

Technological finds from Christon, Avon

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The finds came from excavations of an early/middle iron age site and comprise one crucible fragment and a number of pieces of slag. The slag is quite varied with several different types represented. A brief guide to the identification of this type of material is given by Bayley (1985). The total weight of material examined was about 800 gm.

Fuel ash slags which form when silicate-rich materials such as clays are strongly heated in contact with the ash in a fire, form the major part of this group. Their production is accidental and does not necessarily indicate a technological process though they are often found in association with metal working residues. The slag from XXI is somewhat denser than the rest of the fuel ash slags but this is just because it is more highly vitrified, probably because it was raised to a slightly higher temperature.

A number of contexts (see list below) produced pieces of slag that were far denser as they contained a considerable proportion of iron. These iron silicate slags indicate iron working of some sort; either smelting ores or smithing the resulting metal to produce iron objects. Most of the pieces were very small but that from XII was about half of a plano-convex 'bun' of slag that had collected at the bottom of a hearth; it was about 9 cm in diameter and 4 cm thick. Seen as hand specimens it is not possible to say whether these pieces of slag were produced in a smithing hearth or in a non-tapping smelting furnace. More detailed scientific examination might be able to throw some light on this problem.

The final type of slag identified was hearth lining, the clay lining of a hearth that has become vitrified on one surface from contact with the fire. The process that was carried out in the hearth cannot be identified from these pieces.

In with the slag was one piece (from XIX) which was actually an almost totally vitrified ceramic with traces of

copper alloy on its inner surface. It is difficult to be sure exactly what use this piece had but it is possible that it was the in-gate portion of a mould or perhaps even part of a tuyere. The metal deposit was analysed by energy dispersive X-ray fluorescence (XRF) and major amounts of copper and tin were detected together with traces of lead. The metal was bronze.

The crucible fragment was from a thick-walled, flat-bottomed vessel which had been heated from above. The walls were of variable thickness, ranging from 10-16 mm. The outer parts of the walls were oxidised fired while the inner surface was vitrified and the adjacent clay reduced fired. On the inner surface was a copper-rich deposit which was analysed by XRF; major amounts of copper, tin and lead were detected. This type of crucible is not the typical iron age form, which is triangular in plan with a pointed base, but has parallels in the late bronze age when heavily leaded bronzes were also commonly used. This is not surprising as typical iron age crucibles such as those from Gussage All Saints (Spratling 1979, 132) or Meare (Bullied and Grey 1953, 255f) all date to the last two centuries BC or the first century AD and so are not contemporary with this find. Parallels for this fragment include finds from Dainton (Needham 1980, 184f) and Mucking (Bayley 1980).

#### Contexts producing fuel ash slag

XLVIII  
XXVIII  
XXV  
XXXVII  
XLI  
XXI  
XII

#### Contexts producing iron slag

XII  
XXXVII  
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XLIV

## Contexts producing hearth lining

XLI

XLVII

## References

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