

Subsidies for the Roman West?

The flow of Constantinopolitan solidi to the Western Empire and Barbaricum

Abstract*

This paper discusses the presence of solidi struck in Constantinople found in 5th and early to mid-6th century solidus hoards in the Western Empire, Italy in particular. Some 112 different solidus hoards in eleven regions are compared and evaluated. It is suggested that solidi from Constantinople in most of these hoards may be interpreted as the evidence of subsidies for the Western Empire. A possible cause for the uneven but lengthy supply of gold from Constantinople to the Western emperor could have been the fear of Western insolvency and ultimately a state bankruptcy.

Keywords: Barbaricum, Constantinople, hoards, solidi, subsidies, transfer, warlords, Western empire

Introduction

An important characteristic of the Late Roman and Early Byzantine imperial monetary policy of the late 4th and 5th century is the successive shutdown of various imperial mints within a centralization process that caused Constantinople to become the dominant city of the Late Roman and Early Byzantine Mediterranean (see *Table 1*). In particular, the production of solidi in the Eastern Empire was reduced to only two mints, Constantinople and Thessalonica.¹ The latter mint was essentially used only for specific issues of consular solidi after AD 457. This means that issues from earlier mints such as Antioch, Nicomedia, Siscia, and Sirmium gradually disappeared from circulation. When discussing the imperial mon-

etary production of the Eastern Empire in the 5th century, therefore, it is important to assess the vast output of Constantinople (and the trickle from Thessalonica).²

How does one interpret both literary sources and the archaeological record of large sums of Constantinopolitan solidi in the mid- to late 5th century hoards in Italy, the core of the Western Empire and Barbaricum? How do these finds compare to the rest of the Western Empire and Barbaricum? Are the Constantinopolitan solidi merely testimony to coin circulation or is there a different background? There is a tendency among modern historians and economists not to distinguish between money (coinage or “all purposed money”) and barter transaction (other forms of exchange), that is, between *pretium* and *merx*, according to the *Institutes* of the Roman jurist Gaius.³ Barter and money transactions co-existed in the ancient world and the 5th century was no exception.⁴ Taken these distinctions in account, the paper explores the possibility that Constantinopolitan solidi and gold bars were transferred from the Eastern Empire to its Western counterpart on certain occasions and within specific regions in the shape of state subsidies. This in turn would suggest a patron-client relationship with two unequal partners.⁵

The first probable case of insolvency in the Western Empire occurred shortly after AD 418–419, when the Visigoths effectively came to rule over Aquitaine in Gaul after having sacked all precious metal in Rome.⁶ What followed the de fac-

* This research was financed by grants from the Gihl fund of The Royal Swedish Academy of Letters, History and Antiquities, the Gunnar Ekström Foundation, the Sven Svensson Foundation, and the Berit Walenberg Foundation.

¹ For the solidi of the Thessalonica mint, see Metcalf 1984; Fischer 2014b.

² This trend was replaced in the mid-6th century with the Byzantine conquest of North Africa, parts of Spain and Italy, after which new mints were opened in the West that began exporting coinage to the East, see Gandila 2016.

³ Gai. *Inst.* 3.139–141.

⁴ Carlà 2007, 189–200; 2009, 36–44.

⁵ Altheim 1962.

⁶ Henty 1985, 261; Jones 1964, 185–186; Iluk 2007, 82–84.

Table 1. *Solidus mints of the Late Roman Empire. We follow RIC 7–10 and Depeyrot 1996, 48–71. x = continuous activity; – = no activity.*

West	4th century	5th century	6th century
Arles	c. 340 to 367, c. 395–402	411–413, 456– 461, 475–476	–
Ravenna	–	from 402	to 540
Rome	x	x	x
Milan	x	closed c. 410–425	to 565
Lyon	353–367, 389–395	407–411	–
Aquileia	x	400–402, 424–425	–
Trier	to 394	407–411	–
London	383–388	–	–
Braga	–	420–423 or 454	–
<i>East</i>			
Constantinople	from 330	x	x
Thessalonica	330–331	x	x
Nicomedia	to 368	–	–
Siscia	to 365	–	–
Sirmium	to 395	c. 400–410	–
Anthiochia	to 375	475, 484	–
Alexandria	–	–	565–578
Serdica	303–308	–	–
Cyzicus	365–366, 347–355, 365–366	–	–
Heraclea	to 337–340, 364	–	–

to conquest was a *foedus* settled by a tribute paid for by land.⁷ The background must be sought in Honorius' loss of territory in AD 406–410, which led to a permanent reduction of circulating capital, despite the arrival of Eastern troops in Ravenna in AD 410.⁸ Under Valentinian III followed the loss of the province of Africa in AD 429–435. The sudden loss of the vital tax revenues from Africa crippled the Western empire. This shortage of revenue had to be dealt with. The attempted solution to the problem was of a military nature. Several expensive military campaigns were undertaken either by the Eastern Empire or as the joint efforts of Italy and Constantinople in AD 431, 441, 461, and 468, all paid for with gold.⁹ The campaigns all failed, even if they coincided with very sizeable issues of solidi (the VOT XXX MVLV XXXX and IMP XXXXII COS XVII issues of Theodosius II, the RIC 10 605

⁷ Hyd. 61; Oros. *Hist.* 7.43.10–12; Isid. *Hisp. Hist. Goth.* 22.

⁸ Sozom. *Hist. eccl.* 9.8.6; Zos. *Hist. Nov.* 6.8.2.

⁹ Kaegi 1968, 27–40; Elton 2015, 137–138.

issues of Leo I, and the subsidized Rome mint under Anthemius). As a result, the tax revenue in the West continued to diminish and the Eastern capital invested in the unsuccessful military campaigns could never be retrieved.

Many other cases of insolvency of the Western imperial court can be identified during the second half of the 5th century, in particular in regard to the events around AD 450–452, when the Eastern emperor Marcian refused to pay tribute to Attila, despite having the financial means to do so. Attila moved westward, where the government in Italy simply did not have the capacity to pay him off. This forced him to seek an alternative source of revenue in Gaul.¹⁰ This is confirmed by Eugippius who writes that the infrastructure of the Western armies had collapsed after the 450s and that Italy was not even able to ensure central payments for Roman garrisons in the Noricum Ripensis.¹¹ Similarly, the return of the Western imperial regalia by Odoacer to the Eastern emperor Zeno in AD 476 ought not to be viewed as a deliberate act of defiance against Constantinople but rather as the sign of a desperate warlord, essentially admitting the fact that he was unable to pay his own soldiers.¹²

Coin circulation

The 5th century has sometimes been described as a period of “gold haemorrhage”,¹³ where the Late Roman state apparatus was drained of the financial resources needed to sustain its control over the Western part of the empire.¹⁴ Expenditures of the Late Roman state apparatus always exceeded the revenues in the form of taxes and tributes. As a result, the inventory of the state treasury showed a declining trend over time.¹⁵ It follows that new sources of gold ore were always needed and that the Late Roman state apparatus would seek to exploit all available resources, including imports from areas outside the Empire. The problem is to account for where all the money went, and how.¹⁶ In particular, the large proportion of Constantinopolitan solidi in the 5th- and 6th century solidus hoards found in Italy and Scandinavia begs a number of questions.¹⁷

¹⁰ Kelly 2014, 201–202. It appears that Attila wanted gold only, and never territorial concessions or extraordinary status, see Demougeot 1969, 418.

¹¹ *Life of Severinus* 4, 11, 15, 20.

¹² Kraus 1928, 43–44; McCormick 1977; Maas 2015, 18; López Sánchez 2015a, 160.

¹³ Whittaker 1980, 4.

¹⁴ McCormick 2002, 42–43; Iluk 2007, 54–69, 77 and n. 7 with a bibliography on the subject; Carlà 2009, 327–336.

¹⁵ Hendy 1985, 193–194, 257; Banaji 2006, 266.

¹⁶ Carlà 2009, 355.

¹⁷ For the connection of the Ostrogoths to the Baltic shores and Scandinavia, Fagerlie 1967, 166; Kyhlberg 1986, 19; Ciolek 2007.

First, one must ask as to whether Constantinopolitan solidi circulated in the West as part of a commercial exchange where the West provided the East with expensive or very sizeable sums of commodities. It has been argued that there were existing stocks and imports in the Western hemisphere, which proved to be sufficiently important for centuries.¹⁸ In the late 5th century, when a fluid relation was re-established between North Africa and the Byzantine Empire, the Albertini Tablets, a collection of legal documents involving monetary transactions, suggest an unbroken juridical continuity between the Roman Empire and the Vandal successor kingdom involving the use of the solidus, or at least its measure as a means of account.¹⁹

Second, could a theory be formulated where the Constantinopolitan solidi have ended up in the West and in the Barbaricum via a different network of affluent aristocrats? The 5th-century historian Olympiodorus describes how senators of second rank in Rome had incomes of 1,000 or 1,500 pounds of gold per year, the equivalent of 384,000 to 576,000 solidi. The richer senators could reach even 5,300 pounds of gold a year, corresponding to 2,035,200 solidi.²⁰ *The life of Melania the Younger*, also from the 5th century, relates that when Melania sold her land-holdings in an act of charity, her revenues amounted to some 120,000 solidi.²¹ Senatorial families were known to have vested interests in both parts of the empire as the very same *Life of Melania* demonstrates.²² A few extremely powerful senatorial families, such as the Anicii, were well connected in Italy, Sicily, Africa, and Constantinople.²³ A possible objection to this second theory, though, is the hyperbolic nature of the Eastern history of Olympiodorus (from Thebes), preserved only fragmentarily in the library of Photius, and of the possible measurement of landed wealth into solidi.²⁴ The written sources are unreliable, as estimates of gold reserves of rich Roman aristocrats are typical of 6th- and 7th-century accounts from the Eastern part of the Roman World, rather than an accurate depiction of the liquidity of Western potentates of the 5th century.²⁵

Third, would a synthetic scenario be possible? While the central government probably did not seek to interfere in the free functioning of the private sphere, it did dominate certain sectors such as the military labour market as a monolithic actor with its cash flow. This hypothesis would entail that certain emperors or members of particular dynasties (imperial or aristocratic) contributed from their own properties to the fi-

nancing of some military or professional groups in the service of the State.²⁶ This would entail state funding through a range of different channels and on many different levels, such as the influx of regular commerce, but also bribes within the aristocracy, and military payments ultimately benefitting barbarian warlords and mercenaries. Hiring barbarians as mercenaries or *foederati* was much cheaper for the Roman State than paying regular Roman troops.²⁷

The Roman emperor initially issued money to sustain the administrative mechanisms of the Empire, especially the military state apparatus. Although Duncan-Jones has argued that the Roman monetary economy was never integrated since neither the army nor trade affected extensively the circulation of coins,²⁸ other scholars have reached the opposite conclusion.²⁹ Instead, they argue that the army, government taxation, and trading activities enabled the circulation of coins in distant provinces and served to integrate the Late Roman economy.

These patterns could help us prove or disprove the hypothesis of Roman numismatic integration. However, and so far, the methods of die-link studies and analysis of hoards have been the primary sources of knowledge for numismatists.³⁰ Analysis of hoards and stray finds has a long tradition as an essential way to comprehend coin circulation. The study of die-links is important because different obverse and reverse dies are not eternally coupled, nor do they have identical lifespans. When one die breaks or otherwise falls out of use, it is replaced by another. Therefore, die-linking is an ideal tool for the study of the mint output, even though the actual number of coins that could be produced by a die or dies remains subject of continuing speculation.³¹ One can also establish die-link chains that are related chronologically through distinct distribution paths.³² Thus, die-link studies can be of great interest for the understanding of the reception and movement of particular coins and particular people in brief periods of time. Regarding this, it is widely considered that the circulation of civic bronze coinage outside their original minting regions, and especially near the frontiers,³³ can easily inform us about the movements of private individuals and soldiers who could have carried coins to distant regions with them.³⁴ Rare issues of gold solidi

¹⁸ Lafaurie & Morrisson 1987, 44; *MEC* 1, 17–18; Morrisson 1987.

¹⁹ Courtois *et al.* 1952; Grierson 1959; Conant 2004.

²⁰ Fr. 41.1, 2; Carlà 2009, 319.

²¹ *Vit. Mel. Iun.* 15.

²² Carlà 2009, 421–422.

²³ *PLRE* 2, 796–798.

²⁴ Harper 2015, 56–61.

²⁵ Banaji 2006, 64–65.

²⁶ Carrié 2012, 14–15, 20–21.

²⁷ Iluk 2007, 77–90.

