

Faking it – the evidence for counterfeiting coins in Roman London

Jenny Hall with Dana Goodburn Brown

How often do we get caught out by being given a fake coin in our change? The most common UK coin to be copied today is the £1 coin and the Royal Mint, which takes counterfeiting seriously, has even issued guidance as to how to recognise them.¹ The same thing was happening in Roman London nearly 1800 years ago, although there was no such guide to help you to recognise real from fake. Counterfeiting coins was a criminal act which, during periods of inflation, was so rife throughout the Roman Empire that it perhaps became uncontrollable and people must have just accepted them at face value.

So how did the Romans counterfeit their coins? Official Roman coins were struck – blank metal discs were impressed by finely-crafted engraved metal dies, one below, one above. To forge a coin, however, it was easier to produce a clay mould by taking the impressions from a real coin than it was to produce such engraved dies. Counterfeit coins could then be produced by pouring molten metal into the moulds (Fig. 1).

Excavations at 85 London Wall

A find of clay coin moulds, excavated from 85 London Wall in 1988 (Fig. 2: BLM87)² by archaeologists from Museum of London Archaeology, showed that there were Roman Londoners hard at work in London producing copies of both silver coins (*denarii*) and copper-alloy small change (*asses* and *dupondii*). The moulds were found in the city ditch that lay just beyond the city wall near to All Hallows Church, London Wall. When first found, archaeologists brought a few in a bag to curators at the Museum of London and caused quite a stir as only two such moulds had been ever been found previously from Roman London. The next larger bag contained more, the next even more until there were over 800 coin moulds ranging from

complete to very fragmentary – the largest find of counterfeit moulds from Roman Britain.

The discovery of the moulds in the ditch of Londinium's defensive wall led initial thoughts to be that of the concealment of incriminating evidence and this even formed the source for a Roman chapter in a historical novel by Edward Rutherfurd.³ A research project in 2012–2013, to publish this important group of moulds fully, was able to look closely at the surviving moulds and conclude how they were made and to suggest why they were found scattered in the city ditch just beyond the defensive wall to the east of Blomfield Street.

Two similar moulds, found previously at Newgate (Fig. 2: GM131) in 1966,⁴ were used as evidence for dating the city wall to about AD 200, while three other moulds of similar

date, but made in differing clay and type, have more recently been found in an agricultural ditch in Southwark (Fig. 2: BYQ98).

Modus operandi

As part of the research project, experimental archaeologist Dana Goodburn Brown looked at the surviving evidence to see how the moulds were made. Under the microscope, fine radial cracks in some of the moulds could be seen. She replicated this by pressing a modern coin into a flat disc of clay dusted with fine powder, causing the clay to crack in a similar manner under the applied pressure. She continued the process by adding another clay disc and pressing it down over the coin, followed by other coins and clay discs until a stack, or column of several moulds, was produced (Fig. 3). She found that the



Fig. 1: forgers at work in Roman London (Derek Lucas/Museum of London)

