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ROMAN BRITAIN AND ITS ECONOMY FROM COIN FINDS

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Introduction

HISTORICAL sources for the study of Roman Britain are few in number and selective in the subjects covered. For Britain to be mentioned at all in the written imperial sources someone or something of imperial status and importance needs to have impinged on the province. Provincial written documents are non-existent and the evidence available from inscriptions in Britain is extremely limited in time, in space and in social class. Even at an imperial level mention of coins in use is only seen in two first-century sources, the *Satyricon* of Petronius and the Gospels of the New Testament. By their nature neither of these sources deals with Britain. Students wanting to understand the economy in Roman Britain can only study the coins in use and that can only be done through coin finds whether excavated or chance finds.¹ This type of study can appropriately begin at the point at which Britannia became a province of the Empire.

The conquest and consolidation

The Roman conquest of AD 43 came at a very inconvenient time for paying soldiers. In the last years BC Augustus had restored and expanded the Roman monetary system by introducing a new series of denominations which in theory stretched from coins of high value to small change but mass production was concentrated on the middle value coin, the copper *as*. These were widely distributed throughout the western empire – as it was around AD 1 – thus missing out Britain. While most of the western empire was already well supplied with middle-range change in AD 43, Britain had missed out. To make matters worse Claudius caused very little silver coinage to be produced and his mints gave up on copper and bronze at the time of the conquest. This explains the differences between coins found during excavations in Reims and Verulamium (see Table 1).²

TABLE 1. Coins found in Verulamium and Reims

	<i>Silver</i> (<i>denarii</i>)	<i>Large bronze</i> (<i>sestertii</i>)	<i>Middle bronze</i> (<i>dupondii/asses</i>)	<i>Small bronze</i> (<i>semisses/quadrantes</i>)
Verulamium (to AD 41)	21	8	28	0
Reims (to AD 41)	3 (12)	0	66 (264)	27 (108)
Verulamium (Claudius)	1	0	81	0
Reims (Claudius)	0	0	9 (36)	0

Site totals: Verulamium 5,873; Reims 1,613 (number in brackets = Reims × 4). The multiple is included for ease of comparison between the sites.

¹ Comments from friendly readers make it clear that I need to distinguish between the main source for this paper, excavated site-finds, and the newly available alternative source of the finds reported from the Portable Antiquities Scheme. I have not taken these into account because although I think I know what excavated site-finds represent, how they behave, and how they can be studied, I cannot say the same for chance finds. More studies need to be done before they can legitimately be amalgamated with excavated coins to form a single reliable source of data for Roman coin-finds in Britain.

² Reims: Doyen 2007; Verulamium: Reece 1984.

Claudius' failure to mint denarii probably caused least problems because silver seems to have moved in a cycle from the state treasury, out in state payments, through normal economic exchange and then back to the treasury in taxes. So long as taxes over the rest of the empire had been paid a good supply of pre-Claudian silver could reach Britain as payment for the state servants in the army and civil service. The almost complete absence of silver coins of Claudius from the regular supplies means that small hoards buried between AD 30 and 60 cannot easily be dated before or after the conquest. Only after Nero debased the coinage in AD 64 and struck more new denarii is the dating of a hoard by presence or absence of coins more firmly based. Dating by bronze coins is equally illusory because the last dated bronze coins of Claudius, which are the last bronze coins produced for twenty years, belong around the time of the conquest. The next influx of bronze coin datable in absolute terms belongs to the later years of Nero after AD 63.

Copper and bronze do not seem to have moved in state-to-civilian-to-state cycles – in other words, were not deemed normally acceptable as taxes – so there was no way that the large numbers of Augustan copper coins could be redirected to Britain unless a treasury official had considered the possibility of collecting copper to release in the British economy. The snag is that either the state would have had to buy the copper with silver, or accept copper instead of silver (or gold) in taxes and either way the state would be lower on holdings of silver. Since it is highly likely that it was payment in silver that kept the armies relatively happy a decrease in silver income would not be contemplated.

This idea of buying up copper coins from places with excess and moving them to places in need does seem to have been put into practice in the Mediterranean area in the last years BC – Pompeii may be an example. It may be that where this happened it was a local civic matter in which no state organisation was involved, but for details we have to await future publications.³

It used to be thought that Britain, areas of Spain and a few parts of Gaul made up for the lack of supply of copper coins by making copies of the few regular Claudian coins that were issued. But excellent work in France on hoards of these coins has changed our assumptions. The coins from the continental hoards have been examined by Besombes, stylistically, and Barradon, chemically, who worked independently. The results of the two analyses were then compared and showed a close similarity. Coins in style group A generally showed one chemical composition while other style groups had their own chemical compositions. In other words whether examined by eye for style or by chemistry for composition the same groupings emerged. From this work they have suggested that auxiliary mints had been set up in the field by the army which produced decent, but not brilliant copies of the regular coins, and many of those came over to Britain either with, or to, the army.⁴

While Robert Kenyon did the ground-work on British Claudian coins this has now been partly related to the continental material by Philip Harper, so that British-made copies have to be re-thought and redefined.⁵ It seems likely that we shall be left with the least competent as British products. This reaction to the need for coins probably demonstrates that the idea of buying up surplus copper to supply needs had fallen out of favour by the middle of the first century, that it was not an option in new, far-flung provinces, or that the middle of the first century AD was a time when little surplus bronze was in circulation.

The work just described means that things have moved on from where they were twenty years ago, but they are still in a state of flux. Most of what we formerly thought of as British attempts to fill the gap caused by a Roman invasion force arriving without coinage now have to be reassigned to auxiliary, probably military, mints in Spain and Gaul. Moving beyond the 'decent' copies the most obvious concentrations of really bad copies are at places such as Usk, which are military islands in a sea of non-coin-using Britons.⁶ They also belong late in the Claudian period and perhaps give us an idea of when the auxiliary mints – still hypothetical

³ Frey-Kupper and Stannard forthcoming.

⁴ Besombes and Barradon 2000.

⁵ Kenyon 1992; Harper 2010.

⁶ Boon 1982.

– ceased to function. The fact that many of the earlier (or better?) British Claudian coins are strongly associated with material in Gaul and Spain also suggests that supply to Britain was not a prime motive in the production of ‘extra’ copper coins. And, as yet, there is no collected evidence for anything as technically proficient as the possible Gaulish mints in Britain. But matters are still fluid because Robert Kenyon has promised to return to the subject in his retirement.

One point from his earlier work is important because I have never seen it expressed elsewhere. It relates particularly to the production of copies in copper and of substantial thickness and diameter. The production of thin silver copies presumably poses different problems. As a former art student Kenyon was particularly interested in the style of the copies and set out early in his research to make his own Claudian copies.⁷ He started with the assumption that the difficult technical and time-consuming part would be the engraving of the dies and the easy part would be the production of the blanks and striking them into coins. Experiment convinced him of exactly the opposite. Cutting a crude design on a lump of metal suitable for a punch die was the work of less than a morning and the result was perfectly presentable – as Claudian copies go. The problem came in producing the blanks whether by pouring molten copper into moulds, or simply as drops on a flat surface. The moulds clogged up with quickly cooling solidifying copper before they were filled, and the drops on the flat surface made efficient striking of one plane and one convex surface by virtually flat dies almost impossible. The relevance of this is that the production of copies is mainly a matter of the production or procurement of blanks and that the engraving of dies is less of a problem.

When we discuss British Claudian copies we can only mean ‘of the province of Britain’ with very little likelihood of the involvement at any stage of native Britons. Some Claudian copies escape from purely military surroundings, or trickle down in commerce between the army and locals, but there is very little sign that the newly arrived Roman coinage was either absorbed by the pre-existing British coin-using organization, so far as that survived the conquest, or even that that continued very far into the Roman period. The use of coins produced in this phase of copying seems to be for military purposes, and most of the newly issued and used regular coinage is connected with either military establishments or with newly established towns once they got going. This poses the question as to whether things ever changed during the Roman occupation of Britain or whether the majority of coins lost in Britain have an origin in the state services, military and civilian, even if that is several steps away from the final deposition.