²⁸ Duncan-Jones 1989; Katsari 2011, 27.

²⁹ Hopkins 1980, 101.

³⁰ Gandila 2016, 155 and n. 120.

³¹ Hersh 1976 is the seminal modern study on die-linkage.

³² Katsari 2011, 27. See also Fischer 2014a on the die-links of Anthemius' coinage in Italy AD 467–472, and the isolated position of the Rome mint and the Vestal hoard.

³³ Howgego 1995, 102; Katsari 2011, 28.

³⁴ García-Bellido 2004, 111–113, for the movement of Iberian coinage, both silver and bronze, and Spaniards to the Rhine at the beginning of the Christian era.

can also be approached in exactly the same way, as shown by Fagerlie's seminal 1967 die-link study of Scandinavian solidus hoards. He convincingly proved that Roman and Byzantine solidi were brought *en bloc* to Scandinavia in a few intervals.³⁵ According to Fagerlie, the die-linked solidi of official issues indicate direct payments of the Roman emperor to Scandinavian warriors and members of the Nordic élites.³⁶ These payments reveal direct contact between the aforementioned élites and the warlords in Italy.³⁷ Following Fagerlie's method, we argue that die-link studies and analysis of hoards during the 5th century worldwide are crucial tools. This paper complements—and precedes chronologically—recent approaches to the circulation of western Byzantine coins in Eastern regions during the 6th and the 7th centuries as the best way of tracing long-term developments in the Late Antique Period.³⁸

Distribution routes

Gold had to be distributed across the Empire. There were different routes for this process. The Late Roman Empire had formally speaking very strict regulations on how to transport gold along these routes. There were limits as to how much gold could be placed in a container, just as there were strict procedures for loading any given amount of containers on a horse cart, presumably because there had been serious mistakes in the past. The weight of a given gold transport would also correspond to the size of the accompanying military detachment of guards and provisions for horses.³⁹ *Table 2* lists five possible distribution routes of gold from Constantinople to the West and the Barbaricum. These are discussed and evaluated below.

The first route appears to be the most obvious, and a likely explanation for most of the Constantinopolitan solidus coinage found in the West and in Barbaricum. The hoards can be explained as having eastern coinage augmented with western coinage upon arrival in Italy. Both types of coinage may have circulated for some time within the state apparatus of the Roman Empire prior to arriving in Scandinavia and Poland from Italy.⁴⁰

The second route can explain finds of Constantinopolitan solidi in Gaul, but the nature of this route must have changed over time.⁴¹ It is abundantly clear that Northern Gaul, a region

Table 2. Possible distribution routes for Eastern gold

<i>Route 1</i>	Constantinople > Northern and Central Italy > Pannonia > Barbaricum
<i>Route 2</i>	Constantinople > Northern and Central Italy > Gaul
<i>Route 3</i>	Constantinople > Balkans > Barbaricum
<i>Route 4</i>	Constantinople > Balkans > Barbaricum > Northern and Central Italy
<i>Route 5</i>	Constantinople > Southern Italy, Sicily, and North Africa

defined sometimes as “lethargic”⁴² in terms of solidus hoards in the first half of the 5th century,⁴³ became one of the most important areas of hoarding and circulation of gold coins in the whole of the West a century later. A transfer of gold subsidies to the rulers of Gaul would have allowed for a trade with Byzantium and the Ostrogoths after AD 476. The early 6th-century hoards of Gourdon, Chinon, and Roujan present a different scenario, with clear “pseudo-imperial” compositions and Gallic mints, but the question of the provenance of the gold stills remains open. By the mid-6th century, the hoarding in this region, together with Southern Gaul, surpassed Italy and Scandinavia, which were previously the favoured destinations of most of the Eastern gold.⁴⁴

The third route finds support within the hoard material listed in the corpus of former Yugoslavia, that of Pomerania, Slovakia, and Hungary.⁴⁵ Yet, despite this hoard material, one must explain the presence of the same coin types in Italy (notably in the Reggio-Emilia hoard) and in Belgium (Childeric's grave) while being unable to present hoards in Central Europe that have the same kind of general composition as those in Scandinavia, Belgium, and Italy.⁴⁶

The fourth route can be used to argue against official East Roman subsidies to the West Roman emperor in Italy in the period AD 410–467: “the flow of specie in subsidies and plunder out of the Eastern Roman world was offset by an even greater return of gold to Constantinople that emptied Western and Central Europe of most of its gold.”⁴⁷ But for the fourth route hypothesis to hold true it would mean that lump sums of solidi paid by the Eastern Empire to their barbarian frontier troops were subsequently brought *en bloc* by those

³⁵ Fagerlie 1967, 112.

³⁶ Fagerlie 1967, 114–116.

³⁷ Fagerlie 1967, 112–136.

³⁸ Gandila 2016.

³⁹ Stoffel 1993, 72, 120–121; Van Heesch 2006, 54–55; *CTh.* 5.8.48, 8.5.47–8, 8.5.8, 10.24.3, 12.8.1; *C. Just.* 12.50.23.

⁴⁰ Procop. *Goth.* 2,15; Fagerlie 1967, 166; Gąssowska 1979, 40; Iluk 2007, 89.

⁴¹ *MEC* 1, 113.

⁴² McCormick 2013, 351.

⁴³ King 1992, 186–192.

⁴⁴ McCormick 2013, 351–353.

⁴⁵ Mirnik 1981; Ciolek 2007; 2009; Depeyrot 2009; Prohászka 2009; Budaj & Prohászka 2012.

⁴⁶ Degani 1959; Chifflet 1655; Fischer 2014a; 2014b; Fischer & Lind 2015.

⁴⁷ Harl 1996, 310–311.

very same barbarian warriors into Italy, then mixed with many very different West Roman issues still linked by dies, and buried in Italy. While this is not impossible one must hasten to add that for hoards in Belgium, Italy, and Scandinavia to be linked in this way by East Roman issues as well would mean extensive long-distance travel by the hoard owners rather than by individual coins circulating on a market.

The proposed explanation justifying the fourth route becomes extremely complicated, as one would have to argue solely from written sources and iconography,⁴⁸ while unable to use the full range of the solidus hoards as evidence. The iconographic and epigraphic repertoire of ancient coinage is a huge and substantially un-mined resource for examining areas from local religion to imperial economic policy, and from individual political ambition to communal statements of identity. As recent research has shown, one may combine the evidence from the archaeological contexts to that of the iconography of the objects, thereby exploring patterns of administration invisible in other sources.⁴⁹ Fifth century solidus coins were certainly characteristic of an “open currency system” maintained all throughout the Mediterranean and Europe, as opposed to other “closed” or “epichoric” currencies.⁵⁰ The exchange of gold coinage between Constantinople and other foreign powers was strictly controlled at this time by imperial officials. Thus, the adoption of distinctive Constantinopolitan monetary types in Italy or other regions at a given time tell us much about its influence and the transfer of money from East to West. By contrast, we know very little about the late 5th-century barbarian warlords and their travels. A possible way of resolving this issue is to combine routes one and two, dividing the flow of solidi from the Eastern mint into two—one being the barbarian Balkan route and the other being the Italian route.

Finally, a fifth route would have functioned during periods of détente between Constantinople and Carthage, e. g., before the troubles that started in North Africa in the 420s and after the conclusion of the “perpetual” peace of Genseric with Constantinople in AD 474 or 476, something which permitted the relation between the two states to assume a veneer of

normality.⁵¹ This scenario is precisely what is suggested by the composition of the North African (and Sicilian) hoards of the 5th century.

Arguing from evidence and the absence of evidence

A critical discussion of the use of the tangible evidence is in place. Thordeman’s law states that hoarded coins reflect the general availability at the time for the removal of the hoard from circulation.⁵² But it must be emphasized that substantial parts of Eastern subsidies still may not be visible in the hoard material. This is the case since Romano-Byzantine subsidies and tributes often refer to *centenaria*, leather sacks each containing 100 pounds of gold that could be made up of coins, but also of ingots or plate.⁵³ Many Constantinopolitan coins could also have been melted down and reissued as Western coins, especially during the reign of Valentinian III.⁵⁴ The rationale behind this would be the legitimacy of having one’s own coinage ready for expenditure rather than one’s patron.

It thus seems reasonable to argue for an unofficial distribution network, where leading barbarian warlords and Roman potentates could skim off the state resources and bribe or pay tributes to other secondary players whenever necessary.⁵⁵ By contrast, a more general theory of unofficial cash flow, a large export of solidi without explicit state involvement, would suggest a rather free circulation of East Roman coinage. This could possibly have been dictated by a functioning market economy between the Roman Empire and Barbaricum.⁵⁶ Such a hidden market accompanied by a very substantial coin circulation would break up die-identical chains into random patterns, like, say, the coinage of Honorius in hoards deposited in the AD 440s and 450s. But the evidence of the solidus hoards does not support this general market hypothesis.

No Roman or barbarian archives or documents relating to the mechanisms of distribution and hoarding of coins, as those we know for the Middle or Modern Ages, have survived.⁵⁷ It

⁴⁸ Western solidi looked very different from Constantinopolitan solidi. The former usually employed an obverse image of the diademed emperor in full profile in contrast to the latter’s three-quarter profile cuirassed warrior image. The reverse iconography was also very different with the image of the seated Constantinople up to AD 451, followed by a standing Victoria. The Western mints only began using Victoria in a massive scale after AD 474, when Eastern control of the Western Empire becomes complete. See Ungaro 1985, 58; López Sánchez 2015b, 159–160.

⁴⁹ Von Kaenel & Kemmers 2009.

⁵⁰ Thonemann 2016, 115–124 for the various numismatic landscapes in existence since Hellenistic times. “Obryzium” inscribed on Eastern solidi is a clear sign of the Byzantine coins being part of an “open” currency.

⁵¹ Malchus Fr. 5; Procop. *Vand.* 4.7.26.

⁵² Thordeman 1948 for the silver in general, see also Depeyrot 2009, 7; Carlà 2009, 206 for the 5th-century gold coinage.

⁵³ Dagron & Morrisson 1975; Callu 1978; Harl 1996, 176, 432; Depeyrot 2005, 242; Carlà 2009, 323. Gold bars carried the same value as gold coinage, Crawford & Reynolds 1979, 164, 176, 197.

⁵⁴ Depeyrot 1996, 30–31; Carlà 2009, 419–420; 2010, 51–52; López Sánchez 2015a, 328–334.

⁵⁵ MacGeorge 2002, 304. This would be perfectly possible if one accepts the theory of Hendy that “it is not impossible that the annual revenues of the really wealthy members of the senatorial class equalled those of the empire itself” (Hendy 1989, 11).

⁵⁶ Banaji 2006; Metcalf 1995.

⁵⁷ Van Heesch 2012, 162.

is uncertain if coin hoarding always accurately reflected the monetary circulation in a given region. Hendy established for the 4th century that there were “fiscal units” in the Roman Empire,⁵⁸ something that explains why hoards in given regions do not always contain coins coming from the nearest mints.⁵⁹ Units of any sort, fiscal or geographical, become even more difficult to recognize during the 5th century.⁶⁰ Consequently it is very difficult to ascertain if 5th-century hoarding was the result of pure randomness or indicative of more elaborate patterns of circulation. With a few regional exceptions (Gaul being a case in point), single finds of solidi seem to share the same distribution pattern as larger gold hoards.⁶¹ If the Constantinopolitan coinage that shows up in solidus hoards in the former Western Empire and the Barbaricum is to be considered unofficial and if no proper East Roman state funding was entering the imperial coffers in the West Roman Empire, how does one explain the die-identical chains of Constantinopolitan coins in mixed Western and barbarian hoards? Somehow, very large sums of solidi were transferred, and there is sufficient evidence of intact series of die-linked coins to argue for some sort of organized transfer of the solidi.

Given the composition of the hoards on West Roman territory and in Barbaricum and their die-links, it is easier to argue for continuous East Roman subsidies to the Western Empire (even if they came as illegal bribes to power brokers like Aëtius or Ricimer) than to argue for a widespread circulation emanating from free trade with the East. Roman emperors regularly issued vast quantities of solidi and the size of the imperial military and civil services suggests that several millions of gold coins were required to meet these imperial obligations throughout the later 4th and 5th centuries AD.

