

Sources of silver in the 10th century.

Abstract

This paper is written from the perspective of an economic historian working on the mining of silver in the South-West of England during the last three centuries of the late medieval period. A period for which there is ample surviving documentation and a reasonable amount of archaeological evidence, although only a portion of the latter has yet been adequately interpreted. (Claughton 1997) For the 10th century hard evidence for silver mining in England is sparse indeed. It is therefore necessary to draw on secondary evidence to provide indicators as to the sources of the silver required primarily to underpin the use of coin in commercial transactions. That evidence is examined in respect of England as a whole and the South-West in particular.

Introduction

The late Anglo-Saxon period is characterised by the increased use of coin in commercial transactions. The use of coin had been abandoned in Britain after the departure of the Romans (Spufford 1988, p. 9). After its tentative reintroduction in the 7th century the quality of the coinage rapidly improved. From Offa's reforms of the 8th, through to the 10th century that coinage was based on good quality silver. Pennies of Aethelred's reign averaged around 20 grains of 92% silver (Metcalf 1978, p. 205). That quality was maintained, with occasional lapses of only short duration, throughout the medieval period.

Linked with the increased circulation of coin was the proliferation of minting sites from the late 10th century onwards. (Spufford 1988, Maps 10A and 10B)

The South-West of England was no exception to this expansion of minting, although it was most marked in the modern eastern counties of Somerset and Dorset, and the Lydford mint was a creation of the late 10th century.

A number of sources of silver were available to these late 10th century mints -

1) Recycled silver in the form of old coin returned during periodic recoinage.

2) Foreign coin brought into the country as a result of export trade.

3) Newly mined, unminted silver brought in as a result of export trade.

4) Indigenous, newly mined, silver

A list which is not meant to be in order of precedence, although for England as a whole it is probably about right, for the proportions would vary from mint to mint.

This paper is primarily concerned with the last category and examining to what extent locally mined silver might have contributed to the supply of metal to English mints, particularly those in the South-West.

Continental Sources of Silver

With the increased use of coin in commercial transactions, allied to strong regal control and a regular recoinage cycle there was a need for easily accessible minting sites across the whole country. However as Sawyer has pointed out, and as illustrated in the mint sites mapped by Spufford and others, there was a concentration of mints around the ports of southern and eastern England. (Sawyer 1978, p. 233) This reflects a demand for the recoinage of foreign currency generated through the export, primarily, of wool. The volume of the wool trade was such that by the 11th / 12th centuries it was attracting payment in ingots of unminted silver from the mines of Central Europe. In the second half of the 12th century the use of unminted silver in the Flanders trade was particularly appropriate given the onward trade with central Europe and the recent opening up of new, rich, mines in the area of Freiburg. Two hundred years earlier a similar new production cycle had commenced with the opening up of silver mines around Goslar in the Hartz Mountains. Whilst it is difficult to quantify the volume of wool exports in the 10th century, it was clearly of some substance and would have generated an income of silver both coined and in the form of ingots, primarily from those new mines in Germany. (Nightingale 1985)

Sources of English Silver

The mines at Goslar were particularly rich but silver was also available in smaller quantities throughout Europe, and in England it was found as a common component of most lead deposits. Many of those deposits, particularly those in the Carboniferous Limestone areas, are now regarded as poor in silver and as having only been worth refining since the advent of new technology in the mid 19th century. However, throughout the late medieval period they

were periodically worked for economic deposits of silver found at shallow depth in the zone of enrichment.

Extraction of silver from lead is well attested for the Roman period, with many surviving pigs of lead marked with the inscription Ex Arg, although the lead in many of them is low in silver and had not been refined, and the Romans evidently regarded the English mines as a source of silver. In addition there is archaeological evidence, from Mendip in particular, for silver refining. However there is, as yet, little evidence for the working of silver-bearing ores at specific locations after the departure of the Romans, until the 12th century. During the Anglo-Saxon period silver was certainly mined in England; that is confirmed by Bede, amongst others, in the 8th century when he lists silver amongst the mineral wealth of the country.

If we considering the possible sources of new mined silver at that period it becomes apparent that most, if not all, was extracted from lead found in the mining fields where customary law was acknowledged in the 12th/13th centuries. The majority of those lead mining fields had been in the king's hands during the 9th/10th century if not still in the hands of the Crown in the 12th century. (Maddicott 1989, p. 45; Sawyer 1965, p. 159.)

