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QUADRANTES FROM NIJMEGEN: SMALL CHANGE IN A FRONTIER PROVINCE

Introduction[*]

An investigation of the post-Augustan coins in the *canabae legionis*[1] of the *legio X gemina* at Nijmegen revealed a curious phenomenon.[2] Among the 2236 coins concerned, no less than 412 could be identified as quadrantes. Until now no such amount of these coins has been found anywhere outside Italy.

In the years 1987-1997, 3.5 ha of the *canabae legionis* were excavated by the department of Provincial Roman archaeology of the University of Nijmegen. The canabae was located next to the legionary fortress of the *legio X gemina*, which set up its camp shortly after the Batavian Revolt of AD 69/70. In AD 104 Trajan transferred the legion to Aquincum (Budapest) to take part in the Dacian wars. At the same time or shortly after the departure of the legion most of the inhabitants of the *canabae* left the settlement for an unknown destination (most likely Aquincum as well). The excavations of only a small part of the *canabae* (presumably only 3% of its original size) have revealed a wealth of small finds, which are being investigated right now.

In this paper I will deal with the post-Augustan quadrantes from the *canabae legionis*. First I will summarize the current theory on quadrantes and their function within the Roman monetary system. Secondly I will discuss the quadrantes from the *canabae*. These will be compared with quadrantes from other sites in Nijmegen, from selected regions in the Netherlands and Northwestern Europe and from Italy. Finally I will use this comparison to suggest an explanation for the unusual phenomenon of the quadrantes in the *canabae*.

Quadrantes: character and function

The Roman monetary system, as introduced by Augustus and maintained until the third century, consisted of seven denominations. At the top there was the golden aureus, at the bottom, passing the denarius, sestertius, dupondius, as and semis, there was the copper quadrans. 1600 quadrantes equalled one aureus. As can be

* I would like to thank Prof. M. Erdrich, Prof. H.-M. von Kaenel, Dr. M. Peter, Dr. M. Polak and Dr. D.G. Wigg for reading the first drafts of this paper and discussing it with me. All remaining mistakes are my own.

1 Civil settlements outside the military forts.

2 The Augustan and earlier coinage will be dealt with separately, including the Augustan quadrantes.

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deduced from inscriptions and grafitti in Pompeii, a small family would need six or seven sestertii a day for basic commodities such as corn, oil and wine.[3]

The purchasing power of these quadrantes was small; King even concludes that they were not real money at all.[4] On ancient price-lists from Rome the quadrans does not figure as an individual price-unit; it only occurs in combination with larger denominations.[5] Reece's theory that quadrantes were not used to buy things, but as change necessary for equity, corresponds to this thought.[6]

Apart from their small purchasing power, the geographical and chronological distribution of the quadrantes is restricted. Geographically it is thought to be limited to Italy, specifically the region Rome-Pompeii.[7] Chronologically the quadrantes are typical of the Julio-Claudian period; while they are not too common then, they become very scarce in the Flavian period and afterwards.[8] An explanation for this last aspect could be an increase in price-level, causing less need for the smallest denomination.[9]

Quadrantes from the canabae legionis *at Nijmegen*

Contrary to the theory summarized above,[10] 412 post-Augustan quadrantes were identified in the *canabae legionis* at Nijmegen, on one of the most northern fringes of the Empire. Due to heavy corrosion or wear, 98 of them could only be dated to the first century AD. Of the remaining quadrantes an overwhelming majority, 96%, was issued by Domitian between 81 and 96 AD (*table 1*). Remarkably, 36.8% of Domitian's coins found in the *canabae* are quadrantes. This ratio is not the least comparable to the ratio of quadrantes of any other emperor. Given the distribution of the quadrantes among the different emperors, most of the 98 unidentifiable specimens are likely to date to the reign of Domitian, the ratio will have been even more out of balance in reality.

3 L. Breglia, Circolazione monetale ed aspetti di vita economica a Pompei. Pompeiana, raccolta di studi per il secondo centenario degli scavi di Pompei (Napoli 1950), p. 53. Of course this applies to Pompeii in AD 79. Whether this applies to other regions in Italy and abroad is not known.

4 C.E. King, Quadrantes from the river Tiber. NC 1975, pp. 56-90, p. 80.

5 The only price fixed at one quadrans known so far is the entrance to the public baths in Rome.

6 R. Reece, A Collection of Coins from the Centre of Rome. Papers British School Rome 50, 1982, p. 129.

7 King (above, n. 4), pp. 77-78.

8 A.o. R. Reece, Roman Coinage in Britain and the Western Empire, Britannia IV, 1973, p. 234. J.G. Aarts, Coins or Money? Exploring the monetization and functions of Roman coinage in Belgic Gaul and Lower Germany 50 BC-AD 450 (Amsterdam 2000), p. 60 is certainly wrong in regarding the quadrans as a typical Augustan phenomenon.

9 King (above, n. 4), p. 79.

10 King and Reece are the last ones to have occupied themselves with quadrantes on an interpretative level. As a consequence the theory hasn't been subject to any nuance since the eighties.

Emperor	n_{quadr}	n_{tot}	%	% (n_{tot})	% (n_{quadr})
Tiberius	1	61	1.6	2.7	0.3
Caligula	0	57	0	2.5	0
Claudius	3	122	2.5	5.5	1.0
Nero	0	182	0	8.1	0
Vespasian	2	679	0.3	30.4	0.6
Titus	4	71	5.6	3.2	1.3
Domitian	303	824	36.8	36.9	96.5
Nerva	0	42	0	1.9	0
Trajan	1	185	0.5	8.3	0.3
Hadrian	0	13	0	0.6	0
unknown	98	–			
Total	314 (+98)	2236			

Table 1: Quadrantes found in the *canabae legionis* at Nijmegen.

