

ANALYSIS OF TWO GOLD BANDS FROM A SWORD FROM ACKLAM, YORKSHIRE
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Two gold bands from an Anglo-Saxon sword found at Acklam were analysed using energy dispersive x-ray fluorescence. The technique used was not fully quantitative, but an estimate of the amount of gold, silver and copper could be made on the basis of the ratios of the silver $K\alpha$ and copper $K\alpha$ peak heights to the gold $L\alpha$ peak height. The difference, within the limits of the technique used, between the compositions of the two bands.

The best estimate of the composition of the bands was:

Gold	38%
Silver	60%
Copper	2%

Although the composition given above is only an estimate, it was clear that the gold used was heavily debased with silver and that it contained a small amount of copper.

The gold standard used in gold coinage of the seventh century was debased at intervals during the century (J.P.C. Kent, "Gold standards of the Merovingian coinage, A.D. 580-700", in Methods of Chemical and Metallurgical Investigation of Ancient Coinage, 1970). It reached a gold content of about 40% by about 650 A.D. If, as seems likely, the source of gold for the coinage and for gold objects was the same, a date of around the middle of the seventh century or later seems most likely from the analytical evidence alone.