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Investigating the Composition of Early Medieval Silver Coins: The Case of Sceattas

The elemental composition of a previously unanalysed group of of series D, E and X sceattas from the numismatic collection of the De Nederlandsche Bank was investigated using portable X-ray fluorescence (pXRF). These small silver coins appear in the archaeological record from roughly c. 680–750 CE and are believed to have been used to facilitate long-distance trade among the emporia of north-western Europe (op den Velde & Klaassen 2004). This study focused on sceattas from the Low Countries.

A total of 183 sceattas were analysed. These included those from the Remmerden hoard, of which 135 were Series D sceattas and 5 belonged to the primary Series E. Additionally, 43 Series X sceattas were also included. The elemental compositions of the obverse and reverse face of each sceatta were measured. The coins were not cleaned or polished prior to analysis. Analyses were performed with a Bruker Tracer 5g portable XRF spectrometer. To obtain quantitative data (in %wt) of the relevant elements the 'Precious Metals 2' factory calibration was used.

This study was the first time such a large sample of Series D sceattas was available for analysis. The results indicated the potential of two separate groupings, the 'higher-Au-lower-Cu' and 'lower-Au-higher-Cu' groups within the series. While the differences were not sufficient to declare the groups as entirely distinct, likely due to them having been intermixed, this is still an interesting finding. For the primary Series E varieties their respective Au/Ag ratios revealed significant differences between them. Series X displayed the most variability in its composition. The finest coins contained over 90% silver, followed by groups containing 70–90% and 50–60% silver. Finally, five of the coins were found to have been made of pure copper.

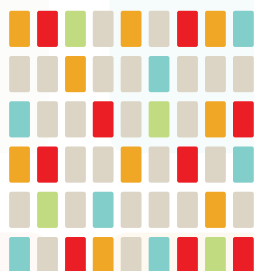
The discovery of two potentially distinct compositional groups of Series D sceattas was only possible due to the large sample size of available, which highlights the potential of large-scale compositional studies. The data suggests Series X sceattas were partly recycled from other series, with added base metals to extend silver supplies. Further non-pXRF analyses are needed to confirm these complex minting practices.

References

Op Den Velde, W., & Klaassen, C. J. (2004). *Sceattas and Merovingian deniers from Domburg and Westenschouwen*. Koninklijk Zeeuwsch Genootschap der Wetenschappen.

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