Without any exceptions, all the 303 Domitianic quadrantes are of the type RIC 436:
Obv. IMP DOM AVG; helmeted head of Minerva, r.
Rev. SC within wreath.

Since Domitian issued 23 different types of quadrantes,[11] the fact that only one type occurred is remarkable.

In an attempt to explain the abundance of the Domitianic quadrantes, which is in contrast to the commonly held opinion, comparison must be made with other sites; first of all with the other sites in Nijmegen itself, to find out whether we are dealing with a local phenomenon; secondly with other sites in the Netherlands in order to discover a possibly regional pattern; thirdly with other Northwestern provinces of the Roman Empire and finally with Italy.

Comparison with Nijmegen

Although excavations and chance-finds in Nijmegen have yielded a wealth of Roman coins, a comparison with the coins from the *canabae legionis* is hardly possible because of the rather poor state of publication and even investigation. Likely candidates would be the coins from the military site at the Kops Plateau, from the legionary fortress of the Tenth Legion, from the town Ulpia Noviomagus and from other areas of the *canabae*. However, the only available data at this moment are the coins from the large excavations at the Kops Plateau and from a small

[11] RIC II, pp. 183-209.

excavation along the Ubbergse Veldweg, which is situated partly in the *castra* of the Tenth Legion and partly in the local *canabae legionis*. Fortunately, though, in both excavations metal detectors were used on a regular basis. This enables a comparison with the bronze coinage from the *canabae* at Nijmegen, because metal detectors were used there as well.

The number of quadrantes from the Kops Plateau cannot be compared with the numbers from the *canabae* (*table 2*). Among a total of 502 post-Augustan coins there was only one quadrans, but, significantly though, it was Domitianic (RIC 436).[12] Of course one has to remember that the Kops Plateau was deserted around 70 AD, the estimated starting date of the *canabae*. The Flavian coins from this site must therefore have belonged to the circulation pool of the *canabae legionis*. Nevertheless, as in the *canabae*, a lack of quadrantes in the pre-Flavian phase can be observed.

As table 2 shows, the coins from the excavation at the Ubbergse Veldweg resemble those from the *canabae*.[13] All quadrantes are RIC 436. One third of all the coins of Domitian are quadrantes, a ratio that is almost equal to the *canabae*. The resemblance is clear, though one has to bear in mind that it is based on a relatively small number of coins (59).

	Kops Plateau			*Ubbergse Veldweg*		
Emperor	n_{quadr}	n_{tot}	%	n_{quadr}	n_{tot}	%
Tiberius	0	124	0	0	1	0
Caligula	0	104	0	0	2	0
Claudius	0	177	0	0	3	0
Nero	0	28	0	0	4	0
Vespasian	0	9	0	0	30	0
Titus	0	4	0	0	0	0
Domitian	1	36	2.8	5	15	33.3
Nerva	0	4	0	0	0	0
Trajan	0	14	0	0	4	0
Hadrian	0	1	0	0	0	0
Total	1	501		5	59	

Table 2: Quadrantes found at the Kops Plateau (FMRN III, 1) and the Ubbergse Veldweg (kindly made available by Bureau Archeologie, gemeente Nijmegen).

12 FMRN III,1. My gratitude goes to Dr. J. v.d. Vin of the Royal Cabinet of coins and medals for showing me his database of the coin finds from the Kops Plateau before it had been published.

13 Theoretically this was expected, because the site is largely part of the *canabae*.

Comparison with the Dutch limes and its hinterland

The coin finds from the Dutch limes and its hinterland (the provinces of Noord-Brabant and Limburg, as well as large parts of northern Belgium) have become available for further research thanks to the recent monograph on Dutch coin finds by Aarts.[14] As table 3 shows,[15] on a total of 4598 coins found in the Netherlands and northern Belgium from the period Tiberius to Hadrian, only 29 were identified as quadrantes, and nearly all of them are Domitianus, RIC 436. Most of the

Toponym	*Site*	*Emperor*	n_{quad}	n_{tot} / emperor	RIC	*Toponym*	*Site*	*Emperor*	n_{quad}	n_{tot} / emperor	RIC
Alphen a/d Rijn	*castellum/ vicus*	Domitian	1	11	?	Nijmegen-Hunerberg	*castra*	Domitian	3	29	436
Bodegraven	*castellum/ vicus*	Claudius	1	2	?	Nijmegen-Valkhof	military	Nero	1	6	?
Den Bosch	native	Domitian	1	2	?	Riethoven	*villa*	Domitian	1	4	?
Echteld	native	Domitian	1	1	?	Rossum	*castellum/ vicus*	Domitian	1	13	436
Elst	temple	Domitian	1	4	?	Scheveningen	native	Claudius	1	1	?
Empel	temple	Flavian	9	22	?	St. Michielsgestel	native	Domitian	1	4	?
Kesteren	*castellum/ vicus*	Domitian	1	2	427	Tongeren	city	Domitian	1	25	?
Maurik	*castellum/ vicus*	Claudius	1	7	?	Valkenburg	*vicus*	Domitian	2	9	436
		Domitian	1	9	?	Vechten	*castellum*	Domitian	6	98	436
		Trajan	1	13	?	Waardenburg	native	Domitian	1	1	?
Nieuwaal	native	Domitian	1	1	?	Wessem	native	Domitian	1	1	?
Nijmegen-Hunerberg West	*canabae*	Domitian	1	4	436	Total			29	247	

Table 3: Quadrantes found along the Dutch Limes and in its hinterland.

