THE COIN FINDS FROM THE SURVEY AND THE EXCAVATION IN STREBERSDORF (BURGENLAND, AUSTRIA) ON THE AMBER ROAD (2008–2017)

Ursula Schachinger
Institut für Antike, FB Alte Geschichte und Epigraphik
Universität Graz
Universitätsplatz 3/II
A – 8010 Graz
ursula.schachinger@uni-graz.at

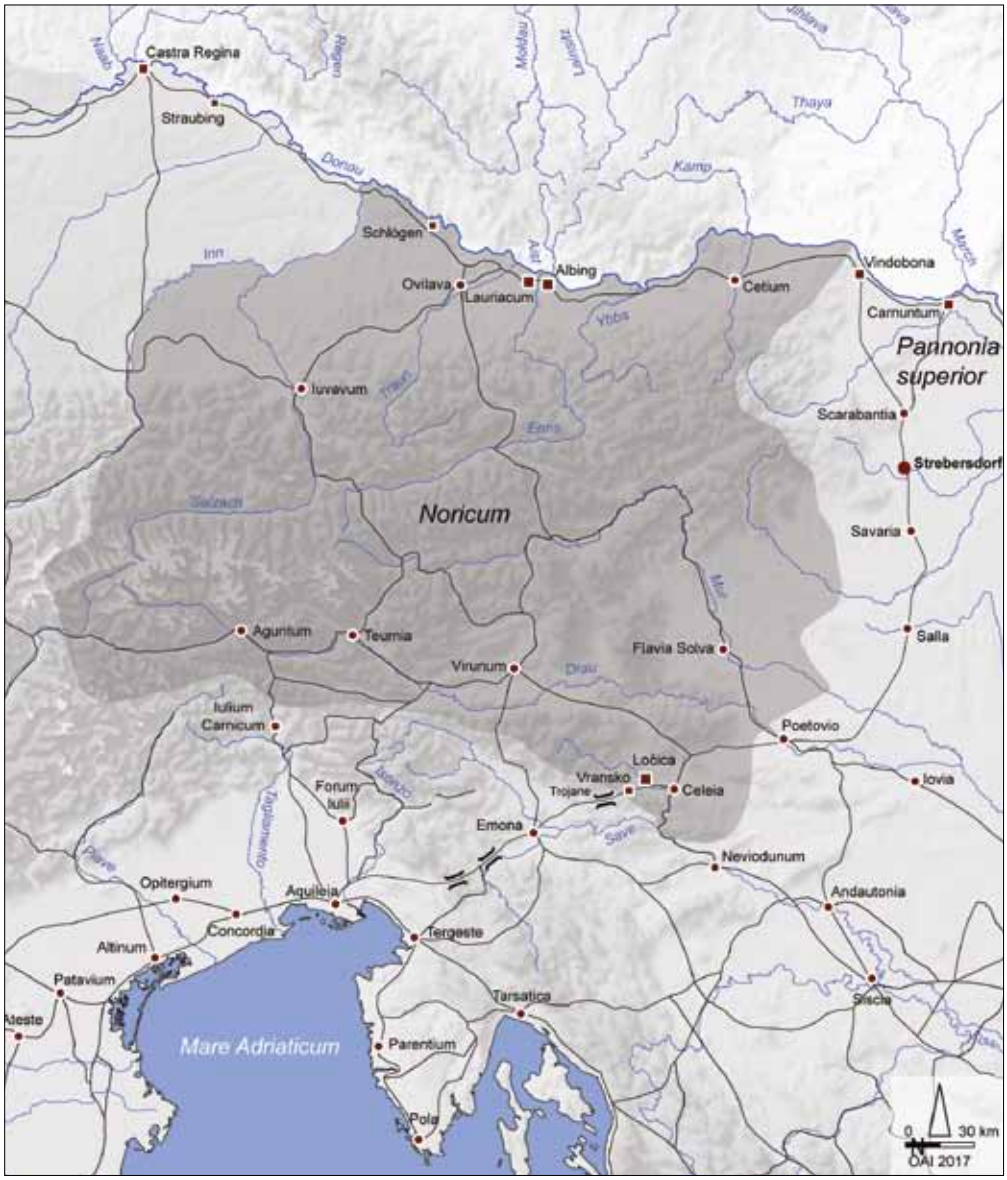
UDK/UDC: 904:737.1(436)
Izvorni znanstveni članak / Original scientific paper

In the course of research by the Austrian Archaeological Institute (ÖAW) between 2008 and 2017 in the area of the Amber Road in eastern Austria, a military camp dating to the early imperial period was discovered near Strebersdorf, from which 452 coin finds were recovered by means of detector survey. Findings of coins from the region date back more than 100 years, published in 1984 in the series Die Fundmünzen der römischen Zeit in Österreich (FMRÖ). In the following, the finds from the survey will be analysed numismatically, focusing at first on the question of the beginning of military presence on site. Furthermore, the development of the settlement up to the 4th century is traced, and the end of coin circulation and settlement activity is also examined. The beginning of coin circulation in Strebersdorf can be determined as falling in late Augustan / early Tiberian times, which suggests that the earliest military camp was established in the wake of the expansions under Augustus, and probably in close connection with the Pannonian Revolt (6–9 AD). In late Tiberian / early Claudian times, the coin supply broke up, and obviously the camp was abandoned. After this, the coin finds no longer occur in the core area of the former military camp, but shift to the vicus, which takes a clear upswing from the times of Trajan and Hadrian onwards. A renewed military presence from Hadrian onwards is suggested not only by increasing numbers of coin finds, but also by the facts that the Amber Road, as a supply road to the Danube, had to be secured, and that local iron mining was being conducted. The settlement seems also to have participated in the general economic upswing in the Severan period. From then on, the finds occur almost exclusively in the area of the street settlement, which apparently developed as an economic centre. In the 4th century, too, uninterrupted development can be expected, with an absolute peak of monetary activity being reached in the 2nd half of the century.

Key words:
Numismatics, coin finds, Roman coins, Roman military site, Amber Road, Roman coin circulation, coinage

The municipality of Strebersdorf is located in Eastern Austria and belongs to the political district of Oberpullendorf, in Central Burgenland. It is in the transition area to the Little Hungarian Plain and thus to the Pannonian Plain. The village lies on a large plain, which is cut by the River Rabnitz. There are two streams – the Raiding and the Stoob – flowing into this river. To the west of the place where the Raiding and the Stoob flow together there is the investigated site of Strebersdorf – an area of more than 40 ha – located directly on the Amber Road, halfway between the *colonia Savaria* and the *municipium Scarabantia* (Map 1). Not only the convenient location as a transport hub, but also large deposits of bog iron ore ('*Raseneisenerz*') on site, provided good conditions for the erection of a military camp and the development of a *vicus*. Due to numerous findings of smelting slag near the military camp, the existence of furnaces is assumed, which connects iron smelting with the military presence. Therefore the site is very important for a new interpretation of the provincial development of military posts, taking into account local economic resources. The results of the surveys, the geophysical prospections and the archaeological excavation are being analysed by a long-term research project at the Austrian Archaeological Institute.[1]

1 https://www.oeaw.ac.at/oeai/forschung/militaerische-infrastruktur-und-verkehrswege/bernsteinstrasse-transitroute-und-militaerpraesenz/(3 March 2020; 16:00).



MAP 1. Topographical situation of Strebersdorf on the Amber Road. (By S. Groh, Austrian Archaeological Institute / ÖAW).

In 2007, the Austrian Archaeological Institute started a research project on the Amber Road in the region of Burgenland, eastern Austria, under the direction of Stefan Groh.[2] The main research activities encompassed the local communities of Strebersdorf and Frankenau, where archaeologists located a *vicus* along the road and three consecutive military camps within a short period of time in the early Principate period. For more than 100 years Roman coins were found at the site, until Franziska Dick, in 1984, published 1810 coin finds from Strebersdorf and 52 from Frankenau included in a catalogue as volume I/2 of the series *Die Fundmünzen der römischen Zeit in Österreich*.

The material of the following numismatic analysis is based on the coin finds of the military and civilian settlement area of Strebersdorf and Frankenau on the Amber Road. The largest part (n=450) was found by metal-detector surveys between 2008 and 2017 in the area of Strebersdorf. All these finds were mapped by exact GPS coordinates. In addition, 2 coins were found in 2008 during archaeological excavations in Frankenau.[3]

These finds (n=452), specifically located in the area of the military camp, the street settlement and its surroundings, are firstly analysed numismatically and secondly compared with the stray finds known from the find zone and published by Franziska Dick (FMRÖ I/2). In this report the denominations follow the scheme of the Vienna School, the datings of the coins conforming to RIC and MIR.

By chronological period, Republican and Julio-Claudian coins account for 17 % of the total material (Tab. 1). Flavian material is almost completely missing (0.5 %), and coins of the 2nd century and Severan pieces are also clearly underrepresented, while late antique coins of the 4th century predominate.

2 Groh 2009; Groh, Sedlmayer 2019.

3 The entire material from the survey is currently being examined at the Austrian Archaeological Institute (ÖAW).

The early coins and the beginning of military presence

In order to verify and classify the beginning of coin circulation on site and the presence of Roman troops in Strebersdorf chronologically, the early – Augustan – coin finds must first be examined in more detail. For, with the appearance of certain Augustan series in the well-researched forts on the Rhine and Lippe (*Nemausus*, *Lugdunum* and moneyers' issues), a precise instrument was created that can also be applied to military sites in a wider geographical area. Although in Strebersdorf we are dealing exclusively with surface finds without stratigraphic context, clear conclusions can be drawn from the composition of the coins and the prevalence of individual coin series with respect to the beginning of the earliest camp on site.

PERIOD	TOTAL NUMBER	PERCENTAGE
Republican	14	3
23 BC–AD 68	60	14
69–96	2	0.5
96–192	26	6
193–238	8	2
238–294	39	9
294–348	112	25.5
348–378	169	39
378–400	6	1
	436	100

TABLE 1. Coin finds from the survey/excavation in Strebersdorf by chronological period (n=436, excluding unspecified coins). (By U. Schachinger).

We count a total of 64 coins from the Republican and Augustan periods, which represents 50 % of the entire material of the Principate period. The prevalence of these early coins clearly relates to an early Imperial military presence.

The following can be seen from an overview of Tab. 2:

1) Of a total of 55 *aes* coins, 21 are halved, which corresponds to a percentage of 38 %.

2) Among the *Nemausus* and *Lugdunum* series, only the later ones from the time after 7/3 BC are documented. All of them are halved. With 4 pieces, they form only a minor part of the total find inventory.

3) In addition, there is a halved Copia type, as well as 6 halved Republican *asses*.

4) Augustan moneyers' series are most frequent (25 coins), among them only 4 halved and 3 with the identical countermark AVG.

5) The silver coins include 5 Republican *denarii* and 2 *quinarii*, 2 of which bear punchmarks.

6) Of the Augustan silver series, only 2 CL CAESARES *denarii* are documented, one of which is halved.

TABLE 2. Republican and Augustan coins from the survey/excavation in Strebersdorf (n=64). (By U. Schachinger).

TYPE	DATE	TOTAL NUMBER	HALVED	COUNTER-MARKS	PUNCH-MARKS
D Republican	109/108–42 BC	5			2
Qui Republican	89/88 BC	2			
As Republican	189–89 BC	6	6 (1 quartered)		
Copia Dp	36 BC	1	1		
As Asia	25 BC	1			
CL CAESARES	2/1 BC, AD 5	2	1		
Lug I/II	7/3 BC–AD 10/14	2	2		
Lug II	AD 10/14	1	1		
Nem III	AD 10/14	1	1		
Moneyers' Ser. II	16/15 BC	3			
Moneyers' Ser. IV	3/2 BC	6		2 AVG (lig.)	
Moneyers' unspecified	16–2 BC	16	4	1 AVG (lig.)	
Moneyers' Qd	9–4 BC	4			
As RIC 471	AD 10/12	2			
As Augustus unspecified		12	7		
TOTAL		64	23	3	2

Since Republican silver remained in circulation for a long time and was only increasingly sifted out under Nero, who issued *denarii* with lower weight and silver content, we shall first take a look at the *aes* coinage. Republican bronze is less suitable for this purpose, however, as it remained in circulation for a long time due to irregular output, especially in post-Sullan times. Augustan bronze series, which are regarded as 'guide fossils', are therefore primarily suitable for precise dating of archaeological complexes. In the following, the dating derived by Frank Berger from the finds of Kalkriese will be used for the most important Augustan bronze series,[4] although their dates are not entirely uncontradicted in numismatics.[5]

First of all, the find inventory from the Hunerberg, near Nijmegen, is to be used as an example of an early military site, the first phase of which is documented from 19 to 12/10 BC. After its abandonment in 12/10 BC, the fort was replaced by a smaller camp on the Kops Plateau. Fleur Kemmers examined the entire coin finds in the context of the archaeological stratigraphy and verified 61 coins from Augustan features.[6] No silver coins dating after 29/27 BC could be verified, and no bronze coins dating after 15 BC. The Augustan circulation money consisted mainly of Republican *asses*, DIVOS IVLIOS types (38 BC), Copia/Vienna issues (38/36 BC), *Nemausus* I types (16/15–8 BC) and moneyers' series II (16/15 BC), with a clear emphasis on Republican bronzes. However, half of these were minted after 44 BC, a quarter were coins minted before 44 BC, and the rest represents Celtic and Augustan material. Almost 75 % of the bronze coins were halved, including all Republican *asses*; 80 % of the transition-period coins were halved, and only 30 % of the Augustan coins. Halving thus decreased as time went on. In addition, not a single bronze coin bore a countermark, especially not the *Nemausus* and moneyers' series, which in later periods were often countermarked. While half of the circulating bronze coins consisted of Republican coins (including coins of the transition period), silver money consisted exclusively of Republican issues up to the Caesarian period. Legionary *denarii* of Mark Antony (32/31 BC) did not occur in Augustan features; thus, they did not appear in finds until after 12/10 BC. Furthermore, no Republican *denarii* with punchmarks were found. The practice of punchmarking Republican silver coins in order to check their fineness must have appeared after 12/10 BC. Hence, the absence of legionary *denarii* and punchmarks can be taken as an indication of an early circulation volume.

In Strebersdorf, Republican coins make up only 3 % of the total quantity of coin finds, while 14 % can be assigned to the Julio-Claudian period. If only the coins from Principate (including Republican) times are taken into account, Republican material makes up about 10 %, with 40 % originating from the Julio-Claudian period. However, only 3 coins are documented from the transition period: 2 *denarii* of 42 BC (Cra 494/43a and Cra 496/1) and 1 halved Copia *dupondius* from *Lugdunum* of 36 BC (RPC 515). This already represents a first striking difference from the Hunerberg, where almost half is transitional material. Adding the bronze-coin evidence, the presence of exclusively halved Republican *asses* shows a parallel, but other features no longer stand up to comparison. The latest coin finds from the Hunerberg are *Nemausus* I and moneyers' II types, whereas no early *Nemausus* coins of the first series (16/15–8 BC) are documented in Strebersdorf, as are only a few of the two *Lugdunum* altar series (7/3 BC and 10/14 AD). Among the moneyers' coins, those of the 4th series, of 3/2 BC, predominate over those of the 2nd series, of 16/15 BC.[7]

In Strebersdorf moneyers' series, Augustan bronze coins predominate. Furthermore, all *Nemausus* and *Lugdunum* coins are halved. Among the Augustan bronze coins there are also numerous halved pieces. In addition, there are 3 Augustan *asses* with the identical countermark AVG (AV ligated). In silver, the absence of legionary *denarii* of Mark Antony could point to an earlier spectrum, but also the presence of only 2 Republican *denarii* with punchmarks, a phenomenon that obviously only appears from the Middle Augustan period onwards, would not contradict this. On the other hand, the two CL CAESARES *denarii* (RIC 207 of 2/1 BC and RIC 207–212, halved, not more closely specifiable than from 2 BC to 5 AD) rather refer to late Augustan circulation.[8] In addition, Celtic coins are present in Augustan features on the Hunerberg, while they are completely missing in Strebersdorf. Thus, the factors mentioned above, and especially the strong presence of moneyers' issues, and halved and countermarked Augustan *asses*, speak against a beginning of military presence in early Augustan times.

Whether this date is reliable has now to be shown by means of a few comparisons with military sites which have been thoroughly examined numismatically. The best-researched forts of early Principate times are those on the Rhine and Lippe; for Pannonia and the Balkans there is insufficient data available. Although the camps on the Rhine and Lippe frontier are only short-lived, nevertheless the presence or absence of individual series in Strebersdorf does limit the time frame for the erection of the first camp. The aim is to show which series did not come here any more because their circulation peak had already been exceeded, and which are already present in larger numbers, thus providing a terminus *ad/post quem*. In particular, it has to be examined whether *Nemausus* I types are already present, and furthermore what the ratios are of *Nemausus* II / *Lugdunum* I to moneyers' and *Nemausus* III / *Lugdunum* II types. From the prevalence of these individual series, references can be derived to the beginning of military presence on site.

The Oberaden fort, for example, existed only for a short period of time between 11 and 8 BC. As expected, the early *Nemausus* I series (16/15–8 BC) is also the most strongly represented among the relevant *aes* series. *Lugdunum* I (7/3 BC) and moneyers' series do not occur; nor do CL CAESARES *denarii* (2/1 BC and 5 AD).[9] In Strebersdorf a much later spectrum is present with *Lugdunum*

4 Berger 1996, 34–44.

5 Summarized in Ziegaus 2015, 157–159.

6 Kemmers 2006, 26–43.

7 Revaluation of moneyers' series, Küter 2014.

8 Dating of the CL CAESARES *denarii*, Wolters 2002.

9 Berger 1996, 33.

I/II and *Nemausus* III *asses*, especially with moneyers' issues, which are mainly halved.

The camp of Haltern was in use a little later than Oberaden. It was founded in 7/5 BC and abandoned in 9 AD. Accordingly, *Lugdunum* I *asses* (7/3 BC) occur most frequently here, followed by moneyers' issues, only a small number of which are halved. In contrast, the late *Lugdunum* II series (10/14 AD) is completely missing.[10] However, this series is testified to in Strebersdorf – in halved form – as the proportion of halved coins is much higher in Strebersdorf. Although some similarities to the Haltern material can be found, the lack of clearly assignable *Lugdunum* I *asses* argues for a later date for the beginning of military presence in Strebersdorf.

The same applies to Kalkriese, whose circulation pattern for bronze coins is similar to that of Haltern. Here, too, *Lugdunum* I *asses* predominate;[11] pieces of the former type *Nemausus* I are no longer present. These predominate exclusively in earlier camps, such as Oberaden, Rödgen and Dangstetten. Thus sites such as Haltern and Kalkriese, where *Lugdunum* I types predominate, represent a later phase, which brings Frank Berger to see three chronologically consecutive phases:[12] the first phase marks the time from the occupation until the death of Drusus by the presence of the early *Nemausus* I series (16/15–8 BC), the second phase from the abandonment of Oberaden until the end of Haltern in 9 AD by *Lugdunum* I *asses* (7/3 BC), and the third the attempts of *Tiberius* and *Germanicus* (12–16 AD) by the numerous presence of Augustan moneyers' issues. Accordingly, *Lugdunum* I types which have not yet been halved are predominantly found in Kalkriese. They circulated until the arrival of *Varus*, who affixed the countermark VAR. The absence of *Lugdunum* II *asses* (10/14 AD) and moneyers' issues indicates the earlier end of Kalkriese.[13] We can therefore classify Strebersdorf with some certainty to the time after 9 AD.

The fact that the Roman military presence in Strebersdorf starts no later than the early years of *Tiberius*'s reign is to be shown exemplarily in comparison to the Claudian fort of Rißtissen. This cohort camp, situated on the road to *Brigantium*, was founded around 45/50 AD and abandoned in 69 AD. At first glance, the coin finds already show a clear emphasis on the 1st century,[14] especially with Tiberian and Claudian issues. The earliest coins include 1 moneyers' IV issue (3/2 BC) with countermark and two *Lugdunum* II types (10/14 AD). Augustan material from the military area is rare; a clear increase in the number of coin finds is manifested in Tiberian times by numerous Providentia *asses* (MIR 29-6; 16–22 AD) and the somewhat later Agrippa *asses* (MIR 24-6; 39 AD). These types circulated more and more in the 30s in *Raetia* and are especially well documented in Claudian forts.[15] The same phenomenon can be observed in the legionary fortress of *Carnuntum*,[16] where Providentia and Agrippa *asses* dominated the contemporary *aes* circulation.

Although a few Providentia and DIVVS AVGVSTVS PATER types have been found in Strebersdorf, the predominance of much earlier material (Republican silver and halved *aes* coins, *Nemausus* and *Lugdunum* types, moneyers' issues) confirms an earlier military presence than in Rißtissen.

The military settlement on the Auerberg, which was founded around 12/13 AD, has a similar inventory of coins to that of Strebersdorf.[17] The settlement existed for about 30 years and was abandoned at the end of the 30s, or the beginning of the 40s at the latest. Among the bronze coins, *Lugdunum* types predominate, with both series being equally well represented.[18] Moneyers' issues are not that frequently documented among the coin finds (although series II and IV are in balance) and *Nemausus* I types are only found in very small numbers. Bernward Ziegaus noted that *Lugdunum* I *asses* arrived on site first, after which *Lugdunum* II, and that both series reached a balance at about the time the place was abandoned. A predominance of *Lugdunum* II types would have indicated a longer existence of the settlement, as in Tenedo/Zurzach or *Vindonissa*.[19] In Strebersdorf, the stronger presence of moneyers' issues should indicate that it is posterior to the settlement on the Auerberg. However, taking into consideration a direct supply from Italy and a decreasing frequency of the *Nemausus* and *Lugdunum* series towards the east,[20] a date of foundation at about the same time can not be ruled out completely.

