

# What we need to know about the metallurgy of the coinages of Carausius (AD 286-93) and Allectus (AD 293-5/6)

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With thanks to: Duncan Hook, Matthew Ponting, Quanyu Wang, Laura Perucchetti, Graham Barker, Richard Beleson, Malcolm Lyne, Hugh Williams, Richard Bourne and Chris Bailey

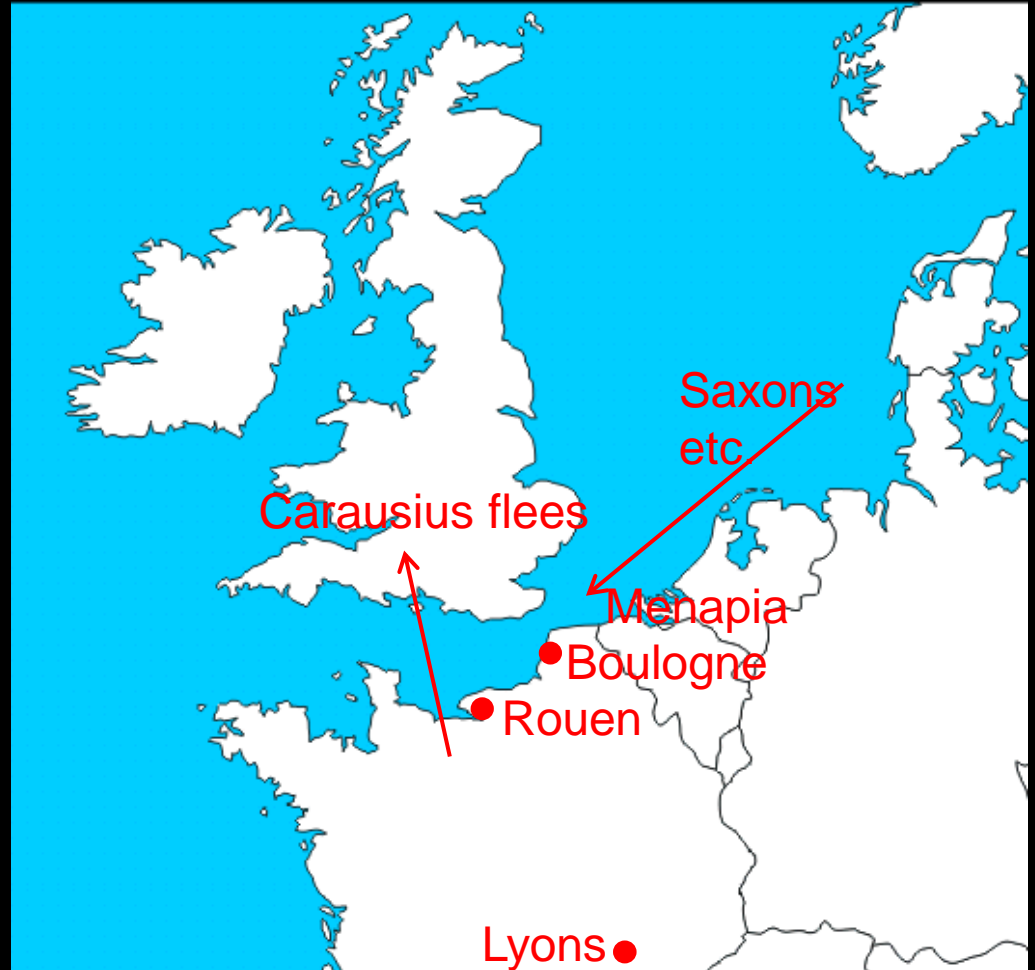
# Carausius Rebels – AD 286



Maximian, AD 286-310



Carausius's flagship?