14 AARTS (above, n. 8). Unfortunately though, Aarts' database does not contain any coins found after 1996. Precisely the last five years have seen a large increase in both the number of excavations as in the use of the metal detector both by professionalists as well as by amateurs. Up to that date the database is considered to be representative for all the Roman coins found in the Netherlands, since the coin list was established in close cooperation with excavators and with a dense network of amateur archaeologists and the Royal Cabinet for Coins and Medals in Leiden.

15 With one exception, the Roman temple site at Empel, it was not possible to compare the number of quadrantes with the other coins on an intra-site level, because most coins in Aarts' database are chance finds by amateurs.

sites on which quadrantes were found have a military or native character, where 'military' can be defined as being either a *castellum* or a *vicus*.[16]

Among the coin finds from the temple at Empel are a lot of quadrantes.[17] Unfortunately though, the author does not group them by emperor but by period. The percentage of quadrantes in the Flavian period (41%) is most likely due to those issued by Domitian, but we cannot be sure. But if we presume that the quadrantes from the Flavian period will mainly be Domitianic, the percentage closely resembles the ratio of the *canabae legionis* at Nijmegen.

Comparison with Britannia, Germania Inferior (German part), Germania Superior and Gallia Belgica

In order to get to a meaningful conclusion, the quadrantes from Nijmegen have to be set in their macro-regional context. A number of type-sites and regions in the Northwestern Roman provinces were selected for this comparison. The coins from the sacred spring of Sulis Minerva at Bath were selected for Britannia, because not only are they excellently published, but they are numerous and have a diachronic distribution (first to fourth century, uninterrupted). The coin finds from large areas of Upper and Lower Germany are published in the FMRD series and the appropriate volumes were checked for quadrantes.[19] Since the Rhineland finds have not yet been published in the series, the Roman fortress at Neuss was selected for the German Rhineland, and for the Swiss part of Germania Superior the Roman towns of Augusta Raurica and Aventicum and the Roman fortress of Vindonissa. All these sites were occupied throughout the Flavian period. Unlike the *canabae* at Nijmegen, most of them last into the third century. Although nearly all these sites were excavated before the introduction of the metal detector, we can assume that the smaller denominations are quite well represented. The rather large numbers of fourth century coins, just as hard to spot by eye only as the quadrantes, on nearly all the sites support this assumption. Apart from these sites, three regions in Gallia Belgica were investigated as well, present-day Luxemburg, the 'Tempelbezirk' in the Altbachtal at Trier and the civitates of the Nervii and Menapii in Belgium.

Among the nearly 13,000 coins from the sacred spring from Sulis Minerva at Bath there was not a single quadrans. The coins date from app. 50 to 400 AD, and a few thousand to the first century, so one would expect at least some quadrantes. Walker supposed that the smallest and lightest coins were carried away from the

16 Since among the 800 coins from the recent (2001/2) excavations of the Roman fort at Alphen a/d Rijn not a single quadrans was found (identified by the author), one might assume that quadrantes from a 'military' site have been mostly found in *vici*.

17 Table 3.

18 Aarts (above, n. 8).

19 The following volumes were used: FMRD I.1-I.7, II.1-4, III, IV.1-2, V.1/1-2, V.2/1-2, VI.1/1, VI.4-6.

spring by the current.[20] Yet a large number of very small and light fourth century coins were found in the spring, so the absence of the quadrantes remains rather significant.

In the legionary fortress at Neuss nine quadrantes were found on a total of 1316 coins from the period in question (*table 4*). Seven of those were issued by Domitian, and five could with certainty be identified as RIC 436.

Emperor	n_{quad}	n_{tot}	%
Tiberius	0	362	0
Caligula	0	324	0
Claudius	1	306	0.3
Nero	1	81	1.2
Vespasian	0	81	0
Titus	0	9	0
Domitian	7	84	8.3
Nerva	0	3	0
Trajan	0	39	0
Hadrian	0	27	0
Total	9	1316	

Table 4: Quadrantes found at Neuss.[21]

The German area covered by the FMRD-series has yielded 55 Domitianic quadrantes (table 5), 36 of which could be identified as RIC 436, and further 34 quadrantes issued by earlier emperors (mostly Claudius). Most striking is the distribution pattern of these coins. Whereas the Domitianic issues are found mostly along the Rhine, the Julio-Claudian ones are scattered along both Rhine and Danube and in the hinterland. A cluster of quadrantes can be seen around Mainz. No less than sixteen Domitianic quadrantes (on a total of 178 coins issued by Domitian) were found in the military vicus of Rottweil.

Only five quadrantes were found at Aventicum, three Claudian and two Domitianic (one RIC 436) on a total of 1129 coins.[22] Among the coins from Augusta Raurica the rather more substantial number of twenty-three quadrantes is known (*table 6*). They differ from the quadrantes in the *canabae* at Nijmegen in three

20 D.R. WALKER, The Roman Coins, in: B. CUNLIFFE (ed.), The temple of Sulis Minerva at Bath, volume 2: the finds from the sacred spring (Oxford 1988), p. 281.

21 H. CHANTRAINE. Die antiken Fundmünzen von Neuss. Gesamtkatalog der Ausgrabungen 1955-1978. Novaesium VIII (Berlin 1982).

22 H.-M. VON KAENEL, Die Fundmünzen aus Avenches, 1. Teil, von den Anfängen bis Titus. SNR 51, 1972, pp. 47-130; A. VON VIETINGHOFF, Die Fundmünzen aus Avenches, 2. Teil, von Domitian bis Traian. SNR 54, 1975, pp. 103, 147-161.

important aspects: their number is much smaller, quadrantes issued by emperors other than Domitian occur in comparable numbers, and finally those issued by Domitian are, with three exceptions, not RIC 436.