At this point, a comparison with the early military camp of *Brigantium* (on the Ölrain) seems reasonable. The coins from the early, late-Augustan-Tiberian camp layers from stratified contexts show a very similar composition to that in Strebersdorf.[21] As in Strebersdorf, Republican bronzes – almost exclusively halved – are also present at the Ölrain. Furthermore, there are the relevant Augustan *aes* series, which are also largely halved. These include *Nemausus* I *asses* (16/15–8 BC) and *Lugdunum* I *asses* (7/3 BC), which are present in approximately equal proportions. However, the largest part of the Augustan bronze coins is formed by *Lugdunum* II *asses* (10/14 AD) and moneyers' issues, which also predominate in Strebersdorf. Thus, according to Arpad Langer, the coin finds from the Ölrain clearly argue against an early-Augustan foundation of the camp, because such a date would presume the predominance of *Nemausus* I and *Lugdunum* I types.[22] Moreover, while 50 % of all *Lugdunum asses* from the Ölrain are halved, among the moneyers' types – similar to Strebersdorf – only about 20 % are halved (see Tab. 2). Although Augustan moneyers' issues only came to the north-west and the

10 Berger 1996, 33.

11 Berger 1996, 33.

12 Berger 1996, 34.

13 Berger 1996, 34–38.

14 Kemkes 1996, 281–305.

15 Mackensen 1987, 51–53.

16 Vondrovec 2007, 94–97; 198.

17 In the following after Ziegaus 2015.

18 Ziegaus 2015, 152–157.

19 Ziegaus 2015, 155.

20 Kos 1986, 36–37 f.

21 Langer 2017, 137–152.

22 *Cf.* van Heesch 1999, 351; Peter 1991, 119; Ziegaus 2015, 191 f., does not exclude the existence of a military post during the time of occupation, 191–192.

Rhine forts in (early) Tiberian times,[23] in *Brigantium* they probably arrived earlier due to the topographical situation,[24] which again suggests an early- or pre-Tiberian foundation date for the camp. This date is confirmed by the sparse presence of countermarked Augustan *asses*. The most common moneyers' series in *Brigantium* is the 4th (3/2 BC), which was also the most frequently countermarked: evidence that is almost entirely identical to that of Strebersdorf. Most of the countermarks on the coins from the Ölrain can be attributed to early Tiberian times;[25] those on the Strebersdorf pieces (AVG with ligated AV) may be dated somewhat earlier in relative chronology.

However, the early coin inventory of Strebersdorf shows strong parallels to the early features of the camp of *Brigantium* (Ölrain) and those of the Auerberg. Decisive for a foundation date for Strebersdorf in the late Augustan / early Tiberian period is the predominance of moneyers' issues, largely without countermarks. This argues for their arrival directly from Italy and not from the Northwest of the empire, where they arrived in targeted deliveries after the *Lugdunum* and *Nemausus* series and were then officially countermarked before being paid out to the troops.[26] Since there are hardly any countermarks on the coins found in Strebersdorf, a later arrival from the Northwest is unlikely. The sparse presence of *Nemausus* and *Lugdunum asses* – all halved – also suggests an arrival of these coins on site only in late Augustan / early Tiberian times. Furthermore, the two CL CAESARES *denarii*, which are generally attributed to the middle and late Augustan circulation,[27] do not contradict the evidence. Moreover, the military context is also clearly visible in the coin spectrum of Strebersdorf, which is particularly reflected in the presence of the 'guiding fossils' (moneyers' series, *Nemausus* and *Lugdunum asses* in halved form, halved Republican bronzes, countermark AVG).

As early as 1986, Peter Kos established a correlation between halved *asses* and the presence of *quadrantes* in the south-eastern Alpine region.[28] Of the Republican and Augustan *aes* coins from Strebersdorf, 40 % are halved (more rarely quartered). This high proportion correlates with the complete absence of *quadrantes*. Regarding the circulation volume in the south-eastern Alpine region, Kos notes that it is generally characterized by a lower presence of *Lugdunum* and *Nemausus* types (*Celeia* 15.7 %; *Emona*, *Poetovio* and Magdalensberg even lower percentages; same situation in the *Cisalpina*);[29] these coins were not regularly transferred to *Illyricum* in scheduled deliveries by the legions from *Germania* and *Raetia* during the Pannonian Revolt between 6 and 9 AD, even if their scarce occurrence does not necessarily rule out a connection with the deployment of troops. Kos estimated their percentage of the total find volume in the south-eastern Alpine region at a maximum of 15 %. Correspondingly, their proportion in Strebersdorf is low, and all pieces are halved. In addition, the Augustan moneyers' series dominate the south-eastern Alpine region (*Celeia* 69 %, *Emona* 61 %), comprising a considerable quantity of halved pieces (*Celeia* 58 %, *Emona* 32 %). According to Peter Kos, the phenomenon of the halving of moneyers' issues is attributed to the late Augustan / early Tiberian period.[30]

With regard to the Augustan bronze coins found in Strebersdorf, two phenomena can be identified. On the one hand, there are the few pieces of the *Nemausus* and *Lugdunum* series, which were already halved when they arrived here. The halving probably took place in the north-western provinces, their region of origin, in the middle Augustan period.[31] Thus they came to Strebersdorf only at a later moment, possibly late Augustan / early Tiberian times. On the other hand, there are the numerous halved moneyers' issues. In Italy, moneyers' issues dominated the circulating volume shortly after their production and spread at about the same time in *Noricum* and *Pannonia*.[32] There, they were probably increasingly halved due to the demand for smaller coin units. In contrast, they did not arrive in the north-western provinces until the Tiberian period.[33] So the evidence suggests that in Strebersdorf we are dealing with a late Augustan / early Tiberian circulation volume.

Among the Augustan bronze coins there are 3 specimens with countermarks. Of these, 2 are pieces of the moneyers' series IVb (RIC 431 and RIC 432) and 1 unspecified moneyers' issue, possibly belonging to the same series.

All 3 pieces bear the identical countermark AVG (AV ligated).[34] Ulrich Werz dates it to the period between 9 and 14 AD and states that it was affixed primarily to *Lugdunum* I and moneyers' issues.[35] Kos verified the same countermark in the south-eastern Alpine region most frequently on moneyers' types and dates it to the late Augustan / early Tiberian period.[36] It is particularly attested to in *Pannonia* and *Carnuntum*,[37] so it is listed by Rodolfo Martini as "*Carnuntum* type".[38] Thus, the presence of only 3 countermarked moneyers' *asses* could suggest that the influx of these pieces on site, relatively chronologically speaking, dates somewhat later than the halved *asses*. However, by no means do they contradict a late Augustan / early Tiberian beginning for the military presence.

23 Berger 1996, 39; van Heesch 1999, 349; Peter 2001, 49–53; Wigg 1999, 338.

24 Langer 2017, 147–148 f.

25 Langer 2017, 51–56.

26 Wigg 1999, 338–340.

27 Berger 1996, 31.

28 Kos 1986, 37–39; further for the Lower Rhine region, Kemmers 2006, 151–165.

29 Kos 1986, 37 ("In the area of the southeastern Alps, however, the *Nemausus asses* and 'altar' *aes* of *Lugdunum* have a much smaller share in the Augustan aes than that of the mint of Rome.").

30 Also Chantraine 1982, 25 f.; Kemmers 2006, 86; against Krmnicek 2010, 101 f. (Augustan times), 25–26.

31 Kemmers 2006, 86; Chantraine 1999, 299.

32 Krmnicek 2010, 102–105.

33 Van Heesch 1999, 349; Peter 2001, 49–53.

34 Werz 2004, No. 33.

35 See also Ziegaus 2015, 183, 186–189.

36 Kos, Šemrov 1995, 51–52 f.

37 Berger 1996, 51, dates it after AD 11/12.

38 Martini 2003, No. 75 with slightly different dating.

Hence the territory around Strebersdorf was developed by the Romans in the course of the Augustan expansion policy in *Pannonia* carried out by *Tiberius* between 12 and 9 BC. The occupation of *Pannonia* was further caused by economic considerations: on the one hand by bog iron ore deposits in the whole region, and on the other hand by fertile farmland. In *Scarabantia*, which Pliny calls *oppido Scarabantia Iulia*,[39] a trading post had already been founded in Augustan times. The further development of the region was achieved by military posts, however. In *Poetovio* a first military camp was established in 15 BC. The territories conquered between 12 and 9 BC were placed together with *Noricum* under a military administration which had its headquarters in *Carnuntum*. The uprising of Pannonian and Dalmatian tribes in 6 AD required the stationing of a legion in *Poetovio* (*legio VIII Augusta*), and a short time afterwards, in 9 AD, a first fort was also built in *Savaria*. At about the same time the Amber Road was extended as a supply route to the Danube and also as a trade route, which caused the erection of stations and camps. However, the construction of the earliest camp in Strebersdorf has to be seen against the background of the economic development along the area of the Amber Road shortly after the Pannonian Revolt. A first troop shifting from the Northwest or West towards *Illyricum* may be reflected on site in the presence of *Copia, Lugdunum* and *Nemausus* types. However, the large number of moneyers' issues speaks of a systematic supply of the troops – probably the ala Pannoniorum coming from *Dalmatia*.[40]

Changes in circulation patterns during the 1st century AD

In the following, it will be examined how the coin curve develops in the 1st century after the clear initial peak in the late Augustan / early Tiberian period, whether continuous development can be assumed, or whether a break in the coin supply is manifested. Even at first glance, a decline in the number of coin finds in the post-Augustan period is obvious (Fig. 1).

From the Tiberian period, there are 8 *aes* coins in total, the latest being an *as* of the 7th and last emission of 36/37 AD (MIR 63-6). This suggests regular use of coins in the military settlement of Strebersdorf at least until the end of Tiberius's reign. However, the strong decrease compared with the Augustan inventory is striking. The Tiberian coin finds consist of 3 Providentia *asses* (MIR 29-6; 16–22 AD), 1 DIVVS AVGVSTVS-Livia type (MIR 27-6; 14–15 AD), 1 DIVVS AVGVSTVS-thunderbolt type (MIR 63-6; 36–37 AD), 1 *sestertius* and 1 *as* of 21/22 AD (RIC 48 and RIC 44), and 1 Drusus *as* (MIR 38-6; 22–34 AD).

Among these 8 coins the numerously issued Providentia series accounts for only 3 coins, which is just one third of the Tiberian coin stock. Higher percentages are regularly found at numerous sites not only in *Raetia, Noricum* and *Pannonia*, as for example in *Brigantium*[42] or *Carnuntum*[43], but also in *Augusta Raurica*[44] and *Noviomagus*[45]. Continuing circulation of this type can be

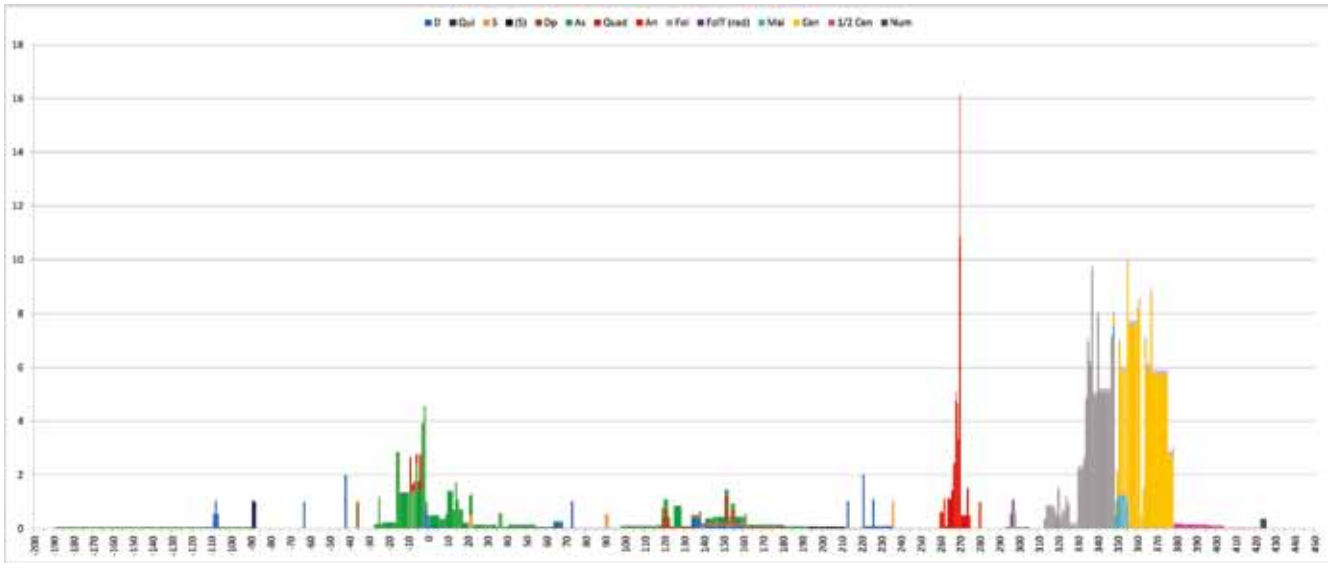


FIGURE 1. Coin finds from the survey/excavation in Strebersdorf (x-axis: date; y-axis: total number of coins) (n=452).[41] (By U. Schachinger).

39 *HN* 3. 146.

40 Groh 2009, 181.

41 The graphs map each coin per year on the x-axis. If a coin cannot be dated to one exact year, in each year an equivalent part is recorded. So that if a coin had been minted over a time period of five years, each year on the x-axis comprises one fifth, or 0.2. On the y-axis, the number of coin finds is recorded.

42 Langer 2017, 61 f.; 149–150 f.

43 Vondrovec 2007, 94.

44 Peter 2001, 59–62.

45 Kemmers 2006, 86–88.

EMPEROR	D	S	DP	AS	QUAD	TOTAL
Augustus (27 BC–AD 14)	2			44	4	50
Tiberius (14–37)		1		1		2
for Divus Augustus				5		5
for Drusus				1		1
Caligula (37–41)						0
Claudius I (41–54)				1		1
Nero (54–68)	1					1
Vespasian (69–79)	1					1
Titus (79–81)						0
Domitian (81–96)		1				1

TABLE 3. Coins from the Julio-Claudian and Flavian periods from the survey/excavation in Strebersdorf (27 BC–AD 96) (n=62). (By U. Schachinger).

assumed until the Flavian period.[46] In *Augusta Raurica*, according to Markus Peter, Providentia *asses* make up the majority of the Tiberian-to-Neronian circulation volume; in terms of numbers, they are ten times more frequent than Tiberian bronzes themselves. In comparison, however, Providentia *asses* are seriously underrepresented in Strebersdorf. It is possible that the Providentia type had not yet reached its circulation peak when it arrived on site. In many places this peak occurs in post-Tiberian times, especially under Claudius I,[47] which means that a supply to Strebersdorf in late Tiberian / early Claudian times did not take place in the usual quantities. A further reason for the assumption of an interrupted coin supply is the complete absence of Agrippa *asses* minted under Caligula (37–41). Both series – Providentia and Agrippa *asses* – are regularly present in large quantities at Claudian sites, such as at the above-mentioned Claudian fort of Rißtissen[48], in *Brigantium*[49] or in *Carnuntum*[50].

As in Strebersdorf, so on the Auerberg, too: Agrippa *asses* are missing, and there are only a few DIVVS AVGVSTVS PATER and Providentia types. The date of the abandonment of the settlement on the Auerberg has been assumed to fall in late Tiberian times, but the presence of 1 *as* of Claudius[51] could postpone the date of abandonment into early Claudian times. This coin also shows traces of burning and seems to play an important role in the chronology of the site.

Among the survey finds of Strebersdorf there is also one single Claudian *as*, but it is very worn, so it cannot be dated exactly. The piece also appears to have been burnt. At first sight, the coin raises more questions than it gives answers. However, looking at the inventory of coins from the time after Tiberius until the end of the Flavian period, a possible explanation for its presence can be found. Only 4 coins from the post-Tiberian and Flavian periods are documented. These are the above-mentioned Claudian *as*, 1 *denarius* of Nero (RIC 55; 64/65 AD) and 1 *denarius* of Vespasian for Titus (RIC 517; 73 AD), as well as 1 moderately worn *sestertius* of Domitian from 90/91 (RIC 702), all of them minted in Rome. The Neronian *denarius* dates from the time after the reform and already has a lower weight and fineness than previous items from Republican and early Principate times. It therefore aligns with the later Flavian and post-Flavian *denarii* of the 2nd century. Both *denarii* – that of Nero and that of Vespasian – are moderately worn, indicating that they remained in circulation for a lengthy period of time. These 2 pieces could therefore be attributed to a later circulation volume. The moderately worn *sestertius* of 90/91 AD also fits well into the circulating volume of the 2nd century. During the 2nd century a shift in the bronze denominations towards larger units is documented. This means that, in the 2nd half of the century, larger denominations, e.g. *sestertii*, predominate.[52] Therefore the presence of this single Flavian *sestertius* can also be explained as part of the circulation volume of the later 2nd century.

Only the Claudian *as* mentioned above is left without explanation. As on the Auerberg, it is a single specimen at the end of a continuous Augustan-Tiberian coin curve. Like the coin from the Auerberg, it shows traces of slag due to the impact of heat. Unfortunately, it is a stray find from the surface without archaeological context, so the coin cannot be associated either with a coherent fire/destruction layer or with a small-scale house fire.

46 Peter 2001, 61.

47 Peter 2001, 61.

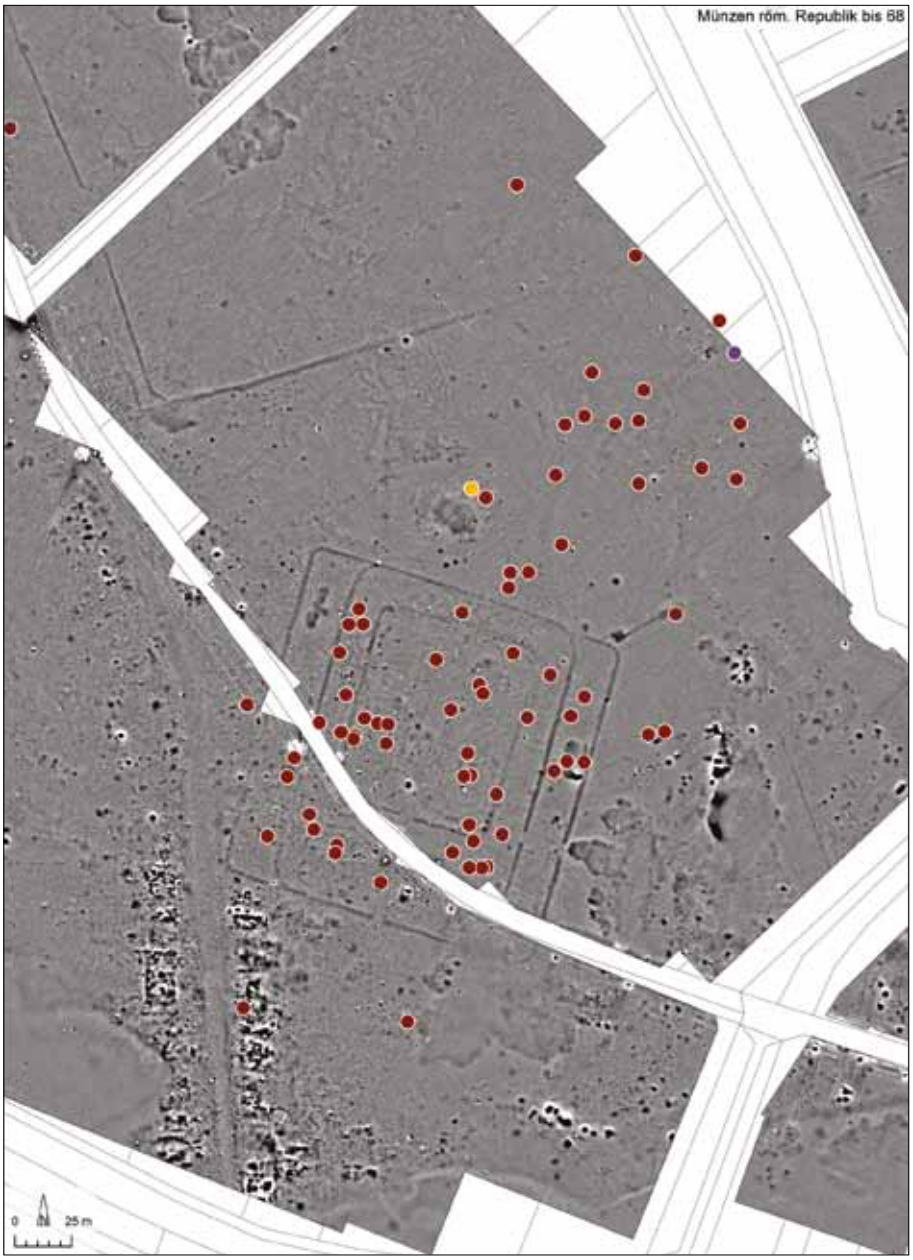
48 Kemkes 1996, 281–305.

49 Langer 2017, 61–68.

50 Vondrovec 2007, 94–97.

51 Ziegaus 2015, n. 210 (RIC 95, 41/42 AD).

52 Peter 2001, 202–205; the same phenomenon emerges also in the forts at the *Limes in Noricum* (Schachinger 2017a, 315 f.).

