



A New Corpus of Roman Coins from England and Wales. An Overview of the Evidence and Analysis of the Data

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ABSTRACT

This paper considers a new corpus of 490,154 Roman coins (site finds) which have been recorded from England and Wales. The corpus provides British and regional means to aid in the preparation of coin reports in line with Historic England guidelines, along with spatial data providing new opportunities for research. The methods of data collection will be detailed and some of the possibilities this dataset can provide presented through a number of case studies. Through the consideration of applied numismatic analyses, the social distribution of the material and, crucially, the spatial distribution of Roman coinage, we can identify new trends and patterns. Case studies evaluating the fourth century will emphasise the changing importance of settlements in Roman Britain and identify those linked with the late Roman state. Furthermore, the retraction of coinage distributions in the second half of the fourth century will be explored. Building on the national and site type means explored within the paper, the full dataset has been made available in a range of forms on the Archaeology Data Service and in an interactive map developed by Maploom.

Keywords: coin reports; Roman coinage; archaeology; Roman Britain; numismatics; site types

INTRODUCTION

The aim of this article is to present the wealth of Roman coin data now available to researchers, building on a range of corpora for England and Wales. This corpus complements the Historic England and the Chartered Institute for Archaeologists (CIFA) guidance for producing standardised numismatic reports; it provides the most comprehensive baseline available for coin loss at sites across England and Wales.¹ For the first time this material can be interrogated in detail spatially and new coin means have been created for Britain as a whole, as well as for different settlement types. This approach emphasises the

¹ Guest 2022 Toolkit for Finds Reporting: Roman coins <https://www.archaeologists.net/roman-coinage-toolkit/analysis>; Henry 2024 <https://doi.org/10.5284/1106784>

TABLE 1. REECE ISSUE PERIODS AND ABCDEF PHASES USED AS PART OF THIS STUDY

Date	Reece issue period	ABCDEF Phase
Before A.D. 41	1	A (To A.D. 260)
A.D. 41–54	2	
A.D. 54–68	3	
A.D. 69–96	4	
A.D. 96–117	5	
A.D. 117–138	6	
A.D. 138–161	7	
A.D. 161–180	8	
A.D. 180–192	9	
A.D. 193–222	10	
A.D. 222–235	11	
A.D. 235–260	12	
A.D. 260–275	13	B (A.D. 260–296)
A.D. 275–296	14	C (A.D. 296–330)
A.D. 296–318	15	
A.D. 318–330	16	
A.D. 330–348	17	D (A.D. 330–364)
A.D. 348–364	18	E (A.D. 364–402)
A.D. 364–378	19	
A.D. 378–388	20	
A.D. 388–402	21	F (A.D. 402–498)
A.D. 402–445	22	
A.D. 445–498	23	

variety of patterns of coin loss that develop, further expanding the national or regional trends identified by a range of authors.²

This paper will consider every parish in England and Wales where a minimum of 25 coins (site finds) can be assigned to a Reece period. These data form the basis for many of the tables and figures discussed (with the raw data detailed in [TABLE 10](#), below). In particular, consideration of the corpus will be based on the upper and lower quartile of parishes per mill.³ This has been undertaken to pick out regions with above or below average coin loss in a particular chronological phase. Through this we can move away from the simple presence or absence of coins from a particular site and instead evaluate the ebb and flow of coin loss which can act as a proxy for the level of integration into the monetary economy of sites across Britain.

STATISTICAL ANALYSIS OF ROMAN COINAGE

Applied numismatic analysis of coins at sites across Britain has generally divided Roman coinage into various issue periods or phases to create bar charts or histograms which provide a simple visual means of presenting the various trends of coin loss.⁴ Reece's method for considering coin profiles based on his 1995 *Britannia* paper has become the accepted form used in Britain where coinage is divided into 21 periods (from before A.D. 41 to A.D. 402: [TABLE 1](#)) often

² e.g. Ravetz 1964; Casey 1988; Reece 1991; 1995; Moorhead 2001; Brickstock 2021; Walton 2012.

³ Analysis of coin assemblages is undertaken per mill rather than a percentage due to errors seen in the past with decimal points. It consists of the number of coins from a particular period divided by the size of the assemblage multiplied by 1000.

⁴ Such as Ravetz 1964; Casey 1988; Reece 1991; 1995.

called Reece periods.⁵ Two further periods added by Sam Moorhead for the fifth century for the Portable Antiquities Scheme (PAS) were also used by the Roman Rural Settlement Project (RRS).⁶

Numismatic analysis can reveal patterns in the data that we can interpret to consider how and when coinage penetrated different regions of Britain as well as how and why coinage was used, both by the state and the populace of the provinces. Generally, individual coin bar-charts or histograms are used to compare a site or a region against a particular mean such as that for Britain. They can also indicate periods of prolific coin production as well as shortages, for example the limited supply of *aes* in the third century.⁷

Evaluating 168,828 coins from 140 sites in Britain, Reece identified broad differences between the coin-loss profiles for assemblages from military, urban and rural sites (which included villas and temples).⁸ Urban sites, for example, tended to have higher proportions of coins from A.D. 260–296 compared with the period A.D. 330–402, whereas the opposite is generally seen at rural sites. A divergence of coin profiles at sites in the east and west of Britain was also noted: greater concentrations of fourth-century coins occurred in the west of Britain; in the east we generally see larger numbers of earlier issues.⁹

With the widespread adoption of forms of numismatic analysis and the development of new datasets, the scale of the data available to researchers has increased significantly. This includes corpora derived from the PAS and RRS databases and the Iron Age and Roman Coinage in Wales project (IARCW).

Philippa Walton compared material recorded by the PAS with a range of assemblages which generally derived from archaeological excavations described as comparative sites.¹⁰ This broadened the sample available in England from 168,828 coins from 140 sites identified by Reece to 211,055 coins from 814 sites. Walton emphasised the importance of a swathe of assemblages located to the south and east of the Fosse Way and the importance of urban sites and the road network in the distribution of coinage from the final decade of Roman Britain. In Wales the IARCW project compiled a corpus of 52,838 coins which included not just site finds, but also hoards.¹¹ Only the 7,406 coins considered to be site finds have been included in this corpus. Since the 1991 publication of *140 Sites* by Reece, no expanded corpus for all site types in both England and Wales has been created.

While the work by Walton at a national level emphasised the scale of coin loss in the third and fourth centuries at rural sites, the introduction of PPG16 in 1990 led to an increase in developer-funded excavations that has also provided a wealth of data. This was systematically evaluated by the RRS project for rural sites across England and Wales.¹² Tom Brindle highlighted the considerable variation within the rural dataset, both regionally and also by site type.¹³ Fewer coins were recovered from farmsteads than from other rural settlement types, even if they were located within regions where coin deposition or coin loss was abundant.

⁵ Reece 1995. As with any form of analysis, it is not without its problems. Analysis of assemblages per mill can create false impressions. A high number of coins (say 60 per cent) from a particular phase or Reece period means that the remaining phases or periods will only have the remaining 40 per cent. This has been discussed by Lockyear 2007, 217–18.

⁶ Brindle 2017, 246, but note that most of the analyses in this publication are not presented at the level of individual periods; Henry and Moorhead 2022, 215.

⁷ Reece 1988, 95.

⁸ Reece 1991; 1995, 179–81.

⁹ Reece 1995. This trend was not seen when the data were evaluated by Reece period by Lockyear 2000, 418–19, using Correspondence Analysis.

¹⁰ Walton 2012, Appendix A.

¹¹ Guest and Wells 2007.

¹² Smith *et al.* 2016; Brindle 2017.

¹³ Brindle 2017, 238.

While the corpora outlined above evaluated trends across a range of sites, the recent Historic England and CIfA guidance emphasises that we should not simply compare them to the British mean, but also consider other perspectives such as depositional practices at temples and shrines. As Guest has highlighted, we should treat them as more than numismatic objects.¹⁴ This article, and the supporting archive deposited with the ADS, present the data from across England and Wales, to provide easy access to a new national mean, alongside a comprehensive picture of regional trends and variations.¹⁵ It will highlight that, rather than simply noting the presence or absence of a coin from a particular period on a map, this dataset can enable us to interrogate the data and map it in new ways.

METHODS USED FOR ANALYSIS

The methodology for presenting statistical analyses of Roman coinage in Britain has changed little in recent decades, with data either in bar-graphs or cumulative analysis per mill by Reece period (see TABLE 1). The latter approach, albeit more complicated, emphasises varying patterns seen in greater detail. A particular assemblage or corpus is compared against the British mean (essentially the *x*-axis) to demonstrate variation. A broadly horizontal plot indicates that a particular assemblage generally follows the British mean; a sharp line either upwards or downwards indicates a substantial deviation from the mean. Ultimately, each plot will converge with the British mean.

Analysis by Reece period groups coins in terms of when they were struck rather than when they were used or potentially lost. In the first to third centuries, the make-up of hoards demonstrates that copper-alloy *aes* and silver *denarii* could remain in circulation for over a century after they were produced.¹⁶ This, as always, is part of the challenge of considering archaeological material, but it can be mitigated through the consideration of a modification of Reece's ABCD Phases, grouping several Periods together into longer chronological phases.¹⁷ In Phase A *aes* are grouped together and a greater emphasis is placed on the changes over longer time periods. Here Reece's Phase D has been split (D: A.D. 330–364; E: A.D. 364–402; and a new phase F: Post A.D. 402, added). The division of Phase D helps accentuate individual sites or wider regions where coin loss declines after A.D. 364.¹⁸ It has been argued that the creation of a Phase F offers insight into the supply and circulation of coinage after the cessation of production of bronze coinage north of the Alps in A.D. 395, and the phenomenon of clipping of silver *siliquae*.¹⁹

THE DATASET

The new corpus of Roman coins from Britain is derived from a range of sources, the principal of which are work by Reece, Walton, the RRS, PAS database and site find elements from the IARCW project. These corpora often included the same sites, which risked duplication; care was taken to avoid this. This material has been supplemented with regional studies not incorporated within the national datasets detailed above and through the generosity of a number of specialists providing unpublished data.²⁰

¹⁴ Guest 2022.

¹⁵ Henry 2024.

¹⁶ Reece 1988, 94–6; Lockyear 2007, fig. 3; Creighton 2014, 10; Bland *et al.* 2020, 247–61.

¹⁷ Reece 1973, 230–1.

¹⁸ Henry and Ellis-Schön 2017, 186; Henry and Moorhead 2022, 215. Note that in the RRS analysis phase designations Di and Dii correspond to phases D and E as used here (Fulford *et al.* 2017, 9).

¹⁹ Henry and Moorhead 2022, 215.

²⁰ Such as: Shotton 1990; Moorhead 2001; Penhallurick 2009. My particular thanks to Murray Andrews, Paul Booth, Richard Brickstock, James Gerrard, Peter Guest, Sam Moorhead, Naomi Payne and the Norfolk Historic Environment Record.

Every dataset will be affected by a range of biases that need to be considered in any analysis of distribution; this corpus is no exception. In recent years much work has been undertaken evaluating bias within the PAS database, but bias within other datasets has been less intensively explored.²¹ The deposition of archaeological objects and their subsequent recovery through metal detecting is affected by a range of biases. These include geographical and geological factors which influence where detecting is most common (arable land). Geological factors can influence the economic regimes of the past (pastoral or arable agriculture) with higher numbers of coins recorded at sites producing arable surplus. They also affect the preservation of objects in acidic or alkaline soils. Finally, legislation and further constraints such as the presence of areas of woodland can also impact detected assemblages. Metal-detecting constraint maps have been used in conjunction with distribution maps in various studies evaluating the distribution of metal-detector finds in greater detail.²²

Collection bias is present within every dataset, not simply the PAS. As Swift has highlighted, by combining a range of datasets a corpus becomes more robust.²³ Yet we must acknowledge that bias will remain and we must evaluate reasons why absences might occur. Constraint mapping has been shown to be advantageous when considering PAS assemblages, but since PAS finds form only part of the larger corpus, such mapping has not been used here.

During data collection it became clear that many coin lists from excavations were too small for statistical analysis to be undertaken at a site level. Consequently, parish profiles have been created as part of this dataset to allow for meaningful comparisons on a national scale. Generally, smaller assemblages occurred at many sites in the south-west and north-west of England as well as in Wales, many of which were too small for applied numismatic analysis.

The data are available on the ADS in a range of formats, and each region of England and Wales is broken down by county and parish/district. In each parish the quantity of coins by Reece period is recorded based on the dataset. Information sources are recorded separately (PAS, RRS, Walton and Other). For RRS or Walton comparative sites data, a comparative site reference number is included, while for 'Other' a reference for the source is noted. Generally, the 'Other' category comprises unpublished data. The combined quantity from all these sources is incorporated into a spatial corpus with detailed ABCDEF phases and Reece periods by quantity and per mill with detailed spatial data and the site type within the settlement hierarchy recorded for each parish.