A survey of Roman gold coins from AD 300 to 500 produced just under 300 hoards.⁶² This represents only one-and-a-half hoards per year. An in-depth analysis of all finds of gold coins discovered both within the Roman Empire and in Barbaricum reveals that there are very few coins per region. This contradicts the impression of some (Eastern) written sources claiming that gold coinage was available in all areas of the Empire.⁶³ In addition, it must be emphasized that several Late Roman laws attempted to control the use of gold in trade, for example, by prohibiting the payment of gold to barbarians beyond the Empire⁶⁴ even specifying that “if, henceforth, gold is

supplied by merchants to the barbarians, either for sale or in exchange for whatever kind of commodities, they shall suffer not just a fine but an even heavier punishment”.⁶⁵

Commerce and trade do not seem to have been regular in all regions and the coin supply also shows an irregular pattern in most Roman and barbarian areas during the Late Antique period—the army being the only organization with real capacity to economically activate a region in substantial areas of Europe.⁶⁶ In this respect it is difficult to argue for a widespread illegal trade of Roman gold beyond the frontiers of the Empire. Thus, another piece of evidence would have to replace the hoards in order to sustain that theory to have empirical precedence (*Fig. 1*).

The comparative material

Table 3 (below, p. 267–269) includes 112 solidus hoards from eleven different regions. The hoards are ordered chronologically and have been arranged according to the presence of solidi of 18 different mints, where it is clear that all other mints besides Constantinople and Thessalonica soon became irrelevant in the 5th century. While inevitably incomplete, *Table 3* still shows the most important known and fully catalogued hoards of the West from AD 400 to AD 575.⁶⁷ It is clear from *Table 3* that the various regions of the Empire already had very different stocks of solidi available to them by around AD 400–410, as did Barbaricum.⁶⁸ There was no even pattern of coin circulation as there once was under the early Empire of the past. This distribution pattern has implications for the value of written sources as comparative evidence.

⁵⁸ *C. Iust.* 4.63.2, translated by Hendy 1985, 257, quoted by Bland 1997b, 31, n. 13.

⁵⁹ Van Heesch 2006.

⁶⁰ Carlà 2010.

⁵⁸ Hendy 1985, 378–380.

⁵⁹ Van Heesch 2006.

⁶⁰ Carlà 2010.

⁶¹ Aubin 1992, 92–96; Lorient 2003, 57–82; Morrison & Ivanišević 2006, 44.

⁶² 299 hoards containing gold coins, to be precise, Bland 1997b, table 4, 43–50; Guest 2008, 304.

⁶³ Hobbs 2006, 51–73.

⁶⁴ *C. Th.* 9.23.1; Pekáry 1979, 127; Iluk 2007, 77.

⁶⁵ *C. Iust.* 4.63.2, translated by Hendy 1985, 257, quoted by Bland 1997b, 31, n. 13.

⁶⁶ Reece 2003 (1984), 124–125; Depuyrot 2005, 173, who points to the immense activities of the Roman army in the Rhineland and Britain during Julian’s campaigns in AD 358, *Zos. H. N.* 3.5.2.

⁶⁷ There is an insufficient number of 5th-century solidus hoards in Central Europe to warrant it the status as a specific region (see Drauschke 2009). Instead Pannonia has been merged with the Balkans. The region of Pomerania has been excluded from *Table 3* due to the incomplete information. One case in point is the hoard of Mrzezino (Puck) that contained more than 150 solidi (Ciolek 2007; Illisch 2015). Some 81 solidi were in the names of Anastasius, Zeno, Leo I, and Basiliscus. But there is simply no way of knowing if these were pseudo-imperial issues from Italy (a very likely possibility given the hoard compositions in Helgö and Gotland, Sweden) or genuine issues from Constantinople, as in the Abritus hoard in Bulgaria. It cannot be determined if the coinage has arrived from Constantinople via the Balkans or from Italy via Pannonia. Another case is the hoard of Trabki Male (formerly Klein-Tromp). It was found on two separate occasions, 1822 and 1838, and supposedly contained an aureus of Gordian III together with relatively rare Western issues struck in Ravenna in the 420s (Ciolek 2007; Dahmen 2015).

⁶⁸ Metcalf 1984; Harl 1996, 175; Banaji 2006, 271.



Fig. 1. Possible distribution routes for eastern gold (E) to the Western Empire:
 Route 1: Constantinople > Northern and Central Italy > Pannonia > Barbaricum.
 Route 2: Constantinople > Northern and Central Italy > Gaul > Britain and Spain.
 Route 3: Constantinople > Balkans > Barbaricum.
 Route 4: Constantinople > Balkans > Barbaricum > Northern and Central Italy.
 Route 5: Constantinople > Southern Italy, Sicily and North Africa.

Table 3 shows that it is impossible to generalize about vast amounts of solidi being in the hands of common folk throughout the Late Roman world, merely because of a handful of 5th-century letters from Heracleopolis in Egypt in which people borrow a single gold coin from a local usurer.⁶⁹ Instead, the evidence of the solidus hoards suggests that separate circuits of the Roman state apparatus operated according to the means available to them. For any outsider to come in from another branch of the imperial administration, that person and his entourage would literally have to bring in new cash with them to operate the network or raise the means upon arriving in the area in question, something that became increasingly difficult in the 5th century. This means that the comparative material of solidus hoards has to be assessed from a regional perspective before the general picture can be ascertained.

Below follows a regional description of the hoards listed in Table 3, essentially following a West–East direction, with a rather simple logic of listing the Regions 1–11 according to the date at which the Roman government lost control of the region in the wake of the great barbarian incursion of AD 406, and when solidus shipments ceased to reach the regions. The distinction between barbarian and Roman territory is not always clear. This is particularly the case in Region 6, because barbarian rulers in Pannonia, for instance, would always

acknowledge the Roman emperor as a superior in return for tributes or subsidies. In addition, the barbarian tributes or subsidies could have been paid inside an area of Roman control and then brought to the barbarian dependencies at a later point. This is most likely the case with the peripheral barbarian actors in Regions 9–11 who would circumvent the great warlords in Region 6 in order to have direct access to gold inside the Empire, notably the parts of Scandinavia that were directly linked to Region 5 of Italy in the period AD 465–500.⁷⁰

Regions 1–2

GERMANY AND THE NETHERLANDS

The hoards found in Germany and the Netherlands are very interesting in that they reveal that solidi from a wide variety of mints from the period AD 364–395 would have had to be stockpiled in this region before being supplemented with coinage struck in the period AD 407–411 by the usurper Constantine III.⁷¹ Of all the Western regions, Germany is the only one that seems shut off from the strong influence of Ravenna during the first years of the 5th century. The penetration of solidi issued by the new mint of Ravenna was quick

⁶⁹ Loriot 2003.

⁷⁰ Fagerlie 1967; Kyhlberg 1986.

⁷¹ Iluk 2007, 94–113.

and widespread in most of the Western hemisphere and North Africa between the inauguration of the mint in AD 402 up to 415.⁷² Nevertheless, only two coins out of 443 in the hoard of Dortmund (*t.p.q.* AD 407), and nine of 188 in the hoard of Menzelen (*t.p.q.* AD 412) belong to Ravenna. Only in the later hoard of Xanten, deposited circa AD 440, are 16% of the hoarded coins from Ravenna, bringing Xanten somewhat closer to the average 20% of most of Western European hoards at the time.⁷³ The small proportion of coinage from the Ravenna mint is not a unique case though, as the mint of Constantinople is even more underrepresented in all the German hoards during the first half of the 5th century. Only 6% of the total of coins hoarded in Dortmund belong to this mint, the rate even falling to around or below 3% in Menzelen and Xanten.

For a region of such a military importance during the 4th century as Germany, it is striking how cut off the region was from the flow of coins emanating from the key mints of Ravenna and Constantinople. Furthermore, it is very significant that there was no hoarding of solidi in the region after AD 440, precisely when Ravenna and Constantinople were of paramount importance in the coin supply to large parts of the Mediterranean and Europe.

In AD 445, Valentinian III issued the Novella 16 that forced the acceptance of the old imperial gold coinage in all kind of transactions.⁷⁴ This imperial decree has been interpreted as a countermeasure to market actors rejecting old coins due to their loss of weight after lengthy circulation.⁷⁵ Although the measure has been regarded as a reflection of the circulation in Gaul and Italy, it seems that Germany was the first continental region not to be supplied regularly with fresh gold coinage.⁷⁶ The stabilization of the barbarian *foederati* in the West and the recognition of Valentinian III as sole emperor of the Italian throne in the late 430s and 440s confirmed Constantinople as the real see of power in both halves of the divided Roman Empire. The lack of interest of Constantinople in Germany after Valentinian's marriage with the Constantinopolitan princess Licinia Eudoxia in AD 437 seems to have put an end to any further hoarding in the area. It is from this larger perspective that the disappearance of hoarding in Germany can be understood.

⁷² Callegher 2002; Arslan 2005.

⁷³ Arslan 2015, 74.

⁷⁴ *Cod. Th., Nov* 16; Carlà 2009, 431–442; Banaji 2006, 278–279.

⁷⁵ Arslan 2009, 126.

⁷⁶ Banaji 2006, 278.

Region 3

BRITAIN

The peripheral Western parts of the Roman Empire were not directly supplied with gold by the still-operating Eastern mints after AD 388, and hence these areas were out of reach for the Eastern emperors throughout the 5th century. Rather, it seems that a good part of the last bulk of solidi to reach these regions before they were permanently detached from the control of the Western imperial government was struck in Milan in the name of Honorius.

In Britain, the significant quantity of solidi discovered shows a high concentration of hoards deposited at the time for the usurpation of Constantine III (AD 407–411), the final years of direct Roman state control over Britain. More hoards and single finds of solidi struck between AD 395 and 411 are known in this region than from any other part of the Late Antique world. The hoarding pattern is clearly related to the troublesome conditions in this militarized province.⁷⁷ As for much of the late 4th century, the main mints during the beginning of the 5th century were those of Northern Italy. The Hoxne hoard (577 solidi or almost exactly eight libra of pure gold)⁷⁸ is very significant in this respect as the solidi of non-Italian mints represent only 19%, and the overwhelmingly predominance of Milan amounts to 64.4% of the total. The recently discovered hoard of 159 solidi of St. Albans (the second largest solidus hoard in Britain) shows a similar composition.⁷⁹ Silver hoards from Britain present a completely different pattern, however, as less than 30% of the very numerous silver coins found in this region have Italian mintmarks. Instead other Western European mints, notably Trier and Arles dominate the silver hoards.⁸⁰ All this suggests that gold, unlike silver, was sent from Northern Italy to Britain.

Region 4

THE IBERIAN PENINSULA

Most of the official and unofficial solidi in the names of Honorius and Arcadius found in the Iberian Peninsula bear the mintmarks of the city of Milan (M-D). The mint of Ravenna was also very important in the region and always superior to that of Rome with percentages reaching 39% of the total in Arcos de la Frontera and 49% in Jerez de la Frontera.⁸¹

⁷⁷ Guest 2008, 205.

⁷⁸ Bland 1997a; 1997b, 43, hoard no. 31.

⁷⁹ Thorold 2013.

⁸⁰ Arslan & Morrisson 2002, 1281.

⁸¹ Arslan & Morrisson 2002, 1281–1282; Arslan 2015, 74.

In Spain, there is a high degree of uncertainty for the real *t.p.q.* of the Grado and Jerez de la Frontera hoards containing solidi struck in the name of Honorius. The traditional perspective within Spanish archaeology is to situate the hoards within the general turmoil of the first Germanic invasions in the region around AD 409/411. However, other hoards with a very similar composition have been dated to *c.* AD 415 or later, notably Arcos de la Frontera. A much later mixed hoard, from Seville and deposited in the 6th century, consists to a large degree of solidi struck for Honorius and Arcadius (41 coins out of 77).⁸² This shows that coins struck during the reign of Honorius circulated widely in Spain beyond the narrow period of AD 409/411.⁸³ The uncertain and contradictory chronological and typological classification of many of Honorius' solidi and other golden coins in *RIC* 10⁸⁴ and Grierson & Mays⁸⁵ has not helped to clarify the sequence of hoarding in Spain at this time. Still, as most of the Spanish hoards are located in areas where imperial troops are known to have acted up to AD 420/422, it is plausible to think that solidi came to the region accompanying the various efforts made by the imperial administration to assure its fidelity.

It is difficult to say from whence all the minted gold that flowed into the Iberian Peninsula at the beginning of the 5th century originally came. However, it is safe to argue that the flow was quite brief and thus contrasts with the previous regular coin circulation into these regions, dominated by bronze nummi with a high percentage of Eastern mintmarks.⁸⁶ Milan and Ravenna were the favoured capitals and mints of the emperors dependent on the East during the 5th century, and it is a reasonable hypothesis that a transfer of gold bullion from the East and the Balkans into Northern Italy occurred during the first two decades of the 5th century in order to strike coins with mintmarks belonging to Milan and Ravenna. Composition of the Spanish hoards around Gibraltar and Seville are remarkably similar both in chronology and composition to the Chemtou hoard, although less massive in scale. Thus, the two

regions of Spain and North Africa may have been in a close relationship around AD 415–423.

