

Evaluation of slags from Lodge Wood Camp, Caerleon, Gwent

Dr T.P. Young

Abstract

This small assemblage of slag comprises three pieces which are certainly blacksmithing slags and one piece which is probably so. All of the slags show evidence for the use of charcoal as fuel. Such slags are not indicative of age, with charcoal-fuelled blacksmithing in clay-lined hearths being the dominant smithing process until the industrial period. The small size of the assemblage and the relatively large size of the slag pieces suggests that the smithing was taking place elsewhere on the site.

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Description

1. [010] adjacent to F26.

Medium-sized plano-convex slag cake, weighing 475g and measuring 105 x 80 x 53mm deep. The upper surface shows an irregular surface, but with a smooth zone proximally. The lower surface is irregular proximally, with accreted grains derived from hearth wall. Distally the lower surface is smoother, with impressions of fine organic remains, suggestive of original fire kindling. There is no well-developed proximal burr (attachment area to hearth wall below blowhole), but a small attached lump of wall and the location of the smooth patch on the upper surface suggests that the cake may have grown somewhat obliquely to wall.

The slag cake has been sectioned along its long axis. The section reveals a very porous internal structure, with voids created by charcoal inclusions. The only dense, non-vesicular, slags form a thin (up to 5mm) layer extending out from below the smooth zone on the upper surface.

2. [028], F11, <0161>

Four pieces of material, two of which are natural stones.

The smaller piece of slag is of a sheet-like form, rectangular, 45 x 55 x up to 15mm thick and weighs 70g. One of the long sides shows a fracture surface and is of a twisted appearance. This might imply this is the side of attachment to the furnace wall, or that the piece has broken off from a larger slag block when still hot and plastic. The upper surface is smooth but

irregularly and finely lobate, with some impressed charcoal. The lower surface is more coarsely lobate, with charcoal impressions and some charcoal.

The larger slag piece is a D-shaped piece of slag cake, 105 wide x 85 wide x 40 deep, weighing 385g. The straight side represents a fracture, and is approximately 80mm long. The cake is concavo-convex, having a raised outer lip around the upper surface. The upper surface is bearing impressions and fragments of rather fine charcoal (up to 15mm). The lower surface is mainly coated in adhering sediment/lining, but shows some fine elongate organic material, probably the kindling. The piece was sectioned approximately along its proximal-distal axis. The section a uniform highly vesicular slag with abundant inclusions of charcoal.

3. [038], <122>

Small slag cake with an almost hemispherical shape, 70 x 65 x 35mm deep, weighing 185g. Upper surface smooth, with greenish glass superficially at one end, extending over margin of upper surface and 15mm down the side of the cake (proximally?). Lower surface irregular, but some patches are smoothly and finely lobate around small charcoal impressions. One side shows 13 x 20mm area of attachment to a piece of sandstone. It is not clear whether this is a small pebble, or a small attachment to a larger piece.

The slag cake has been sectioned along its long axis. The section reveals a two-layer structure, with an upper, largely non-vesicular, layer up to 15mm thick, and a lower layer with vesicles, often elongated in vertical direction, 20mm thick.

Discussion

The assemblage is very small, merely indicating the presence of iron-working in the general area, rather than particularly close to the findspot. All the slags are compatible with blacksmithing. Three of the four are varieties of plano-convex smithing hearth cakes; the fourth is possible a piece of a small cake. The weights of the three fairly complete cakes (185, 385 and 475g) fall within the range of typical blacksmithing slag cakes (Crew 1996 gave the range of typical smithing cakes as 200-500g within an overall range of 100 to 2000g).

The internal structure of the cakes is generally rather vesicular, with two examples showing evidence for a slightly denser slag pool on top. This may be evidence that the hearths were being employed for general purpose smithing, rather than, for instance, intense prolonged fire welding.

References

Crew, P. 1996. *Bloom refining and smithing, slags and other residues*. Historical Metallurgy Datasheet No. 6.