SITE TYPES

A site type has been assigned to each parish which had a minimum of 25 coins in the corpus. For the dataset of excavated sites the principal categories are military, urban, nucleated, rural and a small number of other sites which tend to be finds from hillforts (FIG. 1). The category for each parish has been selected based on the principal site type linked to the largest assemblage from the parish, primarily based on RRS data (see TABLE 2 for a breakdown of coins by site type). The categories used here are derived from the doctoral research undertaken by the author and focus on the relevant site type for the fourth century.²⁴

Sites across the settlement hierarchy can present difficulties with site classification. For example, single sites can have multiple or changing functions over time, such as York and Richborough (military and urban) or Nettleton Scrubb (settlement and religious functions).

Classifications such as 'small towns' or nucleated settlements can also be hotly debated. Here these have been classed separately from urban or rural sites and defined as defended *vici* or

²¹ Robbins 2012, 23–50; Brindle 2013; 2014, 15–29; Walton 2012, 27–30; Oksanen and Lewis 2023, 111–14.

²² Richards *et al.* 2009, chapter 2.3; Robbins 2012, 71–2.

²³ Swift 2012, 175.

²⁴ Henry 2022; Henry in prep.

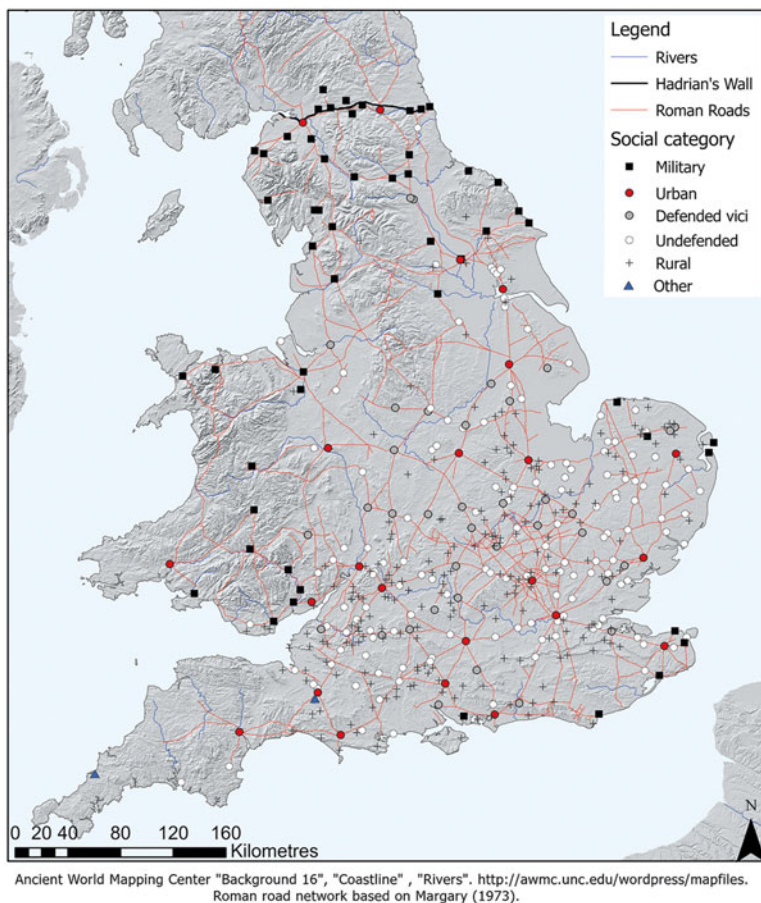


FIG. 1. The distribution of sites in the military, urban, nucleated, rural and 'other' social categories for parishes with more than 25 coins (based on excavated data only). The nucleated category has been separated to indicate defended *vici*. These sites potentially played a crucial role in the late Roman administration. Further sites which fall into these categories but with limited numbers of coins recorded have not been mapped here.

undefended nucleated settlements.²⁵ The aim of assigning these social divisions is to evaluate how the numismatic profiles for these sites might differ from those of sites assigned to other social categories, such as undefended nucleated settlements.

Sub-types within the four main categories have also been defined in TABLE 2, with Reece period breakdowns provided at the end of the paper. Urban centres have been divided between large towns (the fourth century provincial capitals, *coloniae* and *municipia*) and *civitas* capitals to evaluate if different trends occur over time.

The assemblages from three sites skew the British mean or sub-group coin means due to their size and make up. For the British mean and site types Richborough has been excluded, as it is almost five times larger than any other assemblage from Britain and the 22,822 coins from Reece period 21 form over 60 per cent of the entire corpus for Britain. With the site sub-types the assemblages from Coventina's Well (Hadrian's Wall sub-type) and the Sacred Spring at Bath (defended *vici*) have

²⁵ Smith and Fulford 2019.

TABLE 2. THE SOCIAL CATEGORIES AND SUB-TYPES CONSIDERED AS PART OF THIS STUDY.

Site type	Site sub-type
Military – 38,918 coins	Hadrian’s Wall – 6,260 Pennines – 10,695 Wales – 4,352 Saxon shore forts – 5,830
Urban – 89,722 coins	Large towns – 37,599 <i>Civitas</i> capitals – 52,123
Nucleated – 99,031 coins	Defended <i>vici</i> – 16,325 Undefended – 71,038
Rural – 59,289 coins	Temple – 21,389 Farmstead – 4,586 Villa – 23,229
PAS Rural – 168,543 coins	

also been excluded, as they skew the results significantly for similar reasons. While they are removed from the relevant coin means, they are included within the spatial analysis.

Data derived from the PAS have been considered as a separate social category (PAS Rural) to compare with the various site type means based on excavated data from Britain. The PAS material is likely to be derived from a range of site types, although principally we would envisage this to consist of rural and undefended nucleated sites.

SPATIAL ANALYSIS

The creation of a corpus which can be interrogated in GIS presents new opportunities. The number of coins used to undertake statistical analysis varies. The spatial dataset considered here consists of all parishes with a minimum of 25 coins that can be assigned to a Reece period (465,481 coins from 1421 parishes).²⁶ The raw data by period/phase and the total quantity as well as the per mill for each period/phase have been recorded for each site in the ADS corpus.²⁷

The principal method of spatial analysis presented in this paper will be to consider the upper and lower quartiles of Phases A–E per mill to consider regions with significantly above/below average coin deposition or loss during a particular phase. This approach looks to move away from simple distributions which indicate whether a particular period is present or absent to one where we can consider questions relating to coin use, supply and the prosperity of sites across England and Wales.

Quartiles for Phases A–E have been selected to emphasise the ebb and flow of different regions on a national scale (see TABLE 3). Quartiles for Phase F have not been created due to the limited quantities of coins coming to Britain after A.D. 402.

THE BRITISH PROFILE

This current corpus triples the British dataset that was based on what was available in 1991. When the means of the three largest corpora are compared in FIG. 2, the variation seen when comparing the means produced by Reece against Walton or this study is primarily based on the inclusion of

²⁶ The number of coins considered as a minimum for such analysis varies. The lowest figure included by Reece 1991 was 21; Walton 2012 considered PAS parish profiles with a minimum of 20 coins; Moorhead 2010, 149 has suggested a minimum assemblage of 12 coins, but preferably 20. A minimum of 25 has been selected here as it was found that some sites with 20 coins appeared to have incomplete lists and consequently skewed regional profiles.

²⁷ Henry 2024.

TABLE 3. THE NATIONAL MEAN AND THE UPPER AND LOWER QUARTILE FOR PHASES A–E.

Phase	Lower quartile	British mean for each Phase	Upper quartile
A (to A.D. 260)	< 61.8 per mill	197.2 per mill	> 230.7 per mill
B (A.D. 260–296)	< 153.8 per mill	250.5 per mill	> 326.2 per mill
C (A.D. 296–330)	< 48.0 per mill	73.2 per mill	> 126.7 per mill
D (A.D. 330–364)	< 200.0 per mill	320.0 per mill	> 405.7 per mill
E (A.D. 364–402)	< 63.4 per mill	158.9 per mill	> 228.5 per mill

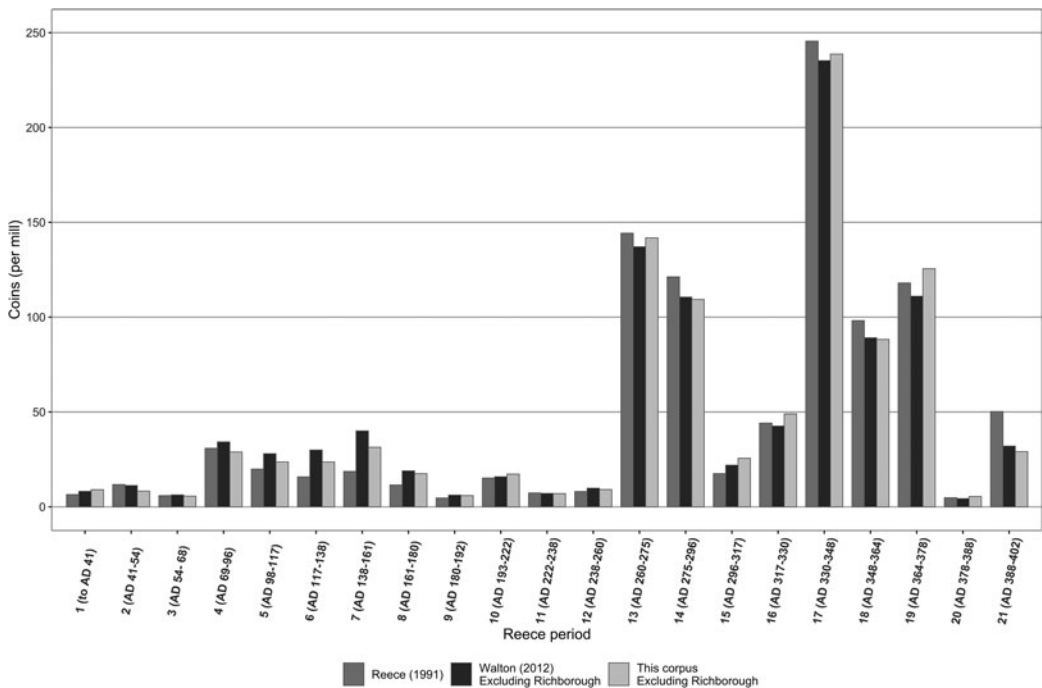


FIG. 2. The comparison of the British coin means from Reece, Walton and this study by Reece issue period.

the assemblage from Richborough by Richard Reece. Generally, low proportions of coinage of the Augustan system (to A.D. 260) are recorded from Britain, with an increase in the mid-third century with the influx of copper-alloy radiates and in the mid-fourth century with copper-alloy *nummi*.

Consideration of site types allows comparison of excavated military, urban, nucleated and rural assemblages against the British mean, which has been undertaken using cumulative analysis (FIG. 3). This emphasises clear differences in the profiles at these site types, particularly the high proportion of coinage found in the first to third centuries at military sites followed by a decline in coin loss in the fourth century, whereas the opposite trend is seen at rural sites. Urban and nucleated sites differ and reflect the changing prosperity of urban sites and undefended nucleated sites (sometimes described as small towns).

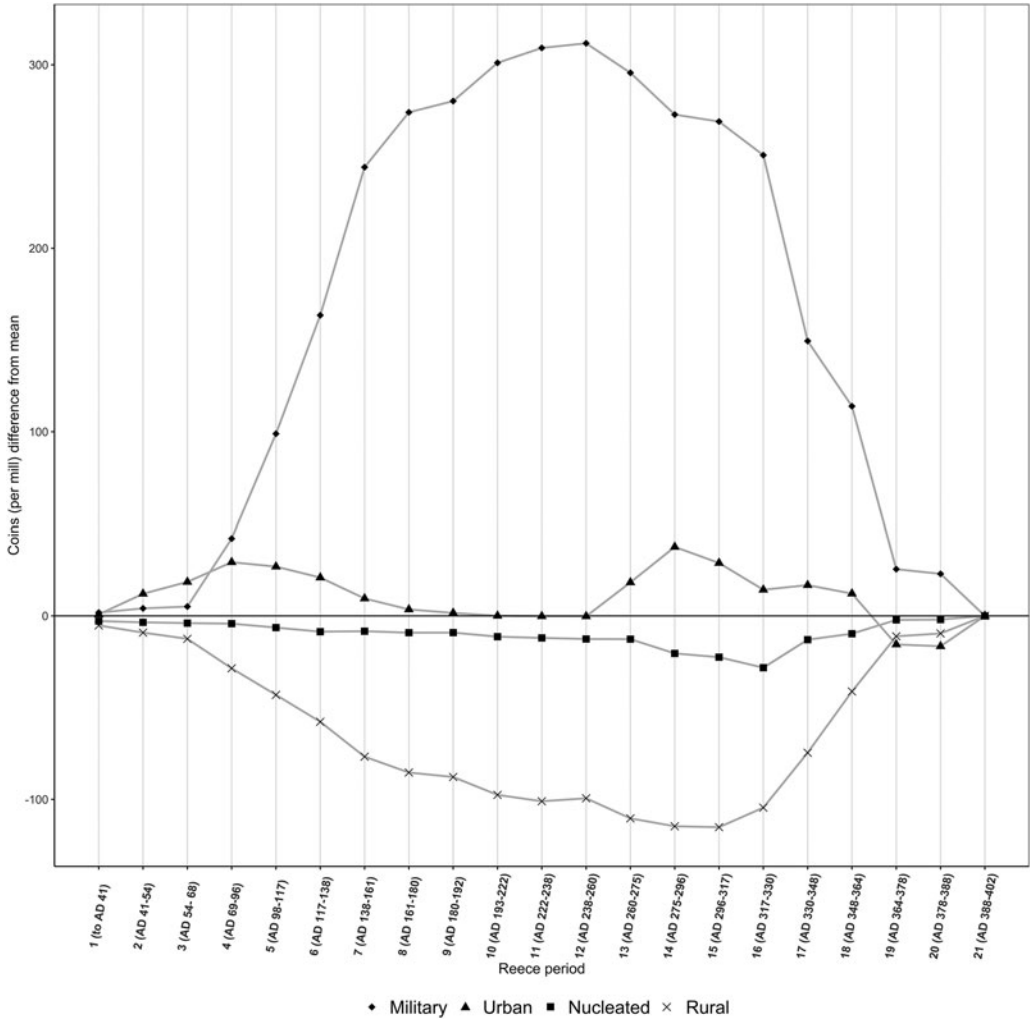


FIG. 3. Cumulative analysis comparing the means from the military, urban, nucleated and rural corpora (excavated data only) against the British mean.