Toponym	*Site*	*Emperor*	n_{quad}	n_{tot} / emperor	RIC	*Toponym*	*Site*	*Emperor*	n_{quad}	n_{tot} / emperor	RIC
Altenburg	fort	Domitian	1	20	436	Köngen	*vicus*	Domitian	1	22	427
Alzey	fort	Claudius	1	5	–	Lauchheim	native	Claudius	1	1	–
Augsburg	city	Claudius	2	14	–	Lorenzberg	fort	Nero	1	5	–
		Vespasian	1	42	–			Vespasian	1	5	–
		anony-mous	1	–	–			Domitian	1	6	432
Bad Abbach	tile fact.	Claudius	1	1	–	Mainz	area	Claudius	1	22	–
Baden-Baden	fort	Domitian	1	4	427			Domitian	1	27	436
Benningen	fort	Domitian	1	3	428/9		cemetery	Domitian	1	8	?
Bingerbrück	fort	Claudius	1	2	–		fort	Claudius	3	38	–
Burgheim	*vicus*	Vespasian	1	4	–			Domitian	2	36	436
Burghöfe	fort	Caligula	1	4	–		river	Domitian	1	5	436
		Claudius	1	10	–	Nida	area	Titus	1	17	–
Butzbach	area	Claudius	1	2	–			Domitian	3	94	427/8, 436
	vicus	Domitian	1	27	?		*villa*	Domitian	1	8	427
Gengenbach	area	Claudius	1	15	–		fort	Domitian	1	45	428
Hegau	area	Caligula	1	2	–		*vicus*	Domitian	3	110	427
Heidelberg	area	Claudius	1	2	–	Nöttingen	road	Domitian	1	2	?
		anony-mous	1	–	–	Ober-Rosbach	fort	Domitian	1	2	426
Heidenburg	fort	Domitian	1	12	436	Pachten	*vicus*	Caligula	1	1	–
Hofheim	fort	Caligula	1	88	–			Claudius	1	2	–
		Claudius	2	97	–	Rheingön-heim	fort	Domitian	1	2	?
		Domitian	8	53	436	Rottweil	*vicus*	Domitian	16	178	436
	vicus	Domitian	3	56	436	Trier	temple	Vespasian	1	1	–
Kempten	city	Caligula	2	159	–			Domitian	1	1	434
		Claudius	3	117	–	Wiesbaden	area	Domitian	1	78	436
		Domitian	1	36	BMC 412/7	Zugmantel	fort	Domitian	1	56	436
Köln	area	Domitian	1	2	435	*Total*			89	1550	

Table 5: Quadrantes found in Germany (FMRD I.1-7, II.1-4, III, IV.1-2, V.1/1-2, V.2/1-2, VI.1/1, VI.4-6).

Emperor	n_{quad}	n_{tot}	%
Tiberius	1	405	0.3
Caligula	1	194	0.5
Claudius	3 (+2)	296	1.0
Nero	0	113	0
Vespasian	0 (+1)	234	0
Titus	0	58	0
Domitian	6 (+2)	210	2.9
Nerva	0	59	0
Trajan	2 (+1)	300	0.7
Hadrian	0	341	0
Anonymous	0 (+4)	–	–
Total	13 (+10)	2210 (+?)	

Table 6: Quadrantes found in Augusta Raurica.[23] Between brackets, supplemental information on quadrantes found in the years 1973-2001 (kindly made available by M. Peter).

The Roman fort of Vindonissa yielded a rather larger number of quadrantes (29; *table 7*). As in the *canabae* at Nijmegen, these coins were mainly issued by Domitian, and sixteen out of the nineteen are of the RIC 436 type.

Emperor	n_{quad}	n_{tot}	%
Tiberius	0	1073	0
Caligula	2	429	0.5
Claudius	7	268	2.6
Nero	0	202	0
Vespasian	0	263	0
Titus	0	42	0
Domitian	19	181	10.5
Nerva	0	36	0
Trajan	1	74	1.4
Total	29	2568	

Table 7: Quadrantes found at Vindonissa.[24]

[23] M. Peter, Untersuchungen zu den Fundmünzen aus Augst und Kaiseraugst. Studien zu Fundmünzen der Antike 17 (Berlin 2001).

[24] C.M. Kraay, Die Münzfunde von Vindonissa (bis Trajan) (Basel 1962).

Finally the number of quadrantes in Luxemburg and Trier is extremely small (*table 8*). On a total of thousands of coins, only eight could be identified as quadrantes. Most of these were issued by emperors other than Domitian. Half of the quadrantes are reported to have turned up in *vici*. This is not really remarkable, since the area lacks a clear military presence and native settlements have hardly been investigated. In the *civitates* of the Menapii and Nervii no quadrantes were found at all.[25]

Toponym	*Site*	*Emperor*	n_{quad}	$n_{tot/emperor}$
Altwies-Hédefeldchen	*villa*	Domitian	1	1
Dalheim	*vicus*	Claudius	1	10
Schandel-Kreizmier	area	Tiberius	1	2
		Domitian	1	2
Titelberg	*vicus*	Tiberius	4	26
		Hadrian	1	45
Total			9	86

Table 8: Quadrantes found in Luxemburg and at Trier.[26]

Comparison with Italy

Having compared the quadrantes from the *canabae* at Nijmegen with sites and regions on a micro- and macroregional level, the final step is to compare them with those from Italy itself, Rome as well as other sites. The coins from the *Urbs* can be regarded as the point of reference for a completely monetized urban society. Unfortunately though, the coins from Rome have hardly been published so far. Some collections were studied, but a complete survey is still lacking. C.E. King has published the quadrantes from an assemblage dredged out of the Tiber,[27] and data of three other assemblages from Rome are available as well.[28] As table 9 shows, in Rome the amount of Domitianic quadrantes is rather low; those issued by earlier emperors are much more common. Of Domitian's quadrantes, a few are

25 J. VAN HEESCH, De muntcirculatie tijdens de romeinse tijd in het noordwesten van Gallia Belgica. De civitates van de Nerviërs en de Menapiërs (ca. 50 v.C.- 450 n.C.) (Brussel 1998), p. 120. Not only quadrantes, also semisses are lacking. According to the author this is not due to excavation methods, since fourth-century coins have been found in abundance.