# Fortress Britain, AD 286-93



Portchester Castle, probably Carausian



# Defeats and invasion by Maximian, c. 290



Succeeded / Assassinate by  
Allectus (AD 293-6); Pevensey





AD 295/6: Asclepiodotus slips past Allectus' fleet in the fog off the Isle of Wight



Constantius Chlorus retakes London –  
Britain is back in the Roman Empire

# The Coinages of Carausius and Allectus

## A Summary

First mint on the Continent, at Rouen for some time; then appears to move to Britain – strikes in gold and bronze – c. AD 286





# Early Coinage in Britain – RSR – Gold, silver and bronze, c. AD 287-8



# Unmarked Coins – Gold, Silver and Bronze, c. 287-288/290



c. AD 287-8



c. AD 288-90



# London, c. 287-91



ML: AD 287-8



L - // ML: AD 288



F O // ML: 288-90



B E // MLXXI: 290-1



# 'C' Mint, c. 287-91



C: c. AD 287-8



MC: c. AD 287-8



C: c. AD 290/1



SC//C: c. AD 290-1

# The last coinages of Carausius

LONDON



S P // MLXXI: AD 291-3

'C' MINT



S P C, AVGGG: c. AD 292



S P // ML: AD 293



S P // C, AVG: 291/293



# Allectus, AD 293-95/6

**LONDON**



S P // ML: AD 293-4



S A // ML: AD 294-5



S A // MSL: AD 295/6

**'C' MINT**



S P // C: 293-5



S P // CL: AD 295/6



# Allectus Q-Radiates (= Half a radiate, but 2/3<sup>rds</sup> the weight

**'C' MINT**



QC LAETITIA: AD 293/4-5



QC VIRTVS: AD 294/5-295/6

**LONDON**



QL VIRTVS: c. AD 294-95/6

So, what have the Archaeometallurgists  
ever done for us?



# Gold of Carausius and Allectus



Only c. 30 specimens known  
Ave Wt: 4.434g = 70 or 72 / lb?

XRF analysis by Quanyu Wang (BM)  
(of 6 BM specimens)

90.5 to 96.5% gold – Average **93.8%**

Higher than Gallic Empire gold –  
Damian Gore and Ken Sheedy,  
Average of 89.33%



Only 27 specimens known  
Ave Wt: 4.366g = 70 or 72 / lb?

XRF analysis by Quanyu Wang (BM)  
(of 5 BM specimens)

91.9-95.3% gold – Average **93.68%**



# Was British gold used by Carausius?



Dolaucothi adit

Pumsaint /  
Dolaucothi Gold Mine

Mendip lead and silver mines



# Silver *denarii* of Carausius – Three Groups



RSR – the most common



Unmarked



Miscellaneous Marks

# Analysis of 41 Silver *denarii*

## XRF:

- Duncan Hook ( Frome Hoard - 5)
- Quanyu Wang (BM - 21)
- M. Gratuze (Paris - 5)
- Peter Bray (Priv Coll - 10)

## Metal sampling:

Matthew Ponting  
(Frome Hoard - 3)



Silver denarius from the Frome Hoard



# Samples from drilling (Matthew Ponting) and XRF analysis (Duncan Hook) for three Frome Hoard coins



XRF (DH)

Sampling (MP)

92.5

92.7



94.6

95.2



93.3

93.5

# Silver content by issues

- Unm      88.7% to 96.7%      Ave 93.04%
- RSR      90.2% to 97.8%      Ave 94.1%
- Misc      90.9% to 93.7%      Ave 92.3%
- All      88.7% to 97.8%      Ave 93.73%

So Carausian silver around the fineness of  
post-reform coinage of Nero (93.5%)



BM: denarius of Nero, AD 64-5



# Some coins with a lower silver content might show declining silver stocks

- Unmarked PRINCIPI IVVENT
  - 53.1% Silver
  - 38% Copper
  - 6.4% Zinc
- (Q Wang, BM)
- Coin possibly of slightly later style



# Analysis might confirm irregular issues

- Blundered RSR  
ADVENTVS type
- 29% silver
- 70.1% copper
- Coin known from three specimens
- RSR Radiate shares same reverse die



# Where was the silver sourced?

- Matthew Ponting's analysis of three Frome coins (Num Chron 2022) shows that they probably had a source from Gaul and the Mendips



Mendip lead mines

- Scope for analysis of more coins





# The 'Rouen' radiates

- Pete Bray analysis shows:
- Coin 1: 86.4% copper, 8.4% tin, 3.3% lead and 0.1% silver
- Coin 2: 55.7% copper, 30.2% tin, 4.6% lead, 0.1% silver
- Need more coins to be analysed



# Silver wash; 'Later style' 'Rouen' coins

Only known example of a 'Rouen' radiate with silver wash



'Later style' 'Rouen' radiate; these appear to have been made in Britain, after the mint moved over Channel.