Further nuances within the data can be discerned when the sub-types within the four wider social categories are considered (FIG. 4). The corpus of military sites in Wales emphasises that a significant proportion of coinage dates to the first century with a decline in coin loss against the British average from the mid-third century (FIG. 4, top left). The profiles of sites on Hadrian’s Wall and in the Pennines are broadly similar. This could support the argument by Collins that there was a single source of coin supply to the Northern Frontier in the later fourth century.²⁸ The profile for the Saxon Shore forts differs, emphasising a peak in coin deposition at these sites in the years A.D. 260–330.

²⁸ Collins and Breeze 2014, 68.

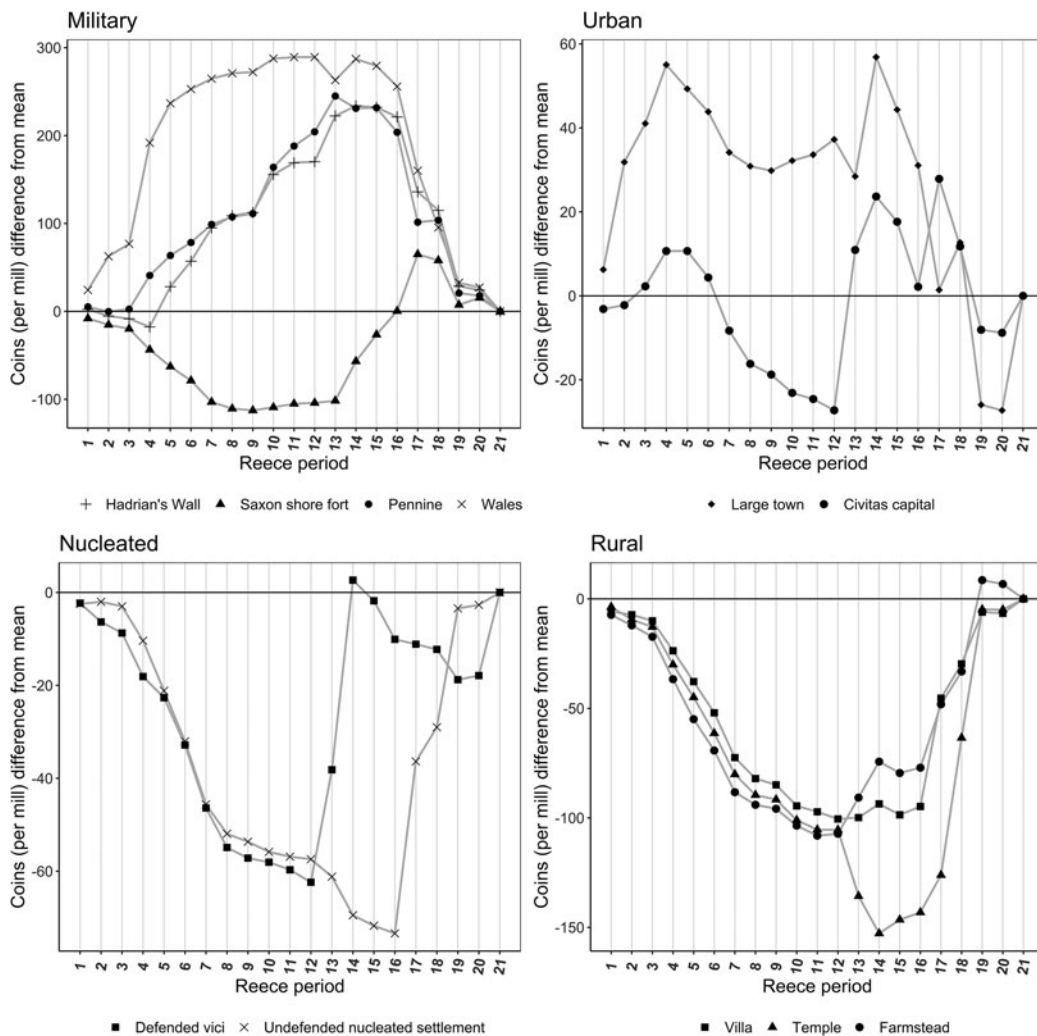


FIG. 4. Cumulative analysis of the sub-types within each of the four major site type categories (excavated data only) against the British mean.

When large towns and *civitas* capitals are compared, both sub-types have above average peaks in coin loss in the first and third centuries (FIG. 4, top right). From the mid-fourth century there is a decline in coin deposition, a trend that supports the argument that the roles these urban centres played changes.²⁹ Walton demonstrated that in Reece period 21 coin loss occurs in higher quantities at urban centres; this is visible most emphatically with the large towns.³⁰

At both defended *vici* and undefended nucleated sites, coin loss is substantially below the British mean in the first and second centuries (FIG. 4, bottom left). In the mid-third century

²⁹ Esmonde Cleary 1989, 66–8; Millett 1990, 131–42.

³⁰ Walton 2012, 113.

there is a significant increase in coin deposition at defended *vici* which is not reflected at undefended sites. In a similar vein to urban centres there is a considerable peak in coin loss in Reece period 21 at defended *vici*. The coin profile suggests that they played a different role from that of undefended nucleated sites in the late Roman period. The peak seen at defended *vici* suggests these sites were central to the late Roman administration of the diocese of Britain – potentially relating to the collection of taxation in kind and the *annona militaris*.³¹ At undefended nucleated sites we see a dramatic increase in coin loss in the mid-fourth century that has been interpreted as evidence of economic prosperity at such sites.³² The pattern is not reflected at all nucleated settlements; for example a decline in coin loss is noted at key undefended nucleated settlements in regions such as Wiltshire.³³

In a similar vein to undefended nucleated settlements, coin deposition at rural sites is substantially below average in the first and second centuries (FIG. 4, bottom right). Although deposition increases in the mid-third century at villas and farmsteads, the pattern increases drastically in the fourth century. In the temple sub-group peaks occur in Reece periods 18 and 19. Coins from these two periods (in particular *FEL TEMP REPARATIO* falling horseman copies) have been identified as key elements of numismatic assemblages at temples.³⁴

PAS AND EXCAVATED DATASETS

In total 168,543 Roman coins that could be identified to a Reece period have been incorporated within this corpus from the PAS database or associated paper records from the Norfolk HER.³⁵ In contrast, 285,205 coins (excluding Richborough) have been included from excavated datasets or museum collections. FIG. 5 compares the two datasets emphasising the value of the PAS corpus in fleshing out the distribution of excavated finds, particularly in East Anglia, Wiltshire and Lincolnshire.

The presences and absences seen in the spatial distribution are not simply due to coin supply and deposition, but also reflect recovery bias. This bias can be influenced by factors that include agricultural regimes, geology, constraints to detecting and the selection of land for development. Consequently, assemblages with 25 coins or more are uncommon from the south-west of England, the New Forest and the Weald.

When the site type categories for the 1,421 parishes which have a minimum of 25 coins are compared, the PAS contribution accounts for about 67 per cent of the parishes with more than 25 coins, yet only 35 per cent of the corpus (TABLE 4). The value of the PAS data here is that they flesh out and vastly expand the data available, creating new spatial patterns as well as emphasising patterns previously noted.

The majority of coins recorded with the PAS are likely to represent finds from contexts that would be assigned to the categories of rural settlement or undefended nucleated sites. This is because these site types are likely to be those within the regions where metal-detecting is most likely, although other site types will be included within the PAS corpus. FIG. 6 highlights that the PAS dataset is best viewed as an assemblage that incorporates a range of site types. It is

³¹ Esmonde Cleary 1989, 47–50; Fleming 2021, 18–25.

³² Millet 1990, 143–56.

³³ Smith and Henry 2020, 196–7; Brindle 2017, 267.

³⁴ Brickstock 1987, 85–7; Moorhead 2001, 157–9; Brindle 2017.

³⁵ While as of October 2023 almost 330,000 Roman coins are recorded on the PAS database, only 169,298 (excluding IARCW data) can be identified to a Reece period. As discussed above, only 7,406 of the 52,858 coins from the IARCW dataset should be considered as site finds. The data for the new corpus discussed here were collected in January 2022.

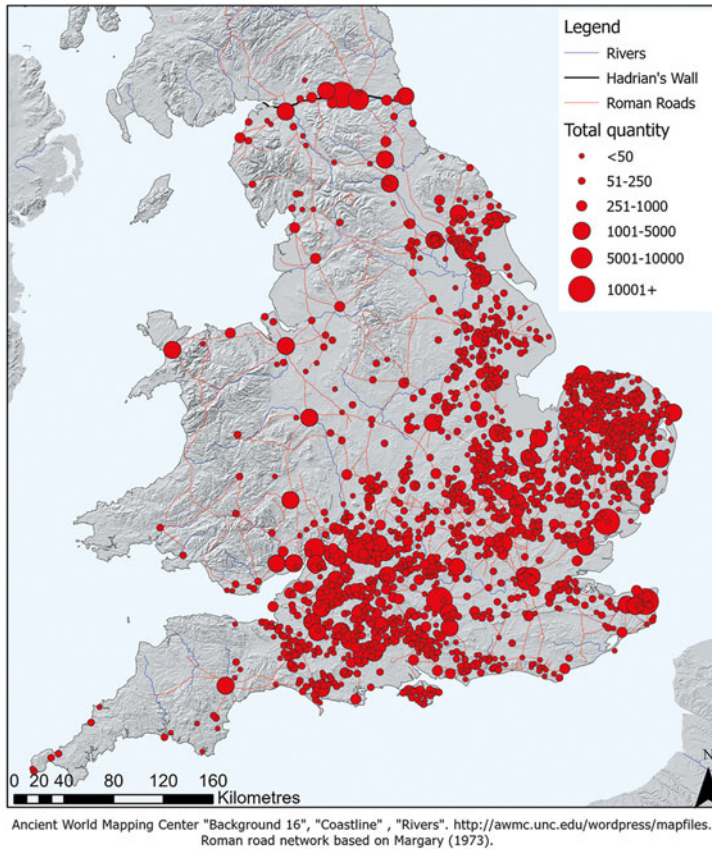


FIG. 5. Comparison of the excavated and PAS datasets within the corpus – with a minimum of 25 coins from a parish.