COUNTERFEIT ROMAN COINS

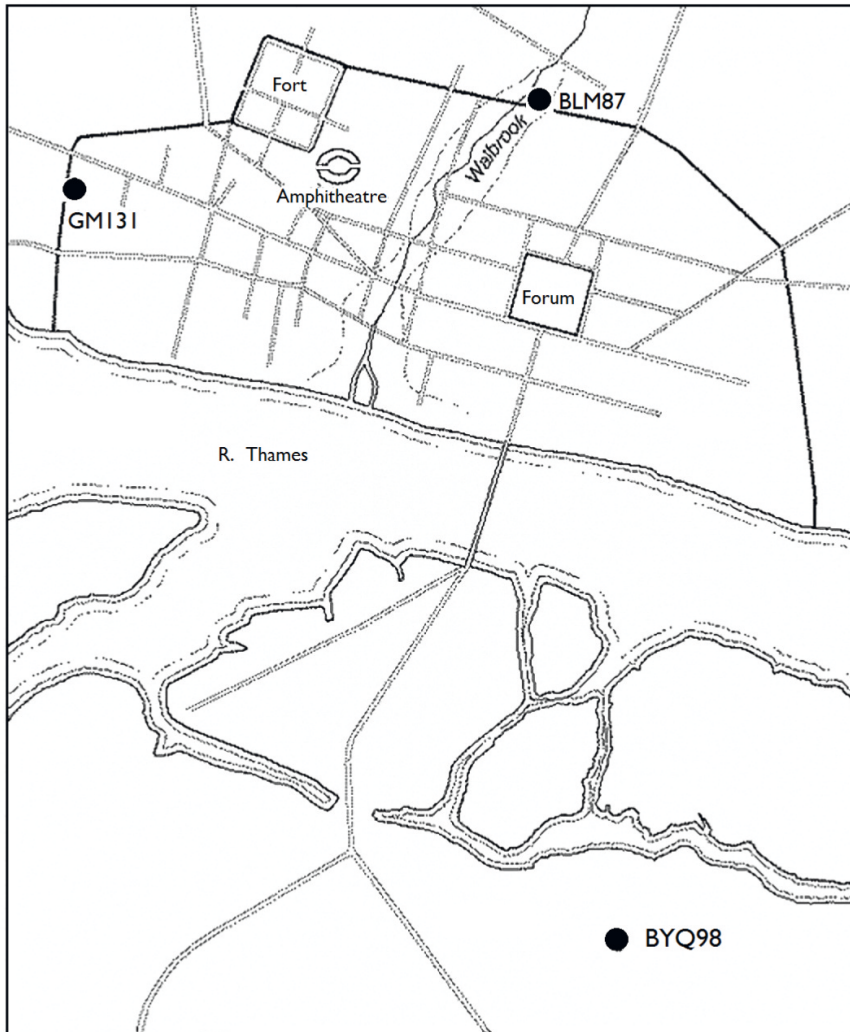


Fig. 2: sites in Roman London where clay coin moulds have been found

stack would have become unstable if the coins were removed at this stage.

It was also possible to see that the sides of the assembled moulds had been smoothed off by rolling the stack

on a flat surface, having trimmed off any excess clay. Then a v-shaped notch the length of the column was cut to create a runnel for each mould to allow molten metal to flow in. Diagonal lines

were also scored along the length of the sides of the stack to aid positioning and to allow an additional coating of clay to adhere to the sides (Fig. 4: bottom left). Left to air-dry, the stacks would have been dismantled and the moulds taken apart to remove the coins. This method meant that, as the coin was left inside each mould until the drying clay shrank slightly, it facilitated its removal. The column would then have been re-assembled matching up the notches and the scored lines.

Experiments also showed that a copy of a coin may sometimes have been used to make moulds. Using a scanning electron microscope (SEM), possible air bubbles or round protrusions on the sides of some of the moulds indicated that a plaster copy, rather than an actual coin, may have been used. There was evidence, too, of file marks on the inside of the rim of some moulds showing where the surface of the plaster copy had been neatened off before use.

As a variety of coins, or copies of coins, were used, each clay mould had the head (obverse) of one coin and the 'tail' (reverse) of another (Fig. 5 top), both produced as mirror images, making it a complicated task to identify the coins, and silicone rubber casts were sometimes taken to facilitate identification. Thus it has been possible to identify the numbers and types of coins used. Each column would have been made up of double-sided moulds with single-sided examples top and

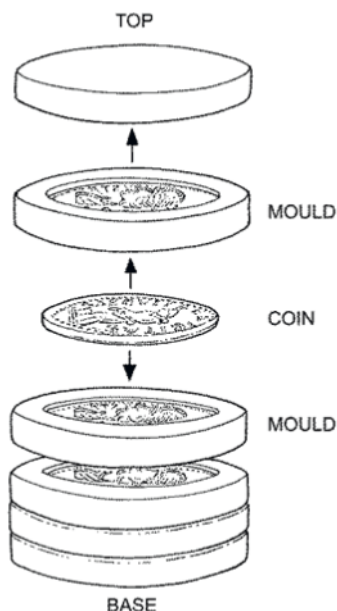


Fig. 3: experiments showed how the moulds were produced (Nick Griffiths/Dana Goodburn Brown)