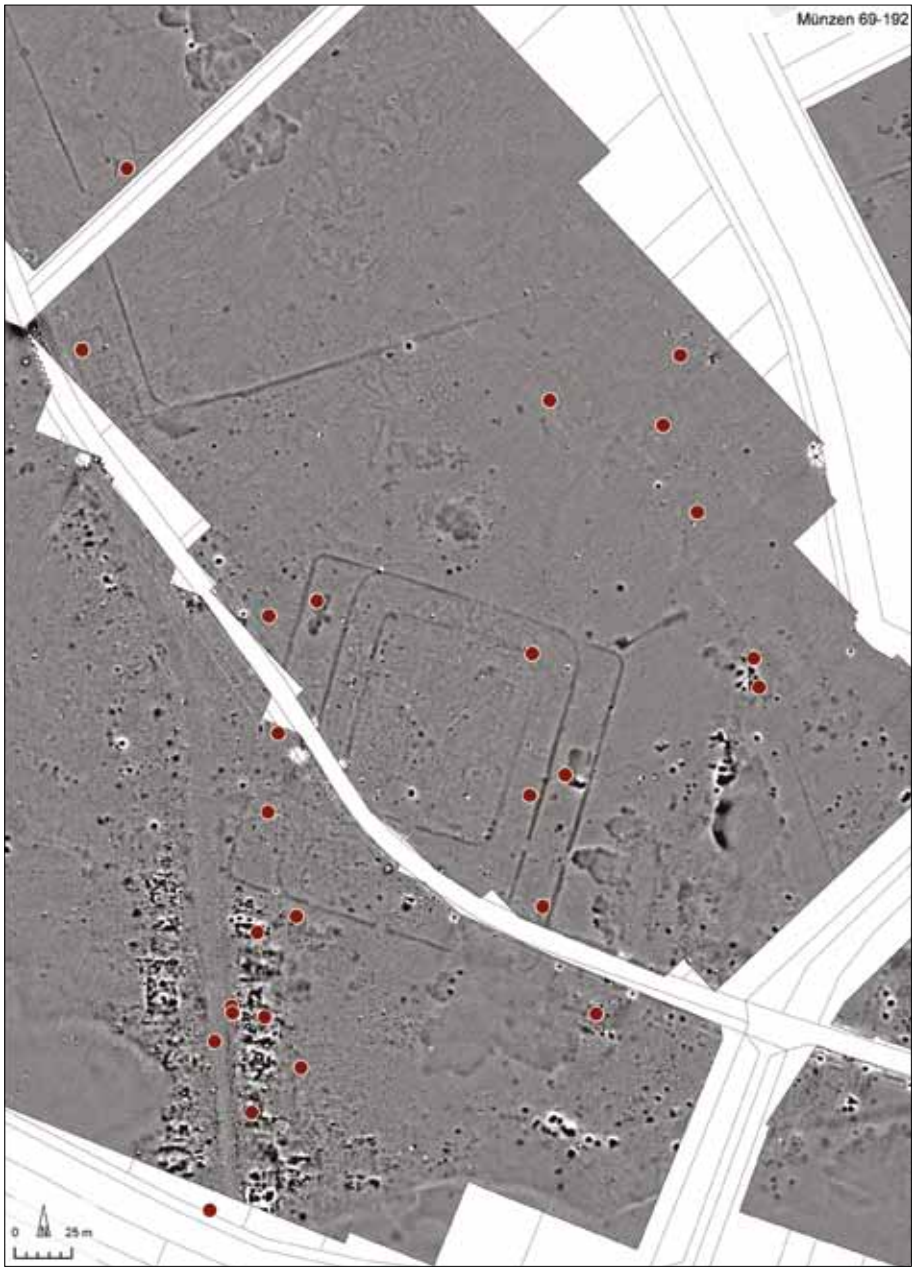


MAP 2. Distribution of the coins from Republican and Principate times up to AD 68 from the survey in Strebersdorf. (By K. Freitag, Austrian Archaeological Institute / ÖAW).

In addition, the exact find spot of this coin is documented as outside the camp walls (Map 2, yellow marking), where an older part of the Amber Road was discovered. This means that it does not necessarily have to relate to the camp. However, it seems to be certain that the coin supply in Strebersdorf ceased in post-Tiberian times. This break-off could therefore be dated – as on the Auerberg – to early Claudian times. However, taking into account the lack of Agrippa *asses* and the scarce presence of Providentia types, we can assume that coin circulation was interrupted in the camp of Strebersdorf in late Tiberian / early Claudian times.

In summary, it can be stated that coin circulation and coin supply in the military camp of Strebersdorf ceased in early Claudian times, which is supported by the declining number of Providentia types and the complete absence of Agrippa *asses*, as well as the presence of 1 burnt Claudius *as*. Coin circulation does not start again until the later 2nd century. The camp was apparently abandoned in Claudian times, when the situation changed in *Pannonia* with the establishment of a civil administration. At the same time in *Poetovio*, *legio VIII* was replaced by *legio XIII*, to which extensive building activity stands witness.[53] At the same time, the *colonia Savaria* was deduced by veterans of *legio XV*. The settlement of Strebersdorf should be considered against the background of the further development of West Pannonia and the Amber Road.

53 Horvat *et al*. 2003, 155–157.



MAP 3. Distribution of the coins from 96 to 192 AD from the survey in Strebersdorf. (By K. Freitag, Austrian Archaeological Institute / ÖAW).

The 2nd century and the Marcomannic Wars

Coins from the period between 96 and 192 AD account for a total of 6 % of Strebersdorf's total stock (Map 3), i.e. 26 coins that can be precisely identified. Considering only the coins up to the end of the Principate period, the percentage increases to 17 %, a rather small amount compared with the material of the early Principate period. In addition, there are 6 *asses* that cannot be precisely specified: they could just as well be earlier pieces, especially since there are 2 halved specimens among them.

There are two preliminary questions to be asked about the coin material:

1) When did coin circulation in the settlement area restart after the break-off in the early Claudian period?

2) Are the Marcomannic Wars reflected in the pattern of coin finds?

Tab. 4 shows the distribution of coins by emperor. The absence of pieces of Nerva and the scarce presence of coins of Trajan is striking. Only one strongly corroded *as* of Trajan is documented, which cannot be specified exactly due to its poor state of preservation. Therefore, it is not possible to determine whether it was minted in the earlier or later phase of Trajan's reign. *Aes* coins of the early years of Trajan show different circulation patterns than later ones. The early coins circulated together with Flavian material, while later pieces show the same circulation patterns as coins of the later 2nd century. Peter found out that the year 103 shows a caesura in the distribution of bronze denominations at several sites in the western provinces; the number of *asses* decreases, whereas *dupondii* and *sestertii* increase.[54] Furthermore

54 Peter 2001, 93–99.

EMPEROR	D	S	DP	AS	TOTAL
Nerva (96–98)					0
Trajan (98–117)				1	1
Hadrian (117–138)	2		3	4	9
Trajan / Hadrian		1			1
Antoninus Pius (138–161)	3	1	4	4	12
M. Aurelius (161–180)			1		1
M. Aurelius / Commodus	1			1	2
TOTAL	6	2	8	10	26

TABLE 4. The coins from the period between 96 and 192 AD from the survey/excavation in Strebersdorf (n=26). (By U. Schachinger).

he noticed that bronze coins of Trajan minted before 103 AD are less worn than later ones, which also indicates a break in the circulation behaviour. Klaus Vondrovec observed a similar pattern in *Carnuntum*. Therefore he doubts whether the withdrawal of the legion in *Augusta Raurica* alone can be the reason for this.[55] However, since hardly any Flavian material from the Strebersdorf survey is present, one could possibly conclude that the coin of Trajan could have been minted in the later years of his reign.

With Hadrian, the coin curve rises again; there are 9 coins that can be assigned precisely, whereas for one specimen it cannot be exactly identified whether it is of Trajan or of Hadrian. None of the coins of Hadrian comes from the earliest period of his reign, shortly after 117 AD. The earliest pieces are assigned to the period of 119–121 AD; they comprise 1 *as* (RIC 579b) and 2 *dupondii* (RIC 604a), all moderately worn. In addition there are 3 *asses* of the strong minting period of 125–128 AD – heavily worn – and 2 *denarii* of the latest phase of 134–138 AD. Another *dupondius* cannot be dated exactly. Since all bronze coins show clear traces of circulation, they must have circulated for a long time. Therefore, these pieces are not suitable for a precise dating of the renewed beginning of coin circulation. An indication could possibly be provided by 1 freshly minted *denarius* of 134–138 AD (RIC 240d). Only its dies show signs of wear, noticeable in terms of blurry parts. It can therefore be assumed that coin use in Strebersdorf restarted during the reign of Hadrian, although it cannot be stated exactly whether it was in the early or late period of his reign.

If one looks at the presence and the total number of denominations (Tab. 4), it is noticeable that silver is quite strongly represented in relation to bronze. The ratio between silver and bronze coins within the period from 96 to 192 is about 1 : 3, i. e. there are 3 bronze coins to 1 silver. If we allocate the Neronian *denarius* (RIC 55) as well as the 2 Flavian coins (Vespasian for Titus, D, RIC 517; Domitian, S, RIC 702) to the circulation volume of the 2nd century – as said before – the ratio is 1 : 2.75. In general, the ratio of silver to bronze coins in civilian settlements is about 1 : 20 to a maximum of 1 : 10, e.g. 1 : 12 in *Iuvavum* and *Ovilavis* and 1 : 22 in *Virunum*.[56] At military sites, on the other hand, it is much higher, such as in Pöchlarn/*Arelape* at 1 : 2.5,[57] in Mautern/*Favianis* and Zwentendorf/*Asturis* at 1 : 4.5. However, despite the small number of coin finds in Strebersdorf in the 2nd century, a military component in the circulation volume can be determined quite clearly, since the money which the troops received in cash was regularly paid out in silver during this period.[58] The high ratio of silver to bronze certainly shows a pattern deviating from the normal distribution. The fact that the finds no longer occur only within the camp (Map 3) can be explained on the one hand by the expansion of the adjacent *vicus* as a centre of economic activity, and on the other hand by the expansion of iron mining, which probably presupposes the presence of soldiers – or at least some officials, such as *curatores*.

During the time of Antoninus Pius (138–161 AD) a continuous inflow of coins to Strebersdorf can be assumed. The number of coin finds increases slightly. For Diva Faustina I, 2 *denarii* and 2 *asses* were minted after 141 AD; the minting dates of the women's coins during the reign of Antoninus Pius have not yet been sufficiently discussed in numismatics, so the period between 141 and 161 is cited as dating for Diva Faustina coins. Coins of Antoninus Pius account for 46 % of the total coin finds from the period between 96 and 192 AD. A preponderance of coins from the period 138–161 AD can also be observed, for example in the fort at Pöchlarn/*Arelape*,[59] where coins from the time of Antoninus Pius are represented at 40 %, while the percentages

55 Vondrovec 2007, 123.

56 The data for *Ovilavis* and *Virunum* are taken from Vondrovec 2003 and Schmidt-Dick 1989.

57 Schachinger 2017a, 312.

58 Of course, an increasing number of *denarii* alone cannot be yielded exclusively as evidence for the presence of soldiers. In the early Principate times, solders received their pay – especially in the Rhine and Lippe camps – in bronze, as witnessed by coin finds. Even though the question of how the soldiers were paid has long been discussed, in the 2nd century AD one can assume that the *stipendia* were paid mainly in denarii; cf. Speidel 1992, notably 87, n. 4 with further literature; see also Alston 1994.

59 Schachinger 2017a, 315–317.

of the other emperors of the 2nd century are 20 % and below. In towns such as *Virunum*, on the other hand, coins from Trajan up to M. Aurelius are more or less equally distributed between 20 % and 25 %. The same pattern as in *Virunum* can be noticed in *Iuvavum* and *Ovilavis*, where coins of the reign of Antoninus Pius form the largest part within the period 96–192 AD, but in total numbers the differences from Trajan up to M. Aurelius are small.

From M. Aurelius onwards, the number of coin finds in Strebersdorf is noticeably declining. From the period 161–180 AD only 1 *dupondius* – very badly preserved and therefore not exactly dateable – as well as 1 *denarius* and 1 *as* are documented, which can only be assigned vaguely either to M. Aurelius or to Commodus, due to corrosion. A sharp decline in the number of coin finds under M. Aurelius is also noticeable at the Norican Danube Limes, as for example in the military camp at Pöchlarn/ *Arelape*[60] and in the *canabae* at *Lauriacum*[61], where the presence of a mould for cast *denarii* indicates a decline in coin supply as early as the 160s.[62] At other military sites, such as Mautern/ *Favianis*, however, the number of finds under M. Aurelius seems to be increasing,[63] which illustrates increased demand for money in this case. In the Norican towns to the north of the main Alpine ridge, such as *Iuvavum* and *Ovilavis*, the number of coin finds under M. Aurelius also decreases slightly. To the south of the main Alpine ridge the situation is different. The *municipium Virunum* did not witness a decline in coin supply at the time of M. Aurelius. But along the Amber Road, *Celeia* records a decline in the number of coin finds in the 160s.[64] In *Carnuntum*, the number of finds in the legionary fortress and in the *canabae* shows an increase,[65] whereas in the civilian town the numbers decrease slightly.[66] Finally the *municipium Salla* is mentioned, which shows a decrease in the number of finds between 160 and 175 AD, but after 175/180 AD the coin curve rises again.[67] Thus, no homogeneous and clear distribution pattern – neither for civilian settlements nor for military sites in *Noricum* and *Pannonia* – can be determined for the time of M. Aurelius. A decrease in the number of coin finds tends to be observed at most sites. On the other hand, under Commodus there was a widespread decline in the number of coins. At this point the question whether the decline of coin finds under Commodus is related to tribute payments to Germanic tribes, or whether imperial monetary policy was the reason for this, cannot be debated in detail. In any case, Roman financial policy was probably severely strained after the battles against the Parthians and Marcomanni, and after the plague.[68]

The question whether the Marcomannic Wars are reflected in the number of coin finds from Strebersdorf cannot be answered by the survey finds alone. A mere decline in coin finds under M. Aurelius cannot be attributed with certainty to warlike activities. However, considering the state of preservation of the coins from the 2nd century, there are strong deformations to be observed on at least 2 specimens: 1 *denarius* of Antoninus Pius, and 1 from the period between 161 and 192. Both are heavily slagged, obviously due to the impact of high temperature. Therefore it can be assumed that these two coins were exposed to intense fire before they were buried in the ground. Was this fire widespread, and did it have to do with warlike incidents? Or has it to do with the iron smelting on site? The coins do not give us the answers. In general, traces of fire can be identified clearly on silver coins, but on bronze coins they are usually difficult to verify after the restoration process. Therefore, some originally burnt bronze coins might also have been among the coin finds.

To sum up the development of coin circulation in Strebersdorf in the 2nd century, it could be shown that, after a long interruption since Claudius I, coin use began again in Hadrian's time. Silver money had a relatively strong impact compared with bronze coins, which can still be related to the presence of soldiers or some kind of officials such as *curatores*. From M. Aurelius onwards the coin supply decreases. The question whether this can be associated with the Marcomannic Wars cannot be answered. However, the presence of burnt *denarii* may be related to warlike incidents, looting or robberies, or maybe only to extensive iron smelting on site. At this time the province of *Pannonia* was divided, which had little impact on Strebersdorf. However, the presence of soldiers can be assumed, probably to secure the Amber Road as a supply route to the Danube, and also to control the process of iron mining. In *Poetovio* smaller military units have also been proven for the purpose of securing the Amber Road after the abandonment of the legionary camp.[69]

The time of the Severan dynasty and the Soldier Emperors (193/294 AD)

Only 8 coins from the Severan period are documented from the survey in Strebersdorf, i.e. 1.8 % of the total inventory of coins and 5 % of the Principate period. Among them there is also 1 iron coin, which generally witnesses a shortage of small change in Severan times. This small quantity of coin finds from the Severan period is an argument against the generally assumed economic upswing in Severan times, although the coin curve does not show a clear break.

In Severan times, the minting output of silver money was boosted due to the increasing military expenses. The production of bronze coins was reduced considerably. For daily groceries, there seemed to be enough older *aes* money of the 2nd and 1st century AD in circulation. Only when the available circulating bronze coins were no longer sufficient did many places start to produce local money, such as the so-called *Limesfalsa*, as well as iron coins. These imitations occur regularly at the Norican

60 Schachinger 2017a, 315–317.

61 Schachinger 2018, 170–172.

62 Schachinger 2018, 179–182.

63 The data are taken from the database "dFMRÖ" of the Austrian Academy of Sciences: http://www.oeaw.ac.at/antike/fmroe/content/suche.de.php; access from 16.08.2015.

64 The data are taken from FSMSI II–IV.

65 Vondrovec 2007, 198, 210, 221.

66 Vondrovec 2007, 235–242.

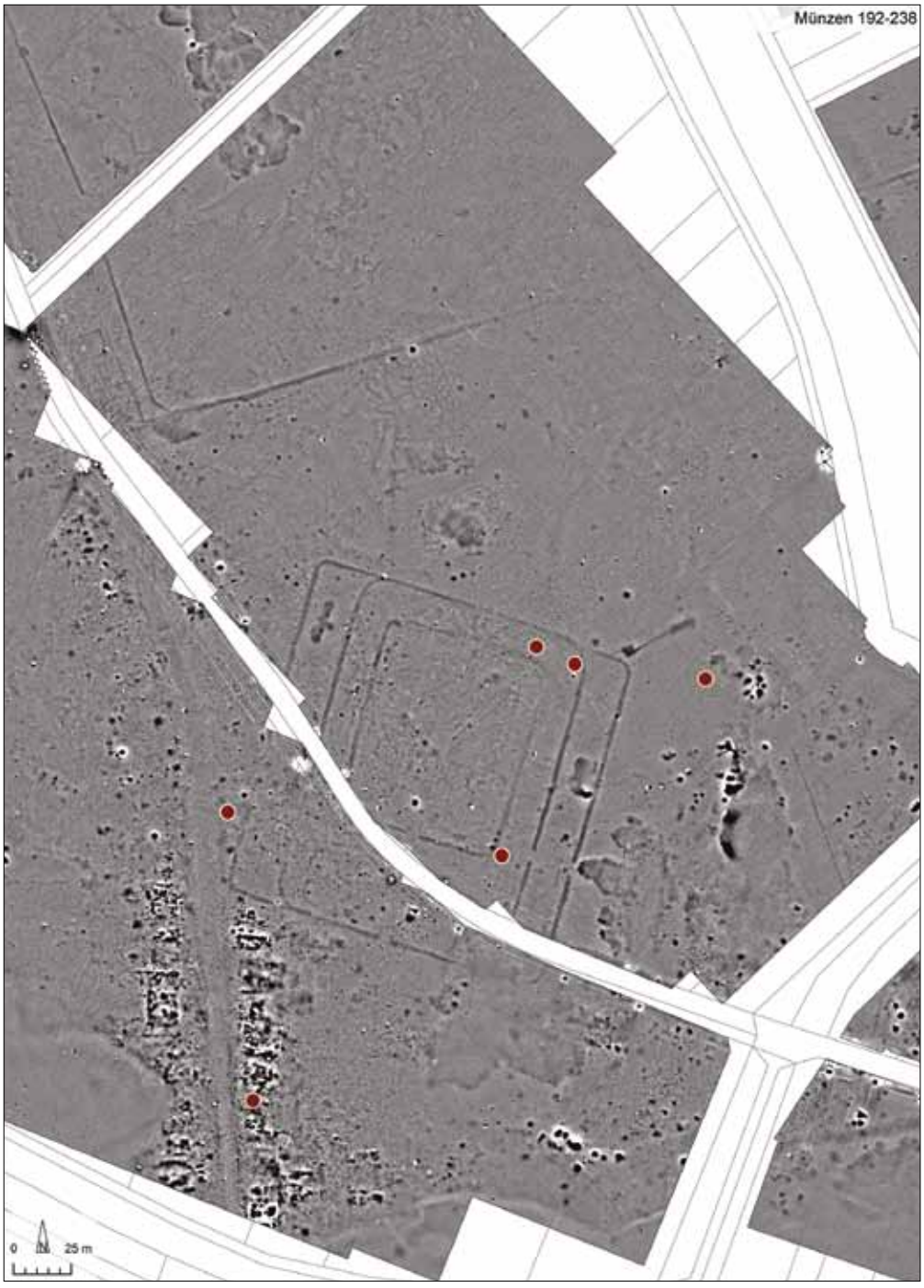
67 The data are taken from Redő 2003.

68 *Cf.* Vondrovec 2007, 127 f.; Găzdac 2010, 115. Hobley's work shows major insufficiencies: C. F. Norena, Rev. A. Hobley An Examination of Roman Bronze Coin Distribution in the Western Empire A.D. 81–192 (British Archaeological Reports International Series 688, *American Journal of Numismatics* 11, 1999, 160–164).

69 Horvat *et al.* 2003, 155–157.

EMPEROR	D	S	DP	AS	TOTAL
Septimius Severus (193–211)		1 imit.			1 imit.
Antoninus III (Caracalla) (211–217)	1				1
Antoninus IV (Elagabalus) (218–222)	2				2
Severus Alexander (222–235)	2				2
Maximinus I Thrax (235–238)		1			1
Severan unspecified	1				
TOTAL	6	1 + 1 IMIT.	0	0	7 + 1 IMIT.

TABLE 5. Coins from the Severan period from the survey/excavation in Strebersdorf (n=8). (By U. Schachinger).



MAP 4. Distribution of coins from 192 to 238 AD from the survey in Strebersdorf. (By K. Freitag, Austrian Archaeological Institute / ÖAW).