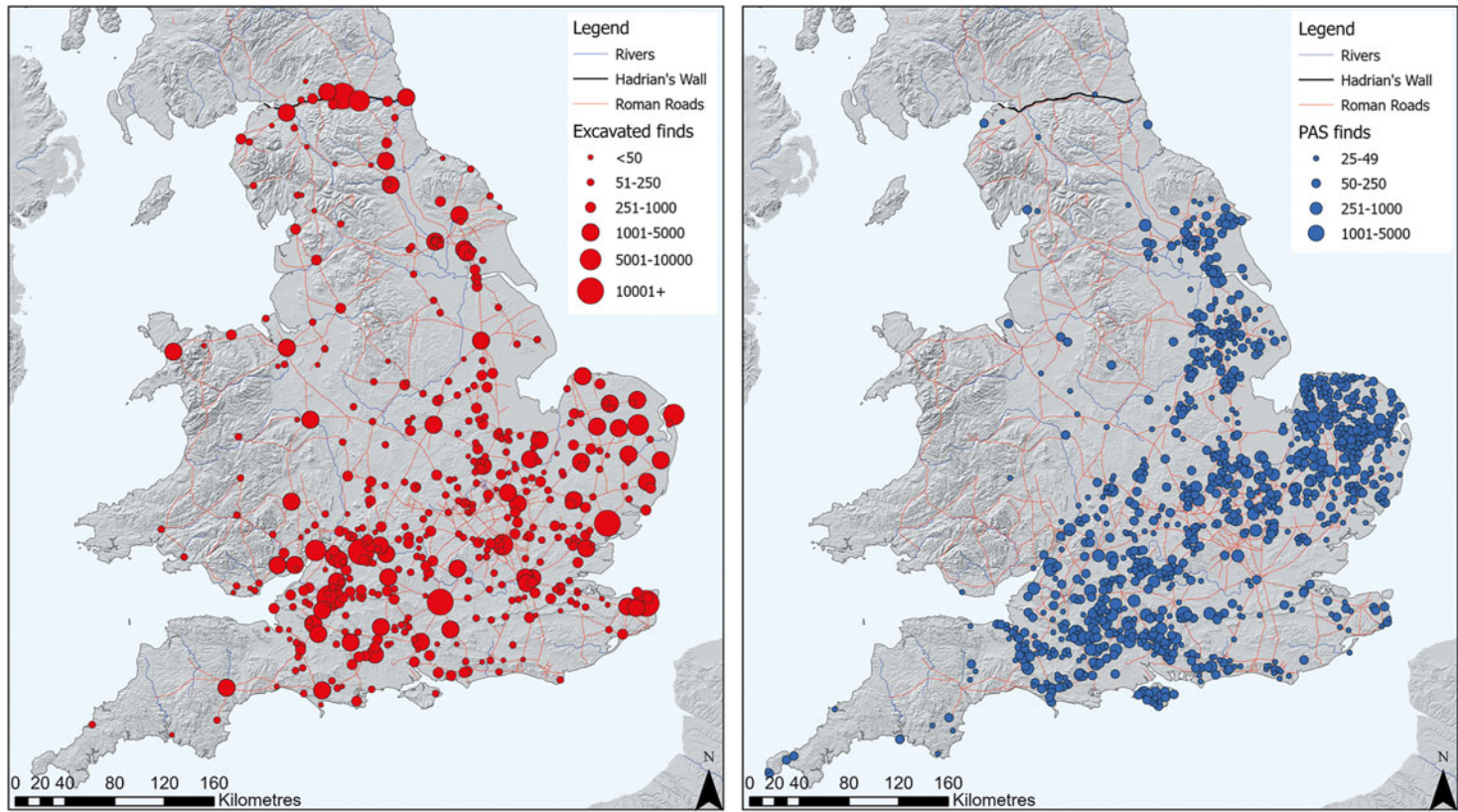
TABLE 4. THE NUMBER OF PARISHES IN EACH SOCIAL CATEGORY AND THE PERCENTAGE

Site type	Number of parishes	Percentage of parishes
Military	53	3.7
Urban	26	1.8
Nucleated	176	12.3
Rural	210	14.7
PAS Rural	955	67.2

therefore essential to consider individual assemblages within the PAS data against a range of site type means.

SPATIAL DISTRIBUTION

When excavated and PAS finds are combined to form the complete corpus there are 1,421 parishes with a minimum of 25 coins recorded to a Reece period (presented in FIG. 7 by quantity). This



Ancient World Mapping Center "Background 16", "Coastline", "Rivers". <http://awmc.unc.edu/wordpress/mapfiles>. Roman road network based on Margary (1973).

FIG. 6. Comparison of the PAS rural coin mean against the mean for rural sites and undefended nucleated settlements.

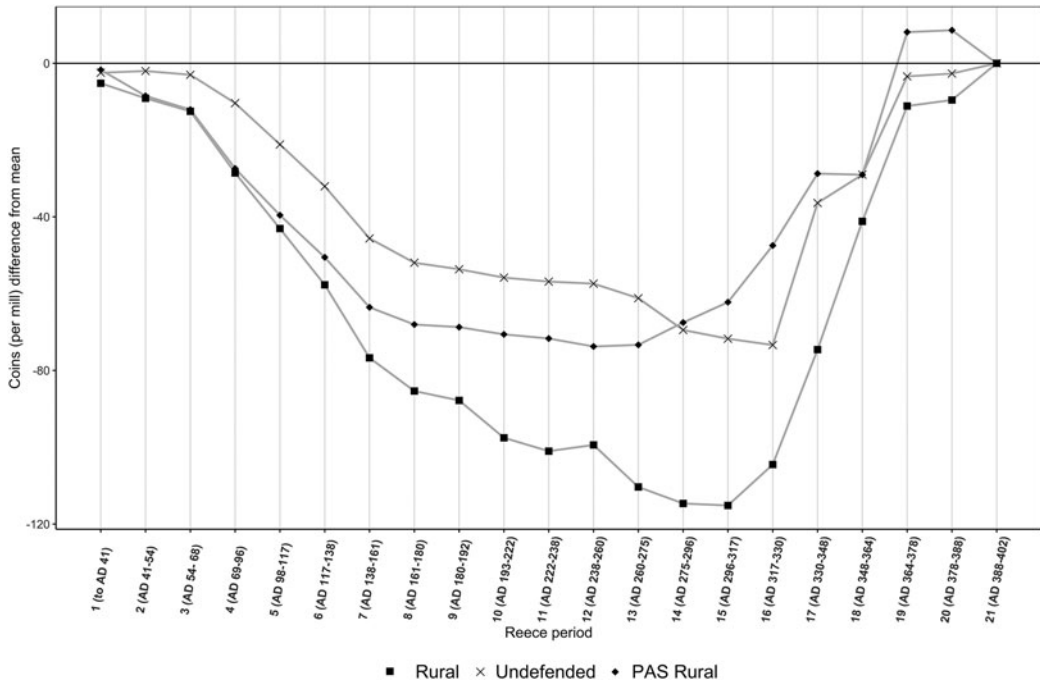


FIG. 7. The number of coins from parishes where a minimum of 25 coins have been recorded presented through graduating quantities (excavated and PAS data).

emphasises that, in general, in regions where coin deposition was lower, such as in Wales or the south-west, key military and urban centres stand out; for example Caernarfon, Caerleon and Caerwent in Wales, or Exeter in Devon. In general, densest coin deposition occurs in the south and parts of the south-west, the east Midlands, East Anglia and Yorkshire as well as between Richborough and London and along Dere Street and Hadrian's Wall. As has been emphasised in FIGS 3 and 4, there are varying regional and site type patterns within this national picture. In the following sections material from PAS and excavated datasets will be compared followed by a consideration of the data by ABCDEF phase.

ABCDEF PHASES

This section looks to undertake spatial analysis with a greater focus on patterns of coin loss rather than presence or absence. Can we identify new trends when ABCDEF phases are considered per mill? For example, are there particular regions in the east of England that behave differently with higher peaks in later coinage?

Patterns are explored through analysis of the sites within the upper or lower quartiles per mill of the 1,421 parishes. This is combined with analysis of the make-up of the site types within these two quartiles. This has been undertaken as it may reveal insights that support the spatial distributions as well as the results of the cumulative analysis in FIGS 2 and 3.

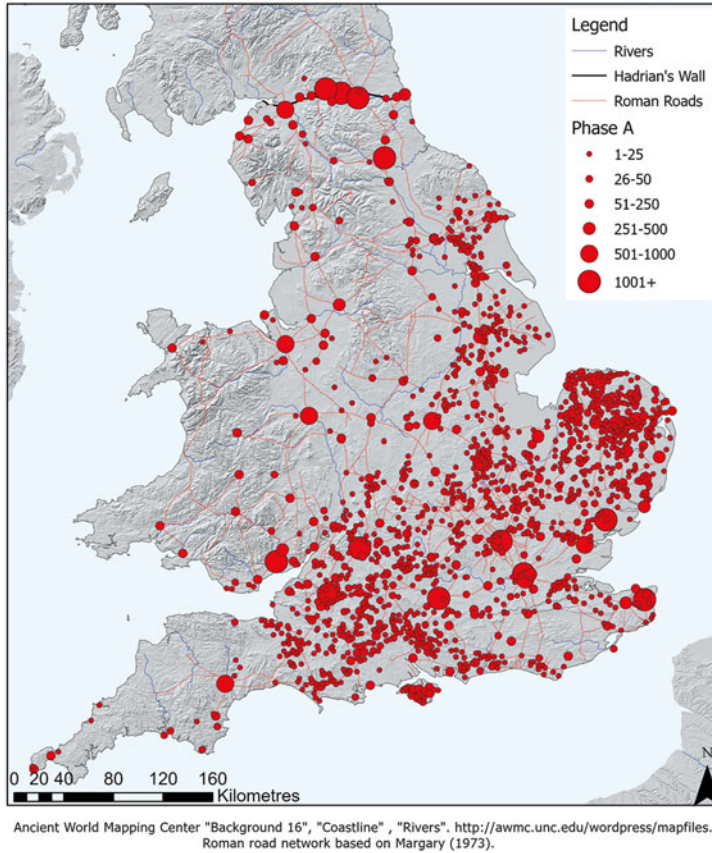


FIG. 8. The quantity of Roman coins from Phase A (to A.D. 260) from 1,379 parishes with a minimum of 25 coins identified to a Reece period (combining excavated and PAS data).

PHASE A (TO A.D. 260)

The currency system of the early Empire was tri-metallic with coinage produced in gold, silver and copper/copper alloy. In general, they were struck regularly throughout the period and had a fixed relationship to each other.³⁶ The key denominations were the silver *denarius* and copper/alloy *aes*, principally the *sestertius*, *dupondius* and *as*. The corpus here does not record denominations. It is important to note that these coins could remain in circulation for a period of 100 years or more partially due to a dramatic reduction in the supply of *aes* to Britain around A.D. 196.

76,588 coins of Phase A recorded from 1,379 parishes are considered here (FIG. 8). The largest assemblages generally occur at key military or urban sites across Britain. Large quantities are recorded from Hadrian's Wall, urban and military sites in Wales, the west Midlands and the south-west. Key urban sites such as Colchester, *Verulamium*, London, Silchester, Cirencester and the Sacred Spring at Bath all have significant coin assemblages from this phase. Coin finds are particularly dense in Norfolk.

³⁶ Walton 2012, 8–9; Bland 2018, 45.

Assemblages in the upper quartile of sites per mill are well represented at military sites in Wales, Hadrian's Wall and the Pennines (FIG. 9). A significant concentration occurs in eastern Norfolk around the *civitas* capital at Caistor-by-Norwich and in a coastal band in Norfolk and Suffolk. Concentrations also occur on the south coast in East and West Sussex and on the Isle of Wight.

The concentration of site finds in the upper quartile from Norfolk is interesting, given that the heartlands of the Iron Age polity (of the Iceni) seem to have lain in western Norfolk (such as around Thetford, which is within the lower quartile), whereas high proportions of Phase A coins occur in the environs of Caistor-by-Norwich.³⁷ It has been argued that the attenuated urban amenities there represented a meagre territory and weak local elite,³⁸ a suggestion that has been challenged.³⁹ The coin profiles from this and previous studies do not support this hypothesis.⁴⁰

Over two-thirds of military assemblages fall into the upper quartile for Phase A, which might indicate that there was little attempt to 'monetise' the hinterlands in the north and the west (TABLE 5). The military sites in the lower quartile consist of the third- and fourth-century Saxon Shore forts and signal stations. In the urban category, only the suggested fourth-century *civitas* capital at Water Newton falls within the lower quartile.⁴¹ Given the general pattern indicating below average coin loss at nucleated sites within this phase (see FIG. 3), it is interesting that almost a third of the nucleated site dataset falls within the upper quartile.

PHASE B (A.D. 260–296)

The majority of coins produced in Phase B are known as radiates due to the radiate crown worn by the emperor on the obverse of the coin. This coin was first briefly introduced by Caracalla in A.D. 215. After reintroduction by Pupienus and Balbinus in A.D. 238, it effectively replaced the *denarius*. With the collapse of the 'Augustan' monetary system in around A.D. 260, it became the only common denomination in circulation. In the 260s and early 270s, the 'radiate' became an increasingly debased denomination struck in vast quantities. The denomination was reformed by Aurelian in around A.D. 274, but the new coins (often called *aureliani*) were not supplied to Britain in great quantity. Furthermore, they do not appear to have been popular in Britain, as pre-reform radiates were only accepted at punishingly low rates of exchange with the new coins.⁴² Instead, barbarous radiates were produced in large numbers and are a regular feature of assemblages at sites.

113,552 coins of Phase B, recorded from 1,407 parishes, are considered here (FIG. 10). The debased radiates were hoarded in significant numbers and are a regular feature of numismatic assemblages across Britain.⁴³ Large assemblages start to occur at a wider range of site types within the settlement hierarchy than previously, including rural sites. Furthermore, they often occur in substantial numbers at the coastal forts known as Saxon Shore forts, many of which, for instance Richborough and Portchester, were constructed at this time.⁴⁴

The majority of sites within the upper quartile per mill for this phase occur to the south of a line between the River Severn and the Wash (FIG. 11). The south of Britain is well represented,

³⁷ Davies and Gregory 1991; Harlow 2021, 1–2.

³⁸ Mattingly 2006, 384.

³⁹ Bowden 2013, 167 suggests that the Iceni were simply not interested in public buildings.

⁴⁰ Davies and Gregory 1991.

⁴¹ Burnham and Wachter 1990.

⁴² Bland 2018, 63.

⁴³ Bland *et al.* 2020.

⁴⁴ Drinkwater 2023.