26 AARTS (above, n. 8).

27 KING (above, n. 4).

28 H.-M. VON KAENEL, Roma – Monete dal Tevere, l'imperatore Claudio I. Boll. di Num. 2/3, 1984, pp. 85-325, p. 95, and F.E. KOENIG, Roma – Monete dal Tevere, l'imperatore Gaio (Caligola). Boll. di Num. 10, 1988, pp. 21-186, p. 44 provide information on the aes coinages of Caius and Claudius found in the Tiber. Prof. von Kaenel kindly gave me permission to use the unpublished data of the *Sottosuolo Urbano I* and *II* complexes, investigated, for the Flavian part, by Holger Komnick.

of the RIC 436 type, but this is a relatively rare type there.[29] Unfortunately we are not well informed on the proportion of the number of quadrantes to the other coins. By studying a survey of some coin collections from Rome and surroundings,[30] one may conclude a much higher proportion of quadrantes, compared to other bronze coins, among the Julio-Claudian emperors than among later emperors.[31] Possibly, one might extrapolate this to the quadrantes from the Tiber and the *Sottosuolo Urbano* complexes.

Emperor	*Sottosuolo Urbano I*	*Sottosuolo Urbano II*	*Tiber I*	*Tiber II*
Tiberius	x	x	x	0
Caligula	x	x	40 (560)	107
Claudius	x	x	90 (951)	294
Nero	x	x	x	98
Vespasian	x	x	x	33
Titus	x	x	x	9
Domitian	13 (796)	21 (199)	x	36
Nerva	x	x	x	11
Trajan	x	x	x	44
Hadrian	x	x	x	1

Table 9: Quadrantes found in Rome in the *Sottosuolo Urbano* complexes (data kindly made available by H.-M. von Kaenel) and in the Tiber I[32] and II[33] complexes. Between brackets, total number of coins (if known).

The coin finds from the rest of Italy have not been published extensively either, however recently a few major collections were investigated.[34] In the areas

29 KING (above, n. 4), pp. 88-89, among the Domitianic quadrantes from the *Sottosuolo Urbano I*, one is of the RIC 436 type, at the *Sottosuolo Urbano II* this number rises to six (personal comment Prof. von Kaenel).

30 KING (above, n. 4), pp. 75-77.

31 One has to bear in mind, though, that this is a general trend. Due to the large differences in the amount of coins between the collections, one can only recognise this trend within each collection separately.

32 VON KAENEL (above, n. 28), KOENIG (above, n. 28).

33 KING (above, n. 4).

34 A.S. HOBLEY, An examination of Roman Bronze Coin Distribution in the Western Empire, A.D. 81-192. BAR International Series 688 (Oxford 1998). One could argue that Hobley's thesis is not very representative, since he draws conclusions for the whole Italian peninsula on the basis of just over 8000 coins, and for the whole of northwestern Europe on the basis of even fewer coins. Nevertheless general trends can be observed in this way. Unfortunately, however, though in line with Hobley's research themes and methods, his investigation only starts with the coins issued by Domitian.

around Milan, Padua and Naples (excluding Pompeii) a few dozen Domitianic quadrantes were found, about ten percent of all Domitianic *aes* coins. Among those quadrantes nearly all RIC-types are present in comparable numbers, including RIC 436. Although the coin finds from Pompeii do not include Domitianic coins, the city being destroyed before the beginning of his reign, quadrantes there are not rare. They occasionally occur in small numbers in hoards, but a few examples are known of several hundreds of quadrantes hidden in boxes or *dolia* inside shops.[35]