Danube *Limes* and in its hinterland. Iron coins are also very common in *Virunum* and in the territory of *Iuvavum*; they reached *Carnuntum* and *Pannonia* in decreasing numbers. The production period of these imitations generally falls in the late Severan period.[70]

At sites in *Noricum* and *Pannonia* during the Severan period, a regular increase in coin finds in the early years of Septimius Severus can be noticed; under Caracalla, the find numbers decline throughout the empire, and with Elagabalus, as well as in the 1st half of the reign of Severus Alexander, a rise in the coin curves can be observed in both *Noricum* and *Pannonia*.[71] This general pattern is only partially reflected in the survey finds from Strebersdorf: coins of Septimius Severus, and not only of the strong initial emissions with the imperatorial acclamations, are missing completely; in addition, the only documented iron coin was produced in late Severan times. Under Elagabalus and Severus Alexander only a small increase in coin finds can be stated, which corresponds to general distribution patterns at that time.

At this point, a comparison with the coin curves of selected Norican and Pannonian sites is recommended in order to check where and whether declining find numbers are witnessed under Septimius Severus. In *Ovilavis* and *Lauriacum* the coin finds increase noticeably under Septimius Severus, especially by the strong initial emissions with the imperatorial acclamations.[72] The same pattern can also be noticed in southern Norican cities, such as *Celeia*.

Whether this pattern is relevant for Strebersdorf will be shown by comparisons with Pannonian sites. In *Carnuntum* an increasing number of coin finds under Septimius Severus has been documented,[73] which could also, however, be attributed to his proclamation on site. In the *municipium* of *Scarabantia* a break-off in the inflow of coins seems to have occurred during the Severan period, especially under Septimius Severus; only with Gordian III do the find numbers rise again, which can be explained by the opening of the *Viminacium* mint.[74] In *Savaria*, too, the number of finds falls under *Septimius Severus*, even if the coin curve does not completely break off. With Elagabalus and Severus Alexander the circulation volume increases as usual.[75] In the street station of Nemescó, on the Amber Road, coins of the 2nd century are regularly in use. The inflow during the Severan period largely stops, and it starts again after the middle of the 3rd century, but only for a short time and in small numbers.[76] The same evidence can be noticed in the *municipium Salla*, where also only a few pieces from the Severan period are documented,[77] as well as in the fort at *Ad Arrabonem*; here, among the sporadic coin finds of the Severan period, only a few pieces of Elagabalus and Severus Alexander were found.[78] A similar pattern occurs in the military camp of *Ala Nova*, which was erected in Severan times, and in the legionary fortress of *Vindobona*.[79]

Consequently, the distribution pattern of Strebersdorf matches the neighbouring stations along the Amber Road (Nemescó, *Ad Arrabonem*) and the military sites along the Danube, such as *Ala Nova* and *Vindobona*, as well as the nearby towns of *Salla, Savaria* and *Scarabantia*, where the Severan period is generally poorly documented. The usually well-represented initial emissions of Septimius Severus are rare. Few specimens of Elagabalus and Severus Alexander document an increasing circulation volume. *Carnuntum*, on the other hand, shows a different pattern, which is manifested especially by the presence of the initial emissions of Septimius Severus, as well as by a stronger increase in coin finds under Elagabalus and Severus Alexander.

EMPEROR	ROM	MED	SIS	ANT	GALLIA	MINT ?	TOTAL
Gallienus (253/260–268)	7	1	1			1	10
Claudius II (268–270)	10					1	11
Aurelian (270–275)				1		3	4
for Divus Claudius II	11						11
Victorinus (269–271)					2		2
Probus (276–282)			1				1
TOTAL	28	1	2	1	2	5	39

TABLE 6. Coins of the Antoniniani period up to 294 AD from the survey/excavation in Strebersdorf (n=39). (By U. Schachinger).

70 Pfisterer 2007, 672–675; Pintz 2014, 267–270.

71 *Cf.* Schachinger 2017b; Vondrovec 2001, 133–134 f.

72 Vondrovec 2007, 133 f; Schachinger 2017a, 338–340; Schachinger 2018.

73 Vondrovec 2007, 133–134 f.

74 Schachinger 2013, 166; 168, Fig. 86.

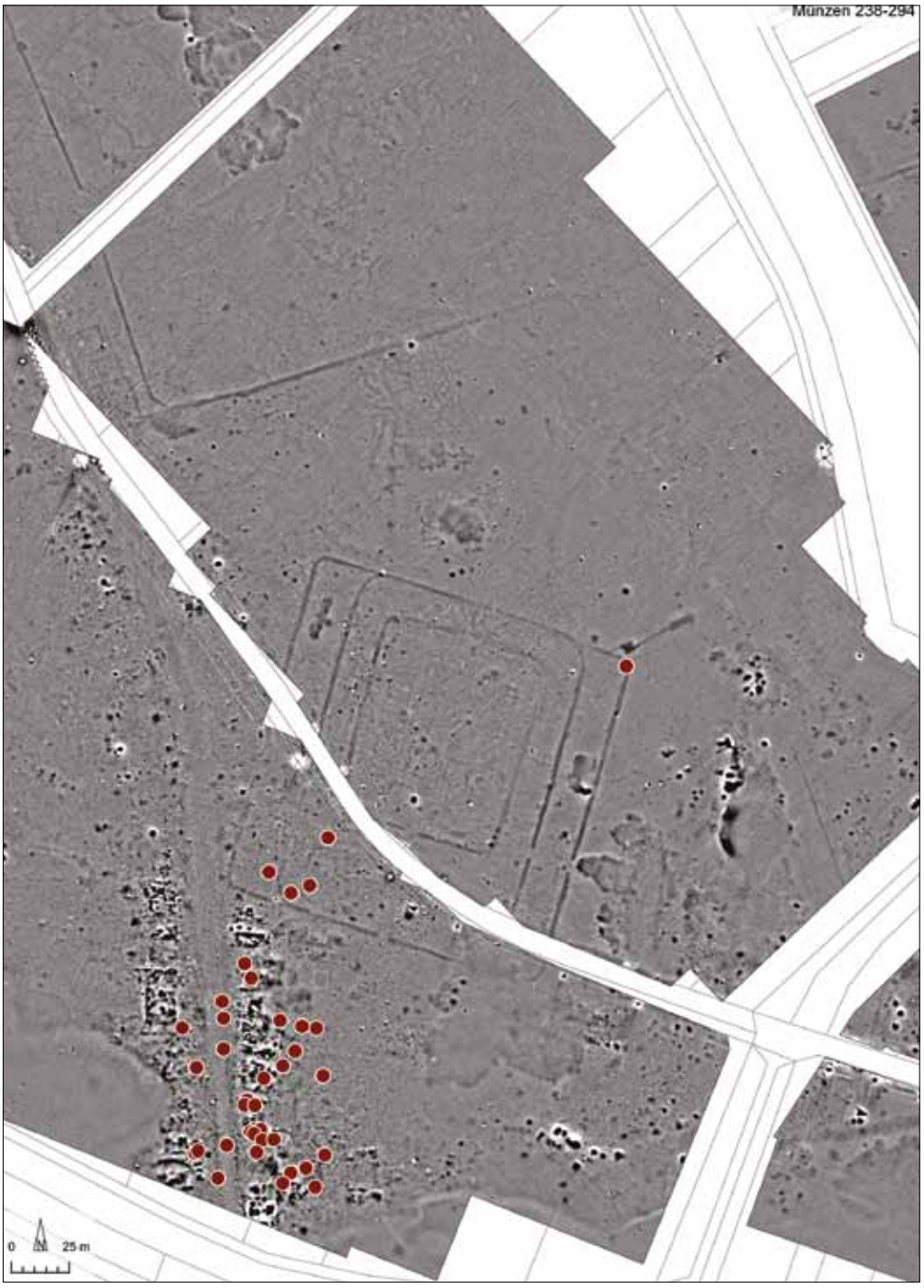
75 Redő 2003, 230; Schachinger 2013, 166–167 f.

76 Schachinger 2013, 161–162 f.

77 Redő 2007, 14 f.; Redő 2003, 213–223; Schachinger 2013, 171.

78 FMRU II, 69–72.

79 Schachinger 2019, 21–25; 32.



MAP 5. Distribution of coins from 238 to 294 AD from the survey in Strebersdorf. (By K. Freitag, Austrian Archaeological Institute / ÖAW).

In the so-called *Antoniniani* period (238–294 AD), the number of coin finds increases significantly. However, Map 5 shows that the coin finds are shifting towards the street settlement and disappearing from the area of the former military camp. The proportion from this period amounts to only 9 % of the total material; if only the period of the Principate is taken into account, it amounts to a quarter. This is a much smaller amount than in Norican and Pannonian cities.

For example, *Antoniniani* make up 17 % of the total coin finds in *Ovilavis*, 23 % in *Virunum*, 19 % in *Celeia*,[80] 30 % in *Flavia Solva*, and 18 % in *Carnuntum*. On the other hand, the cities of *Scarabantia*, with 9 %, and *Salla*, with 8 %, show significantly different proportions. However, in the fort of *Ad Arrabonem*, the percentage of *Antoniniani* amounts to 19 %, while in the nearby *vicus* no coins from this period are documented.[81] Strebersdorf – as far as coin finds from the survey are concerned – thus shows matches with *Scarabantia* and *Salla*, which means that, in comparison with other sites in *Noricum* and *Pannonia*, as well as with other settlements along the Amber Road, such as Neckenmarkt,[82] the *Antoniniani* period is significantly underrepresented.

80 See also Kos 1986, 92–104.

81 FMRU II, 69–72.

82 *Cf.* Dick 1984, 537–573.

In *Carnuntum*, as well as in Norican cities, a relatively consistent pattern can be noted in this period, which is rooted in the minting policy between c. 250 and 280 AD. Accordingly, the coin finds are only slowly increasing just after the currency conversion to *Antoniniani* in 238 AD, because the money was still made of good silver. Only with decreasing silver content and increasing output from the middle of the century onwards does the circulation volume increase massively. The mass emissions under Gallienus, especially the 9th and 10th Roman emission of 264/267 AD and 267/268 AD, as well as Claudius II and DIVO CLAVDIO types, are represented by clear peaks in the coin curve. This means that an absence of these emissions in coin curves relates to local circumstances. It is known that, until the so-called Aurelian's reform of 274 AD, which resulted in a loss of purchasing power due to the increase in nominal value, the emissions were large, which is generally reflected in large quantities of coin finds. Only after 274 AD do the coin finds decrease again throughout the empire, until Diocletian's reform in 294 AD. Therefore, especially the period between c. 250 and 280 AD is regularly well documented in the coin curves; a proportion of only 9 % of the total material must therefore be related to local conditions. So the question is why there is no more money from this period, or whether the site of the former camp was simply no longer in continuous use.

However, a closer look at Fig. 1 shows that this period nevertheless displays the regular form of coin curve relating to the minting policy at the time: coins from shortly after the currency conversion of 238 AD are not represented, which is explained by the fact that good, silver-containing *Antoniniani* generally appear rarely until the middle of the century. Only from c. 260 AD onwards does the coin curve rise rapidly until 270. Between 268 and 270 AD it reaches its highest peak. All relevant mass issues are reflected, especially those of Gallienus and Claudius II, as well as DIVO CLAVDIO types; there are also 2 Gallic *Antoniniani* of Victorinus from 269/270 AD, which is not uncommon, since these coins occasionally reached far into the East. After 274 AD the coin curve decreases rapidly.

If we compare the coin curves of the cities of *Savaria, Scarabantia* and *Salla*, we also notice a significantly lower level in the *Antoniniani* period than, for example, at the military sites of *Carnuntum, Vindobona* or *Ala Nova*. In the three cities the quantity of coin finds of the *Antoniniani* period is far behind the 4th century, even though continuous coin circulation can be assumed. Coins from this period are also rarely documented in the fort of *Ad Arrabonem*, while they are completely absent in the nearby *vicus*.

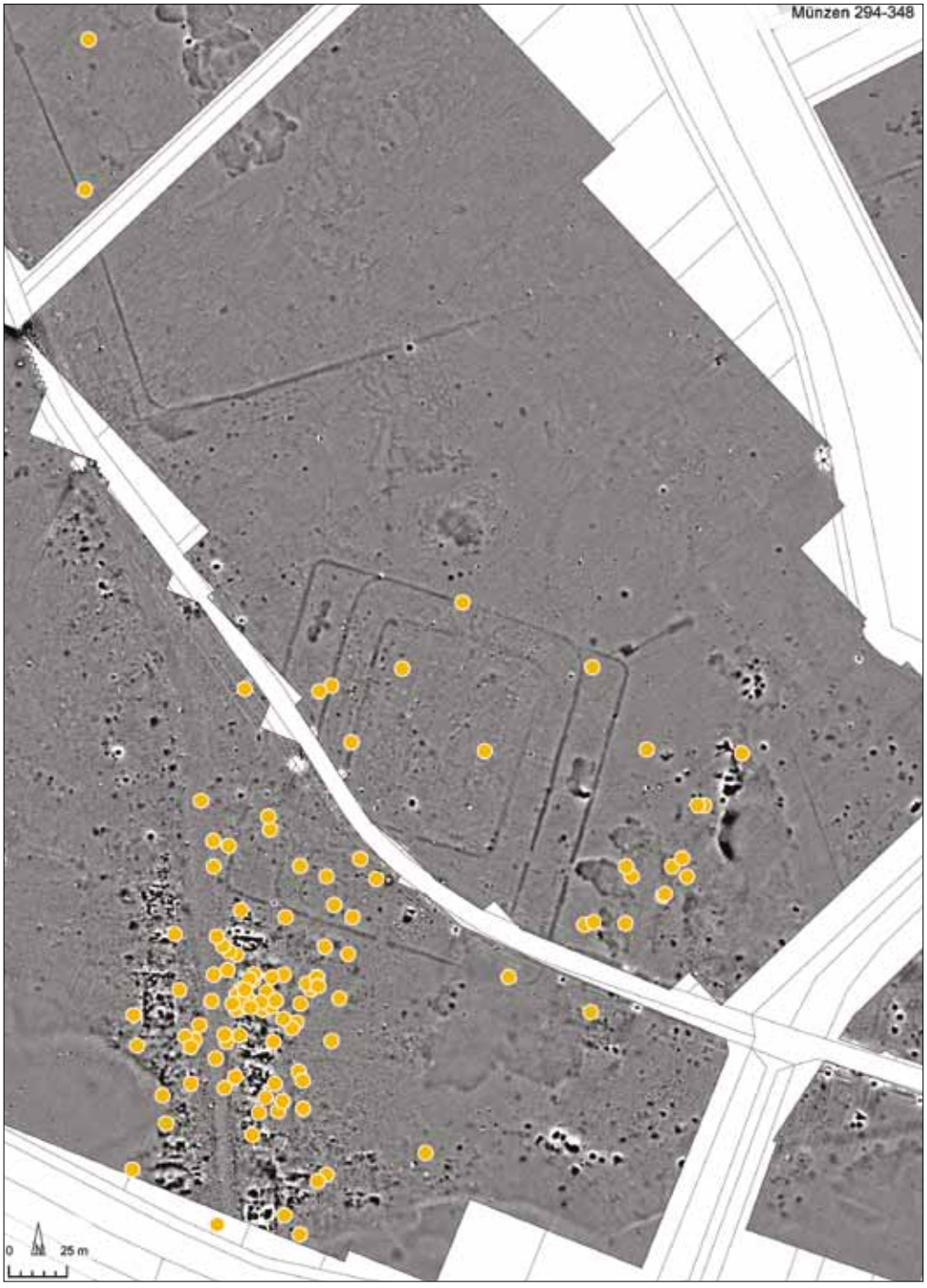
For the *Antoniniani* period of the 3rd century, it can therefore be stated that coin finds are regularly represented and that all parameters speak of a continuous money supply. However, the absolute number of coin finds is somewhat below average. In addition, the coins no longer originate from the area of the former military camp, but are concentrated in the street settlement (Map 5).

The 4th century and the end of coin circulation

After the reform of Diocletian in 294 AD, the coin finds generally rise only slightly until Constantinian times, which can be explained by Gresham's Law, according to which good money is driven out by bad money. Only when the coins gradually lose

TYPE	MINTING PERIOD	TOTAL NUMBER
CONCORDIA MILITVM, Emperor and Jupiter (rad.frac.)	295–299	1
GENIO POPVLI ROMANI, Genius sacrificing	294–313	2
IOVI CONSERVATORI, Jupiter	308–318	1
SOLI INVICTO COMITI, Sol	313–319	2
PROVIDENTIAE AVGG, Camp gate	316–330	1
VICTORIAE LAETAE PRINC PERP, 2 Victories, altar	318–320	1
VIRTVS EXERCIT, Vexillum, 2 Captives	319–321	1
Vota-types, Constantinian	320–325	2
GLORIA EXERCITVS, 2 soldiers with 2 standards	330–336	12
VRBS ROMA, Lupa	330–337	4
CONSTANTINOPOLIS, Victory	330–337	2
GLORIA EXERCITVS, 2 soldiers with 1 standard	335–337	11
GLORIA EXERCITVS, 2 soldiers with 1 standard	337–340	19
Divo Constantino, Quadriga	337–340	1
VICTORIAE DD AVGQNN, 2 Victories	341–348	38
Divo Constantino, VN-MR	341–348	1
VOT XX MVLT XXX	341–348	3

TABLE 7. Distribution of coin types up to 348 AD (except unspecified coins). (By U. Schachinger).

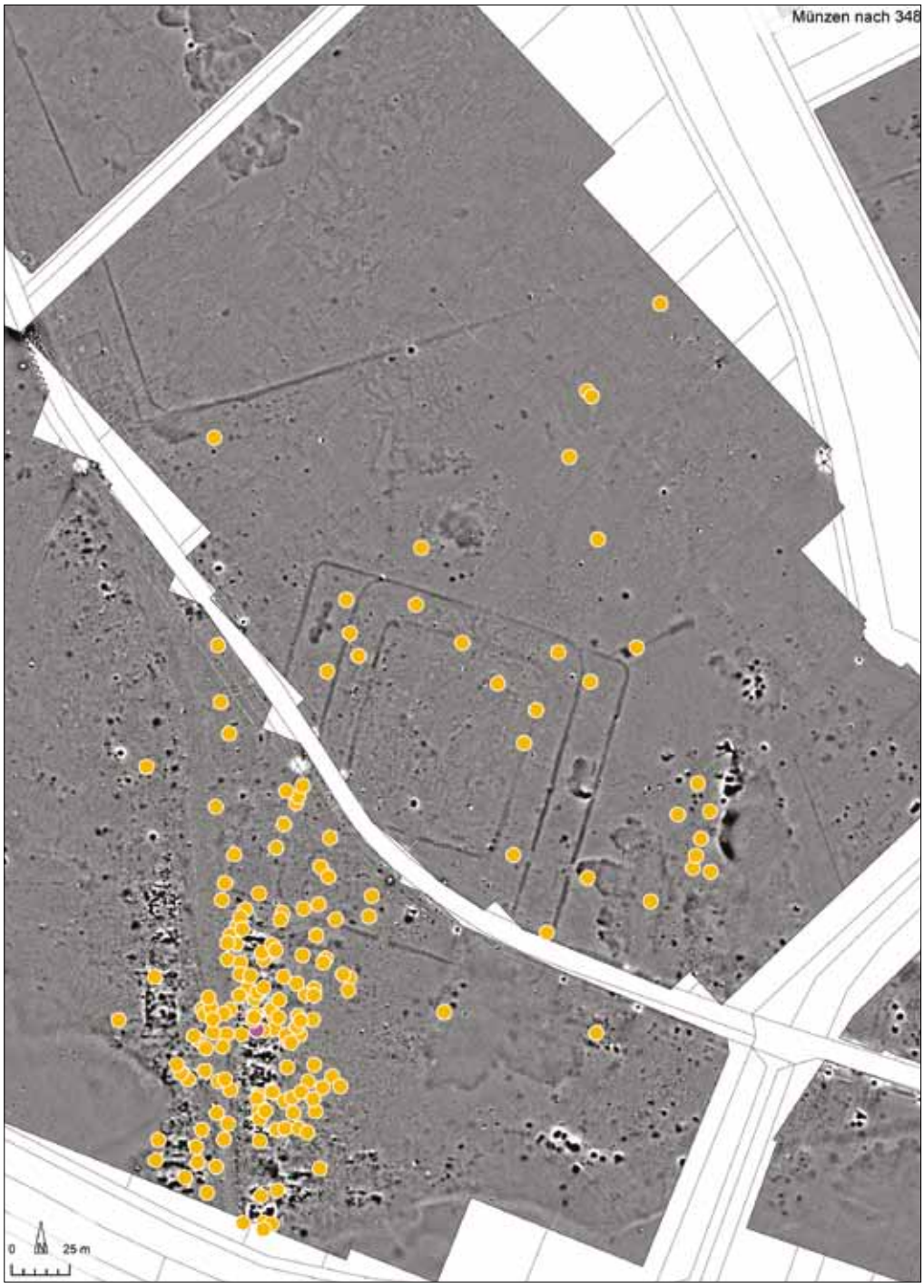


MAP 6. Distribution of coins from 294 to 348 AD from the survey in Strebersdorf. (By K. Freitag, Austrian Archaeological Institute / ÖAW).

weight and size until the middle of the century; only then do they reappear increasingly in finds. Moreover, until Constantinian times a considerable proportion of the circulation volume still consisted of 3rd-century *Antoniniani*. This means that the coin curves do not reflect real circumstances. They depict the minting times of the coins, but not their time of loss. Furthermore, with decreasing weight larger quantities of coins were produced, which means that, in the 4th century, a larger amount of money was needed for daily groceries. This aspect must also be taken into account when assessing the coin circulation of the 4th century. Nevertheless, the circulating quantity must have been high, anyway.