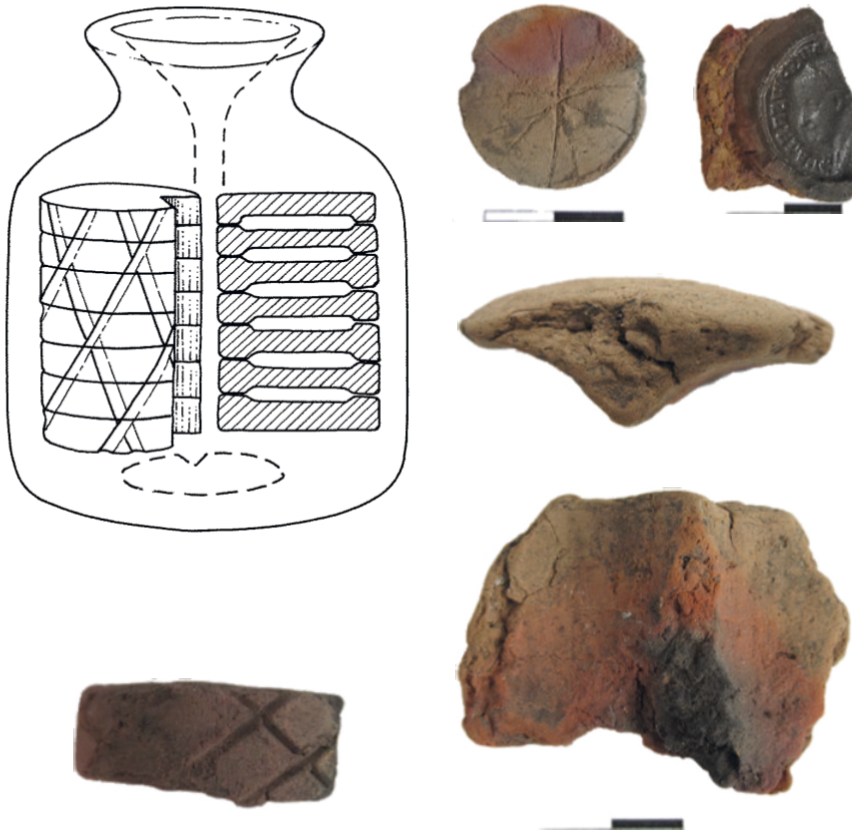


Fig. 4: evidence from the working debris showed that the columns of moulds were encased in an extra layer of clay. Scale in cm.

bottom of each column. It is possible that round discs such as bone counters were held against the top and bottom of the column and used as cutting guides during the trimming process, and one blank side was marked by an incised barred cross which may have denoted it as a column of *denarii* (Fig. 4, top middle).

A find of moulds and working debris from Cologne in Germany showed that three columns were then positioned together⁵ with their runnels facing inwards, and it is likely that this was the case for the London moulds. The same clay (but with short lengths of straw and grass and charcoal added) was used to create a container with a cup-shaped

opening at the top, like a bottle (Fig. 4). The charcoal in the clay would have prevented the cast metal oxidising and the grasses would have made it porous enough to allow gases to flow out of the mould as the metal was poured in. The molten metal would then have flowed down the central cavity and into each mould through the v-shaped runnels. When cold, the container would have been broken open to retrieve the cast coins. Sometimes the moulds had to be prised apart leaving gouges and tool-marks on the surface. This retrieval method accounts for the fragmentary nature of the moulds and for the small fragments of triangular-shaped clay which would have been packed around the columns (Fig. 4: middle and bottom right) while some moulds still had the extra layer of clay attached (Fig. 4: top right). The moulds varied in colour – some were orange-red, others were blackened showing that they had been burnt by the molten metal flowing into the mould. Small fragments of miscast coins also showed that the metal did not always flow properly and that it had hardened before it could flow further into the mould.

Metal analysis

Analysis by X-ray fluorescence (XRF) of the metal in 1990⁶ revealed traces of copper and zinc on some of the *denarii* moulds and traces of copper, zinc and lead on the copper-alloy moulds. The difference indicates that this must have