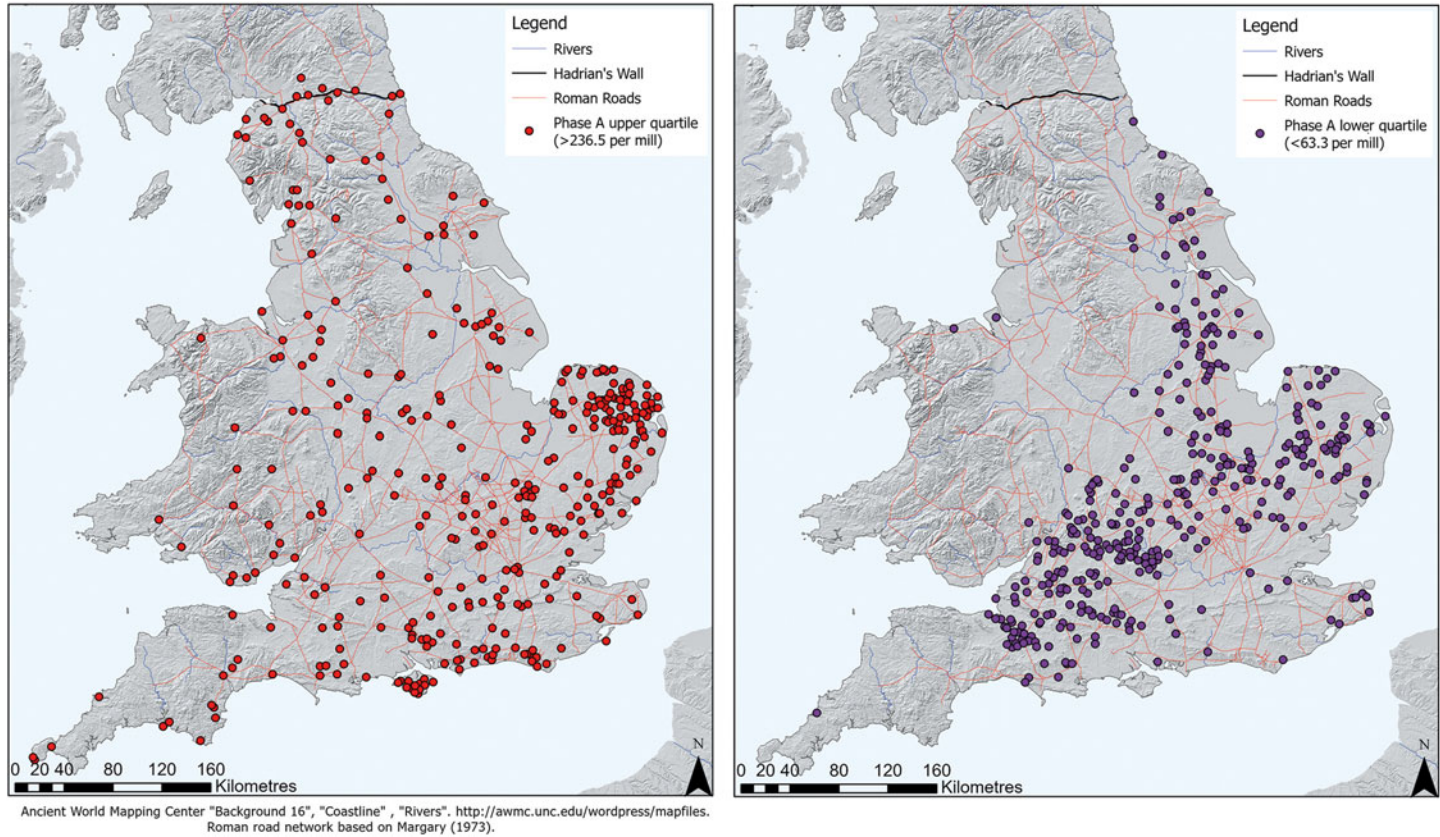


FIG. 9. Comparison of the upper and lower quartile of coins per mill from Phase A (To A.D. 260).

TABLE 5. THE PERCENTAGE OF EACH SOCIAL CATEGORY THAT FALLS WITHIN THE UPPER AND LOWER QUARTILE FROM PHASE A (TO A.D. 260)

Site type	Percentage in upper quartile (Phase A)	Percentage in lower quartile (Phase A)
Military	67.9	13.2
Urban	38.4	3.8
Nucleated	29.5	18.7
Rural	18	37.6
PAS Rural	24.6	24.1

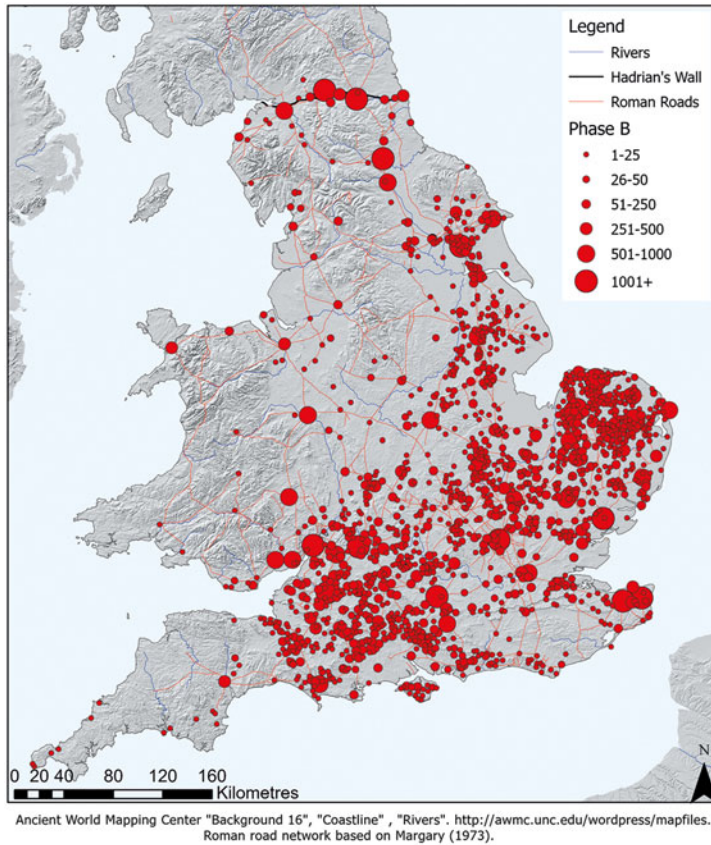
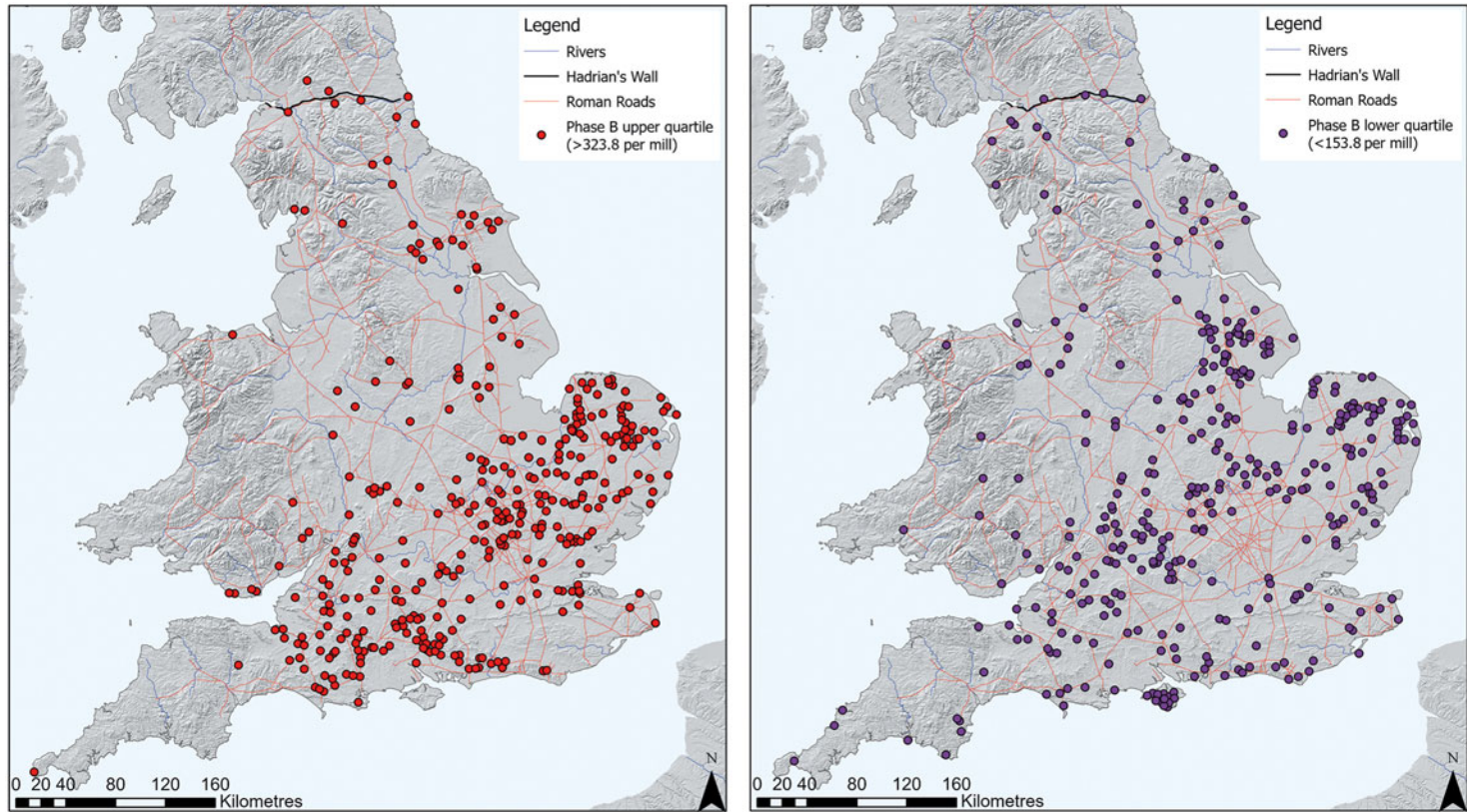


FIG. 10. The quantity of Roman coins from Phase B (A.D. 260–296) from 1,407 parishes with a minimum of 25 coins identified to a Reece period (combining excavated and PAS data).

particularly in the environs of Winchester. Strong radiate peaks are noted at sites in the east Midlands and East Anglia, particularly along the River Great Ouse. A significant number of sites in Lincolnshire have below average coin deposition in this period, as do the Isle of Wight



Ancient World Mapping Center "Background 16", "Coastline", "Rivers". <http://awmc.unc.edu/wordpress/mapfiles>.
Roman road network based on Margary (1973).

FIG. 11. Comparison of the upper and lower quartile of coins per mill from Phase B (A.D. 260–296).

TABLE 6. THE PERCENTAGE OF EACH SOCIAL CATEGORY THAT FALLS WITHIN THE UPPER AND LOWER QUARTILE FROM PHASE B (A.D. 260–296)

Site type	Percentage in upper quartile (Phase B)	Percentage in lower quartile (Phase B)
Military	20.7	50.9
Urban	34.6	11.5
Nucleated	26.1	21.5
Rural	30.4	28.5
PAS Rural	23	23.8

and parts of Norfolk. It is interesting to see low proportions of coin loss in this phase in the environs of the Saxon Shore forts at Burgh Castle and Caister-on-Sea.

Within the military site type category it could be envisaged that the Saxon Shore forts would have formed the bulk of the military sites within the upper quartile, given their construction date, yet only two are included.⁴⁵ The majority of military sites within the upper quartile are those on Hadrian's Wall or in the Pennines. In contrast with Phase A, the proportion of rural sites within the upper quartile has increased, yet this is not paralleled within the PAS data (TABLE 6).

PHASE C (A.D. 296–330)

In A.D. 294 a new copper-alloy denomination replaced the radiate. Its name is uncertain, but it is conventionally called the *nummus*. Initially the *nummus* weighed a little over 10 g but reduced in size and weight in a number of reforms to c. 2.5 g by A.D. 317. In the years A.D. 296–330 the principal mints supplying Britain were London, Trier, Lyon and Arles; coinage was produced at a mint in London until A.D. 325, after which point all coinage was imported from the continent.⁴⁶

30,985 coins from Phase C were recorded from 1,351 parishes (FIG. 12). In general, these coins occur in lower numbers at sites across Britain than those from Phases B and D. Large assemblages are recorded from sites such as Richborough, Silchester, Lydney and Caistor-by-Norwich. Sites in the periphery such as Devon, Cornwall, Wales, the west Midlands and the north-west all have limited assemblages of coins from this period.

Sites along the Roman road linking Winchester, Old Sarum and the Mendips are well represented when the upper quartile for Phase C is considered, as are sites in the Somerset Levels (FIG. 13). Lincolnshire and East Anglia also appear prominently. In Norfolk variation can be noted between the east and west of the county; sites along the River Great Ouse and the Fens are generally more prominent in the lower quartile, as is the Suffolk and Essex coast. Only one parish on Hadrian's Wall is mapped in the upper quartile (Castlesteads – Walton parish); this reflects the decline in coin deposition along Hadrian's Wall, in the Pennines and in Wales noted in the cumulative analysis in FIG. 3.