Therefore an uninterrupted coin supply and coin use can be assumed in Strebersdorf in the 4th century. Fig. 1 shows hardly any differences from the normal distribution patterns of *Noricum* and *Pannonia*. Accordingly, the number of coin finds increases gradually with the gradual weight reduction of the *folles*, with newly issued coin types indicate further stages of reduction.[83] Furthermore, evidence which clearly arose in the *Antoniniani* period is continuing: the finds are concentrated exclusively in the area of the street settlement (Map 6).

83 Wigg 1991, 224–225 f.



MAP 7. Distribution of coins of the post-reform period after 348 AD from the survey in Strebersdorf (red=Vandalic coin). (By K. Freitag, Austrian Archaeological Institute / ÖAW).

A total of 112 coins are documented from the so-called *Follis* period (294–348 AD), which is 26 % of the total number of coin finds from the Strebersdorf survey, which indicates continuous monetary activity during the Constantinian period. Except for sporadic pieces of the first tetrarchy from the period before 305 AD – consisting of 2 full-weight *folles* and 1 fraction (*radiatus*) (RIC 19a, Her; RIC 46b, Ale; Fol undet. 294/305) (Tab. 7) – the finds initially increase very slightly. From the entire period between 305 and 330 AD, only 9 coins are documented. A rapid increase in coin finds occurs after 330 AD, then the quantities remain at the same level until c. 380 AD. Among the Constantinian coin types, all relevant series up to the *aes* reform of 348 AD are represented. This pattern, i.e. an increase in the number of coin finds from Constantinian times and a relatively constant level until the middle of the century, can be noticed both in the Norican cities, such as *Ovilavis*[84], *Virunum*[85] and *Celeia*[86], and in the settlements along the Amber Road, such as Horitschon and Neckenmarkt.[87] In *Carnuntum* the finds also increase strongly from the 330s on-

84 Vondrovec 2003, 28.

85 Increase even from 310 AD onwards; the data are taken from Schmidt-Dick 1989.

86 The data are taken from FMRSI II–IV.

87 *Cf.* Dick 1984, 469–475; 537–573; Schachinger 2013, 165–166 f.

TYPE	MINTING PERIOD	DENOM.	TOTAL NUMBER
FEL TEMP REPARATIO, Galley	348–355	Mai	2
		Cen	1
FEL TEMP REPARATIO, Fallen horseman	348–355	Mai	5
	348–361	Cen	54
CONCORDIA MILITVM, Emperor with standard	350–355	Mai	1
VICTORIA AVGVSTORVM, Victory	350–351	Cen	1
VICTORIA CAESARIS, Victory	351	Cen	1
SPES REIPVBLICE, Emperor with globe	355–361	Cen	19
VOT X MVLT XX	361–363	Cen	1
VOT V MVLT X	363–364	Cen	2
GLORIA ROMANORVM, Emperor and captive	364–378	Cen	26
SECVRITAS REIPVBLICAE, Victory l.	364–378	Cen	51
SALVS REIPVBLICAE, Victory l., captive	378–403	½ Cen	3

TABLE 8. Distribution of coin types after the aes reform of 348 AD (except unspecified coins). (By U. Schachinger).

wards and even more in the 2nd half of the 4th century;[88] a similar distribution pattern can be seen at the military sites of *Ala Nova* and *Vindobona*.[89] In the *municipium* of *Scarabantia*, too, find numbers increase in the 1st half of the 4th century, especially in the amphitheatre – they reach a peak in this period – although in the city the quantities of the 4th century are generally lower than those of the 2nd century.[90] The coin curve of *Salla* shows a pattern similar to that of Strebersdorf: after a weak presence of coin finds during the Severan and *Antoniniani* period, the coin curve increases significantly in Constantinian times, with a first peak in the 320s (with Vota types). In *Ad Arrabonem*, the 4th century is generally weakly represented, but the finds speak of continuous coin use.[91]

The inflow of coins in the 1st half of the 4th century was mainly from nearby *Siscia* (36 % of the exactly determinable coins), but *Aquileia* and *Thessalonica* also supplied decreasing but continuous quantities (18 % and 12 %). The even more distant mints of Rome and Cyzicus account for 9 % of the coin finds of this period. This corresponds to the general pattern of Norican and Pannonian cities.[92]

A total of 174 coins are documented from the 2nd half of the 4th century, the so-called *Maiorinae* or post-reform period, which is 40 % of the total material. The Constantinian (348–363 AD) and the Valentinian (364–378 AD) periods are equally distributed. The find mapping (Map 7) clearly shows that the monetary activity was concentrated in the area of the street settlement and is connected with continuous iron mining (finds also come from the area of the mining pits.)

Under Constans and Constantius II an *aes* reform was undertaken in 348 AD to counteract the inflation of the *Follis* period. As there was certainly a considerable quantity of older *folles* still in use, this did not cause a break in coin circulation, and one can generally speak of an increasing circulation volume in the 2nd half of the 4th century. In many places, the coin finds of the 4th century are the best-documented, with those of the 2nd half of the century predominant, such as in *Carnuntum*, in the legionary fortress and the *canabae*.[93] In *Vindobona* and *Ala Nova*, too, the 4th century is documented continuously; in the later civilian site of the former fort of *Ala Nova* there is even a preponderance of coins minted after 348.[94] During the Valentinian period, the sites along the Rhine and Danube *Limes* experienced a general upswing due to the fortification of the Danube and Rhine frontiers. This caused constant quantities of coin finds during this period.[95] The settlements along the Amber Road also benefited from this; the coin curves of Horitschon and Neckenmarkt show high levels of coin finds. In *Scarabantia*, on the other hand, the number of finds remains about the same as in the 1st half of the

88 Vondrovec 2007, 158–164.
89 Schachinger 2019, 26–29; 32.
90 FMRU II, 131–136.
91 FMRU II, 69–72.
92 Vondrovec 2007, 165–169, with comparative graphs.
93 Vondrovec 2007, 197; 210.
94 Schachinger 2019, 29–33.
95 *Cf.* Peter 2001, 271–273.

century, but the numbers in total are low. In *Savaria*, coin finds of the 4th century generally form a peak and decrease again continuously towards the end of the century.[96] In *Ad Arrabonem* they are distributed more or less equally during the entire 4th century, with declining numbers from the beginning of the Valentinian period onwards.[97] The coin curve of *Salla* shows strong similarities to that of Strebersdorf: the find numbers increase continuously during the *Follis* period until the middle of the century, and the 2nd half of the 4th century is most strongly represented; here the Constantinian and Valentinian periods are represented approximately equally.

Hence, in Strebersdorf continuous monetary activity can be assumed for the 2nd half of the 4th century. Fig. 1 shows a clear emphasis between 348 and 378 AD, wherein the circulation volume is certainly still increased by the presence of old folles of the 1st half of the century. The composition of coin types corresponds to the minting output of the period (Tab. 8); the predominant denomination is *aes* 3 pieces – or *centenionales*, as classified by the Vienna School – which are considered the main currency in small change in this period. In addition, there are *maiorinae* of the early minting phase of 348–355 AD; those of the later phase of 378–383 AD are not documented. After 378 the number of coin finds decreases rapidly, which pattern is also regularly documented in the Rhine and Danube provinces. The coins in this period mainly came from the nearest mints of *Siscia* (60 % of the exactly determinable coins) and *Aquileia* (8 %), this pattern having continued since the *Follis* period and shown no variation whatsoever.

Finally, the question arises as to whether or when coin supply ceased and coin circulation came to an end in Strebersdorf. As early as 378 AD, a regular inflow of new coins ceased almost completely, as can be noted from Fig. 1. Neither the *maiorinae* series of 378–383 AD (REPARATIO REIPVB) nor larger quantities of half-*centenionales*, the main currency after 378 AD, are documented. A total of 6 half-*centenionales* is documented, which corresponds to only 1.33 % of the total quantity of coin finds from the Strebersdorf survey. Despite the divergence of the state of research, similar numbers are reported from Norican cities. For example, the stock of half-*centenionales* in *Celeia* makes up 2.3 %, while in *Ovilavis* and *Virunum* it decreases to the per-mille range. In *Lauriacum* its proportion is 3.6 %.[98] Thus, in relation to the total material, the presence of 6 pieces is somewhat significant. Furthermore, all half-*centenionales* show relatively marked signs of wear.[99] This may be caused by a long circulation period. Taking into account the degrees of preservation of Valentinian coins in order to verify a presumably longer circulation period, there is a clear picture: 12 % of the coins did not show any degree of preservation due to corrosion; 72 % of the coins showed a degree of wear of 3 or more, with most pieces classified as 4. Only 16 % of the coins were in good condition, i.e. with fewer traces of circulation. This evidence can therefore be related with some certainty to a continuing circulation of the coins from the 2nd half of the 4th century.

How long this circulation period may have been could possibly be revealed by the presence of one Vandalic coin (RIC 3805) found in Strebersdorf. At 0.82 grams, the piece is significantly lighter than regular Roman coins. It is a migration-period imitation of a Roman half-*centenionalis* of the common SALVS REIPVBLICE type with Victory running to the left. On the obverse a pearl-diademed bust is depicted, as well as remains of letters that could represent either DOMINO NOSTRO or DOMINIS NOSTRIS, or a similar legend. Kent[100] associates the type either with Boniface, a loyal general of Theodosius II until the usurpation of Iohannes (423–425), or with Geiseric and his agreement with Valentinian III in 442. This could indicate that Roman money probably circulated until at least 423/425 AD or even 442 AD in Strebersdorf.

In summary, it can therefore be stated that the monetary activity in Strebersdorf increased in the Constantinian period in comparison to the preceding *Antoniniani* period. This is particularly expressed in increasing coin finds from the 330s onwards, with a consistently high level between 335 and 378 AD. The bronze-metal reform of 348 AD does not lead to a break-off in the coin curve. It can be assumed that the money used in the 1st half of the 4th century continued to circulate in the 2nd half of the century. Although due to the production of larger quantities of small bronze coins with lower value, which leads to a general increase in coin finds from the 4th century, nevertheless the circulating volume during this period must have been continuously high. The concentrations of finds in the 4th century do not coincide with the location of the early military camp, but highlight some economic wealth in the street settlement, which is certainly caused by continuous iron mining. In addition, the finds also occur in the area of mining pits and along the Amber Road. It can be assumed that the regular inflow of coins ceased shortly after 378 AD, but the existing volume probably continued to circulate at least into the 420s or even 440s, which is suggested by the presence of an imitative Vandalic issue.

The coin curve from the Strebersdorf survey in comparison with the complete stray finds from the find zone

In the following, the coin finds from Strebersdorf (survey/excavation 2008–2017) analysed above will be compared with the stray finds from Strebersdorf and Frankenau, known from the find zone and mostly published in the FMRÖ series by Franziska Dick, in order to answer the following questions:

1) Does coin use generally start in late Augustan / early Tiberian times?

2) Does inflow of coins generally break off in late Tiberian / early Claudian times?

3) Is the Severan find level similarly low?

96 Redő 2003, 230; Schachinger 2013, 166–167 f.

97 FMRU II, 69–72.

98 Schachinger 2017a, 327.

99 Degrees of preservation according to IFS 1995.

100 RIC X, 233–234 f.

4) Is the *Antoniniani* period more strongly represented?

5) Are coins from the 4th century, especially from the 2nd half of the century, continuously documented?

The entire stray finds from Strebersdorf/Frankenau consist of the following complexes:

COMPLEX	YEAR	TOTAL NUMBER
Frankenau, detector findings Eder (partly from Plot 3124)	2005–2008	325
Strebersdorf, Dick, FMRÖ I/2 (so-called Krautäcker field)	1984	1,810
Frankenau, Dick, FMRÖ I/2	1984	52
TOTAL NUMBER		2,187

TABLE 9: Total material from Strebersdorf/Frankenau (except survey/excavation of 2008–2017). (By U. Schachinger).

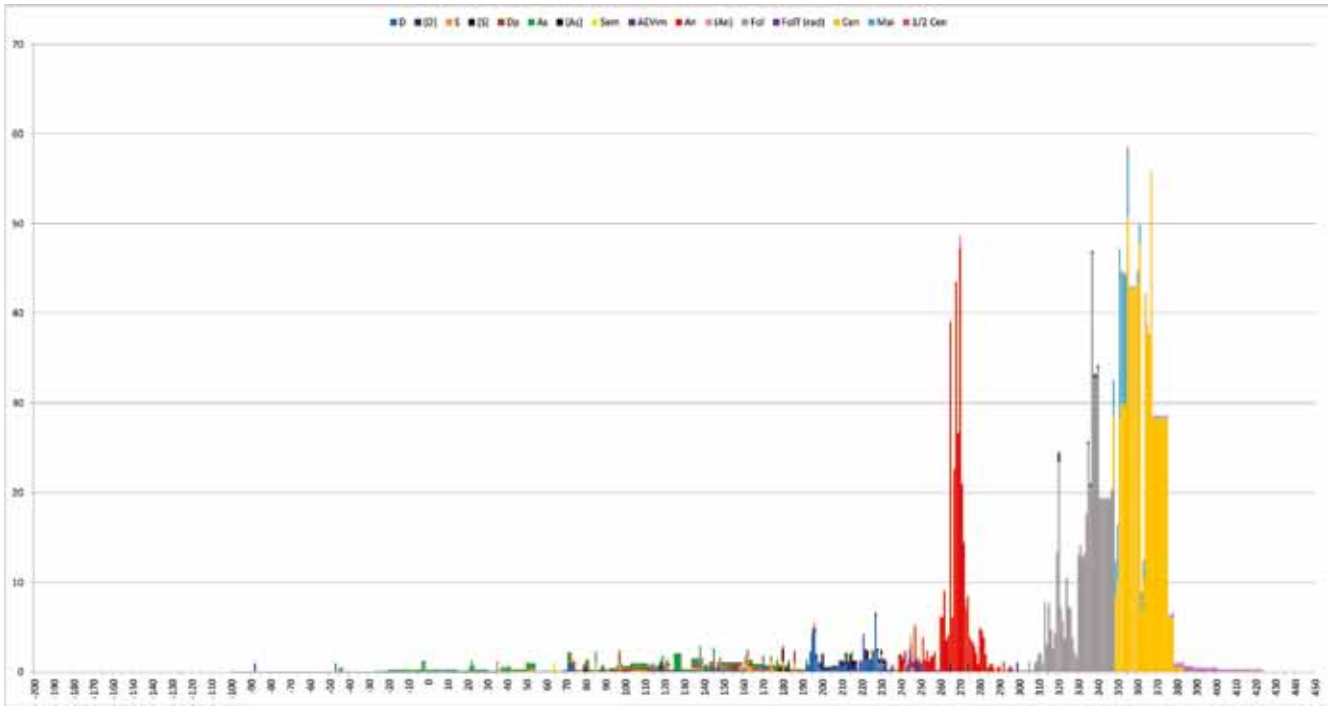


FIGURE 2. Stray finds from Strebersdorf/Frankenau (x-axis: date; y-axis: total number of coins) (n=2187). (By U. Schachinger).

A look at both the annual index chart (Fig. 2) and the percentages of the chronological periods (Fig. 3) immediately reveals that the time before 250 is generally quite poorly represented. The percentage of coins up to 250 AD amounts in total to only 10 % of the entire material. This evidence contradicts the assumption of a regular coin circulation in the entire settlement area before the 3rd century. In contrast, in the survey area, coins from the time before 250 AD make up more than a quarter (Fig. 4).

1) Republican, Augustan and Tiberian coins must be regarded as determining the beginning of Roman coin circulation. Republican coins are represented by only 4 pieces in total: 1 halved *as* and 2 coins from the transition period. These types also appear in the area of the military camp (survey finds). Republican material is represented in the stray finds by only 0.19 %, while it amounts to 3.15 % among the survey finds. An equally big difference can be noticed concerning Augustan coins, 51 of which are documented in the survey finds, compared with 7 stray finds. All of them are *asses*. There are 6 moneyers' *asses*, 1 of which bears the same countermark AVG (AV ligated) as the coins from the survey. There are no *Lugdunum* or *Nemausus* types. This evidence clearly indicates that the Republican and Augustan stray finds relate to the military presence on site. The stray finds of Tiberian times also support this result. There are 5 Tiberian types, 3 of which are also represented in the survey finds. They include 1 Providentia and 1 Drusus issue. The few Republican, Augustan and Tiberian coins can therefore be associated with the military camp. Regular Roman coin circulation in the wider area of the later *vicus* and street settlement certainly was not yet taking place: it was restricted to the military site.

2) Furthermore, it has to be examined whether the stray finds also show a break-off in coin supply in the late Tiberian / early

Claudian period. Up to Trajan the number of stray finds from Strebersdorf/Frankenau is generally very low. Only 6 Claudian coins are documented, which is very few in relation to the total number of 2,187 coins. The later emperors Caligula and Nero are also only scarcely present. As already mentioned, large quantities of Providentia and Agrippa *asses* indicate Claudian and Neronian coin circulation. These types usually appear ten times more frequently than bronzes of Tiberius and Caligula. The coin curve of the survey finds already suggests an interruption in the coin supply during the Claudian period, due to the rare presence of Providentia and the complete absence of Agrippa *asses*. The stray finds from Strebersdorf/Frankenau comprise only 1 Providentia type, 2 Agrippa *asses* and 6 Claudian bronzes. Assuming, as M. Peter has stated,[101] a tenfold-higher proportion of Providentia *asses* than of Tiberian *aes*, the presence of 2 Tiberian coins would require at least 20 Providentia *asses*. The same refers to Agrippa *asses*. Since this equation does not apply, the regular presence of a Claudian coin circulation on site is unlikely. Moreover, from Tiberius to Claudius and Nero, only bronze coins are present, whose circulation period regularly extended into the 2nd and also to the 3rd century. Particularly in the Severan period, when the minting of *aes* was reduced, the circulation of small change was largely composed of *aes* from the 2nd and 1st centuries AD. According to this, the few coins from this period could be explained as belonging to a later circulation volume. In addition, the coin types of the stray finds completely correspond to those from the survey, which means that all Republican and early Imperial coins must be interpreted within the context of the military camp. Only towards the end of the 1st century – possibly already in Flavian times – the stray finds increase, which can be related to the development of the adjacent street settlement and *vicus*.

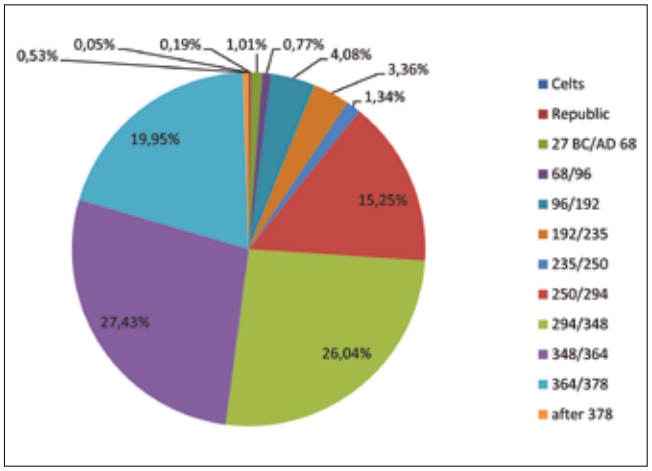


FIGURE 3. Percentages of stray finds from Strebersdorf/Frankenau by chronological period (n=2187). (By U. Schachinger).

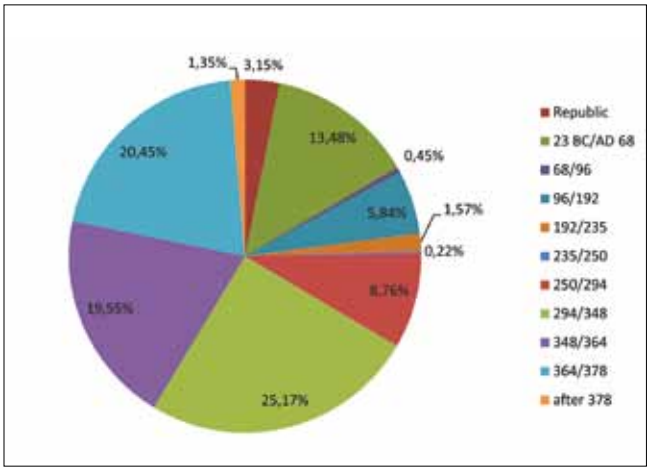


FIGURE 4. Percentages of survey/excavation finds from Strebersdorf (2008–2017) by chronological period (n=452). (By U. Schachinger).

101 Peter 2001, 61.

3) The Severan period is only poorly represented in the survey findings from Strebersdorf. This raises the question of whether there was a general interruption of coin supply, or whether the topographic focus was somewhere else. Monetary activity in the area of the former military camp declined considerably during the Severan period (Map 4). Few coins are distributed in and around the former camp. There are 8 coins that originate from the survey. In contrast, the stray finds show a significant increase in coin finds during this period; 70 stray finds are contrasted with the few pieces from the survey. Furthermore, the Severan coin curve corresponds to the general distribution pattern of Norican and Pannonian sites, with initial peaks in the early years of Septimius Severus (imperial acclamations), and furthermore the widespread decrease under Caracalla and increasing quantities under Elagabalus and Severus Alexander. The focus of coin losses seems to have shifted from the military site to the civilian settlement, where a strong monetary upswing can be observed, which also took place in other settlements during this period.

4) The *Antoniniani* period, or more precisely the period of mass emissions between c. 250 and 280 AD, was represented in the survey finds in very low quantities compared with other settlements. This picture is revised by the stray finds, for the *Antoniniani* period here is represented by more than 15 %. This corresponds to the quantities of comparable settlements (see above). Thus, an uninterrupted coin circulation and continuous economic wealth in the civilian settlement can be assumed.

