mound connected to the same through returned a date 3309-2571 cal. BC (Gillespie 2012: 44). Regrettably the material itself could not be visually inspected.

## Interpretation

The deposit was thus made up of grainy, iron-rich material and was likely confined by some kind of container (*ibid.*: 13). Its central location within the trough points to a likely relation with the hot-water technology carried out within that through.

As stated in the report, due to the early date of the burnt mound activity a connection with ironworking is unlikely (*ibid.*: 38). Interpretations offered were that the material represents ochre, either for removing tannin from acorns and other nuts and using the tannin in leather working, or used as a pigment for colouring. The first suggestion appears to be a non-compatible combination of two processes. Tannin is indeed known to be leached from acorns by mixing the meal of the latter with iron-rich compounds, but this served the purpose of making the acorns more palatable. The tannin is hereby neutralised and so it cannot have been used in further processes. As there is no hot-water technology associated with tannin removal from acorns and other nuts, this suggestion is unlikely. Ochre used as a pigment occurs in nature, and on archaeological sites, as brightly coloured lumps of material which are highly stable and as such do not conform with the grainy, rust-coloured deposit in question.

A different interpretation is here suggested. Bog ore is known to mineralize from both organic and inorganic substrates. Nineteenth-century naturalists often recorded different types of organic material which had mineralized into bog ore varying from different parts of grasses, including the 'fruits' (Hitchcock 1833: 123) to leaves, twigs, branches and even whole trunks of trees (Parkinson 1833: 384–386). Field workers in Irish archaeology will also be familiar with the small flat ring-

shaped, iron-rich pieces often encountered on the wetter excavations. On site these are sometimes interpreted as artefacts, while in fact they represent fragments of reed stems mineralized into bog ore.

That bog ore can form at a speed which would allow for the Coolroe material to be interpreted as such is shown by the large amount of secondarily formed bog ore on iron production waste recovered at the early Medieval site of Clonfad, Co. Westmeath (Young 2008: 11–12). No less than 2.5 ton out of c. 4 ton of material appeared to consist of bog ore formed after the deposition of the ironworking slag. Other deposits of bog ore-like material were observed on the Coolroe site, for example within one of the other mounds which was of younger date, showing that the site was not only conducive to its formation but also that this happened since the burnt mound activity (Gillespie 2012: 44, 47)

## Conclusions

It is suggested here that the iron-rich material from the burnt mound through at Coolroe, Co. Mayo is possibly organic material mineralized to bog ore. This organic material would originally have been situated within some kind of container, possibly a bucket. Because of its apparent prominence within this through, a functional relationship with the burnt mound activity is likely. For this reason, it would be important to subject the iron-rich material in question to visual examination to determine if any traces of the original likely vegetable organisms are preserved. This could provide rare clues to the function of the hot water technology practised at Coolroe.

## Sources

- Cahill M. 2012 Appendix VI: XRF analysis of the iron rich deposit. In Gillespie R. (ed.). *Claremorris Sewerage Scheme. Excavation at Coolroe, County Mayo*. Unpublished Final Excavation Report, Mayo County Council:83–84.
- Gillespie R. 2012 *Claremorris Sewerage Scheme. Excavation at Coolroe, County Mayo*. Unpublished Final Excavation Report, Mayo County Council.
- Hitchcock E. 1833 *Report on the Geology, Mineralogy, Botany, and Zoology of the Massachusetts*. Amherst, J. S. and C. Adams.
- Parkinson J. 1833 *Organic remains of a former world*. London, M. A. Nattali.
- Young T. 2008 *Archaeometallurgical residues from Clonfad 3, Co. Westmeath (A001: 036 E2723)*. (=GeoArch Report 2008/17). Unpublished Specialist Report, GeoArch Ltd.