So Roman (regular) or Romanized copies of coins arrived in Britain, or were produced there, in the first century AD. Where are they found? The earliest coins seem to belong to military sites and to the earliest civilian foundations, but there is a trickle down effect. In the lowlands of Britain and near army establishments, the occasional Claudian copy is found on many British, rural, farming sites. This trickle down from the army seldom seems to start off proper coin use because when the army moves on to the North and West no more coinage seems to enter the typical rural site. The fortress at Exeter seems to have been well supplied with coins until about AD 60 when the army left, but it is not until well into the second century before coin use spread slowly and slightly into surrounding settlements from the newly established towns. This could either be because there are no ‘state’ coin-users with commercial contacts with the farms, or because the coin habit has simply not taken root.

Coin supply to Britain, AD 43 to 193

The move of the army north and west – to Northern Britain and Wales – is further evidence of the spread or isolation of the coin habit. While troops in the Nene Valley, in Colchester or Lincoln were using coins in areas of Britain where British coinage was at least visible, troops moving to Cumbria or the lowlands of Scotland were using coins in areas in which such things were previously unknown. In the South and East ‘trickle down and out’ is visible in towns and

⁷ Kenyon 1992.

larger settlements while in the North and West coins seem in this period to be confined to army sites. So what has actually been found?⁸

TABLE 2. Roman coins from excavations struck between 31 BC and AD 192

	<i>Silver</i> (<i>denarii</i>)	<i>Large bronze</i> (<i>sestertii</i>)	<i>Middle bronze</i> (<i>dupondii</i> / <i>asses</i>)	<i>Small bronze</i> (<i>semisses</i> / <i>quadrantes</i>)	<i>Site total</i>
Verulamium	79	158	397	5	5,873
Canterbury	13	49	73	1	3,215
Cirencester	12	29	121	3	3,372
Lincoln	15	23	57	0	1,939
Reims	29	117	299	43	1,613

The absence of gold coins (perhaps the equivalent of £500 notes) in Table 2 is as expected because such valuable coins would rarely be abandoned as lost for ever. On the other hand, the rarity of small change is, to modern eyes, unexpected and suggests to the modern coin user extreme practical difficulties. What that means of course is that any imposition of modern ideas of coin use on Roman Britain assumes extreme practical difficulties in the Roman period, when the whole business of trade and exchange may well have been on a quite different basis.

Earlier mention of British, pre-Roman, coins might have left the impression that British small bronze coins could have made up for the lack of Roman small change. While a few British coins turn up in excavations of Romanized sites that only seems to happen where the Roman site overlies the pre-conquest site which probably means that the British coins have been disturbed from earlier (pre-conquest) deposits by construction work and the digging of pits. Where the pre-conquest settlement is separated from the Romanized site, as at Corinium/Cirencester three miles away from the earlier settlement at Bagendon, there is little contact. Bagendon, although clearly continuing to be occupied, as judged by the pottery, into the 60s AD produced no first-century Roman coins, and all the excavations of early Roman levels at Cirencester have produced only one or two British coins.⁹

We know the relative values of the coins in the table above but there is a major gap in our knowledge in that we do not know what balance of denominations was supplied from the mint. It has always been assumed that in general the higher the value of a coin the less likely it is to be permanently lost – that is dropped and not found again. Size must also play a part, for it is easier to find a modern 50p piece (diameter 26 mm) than a 5p piece (diameter 17 mm) when the coins are dropped in a grassy field or on a muddy track. With those points in mind the smaller change ought clearly to make up the majority of coin finds, a suggestion with which excellent modern experimental studies agree.¹⁰ That this is so clearly not the case in Roman Britain can only mean that the small denominations were not supplied from the mint. It seems unreasonable to assume that they were supplied, but were rarely used or lost. There is also the context to be considered, but unfortunately this is a subject which still needs to be taken in hand. Military site needs to be compared with civilian site, and within sites areas of housing need to be compared with possible areas of commerce. A first step in this direction was taken at the fort at Usk where concentrations of coin loss were noted.¹¹

Early coin hoards and coin use in Britain and beyond

If we bring hoards into the picture Britain is out of step in this early period. The typical hoard of the first two centuries AD in France is made up of bronze and copper coins from the sester-tius down to the *as*, with much rarer hoards of denarii. The typical British hoard is of denarii with only occasional hoards of copper and bronze. Perhaps it is for similar reasons that the actual denarii excavated at Reims struck in the second century are often local imitations with

⁸ For Reims: Doyen 2007; for the British sites in Table 2: Reece 1993.

⁹ Bagendon: Clifford 1961; Cirencester: Reece and Guest 1998.

¹⁰ See Frazer and Van der Touw 2010 for an Australian example and excellent summary of other studies.

¹¹ Boon 1982, 7.

silver plate on copper cores.¹² In Britain this type of coin is rare, second-century denarii are usually regular issues, and it is not till the early third century that some denarii appear to be irregular. This imbalance between a reasonable number of good denarii in Britain and a scarcity in Gaul needs to be followed up further. It is possible that the larger number of soldiers in Britain compared with Gaul is an important factor in both the quality and quantity of denarii, whether as hoards or site-finds. This could be checked by a thorough comparison in the future of site-finds and hoards in Britain, Gaul and Germany.

This suggestion of military involvement may well be a statement of the obvious; clearly the state would only send coinage to the province for its own selfish reasons, to keep the army happy and to pay the civil servants whose main task, in the view of Rome, was to bring back as much as possible of the money supplied in taxes. The reason this is worth examining further is that if it is true then only the state servants will have had an interest in the supply of coinage. It might have trickled down the exchange system but on this thesis the exchange system would have used it when available for part of its transactions and done without it when necessary. The hoards of denarii in Britain in the second century, which are not typical of other parts of the empire, can easily be seen as bags of state payments to state servants which remain 'in store' in a province where the use of coinage belonged to the upper crust. The occasions on which such bags might move from state coffers to individuals would vary, but a good example would be the honourable discharge of soldiers, at which they would receive the balance of pay, savings and a leaving gratuity. There were more than enough discharged soldiers in Britain to account for the British denarius hoards.

Does coin use in Britain follow the pattern in Gaul or does it develop an individual trend? While the dividing line on coin supply and use in the middle of the first century AD is at the Channel (Augustan supply, or not), by the early third century the dividing line is about the river Loire in the middle of France (reason totally unknown). Coin supply to Gaul in the early third century (Severus, AD 193–211) onwards varied though this is only caught in occasional glimpses as museums are trawled for local finds and very occasional large groups of site-finds are published. In the south bronze and copper continue to be found through the third century and provide some of the more common finds of the middle of the century.¹³ North of the Loire and in Britain third-century copper is rare – with only one or two exceptions. Few early third-century denarii are found in any part of Gaul but they do occur in Britain and especially on the East coast. The recently published coins from the excavations of the Shore Fort at Reculver show the presence of rare bronze coins, with one coin from the Balkans otherwise unknown in Britain, together with the expected Severan denarii.¹⁴ The Severan military expeditions to Scotland seem an appropriate explanation for the early third-century denarii on the East coast of Britain, and once again there is a link between the supply of denarii and the pay for the army.

The third century

The lack of coinage supplied in the early third century seems to support the state servant model, for denarii are definitely present around the military centres on the East coast while the bronze issues which do not arrive would be convenient if a flourishing market economy existed, but were not essential to keep the army paid and happy. But things were changing. The army was different from its classic first-century form and its installations in Britain were changing, with more attention being given to guarding the interior of the province through coastal stations. The monetary system had changed out of all recognition from the neat system of denominations of Augustus, so that by the middle of the third century the most commonly produced, used, and lost coins were the radiates, which have silver contents sliding down from forty-eight per cent (AD 194) to less than one per cent (AD 270). There was no longer a good

¹² Doyen 2007, 191–5.

¹³ Reece 1973.

¹⁴ Reece 2005.

supply of bronze denominations, few were minted after about 255, and gold issues were highly variable both in fineness and weight.