Region 5

ITALY

Italy shows the changing patterns of hoarding of the 5th century more than any other region in Europe and the Mediterranean. Italy has the largest concentration of solidus hoards of the West for the 5th and the 6th centuries.⁸⁷ There are hoards in Italy deposited by AD 400–410, where the influence of Constantinople is quite obvious. By the same token, there was a massive presence of coins struck at the mints of Milan, Aquileia, and Ravenna. At the very onset of the 5th century, the important hoards of Parma and Tiber-Rome already differ from each other. The hoard of Tiber, concealed around AD 400, is entirely composed of coins struck in Italy, whereas many more mints are represented in the contemporary but much larger Parma hoard. Many coins in the Parma hoard came from the continental West (especially Trier) and Constantinople, although Milan is the most important mint of all. The Parma hoard therefore resembles the contemporary German hoards, and has a very different source.

The mint of Ravenna competed against Rome during most of the reign of Valentinian III (AD 425–455) and his successors, only to finally lose ground against the Milanese mint in the 470s. This suggests that the policy of transferring the court and the Italian administration from Milan to Ravenna in AD 402 proved ineffective after the fall of the Theodosian dynasty. The Roman military state apparatus could operate without the consent of the Western emperor and efficient warlords such as Ricimer and his nephew Gundobad could temporarily cover costs with solidi struck in Milan. In the light of this pattern, Milan and the North of Italy, more than the Adriatic Sea, seem to have been the favoured transfer route of Constantinopolitan gold to the West, with the exception of the last years in the reign of Anthemius.⁸⁸

A key Italian hoard is that of Casa delle Vestali (deposited in AD 472) that has certainly an overwhelmingly “Roman” character, with 354 solidi out of 397 belonging to the mint of Rome.⁸⁹ AD 472 was the year of the siege of the capital by Ricimer. While it is possible to regard Rome as functioning with its own gold at this time,⁹⁰ it is highly unlikely that Anthemius, an emperor sent by the East to govern the West,

⁸² Barral i Altet 1976, 78–79, pl. II & III and Peixoto Cabral & Metcalf 1997, 53 are outdated. They believe in a hoard of 40 solidi and 18 tremisses with a *t.p.q.* of AD 527. A current revision of this hoard is in progress (Pliego Vázquez 2015; 2016), documenting 77 gold coins, both solidi and tremisses.

⁸³ Peixoto Cabral & Metcalf 1997, 53.

⁸⁴ *RIC* 10, 124–125, 128–135 and nos 1201–1215, 1239–1240, 1250–1259, 1284–1291, 1308–1313, 1318–1343, 1348–1350, 1352, 1362–1353. The non-imperial golden issues produced or circulating in Spain at the time of Honorius' reign are also common in Spain, *RIC* 10, nos 3704–3707 and Peixoto Cabral & Metcalf 1997, 47–58.

⁸⁵ Grierson and Mays (1992, 195) recognize however, and plainly, that “the coins struck in Honorius' name (...) are difficult to describe clearly (...)”. The chronology of the coins, apart from the few special issues that bear dates, depends very largely on our knowledge of the periods of activity of the various mints.

⁸⁶ Nicklas 1995, 170.

⁸⁷ Ungaro 1985, 72–73; Iluk 2007, 74–75.

⁸⁸ Arslan 2015, 74–75.

⁸⁹ Ungaro 1985; Fischer 2014a.

⁹⁰ Ungaro 1985, 70 speculates about “*donativa* particolari per l'*adventus* dell'imperatore”.

managed to do so without financial aid from Constantinople.⁹¹ The traces of the financial aid appear evident in the San Mamiliano hoard (Sovana, Grosseto), another deposit of roughly the same period (AD 476) and where half of the 498 solidi have an Eastern provenance.⁹² The composition of the hoard is strong evidence in support of the view that the East supplied the West with gold during military operations in Italy or Sicily, the peaceful periods of the 5th century being covered by Western solidi. The mixed character of this hoard, containing roughly the stipendium of a hundred men for an entire year seems to suggest a steady production of coins by the three Italian mints when Byzantium was not directly in charge of the peninsula.⁹³ The depositions of San Mamiliano and Casa delle Vestali in Italy, along with the Szikancs hoard in Pannonia, can be interpreted as a consequence of dramatic events related to the unstable political situation of the Italian peninsula at the time.⁹⁴

After the direct imperial rule in Italy had ceased, Italian solidus hoards of the 480s and 490s still highlight the importance of Milan as a mint, notably the Zeccone hoard.⁹⁵ This could be interpreted as evidence that there was a justified concern in Constantinople regarding the possible reactivation of an independent Italian throne beyond control. By contrast, Italian hoards of the 520s and 540s rarely include solidi issued by local mints, the Crotone hoard being a pertinent example of this development. An interesting point related to this topic would be to consider the transfer of highly skilled Byzantine engravers to produce some of the superb Ostrogothic issues of the 6th century. If so, engravers could have been a part of the legal and politically arranged importation of gold from the East during this century.⁹⁶

In Sicily, the two most significant hoards of the century (Comiso and Butera) were assembled during the late reign of Valentinian III (AD 437–455). They show a reduced percentage of coins coming from Rome or Milan, while the overwhelming bulk of solidi were supplied either by Ravenna (Comiso) or by Constantinople (Butera). The island, rich as always, looks to have been more inside the Adriatic and Eastern economic spheres of influence at the middle of the 5th century than the Tyrrhenic and Western ones. Castellana Sicula, the most important of the 6th-century solidus hoards, only contains issues from Constantinople. Thus it seems that Sicily was completely linked to the East rather than to the West by AD 540.

⁹¹ Fischer 2014a.

⁹² Arslan 2015; López Sánchez 2015b.

⁹³ Arslan 2015, 67.

⁹⁴ Gorini 1996; Arslan 2007; Arslan 2015.

⁹⁵ Brambilla 1870, 15ff.

⁹⁶ Cassiod. *Vár.* 9, 3; Barnish 1985, 11–12.

Region 6

PANNONIA AND ILLYRICUM

Pannonia and Illyricum were frontier areas between the Barbaricum, the East, and the West. These regions were important at the beginning of the 5th century and served as an interface between the Eastern and the Western empires for centuries to come.⁹⁷ Still, Pannonia and Illyricum do not show any evidence of large scale hoarding until the mid-5th century. Only after *c.* AD 440, with the East becoming a superior power, is there a significant solidus hoard in the region. The most important hoard is that of Szikancs.⁹⁸ It consists almost exclusively of solidi from Constantinople and it has been convincingly argued that this hoard formed part of a subsidy from Constantinople to the Hunnic court.⁹⁹ It is a monolithic composition, quite similar to that of the other massive treasure of the region, the Abrittus hoard. Both are probably Constantinopolitan subsidies to Germanic affinities on the immediate fringes of the Empire.¹⁰⁰ Bina, on the other hand, seems to come from a purse that was filled up in Northern Italy with a mixed composition of solidi.¹⁰¹

The relatively insignificant size of the hoards of Karancskezi and Nahac confirm the hypothesis that the flow of gold along the first route travelled only in one direction and mostly at the time of Byzantine interventions in the West. From this point of view, the entire 5th-century Balkan peninsula and its neighbouring regions appear to be an area where the coins of Constantinople (and only very occasionally those of Thessalonica since the second quarter of the 5th century)¹⁰² constituted the base for the circulating stock in gold, as was the case in the rest of the East in the late 5th and the 6th centuries.¹⁰³

Region 7

NORTH AFRICA

The circulation of solidi in Northern Africa has been well analysed and the overall ratio between Eastern and Italian coins seems to be 2:1.¹⁰⁴ This is due to a distinct transformation of the supply routes during the 5th century. Under Honorius' reign, Italian solidi in the region represent *c.* 45% of the total.¹⁰⁵ In the important hoard of Chemtou, however, as many

⁹⁷ Morrisson & Ivanišević 2006, 39.

⁹⁸ Biró Sey 1976.

⁹⁹ Bóna 2002, 43–44.

¹⁰⁰ Stojanov 1982.

¹⁰¹ Kolníková 1968.

¹⁰² Metcalf 1988b; Fischer 2014b.

¹⁰³ Morrisson & Ivanišević 2006, 45; Tejral 2012.

¹⁰⁴ Morrisson 1987, 330.

¹⁰⁵ Arslan 2015, 78.

as 85% of the solidi are from Italian mints.¹⁰⁶ We do not know exactly how these hoards were sorted out, but two principal models are conceivable: either some Roman or Vandal warriors received money from their particular employer when acting on behalf of Romans before AD 429 or, alternately, a soldier or a company of soldiers shared a certain part of the booty seized during a victorious military campaign. According to Fulgentius, in his *Libri III ad Thrasamundum*, donatives were paid to Vandal soldiers garrisoned in *castris regiis* which would suggest that Geiseric had money to meet the needs of his warriors at the beginning of his reign.¹⁰⁷ The hoard is very close both in chronology and in composition to southern Spanish hoards. Chemtou, with 1,648 solidi, shows the regular pattern in the West with about 25% of the total belonging to Ravenna and 45% of the solidi belonging to the Milanese mint. Only six solidi (0.4%) belong to Constantinople and it is clear that Italy, and not the East, was responsible for the coin supply in Africa at this point. An equilibrium between the mints of Rome and those of Ravenna occurs at the mid of the 5th century, whereas circulation of bronze coinage in Northern Africa remains firmly attached to the mint of Rome throughout the whole of the 5th century.¹⁰⁸ As a consequence, the second half of the 5th century in Africa shows a clear dual pattern of circulation, with an Eastern provenance of the gold. The model for the domestic Vandal bronze currency was the solidus struck by the imperial mints. But minting gold coinage remained an imperial prerogative that no Vandal king ever dared to transgress. This can be seen in most of the richer 5th- and early 6th-century hoards in North Africa, which contain an abundance of solidi.¹⁰⁹ Imperial mints, with those of the East gaining progressively greater representation, provided the bulk of gold coins circulating in Africa.¹¹⁰ This could have been a consequence, after the failed Roman campaign of AD 468, of the opening of the Vandal kingdom to Constantinople in AD 474 or 476, when a “Perpetual Peace” was signed between both Mediterranean powers. In any case, and since AD 477, the Vandals produced their own coinage and the fact that it was restricted to bronze and silver low-denomination coins can suggest that the easing of relations could have implied the supply of minted gold from Constantinople to the territories of the Vandal kingdom in the form of tributes. As a result, the monetary horizon changes completely at the end of the 5th century in Africa. North Africa was also an extremely fertile country. The Vandal landowners in the region accumulated

substantial wealth over the 95-year period of Vandal rule in North Africa. Therefore, one of the main reasons for the Byzantine conquest of the region under Justinian in AD 533–534 was its prosperity. As the long Byzantine-Vandal conflict ended when Gelimer surrendered to Belisarius, “normal” and even intense relations between both regions were re-established. A proof of a restored and fluid pattern of exchanges between Constantinople and Northern Africa can be seen at the hoard of Aïn Meddah (Algeria), buried in AD 595. It seems to have consisted of 68% of coins with mintmarks of Constantinople and 21% of Thessalonica. This case appears to be even stronger in the treasure of Djemila, also composed overwhelmingly of Constantinopolitan solidi, with a single solidus from Milan and the majority of the coins with the mintmark of Constantinople. The increasing dependence of Africa upon the East continued, as shown by the later hoard of Derhafla Djebibina (Tunisia), deposited *c.* AD 575, in which only one of seven solidi comes from Ravenna.¹¹¹

Region 8

GAUL

The provinces of Gaul (roughly corresponding to present-day France, Belgium and Switzerland) have yielded a half-dozen 5th-century solidus hoards. The three finds from Chécý, Arçay and Combertault that date to the first decades of the 5th century are notable exceptions as they seem to constitute rarities in a region deprived of the large-scale finds characteristic of Italy. Furthermore, these early hoards show many similarities with contemporary Italian treasures and it seems that at this stage the supply of solidi to Gaul was completely dependent on Northern Italy.¹¹² A partial explanation for the relative scarcity of Gallic hoards during much of the 5th century is the very early presence of barbarian mints in Gaul, presumably operating already during the 420s. Mints such as the one which adopted RA as mintmark on its reverses (referring to the city of Arles?) and others abound in the mid-5th century and later and were presumably made for *foederati* of the Roman Empire.¹¹³ This would become a regular scenario during the beginning of the 6th century, when Gallic coins borrowed their iconography from Ostrogothic models¹¹⁴ and for centuries to come, becoming a real alternative to the Rhône estuary.¹¹⁵

¹⁰⁶ Baldus & Khanussi 2014.

