

## Metallurgical residues and associated material from Lower Slaughter

### Summary

This is a small collection of material, but one which includes unabraded residues, suggesting metallurgical activity nearby. None of the fragments is entirely diagnostic of the metal being worked. The material from 130 is probably from iron working, as is that from 272. The hearth lining from 380 would be compatible with derivation from a smithing hearth, but is not demonstrably of this origin.

### Catalogue

#### *130 <4> labelled "slag" Ditch S (phase 2)*

This is a collection of tiny fragments of a dark, crystalline vesicular slag. The fragments include material which is highly magnetic. Although the surviving fragments are small they are suggestive of a hearth slag from an iron working (probably smithing) hearth.

#### *380 labelled "crucible?", Ditch F (phase 2)*

This piece represents an exceptionally heavily vitrified piece of siliceous ceramic material. The oxidised fabric, extremely quartz-rich unvitified material and the highly irregular glazed surface indicate that it is a fragment of hearth/furnace lining. The degree of vitrification probably indicates an origin close to the blowhole or tuyère.

The piece has an "S" shaped profile along its long axis. The convex part of the curve is abrupt, forming an angle of about 70°. A plausible explanation for this shape is the abrupt inturn represents the upper margin of the blowhole, with the concave part of the "S" corresponding to the zone of attrition of the hearth wall above the blowhole (where the hearth hotzone impinges on the wall; see Crew 1991 for an example in a smelting furnace).

The vitrified zone has an inner face which comprises a superficial skim of partially crystallised black to green glass. The vitrified zone varies from 6-16mm in thickness. Where thickest, the zone can be seen to be in two layers, divided by a thin lamina of greenish fuel ash slag. Locally both the superficial glass and the inner green glass layer show patches of glass of a pale buff colour. Whether this surface indicates a repair, or the sloughing of partially molten lining down the wall, is not clear. The majority of the vitrified layer, below the superficial glass, is mid-grey in colour, but there is a second black layer at the junction with the unvitified wall material – suggesting that the vitrified layer represents, at least in part, the fluid ash-fluxed lining soaking in to the porous, siliceous hearth wall.

The wall material is dominated by reddened fine quartz sand, and there appears to be relatively little clay in the fabric. There are no other inclusions. The vitrified section of the wall is vesicular.

The wall bears the imprint of contact with a piece of charcoal, just above the putative blowhole position.

#### *039 labelled "cinder/slag" (phase 3)*

This specimen is piece of coked coal.

#### *272 labelled "slag" Ditch O (phase 5)*

This specimen is of a rather contorted dark glassy slag. The glass varies from almost black to a bluish-green, probably reflecting a variable influence from the fuel ash which has fluxed the hearth lining.

### Reference

CREW, P. 1991. The experimental production of prehistoric bar iron. *Historical Metallurgy*, **25**, 21-36.