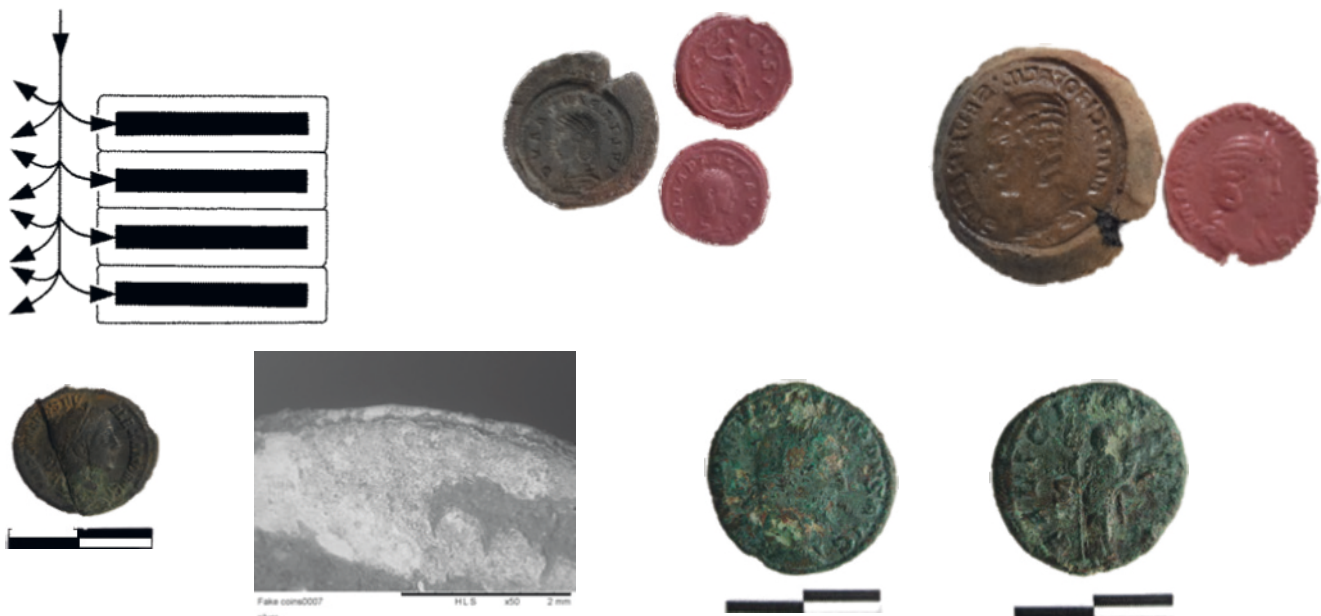


Fig. 5: molten metal flowed into the clay moulds - moulds shown here with their casts, one double-sided denarius mould (left) and one single-sided as mould (right), and the evidence from the cast coins showed the cast edge and incorrectly matched obverse and reverse. Scale in cm.

been deliberate depending on the types of coins being cast. Both mixes would have had lower melting temperatures than that needed for either silver or copper alloy.

There was also supplementary evidence from cast copies of coins, one, a 'silver' *denarius*, was found amongst the moulds and the other, a copper-alloy *as*, was found elsewhere on the site. The 'silver' coin had a seam line along its edge (Fig. 5 bottom left & SEM image), indicating that it had been cast and, where the molten metal had flowed into the mould, a 'casting' cup had also formed. This would have been cut off after cooling causing a flat edge at that point. The cast copper-alloy coin (Fig. 5 bottom right) showed that care was not always taken in the process as it had the obverse of a coin of the emperor Philip I with a reverse of Gordian III. The coin, being cast, also had a seam around its edge which showed it came from two types of moulds; one with a deep impression, the other, more shallow, making it less detectable as a forgery. Yet another coin was found still attached to its mould and showed that the forger had tried to chip away the mould without success before discarding it.

Made in London

The moulds for both the *denarii* and *as* coins were made from a fine, micaceous clay with iron-rich inclusions, showing quartz and mica – a clay similar to that used at pottery kilns excavated at Northgate House, Moorgate in 1998.⁷ From the end of the 1st century and through the early 2nd century these kilns were regularly producing, amongst other wares, London oxidised ware vessels, production being particularly abundant in the early Antonine period. The fabric of London oxidised wares is similar to that used for the London moulds one hundred years later. Other moulds from Britain⁸ and Belgium⁹ are also made from similar fine clays which enabled the moulds, in the main, to take crisp high-quality impressions.

Quantity not quality?

At least 75 coins were being copied, both silver *denarii* of the early 3rd century AD and copper-alloy coins from the early 2nd to mid-3rd century AD. The earliest coin used was that of

the Emperor Trajan and was very worn and the latest coins were of the little-known emperor Trebonianus Gallus (AD 250–253). The bulk, however, consisted of *denarii* of the Severan family from the late 2nd to the mid-3rd century. The following members of the imperial family featured on the moulds – Septimius Severus, his wife Julia Domna, sons Geta and Caracalla and Severus' sister, Julia Maesa, whose daughters, Julia Soaemias and Julia Maesa, were mothers to Elagabalus and Severus Alexander respectively and Julia Paula, the first wife of Elagabalus (Fig. 5: top middle). Of the copper-alloy coins used, most were of the emperor Philip I, his wife Otacilia Severa (Fig. 5: top right), the emperor Trajan Decius and his wife Herennia Etruscilla, although there are an interesting number of 2nd-century worn coins of Trajan, Antoninus Pius and Faustina II, showing how long such coins must have remained in circulation.