¹⁰⁷ Fulgentius Ferrandus, *Ad Thrasamundum libri* 3, 1.1.3; Berndt 2015, 90.

¹⁰⁸ Morrisson 1987; Salama 2001; Asolati 2006, 120–121 with modern bibliography and different views on this subject.

¹⁰⁹ Morrisson 1976; 1987.

¹¹⁰ Berndt 2015, 97.

¹¹¹ *RIC* 10, xvc.

¹¹² Arslan 2015, 76.

¹¹³ Callu & Barrandon 1987.

¹¹⁴ *MEC* 1, 114; McCormick 2013, 353.

¹¹⁵ Metcalf 1988a.

By contrast, a southern route to Gaul could perhaps have been operational at the end of the 6th century rather than during the 5th century, as suggested by the important hoard of Viviers in the Ardèche (*c.* AD 575). Here, 109 real Constantinopolitan solidi out of 119 documented coins dominate a smattering of Ostrogothic, Visigothic, and Frankish solidi and tremisses.¹¹⁶ Thus, the most plausible reason for the proliferation of this imitative coinage could be the absence of substantial numbers of Imperial troops in the region during most of the period. If local coinage in Gaul was produced under some form of Imperial permission, the absence of clear-cut treaties previous to the 440s can suffice to explain the paucity of Imperial gold in Gaul until this date. Although advanced by some, trade as an explanation for the presence of Italian gold in Gaul during this period does not seem completely convincing, as it does not explain the total absence of Constantinopolitan solidi in the region.¹¹⁷

Legitimacy was important to barbarian successor kingdoms in the West and this must have accentuated the need for additional monetary resources. The boom of issues and mints in Gaul throughout the entire 6th century is in any case a unique phenomenon in the Western World. This suggests that all the important barbarian kingdoms with a connection to the imperial power in the West operated mints in Gaul.

Regions 9–11

ÖLAND, BORNHOLM, GOTLAND, AND HELGÖ

The onset of solidus hoarding on Öland in significant numbers began only slightly before the extinction of the Theodosian dynasty (AD 456).¹¹⁸ Certainly, there is evidence of gold coinage older than this period in Scandinavia, especially in the area around Gudme on the island of Funen. Reasons for the sudden influx of solidi to specific regions in Scandinavia can be varied but it is well known that certain groups in the Barbaricum were capable of establishing special relations with specific members of the Imperial bureaucratic and military machinery, after the fall of Attila allowed for new contact networks.

The middle and second half of the 5th century was the time when Visigoths, Burgundians, and Vandals among many other minor ethnic affinities asserted their power in different regions inside the Empire, establishing the first successor kingdoms. In this context, it appears that Öland was the first among other regions in Scandinavia to maintain privileged

relations with barbarians inside the Empire. On Öland there were at least ten important hoards deposited during the two decades spanning from the death of Valentinian III (AD 455) to the abdication of Romulus Augustus (AD 476). They are relatively modest hoards when compared to the five largest hoards of Chemtou, Szikancs, Casa delle Vestali, San Mamiliano, and Abrittus. But regardless of the size, the typical Ölandic hoard composition seems to follow the same pattern of subsidies sent from the East in the wake of political emergencies in the West.

The hoards probably reflect active Ölandic participation within the shifting and dangerous politics during the third quarter of the 5th century inside the Empire.¹¹⁹ Constantinople is the most important mint of all in the Ölandic hoards. However, almost one third of the solidi of the largest hoard of Åby, *t.p.q.* AD 477, have Italian mintmarks, a quantity which is close to 40% in the hoard of Björnhovda. These are similar percentages to those present in the mixed hoard of Bina in Slovakia from the mid-5th century, and the large treasure of San Mamiliano in Sovana from *c.* AD 477. Ölandic hoards have similar compositions, divided in two almost symmetrical halves with provenance from the East and the West. All this strongly suggests that Northern Italy and Pannonia are the most likely regions of acquisition for these solidi.

Bornholm, Gotland, and Helgö replace Öland as main repositories for imperial solidi in Scandinavia after AD 476.¹²⁰ This probably occurred after a major armed conflict on Öland had forced most of the solidi into the ground in *c.* AD 490.¹²¹ Constantinople continues to be the dominant mint.¹²² Coins struck in Italy represent only 20–25% of the total of the hoarded material up to AD 515/520.¹²³ After this date, which coincides with the aftermath of the death of Anastasius (AD 518), Constantinople is of even greater importance and just one eighth of the Botes hoard is composed of Italian coins. Again, the lieu of their acquisition can still have been the North of Italy or Pannonia. The impression of these hoards, though, is that the gold was mainly Constantinopolitan and that even the Italian mints under Ostrogothic control may have received their supplies from the East (*Fig. 2*).

¹¹⁶ Lafaurie & Morisson 1987, 49, 77–80; McCormick 2013, 352.

¹¹⁷ Arslan 2015, 75–76.

¹¹⁸ Janse 1922; Fagerlie 1967; Gąssowska 1979, 16–52; Herschend 1980; Iluk 2007, 92–93; Horsnaes 2010, 176–177; 2013, 81–86, 94–97.

¹¹⁹ Fagerlie 1967, 155–156.

¹²⁰ Fagerlie 1967, 156–162; Metcalf 2010.

¹²¹ Werner 1949.

¹²² Kyhlberg 1986; Fischer 2014b.

¹²³ Kyhlberg 1986; Horsnaes 2013, 83.

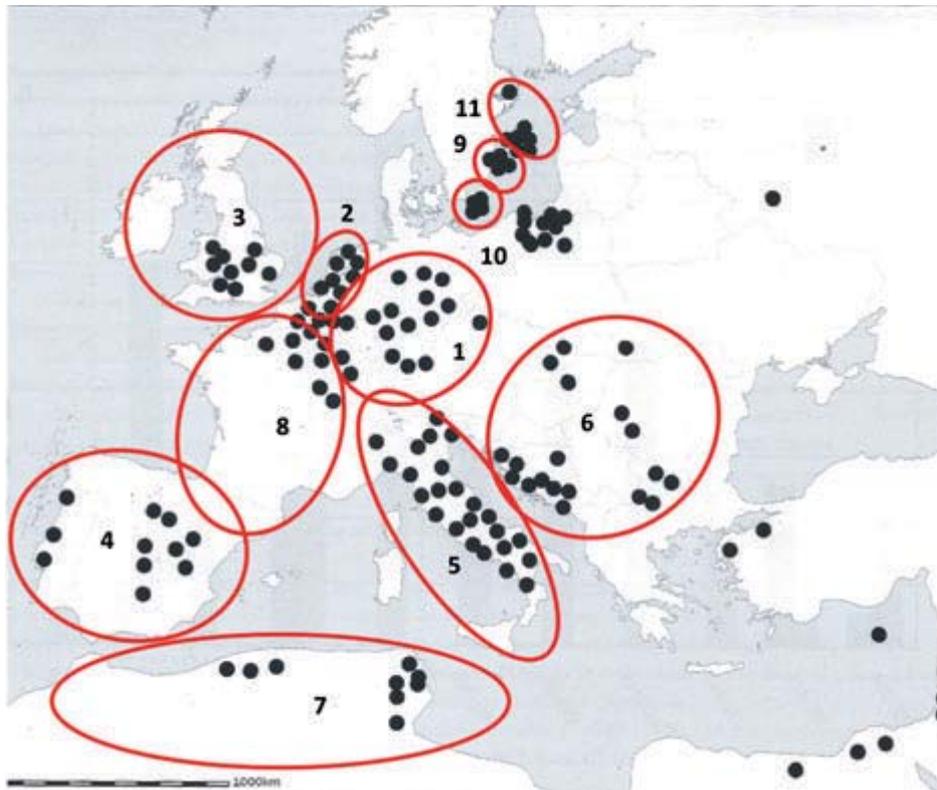


Fig. 2. *Solidus* hoards, regions 1–11: 1. Germany, 2. Netherlands, 3. Britain, 4. Spain, 5. Italy, 6. Pannonia, Illyricum, and Thrace, 7. North Africa, 8. Gaul, 9. Öland, 10. Bornholm, 11. Gotland and Helgö.

Concluding remarks: Gold transfer from East to West

Western hoards deposited throughout the 5th century contain increasing numbers of coins minted in the Eastern Empire, mainly from Constantinople. This presents a stark contrast to the hoards found within the empire of Constantinople, which are composed almost entirely of coins minted in the East. The most logical conclusion to draw from this picture is that the Roman-Italian emperors of the 5th century increasingly acted in a similar way to other non-imperial client kingdoms of Constantinople in Western, Central, or Northern Europe. This happened when reserves of gold in the West and in the mint of Rome seem to have been already recycled, *c.* 440 for the West and probably around the death of Valentinian III for the mint of Rome. This suggests that the mints of Ravenna and Milan may all have received payments in gold from Constantinople for the explicit purpose of striking new *solidus* coinage.

The weakened Western imperial and barbarian powers did not seem to have had control of either the necessary mines to strike coins or the political resources to maintain a sustain-

able minting of gold by any other means.¹²⁴ As for Britain and Germany, once important hoarding zones at the beginning of the 5th century, were areas with much military activity, but the departure of the Roman military from the area meant that the hoarding process ceased. The same can be said for Spain, Africa, and Gaul in the following decades. But after AD 440, Italy, Sicily, and Africa seem to have become extensions of the Eastern Empire.¹²⁵ It is a fact that gold flowed into the West from Constantinople and the Balkans, either through subsidies or through consensual processes of buying and selling attested in several sources for the 6th and 7th centuries.¹²⁶

It seems that gold flowed both inside and outside of the Empire according to the necessities and the relations of different powers and regions. Italy was always sustained by gold from Constantinople, but the ratio of subsidies increased over time up to AD 476, and regained moment again after the fall of Odoacer in AD 493. It is quite likely that many Eastern

¹²⁴ Depeyrot 1996, 45–47; Iluk 2007, 51.

¹²⁵ López Sánchez 2013.

¹²⁶ Carlà 2009, 356–367; Cassiod. *Var.* 9, 3; *Lex Romana Visigothorum* 55 11.3.1.

coins were recast into new solidi in Italian mints in the 5th century.¹²⁷ The patterns of hoarding of the 5th century still require further study, but this survey has tried to argue that subsidies and politics, and not free trade, is the background for the hoarding of solidi in most of Europe and the Mediterranean.