Arguably Phase C should be viewed as transitional, the stage when the trends in coin loss seen in FIG. 2 (such as the increasing decline in coin loss at military sites and the start of the trend of increase in coin loss at rural sites) begin to occur. Perhaps the most notable elements are the absence of urban sites in the upper quartile and the percentage of nucleated sites that fall

⁴⁵ Caistor-on-Sea and Reculver. A further site which falls within the upper quartile is *Claudentum* (Southampton) which has been suggested as a possible Saxon Shore fort in the past.

⁴⁶ Cloke and Toone 2015, 73.

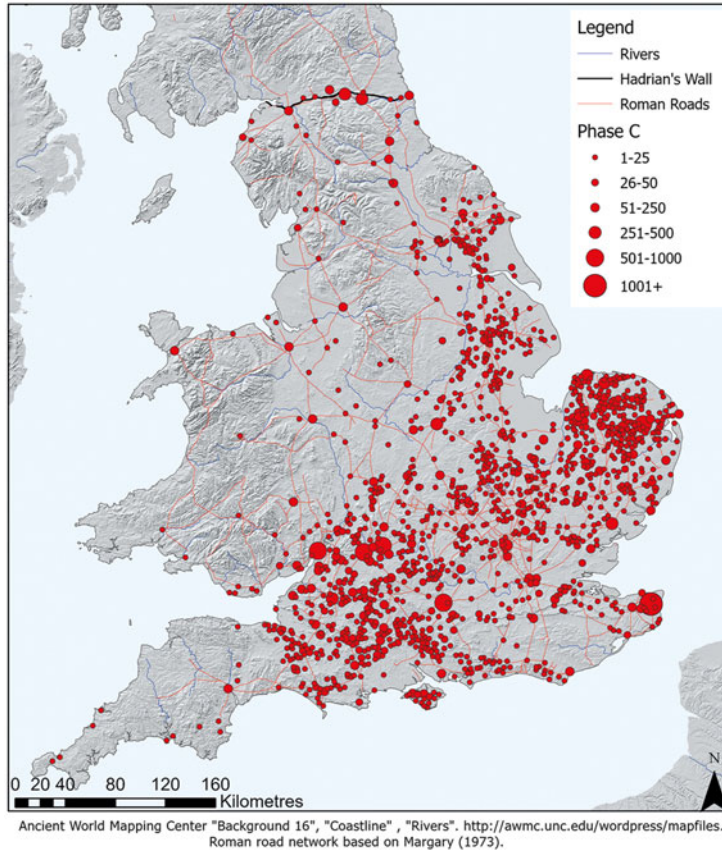


FIG. 12. The quantity of Roman coins from Phase C (A.D. 296–330) from 1,351 parishes with a minimum of 25 coins identified to a Reece period (combining excavated and PAS data).

within the lower quartile (TABLE 7). FIG. 3 demonstrates that at the majority of nucleated sites, which have been viewed as generally prosperous in the fourth century, the step change occurs in Phase D.

PHASE D (A.D. 330–364)

The principal denominations of this phase consisted of the gold *solidus* and two silver denominations called *miliarensis* and *siliqua*, along with the copper-alloy *nummus*. This uniform system of denominations was central to the fiscal system, ensuring that the government could discharge its obligations. Gold and silver coinage was used to pay the army and the bureaucracy; the *nummus* in contrast was the mechanism for precious metal coinage to be clawed back through taxation after exchanging it with a money changer.⁴⁷ After it had fulfilled this role, it was of little use to the state but was crucial to most of the populace of the diocese of Britain.

⁴⁷ Esmonde Cleary 2013, 331.

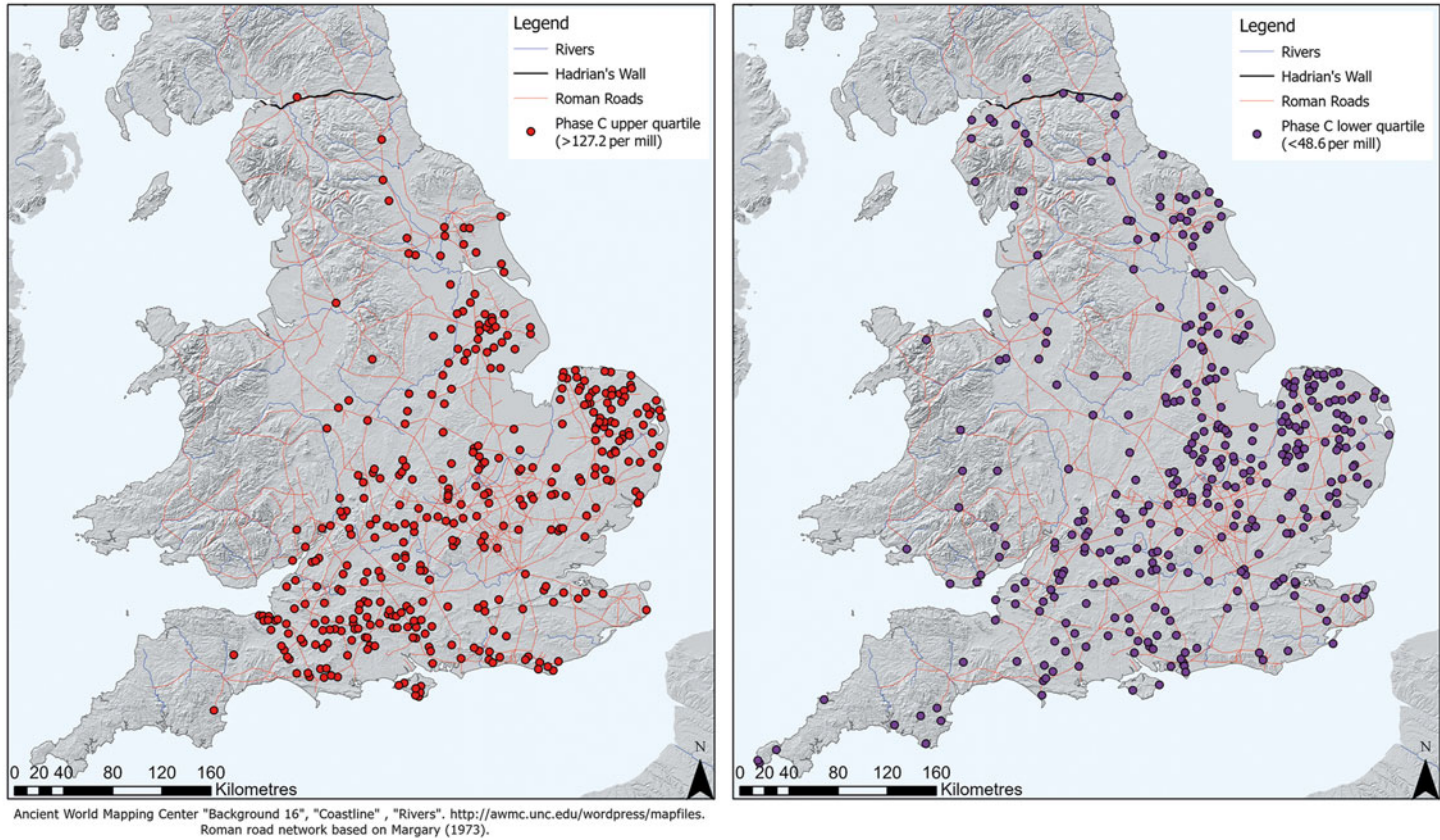


FIG. 13. Comparison of the upper and lower quartile of coins per mill from Phase C (A.D. 296–330).

TABLE 7. THE PERCENTAGE OF EACH SOCIAL CATEGORY THAT FALLS WITHIN THE UPPER AND LOWER QUARTILE FROM PHASE C (A.D. 296–330)

Site type	Percentage in upper quartile (Phase C)	Percentage in lower quartile (Phase C)
Military	11.3	60.3
Urban	0	42.3
Nucleated	14.2	32.3
Rural	17.6	30
PAS Rural	31.5	20.1

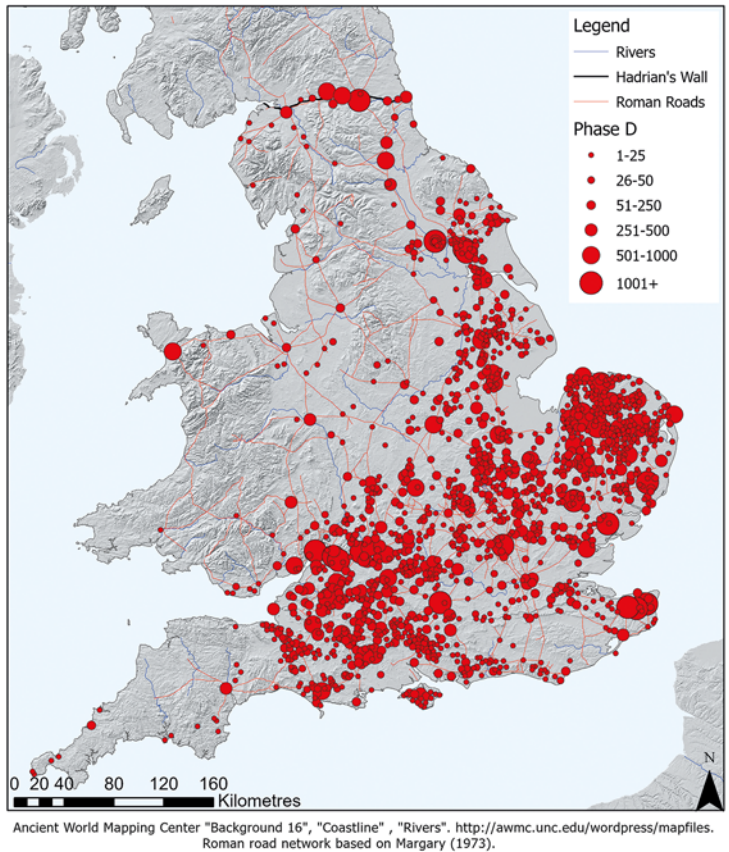


FIG. 14. The quantity of Roman coins from Phase D (A.D. 330–364) from 1,402 parishes with a minimum of 25 coins identified to a Reece period (combining excavated and PAS data).

150,357 coins from Phase D are recorded in the corpus, from 1,402 parishes (FIG. 14). Coins from this period occur in the greatest numbers in Britain, particularly coins of Reece period 17 (A.D. 330–348). Again they occur in greatest quantities south-east of a line between the Severn and the Wash, as well as along Dere and Ermine Streets and Hadrian’s Wall.

Interestingly, although coins from this phase are well represented in the south and in Kent, the pattern based on the upper quartile has a greater focus on Somerset, Gloucestershire and Wiltshire in the south, as well as on the east Midlands and Norfolk (FIG. 15). In contrast to Phase C, higher numbers of sites fall in the upper quartile in the west of Norfolk and the region around the Wash appears to be an area of significant wealth in the mid-fourth century.⁴⁸ The environs of Winchester and Chichester both fall within the lower quartile which coincides with changes noted to the character of Winchester at this point.⁴⁹

The trend for higher percentages of military sites to fall within the lower quartile continues in Phase D (TABLE 8). Greater divergence is seen within the urban category, as can be noted in FIG. 3. Generally, the large towns have higher proportions of Phase D per mill than the *civitas* capitals. This decline in coin loss at *civitas* capitals and the increase in coin loss at nucleated sites has been emphasised in the past by authors such as Martin Millett.⁵⁰ Similarly, the percentage of rural sites which fall in the upper quartile is increasing when compared with Phase C. The question of the increasing deposition of coinage at nucleated settlements will be considered below.

PHASE E (A.D. 364–402)

This phase represents the last significant period of coin supply in Britain under the House of Valentinian and House of Theodosius. From A.D. 395 the mints north of the Alps stopped producing *nummi*, marking a watershed for the whole of the north-west provinces.⁵¹

A total of 93,094 coins from this phase were recorded from 1,337 parishes (FIG. 16). When compared with Phase D a reduction in coin deposition is visible across Britain. These coins occur in large quantities in specific regions such as Hampshire, Wiltshire, Gloucestershire and Oxfordshire as well as the east Midlands, Norfolk and Suffolk and along Ermine Street to York. As previously noted, over 20,000 coins of Reece period 21 were recorded from Richborough and fall within this phase.

The comparison of the upper and lower quartiles per mill from this phase is particularly interesting and demonstrates the value of such an approach as a simple consideration of the presence or absence of coins from a particular Reece period or phase masks the underlying pattern. As noted already, the south is particularly strong, especially the environs of Winchester, Wiltshire and the Upper Thames Valley (FIG. 17). Regions of the east Midlands located along Ermine Street or in the vicinity of the Great Ouse also have high proportions of coins of this phase. In Norfolk it is only the west and north-west coast that includes sites with particularly high proportions of coins from this phase. As can be seen, the east coast from Norfolk to Essex regularly falls within the lower quartile, as do sites in East and West Sussex.⁵²

FIG. 17 emphasises sites which continue as part of the coin-using economy until the end of the fourth century and might also represent the regions where large numbers of public servants (either military or the bureaucracy) were stationed. It has been argued that sites with particularly strong peaks of coin loss in the House of Valentinian represent an increase in rural activity which Sam Moorhead has linked to the export of grain to the continent revived in the reign of Julian the Apostate (A.D. 355–363).⁵³

The number of military sites in the upper quartile declines further in Phase E, although a number of the signal stations on the Yorkshire coast are represented, as is Richborough

⁴⁸ Davies and Gregory 1991; Mattingly 2006, 385; Hobbs 2006.