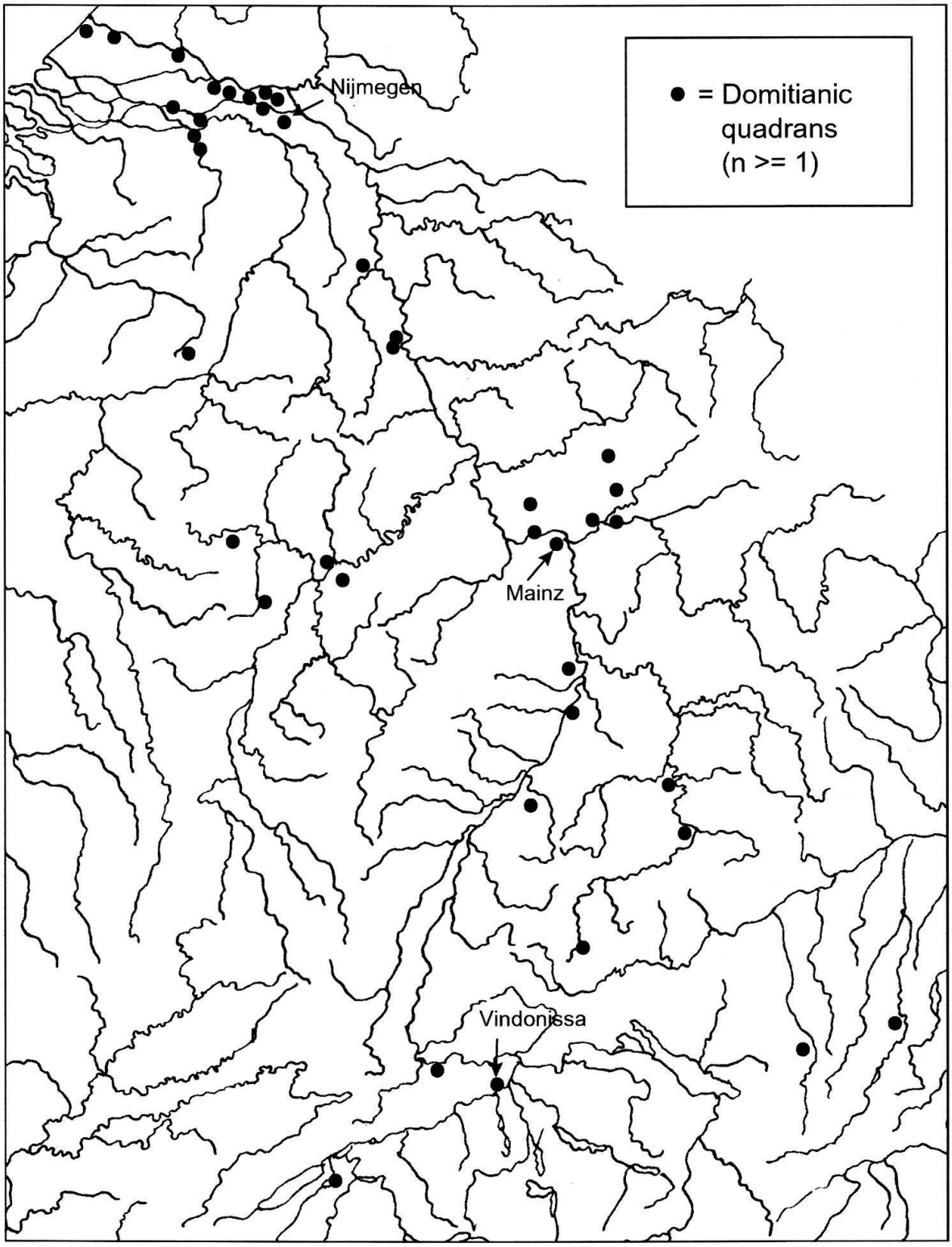
Conclusions

Before we can draw any conclusions from this inventory of quadrantes in Italy and northwestern Europe, we have to be aware of its incomplete character. The data from recent excavations in Nijmegen are very different in nature from eighteenthcentury private collections in Italy. However, conclusions can be drawn, since our main interest lies in the quadrantes from the limes and its hinterland, areas which have been excavated quite intensively. The only remaining problem which will be dealt with in the final conclusions is the German Rhineland, where major collections (e.g. Xanten, Cologne, Bonn) have not or only partially been published.

On the basis of the Italian finds, though problematic in provenience and representativity, we can conclude that quadrantes were quite common in Italy in the Julio-Claudian period, but declined in number in the final quarter of the first century. Rome and the surrounding area have yielded by far the most quadrantes, so perhaps we should assume that they spread slowly across the peninsula from the centre.

When looking at the distribution map of post-Augustan quadrantes, it appears that they are not as rare as they were thought to be (*map 1*). The Domitianic quadrantes, however, differ from the Julio-Claudian ones in their distribution pattern. Nearly all the Domitianic quadrantes were found on military sites or on native sites in the vicinity of the Limes.[36] Three clusters can be recognised: Nijmegen and surroundings, Mainz and surroundings and possibly Vindonissa and surroundings. Julio-Claudian quadrantes, on the other hand, are evenly spread along the limes and in the hinterland, especially Gallia Belgica and Southeast Germany. In Italy itself Domitianic quadrantes are less common than Julio-Claudian issues, but are still present in small numbers.

[35] BREGLIA (above, n. 3), pp. 57-59.
[36] This conclusion is not to be reversed; not every military site has yielded quadrantes.



Map 1

As shown by these many comparisons, so far the amount of quadrantes from the *canabae legionis* at Nijmegen is unique in northwestern Europe; only Rome itself has yielded a comparable number. However, when taking into account the ratio between quadrantes and other Domitianic coins per site, a different picture emerges (*map 2*). The *canabae* at Nijmegen still has the largest percentage of quadrantes, but in many other sites they amount to between 16 and 30%. On even more sites quadrantes represent 6 to 15% of the total amount of Domitianic coins. Only a few sites have percentages below five percent.[37]

The different types of Domitianic quadrantes show a strong regional distribution pattern (*map 3*). RIC 436 is clearly dominant along the lower and middle Rhine. In Nida (Frankfurt a.M.) and along the upper Rhine and Danube other types appear as well, although in sheer numbers RIC 436 remains dominant.

Considering the above-mentioned facts three statements can be made. Firstly, the commonly held opinion that quadrantes are scarce after the Augustan, and certainly after the Julio-Claudian, period is not correct. The *canabae* at Nijmegen is the only site to have yielded such a large number of Domitianic quadrantes. Other sites, however, have yielded quadrantes in smaller numbers, but in a more or less comparable percentage.[38] Secondly, the theory that the distribution of post-Augustan quadrantes is restricted to Rome and surroundings has been proven wrong. There is a distribution outside Rome, though of rather small numbers. Finally it appears that if a Domitianic quadrans is found, it will be nearly always along the Limes, and it will almost certainly be RIC 436.