5) As witnessed by the survey finds, a focus of monetary activity is also apparent in the stray finds in the 4th century. The number of coin finds increases continuously from 310 AD onwards until the middle of the century. Especially after 330 AD, coin production of more and more weight-reduced pieces was increased. There seems to be a preponderance of coin finds in the 2nd half of the 4th century. The total percentage of coins of this period amounts to more than 40 %. As already mentioned above, a con-

tinuously increased circulation volume can be expected during this period, since even older money from the 1st half of the 4th century remained in circulation. Thus, one can generally speak of continuous monetary activity in Strebersdorf/Frankenau in the 2nd half of the 4th century. This pattern is also noticed in other settlements of the region, such as the cities of *Savaria* and *Salla*, as well as the settlements of Horitschon and Neckenmarkt on the Amber Road.

Conclusion

The beginning of the monetary circulation in Strebersdorf is connected with the erection of the earliest military camp. According to the numismatic evidence, it is dated to the late Augustan / early Tiberian period and can be linked with the events after the Roman occupation of *Pannonia*, which was caused not only by territorial expansion, but also by economic considerations. At the same time as the construction of military posts, an economic development began in the area, and the Amber Road was extended. An early trading post had already been established in *Scarabantia* during the reign of Augustus. First military camps had been erected on the Amber Road, as for example in *Poetovio* in 15 BC. After 9 BC the conquered territories stood under military administration. Shortly after the uprising of the Pannonian Revolt in 6 AD a legion was stationed in *Poetovio;* and, after the revolt was suppressed, a first fort was also built in *Savaria* in 9 AD. At that time the Amber Road developed as supply and trading route to the Danube, which required the erection of camps and stations along the road. During this time the earliest camp in Strebersdorf was constructed. In late Tiberian / early Claudian times an interruption in the coin supply can be observed, since all relevant parameters indicating Claudian and Neronian coin circulation are missing. Only with the establishment of a civil administration under Claudius did Roman coin circulation generally develop in the province. Nevertheless, the coin finds in Strebersdorf are not as numerous as one might assume, either in Claudian or in Flavian times. From then on, coin loss increasingly occurred in the vicinity of the early military site, and no longer within its core area, which indicates the abandonment of the fort and the development of an adjacent street settlement. In the times of Trajan and Hadrian the quantity of coin finds clearly increases with the expansion of the civil settlement. A renewed military presence from Hadrian onwards is suggested by the fact that the Amber Road had to be secured and the mining of bog iron ore deposits had to be supervised. The high ratio of silver to bronze coins shows a pattern deviating from the normal distribution. It could probably relate to the presence of soldiers.

In addition, the regular distribution of bronze coins in the stray finds already indicates a lively marketplace. During the Severan period a clear topographical shift in the coin finds can be recognized: in the area of the former military camp, the coin finds decrease, while they increase significantly in the stray finds. Thus, the settlement of Strebersdorf/Frankenau seems to have participated in the general upswing during the Severan period. This trend continues during the *Antoniniani* period; the finds occur almost exclusively in the area of the street settlement, which apparently establishes itself as an economic centre. Continued development can be expected in the 4th century, with steady monetary activity in the 2nd half of the century. This pattern is also observed in other settlements along the Amber Road, such as Horitschon and Neckenmarkt. A break-off in regular Roman money supply takes place around, or shortly after, 378 AD, which can probably be put into the historical context of the riots at the Pannonian *Limes* and its breakdown. However, the fact that the available volume of money continued to circulate until the 1st half, or the middle, of the 5th century is witnessed by the presence of an imitative Vandalic issue left behind by the Vandals on their procession along the Danube to *Raetia*.

Catalogue[102]

NO.	MINT	DENOM.	DATE	MINT-MARK	CIT.	WEIGHT	DIM.	PRES.	FIND-NO. / YEAR
				L.FLAMINI CILO					
1.	Rom	D	109/108 BC		Cra 302/1; Pz	3.58	18.3	3	53/2012
				M.HERENNI					
2.	Rom	D	108/107 BC		Cra 308/1a; Pz	3.42	17.8	3–4	4073/2012
				Republic: unspecified					
3.	Rom	As (halved)	189/89 BC		Cra ?	14.42	34.2	5	5367/2013
4.	Rom	As (halved)	189/89 BC		Cra ?	11.58	30	5	M 034/2009
5.	Rom	As (halved)	189/89 BC		Cra ?	9.54	28	5	297/2012
6.	Rom	As (halved)	189/89 BC		Cra ?	8.61	28	5	M 062/2009
7.	Rom	As (quart.)	189/89 BC		Cra ?	4.98	21.6	0	6991/2013
8.	Rom	As (halved)	189/89 BC		Cra ?	3.38	27	5	10467/2013
				M.CATO					
9.	Rom	Qui	89 BC		Cra 343/2b	1.43	15	4	1788/2012
				CN.LENTVL					
10.	Rom	Qui	88 BC		Cra 345/2	1.37	16	4	6757/2013
				L.CASSI LONGIN					
11.	Rom	D	63 BC		Cra 413/1	3.5	20	3	M 071/2009
				L.MVSSIDIVS T.F LONGVS IIIIVIR A.P.F					
12.	Rom	D	42 BC		Cra 494/43a	3.47	19.1	3–4	4056/2012
				M.ANTONIVS IMP.IIIVIR R.P.C					
13.	Wms	D	42 BC		Cra 496/1	3.43	18	2–3	13016/2017
				Octavian and Divus Caesar					
14.	Copia	Dp (halved)	36 BC		RPC 515	8.31	30.7	2	117/2012
				Augustus (27 BC–AD 14)					
15.	Nem	As (halved)	10/14		RIC 159–161	6.46	27	3	2598/2012
16.	Lug	D	2/1 BC		RIC 207	2.51	17	3	5086/2013
17.	Lug	D (halved)	2 BC/AD 5		RIC 207–212	1.52	19	4–5	628/2010
18.	Lug	As (halved)	7 BC/AD 14		RIC 230, 233, 237–238b, 242 or 245	3.9	24	4	M 085/2009
19.	Lug	As (halved)	7 BC/AD 14		RIC 230, 233, 237–238b, 242 or 245	2.76	25	4–5	M 049/2009
20.	Lug	As (halved)	10/14		RIC 233 RIC 233, 237–238b, 242 or 245	3.03	24.1	5	4279/2013
21.	Rom	As	16/15 BC		RIC 386	9.07	28	4	M 347/2009
22.	Rom	As	16/15 BC		RIC 386	8.75	27	3	4443/2013
23.	Rom	As	16/15 BC		RIC 386	6.19	25	3	4910/2013
24.	Rom	Quad	9 BC		RIC 421	2.4	15.9	2–3	6837/2013
25.	Rom	As	3/2 BC		RIC 427	8.32	28.4	3–4	6472/2013
26.	Rom	As	3/2 BC		RIC 431; Km	8.18	28	3	M 137/2009
27.	Rom	As	3/2 BC		RIC 432; Km	10.36	27	4	M 391/2009
28.	Rom	As	3/2 BC		RIC 435	5.91	26	4	M 066/2009
29.	Rom	As	3/2 BC		RIC 436	7.62	26.6	4	886/2012

102 The catalogue is based on the scheme of FMRÖ and uses the common abbreviations for mints and denominations.

NO.	MINT	DENOM.	DATE	MINT-MARK	CIT.	WEIGHT	DIM.	PRES.	FIND-NO. / YEAR
30.	Rom	As	3/2 BC		RIC 437	8.19	27	4	M 086/2009
31.	Rom	Quad	4 BC		RIC 468	3.08	14	2	M 335/2009
32.	Rom	As	10/12		RIC 471	9.08	29	2–3	7148/2013
33.	Rom	As	10/12		RIC 471	8.63	27	3	M 043/2009
34.	Eph	As	25 BC		RIC 485 or 486	8.01	22	4	662/2010
35.	Rom	As	16/6 BC		RIC ?	8.12	25.6	4	11122/2013
36.	Rom	As	16/6 BC		RIC ?	8.05	26	4	M 035/2009
37.	Rom	As	16/6 BC		RIC ?; Km	8.02	28.2	4	12593/2013
38.	Rom	As	16/6 BC		RIC ?	7.25	25	5	M 138/2009
39.	Rom	As	16/6 BC		RIC ?	6.86	25.6	4	6850/2013
40.	Rom	As	16/6 BC		RIC ?	6.75	26.4	4	3847/2012
41.	Rom	As	16/6 BC		RIC ?	6.51	26	4	M 073/2009
42.	Rom	As (halved)	16/6 BC		RIC ?	5.72	26.7	0	6639/2013
43.	Rom	As	16/6 BC		RIC ?	5.69	26.6	3	1735/2012
44.	Rom	As	16/6 BC		RIC ?	4.66	25	0	6186/2013
45.	Rom	As	16/6 BC		RIC ?	4.56	24	5	M 387/2009
46.	Rom	As	16/6 BC		RIC ?	4.45	28.3	3–4	5754/2013
47.	Rom	As (halved)	16/6 BC		RIC ?	4.36	27	3	2673/2012
48.	Rom	As	16/6 BC		RIC ?	4.28	27	4–5	5180/2013
49.	Rom	As (halved)	16/6 BC		RIC ?	3.19	15.8	4–5	991/2012
50.	Rom	As (halved)	16/6 BC		RIC ?	2.73	24	0	5554/2013
51.	Rom	As	16 BC/AD 12		RIC ?	7.27	26	4–5	M 044/2009
52.	Rom	Quad	9/4 BC		RIC ?	2.22	15	3	664/2010
53.	Rom	Quad	9/4 BC		RIC ?	1.19	14	0	M 079/2009
54.	mint?	As	27 BC/AD 14		RIC ?	8.56	27	0	1374/2012
55.	mint?	As	27 BC/AD 14		RIC ?	6.15	26.7	4	1965/2012
56.	Rom	As	27 BC/AD 14		RIC ?	6.09	25.5	0	4673/2013
57.	mint?	As (halved)	27 BC/AD 14		RIC ?	2.67	22	5	1209/2012
58.	mint?	As (halved)	27 BC/AD 14		RIC ?	2.48	22.5	5	10656/2013
59.	mint?	As (halved)	27 BC/AD 14		RIC ?	1.78	23.2	5	1568/2012
60.	mint?	As	23 BC/AD 14		RIC ?	7.14	26	5	M 307/2009
				Tiberius (14–37)					
61.	Rom	As	21/22		RIC 44	10.03	29	3	10458/2013
62.	Rom	S	21/22		RIC 48	21.61	33	4	5392/2013
				Tiberius for Divus Augustus					
63.	Rom	As	14/15		MIR 27-6	7.24	26	4	M 340/2009
64.	Rom	As	14/17		MIR 29-6	9.47	26.5	2–3	2400/2012
65.	Rom	As	14/17		MIR 29-6	4.35	25.3	5	13029/2017
66.	Rom	As	16/22		MIR 29-6	8.99	30	4	M 311/2009
67.	Rom	As	36/37		MIR 63-6	7.01	28	4	M 101/2009
				Tiberius for Drusus					
68.	Rom	As	22/34		MIR 38-6	9.73	31	3	M 045/2009

NO.	MINT	DENOM.	DATE	MINT-MARK	CIT.	WEIGHT	DIM.	PRES.	FIND-NO. / YEAR
				Claudius I (41–54)					
69.	Rom	As	41/54		RIC ?	3.05	24.1	4	4679/2013
				Nero (54–68)					
70.	Rom	D	64/68		RIC 55	2.94	17.6	3	510/2012
				Julio-Claudian					
71.	mint?	As (halved)	27 BC/68		RIC ?	3.17	23.3	0	2056/2012
72.	mint?	As (halved)	27 BC/68		RIC ?	1.48	23.5	5	1764/2012
73.	mint?	As (halved)	23 BC/54		RIC ?	1.68	22	5	M 306/2009
74.	mint?	As (halved)	23 BC/68		RIC ?	2.7	24.5	0	3271/2012
				Vespasianus for Titus					
75.	Rom	D	73		RIC 517	1.31	17.5	3	13022/2017
				Domitianus (81–96)					
76.	Rom	S	90/91		RIC 702	22.82	35	3	M 354/2009
				Traianus (98–117)					
77.	Rom	As	98/117		RIC ?	3.85	23.8	0	12965/2013
				Hadrianus (117–138)					
78.	Rom	D	134/138		RIC 237 (d)	3.05	18	3	697/2010
79.	Rom	D	134/138		RIC 240 (d)	3.01	19	1	M 131/2009
80.	Rom	As	119/121		RIC 579b (c)	7.5	25.8	4	7818/2013
81.	Rom	Dp	119/121		RIC 604a	11.39	26.8	3	560/2012
82.	Rom	Dp	119/121		RIC 604a	10.65	25.7	3	5801/2013
83.	Rom	As	125/128		RIC 674 (c)	9.52	24	4	M 379/2009
84.	Rom	As	125/128		RIC 678 (c)	11.96	26.1	4	10707/2013
85.	Rom	As	125/128		RIC 678 (c)	9.35	27	4	M 068/2009
86.	Rom	Dp	117/138		RIC ?	n/a	n/a	4	81_8/2008
				Traianus or Hadrianus					
87.	Rom	S	98/138		RIC ?	16.37	34.5	0	2981/2012
				Antoninus Pius (138–161)					
88.	Rom	As	145/161		RIC 824a	9.14	27	3	M 332/2009
89.	Rom	Dp	151/152		RIC 894	n/a	n/a	2	147_1/2008
90.	Rom	Dp	151/152		RIC 894	15.46	28.6	1–2	9066/2013
91.	Rom	Dp	154/155		RIC 932	11.5	26	2	833/2010
92.	Rom	D	138/161		RIC ?	1.7	18	0	848/2010
93.	Rom	S	138/161		RIC ?	15.41	31.5	4–5	3807/2012
94.	Rom	Dp	138/161		RIC ?	13.36	26	3–4	872/2010
95.	Rom	As	138/161		RIC ?	6.83	24.6	3–4	5296/2013
				Antoninus Pius for Diva Faustina I					
96.	Rom	D	141/161		RIC 344 (a)	3.35	19	1	M 105/2009
97.	Rom	As	141/161		RIC ?	8.39	27	4	706/2010
98.	Rom	As	141/161		RIC ?	5.4	24	4–5	11124/2013
99.	Rom	D	141/161		RIC 350a	2.6	17.9	3	12751/2013
				Marcus Aurelius (161–180)					
100.	Rom	Dp	161/180		RIC ?	11.06	25	3–4	839/2010

NO.	MINT	DENOM.	DATE	MINT-MARK	CIT.	WEIGHT	DIM.	PRES.	FIND-NO. / YEAR
				Marcus Aurelius or Commodus					
101.	Rom	D	161/192		RIC ?	2.14	17.8	0	9731/2013
102.	Rom	As	161/192		RIC ?	11.88	27	4	7260/2013
				1st/2nd century					
103.	mint?	As	23 BC/192		RIC ?	7.91	26.2	0	647/2012
104.	mint?	As	23 BC/192		RIC ?	5.07	25.2	0	566/2012
105.	mint?	As	23 BC/192		RIC ?	6.19	25	0	3015/2012
106.	mint?	As	23 BC/192		RIC ?	3.1	20.5	0	5125/2013
107.	mint?	As (halved)	23 BC/192		RIC ?	1.87	24.5	0	5830/2013
108.	mint?	As (halved)	23 BC/192		RIC ?	2.08	21.5	5	13018/2017
				Provincial					
109.	mint?	AEgr.	23 BC/260		RIC ?	3.05	19.5	4	13032/2017
				Septimius Severus (193–211)					
110.	(mint?)	(S)	193/211		RIC ?	13.11	26.4	0	12815/2013
				Caracalla (211–217)					
111.	Rom	D	213		RIC 232	1.89	18	3	2998/2012
				Elagabalus (218–222)					
112.	Rom	D	221		RIC 146 (b)	2.99	20	2	M 318/2009
113.	Rom	D	221		RIC 146 (b)	0.96	18	3–4	763/2010
				Severus Alexander (222–235)					
114.	Rom	D	222/235		RIC ?	1.29	10	3	10509/2013
				Severus Alexander for Julia Mamaea					
115.	Rom	D	226		RIC 343	1.73	19	3	819/2010
				Severan times					
116.	mint?	D	193/235		RIC ?	0.71	12	4	767/2010
				Maximinus I Thrax (235–238)					
117.	Rom	S	236		MIR 10-5/C	15.3	30	3	M 303/2009
				Gallienus (260–268)					
118.	Rom	An	260/261	_ P//_	MIR 344a	1.66	19	2–3	743/2010
119.	Rom	An	262		MIR 465q1	1.51	19	3	1060/2012
120.	Rom	An	264/267	A _//_	MIR 570a	1.88	19	2	716/2010
121.	Rom	An	264/267	_ Є//_	MIR 583a	1.58	19	2	728/2010
122.	Rom	An	264/267	_ Є//_	MIR 583a	2.17	17	3	758/2010
123.	Rom	An	264/267	_ _//_	MIR 591a	2.4	19	3	744/2010
124.	Rom	An	267/268	_ _//XI	MIR 747b	2.69	20	3	752/2010
125.	Med	An	266/268	_ _//MP	MIR 1331d	1.78	20	3	840/2010
126.	Sis	An	267/268	S _//_	MIR 1501b	1.82	21.2	2	8496/2013
127.	mint?	An	260/268		MIR ?	1.24	19	3	626/2010
				Claudius II (268–270)					
128.	Rom	An	268/270	_ _//_	RIC 92 (K)	1.45	18	2–3	699/2010
129.	Rom	An	268/270	_ _//_	RIC 100 (F)	2.02	17	2–3	701/2010
130.	Rom	An	268/270	_ _//_	RIC 48 (F)	2.62	20	2	702/2010

NO.	MINT	DENOM.	DATE	MINT-MARK	CIT.	WEIGHT	DIM.	PRES.	FIND-NO. / YEAR
131.	Rom	An	268/270		RIC 91 or 92	1.28	18	2–3	751/2010
132.	Rom	An	268/270		RIC 91	1.4	19	2–3	754/2010
133.	Rom	An	268/270	_ _//_	RIC 71 (F)	1.28	18	3	785/2010
134.	Rom	An	268/270	_ N//_	RIC 16 (K)	2.2	20	3	787/2010
135.	Rom	An	268/270	Є _//_	RIC 109 (K)	1.3	16	3	855/2010
136.	Rom	An	268/270	_ _//_	RIC 109 (F)	1.93	18.9	3	8428/2013
137.	Rom	An	268/270	_ _//_	RIC 80 (F)	1.74	17	3–4	9905/2013
138.	mint?	An	268/270		RIC ?	1.07	15.1	4–5	10014/2013
					Victorinus (269–270)				
139.	Gall	An	269/270		RIC ?	1.03	14	3–4	631/2010
140.	Gall	An	269/270	_ _//_	RIC ?	2.86	17	3	879/2010
					Aurelianus (270–275)				
141.	Ant	An	274	T//XXI	MIR 381a3	3.23	23	2	705/2010
142.	mint?	An	270/275		MIR ?	3.19	20.1	0	9271/2013
143.	mint?	An	270/275		MIR ?	2.4	24	4	M 371/2009
144.	mint?	An	270/275		MIR ?	1.96	18	4	829/2010
					Aurelianus for Divus Claudius II				
145.	Rom	An	270	_ _//_	MIR 98loa	2.88	15.7	4	9158/2013
146.	Rom	An	270	_ _//_	MIR 98moa	1.4	18	3	704/2010
147.	Rom	An	270	_ _//_	MIR 98poa	0.93	15	3	753/2010
148.	Rom	An	270	_ _//_	MIR 98poa	1.14	14	4	762/2010
149.	Rom	An	270	_ _//_	MIR 99loa	1.97	15.5	3	6775/2013
150.	Rom	An	270	_ _//_	MIR 99lob	1.79	18.6	3	7518/2013
151.	Rom	An	270	_ _//_	MIR 9900b	1.04	13	3	747/2010
152.	Rom	An	270	_ _//_	MIR 9900b	1.61	15	3	711/2010
153.	Rom	An	270	_ _//_	MIR 99l/nob	2.18	18	3	766/2010
154.	Rom	An	270	_ _//_	MIR 99l/nob	0.73	15	3	786/2010
155.	Rom	An	270	?	MIR 99	0.33	12	3	803/2010
					Probus (276–282)				
156.	Sis	An	280	_ Q//XXI	RIC 712 (F)	4.53	22.9	2	8492/2013
					Diocletianus (284–305)				
157.	Her	Fol	297/298	_ _//HTS	RIC 19a	8.74	27.4	1–2	11347/2013
					Maximianus I (285–310)				
158.	Ale	FolT (rad)	296/297	?//ALE	RIC 46b	2.42	20	4	M 132/2009
					Maximianus I for Constantius I				
159.	mint?	Fol	293/305		RIC ?	5.85	29.5	5	12009/2013
					Constantinus I (306–337)				
160.	Tic	Fol	322/325	ↄ//QT	RIC 167	2.38	19	3	M 361/2009
161.	Aqu	Fol	320	S F//AQP	RIC 40	2.44	19.1	1	11958/2013
162.	Rom	Fol	316/317	_ _//[R]S	RIC 52	2.86	20.3	1–2	8998/2013
163.	Rom	Fol	336/337	_ _//R*P	RIC 391	0.81	15.5	4	4424/2013
164.	Tes	Fol	330/333	_ _//SMTSA	RIC 183	1.75	18.6	3	8352/2013