Notably -

Derbyshire (Peak District)- Wirksworth

- High Peak

Cumberland- Alston (including Priorsdale)

Somerset (Mendip)- Chewton Mendip

- Cheddar

North Wales - Denbighshire- Bromfield and Yal

- Flintshire- Hopedale

- Englefield

Given that the Normans respected English customs relating to land holding, where they had been in place before the Conquest, and did not impose French concepts of tenure (A sensible procedure when, although having won the crown of England in battle, William and his followers had no superiority in numbers and needed to govern with the consent of the majority of the population.) they would have similarly respected those customs relating to mining rights (that is the right to mine rather than the rights to the minerals). It could therefore be suggested that it was in those areas where mining was established before, and sustained after, the Conquest that customs would survive and subsequently be acknowledged as customary law. (Britnell 1996, p. 60; Chibnall 1986, p. 161 et seq.)

Thus the development of mining in the above areas, and possibly other minor fields (e.g. parts of Swaledale and Wharfedale, in Yorkshire), along with the stannaries of Devon and Cornwall and iron mining in the Forest of Dean which retained similar customs, should be dated to the 9th/10th century, if not earlier; with the system of custom having evolved under Saxon influences. The outward movement of population from northern Germany during that period would account for similarities in mining law between such diverse places as Bohemia and England. (1) In the case of Cumberland (Alston Moor) the Normans had taken over a

largely Celtic structure of land tenure. That is reflected in the organisation of mining; with its system of an elected serjeantry, holding wider powers than those of a barmaster of the Derbyshire Peak, equal to his fellows in the adjoining lordships of Cumbria. That such institutional arrangements should survive in mining organisation suggests that its origins were not necessarily Anglo-Saxon but Celtic. (Barrow 1973, p. 129-30.)

That customary law in these areas survived into the 13th century and beyond has more to do with the demand for lead in the construction boom of the period than with their silver production at that time. But it is not unreasonable to suggest that mining was initiated for silver in preference to lead given the limited demand for lead as a construction material, compared with the attraction of silver for ornamentation and later for coin, in the Anglo-Saxon period. Ozanne has even suggested that the colonisation of the Peak District in the 7th century was stimulated by the demand for silver. Added to this attention might be given to the view that the 'cost' element in certain Derbyshire placenames, identified with sites that were later associated with lead smelting using the wind-blown bole hearth, can be interpreted as meaning a 'trial' for silver. However, the author is not familiar with Anglo-Saxon text and would not like to comment on this interpretation. (Ozanne 1963; Daniel 1980)

Certainly by the time of Domesday there is the suggestion of silver extraction from lead in Derbyshire, with at least seven plumbariae (leadworks) in operation and the requirement to pay certain rents in 'pure silver.'

Further evidence for silver mining, this time along the Welsh border with England, is supplied by Domesday where it is noted that the moneyers at Hereford would make periodic journeys into Wales. The suggestion being that they would return with silver for the mint.

That silver was being extracted from lead deposits in Monmouthshire and Glamorgan is quite plausible given the occasional reference to silver mining in those areas in the later medieval period. A cupellation furnace for refining silver was located in the outer precinct of Tintern Abbey, the lead for which could have come from any one of a number of mines active in the area prior to the 16th century. (Courtney 1989)

Silver sources in the South-West.

If we look further south to Somerset a cluster of late Anglo-Saxon mints will be noted around Mendip (Fig. XX), more than can perhaps be justified by local or overseas trade. Given the history of that area as a silver producer in the Roman and later medieval periods it is not implausible that those mints were supplied with local silver. Archaeological work at Charterhouse on Mendip has confirmed Roman mining activity there and found evidence for medieval lead working. (Todd 1994, p. 2)

If working of silver-bearing lead deposits in the Carboniferous Rocks survived from the Anglo-Saxon into the Anglo-Norman period through the demand for metallic lead, what of deposits in the older rocks which were not such prolific lead producers. In fact the silver-bearing deposits of the South-West which, apart from Mendip, are confined to the older rocks are numerous, with over 70 mines in East Cornwall, Devon and West Somerset alone producing silver in the second half of the 19th century. (2) But few of those silver deposits were known to the medieval miner.

The major sources of silver from the 13th to the 15th centuries were -

Bere Ferrers, on the Tamar south of Tavistock.

Combe Martin, on the North Devon coast, not far from Barnstaple.

Trials were made at other sites but with no sustained production.

1. Lobbecombe, at Plympton in the area of East Bottle Hill Mine.

2. St Cubert, on the north Cornish coast.

3. Alternun, north-east of Bodmin Moor.

4. Mounts Bay.

5. South Tawton, north of Dartmoor.

6. Brushford, near Crediton.

7. Dulverton, on the north Devon - west Somerset border

Some of these lesser sites, like the mine at Treworthie near St Cubert, were to develop as significant producers in the 16th century and later. Lobbecombe was to be revisited in the 14th century on a number of occasions without producing significant amounts of silver - the ores proved difficult, being close to the granite in the area of East Bottle Tin Mine. But none were significant producers of lead in their own right.