SVANTE FISCHER
Department of Archaeology and Ancient History
Uppsala University
Box 626
SE-751 26 Uppsala
swantowraetruna@hotmail.com

FERNANDO LOPEZ-SANCHEZ
Wolfson College
Linton Road
OX2 6UD
Oxford, United Kingdom
flopezsanchez@hotmail.com

Bibliography

- Altheim, F. 1962. *Entwicklungshilfe im Altertum. Die großen Reiche und ihre Nachbarn* (Sammlung Deutscher Enzyklopädie), Reinbek.
- Arslan, E.A. 2005. 'La zecca e la circolazione monetale', in *Ravenna da Capitale Imperiale a Capitale Esarcale. Atti del XVII Congresso Internazionale di studi sull'alto Medioevo (Ravenna, 6–12 giugno 2004)*, Spoleto, 191–236.
- Arslan, E.A. 2007. 'Il gruzzolo di monete d'oro', in *Il tesoro svelato. Storie dimenticate e rinvenimenti straordinari riscrivono la storia di Noli antica. Guida all'esposizione, Noli, 7 luglio – 7 ottobre 2007*, ed. A. Frondoni, Genova, 57–62.
- Arslan, E.A. 2009. 'L'oro rifiutato: Confini e dogane nell'altomedioevo', in *Valori e disvalori delle monete. I trenta denari di Giuda*, ed. L. Traviani, Roma, 119–144.
- Arslan, E.A. 2015. 'Alla fine dell'impero romano d'Occidente. Il ripostiglio di San Mamiliano a Sovana (Gr). 498 solidi da Onorio a Romolo Augusto', in *Il Ripostiglio di San Mamiliano a Sovana (Sorano – GR): 498 solidi da Onorio a Romolo Augusto* (Studi e Ricerche di Archeologia et Storia dell'Arte, 19), eds. E.A. Arslan & M.A. Turchetti, Spoleto, 61–122.
- Arslan, E.A. & C. Morrisson 2002. 'Monete e moneta a Roma nell'alto medioevo', in *Roma fra Oriente e Occidente. Atti della XLIX Settimana di studio sull'alto Medioevo (Spoleto, 19–24 aprile 2001)*, Spoleto, 1255–1305.
- Asolati, M. 2006. 'Il ripostiglio di Camporegio (Grosseto)', *Rivista italiana di Numismatica e Scienze affini* 107, 113–161.
- Aubin, G. 1992. 'Réflexions sur l'usage de l'or romain dans l'Ouest de la Gaule', in *L'or monnayé III. Trouvailles des monnaies d'or dans l'occident romain. Actes de la table ronde tenue à Paris les 4 et 5 décembre 1987* (Cahiers Ernest Babelon, 4), eds. C. Brenot & X. Loriot, Paris, 91–99.
- Baldus, H.-R. & M. Khanussi 2014. *Der Spätantike Münzschatz von Simittus/Chimtu* (Simittus, IV), Wiesbaden.
- Banaji, J. 2006. 'Precious metal coinages and monetary expansion in Late Antiquity', in *Dal Denarius al Dinar. L'Oriente e la moneta romana. Atti dell'incontro di studio. Roma 16–18 settembre 2004, Istituto Italiano di Numismatica* (Studi e materiali, 12), eds. F. De Romanis & S. Sorda, Roma, 265–303.
- Barnish, S.J.B. 1985. 'The wealth of Iulianus Argentarius: Late Antique banking and the Mediterranean economy', *Byzantion* 55, 5–38.
- Barral i Altet, X. 1976. *La circulation des monnaies suèves et visigothiques. Contribution à l'histoire économique du royaume visigot. Avec un préface de Jean Lafaurie* (Beihefte der Francia, 4), München.
- Berndt, G. 2015. 'Strategies of representation: Minting the Vandal regnum', in *Medieval coins and seals: Constructing identity, signifying power*, ed. S. Solway, Turnhout, 83–108.
- Biró Sey, K. 1976. 'A Szikanci V. századi solidus lelet', *Numizmatikai Közlemény* 74–75, 7–19.
- Bland, R. 1997a. 'Coin hoards 1997, n. 44', *NC* 157, 228–229.
- Bland, R. 1997b. 'The changing patterns of hoards of precious-metal coins in the Late Empire', *Antiquité Tardive* 5, 29–55.
- Bóna, I. 2002. *Les huns: Le grand empire barbare d'Europe (IVe–Ve siècles)*, Paris.
- Brambilla, C. 1870. *Altre annotazioni numismatiche*, Pavia.
- Budaj, M. & P. Prohászka 2012. 'Ein Oströmischer Solidusfund aus dem Wald von Nahác (Okr. Trnava, Slowakei)', *Numismaticky sborník* 26, 91–97.

¹²⁷ Depeyrot 2009, 14.

- Callegher, B. 2002. 'La diffusione della moneta di Ravenna tra VI e metà VIII secolo', in *Ritrovamenti monetali nel mondo antico: Problemi e metodi. Atti del congresso Internazionale, Padova, 31 marzo–2 aprile 2000* (Numismatica Patavina, 1), ed. G. Gorini, Padova, 247–272.
- Callu, J.-P. 1978. 'Le centenarium et l'enrichissement monétaire au Bas-Empire', *Ktema* 3, 301–316.
- Callu, J.-P. & J.-N. Barrandon 1987. 'Note sur les sous gaulois au Ve s. de notre ère', in *Studi per Laura Breglia II. Numismatica romana, medievale, moderna* (Suppl. Bolletino di Numismatica, 4:II), 197–204.
- Carlà, F. 2007. 'Il sistema monetario in età tardoantica: Spunti per una revisione', *Annali dell'Istituto Italiano di Numismatica* 53, 155–218.
- Carlà, F. 2009. *Loro nella tarda antichità: Aspetti economici e sociali* (Series Dipartimento di storia dell'Università di Torino), Torino.
- Carlà, F. 2010. 'The end of Roman gold coinage and the disintegration of a monetary area', *Annali dell'Istituto Italiano di Numismatica* 56, 45–114.
- Carrié, J.-M. 2012. 'Were Late Roman and Byzantine economies market economies? A comparative look at historiography', in *Trade and markets in Byzantium*, ed. C. Morrisson, Washington, 13–26.
- Chiflet, J.J. 1655. *Anastasis Childerici I, Francorum regis, sive Thesaurus Sepulchralis Tarnaci Nerviorum effossus et commentario illustrates*, Antwerpen.
- Ciołek, R. 2007. *Die römischen Fundmünzen Polens. Pommern*, Wetteren.
- Ciołek, R. 2009. 'Der Zufluss von Solidi in die südlichen Ostseegebiete', in *Byzantine coins in Central Europe between the 5th and 10th century. Proceedings from the conference organized by Polish Academy of Arts and Sciences and Institute of Archaeology University of Reszów under the patronage of Union Académique Internationale (Programme No. 57 Moravia Magna). Kraków, 23–26 IV 2007* (Moravia Magna. Seria Polona, 3), ed. M. Wołoszyn, Kraków, 217–229.
- Conant, J.P. 2004. 'Literacy and private documentation in Vandal North Africa: The case of the Albertini Tablets', in *Vandals, Romans and Berbers: New perspectives on Late Antique North Africa*, ed. A.H. Merrills, Aldershot, 199–224.
- Courtois, C., Leschi, L., Perrat, Ch. & Saumagne, Ch. 1952. *Tablettes Albertini: Actes privés de l'époque vandale*, Paris.
- Crawford, M.H. & J.M. Reynolds 1979. 'The Aezani copy of the Prices Edict', *ZPE* 34, 163–210.
- Dahmen, K. 2015. 'Zur Geschichte des Schatzfundes von Klein-Tromp im früheren Ostpreußen (heute Trabki Male, Polen)', *Wiadomości Numizmatyczne, Polish Numismatic News* 9, 35–46.
- Dargon, G. & C. Morrisson 1975. 'Le kenténarion dans les sources byzantines', *RN* 6, 145–162.
- Degani, M. 1959. *Il Tesoro romano barbarico di Reggio Emilia*, Firenze.
- Depeyrot, G. 1996. *Les monnaies d'or de Constantin II à Zenon (337–491)*, Wetteren.
- Depeyrot, G. 2005. *Crise et inflation entre Antiquité et Moyen Âge. Deuxième édition augmentée*, Wetteren.
- Depeyrot, G. 2009. *Les trésors et les invasions (Les enfouissements d'or et d'orfèvrerie de 379 à 491) I. Introduction, l'Europe orientale et centrale*, Wetteren.
- Demougeot, E. 1969. *La formation de l'Europe et les invasions barbares, des origines germanique à l'avènement de Dioclétien*, Paris.
- Drauschke, J. 2009. 'Byzantine coins in Central Europe between the 5th and 10th century', in *Byzantine coins in Central Europe between the 5th and 10th century. Proceedings from the conference organized by Polish Academy of Arts and Sciences and Institute of Archaeology University of Reszów under the patronage of Union Académique Internationale (Programme No. 57 Moravia Magna). Kraków, 23–26 IV 2007* (Moravia Magna. Seria Polona, 3), ed. M. Wołoszyn, Kraków, 279–323.
- Duncan-Jones, R. 1989. 'Mobility and immobility of coin in the Roman empire', *Annali dell'Istituto Italiano di Numismatica* 36, 121–37.
- Elton, H. 2015. 'Military developments in the fifth century', in *The Cambridge companion to the Age of Attila*, ed. M. Maas, Cambridge, 125–139.
- Fagerlie, J.M. 1967. *Late Roman and Byzantine solidi found in Sweden and Denmark* (NNM, 157), New York.
- Fischer, S. 2014a. 'The solidus hoard of Casa delle Vestali in context', *OpAthRom* 7, 107–127.
- Fischer, S. 2014b. 'Tracking Solidi: From Thessalonica to Hjärpestad', in *Labrys: Studies presented to Pontus Hellström* (Boreas. Uppsala Studies in Ancient Mediterranean and Near Eastern Civilizations, 35), eds. L. Karlsson, S. Carlsson & J. Blid Kullberg, Uppsala, 153–162.

- Fischer, S. & L. Lind 2015. 'The coins in the grave of King Childeric', *Journal of Archaeology and Ancient History* 14, 1–36.
- Gandila, A. 2016. 'Going East: Western money in the Early Byzantine Balkans, Asia Minor and the circumpontic region (6th–7th c.)', *Rivista Italiana di Numismatica e Sienzi Affini* 117, 129–188.
- García-Bellido, M.P. 2004. *Las legiones hispánicas en Germania. Moneda y Ejército* (Anejos de Gladius, 6), Madrid.
- Gąssowska, E. 1979. *Bizancjum a ziemie północno-zachodnio-słowiańskie we wczesnym średniowieczu. Studium archeologiczne*, Wrocław, Warszawa, Kraków & Gdansk.
- Gorini, G. 1996. 'Currency in Italy in the fifth century A.D.', in *Coin finds and coin use in the Roman world. The thirteenth Oxford Symposium of Coinage and Monetary History 25.–27.3.1993: a NATO advanced research workshop* (SFMA, 10), eds. C.E. King & D.G. Wigg, Berlin, 185–202.
- Grierson, P. 1959. 'The Tablettes Albertini and the value of the solidus in the fifth and sixth centuries AD', *JRS* 49, 73–80.
- Grierson, P. & M. Mays 1992. *Catalogue of Late Roman coins in the Dumbarton Oaks Collection and in the Whittemore Collection: From Arcadius and Honorius to the accession of Anastasius*, Washington.
- Guest, P. 2008. 'Roman gold and Hun kings: The use and hoarding of solidi in the late fourth and fifth centuries', in *Roman coins outside the Empire: Ways and phases, contexts and functions*, eds. A. Bursche, R. Ciolek & R. Wolters, Wetteren, 295–307.
- Harl, K.W. 1996. *Coinage in the Roman economy 300 B.C. to A.D. 700*, London.
- Harper, K. 2015. 'Landed wealth in the long term. Patterns, possibilities, evidence', in *Land and natural resources in the Roman world*, eds. K. Verboven & P. Erdkamp, Oxford, 43–61.
- Hendy, M.F. 1985. *Studies in the Byzantine monetary economy c. 300–1450*, Cambridge.
- Hendy, M.F. 1989. 'Economy and state in Late Rome and Early Byzantium: An introduction', in *The economy, fiscal administration and coinage of Byzantium*, ed. M.F. Hendy, Northampton, 1–23.
- Hersh, C.A. 1976. 'A study of the coinage of the moneyer C. Calpurnius Piso L. f. Frugi', *NC*, 7 ser., 16, 7–63.
- Herschend, F. 1980. 'Myntat och omyntat guld. Två studier i öländska guldfynd I. Det myntade guldet; II. Det omyntade guldet', *Tor* 18, 33–194.
- Hobbs R. 2006. *Late Roman precious metal deposits, c. AD 200–700: Changes over time and space*, Oxford.
- Hopkins, K. 1980. 'Taxes and trade in the Roman Empire (200 B.C. A.D. 400)', *JRS* 70, 101–125.
- Horsnaes, H.W. 2010. *Crossing boundaries. An analysis of Roman coins in Danish contexts 1. Finds from Zealand, Funen and Jutland* (Publications of the National Museum. Studies in Archaeology and History, 18:1), København.
- Horsnaes, H.W. 2013. *Crossing boundaries. An analysis of Roman coins in Danish contexts 2. Finds from Bornholm* (Publications of the National Museum. Studies in Archaeology and History, 18:2), København.
- Howgego, C. 1995. *Ancient history from coins*, London.
- Illisch, P. 2015. 'Der Fund von Putzig (Mrzezino) und das Interesse der preussischen Monarchie und Münzfunden', *Wiadomości Numizmatyczne, Polish Numismatic News* 9, 285–292.
- Iluk, J. 2007. *Aspects économiques et politiques de la circulation de l'or au Bas-Empire*, Wetteren.
- Janse, O. 1922. *Le travail de l'or en Suède à l'époque mérovingienne. Etudes précédées d'un mémoire sur les solidi romains et byzantins trouvés en Suède*, Orléans.
- Jones, A.H.M. 1964. *The Later Roman Empire, 284–602: A social, economic and administrative survey*, 2 vols, Oxford.
- Kaegi, W.E. 1968. *Byzantium and the decline of Rome*, Princeton.
- Katsari, C. 2011. *The Roman monetary system: The Eastern provinces from the first to the third century AD*, Cambridge.
- Kelly, C. 2014. 'Neither conquest nor settlement: Attila's empire and its impact', in *The Cambridge companion to the Age of Attila*, ed. M. Maas, Cambridge, 193–208.
- King, C.E. 1992. 'Roman, local and barbarian coinages in fifth-century Gaul', in *Fifth-century Gaul: A crisis of identity?*, eds. J.F. Drinkwater & H. Elton, Cambridge, 184–195.
- Kolníková, E. 1968. 'Nález neskororimských solidov v Bini, okres Nové Zámky', *Numismatický Sborník* 10, 5–50.
- Kyhberg, O. 1986. 'Late Roman and Byzantine solidi. An archaeological analysis of coins and hoards', in *Excavations at Helgö 10. Coins, iron and gold*, ed. B. Hovén, Stockholm, 13–126.