⁴⁹ Booth *et al.* 2010, 523–6.

⁵⁰ Millett 1990, 143–56.

⁵¹ Kent 1994; Esmonde Cleary 2013, 348; 2017.

⁵² This trend was noted by the RRS when considering roadside settlements in East Anglia: see Brindle 2017, 267–8.

⁵³ Moorhead 2001, 160; 2009.

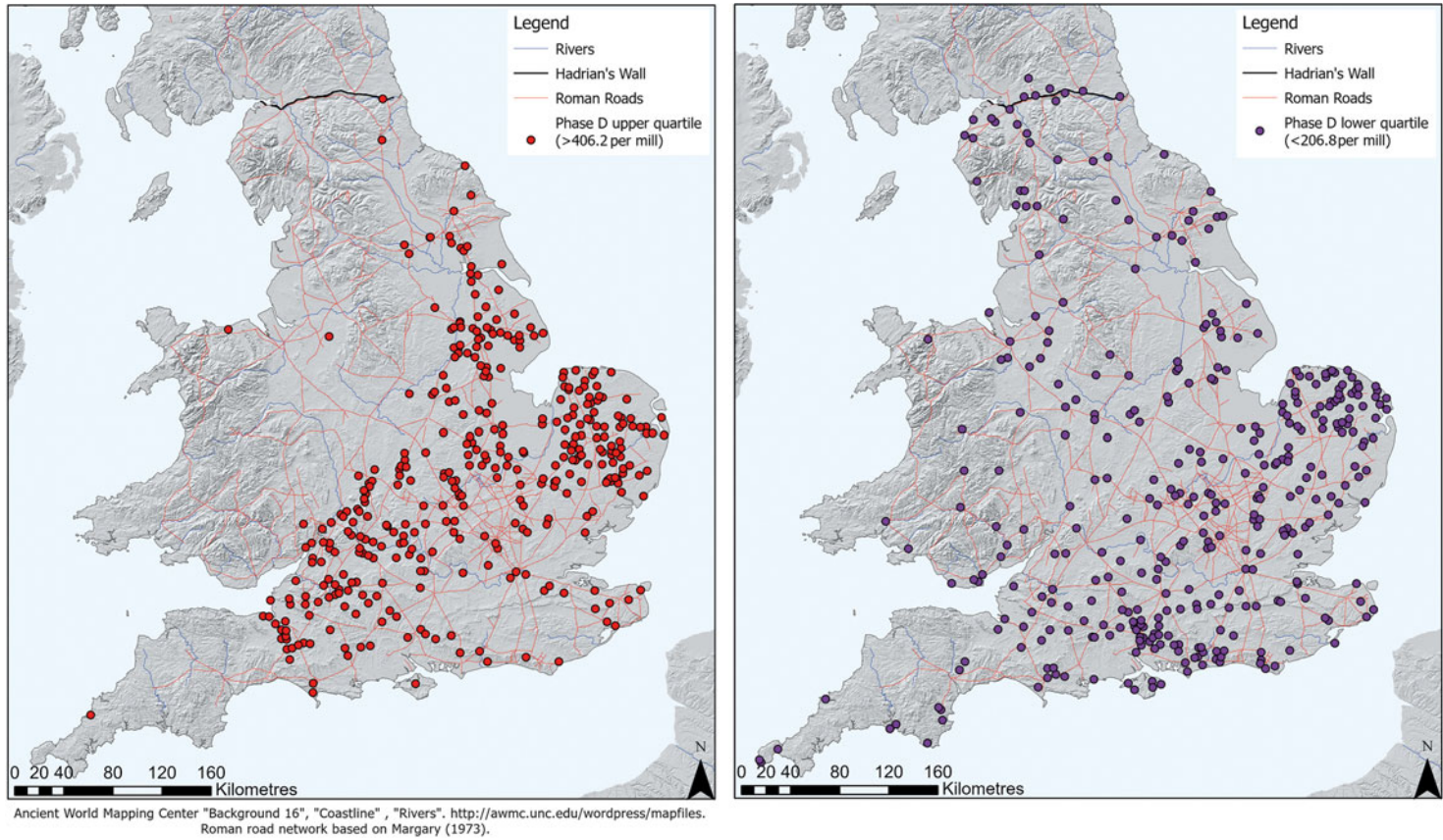


FIG. 15. Comparison of the upper and lower quartile of coins per mill from Phase D (A.D. 330-364).

TABLE 8. THE PERCENTAGE OF EACH SOCIAL CATEGORY THAT FALLS WITHIN THE UPPER AND LOWER QUARTILE FROM PHASE D (A.D. 330–364)

Site type	Percentage in upper quartile (Phase D)	Percentage in lower quartile (Phase D)
Military	16.9	69.8
Urban	7.6	13.3
Nucleated	25	22.7
Rural	32.8	20.9
PAS Rural	25.1	23.4

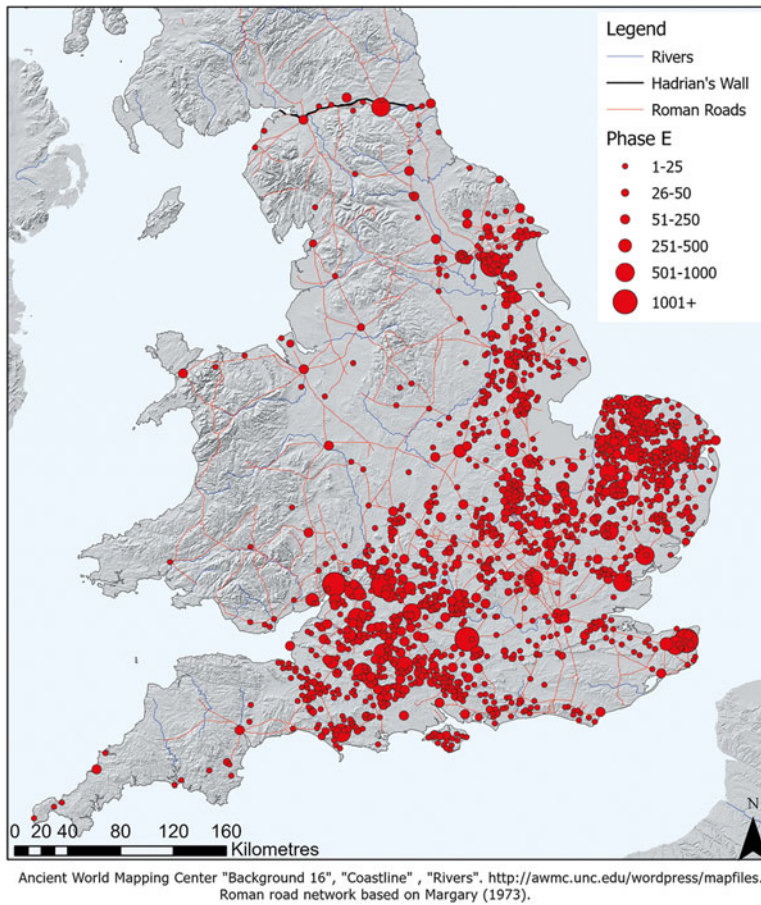


FIG. 16. The quantity of Roman coins from Phase E (A.D. 364–402) from 1,337 parishes with a minimum of 25 coins identified to a Reece period (combining excavated and PAS data).

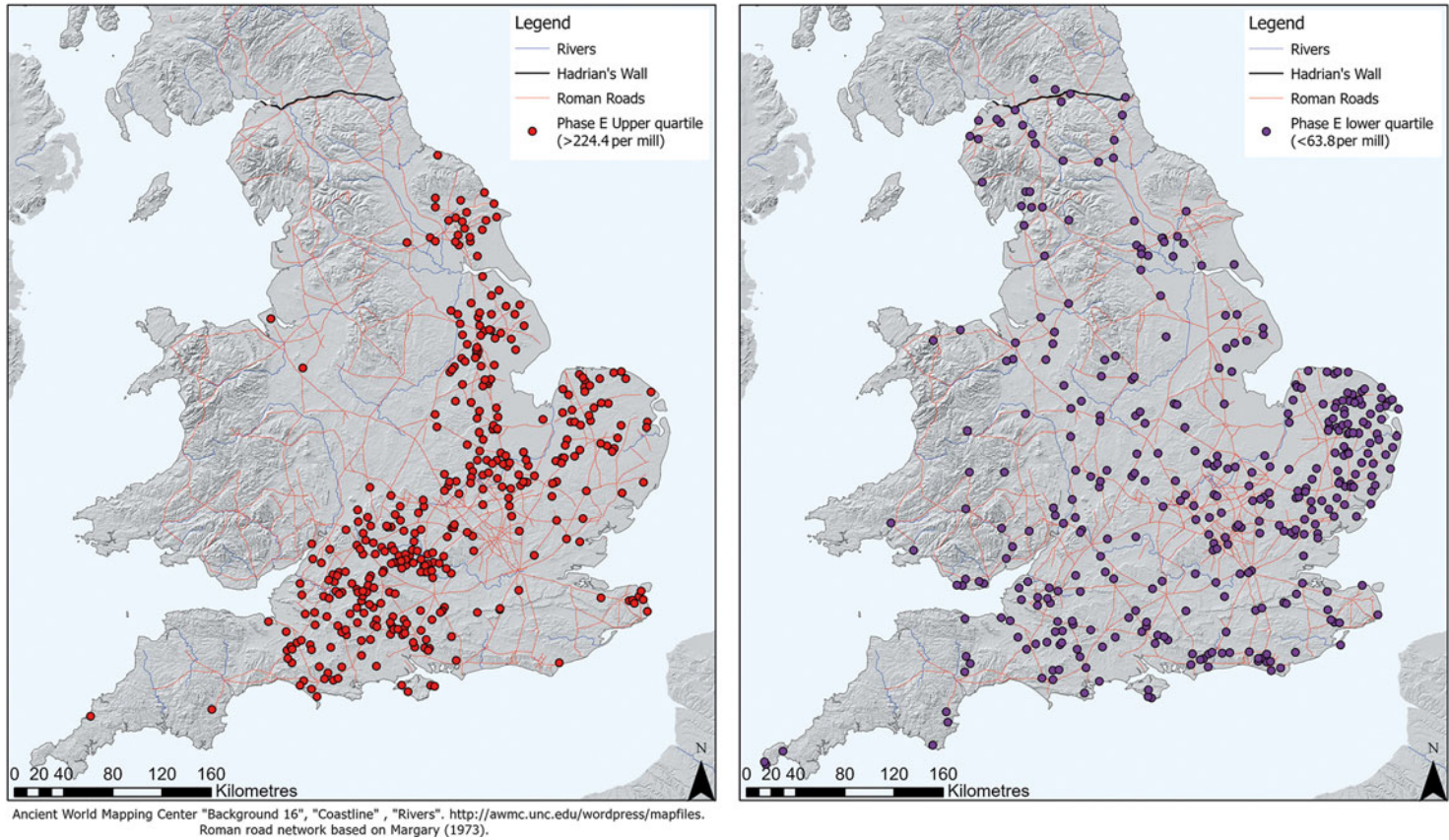


FIG. 17. Comparison of the upper and lower quartile of coins per mill from Phase E (A.D. 364-402).

inevitably (TABLE 9). The percentage of urban sites in the upper quartile in Phase E increases in contrast to Phase D. This in part emphasises the peak in coin loss noted at urban centres in Reece period 21 (see FIG. 4).

PHASE F (A.D. 402–498)

By Reece period 21 (A.D. 388–402), there was a general retraction of coin deposition focused on the road network, major urban centres and defended *vici*. The distribution of coins produced after A.D. 395, when the majority of mints supplying Britain ceased to produce copper-alloy *nummi*, causes problems for our understanding of the social and political changes that occurred at the turn of the fifth century.

This corpus includes only 48 coins from Phase F which date to after A.D. 402. The majority of the coins recorded as site finds from Britain from Phase F are gold; a small number of *siliquae* and *nummi* are also recorded. The limited quantity of coinage from this phase emphasises the major watershed at the turn of the fifth century. The closure of the mints producing bronze coinage has significant implications for the late Roman taxation system if, as argued, the bronze coinage played a key role in clawing back precious metal coinage.⁵⁴

The political turmoil which occurred at the turn of the fifth century ultimately led to a drastic reduction in coin supply for Britain. The general absence of supply of new coinage from the continent after the turn of the fifth century causes difficulties for our understanding of when the coin-using economy in Britain and the Roman-style taxation cycle ceased. Walton, for example, argues that a tri-metallic currency system perhaps stayed in place until *c.* A.D. 425, and this date is often suggested as the possible cessation point.⁵⁵

Although the number of coins from Phase F is sparse, these can be compared with clipped *siliquae*. There seem to be at least two phases of clipping: light clipping occurred from the 380s, large-scale heavy clipping occurs in the early fifth century. The date of the latter phase is debated but has been suggested to be as early as A.D. 402 or after A.D. 407 based on the absence of clipped coins in hoards.⁵⁶

FIG. 18 maps coinage from Phase E against clipped *siliquae* recorded with the PAS. Although we cannot state for certain when clipping was undertaken and when coinage ceased to circulate as currency, this provides one of the strongest indications for the regions where the use of Roman currency continued after *c.* A.D. 400. Analysis of the proportions of unclipped and clipped coinage defined by clip factor based on the work of Peter Guest has emphasised that there remained a standard circulating currency pool of these coins from Piercebridge to the south-west.⁵⁷ This supports the argument that clipping was undertaken at a central level and that clipped coins then circulated relatively quickly.