Metallurgical analysis would be helpful in determining their relationship with earlier and later pieces.



# Early British Radiates – RSR, Unmarked and early ML an C marks

- These coins tend to be small module (18-19mm die span) and lighter (c. 3.00-3.50g)
- Analysis of 6 unmarked and one early ML coin (Cope 1997; Q Wang) gives silver content of 0.08-0.17% silver
- Many more coins need to be analysed



The BM ML coin analysed by Q Wang



# Overstrikes, mostly on radiates of c. AD 260-74





# Use of earlier brass / orichalcum



Duncan Hook: 85.1% copper, 10% zinc and 3.6% tin



# Much Carausian interest in North Wales and Anglesey



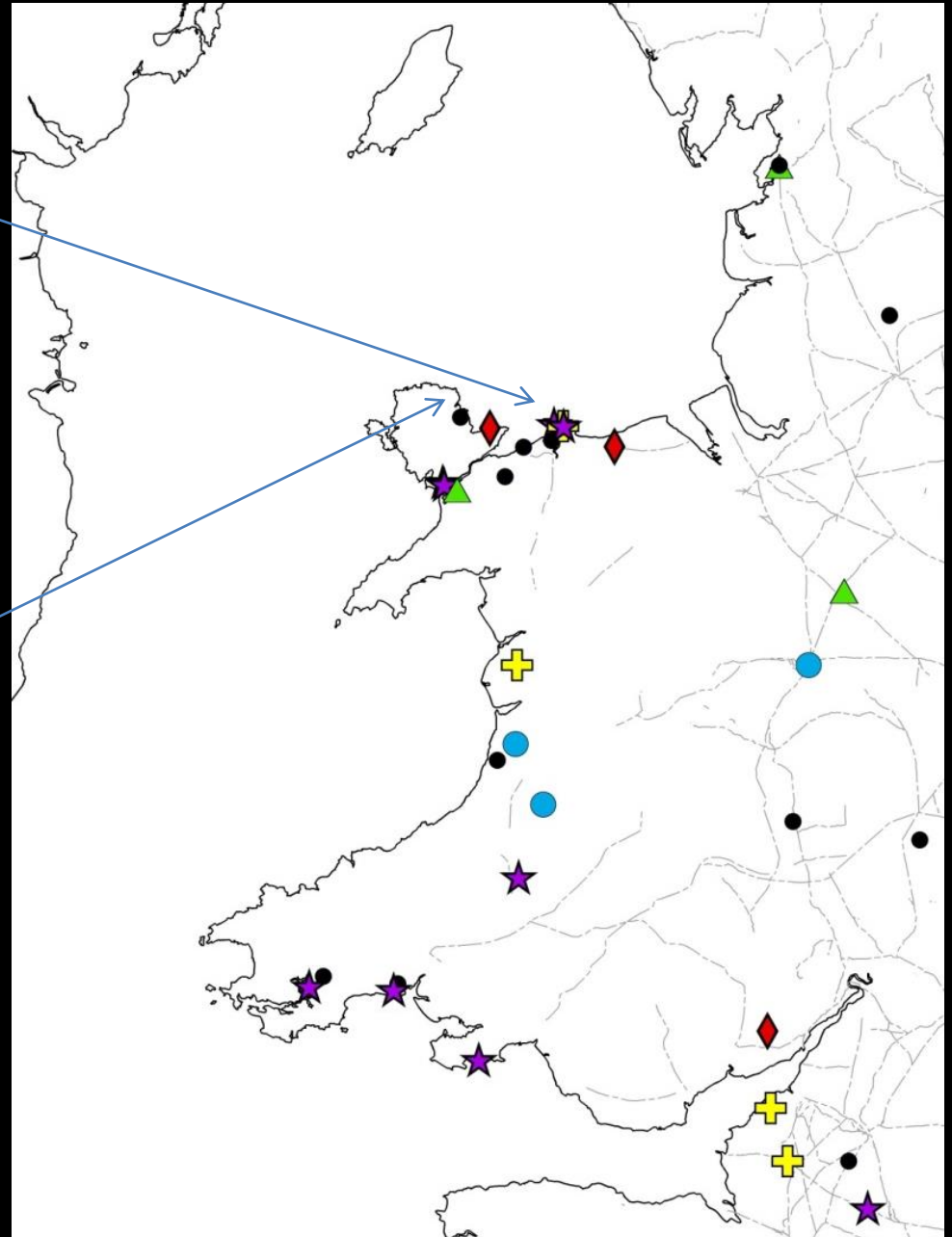
Segontium Roman Fort (Caernarvon); Anglesey in background (CADW)