To add to the uncertainty the empire seems to me to be turning inside out.¹⁵ Motivation for extending Roman rule in the first century is constantly discussed, and opinions vary between the extremes of frank exploitation of new markets and a mission to civilize the known world. Even if mission was the prime mover it must soon have become clear that new mission fields for classical ideals were new markets for goods produced in the Mediterranean area and new sources of raw materials and minerals. This can be documented quite easily in material terms in Britain, where Italian and Gaulish pottery and wine, and Spanish oil, were imported in reasonable amounts, and there was the almost immediate imperial exploitation of the silver from the British lead mines as demonstrated by surviving stamped lead pigs. Reduced to its basics, the first and second centuries were the time when the centre ripped off the periphery.

But through the second century the provinces put their affairs in order and began to fight back. In the early third century I see a time of slack water with no very obvious balance of trade or profit in either direction, and by the later part of the third century it is Britain that seems to be booming while Italy is looking distinctly unwell in the sense of its economy and prosperity. It could be seen as the time when the provinces began to live at the expense of the centre.

The third century after about 225 presented problems as much for the paymasters of the Roman army as it presents for modern archaeologists and numismatists. The commonly struck more valuable coin, the denarius, changed into the radiate, which might be worth either two denarii, which would have to be a notional tariff, or one-and-a-half denarii, which represents its actual weight of silver as related to the denarius. The radiate itself, which was first struck in 215 at 48 per cent silver, quickly degenerated into a copper coin with a small addition of silver. Gold meanwhile became erratic both in the weight of individual coins and in the gold content. With radiate coins of such low intrinsic value, yet a notional tariff of at least a denarius, the old copper and bronze denominations had little place, so it is not surprising that few were lost after about 260. To be more accurate perhaps we should say that few ever occur as site-finds after about 260. Yet again it is possible to quibble and insist on even greater attention to detail.

The simple statement that few copper and bronze denominations occur as site-finds after about 260 is problematic. It confuses the date of the coins with the date of their loss, which has to come from the deposit in which they were found. While it is reasonable to suggest that subdivisions of the billon radiate were probably not struck in great numbers, so were not widely circulated, and thus were only available for loss in restricted parts of the empire, at the moment we just do not know when they were lost because the number of coin reports from excavations, empire wide, which give details of deposits in which each coin was found may not need the fingers of both hands to count them. This, in turn, means that not only do we not know when newly struck copper coins were lost, one by one in the third century, but we have no idea of when the great volume of earlier issues left circulation.

There is some evidence which can help. Hoards of copper coins were still being buried, judging as always by the date of the latest coin in the hoard, in the 270s. This agrees with the fact that Postumus (260–69) overstruck old sestertii to turn them into double sestertii. Sometimes it was a complete overstrike, sometimes just the addition of a radiate crown as a punch mark. Thirdly, there is the composition of barbarous coins imitating regular radiates of the 270s. Many of these coins are simple coppery discs which clean easily, but others are more bronze-looking discs which take more time to clean because they have whitish surface deposits typical of the corrosion products of tin, lead and zinc. I apologise for this inexact and anecdotal evidence, but for the moment it seems to be all we have, because there has not been a full programme of chemical analysis of Barbarous Radiates. The relevance of this to the fate of sestertii is simple, in that it is clearly good sense to melt down a single worn old sestertius

¹⁵ Reece 1981a.

containing copper mixed with lead, zinc and tin to produce several radiate coins each of a higher notional value.

The fate of silver can also be charted from hoards. My objection to writing the whole of monetary history from hoards is that they represent not the coins in general circulation but the coins chosen from circulation to put away for the future. In the case of the denarius older is finer; that is, from the 90s AD onwards older denarii have a higher ratio of silver to copper in their alloy than newer denarii. This does not mean that judged one by one an old coin will contain a higher weight of silver than a new coin, because loss by wear can overtake debasement. I have been able to show elsewhere that favouring the selection of old coins over new – provided you have a large variable groups of coins to choose from – may lose you an appreciable weight of silver.¹⁶ Leaving this on one side, it is clear that when the composition of hoards of denarii is put in sequence the rate at which the coins of each emperor drop out of circulation speeds up in the third century and few seem to be available for hoarding after about 260.¹⁷

By 270 or so bronze and copper coins were fast dropping out of use, the radiate had declined to below 1 per cent of silver, old denarii were scarce, and gold was both scarce and variable. This must have caused major problems for the payment of troops. The only possibilities were radiates and gold, because those were the only denominations being commonly minted and supplied to the provinces – and even there the supply of gold has to be a theory in the almost complete absence of evidence. While the army of the third century was different from that of the second century it still seems very unlikely that soldiers in Britain in the middle of the third century would have been satisfied with pay judged in bags of billon radiates. While there is no doubt about the garrisons in many existing forts and the building of new forts no one so far as I know has examined the question of the actual coins used for army pay at that time or the peculiarities, if any, of coin loss on military sites. On civilian sites there is little doubt about the supply, use and loss of radiate coinage because these are the coins with which coin loss at a majority of rural sites begins. The rebuilding of the typical Roman villa after the second century seems always to cover a few radiates so that such rebuildings or new foundations are constantly referred to as a time of prosperity in Britain in the late third century. It seems surprising to mention a period of affluence at a time when the supply of coinage was in crisis, so that my usual explanation has been that these low value coins, and the copies of them of even lower value, form the first coins that were relevant to trade and exchange in Britain.

An extra problem at this time is political. While the emperor Valerian was fighting off the Persians in the East the Germanic peoples in the West were threatening the Rhine. These events resulted in the establishment of an alternative government in the north west provinces. The Gallic Empire lasted from 260 until its reduction by Aurelian in 274. The central empire continued striking coins for the central emperors while the Gallic mints struck coins for the Gallic emperors. It seems likely that in the slide of debasement of those years Postumus usually managed to retain a silver content for their coins a little higher than that of his imperial rivals. Neither side would actually supply coin to its opponents, so this raises difficult questions about the date of arrival of coins of say Gallienus (sole rule 260–68) in Britain. Should they be used to date deposits in which they are found to around 265 on the assumption that they moved swiftly by some sort of diffusion, or did they only arrive in Britain after the suppression of the Gallic Empire in 274? Might they even be evidence of the central empire off-loading base earlier coinage on the provinces after 274?

The minting, release, supply and arrival of the base radiate coins struck after 260 is at present a very tangled web, which is being actively examined on the continent through the study of both hoards and site-finds, but the results have neither been fully published, nor have they leaked across the Channel. We need to do some detailed work of our own because we cannot simply accept the French work and so discount direct supply by sea from the Mediterranean; we cannot assume that whatever can be demonstrated in France necessarily

¹⁶ Reece 2008.

¹⁷ Reece 1988b.

applies to Britain after a time-lag. An excellent start on this problem can be seen in the work of Vincent Geneviève around Bordeaux and Toulouse.¹⁸

With all the problems outlined above it is not surprising that when he had brought most of the empire to order Aurelian (270–75) instituted a reform of the coinage. The weight of each new coin was raised to around 3.5 g, and the silver content was probably expected to be five per cent but seldom actually reached that figure. These coins occur commonly as site finds in the south of France, in Italy, and in the Mediterranean area in general but are rarer in the north of France and in Britain.¹⁹ The Loire divide seems still to operate. The general standard and appearance of these coins makes it easier to believe that they could be tolerated as military pay. Their rarity among British site-finds may be due to their high purchasing power compared with the former small change of the base radiate. If they were thought of as in some ways similar to the old silver denarius – with the state making a major profit by over-valuation – then their rare appearance might be explained. The coin list from a rural site rarely contains a denarius even when it is clear that the site is occupied during the second century. The rural site seldom has a reformed radiate which was only available for one or two decades. The reasons might be similar even though on discovery the denarius gleams silver while the reformed radiate looks like copper. This rise in face value does not seem adversely to have affected losses in Gaul or Italy, and a few large hoards such as that from Gloucester which consist almost entirely of these coins, show that they certainly entered Britain in reasonable numbers.