- Kraus, F.F. 1928. *Die Münzen Odovacars und des Ostgotenreiches in Italien*, Halle (Saale).
- Lafaurie, J. & C. Morrisson 1987. 'La pénétration des monnaies byzantines en Gaule mérovingienne et visigotique du VIe au VIIIe siècle', *RN* 6:29, 38–98.
- López Sánchez, F. 2013. 'Theodosius II and the consolidation of the Visigothic power in the West: the numismatic and the monetary evidences', in *The Theodosian Age (A.D. 379–455). Power, place, belief and learning at the end of the Western Empire* (BAR-IS, 2493), eds. R. García-Gascó, S. González Sanchez & D. Hernandez de la Fuente, Oxford, 67–72.
- López Sánchez, F. 2015a. 'The mining, coining and obtaining of gold in the Roman Empire', in *Ownership and exploitation of land and natural resources in the Roman world* (Oxford Studies on the Roman Economy), eds. P. Erdkamp, K. Verboven & A. Zuiderhoek, Oxford, 315–336.
- López Sánchez, F. 2015b. 'El tesoro de 498 Solidi de San Mamiliano (Sovana, Toscana) y las Scholae Palatinae italianas del siglo V', in *Il ripostiglio di San Mamiliano a Sovana (Sorano-GR): 498 solidi da Onorio a Romolo Augusto*, eds. E.A. Arslan & M.A. Turchetti, Spoleto, 145–162.
- Loriot, X. 2003. 'Réflexions sur l'usage et les usagers de la monnaie d'or sous l'Empire romain', in *Journées internationales d'histoire monétaire des 20 et 21 octobre 2000. Autour de l'oeuvre numismatique de Jean-Pierre Callu* (= *RN* 159), Paris, 57–82.
- Maas, M. 2015. 'Reversals of fortune: An overview of the Age of Attila', in *The Cambridge companion to the Age of Attila*, ed. M. Maas, Cambridge, 3–25.
- MacGeorge, P. 2002. *Late Roman warlords*, Oxford.
- McCormick, M. 1977. 'Odoacer, Emperor Zeno and the Rugian Victory Legation', *Byzantion* 47, 212–222.
- McCormick, M. 2002. *Origins of the European economy. Communications and commerce AD 300–900*, Cambridge.
- McCormick, M. 2013. 'Coins and the economic history of post-Roman Gaul: Testing the standard model in the Moselle, ca. 400–750', in *Die Merowingischen Monetarmünzen als Quelle zum Verständnis des 7. Jahrhunderts in Gallien* (MittelalterStudien, 27), Paderborn, 337–376.
- MEC 1 = Grierson, P. & M. Blackburn 1986. *Medieval European Coinage 1. The Early Middle Ages (5th–10th centuries)*, Cambridge.
- Metcalf, D.M. 1984. 'The mint of Thessalonica in the early Byzantine period', in *Villes et peuplement dans l'Illyricum protobyzantin. Actes du colloque organisé par l'École française de Rome (Rome, 12–14 mai 1982)*, ed. G. Dagron, Roma, 111–128.
- Metcalf, D.M. 1988a. 'North Italian Coinage across the Alps. The Ostrogothic and Carolingian evidence compared', *RIN* 90, 449–456.
- Metcalf, D.M. 1988b. 'The minting of gold coinage at Thessalonica in the fifth and sixth centuries and the gold currency of Illyricum and Dalmatia', in *Studies in Early Byzantine gold coinage* (= *NS* 17), eds. W. Hahn & W.E. Metcalf, New York, 65–109.
- Metcalf, D.M. 1995. 'Viking-age numismatics I. Late Roman and Byzantine gold in the Northern lands', *NC* 155, 413–451.
- Metcalf, D.M. 2010. "First to Öland, then to Gotland...": The arrival and dispersal of late Roman and Byzantine solidi in Sweden and Denmark', in *Mélanges Cécile Morrisson* (TravMém, 16), ed. J.-C. Cheynet, Paris, 561–576.
- Mirnik, I. 1981. *Coin hoards in Yugoslavia* (BAR-IS, 95), Oxford.
- Morrisson, C. 1976. 'Les origines du monnayage vandale', in *Actes de 8eme Congrès international de numismatique, New York-Washington, septembre 1973* (Publications de l'Association internationale des numismates professionnels, 4), eds. H.A. Cahn & G. Le Rider, Paris, 461–472.
- Morrisson, C. 1987. 'La circulation de la monnaie d'or en Afrique à l'époque vandale. Bilan de trouvailles locales', in *Mélanges de numismatique offerts à Pierre Bastien à l'occasion de son 75e anniversaire*, eds. H. Huvelin, M. Christol & G. Gautier, Wetteren, 325–344.
- Morrisson, C. & V. Ivanišević 2006. 'Les émissions des VIe–VIIe siècles et leur circulation dans les Balkans', in *Les trésors monétaires byzantins des Balkans et d'Asie Mineure (491–713)* (Réalités Byzantines, 13), eds. C. Morrisson, V. Popović & V. Ivanišević, Paris, 41–73.
- Nicklas, S.D. 1995. *A general survey of coinage in the Roman Empire A.D. 294–408 and its relationship to Roman military deployment*, Lewiston.
- Pekáry, T. 1979. *Die Wirtschaft der griechisch-römischen Antike*, Wiesbaden.
- Peixoto Cabral, J.M. & D.M. Metcalf 1997. *A moeda sueva. Suevic coinage*, Porto.

- PLRE 2 = Martindale, J.R. 1980⁴ (pr. 2006). *The prosopography of the Later Roman Empire 2. A. D. 395–527*, Cambridge.
- Pliego Vázquez, R. 2015. 'Las monedas visigodas de la calle Cuna (Sevilla)', http://www.museosdeandalucia.es/cultura/museos/media/docs/MASE_a4_pieza_abril_2015_100.pdf
- Pliego Vázquez, R. 2016 (forthcoming). 'A Hoard of Late Roman and Visigothic Gold', *NC* 176.
- Prohászka, P. 2009. 'Ost- und Weströmische Goldmünzen aus dem 5. Jahrhundert im Karpatenbecken', in *Byzantine coins in Central Europe between the 5th and 10th century. Proceedings from the conference organized by Polish Academy of Arts and Sciences and Institute of Archaeology University of Reszów under the patronage of Union Académique Internationale (Programme No. 57 Moravia Magna). Kraków, 23–26 IV 2007* (Moravia Magna. Seria Polona, 3), ed. M. Wołoszyn, Kraków, 83–115.
- Reece, R. 2003 (1984). 'Mints, markets and the military', in *Military and civilian in Roman Britain. Cultural relationships in a frontier province. Papers from a conference held at the University of Kent, Dec. 16–18, 1983* (BAR-BS, 136), eds. T.F.C. Blagg & A.C. King, Oxford, 143–160 (= R. Reece, *Roman coins and archaeology. Collected papers* (Collection Moneta, 32), Wetteren, 118–129).
- RIC 7 = Bruun, P.M., H. Mattingly, & E.A. Sydenham 1966. *The Roman Imperial coinage 7. Constantine and Licinius: A.D. 313–337*, London.
- RIC 8 = Kent, J.P.C. & C.H.V. Sutherland 1981. *The Roman Imperial Coinage 8. The Family of Constantine I. A.D. 337–364*, London.
- RIC 9 = Pearce, J.W.E., R.A.G. Carson, C.H.V. Sutherland & H. Mattingly 1951. *The Roman Imperial Coinage 9. Valentinian I–Theodosius I*, London.
- RIC 10 = Kent, J.P.C. 1994. *The Roman Imperial coinage 10. The divided Empire and the fall of the Western parts A.D. 395–491*, London.
- Salama, P. 2001. 'Inventaire complémentaire des solidi tardifs découverts dans l'Afrique du Nord', *Num.AntCl* 30, 253–270.
- Stoffel, P. 1993. *Über die Staatspost, die Ochsenespanne und die requirierten Ochsenespanne. Eine Darstellung des römischen Postwesens auf Grund der Gesetze des Codex Theodosianus und des Codex Iustinianus*, Bern.
- Stojanov, S. 1982. *A treasure of gold coins found at Abrittus: The Vth century AD*, Sofia.
- Tejral, J. 2012. 'Cultural and ethnic changes? Continuity and discontinuity on the Middle Danube ca A.D. 500', in *The Pontic-Danubian realm in the period of the Great Migration* (Monographies du Centre de Recherche d'Histoire et Civilisation de Byzance, Collège de France, 36), eds. V. Ivanišević & M. Kazanski, Leuven, 115–188.
- Thonemann, P. 2016. *The Hellenistic world. Using coins as sources*, Cambridge.
- Thordeman, B. 1948. 'The Lohe hoard', *NC* 7, 188–204.
- Thorold, D. 2013. 'The Sandridge hoard', *Searcher* 329, January 2013, 16.
- Ungaro, L. 1985. 'Il ripostiglio della Casa delle Vestali, Roma, 1899', *Bollettino di Numismatica* 3, 47–160.
- Van Heesch, J. 2006. 'Transport of coins in the later Roman Empire', *RBN* 152, 51–61.
- Van Heesch, J. 2012. 'Control marks and mint administration in the fourth century AD', *RBN* 158, 161–178.
- Von Kaenel, H.-M. & F. Kemmers, eds. 2009. *Coins in context 1. New perspectives for the interpretation of coin finds. Colloquium Frankfurt a. M. October 25–27, 2007* (SFMA, 23), Mainz.
- Werner, J. 1949. 'Zu den auf Öland och Gotland gefundenen byzantinischen Goldmünzen', *Fornvännen* 44, 257–286.
- Whittaker, C.R. 1980. 'Inflation and the economy in the fourth century A.D', in *Imperial revenue, expenditure, and monetary policy in the fourth century A.D. The fifth Oxford Symposium on Coinage and Monetary History* (BAR-IS, 76), ed. C.E. King, Oxford, 1–22.

Table 3 (and following pages). 5th century solidus hoards and their composition.

