

Ancient Monuments Laboratory
Report 150/88

CRUCIBLES FROM YEAVINGER,
NORTHUMBERLAND.

Justine Bayley

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Summary

Metal-rich deposits on 13 crucible sherds were analysed qualitatively by XRF. They are probably Anglo-Saxon in date.

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A total of 13 crucible fragments were examined and their surfaces analysed qualitatively by X-ray fluorescence (XRF) in an attempt to identify the metals that were melted in them.

They were made of a variety of different fabrics, some fine and others coarser, but all were quite refractory and had withstood the high temperatures well though all showed some vitrification of the outer surface. The sherds varied in thickness from 4 to 11 mm suggesting a range of vessel sizes though none of them were large enough to allow reconstruction of a profile.

The thinner-walled sherds must be from fairly small crucibles (with a diameter of the order of 50 mm) as they would not have been strong enough to hold the large weight of metal in a bigger vessel. Their curvatures however tend to suggest larger diameters and this, together with the variable curvature of some of the sherds, indicates a non-circular form. One possibility is the half-pear shape known among the crucibles from Dinas Powys (Alcock 1963), Dunadd (Craw 1929-30, Bayley 1984) and Hartlepool (Bayley 1987). These crucibles are normally lidded but none of the Yeaving sherds were from lids so this form should be considered as possible though not proven.

The thicker-walled sherds (large sherd in Bag 18B and Bag 77A) would have come from a different form of crucible, perhaps a thumb-pot. The very thick sherd (Bag 67) is quite different from the rest and may not be contemporary. Though no forms can be positively identified, the Yeaving crucible sherds are more likely to be Anglo-Saxon in date than either earlier or later. The only piece which is unexpected in a group of this date is that in Bag 67 which is obviously from a relatively large crucible. On its own I would place it as either Roman or medieval though the thin-walled crucibles are unlikely to belong to either of these periods.

The red colouration of many of the vitrified surfaces shows the presence of copper though this need not have been a major constituent of the metal being melted. However, visual examination and analysis failed to detect any precious metals (gold or silver) so the metals melted were most probably copper alloys. The XRF analyses were disappointing as only very low levels of metals survived on most of the crucibles, enough to confirm they had been used but not enough to permit the identification of specific alloys. Copper was universally detected and in one crucible (Bag 7A) tin was also detected so bronze (copper + tin) was probably being melted while in two others (thin sherd in Bag 18B and Bag 66A) the higher than normal zinc levels suggest the metal may have been a brass (copper +

zinc). The generally low levels of zinc and lead, which are often over-represented in crucible deposits, suggest they were not major components of the metals melted.

Catalogue

Bag No	Sherd description [thickness in mm]
5A	body sherd [6]
7A	body sherd [5-6]
17A	body sherd [4] rim sherd, possibly unused [4] 3 fragments of fired clay (not crucibles)
18B	body sherd [7] rim sherd [4]
21A	body sherd [4]
38A	body sherd [4-7]
66A	body sherd [6] lump of fuel ash slag, ? with included crucible sherd
67	body sherd [11-15]
77A	2 joining body sherds [8]
107A	body sherd [4]

References

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- Bayley, J (1984) Crucibles and clay moulds from Dunadd, Argyll. Ancient Monuments Lab Report No 4237.
- Bayley, J (1987) Crucibles and moulds from Church Close, Hartlepock, Cleveland. Ancient Monuments Lab Report No 157/87.
- Craw, J H (1929-30) Excavations at Dunadd and at other sites on the Poltalloch Estates, Argyll. *Proc Soc Antiq Scot*, 64, 111-146.