The years around 260 to 270 are marked in the coins from almost every site in Britain where coin loss suddenly increases by a large amount.²⁰ Towns show an increase in coins lost per year which far exceeds that of the second century, and in rural sites such as villages and villas radiate coins are either the first coins to be lost and found, or they form the first evidence of continuous coin loss. There is therefore the clear conjunction of a sudden province-wide increase in coin loss at the moment when the only coin available is the lowest valued coin ever lost in Britain. If we take the first-century denarius as a little heavier than the third-century radiate and the denarius of high silver content, then the official radiate (Claudius II, 268–70) with one per cent silver cannot have a bullion value of more than one hundredth of a denarius. The first-century quadrans was a quarter of an *as*, which was a quarter of a sestertius which was in turn a quarter of a denarius, so the quadrans was rated at 64 to the denarius while the radiate, in silver value, would rate at 100 to the denarius. The insoluble problem is the extent to which the purchasing power or face value of the radiate can be measured by its silver content. Even if we assume an over-valuation of the radiate of 100 per cent it comes out as little different from the rare first-century quadrans, and it is therefore eminently suitable for the market-stall type of buying and selling.

I use that phrase ‘buying and selling’ because it is the one description of the use of Roman coinage that has come down to us – from the late fourth-century pamphlet *De Rebus Bellicis* (On the things of war).²¹ But there is a gap between an eminently suitable use of such coins for buying and selling, a Roman statement that coins were meant for buying and selling, and using this as proof that by the second half of the third century low value coins were in constant use in a market economy in Roman Britain. The first two points are reasonably close to facts, the third is an interpretation, which is a quite different matter from a fact.

Britain and the Barbarous Radiate

At Aurelian’s reform of 274 the lamentable state of the coinage – a very top-down view – received attention. I suggest that an immediate reaction to this lack of interest in matters of the market place set in, causing the production of copies now known as Barbarous Radiates. These coins do copy regular issues of 260–68, such as those of Gallienus, but a majority copy

¹⁸ Geneviève 2007; Geneviève 2008.

¹⁹ Reece 1973.

²⁰ Reece 1991.

²¹ Reece 1979.

the last good-for-market coins of Victorinus, Claudius II, and the Tetrici, father and son, which all belong in the years before the Reform. They do not so often copy regular issues of Aurelian struck before his reform, which is hardly surprising since the central state would not have supplied coinage to a rebel area. On the other hand Claudius II with his typically sharp and instantly recognizable nose was a favourite subject for the copiers, so a number of his coins had got through to Britain before the production of Barbarous Radiates ceased. The contrast between the numbers of copies based on Aurelian and those based on Claudius II fits well with the recent idea that there was a re-issue of the coins commemorating the death of Claudius in 270 (*Divo Claudio*) some time after that date, which might have come direct to Britain. We have to wait for the second edition of *RIC* volume 5 part 1 for this to be set out in detail.

I find it difficult to avoid the interpretation that the production of Barbarous Radiates started because the supply to Britain of good-for-market coins ceased. While in the conquest period of the first century I saw a strong army involvement in coin use and copying I am not willing to see the army involvement in every town, villa, village and farmstead in third-century Britain which the widespread distribution of Barbarous Radiates would demand. Others do see an army take-over of the province but they have yet to make their extreme suggestion believable. So this leads me to the view that by the later third century a strongly coin-using economy had been established in Britain in which a substantial minority of the population took part.

From the reform of Aurelian in 274 there were only twelve years (274 to 286) before Carausius was declared as independent emperor in Britain. We ought to wait for Sam Moorhead's results from his on-going study of the coinage of Carausius and Allectus, but meanwhile I have always maintained that the early scruffy issues of that emperor grew out of the Barbarous Radiate wave and gradually spruced themselves up to equal the products of Diocletian and his fellow emperors from the central mints.

One point about Barbarous Radiates that has always been agreed is that the great majority are clearly copies, in fact they almost seem to rejoice in a style well away from the dull competence of the regular mints. This applies particularly to struck copies, but cast copies and a small number of struck copies need expert identification from those who have spent many hours on the large hoards which have been identified over the past few decades. Two points about Barbarous Radiates which were once controversial now seem reasonably secure. They were not the produce of family forging in the garden shed – in other words, very local and incompetent issues restricted to the area around the production site – and their production belongs to a period shortly after their prototypes (the last being Probus, 276–82), that is the later third and perhaps very early fourth century. The wide-ranging circulation, and therefore presumably use, of these coins can be illustrated in a map and an anecdote.

The map published by Boon shows die-links between Britain and Gaul and between many different parts of Britain.²² The question of die-links was one which Harold Mattingly was investigating in 1968 when I was identifying the coins from the Winchester excavations. I was still working on the 'local production' model and thought that this would be an excellent opportunity to examine a well-documented local group. He enthusiastically agreed, the Barbarous Radiates were studied and it is hoped that this will appear when the Winchester coins are published. But few certain die-links were found. In other words virtually every Barbarous Radiate found at Winchester came from a different die, and the links in style suggested that they belonged to several quite different areas of production. Later studies by John Davies came to rather similar conclusions with some die-links, but a greater number of links in style.²³

The suggestion of wide-ranging trade, coin use and exchange in the late third century seems surprising because that is always thought of as the typical time of storm and stress in the Empire and the monetary crisis has already been discussed. I have suggested that in a time of

²² Boon 1988, fig. 10.

²³ Davies 1988, summarized in Davies 1987.

monetary crisis leading to low-value coinage and large-scale copying it is not too surprising that people in small settlements, well away from invasions and unaware of political crises, used the coins with enthusiasm. Is there other evidence which might add to the picture?

Roger Bland pointed out to me four maps of hoarding of the period in the essential study of hoards and hoarding in the Later Empire by Richard Hobbs.²⁴ These show the concentration of hoards moving from the Danube in 238 to 259, to Gaul and Britain in 260 to 274, to Britain in 275 to 295. If hoards are always regarded as evidence of blood and thunder, pillage and destruction, these maps seem very odd. There is good evidence, both historical and archaeological, for trouble on the Danube around 238–51, and there seems to be no doubt in anyone's mind that Gaul was a centre of invasions around 270, but there is absolutely no evidence at all, either historical or archaeological, for trouble of the same sort in Britain from 275 to 295. If unrecovered hoards may have many different causes, as Peter Guest has argued powerfully, then we could look for other explanations of the maps.²⁵ If, as seems possible, the concentrations of such hoards have similar causes, and if those are all the same and not due to the effects of invasions, then the simplest alternative is to see some sort of result of coin use – or disuse and disposal – spreading from the military centre of the empire to the periphery.

Is this an example of Britain, on the edge of the empire, nearly dropping out of coin-use during a time of political crisis, burying those old and useless things called coins just in case the idea of their use ever came back? Or is it a retention of small change after the period of crisis and an economical thought of burying the old small change when new small change arrived from the mint, just in case the old came back into use? The difference is between a fringe economy always in danger of slipping back off coin use into barter and a thriving and well integrated economy with its own rules, wants and regulations. The burying of bronze discs rather than using them as scrap for recycling suggests that the owner saw more value in them as discs which were coins than as discs which were bronze scrap, an idea we will meet again. One possible comment on this difference might be seen in the composition of radiate hoards which I published in *BNJ* with Peter Guest in our review of Professor Anne Robertson's great *Inventory*.²⁶ That particular group of radiate hoards shows a very surprising similarity of composition. If they all had the same end-date, or latest coin, or if they all came from a particular area that similarity would not be so surprising. But the table of find-spots, latest coins, finding date, and number of coins (Table 3) shows that they are almost as varied as possible.

TABLE 3. Hoards ending with coins struck between 270 and 293

<i>Robertson inventory no.</i>	<i>Find-spots</i>	<i>Find date</i>	<i>No. of coins</i>	<i>Latest coins</i>
732	Anglesey	1937	421	Aurelian 270–74
741	Cheshire	1957	2,443	Probus 276–82
752	Lincolnshire	1953	13,730	Probus 276–82
759	Staffordshire	1960	1,739	Probus 276–82
822	Shropshire	1977	2,582	Carinus 282–85
828	Wiltshire	1980	3,466	Diocletian 285–86
880	Hampshire	1967	7,714	Carausius 286–93
903	Caerwent	1860	1,051	Carausius 286–93

These hoards pose a number of questions but give few answers. The similarity of these hoards must mean either that the coinage pool of the 270s and 280s from Anglesey to Hampshire and Lincolnshire to Caerwent (Monmouthshire) was uniform, or that there was a central treasury from which uniform batches of mixed coin were sent out all over Britain. Either answer suggests that coin use was flourishing in uniform and organized fashion throughout Britain in a time which was supposed to be one of political and economic chaos. In fact one answer merges into the other because if uniform batches of coin were sent out from a

²⁴ Hobbs 2006, figs 6, 7 and 8.