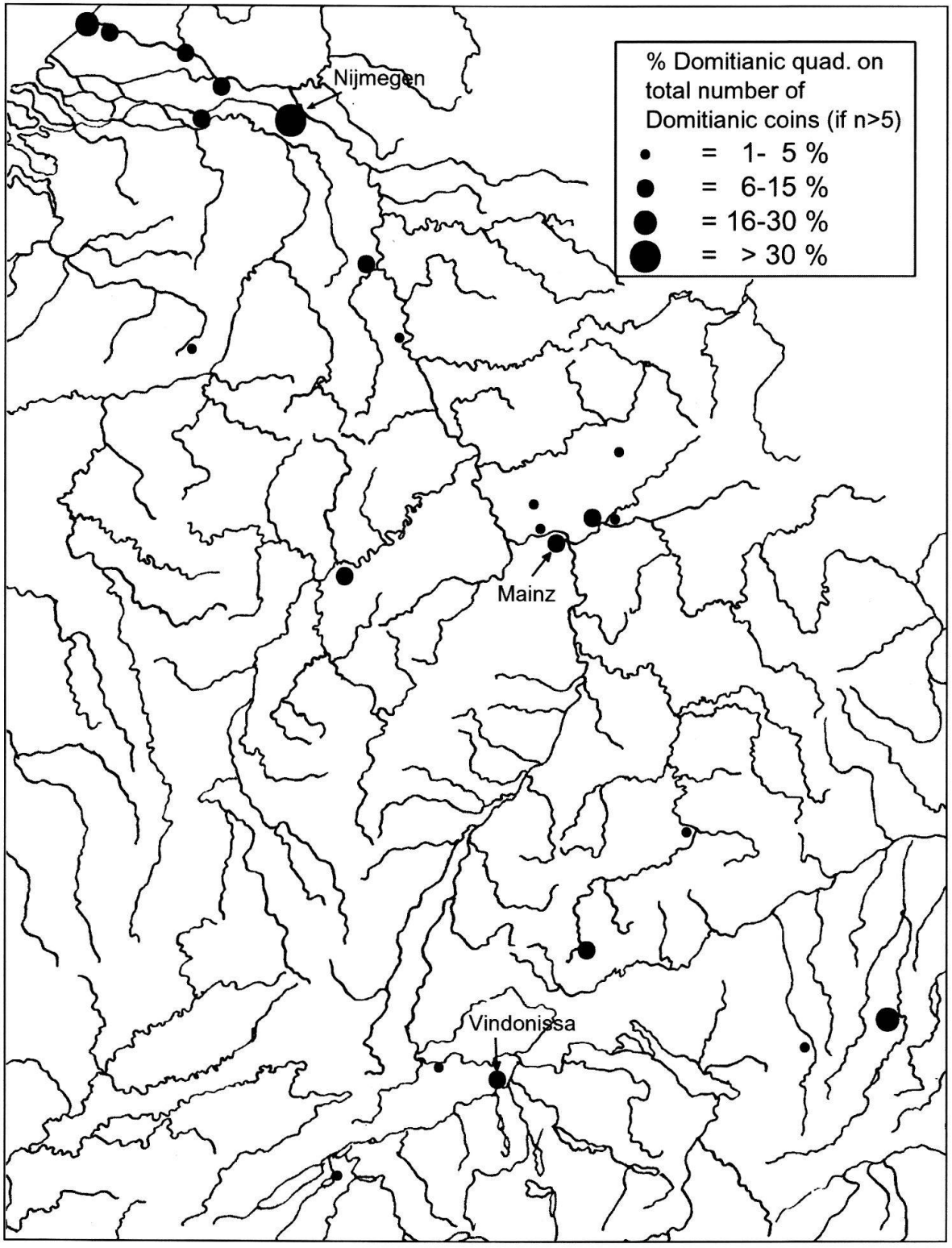
These three conclusions point to the following theory: In the reign of Domitian a bulk of quadrantes of the type RIC 436 was supplied to the German Limes. This type could have been minted specifically for this purpose, since it is quite uncommon in Italy. Most likely this consignment was delivered at Nijmegen, since most quadrantes were found there. Afterwards the coins found their way to the neighbouring forts and the hinterland. The quadrantes from Mainz and possibly Vindonissa may represent a second and third consignment, delivered to Germania Superior.[39] The scarcity of this specific coin type in non-military contexts, where other types of quadrantes have been found, supports the theory that Rome distributed money primarily to the army and not to the hinterland.

The theory of a delivery of specifically quadrantes to, at least, Nijmegen seems rather convincing. The question remains why. In his Satyricon Petronius described the unhappy fate of the quadrans: being swept carelessly on the muck-heap after