The paucity of clipped *siliquae* as site finds and hoards from certain regions is notable, in particular the environs of Cirencester, the suggested capital of the province of *Britannia Prima*.⁵⁸ It has been argued that in the south-west and *Britannia Prima* in particular, there was continuity of *Romanitas*.⁵⁹ In this region we see significant peaks in coin loss from Reece period 21 and a substantial number of Theodosian *nummi* hoards.⁶⁰ Perhaps there was an attempt to continue as normal much longer here than in other regions.

⁵⁴ Reece 1999; Esmonde Cleary 2013, 348.

⁵⁵ Walton 2012, 114.

⁵⁶ Burnett 1984; Guest 2005; Abdy 2013; 2020

⁵⁷ Guest 2005; Henry *in prep.*

⁵⁸ A dedication to Jupiter by the governor of the province Lucius Septimius was discovered in the town (*RIB* 103).

⁵⁹ Dark 2000; White 2007.

⁶⁰ Bland 2018, map 27.

TABLE 9. THE PERCENTAGE OF EACH SOCIAL CATEGORY THAT FALLS WITHIN THE UPPER AND LOWER QUARTILE FROM PHASE E (A.D. 364–402)

Site type	Percentage in upper quartile (Phase E)	Percentage in lower quartile (Phase E)
Military	9.4	69.8
Urban	19.2	23
Nucleated	23.8	27.2
Rural	29	26.1
PAS Rural	24.7	22

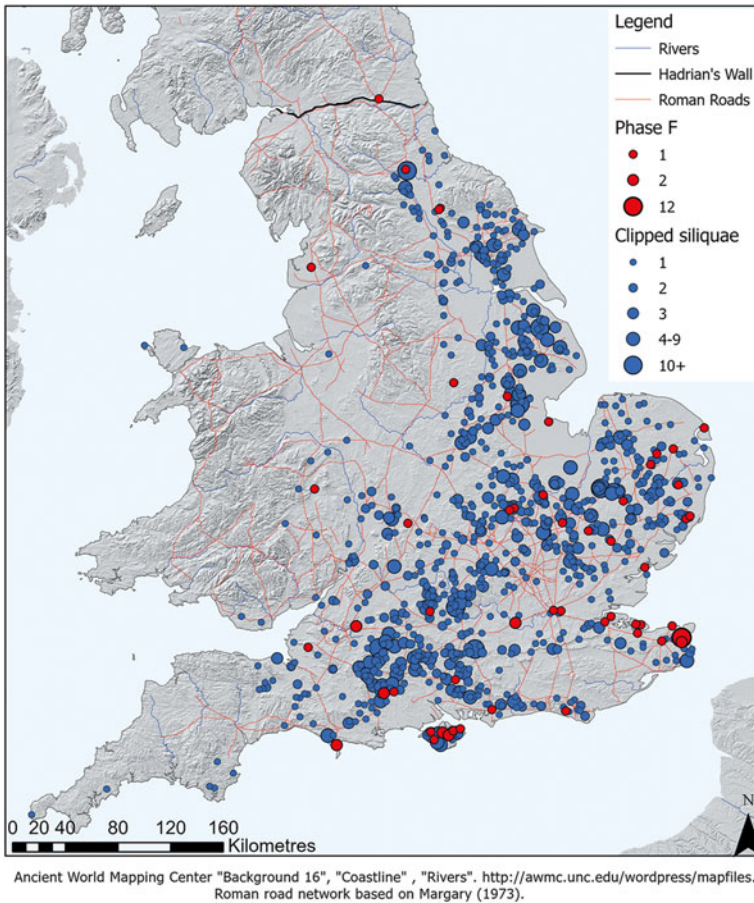


FIG. 18. Coinage produced after A.D. 402 (Phase F) mapped against the distribution of clipped *siliquae* recorded with the PAS.

I would argue that the standardised patterns noted in the currency pool emphasise that coin use continued for a longer period than is perhaps generally accepted, into the second quarter of the fifth century. The distribution of clipped *siliquae* in coin hoards suggests that the regions where

clipped coinage continued to circulate the longest include parts of the south and south-west, especially Hampshire and Wiltshire, as well as East Anglia and Yorkshire.⁶¹ It seems to have ceased by the 460s when the Patching (West Sussex) hoard includes no clipped coins.⁶² Similarly, by this date the spatial distribution of coinage has changed with a focus on the south and east coast.

NUCLEATED SETTLEMENTS AND URBAN CENTRES, CONTRASTING FOURTH-CENTURY PROFILES

In 1990, Martin Millett argued that in the fourth century the nature of the large towns and *civitas* capitals changed.⁶³ This coincided with a phase when small towns saw an increase in their prosperity. Clearly not all sites grew in prosperity, and we can discern the ebb and flow within the coin-loss profiles of many smaller settlements. Jude Plouviez demonstrated that the coin-loss profiles of rural settlements (primarily derived from metal-detected assemblages) in Suffolk were exaggerated versions of the profiles seen at the local major centre.⁶⁴ Similar patterns were noted when metal-detected assemblages in Norfolk and Wiltshire were considered.⁶⁵ With the development of this corpus and the social data associated with it, can we identify new trends or support previous conclusions?

Richard Reece previously argued that there was a divergence in the fourth century when east and west Britain are compared.⁶⁶ When we evaluate urban, nucleated and rural sites in the east, it is clear that in general coin loss is above average in Phase D and there is a decline in coin loss in some areas in Phase E. This supports the argument by Plouviez that the success of the local major centre appears to affect the prosperity of many regions directly, including East Anglia. Interestingly, the coin loss for both phases in urban centres such as Winchester and Lincoln is low, yet this is not reflected in the patterns seen in their environs.

Coin loss at nucleated settlements in general terms occurs in higher numbers from both phases when compared with urban centres. Although Reece period 21 coins occur in higher numbers at urban centres and defended *vici*, the pattern noted above is primarily based on large Valentinianic peaks in Phase E at many nucleated settlements. As has been emphasised by Martin Millett in the past, coin loss could be viewed as a proxy for economic prosperity or involvement in the fiscal system at many nucleated settlements.⁶⁷ In specific regions, decline in coin loss at such settlements has been noted, for example in southern Wiltshire and Dorset between Salisbury and Purbeck.⁶⁸ This emphasises that, even in regions where an increase in prosperity and a greater state presence have been noted, the ebb and flow of many settlements still varies.

It has been argued that taxation in kind and the development of the *annona militaris* in the fourth century would have generated new functions for 'small towns'.⁶⁹ These were generally located on key nodes of the communication network. The defended *vici* in particular should be associated with this increase in the collection of taxation in kind and the *annona*.⁷⁰ These

⁶¹ Henry in prep., chapter 14.

⁶² Abdy 2013.

⁶³ Millett 1990.

⁶⁴ Plouviez 1995.

⁶⁵ Davies and Gregory 1991; Moorhead 2001.

⁶⁶ Reece 1995, 181.

⁶⁷ Millett 1990, 143–56.

⁶⁸ Moorhead 2001; Brindle 2017; Henry and Ellis-Schön 2017, 184; Smith and Henry 2020; Henry and Moorhead 2022, 227.

⁶⁹ Millett 1990, 149–51.

⁷⁰ Millett 1990, 149; Henry and Moorhead 2022, 227.

TABLE 10. THE RAW DATA FOR EACH MEAN DISCUSSED IN THE TEXT, BY REECE PERIOD

Reece period	<i>Britain (including Richborough)</i>	<i>Britain (excluding Richborough)</i>	<i>Military</i>	<i>Hadrian's Wall</i>	<i>Pennines</i>	<i>Saxon Shore forts</i>	<i>Wales</i>	<i>Urban</i>	<i>Large towns</i>	<i>Civitas capitals</i>	<i>Nucleated</i>	<i>Defended vici</i>	<i>Undefended</i>	<i>Rural</i>	<i>Villa</i>	<i>Farmstead</i>	<i>Temple</i>	<i>PAS Rural</i>
1	4,127	3,943	421	72	152	6	145	883	575	308	686	110	543	227	76	8	115	830
2	4,013	3,609	410	3	30	6	203	1,752	1,273	479	841	69	721	259	158	16	53	169
3	2,598	2,455	257	16	90	6	86	1,085	558	527	574	53	384	133	66	2	48	232
4	13,004	12,615	2,558	123	718	30	626	3,558	1,613	1,945	3,168	319	1,779	762	354	44	251	1,541
5	10,420	10,326	3,125	435	495	26	299	1,908	674	1,234	2,380	312	1,066	545	223	25	187	1,304
6	10,393	10,315	3,425	329	410	45	173	1,587	684	903	2,368	220	1,053	533	218	43	155	1,438
7	13,808	13,695	4,350	433	555	41	188	1,793	816	977	3,501	291	1,472	734	254	57	270	2,082
8	7,654	7,616	1,839	197	277	58	103	1,031	533	498	1,842	146	920	523	183	54	171	1,471
9	2,610	2,596	469	60	104	23	32	361	184	177	663	60	351	208	72	19	83	598
10	7,575	7,522	1,478	378	747	121	142	1,409	738	671	1,661	267	1,244	445	177	44	168	1,741
11	3,052	3,038	586	128	332	64	37	602	315	287	696	87	490	207	99	11	56	667
12	4,017	3,974	451	64	270	59	40	814	479	335	943	105	708	636	136	46	193	797
13	66,631	61,866	4,881	1,214	1,948	841	503	14,383	5,001	9,382	15,676	2,710	11,405	7,761	3,308	730	2,386	16,125
14	51,813	47,705	3,361	756	1,018	899	581	11,543	5,180	6,363	11,236	2,451	8,350	6,230	2,685	580	1,974	13,057
15	11,515	11,160	845	150	281	326	77	1,511	491	1,020	2,603	345	1,926	1,487	478	94	681	3,500
16	22,233	21,364	1,191	238	224	442	111	3,087	1,342	1,745	4,784	664	3,910	3,537	1,226	237	1,119	7,226
17	114,335	104,130	5,333	961	1,456	1,768	622	21,640	7,859	13,781	28,091	3,879	22,779	15,930	6,692	1,234	5,469	29,182
18	41,762	38,494	2,046	420	966	474	103	7,503	3,743	3,760	10,119	1,422	7,899	7,214	2,414	476	3,227	9,970
19	57,648	54,751	1,438	246	455	437	272	8,772	3,265	5,507	14,714	1,942	12,483	9,225	3,463	771	3,938	18,440
20	2,503	2,388	114	6	27	78	1	404	156	248	627	104	514	417	115	17	115	676
21	35,552	12,698	240	31	120	80	8	4,096	2,120	1,976	3,441	767	2,626	2,294	829	103	728	2,324

sites often have limited evidence of internal masonry structures and therefore have been viewed as secure compounds for goods being transported by the state.⁷¹

Coin loss seems to occur at a number of defended *vici* in significantly higher proportions than in urban centres in both phases. The similarities in the cumulative analysis between defended *vici* and urban centres seems to emphasise the key roles such sites played in the administration of the late Roman state. These figures emphasise the sites in the Upper Thames Valley in particular, where many assemblages fall within the upper quartile of both Phases D and E.

CONCLUSIONS

This paper has highlighted the opportunities for numismatic research in Britain utilising this new, substantial dataset of almost 500,000 Roman coins. Analysis of the national and site type means underlines previous research that noted clear variations in coin loss at a range of site types in England and Wales. Distinctive profiles have been identified for the four main site types and sub-types. The systematic approach to the data collection further developed this patterning and emphasises links between different site types, such as similar patterns in the final decades of the fourth century when urban sites and defended *vici* are compared, or similar patterns noted in many military assemblages across England and Wales.

The similarities seen in coin loss at defended *vici* and urban centres in Reece period 21 has previously been linked to a retraction of coin use in the final decade of the fourth century back towards the road network.⁷² The similar patterns noted above suggest that these sites were central to the late Roman administration in some form. This could be a reflection of requirements for tax in kind and in coin, or perhaps hints that troops were billeted in these sites in the late Roman period. Aside from a number of assemblages such as Richborough, we can identify a regular pattern of decline in coin loss at military sites in the fourth century. This might add further weight to the arguments that Hadrian's Wall was not the major frontier in the later fourth century and that the Saxon Shore forts were not a unitary system after perhaps A.D. 320.⁷³

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⁷¹ Black 1995; Liddle 1995; Allen and Lodwick 2017, 153.

⁷² Walton 2012, 109–10.

⁷³ Cool 2010; Reece 2011; Esmonde Cleary 2017; Drinkwater 2023.

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