²⁵ Guest forthcoming.

²⁶ Reece and Guest 2001; Robertson 2000.

central treasury the dispersion of such batches in payments would lead to uniform coin use throughout the province.

There is one point of non-uniformity in the find-spots of this group of hoards. They belong outside an area delimited by a line curving round from the Wash to the Solent; none of them occur in East Anglia or the heartland of the Home Counties. This point would be worth future detailed checking. John Davies has suggested a similar spatial division between hoards of Barbarous Radiates containing copies of module similar to that of the official coins (his fig. 2) and hoards containing very small copies (his fig. 3).²⁷ The hoards with mainly larger copies were grouped towards the South and East, while the small copies mainly seemed to occur in the later hoards outside the Home Counties area. In other words small copies, minims, only spread to 'the backwoods' some time after Barbarous Radiates had been in circulation in a core area.

A quick recent look, while this paper was in preparation, at the other radiate hoards and their centres of gravity suggests that Home Counties hoards do not present any close groups similar to those of the periphery. At present all the maps in the Robertson inventory are based on the latest coin in each hoard and research is clearly needed to produce another set of maps based on the groupings of hoards by centre of gravity (composition) regardless of the date of the latest coin. A second step would be to look at the centre of gravity in relation to the date of the latest coin and the place of deposition, to see if there is a movement of deposition of certain groups from early deposition in the core area to later deposition in the periphery.

On the subject of maps there are two points to be made on those in the Robertson *Inventory*. The first is the failure of hoards to congregate according to historical preconceptions. In France there was an old habit of plotting hoards on maps and then drawing lines to 'document' battles, invasions and other disasters, which I am glad to say has now almost died out. Yes, there are examples where historically recorded invasions agree with concentrations of coin hoards. The point which I made several decades ago, but which will bear repeating, is that a concentration of hoards can only be used to suggest trouble if it is reasonably localized, and that localized concentration is not visible in other areas.²⁸ So a surprising group of hoards on the German frontier of the empire with latest coins of around 238 to 250 is not repeated in other places and agrees with historically reported attacks on the frontier. Professor Robertson's meticulous work has saved us from citing non-existent invasions of Britain during the third-century troubles elsewhere. Her lists of hoards and the maps drawn from them refuse to group, clump, or even suggest pathways of invasion.²⁹ This is true not only of the troubled period (elsewhere) in the third century but throughout the Roman period in Britain.

The reason for mentioning maps at this point in our chronology – the end of the third century, is that there are two Robertson *Inventory* maps which do show interesting presences and absences. The map of hoards ending with Allectus probably shows the situation in the years around 300.³⁰ The map of hoards ending with coins struck after 388 presumably shows the state of affairs soon after 400.³¹ With 100 years of enthusiastic, even peak, coin use between them, what can be the connection? The explanation which suggests itself to me is 'change of regime'. The first, and dangerous, conclusion would be that coins of Allectus disappeared quickly after the recapture of Britain for the central empire of Diocletian. The way to check that is to look at hoards deposited after 296. I admit to surprise that in fact a quick check in the Robertson *Inventory* fails to show coins of Allectus in hoards with end dates after 296 though there are a few coins of Carausius which quickly die out. Could both the Allectan map and the post-388 map be used to suggest the spread of coin supply, or coin using, or even coin losing out from that core area around London taking time to get to the backwoods? So Allectan coins being distributed from the centre started to move out slowly in 293 but only got a certain way before the regime changed in 296. After that point Allectan coins moved very

²⁷ Davies 1992, figs 2 and 3.

²⁸ Reece 1981b.

²⁹ Robertson 2000, map 14.

³⁰ Robertson 2000, map 17.

³¹ Robertson 2000, map 24.

slowly, or not at all, or were discarded. Coins struck after 388 reached Richborough in great numbers and, if that was the main point of arrival, a proportion travelled to the edge of the core. There could have been some sort of political or social barrier to letting them go further, there could have been unwillingness to accept them in the periphery, or, by that time, the periphery was out of the habit of coin using. But there was definitely a regime change, Britain went off the Roman map, and material whether pottery or coins belonging to an earlier life-style became irrelevant.

Diocletian's reform and beyond

The period immediately after Diocletian's much underestimated reform of 294–95 is one that has puzzled me for decades. The coinage coming into Britain can be divided up into four main phases, two of which we have already dealt with, 32 BC to about AD 238 (the denarius period), 238 to 296 (the radiate period), 296 to 330 (the follis/nummus period) and finally the late period from 330 to 402. Different sites in Britain used and lost coins of the different phases in different proportions.³² Towns and military sites lost more denarius-period coins than the British average while rural sites lost less. Towns have about an equal number of radiate coins and late coins while rural sites have about three times the number of late coins compared with radiate coins. Differences can be quite easily seen, and if the subject is approached numerically with diagrams the different types of British sites can be shown to group together according to the phase of coins lost: except for the period 296 to 330. In this period, the coinage that is lost seems to be absolutely uniform throughout Britain. Sites cannot be classified according to the coins of that period lost on them, and no reason for this uniformity has yet suggested itself. But if there is uniformity within Britain there is diversity in the Empire.³³

The Diocletianic system stretched in theory from the gold piece, only a little less valuable than the old aureus, down to the smallest coin, which might have been worth two Diocletianic denarii (DD). This unit bore no relation to the old silver denarius of the second century and is a notional unit of account. The purchasing power of these denarii can be examined from the contemporary Edict on Maximum Prices, which gives the highest price allowed for a large range of material. While five pounds of cut grass were priced at one DD, a prod or whip at five DD, the price of luxuries such as a tanned seal-skin went up into the thousands of DD. It seems as if the two ideas – a new coinage system of use at all economic levels, and an edict on prices to cut inflation at a stroke – should have set the monetary and economic system on a firm basis. Unfortunately both systems had flaws and those were mainly related to the gap between theory and practice. The fact that the Edict was on maximum prices with the death penalty for buyer and seller alike if they exceeded the set limits means that it was inexact in its provisions and hopelessly idealistic in its application.

The new coinage system of 294, modified later, with (perhaps) values of 2, 5, 25, 100 and 600 DD, would have been an almost perfect system if all the values had been equally minted and supplied. But as in the case of the Augustan system those who planned the system and put it into operation seem to have disregarded the lower end of the market. The 25 DD coin (follis or nummus), perfect for paying the maximum daily wages of a sewer-cleaner or camel driver, was struck in substantial numbers and seems to have been distributed around the empire. The camel driver will of course have wanted to spend his wages and the 5 DD coin (radiate) will have been essential for change. This coin is the most commonly found coin in the Mediterranean area, far out-stripping the follis/nummus in lists of coins excavated from sites, but it is distinctly rare in Britain. Finally the 2 DD piece is essential if goods are bought with a 5 DD coin and change is required but I have only ever seen two of these coins from excavations in England, and very few in any museum or collection in France, Germany or Italy. Just as in the middle of the first century AD the coins for buying goods from the market are available, but the coins necessary for the market trader to give change are missing.

³² Reece 1991.

³³ Reece 1988a.

The fate of both the Edict on Maximum Prices and the coinage system was the same. The Edict had been forgotten within ten years, inflation continued at a considerable rate, and the coins issued changed rapidly, falling in size and purchasing power phase by phase till about 330. Conversely the number of coins found in excavations rose as their size and value seems to have dropped. What we don't know is whether this represents a constant loss of value or a boom in the economy.