This was not the official means of minting – so, how common was the practice of copying coins? The evidence from the three London sites, where moulds have been found, shows that the early to mid-3rd century was a time when the counterfeiting of silver *denarii* was most prolific and Philippa Walton, when with the Portable Antiquity Scheme (PAS) at the British Museum, calculated that about one-third of the silver coins in circulation in the mid-3rd century were either fake or plated with a cheaper copper-alloy core. She also suggested that the practice was most prevalent in areas of the north-western provinces where the army was based and where silver was needed to pay the army.¹⁰ London has the largest number of moulds found from Roman Britain but there are also larger groups of moulds from towns in military provinces at Pachten, Mainz and Trier in Germany, Saint-Mard in Belgium and Lyon in France.¹¹

A British phenomenon?

So, when and why were such coins being produced in Roman London? The number of moulds found from London far outnumber other examples of clay moulds from Roman Britain. In London, there was a greater number of the 'silver' moulds, some 400 double moulds and 75 single while there were

fewer copper-alloy moulds, some 246 double and 92 single moulds. The mid-3rd-century moulds for copper-alloy coins, however, appear to be unique – such coins were not widely circulated nor are they common finds from Roman Britain. It is a puzzle as to why these low-value coins were being produced and it has been suggested that they were needed as small change to boost London trade.¹²

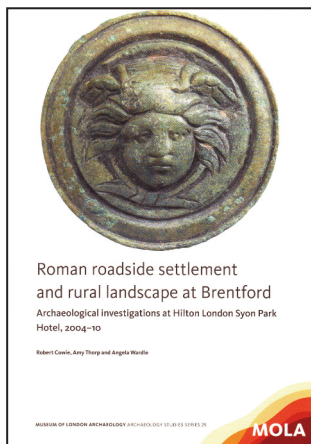
The last coins used to make the moulds found in the city ditch at London Wall dated to AD 250–253. This might tell us that they could have been deposited there by about AD 260 when the ditch was already filling up with general rubbish. In addition, there were human bones, leather shoes and nine whole funerary pots in the ditch, including five which held offerings of chickens and coins, thought to be from burials washed out from a cemetery further to the north.¹³

This article has sought to make suggestions as to what the moulds were and why they were made, but the fact remains that London was producing a large number of forged coins in the mid-3rd century and disposing of the rubbish from production. The moulds recorded as part of this research were not the final total. Many small fragments were unidentifiable and, indeed, more moulds could be seen in section on the edge of the site but could not be retrieved for safety reasons. Workmen from the site later collected a number of moulds (some of which were purchased by the Museum of London and included in the research) while it has been suggested that others were seen on a nearby site but no record survives for these. The numbers published here, therefore, will never be the final or absolute total.

Acknowledgements

The full report has been published in *Britannia*¹⁴ with the research kindly funded by the City of London Archaeological Trust and *London Archaeologist*, and my thanks go to Dana Goodburn Brown for her experimental work and to Nick Griffiths for his illustrations. I would also like to thank the Museum of London conservators and conservation students who kindly produced casts of many of the moulds to assist in identification

Roman roadside settlement and rural landscape at Brentford



Robert Cowie, Amy Thorp and Angela Wardle

MOLA Archaeology Studies Series 29,

20113

114 pp, 78 figs, bibliography, index.

£15

Reviewed by Clive Orton

We cannot understand *Londinium* without understanding its hinterland, and the study of the hinterland is much less advanced than the study of the city itself. Any report on one of the ‘third-level’ or roadside settlements that ring *Londinium*, such as Enfield, Ewell, Brockley Hill or in this case Brentford, is welcome, especially if it includes a discussion of the settlement as a whole.