NO.	MINT	DENOM.	DATE	MINT-MARK	CIT.	WEIGHT	DIM.	PRES.	FIND-NO. / YEAR
165.	Tes	Fol	336/337		RIC 222	1.38	16.5	2	8134/2013
166.	Her	Fol	330/333	_ _//SMHΓ	RIC 111	1.91	17.8	3	9633/2013
167.	Cyz	Fol	324/325	_ _//SMKϵ	RIC 24	1.68	16	3	2872/2012
168.	Kyz	Fol	336/337	_ _//SMKΔ	RIC 122	1.49	17	3	801/2010
169.	Nic	Fol	313/317	_ ?//SMN	RIC 12	1.92	19.5	3	26/2012
170.	mint?	Fol	318/320		RIC ?	3.21	20.9	0	9178/2013
171.	mint?	Fol	321/324		RIC ?	1.88	18	4	M 037/2009
172.	mint?	Fol	330/336		RIC ?	2.2	16.8	3–4	7748/2013
173.	mint?	Fol	330/336		RIC ?	1.35	17.2	4–5	11400/2013
174.	mint?	Fol	335/337		RIC ?	1.27	15.8	0	8919/2013
175.	mint?	Fol	336/337		RIC ?	1.03	15.9	3–4	10129/2013
				Constantinus I for Constantinus II					
176.	Sis	Fol	335/336	_ _//ϵSIS	RIC 253	1.11	16.7	3	8282/2013
177.	Tes	Fol	330/333	_ _//SMTSΓ	RIC 184	1.75	19	3	M 324/2009
178.	mint?	Fol	330/336	_ _//?	RIC ?	1.25	16	4	M 136/2009
				Constantinus I for Constantius II					
179.	Aqu	Fol	336/337	_ _//•AQP	RIC 145	1.21	16.6	1	10105/2013
180.	Sis	Fol	334/335	_ _//•ASIS•	RIC 237	1.86	18	2	722/2010
181.	mint?	Fol	330/336		RIC ?	1.75	17.4	3	11945/2013
				Constantinus I for Constans					
182.	Sis	Fol	334/335	_ _//•ASIS•	RIC 238	2.63	19	2	721/2010
183.	Sis	Fol	334/335	_ _//•ΔSIS•	RIC 238	2.04	18	2	683/2010
184.	Con	Fol	333/335	_ _//•CONSIA•	RIC 83	2.37	18	2	863/2010
				Constantinus I for Constans or Constantius II					
185.	mint?	Fol	335/337		RIC ?	1.14	16.5	3	6654/2013
				Constantinus I for Delmatius					
186.	Aqu	Fol	336/337	_ _//•AQP	RIC 147	1.25	16.5	2	11774/2013
				Constantinus I for Constantinopolis					
187.	Sis	Fol	334/335	_ _//•BSIS•	RIC 241	2.04	19.1	2–3	8994/2013
188.	Tes	Fol	330/337	_ _//SMTSϵ	RIC 188=230	1.76	16	1	842/2010
				Constantinus I for Urbs Roma					
189.	Sis	Fol	334/335	_ _//•ASIS•	RIC 240	1.1	17	4	M 069/2009
190.	Sis	Fol	334/335	_ _//•BSIS•	RIC 240	1.77	18	3	M 339/2009
191.	mint?	Fol	330/337		RIC ?	1.29	15.7	5	12012/2013
192.	mint?	Fol	330/337		RIC ?	1.25	13	3	789/2010
				Constantinus I for Sons					
193.	mint?	Fol	335/337		RIC ?	1.32	15	3	773/2010
194.	mint?	Fol	318/337		RIC ?	1.33	15.6	0	6677/2013
195.	mint?	Fol	330/336		RIC ?	2.37	19.3	0	8569/2013
196.	mint?	Fol	330/337		RIC ?	2.11	17.5	0	8972/2013
197.	mint?	Fol	335/337		RIC ?	1.55	14	4	M 320/2009

NO.	MINT	DENOM.	DATE	MINT-MARK	CIT.	WEIGHT	DIM.	PRES.	FIND-NO. / YEAR
				Licinius I (308–324)					
198.	Rom	Fol	314/315	R/X F//RP	RIC 29	3.55	20	2	M 023/2009
				Constantinus I or Licinius I					
199.	mint?	Fol	313/318		RIC ?	1.7	19.5	0	7161/2013
				Constantinus II, Constans and Constantius II for Divus Constantinus I					
200.	Con	Fol	337/340	_ _//CONS	RIC 37	1.46	16	3	685/2010
				Constans (337–350)					
201.	Arl	Fol	340	G//PARL	RIC 58	1.82	15	2	864/2010
202.	Aqu	Fol	340	_ _//AQS	RIC 34	1.1	16	2	793/2010
203.	Aqu	Fol	341/348	ɨ//AQP	RIC 87	1.2	16	4	M 328/2009
204.	Aqu	Fol	341/348	ɨ//AQ?	RIC 87	0.96	16	3	814/2010
205.	Aqu	Fol	341/348	ɨ//AQP	RIC 87	1.3	16	4	851/2010
206.	Aqu	Fol	341/348	ɨ//?	RIC 87, 89 or 92	0.74	15	4	M 369/2009
207.	Rom	Fol	341/348	_ _//AQP	RIC 77	1.74	15	3	10111/2013
208.	Rom	Fol	341/348	_ _//R?	RIC 78	1.4	15	3	708/2010
209.	Kyz	Fol	337/340	_ _//SMKB	RIC 12	0.94	16	2	806/2010
210.	Kyz	Fol	337/340	_ _//SMKB•	RIC 22	0.67	15	2–3	824/2010
211.	Kyz	Fol	347/348	_ _//SMK?	RIC 51	1.33	14	2	720/2010
212.	Sis	Fol	337/340	_ _//ΔSIS◡	RIC 99	1.56	17	1–2	804/2010
213.	Sis	Fol	337/340	_ _//I͡SIS◡	RIC 100	1.48	16	2	703/2010
214.	Sis	Fol	341/348	_ _//I͡SIS	RIC 183	1.3	16.1	1–2	10188/2013
215.	Sis	Fol	341/348	_ _//BSIS	RIC 183	1.36	16.3	3	12239/2013
216.	Sis	Fol	341/348	_ _//•ASIS•	RIC 185	0.6	15	3	M 059/2009
217.	Sis	Fol	341/348	_ _//[•]ASIS•	RIC 185	1.47	16	2	627/2010
218.	Sis	Fol	341/348	_ _//•ASIS•	RIC 185	1.53	16	2	644/2010
219.	Sis	Fol	341/348	_ _//•BSIS•	RIC 185	0.93	16	3	681/2010
220.	Sis	Fol	341/348	ꟻ//BSIS	RIC 192	1.1	16	3	M 365/2009
221.	Sis	Fol	341/348	ꟻ//I͡SIS	RIC 192	1.34	16	2	698/2010
222.	Sis	Fol	341/348	ꟻ//ASIS	RIC 192	1.7	17	2	750/2010
223.	Sis	Fol	341/348	ꟻ//BSIS	RIC 192	1.12	17	0	869/2010
224.	Sis	Fol	341/348	ɨ//BSIS	RIC 195	1.42	16	2	694/2010
225.	Sis	Fol	341/348	ɨ//ASIS	RIC 195	1.38	16.8	3	8911/2013
226.	Sis	Cen	348/350	_ _//ΔSIS◡	RIC 244	1.82	17	2	746/2010
227.	Tes	Fol	341/348	_ _//SMTS͡I	RIC 100	1.86	16	1–2	710/2010
228.	Tes	Fol	341/348	ɨ//SMTSB	RIC 105	1.16	15	3	M 358/2009
229.	mint?	Fol	337/340	_ _//?	RIC ?	1.44	14	3	7566/2013
230.	mint?	Fol	337/340		RIC ?	0.99	16	3	672/2010
231.	mint?	Fol	341/348	_ _//?	RIC ?	1.44	17	2–3	639/2010
				Constantius II (337–361)					
232.	Tre	Mai	348/350	_ _/TRP	RIC 214	3.01	23.5	2	13030/2017
233.	Arl	Fol	340	G//?	RIC 56	1.35	15.2	3	9058/2013
234.	Arl	Cen	360/361	◡ _//SC ON	RIC 298	1.5	15	3	797/2010
235.	Aqu	Fol	341/348	_ _//AQP	RIC 76	1.43	15.5	3	9838/2013
236.	Aqu	Mai	350/351	A _; ⁎ _//AQ?	RIC 153	3.23	22	1–2	714/2010

NO.	MINT	DENOM.	DATE	MINT-MARK	CIT.	WEIGHT	DIM.	PRES.	FIND-NO. / YEAR
237.	Aqu	Mai	352/355	A _; ? S _//?	RIC 193	3.76	19.4	3–4	11800/2013
238.	Aqu	Cen	352/355	_ _//AQP	RIC 199	2.28	16	3	689/2010
239.	Aqu	Mai	352/355	LXXII ?//?	RIC 187–197	1.86	21	3	813/2010
240.	Rom	Cen	352/355	_ _//R∗Q	RIC 276	1.47	18.6	3	7563/2013
241.	Rom	Cen	355/361	_ _//R♀Z	RIC 318	1.81	18	2	719/2010
242.	Sir	Cen	355/361	M _//BSIRM•	RIC 73	2.26	19	1–2	742/2010
243.	Sir	Cen	355/361	ꞩ _//_	RIC 86	1.47	17	2	769/2010
244.	Sis	Fol	341/348	⸙//?	RIC 194	1.36	16	2	717/2010
245.	Sis	Cen	350/351	_ _//ЄSIS	RIC 313	2.27	19.2	1–2	8988/2013
246.	Sis	Mai	351/355	A _; III ∗//ΓSIS	RIC 327	3.68	23.2	2–3	9443/2013
247.	Sis	Cen	351/355	_ _//ΓSIS	RIC 350	1.72	17	5	M 384/2009
248.	Sis	Cen	351/355	_ _//ΔSIS	RIC 350	1.9	18	3	696/2010
249.	Sis	Cen	355/361	_ _//ASISD	RIC 364	2.61	17	2	643/2010
250.	Sis	Cen	355/361	M _//ASISZ	RIC 369	2.22	16	3	736/2010
251.	Sis	Cen	355/361	M _//?SISZ	RIC 369	1.83	16	3	796/2010
252.	Sis	Cen	355/361	M _//ASISZ	RIC 369	2.46	18	3	9280/2013
253.	Sis	Cen	355/361	M _//ΓSIS	RIC 377	2.49	16	3	817/2010
254.	Sis	Cen	355/361	_ _//ASIS∗	RIC 396	1.09	15.4	3	7442/2013
255.	Sis	Cen	355/361	_ ∗//BSIS	RIC 398	2.87	15	2	674/2010
256.	Sis	Cen	355/361	_ _//?SISV	RIC 400	1.32	16	3	858/2010
257.	Sis	Cen	351/361	_ _//?SISZ	RIC 352=361	2.25	17.2	3	9800/2013
258.	Sis	Cen	351/361	_ _//BSISZ	RIC 352=361	1.99	18	4	12236/2013
259.	Tes	Fol	341/348	_ _//SMTSΔ	RIC 99	1.57	16	2–3	874/2010
260.	Tes	Cen	355/361	M _//SMTSA	RIC 208	1.93	18	2	873/2010
261.	Tes	Cen	355/361	M _//SMTSA	RIC 211	2.34	15	2–3	859/2010
262.	Her	Cen	351/355	_ _//SMHA	RIC 90	2.18	18	2	860/2010
263.	Con	Cen	351/355	_ _//CONS?	RIC 118	2.64	16	3	M 373/2009
264.	Con	Cen	355/361	_ _//CONSA•	RIC 135	3.02	18.3	2	9423/2013
265.	Kyz	Fol	337/340	_ _//SMKA•	RIC 21	1.2	15	3	8245/2013
266.	mint?	Fol	337/348		RIC ?	1.72	13	3–4	772/2010
267.	mint?	Mai	348/355		RIC ?	2.94	20.7	4	6959/2013
268.	mint?	Mai	350/355		RIC ?	1.79	19.8	4–5	4984/2013
269.	mint?	Cen	351/361		RIC ?	2.2	18.1	4	7645/2013
270.	mint?	Cen	351/361		RIC ?	2.07	18.2	0	10021/2013
271.	mint?	Cen	351/361		RIC ?	2.02	16.7	0	7667/2013
272.	mint?	Cen	351/361		RIC ?	1.89	16	3	865/2010
273.	mint?	Cen	351/361		RIC ?	1.87	16.2	4	12316/2013
274.	mint?	Cen	351/361		RIC ?	1.86	16.7	4	6532/2013
275.	mint?	Cen	351/361	_ _//?	RIC ?	1.82	18.6	2	7471/2013
276.	mint?	Cen	351/361		RIC ?	1.81	16	3	779/2010
277.	mint?	Cen	351/361		RIC ?	1.8	17	4	M 135/2009
278.	mint?	Cen	351/361		RIC ?	1.72	17	4	862/2010
279.	mint?	Cen	351/361		RIC ?	1.41	13	4	M 039/2009
280.	mint?	Cen	351/361		RIC ?	1.29	15.1	4	7571/2013
281.	mint?	Cen	351/361		RIC ?	1.22	18	4	843/2010

NO.	MINT	DENOM.	DATE	MINT-MARK	CIT.	WEIGHT	DIM.	PRES.	FIND-NO. / YEAR
282.	mint?	Cen	351/361		RIC ?	1.2	16	0	826/2010
283.	mint?	Cen	351/361		RIC ?	1.18	16	4–5	11535/2013
284.	mint?	Cen	351/361		RIC ?	0.99	16.4	4–5	4564/2013
285.	mint?	Cen	351/361		RIC ?	0.99	14	4–5	5209/2013
286.	mint?	Cen	351/361		RIC ?	0.98	17	0	1071/2012
287.	mint?	Cen	351/361		RIC ?	0.85	16	4	M 110/2009
288.	mint?	Cen	351/361		RIC ?	0.81	14.3	4	2670/2012
289.	mint?	Cen	351/361		RIC ?	0.71	16.2	0	8085/2013
290.	mint?	Cen	351/361		RIC ?	0.55	13.5	4–5	1266/2012
291.	mint?	Cen	355/361		RIC ?	1.94	17	4	M 337/2009
292.	mint?	Cen	355/361	_ _//?	RIC ?	1.92	15	3	788/2010
293.	mint?	Cen	355/361		RIC ?	1.74	16	2–3	707/2010
294.	mint?	Cen	355/361		RIC ?	1.7	14	4	749/2010
295.	mint?	Cen	355/361		RIC ?	1.54	17	3	792/2010
296.	mint?	Cen	355/361		RIC ?	1.48	17	3	802/2010
297.	mint?	Cen	355/361		RIC ?	1.48	16.3	3	8875/2013
298.	mint?	Cen	355/361		RIC ?	1.11	16	3	770/2010
299.	mint?	Cen	355/361		RIC ?	1.06	16	3	709/2010
300.	mint?	Cen	355/361		RIC ?	1.04	15	3	807/2010
301.	mint?	Cen	355/361		RIC ?	1	14	4	M 334/2009
302.	mint?	Cen	355/361		RIC ?	0.69	14.7	3	3065/2012
303.	eastern mint	Cen	351/361	M _//?	RIC ?	1.4	18	2	8214/2013
304.	eastern mint	Cen	355/361	M _//?	RIC ?	2.12	17	2–3	737/2010
				Constantius II for Constantius Gallus					
305.	Sis	Cen	351	_ _//ΓSIS	RIC 317	1.41	15	4	M 333/2009
306.	Sis	Cen	351/354	_ _//ΔSISƩ	RIC 354	1.09	17	3	M 351/2009
307.	mint?	Mai	351/354	A _; ?	RIC ?	2.78	22	4	M 022/2009
308.	mint?	Cen	351/354		RIC ?	1.68	16	3–4	847/2010
309.	mint?	Cen	351/354	_ _//?	RIC ?	2.09	18	3	7959/2013
				Constantius II for Iulianus					
310.	Aqu	Cen	355/361	M _; _ _//AQT/	RIC 223	2	17	2	812/2010
311.	Aqu	Cen	355/361	M _; _ _//AQT/	RIC 223	1.35	18	2–3	10059/2013
312.	Aqu	Cen	355/361	M _; ?	RIC 223, 225, 227 or 229	1.94	19	3–4	876/2010
313.	Rom	Cen	355/361	_ _//R*ς	RIC 321	1.47	16	2	861/2010
314.	Sis	Cen	355/361	_ _//ΔSISV	RIC 401	2.02	16	3	756/2010
315.	eastern mint	Cen	355/361	M _//?	RIC ?	1.68	17	4	835/2010
316.	eastern mint	Cen	355/361	M _//?	RIC ?	1.35	17	3	M 112/2009
				Constantius II for Constantius Gallus or Iulianus					
317.	mint?	Cen	351/361		RIC ?	1.53	17	4	764/2010
				Constantius II or Constantius II for Iulianus					
318.	eastern mint	Cen	355/361	M _//?	RIC ?	2.6	16	4	877/2010
				Constantius II or Constantius II for Constantius Gallus or Iulianus					
319.	mint?	Cen	351/361	?	RIC ?	2.04	15	4	881/2010

NO.	MINT	DENOM.	DATE	MINT-MARK	CIT.	WEIGHT	DIM.	PRES.	FIND-NO. / YEAR
320.	mint?	Cen	351/361		RIC ?	1.11	18.3	0	8996/2013
				Constans and Constantius II for Divus Constantinus					
321.	mint?	Fol	347/348		RIC ?	1.01	15.5	3	8470/2013
				Constantinus II, Constans or Constantius II					
322.	Aqu	Fol	337/340	_ _//AQP	RIC 27A–30	1.04	15	3	748/2010
323.	Tes	Fol	337/340	_ _//SMTS?	RIC 55–57	0.5	16	3	M 111/2009
324.	Ant	Fol	337/340	_ _//SMAN?	RIC 40–48	1.44	14	0	871/2010
325.	mint?	Fol	337/340		RIC ?	1.26	15.6	4	8129/2013
326.	mint?	Fol	337/340		RIC ?	1.23	16	4	10212/2013
327.	mint?	Fol	337/340		RIC ?	0.93	14	4	635/2010
328.	mint?	Fol	337/340		RIC ?	0.97	16	0	8467/2013
329.	mint?	Fol	337/340		RIC ?	0.33	15.7	4	7728/2013
330.	mint?	Fol	337/348		RIC ?	1.46	14	4–5	658/2010
331.	mint?	Fol	337/348		RIC ?	1.09	15	4	844/2010
				Constans or Constantius II					
332.	Aqu	Fol	341/348	ǂ//AQ?	RIC 86–93	1.38	18	3	795/2010
333.	Rom	Fol	337/340	_ _//?	RIC 11–13	1.27	14	2	715/2010
334.	Sis	Fol	337/340	_ _//•ASIS•	RIC 102 or 104	0.63	15	3	M 116/2009
335.	Aqu/Sis	Fol	341/348	ǂ//?	RIC ?	0.86	15	4	M 329/2009
336.	mint?	Fol	341/348		RIC ?	1.9	15	4	M 124/2009
337.	mint?	Fol	341/348		RIC ?	1.83	15.5	3–4	8824/2013
338.	mint?	Fol	341/348		RIC ?	1.54	16	4	648/2010
339.	mint?	Fol	341/348		RIC ?	1.5	16	0	7220/2013
340.	mint?	Fol	341/348		RIC ?	1.31	14	4	650/2010
341.	mint?	Fol	341/348		RIC ?	1.31	16	4	M 133/2009
342.	mint?	Fol	341/348		RIC ?	0.94	14.6	4	13024/2017
343.	mint?	Fol	341/348		RIC ?	0.93	16.1	4	6919/2013
344.	mint?	Fol	341/348		RIC ?	0.91	14	3	M 024/2009
345.	mint?	Fol	341/348		RIC ?	0.87	14.2	4–5	12658/2013
346.	mint?	Fol	341/348		RIC ?	0.86	16	4	782/2010
347.	mint?	Fol	341/348	ǂ//?	RIC ?	0.82	14	3	800/2010
348.	mint?	Fol	341/348		RIC ?	0.6	14.8	4	10261/2013
349.	mint?	Fol	341/348		RIC ?	0.57	14	4	M 114/2009
				Constantinian times					
350.	mint?	Fol	330/348		RIC ?	1.48	13.2	5	8920/2013
351.	mint?	Fol	330/340			1.51	16.2	4	13021/2017
352.	mint?	Fol/Cen	318/348		RIC ?	0.6	15.7	0	150/2012
				Iulianus (361–363)					
353.	Sis	Cen	361/363	_ _//BSIS	RIC 414	1.23	18.1	2	778/2010
				Iovianus (363–364)					
354.	Arl	Cen	363/364	_ _//?CONST	RIC 333	2.68	18	2	M 338/2009
355.	Sis	Cen	363/364	_ _//ASISC	RIC 426	2.29	20	2	712/2010