A modern illustration might make this clear. If we had only coins with a purchasing power of two pounds to spend in year one and 50 of those coins were lost that is a total loss of £100. If in year 5 there was still only that one same type of coin but its purchasing power had dropped to one pound there are three possibilities:

- there might be 50 of those coins lost and this would mean a drop in the total value-loss from £100 to £50 (market declining?);
- there might be 100 of those coins lost and this would mean the total value-loss kept up to £100 (market steady?);
- finally the lower purchasing power might mean that the coins had become more relevant to everyday purchases, the occasion when coins are most likely to be lost, and 200 of these coins were lost making a total value-loss now increased to £200 (market booming?).

This outlines the problem which faces the numismatist who is asked to interpret coin finds in terms of economic activity and it was forcibly brought out in the open by John Kent in response to a lecture I gave on coin finds in Italy.

Constant numbers or constant value?

The diagram (Fig. 1) simply divides up the coins found from a selection of sites in Italy and the Mediterranean area (Med Mean) into roughly twenty-year periods over 400 years, from AD 1 to 400. In fact there are 21 periods, but for the sake of simplicity let us keep to 20 periods in 400 years so that each period represents 1/20th of the time, or 5 per cent. We put on the diagram the percentage of the total coins found that belong to each period and we add them up as we go along. If period 1 has 4 per cent of the total we plot that, if period 2 has 5 per cent, we add that to give 9 per cent of the total coins found at the end of period 2, and so on.

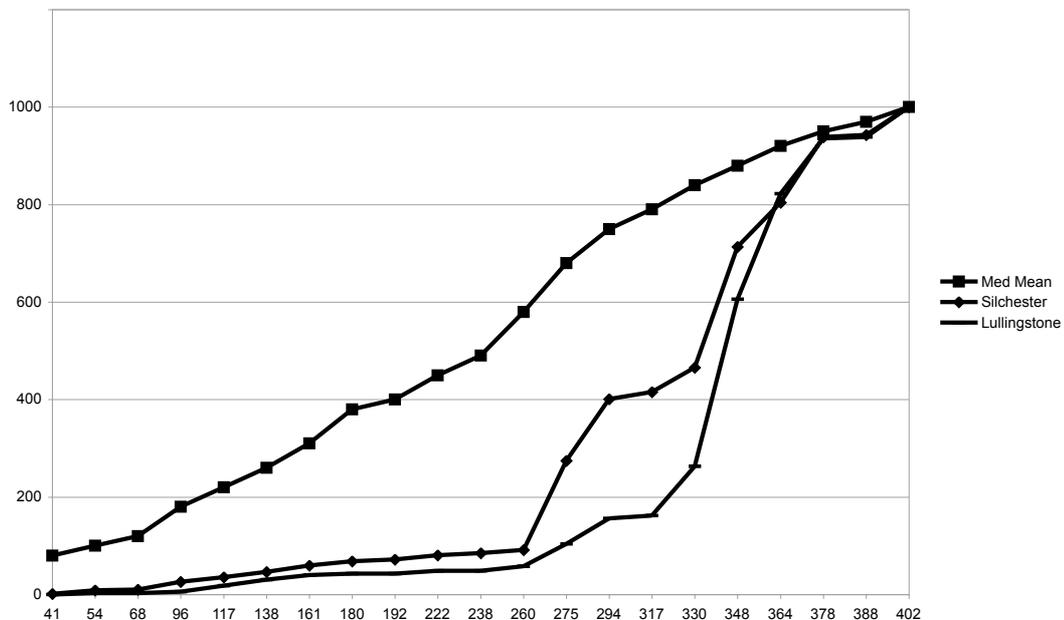


Fig. 1. Coins found on Mediterranean and British sites, AD 1 to 400

Note. Horizontal axis years AD, vertical axis cumulative values per thousand of coins lost.

The result is a fairly direct, if wobbly, line from 0 to 100 per cent, suggesting that roughly the same number of coins is lost in each period.

Dr Kent suggested that this diagram cannot be a true representation of coins found because the losses in the first and second centuries were 'proper' coins, denarii, sestertii and asses, whereas the coins lost in the fourth century were scrappy copper discs. While a little dismissive of the fourth century coinage this is a fair comment. It raises in very clear form the problem of constant coin-number loss and constant value loss. Since some sites do show coin loss with the same number of coins lost in each decade of the fourth century as the first century – but very different coins – we have to try to decide whether the losses represent constant value or not. If they do, then it suggests that the 'scrappy copper discs' of the fourth century held a purchasing power much higher than we might expect. For part of the fourth century (300 to 358) this could be justified by pointing out that the discs were not just copper but contained a small percentage of silver, up to one per cent or so. With treatment for leaching away some of the copper in the surface after the coins were struck but before they were released from the mint the public saw them for their first few months as 'silvery' coins. They might therefore have been given a purchasing power according to their silvery appearance.

The outlook for this interpretation is not good for two reasons. If silver was the deciding factor then one per cent of silver would tariff the intrinsic value of these coins at 100 to the silver piece. Disregarding fairly small differences in weight and fineness, 100 of these coins to a fourth-century silver piece is quite different from four large bronze sestertii to a silver denarius. The second problem is what happened after about 358 when the addition of small amounts of silver to the copper coinage ceased. If the notion based on silver content were correct then the number of bronze coins on the 'constant value' theory ought to jump up at 364 at the latest. This does not happen. In fact it is quite common for the silver-less coins of the House of Valentinian (364–378) to be a little fewer in number than the silvery coins of the House of Constantine (306–361).

What is the alternative? It is one which has had far-reaching effects on late Roman archaeology. If the idea of constant value loss cannot be sustained then the coin finds must mean that less money-value or purchasing power was being lost in towns in Italy and much of France in the fourth century than in earlier centuries. In other words, it seems that such towns were in economic decline in the fourth century. Of course this needs to be argued out in detail in relation to the archaeological evidence. While at first this idea was unacceptable I think it is fair to say that it has gradually been gaining ground over the last forty years. Exactly the same problem worries Jean-Marc Doyen in his publication of the coins from Reims, and in that case the reduction in coin loss can be partly matched with the reduced area occupied inside the town walls.³⁴ But let us return to Britain.

Before we go back to the peak time of coin use in Britain we should look at how Britain compares with the Mediterranean area and how different types of site in Britain compare with one another. The surprising feature of some Italian and French towns is that the coins found in them seem to stay relatively level as they are lost year by year, decade by decade and even century by century. This is not the case in Britain as a comparison of the Mediterranean curve with typical British curves (Fig. 1 above) shows.

To one way of thinking the British town, Silchester on the diagram, makes much better sense than the Mediterranean town. As the value of coins dropped the number of coins lost rose. Following the same train of thought the British rural site, the villa at Lullingstone on the diagram, makes even better sense with even greater relative late coin loss than the town. If the British town is surviving better economically than the Mediterranean town, the village, villa or farmstead in Britain is surviving even better than that. The bulk of these coins belong to the years from about 330 to 380 and, for the first thirty years of that period the coins so commonly lost have a silver component which presumably gave them a value above that of the copper disc. Or do they? The problem, once again, is copying.

³⁴ Doyen 2007, 382–90.

Constantinian copies

The whole problem of regular coins of the House of Constantine and copies was examined by Mike Hammerson.³⁵ He demonstrated that while there were coins that were clearly regular, and there were coins that were clearly copies – ranging, as I like to put it, from the immaculate to the inarticulate – a majority clumped in the centre of any attempted separation. They are neither obviously irregular nor blundered copies as far as style goes. They may be a little smaller than the best regular coins, but then, so are some of the equally good coins of completely regular style. All that sounds very subjective, yet if hard and fast weights and measurements are used there is no obvious break point between the two extremes. The one characteristic which has separated out two groups in the coins from one hoard – and I carefully avoid saying regular coins and copies – is work by Cathy King in which clearly regular coins contained that small amount of silver while the doubtful coins contained no silver.³⁶ What is now needed is a project like that mounted on the Claudian coins in France by Besombes and Barradon. It seems to me a neat and highly desirable post-graduate project to take a good number of Constantinian copies – those from Richborough on which Hammerson worked would be ideal – and submit them to chemical analysis. A first step would be to take clear copies and clear regular coins and give those a full analysis. If this was successful and suggested two reasonably clear groups a larger number of coins which had not undergone stylistic study should be more briefly analysed and the results compared with stylistic analysis. By ‘brief analysis’ I mean that only two or three elements which had been found diagnostic in the full analysis need be examined, or perhaps even a simple presence or absence.