Hoard	Zone	Region	Year	Amount	S	K	N	SM	AQ	LG	AN	TR	TH	MD	RM	RV	CON	AR	VT	BU	OG	FR
Dortmund	1	Germany	407	443	7	1	1	8	9	22	57	114	25	126	13	3	28	17	-	-	-	-
Mainz	1	Germany	408	11	-	-	-	2	-	1	1	-	1	12	-	2	-	-	-	-	-	-
Wiesbaden-Kastel	1	Germany	410	16	-	1	-	-	-	1	-	3	-	3	2	4	2	-	-	-	-	-
Gross Bodungen	1	Germany	410	21	-	-	-	-	-	3	1	3	-	51	-	4	1	-	-	-	-	-
Menzelen	1	Germany	412	188	-	-	-	33	-	19	-	32	2	16	2	9	6	1	-	-	-	-
Wirselen	1	Germany	440	32	-	-	-	-	-	-	-	13	-	7	-	-	-	-	-	-	-	-
Xanten	1	Germany	440	210	-	-	3	16	4	6	30	27	7	32	14	34	6	6	-	-	-	-
Cologne	1	Germany	540	6	-	-	-	-	-	-	-	-	1	2	-	-	5	-	-	-	2	-
Bato's Erf	2	NL	400	3	-	-	-	-	-	-	1	1	-	1	-	-	-	-	-	-	-	-
Suarlée	2	Belgium	400	8	-	-	-	-	-	-	3	2	-	2	-	1	-	-	-	-	-	-
Beilen	2	NL	400	23	-	-	1	-	-	2	1	5	5	4	1	-	-	-	-	-	-	-
Venlo	2	NL	405	10	-	-	-	-	-	-	1	1	1	2	-	1	3	-	-	-	-	-
Obbicht	2	NL	405	17	-	-	-	1	-	1	3	3	-	5	1	-	1	-	-	-	-	-
Echt-Pey	2	NL	410	12	-	-	-	2	-	-	5	5	-	-	-	-	-	-	-	-	-	-
Velp 1715	2	NL	426	8	-	-	-	1	-	2	-	1	-	1	1	3	-	-	-	-	-	-
Midlum	2	NL	540	13	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-
Good Easter	3	UK	400	6	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-
Deopham	3	UK	400	26	-	-	-	2	-	-	-	1	-	23	-	-	-	-	-	-	-	-
London (The Tower)	3	UK	405	3	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-	-
Maiden Castle	3	UK	405	4	-	-	-	-	-	-	-	-	-	1	-	2	-	-	-	-	-	-
Terling	3	UK	405	26	-	-	-	1	-	1	-	5	-	17	2	-	-	-	-	-	-	-
Stanchester	3	UK	408	3	-	-	-	-	-	-	-	-	-	1	-	2	-	-	-	-	-	-
St Albans	3	UK	408	159	-	-	-	1	-	2	-	11	3	117	7	11	3	-	-	-	-	-
Hoxne	3	UK	408	569	-	-	-	8	2	5	-	77	1	363	38	54	2	-	-	-	-	-
Boscombe Down	3	UK	410	8	-	-	-	2	-	-	-	3	-	2	-	1	-	-	-	-	-	-
Patching	3	UK	465	22	-	-	-	-	-	-	-	2	-	2	-	3	4	1	1	-	-	-
Conimbriga	4	Portugal	400	10	-	-	-	1	-	-	-	3	-	1	1	-	2	-	-	-	-	-
Beja	4	Portugal	405	65	1	-	-	1	1	-	-	1	3	1	-	2	-	-	-	-	-	-
Grado	4	Spain	408	13	-	-	-	1	-	-	-	-	-	2	1	1	4	-	-	-	-	-
Arcos de la Frontera	4	Spain	410	28	-	-	-	1	-	-	-	-	-	9	3	11	1	-	-	-	-	-
Jerez de la Frontera	4	Spain	415	35	-	-	-	2	-	-	-	-	-	14	-	7	-	-	-	-	-	-
Elche	4	Spain	420	3	-	-	-	-	-	-	-	-	-	1	-	1	1	-	1	-	-	-
Sevilla	4	Spain	575	54	-	-	-	-	-	-	-	-	-	41	-	-	-	-	13	-	-	-
Tiber (Rome)	5	Italy	400	69	-	-	-	-	-	-	-	-	-	10	38	21	-	-	-	-	-	-
Parma	5	Italy	400	265	-	-	1	22	2	8	3	45	4	113	-	-	68	-	-	-	-	-
San Lazzaro	5	Italy	405	6	-	-	-	-	-	-	-	-	-	4	1	1	-	-	-	-	-	-
Pavia	5	Italy	410	13	-	-	-	-	-	-	-	-	-	3	-	10	-	-	-	-	-	-
Aquileia	5	Italy	426	9	-	-	-	-	-	-	-	-	-	33	4	3	2	-	-	-	-	-

<i>Hoard</i>	<i>Zone</i>	<i>Region</i>	<i>Year</i>	<i>Amount</i>	<i>S</i>	<i>K</i>	<i>N</i>	<i>SM</i>	<i>AQ</i>	<i>LG</i>	<i>AN</i>	<i>TR</i>	<i>TH</i>	<i>MD</i>	<i>RM</i>	<i>RV</i>	<i>CON</i>	<i>AR</i>	<i>VI</i>	<i>BU</i>	<i>OG</i>	<i>FR</i>
Mazzenzatica	5	Italy	440	15	-	-	-	-	-	-	-	-	-	4	1	9	4	-	-	-	-	-
Comiso	5	Sicily	440	423	-	-	-	-	-	-	-	-	1	1	31	337	21	-	-	-	-	-
Nonantola	5	Italy	445	9	-	-	-	-	-	-	-	-	-	-	-	5	3	-	-	-	-	-
Noli	5	Italy	455	13	-	-	-	-	-	-	-	-	-	-	10	3	-	-	-	-	-	-
Butera	5	Sicily	455	41	-	-	-	-	-	-	-	-	-	-	1	1	39	-	-	-	-	-
Casa delle Vestali (Rome)	5	Italy	472	397	-	-	1	-	-	-	-	-	-	4	354	6	32	-	-	-	-	-
Brembio	5	Italy	473	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
San Mamiliano	5	Italy	476	498	-	-	-	-	-	-	-	-	11	59	93	83	239	9	-	-	-	-
Zeccone	5	Italy	480	49	-	-	-	-	-	-	-	-	-	23	7	2	14	-	-	-	-	-
Esquiline (Rome)	5	Italy	490	19	-	-	-	-	-	-	-	-	-	-	-	1	18	-	-	-	-	-
Reggio-Emilia	5	Italy	490	60	-	-	-	-	-	-	-	-	1	-	-	3	56	-	-	-	-	-
Braone	5	Italy	510	9	-	-	-	-	-	-	-	-	-	1	1	-	7	-	-	-	-	-
San Daniele Po	5	Italy	520	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-
Nerviano	5	Italy	520	21	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	15	-
Campo Moreno	5	Italy	530	8	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	6	-
Pava	5	Italy	540	3	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-
Montebuono	5	Italy	540	11	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	10	-
Castellana Sicula	5	Sicily	540	12	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-
Crotone	5	Italy	540	103	-	-	-	-	-	-	-	-	-	-	-	-	80	-	-	-	-	-
Titel	6	Serbia	405	4	-	-	-	-	-	-	-	2	-	1	-	-	1	-	-	-	-	-
Kamnik	6	Slovenia	430	12	-	-	-	-	-	-	-	-	1	-	1	1	4	-	-	-	-	-
Pontes	6	Serbia	445	5	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-
Bina	6	Slovakia	445	108	-	-	-	-	-	-	-	-	4	-	7	51	40	-	-	-	-	-
Szikancs	6	Hungary	445	1439	-	-	-	-	-	-	-	-	1	-	1	3	1404	-	-	-	-	-
Udovice	6	Serbia	461	4	-	-	-	-	-	-	-	-	-	-	3	1	-	-	-	-	-	-
Karancseszi	6	Hungary	466	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Nahac	6	Slovakia	466	4	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-
Abritus	6	Bulgaria	490	835	-	-	-	-	-	-	1	-	14	-	-	-	819	1	-	-	-	-
Cherchel I	7	Algeria	420	26	-	-	-	-	-	-	-	-	-	1	-	24	1	-	-	-	-	-
Chemtou	7	Tunisia	420	1646	-	-	-	23	10	3	102	1	1	753	236	406	6	5	98	-	-	-
Carthage	7	Tunisia	450	4	-	-	-	-	-	-	-	-	-	-	-	1	3	-	-	-	-	-
Ain Meddah	7	Algeria	495	93	-	-	-	-	-	-	-	-	1	2	4	5	80	1	-	-	-	-
Djemila	7	Algeria	495	180	-	-	-	-	-	-	-	-	5	1	-	-	117	-	-	-	-	-
El Djem	7	Tunisia	542	20	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-
Derhafla Djebibina	7	Tunisia	572	7	-	-	-	-	-	-	-	-	-	-	1	-	4	-	-	-	-	-
Chécý	8	France	420	24	-	-	-	-	-	-	-	-	-	14	4	6	-	-	-	-	-	-
Furfooz	8	Belgium	445	5	-	-	-	-	-	-	-	1	-	-	-	1	-	-	2	2	-	-

<i>Hoard</i>	<i>Zone</i>	<i>Region</i>	<i>Year</i>	<i>Amount</i>	<i>S</i>	<i>K</i>	<i>N</i>	<i>SM</i>	<i>AQ</i>	<i>LG</i>	<i>AN</i>	<i>TR</i>	<i>TH</i>	<i>MD</i>	<i>RM</i>	<i>RV</i>	<i>CON</i>	<i>AR</i>	<i>VI</i>	<i>BU</i>	<i>OG</i>	<i>FR</i>
Arçay	8	France	450	16	-	-	-	-	-	-	-	-	-	-	-	3	-	-	13	-	-	-
Combertault	8	France	456	10	-	-	-	-	-	tj	-	-	-	3	1	6	6	1	-	-	-	-
Tournai	8	Belgium	482	89	-	-	-	-	-	-	-	-	1	-	-	1	87	-	-	-	-	-
Vedrin	8	Belgium	495	69	-	-	-	-	-	-	-	1	-	11	11	22	18	2	3	-	-	-
Houdain	8	France	510	7	-	-	-	-	-	-	-	1	-	1	-	-	2	-	-	-	-	2
Roujan	8	France	525	4	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	2	1
Chinon	8	France	525	81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	7	2	61
Gourdon	8	France	530	36	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	34	-	-
Alise-Sainte-Reine	8	France	550	11	-	-	-	-	-	-	-	-	-	-	-	-	x	-	x	-	x	x
Viviers	8	France	575	119	-	-	-	-	-	-	-	-	-	-	-	1	109	-	9	-	2	2
Stora Brunneby	9	Öland	456	17	-	-	-	-	-	-	-	-	-	1	1	4	11	-	-	-	-	-
Sörby Tall	9	Öland	457	4	-	-	-	-	-	-	-	-	1	-	-	1	2	-	-	-	-	-
Ingelstad	9	Öland	466	4	-	-	-	-	-	-	-	-	-	-	-	2	1	-	1	-	-	-
Hässelstad	9	Småland	471	10	-	-	-	-	-	-	-	-	-	-	1	1	7	-	-	-	-	-
Bostorp	9	Öland	473	6	-	-	-	-	-	-	-	-	-	1	1	1	3	-	-	-	-	-
Hjärpestad	9	Öland	473	13	-	-	-	-	-	-	-	-	2	2	-	1	7	-	-	-	-	-
Övetorp	9	Öland	473	22	-	-	-	-	-	-	-	-	-	1	3	7	10	-	-	-	-	-
Kullen, Köping	9	Öland	475	8	-	-	-	-	-	-	-	-	2	1	2	-	3	-	-	-	-	-
Björnhovda	9	Öland	476	36	-	-	-	-	-	-	-	-	1	2	8	4	20	-	-	-	-	-
Åby	9	Öland	477	80	-	-	-	-	-	-	-	-	4	3	7	15	46	1	1	-	-	-
Fuglsangsager	10	Bornholm	435	7	-	-	-	-	-	-	-	-	-	-	4	2	-	-	1	-	-	-
Buddegård	10	Bornholm	480	9	-	-	-	-	-	-	-	-	-	-	-	4	3	2	-	-	-	-
Käsbygård	10	Bornholm	480	14	-	-	-	-	-	-	-	-	-	1	-	1	9	-	1	-	-	-
Saltholm	10	Bornholm	500	28	-	-	-	-	-	-	1	-	1	2	1	1	17	-	1	-	-	-
Vasegård	10	Bornholm	510	10	-	-	-	-	-	-	-	-	-	1	1	-	7	-	-	-	1	-
Dalshøj	10	Bornholm	510	16	-	-	-	-	-	-	-	-	-	2	-	-	11	-	2	-	-	-
Vestermarie	10	Bornholm	515	6	-	-	-	-	-	-	-	-	-	-	-	1	3	-	-	-	1	-
Soldatergård	10	Bornholm	515	36	-	-	-	-	-	-	-	-	2	3	-	5	23	-	2	-	1	-
Kaupe	11	Gotland	515	5	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-
Norrkvie	11	Gotland	515	7	-	-	-	-	-	-	-	-	-	-	1	-	5	-	-	-	1	-
Eskelhem	11	Gotland	515	11	-	-	-	-	-	-	-	-	-	-	-	4	7	1	-	-	1	-
Helgö	11	Sweden	515	47	-	-	-	-	-	-	-	-	-	6	2	1	29	-	1	1	4	2
Hardings	11	Gotland	520	8	-	-	-	-	-	-	-	-	-	-	-	1	3	1	-	-	1	1
Harkvie	11	Gotland	520	11	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	1	1
Rosarve	11	Gotland	530	6	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	1	1
Botes	11	Gotland	535	83	-	-	-	-	-	-	-	-	2	5	-	6	54	-	1	1	9	2
Smis	11	Gotland	550	25	-	-	-	-	-	-	-	-	-	1	1	3	15	-	-	-	1	1