Not even at the major silver producers, Bere Ferrers and Combe Martin, was there significant lead production as a bi-product of the refining process. Consequently there was a shortage of lead in the South-West during the medieval period and for construction purposes, as with

Exeter cathedral, Derbyshire lead had to be bought at market in Boston. Under these circumstances it unlikely that any body of customary law would survive into the Anglo-Norman period through sustained silver-lead production.

That is not to say that there was no locally mined silver available to the mints of the South-West during the Anglo-Saxon period but the hard evidence to support it is lacking. However, given the evidence for local mining elsewhere in England it would not be surprising to find that some attempt had not been made to secure local supplies in the South-West. The rapid, and simultaneous opening up of silver mines at Combe Martin and Bere Ferrers, at opposite ends of Devon, in 1292 does suggest some prior knowledge of the potential. Although that had not come to light during Crown investigations some thirty years earlier.

When the mining of silver-bearing ores was revived in the South-West in the 13th century the Crown worked them using directly employed labour under the supervision of Crown officers and no body of customary law was allowed to develop. The miners were granted privileges but these bore no resemblance in law to the rights of miners on Mendip or the Peak.

Customary law did, of course, survive in respect of the Stannaries. Tin production was established in the Anglo-Saxon period and sustained beyond the Conquest, accounting for a substantial portion of exports from the ports of the South-West. The number of moneyers employed at the Exeter mint suggests a demand for coin resulting from a vibrant export trade. The smaller mint at Lydford could have shared in that trade, as could that at Barnstaple and their prime importance would have been in reminting foreign coin and that returned during the periodic recoinage, perhaps supplemented by some locally mined silver.

Sources of silver around Lydford.

In speculating as to why Lydford was chosen as a minting site in the late 10th century consideration has to be given to possible local sources of new mined silver. Of the numerous silver-bearing deposits in South-West England a high proportion lie close to the Tamar valley within reach of Lydford, some less than a kilometre from the mint. However our knowledge of those deposits is based largely on late 19th century activity.

Only a small number of those mines listed in Table 1 were known to the medieval miner.

Some very rich mines - South Hooe or Tamar Silver-Lead, for example - lay close by mines which were worked extensively in the 13th to 15th centuries yet there is no evidence of their being worked even at surface. A small group of mines, including Wheal Betsy, Florence and Lydford Consols (a mid 19th century grouping comprising Wheals Mary, Mary Anne, Adventure, Castle and the Kitt's Mine), lie close to the site of the late Anglo-Saxon mint at Lydford. Silver-lead deposits at the former are found in a north-south crosscourse similar in character to that worked in the late medieval period at Bere Ferrers and returned good silver values, yet there is no documentary evidence for medieval activity at Betsy. Neither is there evidence for the two latter mines being worked during the Anglo-Saxon or later medieval periods despite the existence of pockets of particularly rich silver-bearing ores. (Dines 1988, addenda p. xxxi)

Silver from copper.

Archaeologists investigating the Late Iron Age settlement at Hengistbury Head in Dorset have often suggested a closely defined area of East Cornwall as a source for the ores used to

produce the metalliferous assemblages, copper mattes containing lead and silver, found on that site. A suggestion based almost entirely on the fact that East Cornwall was the nearest source of ores bearing copper, lead and significant amounts of silver, although no archaeological evidence for Iron Age mining in East Cornwall has yet come to light.

Recent work by Salter and Northover has, however, suggested that the lead in the copper matte may have been added with the intention of drawing out silver from the copper ore - possibly a form of liquation. That copper was not the prime reason for smelting the matte is indicated in that it was rejected before the copper reduction process was complete.

Whilst sites providing silver-bearing copper ores are not numerous in the South-West there are a number in the Tamar valley which could have been exploited at the period. In correspondence after the conference my attention was drawn to Virtuous Lady Mine by Justin Brooke. High silver returns from that mine during the 19th century were regarded at the time as designed to inflate the market value. However, as the deposits being worked at the time were shallow they could have easily been exploited in the medieval period. (Salter and Northover 1992; MJ 1869, 568 and 597.)

Conclusions

There is little hard evidence on which to anchor an argument for the working of silver-bearing deposits in the South-West of England during the 10th century. The disproportionate survival of numismatic evidence, against the lack of other archaeological and documentary evidence, has perhaps provided a distorted view on the use of silver. That evidence suggests that mines

on Mendip were a source of silver used in minting. As to silver mining further to the south-west we can only speculate, but lack of hard evidence should not persuade us that there was no activity in that area.