There is one good reason why the copies might not have contained any silver as a matter of policy and that is the state attitude to silver. It is in some sense *sacra*, sacred, set apart, almost a part of the emperor and to misuse silver was to some extent regarded as the equivalent of an attack on the emperor’s person. If these copies were not authorized then to add silver to them, wherever it had come from, would have put the copiers in a dangerous legal position. If they were merely striking bronze discs which were like the official coinage then their punishment if anyone bothered to pursue and catch them might be limited to a mild form such as heavy labour for life rather than capital punishment.

Why were the coins copied when the official mints seem to have been striking so many coins between 330 and 341? At this point the *entente cordiale* breaks down and friendly open warfare begins. As recently as the publication of Jean-Marc Doyen’s great work on the coinage found at Reims the split opened up again. It all depends on what you think the mints were doing, or not doing, between 330 and the great reform dated by the 1100th anniversary of the City of Rome in 348. The French opinion is that the mints produced coins continuously if perhaps irregularly over that period. Then, perhaps around 354, either production weakened or supply became intermittent, and copies were produced ranging from originals struck in 330 (Wolf and Twins, Soldiers and Standards) to the well-known copies of the Fallen Horseman (350 onwards). This has most recently been set out by Doyen in very moderate tones with full references.³⁷

Ever since Carson, Hill and Kent revolutionized the study, identification and dating of ‘Late Roman Bronze Coinage’ from 324 to 498 the British view has been that there were gaps in coin production in different mints at different times.³⁸ One gap occurred shortly after the death of Constantine II in 340. The reasoning here is that the three sons of Constantine share substantial production of coins, and mint-marks, after the death of their father in 337 until the death of Constantine II in 340, after which each western mint produced coins with only one or two mint-marks for which there are no coins of Constantine II. Given the proliferation of mint-marks before 340 the simplest explanation for this tailing off is that the western mints stopped production shortly after 340 – say 341, and did not start again for a few years. This

³⁵ Hammerson 1980.

³⁶ King 1978.

³⁷ Doyen 2007, 320–7.

³⁸ Carson, Hill and Kent 1960.

gap in production widened to become almost a diplomatic incident when Constantius II, the eldest son, with responsibility in the East, indelicately proclaimed his superiority over his younger brother Constans, with responsibility in the West. Constantius II had been proclaimed Caesar in 323 and was therefore entitled to renew his imperial vows when he completed twenty years in 343, and to look forward to his thirtieth anniversary ten years in the future. About 343 his mints in the East therefore started issuing copper coins with the reverse VOT/XX/MVLT/XXX – twenty years completed, vows undertaken for the next ten.

This posed a problem for the court of Constans because after Diocletian's empire-wide reform of the mints and currency all mints tended to follow the lines set down for reverse types by the highest authority. From 330 to 341 all mints struck reverses either for the two imperial cities, Rome (Urbs Roma, Wolf and Twins), or Constantinople (Constantinopolis, Victory on prow), or reverses showing two soldiers holding military standards. Constans failed to take up the challenge in 343, perhaps because it would have meant admitting his junior status to every coin using person in the western empire. He had been proclaimed Caesar in 333 so he would have had to strike copper coins with the reverse VOT/X/MVLT/XX. Instead he seems to have waited for a time and then introduced a new reverse when his mints began to issue bronze again showing two Victories facing one another with the legend VICTORIAE DD AVGG Q NN (the victories of our lords the emperors).

After this disputed period all mints in East and West then swung into full production for the anniversary year of 348. The reason Carson and Kent attached the victory coins as a prelude to the issues of 348 and left a gap between 341 and perhaps 345 was simply that the style of the emperor's bust changed during the victory issues from the old (330 to 340) style to the new style of the Return of the Happiness of Former Times (Fel Temp Reparatio), the 1100th anniversary. We can leave aside the point that *Later Roman Bronze Coinage* dated the Fel Temp Reparatio issues to 346 because both Carson and Kent later happily admitted that they had made a mistake. They saw so many different types and weights of coins to fit in between 348 and 350 that they felt more time was needed. However, when they realised that the coins formed a series of denominations so that they fitted well together, no extra time was needed, and the issues could return to the appropriate year of 348. John Kent's three-page paper explaining the importance of the Phoenix to this period rates, in my estimation, as one of the most concise and important papers ever published.³⁹

At this point I entered the discussion with the need to explain the rash of Constantinian copies and this coincided with the Carson-Kent chronology.⁴⁰ It seemed then, and it still seems now, that the two factors fit well together so that they can both be accommodated in a single explanation. The years immediately after 330, for whatever reason, saw a great expansion of production by the imperial mints in the West and a corresponding acceptance, use and loss of these coins in Britain. Suddenly the supply stopped early in 341 bringing copious supply to an end. The British coin users had become accustomed to that constant supply so that something had to be done to alleviate the shortage of new coin. The last issues to come in were enthusiastically copied in a remarkable variety of styles and competence, the best of which were indistinguishable from the regular coins whose supply had stopped at source. After four years or so of home supply, production at the western mints suddenly started up again with the Two Victories issues and the need to copy vanished. Copies of the Two Victories do exist but they are much less common than the copies of the Wolf and Twins, Victory on Prow, and Two Soldiers. But the story can be continued before we try to derive wider meaning from events.

In 348 the coinage was reformed. Use of that word always means that the state disregarded the likes and needs of the general population by upgrading the value of the commonly struck coinage for its own purposes. I think a clear example has already been demonstrated in the reform of 274.⁴¹ Then, as in 348, those purposes involved the paying of state bills which are more simply settled with smaller amounts of high value coinage rather than sacks full of

³⁹ Kent 1967.

⁴⁰ Reece 1973, 242–4.

⁴¹ See pp. 16–17 above.

intrinsically worthless copper discs. On the other hand the market – in the sense of pile it high and sell it cheap, to use a modern example – works best with a substantial float of small coins in order to give quick and exact change to customers tendering higher value coins. In 348 things were not as bad as they could have been because there was the system of denominations which at first foxed Carson and Kent so that the inconvenience of the larger coins was offset by the smaller issues with the Phoenix reverse.

By about 354, after the revolt of Magnentius had been contained and eliminated the state both increased the general module of the coinage and apparently sent most of the mint products to the Mediterranean area. The regular coins with reverses of the Fallen Horseman are some of the most common fourth-century coins found on any Mediterranean site. In Britain they are distinctly unusual finds, and any regular coins are always accompanied by numerous copies. These seldom, if ever, achieve the high standard of some of the copying of the issues of 330 to 341, are struck on very irregular flans, and are sometimes overstruck on both regular coins of 330 to 341 and their copies. This overstriking of Fallen Horseman (354–8) on Wolf and Twins (330–41) encourages me to separate out these two periods of copying because I have never seen a Wolf and Twins overstruck on a Fallen Horseman. This suggests that the copies of regular coins of 330–41 had ceased to be made before the Fallen Horseman and its copies began their short life. In deference to the magnificent work of Doyen I ought to add here the brief but telling phrase ‘in Britain, at least’.

In contrast to the period of Diocletian’s reform when Britain received the largest copper/silver coin, the Mediterranean area received the medium, radiate coins, and no one received the smallest coin, the period around 385 to 390 reversed the trend. At this point Magnus Maximus struck smaller and larger copper coins. The larger coins belong to the Mediterranean story while the smaller coins move Britain towards the last issues of copper coin to enter the province.

The return of silver

This leaves us with the sudden re-introduction of silver to common currency, and Britain’s attitude to it. Diocletian had made a good silver coin part of his system but something was wrong and it slid remarkably quickly into a debased oblivion, from which Constantine rescued it around 327 but only for ‘official’ use. That is, such coins were continuously produced from c.327 onwards but very few are found today, so it is assumed that very few were issued and those were intended for use by the state and not by the masses. Suddenly in around 357 the silver coin known today as the *siliqua* was reduced in weight, but not in its fineness of around 96 per cent silver, and a moderate number are known as modern finds. In Britain they occur as site finds at the rate of about one *siliqua* for 1,000 total site finds. This may be a higher proportion than is found in Germany, France or Italy, but comparative material from excavations is not yet common enough to make firm judgements.