This book has two main sections: the report of an excavation at the (apparently) extreme west end of the settlement, and a discussion of what new light this sheds on the settlement as a whole, which has been extensively excavated in the past. Brentford (its Roman name is unknown) lies on the London-Silchester road, about midway between *Londinium* and *Pontibus* (Staines). Its classification as a ‘third-level’ settlement puts it

below the ‘small towns’, with an estimated area of 5–6 ha and a population perhaps in the hundreds.

The excavation occupied a strip of land running roughly south from the Roman road, beyond the (then) known western limit of the settlement. This study is welcome, because most previous work had concentrated on the road itself and its immediate frontage, and little was known about the back-lands. I found the thumb-nail plans of the whole site, located in the corner of each phase/trench plan, very useful. The report has the weaknesses of many rural sites: mostly small ceramic assemblages often complicated by residuality and intrusion, and an ephemeral stratigraphy often damaged by later activity. However, they do not detract from the general chronological pattern of growth, decline, and a final resurgence before fading out in the 5th century, and the spatial pattern of occupation alongside the road and agricultural activity (field ditches) further from it.

Most readers will probably be more interested in the discussion. There is some overlap with the descriptive section, as evidence presented there is discussed. The work breaks away from the usual model of such excavations, which says that it is a road-side settlement because evidence is only found near the road, and so only looks for more evidence near the road, which becomes self-fulfilling. The valuable gazetteer makes this plain. The extensive report on the 138 Roman coins found fails to compare their chronological distribution (or, better still, the distribution of coins found on all Brentford sites) with that of Reece’s site types, or of other similar sites (such as Ewell) in the region. This could have provided additional evidence for the nature of the settlement. The overall conclusion, that Brentford was (as usually thought) a convenient stopping place on the road, and possibly also a small market centre, is not surprising, but more firmly based than before. The report is a small piece in the jigsaw, but a useful one.

and to the Picture Library for the use of the reconstructed illustration by Derek Lucas (Fig. 1). The moulds are housed in the London Archaeological Archive and Research Centre at the Museum of London.

Jenny Hall, Senior Curator (Roman) at the Museum of London for 36 years, was responsible for the Roman London Gallery (1996), curator of the High Street Londinium exhibition (2000) and

water-lifting machine reconstruction (2002), and led the project team for the museum’s Londinium website (2008). Since retirement in 2011, she has devised a Roman London website (for Key Stage 2 children) for the London Grid for Learning, completed the research for the coin moulds and is currently editing a catalogue of Roman military equipment from London.

Dana Goodburn Brown, a freelance

accredited conservator and experimental archaeologist with an MSc in Sustainable Heritage (UCL 2011), has contributed investigative conservation and replication sequences to several Time Team and other archaeological documentary programmes. She currently manages a community archaeological conservation project (CSI: Sittingbourne) and co-manages the development of a new Conservation Studio for the National Trust at Knole in Kent.

1. <http://www.royalmint.com/discover/uk-coins/counterfeit-one-pound-coins>

2. Unpublished site (BLM87) but records can be found in the London Archaeological Archive and Research Centre, Museum of London.

3. E. Rutherford *London – The Novel* (1997).

4. R. Merrifield *London City of the Romans* (1983) 160–3.

5. For a discussion on Roman Britain’s moulds, see G. Boon ‘Counterfeit coins in Roman Britain’ in J. Casey and R. Reece (eds) *Coins and the Archaeologist* (1988).

6. The analysis was conducted by Mike Heyworth, then of the Ancient Monuments Lab.

7. F. Seeley and J. Drummond-Murray *Roman pottery production in the Walbrook valley* (2005) 114–5.

8. G. Boon and P. Rahtz ‘Third-century counterfeiting at Whitchurch, Somerset’ *Arch J* 122 (1965) 13–51.

9. J. Lallemand ‘Les moules monétaires de Saint-Mard (Virton, Belgique) et les moules de monnaies’, in A. Cahen-Delhaye et al., *Un quartier artisanal de l’agglomération gallo-romaine de Saint-Mard (Virton),*

Etudes et Documents, Fouilles I (1994) 141–77.

10. P. Walton *Rethinking Roman Britain: Coinage and Archaeology*, Collection Moneta 137 (2012).

11. *Op cit* fn 9.

12. R. Reece *The Coinage of Roman Britain* (2002) 45–6.

13. As previewed in *London Archaeologist* 13 no 11 (Winter 2013/14).

14. J. Hall ‘With Criminal Intent? Forgers at Work in Roman London’ *Britannia* 45 (2014) 165–194.