The picture is only a little clearer in the rest of England and Wales. What evidence there is is largely circumstantial although broad statements by chroniclers such as Bede lend credence to the view that indigenous sources of newly mined silver were available during the Anglo-Saxon period. The institutional framework surviving for certain lead mining areas does point to those areas, like Mendip, having been a source of silver. Again, we should not discount the existence of silver mining in the older rocks through a lack of such evidence. The survival of the Stannaries shows that mining in the South-West could support such an institutional framework and further research into the origins of Stannary Law might reveal its wider application to mining other than tin. In that respect copper is of particular interest as a source of silver. (3)

In the long term, hard evidence for 10th century silver mining in the South-West, and the rest of England and Wales, will come through detailed archaeological investigation of mining sites. Discoveries over the last few years in Wales have already stimulated a search for further evidence of prehistoric mining in the South-West. That, allied to the work already underway on Roman sites on Mendip, should assist in illuminating that dark age before well attested silver mining in the late medieval period.

Footnotes

1)The study of customary mining law is as yet fragmentary. Although elements of customary law relating to specific geographical areas have been examined (Pennington 1973 and Ford 1988,) and some work is in progress (Costello 1995) no overall study has yet been published. A detailed examination of all mining law and comparisons with the evolution of other areas of customary law, and of mining outside of the areas of Anglo-Saxon control, e.g. those parts of Wales remaining under Celtic control, is required to establish clearly the origins of the law relating to English mining.

2)Cornwall, Devon and Somerset together are recorded as producing over 155 tons of silver in the period 1845 to 1913.

3)Copper was regarded as a royal metal and subject to Crown prerogative, along with gold, silver and tin, from its inception in the thirteenth century until the Mines Royal Acts 1689 and 1693.

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Table 1.

Mines in East Cornwall, Devon and West Somerset producing silver during the second half of the nineteenth century.

Listed in approximate order -- south-west to north-east. Those mines listed in **bold** print have a recorded production of 1000 ozs or more between 1845 and 1913. (Dines 1988)

Bodmin Wheal Mary	Kingston Consols
Silver Vein	Carpenter
Pencorse Consols	Wheal Concord
Crowhill	South Ward
Hewas	North Hooe
Polmear	South Hooe (Tamar Silver-Lead Mine)
West Crinnis	Buttspill
Crinnis	Furzehill
Fowey Consols	South Tamar
Cuddrabridge	Borrington Consols
Treveglos	Whitleigh
Credis	Emily
Tregonna	Crelake
Pheonix (Carthen Consols)	Lopwell
Pentreglaze	Maristow
Treburgett	Friendship
Tregardock	Betsy
East Caradon	Lydford Consols
Bickton Wood	Florence
Ambrose Lake	Baron
Carnvivian	Exmouth (including Adams)
Hurstock	Frankmills
Herodsfoot	South Exmouth
Mary Ann	Old Combmartin
Trelawny	Knap Down
Trewetha	Vervale (or Combmartin Consols)
Wrey and Ludcott United	East Combe
Trebeigh	Dulverton
Callington United	
Florence	
Lady Ashburton	
Silver Valley	
Langford	
Brothers	
Sisters	
Prince of Wales and Harrowbarrow	
West Devon Consols	
New Great Consols	
Devon Great Consols (Fortescue)	

Silver in copper ores.

The majority of mines listed above, and all those with a significant output in the late medieval period, were producing silver found in association with lead ores. However the possibility that silver was produced from copper ores in the Anglo-Saxon period and earlier is worthy of consideration. Particularly as there is evidence for copper/silver working in the 14th century.

Archaeologists investigating the Late Iron Age settlement at Hengistbury Head in Dorset have often suggested a closely defined area of East Cornwall as a source for the ores used to produce the metalliferous assemblages, copper mattes containing lead and silver, found on that site. A suggestion based almost entirely on the fact that East Cornwall was the nearest source of ores bearing copper, lead and significant amounts of silver, although no archaeological evidence for Iron Age mining in East Cornwall has yet come to light. Recent work by Salter and Northover (1992) has, however, suggested that the lead in the copper matte may have been added with the intention of drawing out silver from the copper ore - possibly a form of liquation. That copper was not the prime reason for smelting the matte is indicated, in that it was rejected before the copper reduction process was complete. Whilst sites providing silver-bearing copper ores are not numerous in the South-west there are a number in the Tamar valley which could have been exploited at the period.

Some backing for the idea that silver-bearing copper ores were worked in the Tamar valley at some time prior to the late 13th century comes from accounts of 'nigorum operum coperos' (copper blackwork - the residues from the initial smelting of copper ores) being reworked for silver and lead in 1311/12 (PRO E101/261/3).