

Ancient Monuments Laboratory
Report 6/86

COPPER ALLOY WASTE FROM THE GREEN ,
NORTHAMPTON .

Justine Bayley

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Summary

Nine pieces of waste were analysed qualitatively by XRF and some were shown to be bell metal, including one piece adhering to a cope fragment of bell mould. Most of the material was late medieval (1350 - 1500) in date.

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The finds submitted for examination and analysis are listed below together with individual notes and comments. Most are late medieval (1350-1500) in date.

Finds No

- | | |
|-----|--|
| 91 | Copper alloy waste; ? offcut from the end of a bar |
| 95 | Copper alloy waste; spill of molten metal |
| 100 | Copper alloy waste; spill of molten metal |
| 102 | Copper alloy; ? corrosion products on lump of earth |
| 119 | Copper alloy waste; ? spilt molten metal |
| 121 | Copper alloy waste; droplet |
| 129 | Copper alloy waste; ? droplets |
| 134 | Copper impregnated ?? organic material |
| 138 | Copper alloy fragments |
| 143 | Copper alloy waste; ? spilt molten metal |
| 144 | Copper alloy waste; metal adhering to a rim piece of a bell mould (cope). The metal has run between the two halves of the mould which cannot have been sufficiently well luted together. |

Most of the pieces were analysed qualitatively by energy dispersive X-ray fluorescence. The elements detected in each piece are listed below. Those elements appearing in brackets were not significant components of the alloy.

- | | |
|-----|---------------------------------|
| 91 | copper tin (lead antimony) |
| 95 | copper lead |
| 100 | copper tin (zinc lead antimony) |
| 119 | copper lead (tin zinc antimony) |
| 121 | copper (lead zinc) |
| 129 | copper tin (lead) |
| 138 | copper tin (lead) |
| 143 | copper tin (lead) |
| 144 | copper tin (lead) |

Both its context and composition suggest 144 is bell metal, ie high tin bronze. Some of the other samples may also be waste metal from the same process. Those containing significant amounts of lead, 95 and 119, are not suitable for making bells. The zinc and antimony are only present in trace amounts, probably a percent at most in the metal.