AML Rpt 2849
copy sent Anne; JB

Marc 3 - Various technological bits and pieces

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785256 A calcareous Mortar/Daub

785257 A blob of copper alloy c. 1cm long, with a yellow powdery surface.

785258 A laminar, glassy lump which has been much erroded.
Mode of formation unknown.

785259 Crucible fragment showing signs of heating on both inner and outer surfaces - the outer surface has a thin vesicular layer with traces of fuel ash 'glazing' while the inner surface appears a purplish-red colour; this is often seen in cr ucibles that have been heated fairly strongly. The crucible was 18mm thick. There is no evidence to suggest what wa s heated in it.

785260 Fragments of a crucible. Reconstructable parts included a rounded base and two rim sections including a pouring lip. The longer rim section suggests a triangular rather than circular shape for the crucible. The outside is extensively vitrified but to a varying extent, one side being far more deeply affected than the other. There are two corroded blobs of metal in the vitrified surface of the crucible, a small one just below the rim inside and a larger one on the outside nea r the bottom. The larger blob was analysed with the Milliprobe (XRF spectrometer); only copper and tin were detected suggesting the metal melted in the crucible was bronze.

785261 Fired clay with a funnel-shaped channel in an irregular surface. It is unlikely to be a resevoir for a casting mould or even part of a mould as it is too irregular. It is probably part of a larger baked clay structure.

785262 Large chalk bar-mould with two parallel channels of trapezoid cross-section. Both splay out at one end as though to make a resevoir, but this would assume it was part of a two-piece mould ~~wh~~ for which there is no other evidence. There is no trace of metal in the channels but all the surfaces (channels and raised areas each side) are blackened. Max. length of the chalk block was 170mm.

785263 The cob/daub was mainly acid soluble. It had a very inhomogeneous texture. The attached charcoal was oak.

785264 Similar to 785263.

785265 Possibly modern concrete type conglomerate.

785266 Carboniferous shale coke ?

785267 As 785266

785268 Lump of iron. Prof. Tylecote has examined this and his report is attached.

A piece of steel from MARC 3 Site R382 A.M.No. 785268

This is an irregular lump of steel weighing about 160 g. It doesn't show signs of being cut-off anything. Its carbon content varies from 0.4 to 0.7% C, and the hardness from 162 to 193 HV. It has a widmanstätten structure and the pearlite is lamellar-to-spheroidal. Thus, it has been cooled fairly rapidly (probably in air) from a high temperature, and fairly slowly through the 700 - 600°C region. It must have a low phosphorus content.

Some areas of this material have a potential hardness, with correct heat treatment, of up to 900 HV. At the same time, it contains a good deal of slag ans has no distinctive 'modern' attributes. From its heterogeneity it could be accepted as dating from a period up to 1500 AD.

R.F. Tylecote
17.12.78.