The problem of the instability of the copper/silver coinage from its inception to its end and the substantial inflation which accompanied it seem to me to be questions which contain their own answer. When the state debases silver it goes off the bullion silver standard and the coinage seems to have a tendency to find its own value or purchasing power. This presumably is reflected in the face-value of goods for sale which increase to find an equilibrium with the coinage. More money is needed so more coins are struck with less silver in them and the result seems to be a free-for-all in which market activity increases – as judged by coins lost. Diocletian may have made the right decision in re-introducing bullion silver coinage, but either the continuation of the base copper/silver coinage undermined the reform, or the pure silver was put into circulation at the wrong tariff. The monetary managers of around 357 seem to have made the correct decision in increasing the amounts of bullion silver issued at a lower weight and soon afterwards taking the silver out of the small copper coins to provide real small change minted in large amounts for the first time in the Roman Empire.

I am intrigued by this sequence of good silver coinage (with or without accompanying small change) falling into debasement. The final result of debasement, if allowed to run its

course, eliminates copper small change which becomes worthless, so that the debased silver eventually turns into small change and good silver is re-introduced. It would be good if ancient, medieval and modern parallels could be investigated and compared, but I am not the person to do it.

The next step in the discussion of the Roman use of silver depends on the finding of the Hoxne hoard of gold and silver coins and objects and particularly in its study and publication by Peter Guest.⁴² With the large numbers of coins available he was able to extend earlier work on both the regular coins and groups of copies which had previously had a rather shadowy existence simply because they only turned up in twos and threes. He was able to isolate three groups of copies. In each group there is quite strong die-linking, but there are no die-links between the groups. This strongly suggests that the three groups were produced at different times (or possibly, but less likely, different places) because continuous production of all the copies in the same place at the same time would be almost certain to produce a full set of links between the dies used in different issues. The regular coins seem to belong to a stop-go system of production so that at times moderate numbers of coins seem to reach Britain but at other times, virtually none. Unfortunately the scarcity of other similar large hoards from Britain and the virtual absence elsewhere in the empire of hoards surviving for study, means that we do not know whether these periods of shortage are periods of mint inactivity or periods of low supply to Britain. Guest also noted that each of the groups seems to base its copies on the last issues coming in before a period of shortage. The simplest explanation of this is that a group of copies followed soon after the end of supply of the regular coins being copied. Finally, a large number of coins in the hoards are clipped, but both regular coins and copies are clipped, so at least some of the copies were struck before some of the clipping happened. Analysis of the regular coins and the copies found very little, if any, difference between their metal alloy. The simplest hypothesis is that the copies were minted on flans prepared by melting down clippings from pre-existing coins.

While the picture of shortage and copying might by now be expected there are two linked elements here which differ from earlier copying sprees. The copies are visually difficult to distinguish from the regular coins and it is sometimes a matter of a very trained eye and even then the need of a large volume of material for comparison. Metallurgically the copies cannot be distinguished from the regular coins. This makes these late silver copies quite different from Claudian copies, Barbarous Radiates and Fallen Horseman copies. We do not know as yet whether some of the excellent copies of the House of Constantine have the requisite silver content to match the regular coins and this is a matter which needs immediate attention.

How do the silver copies which seem to fill in the gaps of siliqua production in the last decades of the fourth century fit into this picture? They are different from earlier copying in several ways. The copying is almost exact, it involves the explicit re-use of silver and it supplies the gaps in production but seems to give up at the end of supply. While it might be coincidence it also marks the end of the large-scale copying of copper coins. This seems a major break in tradition.

The change in the coinage around the year 356–58 is one that has received little comment and I think it has been unjustly neglected. After sixty years of one system of coinage in which the value of copper coins was increased by the addition of a small percentage of silver the process was discontinued and a simple copper coinage returned to the Empire, certainly after 363, after a gap of over a hundred years. The disappearance of silvered copper which I assume was more like very heavily over-valued bronze was made up for by the issue of a reasonable amount of silver of high fineness and reduced weight. It would be interesting to try to calculate whether the removal of silver from the base copper was fully invested in the increased amounts of pure silver coinage issued but such calculations are at present impossible. The end of base silver coinage fairly quickly marks a change in the coinage in datable hoards. While hoards with end-dates up to about 370 contain a proportion of earlier issues, hoards buried

⁴² Guest 2005.

late in the time of the House of Valentinian (364–78) already show a drop in this proportion, and hoards later than this seldom have many coins earlier than 364.

It would be good here to bring in comparative evidence from other provinces but the material simply has not been found. The sound foundation of the study of British silver copies depends on the study of the Hoxne hoard, for while such copies had been seen before the discovery of that hoard there were far too few of them to suggest a coherent picture of die-links and groups. Similar hoards outside Britain are very rare, and none has survived intact for study, so we do not know whether copying is a British peculiarity. On the other hand, British copies seem connected to the clipping of regular coins to provide the silver, and clipping does seem to be particularly British. So much so that the discovery of one or two clipped siliquae in a small hoard discovered high in the Pyrenees has been taken as evidence of British soldiers with British pay moving down to Spain to fight for Constantine III.⁴³

Sadly we have to note that while the analyses of regular and copied coins from the Hoxne hoard show very close similarities in metal content it could be that analyses of silver plate of the period show equally close links. The silver alloy used for coinage and for plate is consistently similar at this period. So it is possible that the gaps in supply of regular silver coins from the continental mints could have been closed by requisition of silver plate, its dismemberment, melting down, and re-striking. This of course is reminiscent of *Hacksilber* and it would clearly be a very economical hypothesis to suggest that while the state controlled late coinage any requisitions of plate, cut up, melted down, had to be turned into official coinage. Later on, after final struggles to keep up the Roman system, the absence of the state removed the need to re-model silver into coinage and *Hacksilber* prevailed.⁴⁴

This goes against an argument that I had formed (but not published) to explain the unusual presence of late silver coins as site-finds and hoards in Britain. I suggested that siliquae circulated in moderate numbers over the whole of the western empire till they were recycled and formed into newer coinage. The peculiarity in Britain was that the coins of the latest fourth century were never officially recycled so that they remained after the idea of coin use had ended. If they were not officially recycled into new silver coins by the state why were they not recycled after the withdrawal of Roman officialdom into plate or jewellery? An important point here is that while clipping took little notice of the legend on the coins it always respected the imperial portrait. It is obviously highly speculative but it may not be too fanciful to suggest that the last siliquae were buried ‘for the future’ because the imperial portrait still had a hold over the imagination.

Silver coinage did continue to be minted in the empire after Britain ceased to be governed from Rome but in sharply decreasing amounts. It might be suggested that this is just one of the effects of the breakdown and dismemberment of the western empire but this will not work because the same happened in the surviving East. The drop in production in the fifth century was so great that it led Grierson in his discussion of the fifth-century coinage to suggest that later fifth- and sixth-century silver coins were produced only in small numbers for ceremonial occasions.⁴⁵ This agrees well with the fifth-century silver coinage reported in the *Fundmünzen der Römischen Zeit in Deutschland* where they invariably occur as grave finds so they could well be ‘honours’ buried with the deceased rather than money offerings for the afterlife.

The whole subject of the nature and date of the end of the use of Roman coinage in Britain would need a discussion as long as that which has already taken place so I end with a personal view. I strongly suspect that by the end of the fourth century civilian direction and involvement in coinage was minimal or non-existent so that the end of state direction of coinage meant the end of coinage. The problem of coin supply around 400 is the final shortage and it is the exception. After coins of the House of Theodosius were no longer sent to Britain there was not a spate of copying. There are a few examples of very late copies, just as there are a few

⁴³ Berdeaux-Le Brasidéc and Hollard 2008.

⁴⁴ Reece forthcoming.

⁴⁵ Grierson 1992.

arrivals of coins minted after 400, but they are all rare. For some reason, after making copying at times of shortage almost a provincial habit the Britons of the early fifth century went off the Roman standard and abandoned the use of coinage.

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