

HBMC5 LAB(1T)1184

Ancient Monuments Lab. Report No 4465

Examination and analysis of small finds from Corbridge, Northumberland

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February 1985

A group of brooches from the site were analysed qualitatively by X-ray fluorescence (XRF). The results are given in the table below. The enamel decoration on a number of the brooches and on some other objects was examined in an attempt to define the colours originally used.

Description of enamels

- 822051 Finger ring with enamelled lozenge, originally green or turquoise. The spots are reserved metal.
- 822057 Seal box lid with two enamel fields; the outer one red, the other probably turquoise.
- 822108 Brooch with enamelled pelta on bow. This is now dark olive, not its original colour. In addition there is applied silver in the form of repousse foils soldered in place. There was a silver strip down the centre of the foot with spots each side, as well as a spot and band on the disc higher up the bow.

- 822113 Handle with rectangular panel of blue and white enamel. The pattern cannot be identified with certainty as the enamel is badly decayed but it was possibly a degenerate millefiori chequerboard.
- 822120 Rectangular plate with 4 x 10 blocks of millefiori of two patterns which alternate. One pattern is a 5 x 5 chequerboard of yellow (at the corners) and "black" and the other plain turquoise.
- 822128 Fantail brooch with enamel on the foot and the bow. The former is three red lozenges with flanking white triangles while the latter is a central red spot with a surrounding ring which now looks greenish but may originally have been white.
- 831185 Knee brooch with crescent-shaped field on head-plate which once contained enamel though none now survives. There is a band of tinning down the centre of the bow and tinned spots down its edges. These probably originally held silver foils in position (cf 822108).
- 831211 Fantail brooch similar to 822128. Here the lozenges and the annulus on the bow now look pale green while the flanking triangles and the spot look dark green. Neither colour is likely to be the original one.
- 831682 Disc brooch with one circular and two concentric annular fields. The innermost is blue with a central white spot. The middle one is badly decayed but probably once had six inserted spots of a second colour of enamel; neither colour can now be determined. The outer ring contains traces of blue enamel.

- 831686 Disc brooch. The outer enamel band is blue while the inner one is red with reserved metal spots. The centre may originally have been covered by a metal boss.
- 831694 Small stud with an orange centre, around which is an annular field with eight segments, alternately turquoise and what now appears dark green/black (maybe not the original colour).
- 834919 Finger ring with oval setting containing translucent pale turquoise enamel.

#### Discussion of analyses

Different brooch types tend to be made of different alloys while similar brooches usually have similar compositions (Bayley and Butcher 1981). Not all the brooches in this collection are of types where sufficient analyses have been done to provide an adequate data base for comparison. However, for those types where comparative data is available, the results are in agreement with those obtained from similar brooches from other sites. For example, most Hod Hill brooches are brass and Polden Hill brooches are leaded bronze while brooches with applied silver foils are normally brass.

#### Reference

Bayley J. and Butcher S. (1981) Variations in alloy composition of Roman brooches. Revue d'Archéométrie. Supplement, 29-36.

Table of analytical results

<u>AM Lab No</u>	<u>Brooch type</u>	<u>Alloy</u>	<u>Decoration</u>
822060	Disc	Leaded gunmetal	
822079	Penannular	Gunmetal	
822108	Plate on bow	Brass/gunmetal	Enamel. Applied silver
822128	Fantail	(Leaded) bronze	Enamel
822130	?(foot only)	Gunmetal	
831173	Polden Hill?	Leaded bronze	
831185	Knee	Brass	Enamel. Applied silver
831205	Hod Hill	Brass	
831211	Fantail	(Leaded) bronze	Enamel
831672	?(Bow brooch)	Bronze	
831676	Trumpet	Bronze	
831684	Penannular	Bronze/gunmetal	
831686	Disc	Gunmetal	Enamel
831688	Knee	Leaded bronze	Tinning
834922	Penannular	Gunmetal	

Notes: Brass is mainly copper and zinc, bronze copper and tin while gunmetals contain significant amounts of both tin and zinc in addition to the copper. Leaded alloys additionally contain lead.