Copper at Great Orme's Head



Copper at Parys Mountain  
Anglesey



# Radiates with a silver content, AD 287/8-293

- Modules of the coins now increases; die span of c. 20-23mm
- Weights increase with averages for issues between 4 and 4.60g
- These coins now have a small silver content and hoard coins show a silver wash



From Hoard coins showing the increase in module size and the addition of silver

Silver content in radiates from ML to S P // ML and C to S P // C (XRF analyses by Cope, Hook, Wang, Davis, NMGW; Sample of 25 coins)

## LONDON

- Silver content ranges from 2.17% to 3.3%
- Overall average 2.3%



## 'C' MINT

- Silver content ranges from 2.4% to 3.1%
- Overall average 2.64%



A much bigger sample is needed



# For Allectus (only a sample of 19 coins)

## LONDON

- Silver content ranges from 1.3% to 2.1%
- S P // ML: 2.04%
- S A // ML: 1.9%
- S A // MSL: 1.7%

## 'C' MINT

- Silver content ranges from 1.16% to 3.2%
- S P // C: 2.39% silver
- S P // CL: 1.1% silver



A larger sample is needed but the results so far do show a declining silver content in Allectan radiates as the reign progresses.

# The Q-Radiates (Davis, Rogiet hoard, Cardiff; Hook and Wang BM; samples of 11 and 8)

## 'C' MINT QC

- QC LAETITIA: 1.2% to 1.9%  
Average 1.46% and 1.7%
- QC VIRTVS: 1.3%-1.7%  
Average c. 1.45%



## LONDON QL

- QL VIRTVS: 1.1% to 1.7%  
Average 1.45% and 1.3%
- One Cope QL had 0.06% silver



Q-Radiates have a generally lower % of silver than the Radiates, but they do weigh two-thirds of a radiate, so could tariff at half a Radiate.

Why is there not 5% silver which the XXI mark on coins is supposed to suggest?



B E // MLXXI from London



CXXI from 'C' Mint



# The BIG Problem with analysing silver content of Radiates: surface silvering



No silvering remains



Elveden Hoard coins (BM)  
show some silvering



Many Frome Hoard  
coins have full  
silvering

How much of the silver content was actually in the silver wash? Would this bring us closer to 5%. Could uncleaned Frome Hoard coins be used to test this hypothesis?

# So, what can the scientists do for the numismatists?



# What is to be done? 1

- Gold – analysis of more coins
- Gold – trace element analysis to see if sources can be identified
- Silver – more analysis to identify coins with lower silver content
- Silver – more trace element analysis to build on the work of Matthew Ponting in identifying the sources of silver



# What is to be done? 2

- Need to analyse more 'Rouen' Radiates
- Need to consider silver wash on 'Rouen' radiates and analyse 'later style' 'Rouen' radiates
- Much analysis of early RSR, unmarked, ML and C radiates needed
- This might also help to identify coins overstruck or made from earlier coins (eg orichalcum)
- Can copper be traced back to British (Welsh) sources?

# What is to be done? 3

- Need larger samples for Carausian and Allectan radiates
- Need to consider the problem of silver wash on coins and devise a way of gaining silver content from well-silvered examples (eg in the Frome Hoard)

There is a lot riding on this, Pete!



Get it wrong.....





# Get it right.....