NO.	MINT	DENOM.	DATE	MINT-MARK	CIT.	WEIGHT	DIM.	PRES.	FIND-NO. / YEAR
				Valentinianus I (364–375)					
356.	Aqu	Cen	367/375	_ _//SMAQS	RIC 11a (xvib)	2.2	17	3	794/2010
357.	Aqu	Cen	367/375	_ _//SMAQS	RIC 12a (xiva)	2.38	19	1	651/2010
358.	Sis	Cen	364/367	_ _//ASISC	RIC 7a (i)	2.24	18	1–2	810/2010
359.	Sis	Cen	364/367	_ _//DΔSISC	RIC 7a (iv)	2.67	19.8	2	8720/2013
360.	Sis	Cen	364/367	_ _//DΔSISC	RIC 7a (iv)	1.18	18	4	841/2010
361.	Sis	Cen	364/367	⁎/A _//DΔSISC	RIC 7a (vii)	2.2	19	2	775/2010
362.	Sis	Cen	367/375	_ R//?SISC	RIC 14a (x)	1.98	17	3	632/2010
363.	Sis	Cen	367/375	_ D//?	RIC 14a (xi or xii)	1.16	18	3	832/2010
364.	Sis	Cen	367/375	R _//?	RIC 15a (x)	1.33	17	2	718/2010
365.	Sis	Cen	367/375	R _//•ASISC	RIC 15a (x)	1.83	18	3	882/2010
366.	Sis	Cen	367/375	D _//⁎ΔSISC	RIC 15a (xi)	1.73	17	3	M 326/2009
367.	Sis	Cen	367/375	D -//?SISC	RIC 15a (xi or xii)	1.07	17	3	M 054/2009
368.	Sis	Cen	367/375	D S//?	RIC 15a (xiii)	1.91	18	4	M 316/2009
369.	Sis	Cen	367/375	⁎/P M//?	RIC 15a (xvii)	1.88	17	4	M 330/2009
370.	mint?	Cen	364/375		RIC ?	2.19	18.4	0	9146/2013
371.	mint?	Cen	364/375		RIC ?	1.92	17.7	3	12547/2013
372.	mint?	Cen	364/375		RIC ?	1.75	19	3–4	7267/2013
373.	mint?	Cen	364/375		RIC ?	1.36	15	2	7372/2013
374.	mint?	Cen	364/375		RIC ?	0.42	15	4	M 115/2009
				Valens (364–378)					
375.	Arl	Cen	364/367	OF I//?	RIC 7a (iia)	1.75	17.1	3	8413/2013
376.	Aqu	Cen	364/367	_ B/•//SMAQ?	RIC 7b (iiia or iiib)	1.88	17	2–3	823/2010
377.	Aqu	Cen	364/367	⁑ _//SMAQ?	RIC 9b (viia or viib)	2.09	18	2	659/2010
378.	Aqu	Cen	367/375	♌ _//SM?	RIC 12b (xiva or xivb)	1.38	17	2–3	636/2010
379.	Aqu	Cen	367/375	_ _//SMAQS	RIC 12b (xvib)	2.13	18.2	3	8524/2013
380.	Aqu	Cen	367/375	_ ⁎/B//TES	RIC 26b (xv)	1.99	16.2	3–4	6513/2013
381.	Rom	Cen	364/375	_ _//R•PRIMA	RIC 17b=24b (ixb)	1.27	16.9	3	8862/2013
382.	Sis	Cen	364/367	_ _//ASISC	RIC 5b (i)	2	17	3	663/2010
383.	Sis	Cen	364/367	_ _//BSISC	RIC 5b (i)	1.92	18	3	695/2010
384.	Sis	Cen	364/367	_ ⁎/A//DBSISC	RIC 5b (vii)	2.05	20.2	2–3	7462/2013
385.	Sis	Cen	364/367	_ _//BSISC	RIC 7b (i)	1.07	16	4	M 331/2009
386.	Sis	Cen	364/367	⁎/A _//?	RIC 7b (v–vii)	1.63	18.3	3–4	6786/2013
387.	Sis	Cen	367/375	_ R//•BSISC	RIC 14b (x)	1.79	17	3	M 315/2009
388.	Sis	Cen	367/375	_ R//?	RIC 14b (x)	1.97	17	3	771/2010
389.	Sis	Cen	367/375	R _//?	RIC 15b (x)	2.46	17.1	3–4	11893/2013
390.	Sis	Cen	367/375	D S//ASISC	RIC 15b (xiii)	2.44	17.2	1–2	7445/2013
391.	Sis	Cen	367/375	⁎/F S//ASISC	RIC 15b (xv)	1.98	17	3	8895/2013
392.	Tes	Cen	367/375	⁎/V Γ//TES	RIC 27b (xxxviii)	2.05	16.7	2	8625/2013
393.	mint?	Cen	364/378		RIC ?	2.62	15	3	649/2010
394.	mint?	Cen	364/378		RIC ?	2.05	17	3	675/2010
395.	mint?	Cen	364/378		RIC ?	1.98	16	4	676/2010
396.	mint?	Cen	364/378	_ ⁎//?	RIC ?	1.92	18.1	2	8251/2013
397.	mint?	Cen	364/378		RIC ?	1.72	16	4	M 360/2009
398.	mint?	Cen	364/378		RIC ?	1.47	18.2	3	8959/2013

NO.	MINT	DENOM.	DATE	MINT-MARK	CIT.	WEIGHT	DIM.	PRES.	FIND-NO. / YEAR
				Valentinianus I or Valens					
399.	Aqu	Cen	364/378	? ?//SMA?	RIC ?	1.51	16.9	2–3	9113/2013
400.	Sis	Cen	367/375	D ?//?	RIC 15a or 15b (xi–xiii)	0.48	14.5	3–4	10007/2013
401.	mint?	Cen	364/378		RIC ?	2.93	18.5	0	7663/2013
402.	mint?	Cen	364/378		RIC ?	2.12	18.2	4	6776/2013
403.	mint?	Cen	364/378		RIC ?	2.09	15.4	4	9143/2013
404.	mint?	Cen	364/378		RIC ?	1.85	17	4	790/2010
405.	mint?	Cen	364/378		RIC ?	1.78	16	3–4	691/2010
406.	mint?	Cen	364/378		RIC ?	1.75	15	4	805/2010
407.	mint?	Cen	364/378		RIC ?	1.69	16	3	684/2010
408.	mint?	Cen	364/378		RIC ?	1.64	18	4	8049/2013
409.	mint?	Cen	364/378		RIC ?	1.62	17	5	M 126/2009
410.	mint?	Cen	364/378		RIC ?	1.51	14	3–4	816/2010
411.	mint?	Cen	364/378		RIC ?	1.46	16	4	761/2010
412.	mint?	Cen	364/378	♌ _//?	RIC ?	1.46	17.5	4	6966/2013
413.	mint?	Cen	364/378		RIC ?	1.4	14.6	4	8135/2013
414.	mint?	Cen	364/378		RIC ?	1.38	16.3	4–5	4955/2013
415.	mint?	Cen	364/378		RIC ?	1.28	16	4	3133/2012
416.	mint?	Cen	364/378		RIC ?	1.17	16	4	M 083/2009
417.	mint?	Cen	364/378		RIC ?	1.11	16	4	8068/2013
418.	mint?	Cen	364/378		RIC ?	1.04	12	4	798/2010
419.	mint?	Cen	364/378		RIC ?	1.02	14.3	4	8621/2013
420.	mint?	Cen	364/378		RIC ?	0.97	15	3	875/2010
421.	mint?	Cen	364/378		RIC ?	0.95	15.2	4	5703/2013
422.	mint?	Cen	364/378		RIC ?	0.92	15.8	4	5717/2013
423.	mint?	Cen	364/378		RIC ?	0.9	13	4	739/2010
424.	mint?	Cen	364/378		RIC ?	0.87	16	0	8766/2013
425.	mint?	Cen	364/378		RIC ?	0.86	15	4	M 048/2009
426.	mint?	Cen	364/378		RIC ?	0.83	16	4	M 367/2009
427.	mint?	Cen	364/378		RIC ?	0.76	14	5	M 383/2009
				Gratianus (367–383)					
428.	Sis	Cen	367/375	_ D//?	RIC 14c (xi or xii)	2.27	19	3	660/2010
429.	Sis	Cen	364/375	S D//ΓSISC	RIC 14c (xiii)	2.06	17.1	3	9391/2013
430.	Sis	Cen	367/375	S D//ΓSISC	RIC 14c (xiii)	2.24	19	2	755/2010
431.	mint?	Cen	367/378		RIC ?	2.49	17.2	0	9859/2013
432.	mint?	Cen	367/378		RIC ?	2.22	20.7	0	10132/2013
433.	mint?	Cen	367/378		RIC ?	1.14	14.4	4–5	12070/2013
				Valentinianus I, Valens or Gratianus					
434.	Sis	Cen	367/378	? ?//?SISC	RIC ?	1.94	18.3	4	9208/2013
435.	mint?	Cen	364/378		RIC ?	0.67	12	4	828/2010
				Constantinian/Valentinian times					
436.	mint?	Mai	348/383		RIC ?	3.24	21	0	6352/2013
437.	mint?	Cen	348/378		RIC ?	0.36	10	4	740/2010
438.	mint?	Fol/Cen	318/378		RIC ?	2.8	18	5	726/2010
439.	mint?	Fol/Cen	318/378		RIC ?	1.65	15.7	0	1639/2012

NO.	MINT	DENOM.	DATE	MINT-MARK	CIT.	WEIGHT	DIM.	PRES.	FIND-NO. / YEAR
440.	mint?	Fol/Cen	318/378		RIC ?	1.51	17.1	0	7910/2013
441.	mint?	Fol/Cen	318/378		RIC ?	1.23	15.5	0	10444/2013
442.	mint?	Fol/Cen	318/378		RIC ?	1.17	16.5	0	6058/2013
443.	mint?	Fol/Cen	318/378		RIC ?	1.1	17.1	5	11970/2013
444.	mint?	Fol/Cen	318/378		RIC ?	1.03	15.4	0	5105/2013
445.	mint?	Fol/Cen	318/378		RIC ?	0.81	14	5	693/2010
446.	mint?	Fol/Cen	318/378		RIC ?	0.49	14	0	1868/2012
				Valentinianus II, Theodosius I, Arcadius or Honorius					
447.	mint?	1/2 Cen	383/403		RIC ?	1.18	12	4–5	809/2010
448.	mint?	1/2 Cen	378/395		RIC ?	0.81	13	4	M 042/2009
449.	mint?	1/2 Cen	378/425		RIC ?	0.54	12	4	673/2010
				After 378 (indefinite)					
450.	mint?	1/2 Cen	378/395		RIC ?	0.91	12.2	5	4260/2013
451.	mint?	1/2 Cen	378/395		RIC ?	0.6	11.7	5	91/2012
				Migration period: Vandals					
452.		1/2 Cen	423/442		RIC cf. 3805	0.82	10	3	846/2010

BIBLIOGRAPHY

Alston 1994 – R. Alston, Roman military pay from Caesar to Diocletian, *The Journal of Roman Studies* 84, 1994, 113–123.

Berger 1996 – F. Berger, *Kalkriese 1, Die römischen Fundmünzen*, Römisch-Germanische Forschungen 55, Philipp von Zabern, 1996.

Chantraine 1982 – H. Chantraine, *Die antiken Fundmünzen von Neuß, Gesamtkatalog der Ausgrabungen von 1975–1978,* Limesforschungen 20, Gebrüder Mann, 1982.

Chantraine 1999 – H. Chantraine, Novaesium und die Fundmünzen vom Niederrhein, in Schlüter, W., Wiegels, R. (eds.), *Rom, Germanien und die Ausgrabungen von Kalkriese,* Universitätsverlag Rasch, 1999, 293–303.

Dick 1984 – F. Dick, *Die Fundmünzen der römischen Zeit in Österreich, Abteilung I/2 Burgenland*, Österreichische Akademie der Wissenschaften, 1984.

FMRSI 2 – P. Kos, *Die Fundmünzen der römischen Zeit in Slowenien, Teil 2*, Philipp von Zabern, 1988.

FMRSI 3 – P. Kos, A. Šemrov, *Die Fundmünzen der römischen Zeit in Slowenien, Teil 3*, Philipp von Zabern, 1995.

FMRSI 4 – A. Šemrov, *Die Fundmünzen der römischen Zeit in Slowenien, Teil 4*, Philipp von Zabern, 1998.

FMRU 2 – V. Lányi (ed.), *Die Fundmünzen der römischen Zeit in Ungarn, Band 2, Komitat Győr–Moson–Sopron*, Gebrüder Mann, 1993.

Găzdac 2010 – C. Găzdac, *Monetary circulation in Dacia and the provinces from the Middle and Lower Danube from Trajan to Constantine I (AD 106–337)*, Coins from Roman sites and collections of Roman coins from Romania 11, Mega Publishing House, 2010.

Groh 2009 – S. Groh, Neue Forschungen an der Bernsteinstraße in Nordwestpannonien. Die römischen Militärlager und der Vicus von Strebersdorf und Frankenau/Frakanava (Mittelburgenland, Österreich), in Biró, S. (ed.), *Ex Officina Studia in honorem Dénes Gabler*, Mursella Régészeti Egyesület, 2009, 175–187.

Groh, Sedlmayer 2019 – S. Groh, H. Sedlmayer, Via publica vel militaris. Die Bernsteinstraße in spätantoninischer und severischer Zeit, in Kolb, A. (ed.), *Roman Roads. New Evidence – New Perspectives*, De Gruyter, 2019, 191–214.

Horvat *et al.* 2003 – J. Horvat, M. Lovenjak, A. Dolenc Vičič, M. Lubšina-Tušek, M. Tomanič-Jevremov, Z. Šubic, Poetovio. Development and Topography, in Šašel-Kos, M., Scherrer, P. (eds.), *The autonomous towns of Noricum and Pannonia, Pannonia I*, Situla 41, Narodni muzej Slovenije, 2003, 153–189.

IFS 1995 – *Abnutzung und Korrosion. Bestimmungstafeln zur Bearbeitung von Fundmünzen*, Bulletin IFS ITMS IRMS 2, Supplément, Société suisse de numismatique, 1995.

Kemkes 1996 – M. Kemkes, *Das römische Donaukastell Rißtissen*, PhD thesis, Universität Freiburg, 1996.

Kemmers 2006 – F. Kemmers, *Coins for a legion. An analysis of the coin finds from Augustan legionary fortress and Flavian canabae legionis at Nijmegen*, Studien zu Fundmünzen der Antike 21, Philipp von Zabern, 2006.

Kos 1986 – P. Kos, *The Monetary Circulation in the Southeastern Alpine Region ca. 300 BC – AD 1000 / Denarni Obtok Na Prostoru Jugovzhodnih Alp, 300 Pr. N.š.–1000*, Situla 24, Narodni Muzej v Ljubljani, 1986.

Kos, Šemrov 1995 – P. Kos, A. Šemrov, *Roman Imperial Coins and Countermarks of the 1st Century, Rimski novci in kontramarke iz 1. Stoletja*, Zbirka Numizmaticnega kabineta Narodnega muzeja, Collection of the Coin Cabinet of the National Museum 2, 1995.

Krminicek 2010 – St. Krminicek, *Münze und Geld im frührömischen Ostalpenraum, Studien zum Münzumlauf und zur Funktion von Münzgeld anhand der Funde und Befunde vom Magdalensberg*, Kärntner Museumsschriften 80, Landesmuseum Kärnten, 2010.

Küter 2014 – A. Küter, *Zwischen Republik und Kaiserzeit: Die Münzmeisterprägungen unter Augustus*, Berliner Numismatische Forschungen 11, Gebrüder Mann, 2014.

Langer 2017 – A. Langer, *Die Münzen und Glasfunde der Ausgrabungen im Bereich der Gmeinerwiese und Münzfunde der Ausgrabungen am Böcklereal*, unpubl. MA thesis, Universität Innsbruck, 2017.

Mackensen 1987 – M. Mackensen, *Frühkaiserzeitliche Kleinkastelle bei Nersingen und Burlafingen an der oberen Donau*, Münchener Beiträge zur Vor- und Frühgeschichte 41, C. H. Beck, 1987.

Martini 2003 – R. Martini, *Collezione Pangerl. Contromarche Imperiali Romane (Augustus – Vespasianus)*, The Pangerl Collection. Catalog and Commentary on the Countermarked Roman Imperial Coins, Nomismata, Historisch-numismatische Forschungen 6, Edizioni Ennerre, 2003.

Peter 1991 – M. Peter, Fundmünzen aus dem Bereich des frühkaiserzeitlichen Lagers in Kaiseraugst, in Deschler-Erb, E., Peter, M., Deschler-Erb, S. (eds.), *Das frühkaiserzeitliche Militärlager in der Kaiseraugster Unterstadt*, Forschungen in Augst 12, Römermuseum Augst, 1991, 115–120.

Peter 2001 – M. Peter, *Untersuchungen zu den Fundmünzen aus Augst und Kaiseraugst*, Studien zu Fundmünzen der Antike 17, Philipp von Zabern, 2001.

Pfisterer 2007 – M. Pfisterer, Limesfalsa und Eisenmünzen: Römisches Ersatzkleingeld am Donaulimes, in Alram, M., Schmidt-Dick, F. (eds.), *Numismata Carnuntina: Forschungen und Material*, Österreichische Akademie der Wissenschaften, 2007, 643–875.

Pintz 2014 – U. Pintz, *FMRÖ Salzburg: Die Fundmünzen der Villa Loig und ihre Besonderheit, die Eisenmünzen*, unpub. PhD thesis, Universität Wien, 2014.

Redő 2003 – F. Redő, Municipium Aelium Salla, in Šašel-Kos, M., Scherrer, P. (eds.), *The autonomous towns of Noricum and Pannonia, Die autonomen Städte in Noricum und Pannonien*, Situla 41, Narodni muzej Slovenije, 2003, 191–235.

Redő 2007 – F. Redő, *Éremforgalom Sallában*, Zalalövő öröksége 5, 2007.

Schachinger 2013 – U. Schachinger, Die Fundmünzen eines Oberflächensurveys 2012 im Nordteil der Straßenstation von Nemescsó, in Groh, S., Sedlmayer, H., Virág Zalka, C. (eds.), *Die Straßenstationen von Nemescsó und Sorokpolány an der Bernsteinstraße (Pannonien, Ungarn), Grabungen, geophysikalische Prospektionen und Surveys 1980–1982 und 2009–2012*, Zentraleuropäische Archäologie Band 3, Österreichisches Archäologisches Institut, 2013, 159–172.

Schachinger 2017a – U. Schachinger, Die Fundmünzen aus dem norischen Donaukastell Arelape/Pöchlarn, *Numismatische Zeitschrift* 122/123, 307–363.

Schachinger 2017b – U. Schachinger, Römische Gutshöfe im Umfeld des municipium Claudium Iuvavum im Spiegel der Fundmünzen: Überlegungen zur Entwicklung anhand ausgewählter Fundpunkte. Mit archäologischem Fundstellenkommentar und Einleitung von Raimund Kastler, in Lang, F., Traxler, St., Kastler, R. (eds.), *Neue Forschungen zur ländlichen Besiedlung in Nordwest-Noricum*, ArcheoPlus, Schriften zur Archäologie und Archäometrie der Paris Lodron-Universität Salzburg, Band 8, Universität Salzburg, 2017, 237–339.

Schachinger 2018 – U. Schachinger, Lauriacum, Canabae NW: Die Fundmünzen der Grabungen von 2007–2011, in H. Seldmayer, *Extra muros, Lebenswelt der consistentes ad legionem von Lauriacum*, Forschungen in Lauriacum 17, 2018, 169–190, 398–399.

Schachinger 2019 – U. Schachinger, Die Fundmünzen aus dem Kastell von Ala Nova/Schwechat mit einem Anhang zu den Grabfunden. Mit einem Exkurs von Ana Z. Maspoli, *Slovenská Archeológia* 67/1, 2019, 19–60.

Schmidt-Dick 1989 – F. Schmidt-Dick, *Die Fundmünzen der römischen Zeit in Österreich Abteilung 2, Kärnten*, Österreichische Akademie der Wissenschaften, 1989.

Speidel 1992 – M. A. Speidel, Roman army pay scales, *The Journal of Roman Studies* 82, 1992, 87–106.

Thüry 2014 – G. E. Thüry, *Die Stadtgeschichte des römischen Salzburg: Befunde und Funde bis 1987*, British Archaeological Reports, International Series 2600, Archeopress, 2014.

Van Heesch 1999 – J. van Heesch, Augustan bronze coins in the north-west of Gaul, in Schlüter, W., Wiegels, R. (eds.), *Rom, Germanien und die Ausgrabungen von Kalkriese*, Universitätsverlag Rasch, 1999, 347–361.

Vondrovec 2007 – K. Vondrovec, Gesamtdarstellung und Auswertung der antiken Fundmünzen im Museum Carnuntinum, in Alram, M., Schmidt-Dick, F. (eds.), *Numismata Carnuntina: Forschungen und Material*, Österreichische Akademie der Wissenschaften, 2007, 55–340.

Vondrovec 2003 – K. Vondrovec, *Die antiken Fundmünzen aus Ovilavis/Wels. Die Fundmünzen der römischen Österreich Abteilung 4/1*, Österreichische Akademie der Wissenschaften, 2003.

Werz 2004 – U. Werz, *Gegenstempel auf Reichs- und Provinzialprägungen der römischen Kaiserzeit, Katalog der Sammlung Dr. Konrad Pech, Mainz*, Numismatische Gesellschaft Speyer, 2004.

Wigg 1999 – D. Wigg, Die Rolle des Militärs bei der Münzversorgung und Münzwirtschaft am Rhein in der frühen Kaiserzeit, in Schlüter, W., Wiegels, R. (eds.), *Rom, Germanien und die Ausgrabungen von Kalkriese*, Universitätsverlag Rasch, 1999, 327–346.

Wigg 1991 – D. Wigg, *Münzumlauf in Nordgallien um die Mitte des 4. Jahrhunderts n. Chr.*, Studien zu Fundmünzen der Antike 8, Gebrüder Mann, 1991.

Wolters 2002 – R. Wolters, Caius und Lucius Caesar als designierte Konsuln und principes iuventutis: Die lex Valeria Cornelia und RIC I² 205ff, *Chiron* 32, 2002, 297–323.

Ziegaus 2015 – B. Ziegaus, Die Fundmünzen vom Auerberg, in Ulbert, G. (ed.), *Der Auerberg IV: Die Kleinfunde mit Ausnahme der Gefäßkeramik sowie die Grabungen von 2001 und 2008*, Münchner Beiträge zur Vor- und Frühgeschichte 63, C. H. Beck, 2015, 145–260.