

Analysis of two silver spoons from Lullingstone Roman Villa
(AM Lab nos 720750 and 720751)

The two spoons were first examined by X-ray fluorescence. An area on the back of the bowl was examined in each case, and both gave similar results. Silver and copper were detected strongly, together with some lead and a trace of zinc. Gold and mercury were also detected weakly. Unfortunately these measurements cannot be put on a fully quantitative basis.

The presence of lead is not surprising, considering that most Roman silver was refined from lead. Copper would have been added as an alloying element, and the trace of zinc suggests that the copper may have been added in the form of brass.

The presence of gold and mercury is interesting, since it suggests that the spoons were originally amalgam-gilded. No visible trace of gilding remains.

Bromine was detected strongly on the handle of 720750, which has not been cleaned, indicating the presence of silver bromide in the corrosion products. This is quite common, and has been reported by Hedges. (REM Hedges, Studies in Conservation, 21 (1976) 44).

Further examination of the corrosion products by X-ray diffraction revealed only silver chloride and silver metal. It appears that bromide ions can be incorporated randomly into the AgCl lattice, making their presence known only by small increases in the lattice spacings.

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Analytical references: XRD G14 tr 3

XRF MP 868