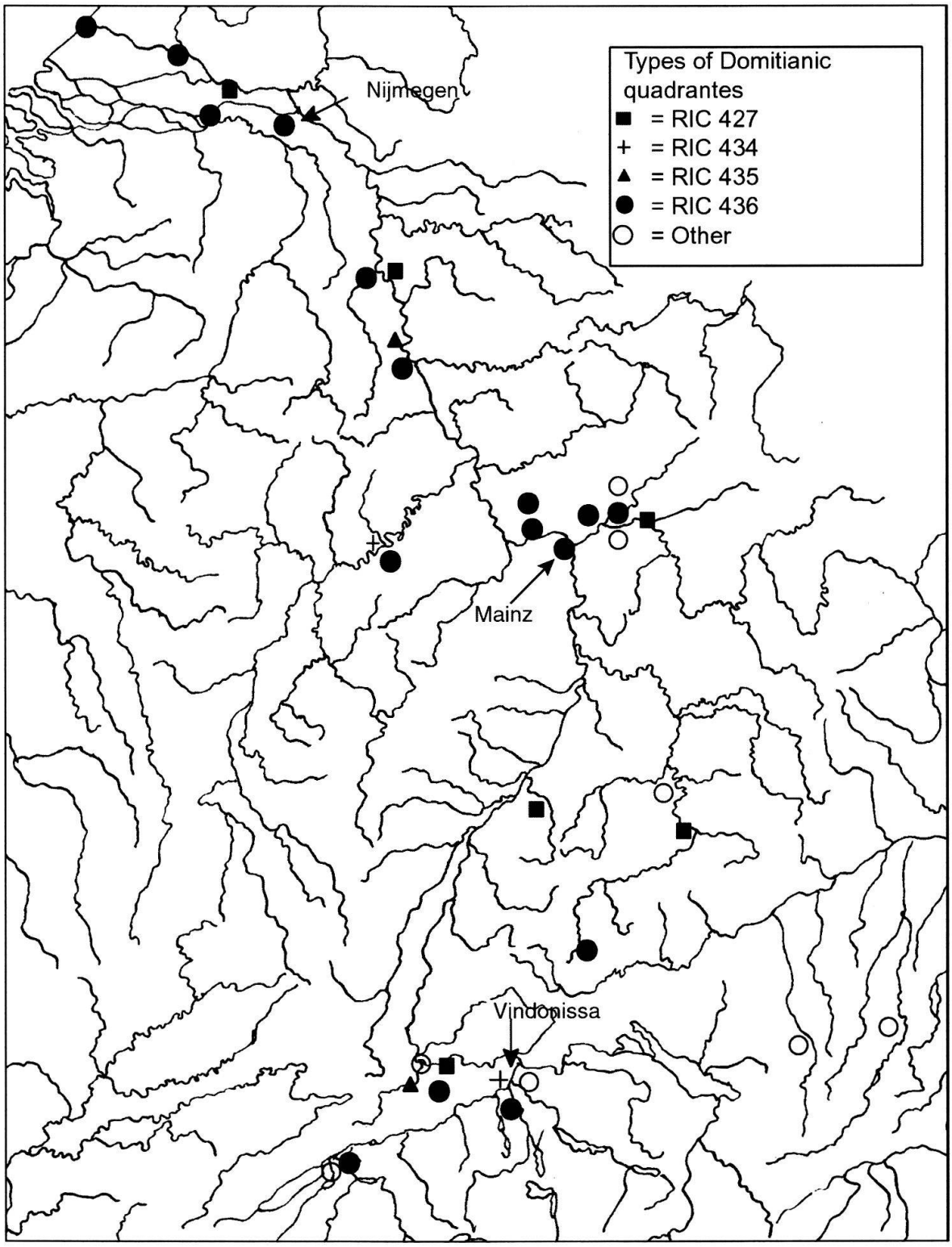
37 Sites with less than five Domitianic coins were not taken into account.

38 Furthermore because of excavation-methods quadrantes are underrepresented at all sites. If a metal-detector had been used on a regular basis the number of quadrantes might have been quite higher.

39 As long as the coin finds from the German Rhineland have not been published, we cannot be completely sure, but I would not be surprised if a lot more quadrantes turned up between Nijmegen and Mainz, representing yet another consignment.


% Domitianic quad. on total number of Domitianic coins (if n>5)
= 1- 5 %
= 6-15 %
= 16-30 %
= > 30 %
Nijmegen
Mainz
Vindonissa

Map 2


Types of Domitianic quadrantes
■ = RIC 427
+ = RIC 434
▲ = RIC 435
● = RIC 436
○ = Other
Nijmegen
Mainz
Vindonissa

Map 3

the cleaning of the kitchen-floor.[40] Obviously quadrantes had a very small purchasing power in Rome. The relatively small amount of these coins in the coin circulation at Rome confirms this.[41] In Nijmegen apparently this was not the case. Quadrantes were used in large numbers and intensively, as testified by the heavy wear on most of them. Reece offers an attractive explanation.[42] In his opinion, the price level in frontier provinces, with an underdeveloped economy, was considerably lower than in the mediterranean provinces, so for daily shopping smaller denominations were needed. This pictures the situation at Nijmegen fairly well: Most of the quadrantes were found in the *canabae*, where most economic transactions would have taken place.

Still one question remains: why were these quadrantes supplied to Nijmegen just in the reign of Domitian and hardly before or afterwards? An interesting solution presents itself: During the Augustan period Celtic bronze coins were used in the Roman forts as quadrantes and larger official issues were halved or even quartered. The soldiers were forced to do this because of the lower price-level along the frontier and the lack of supplies of small change.[43] Wigg's new theory supposes that the abundant Claudian copies served this same purpose,[44] but that they were not meant to be *asses* (their official model), but smaller denominations hardly available by official means. Evidently, during the pre-Flavian period people were forced to take initiatives to meet the shortage of small change. Could it be that in the Flavian period, in the reign of Domitian, the government in Rome became aware of this problem and made an effort to meet the needs of the soldiers? Wigg's argument that the Celtic coins and the copies were largely used in native contexts, where a monetary economy was only beginning to develop, does not contradict our theory.[45] After all, distributing money to the army was the only official possibility the government had. The reason why no emperor after Domitian supplied the Limes with quadrantes might be the general inflation in the course of the second century.

If the proposed explanation is correct, then the presence of the huge number of quadrantes at Nijmegen is not an anomaly at all. On the contrary, it is the continuation of an existing phenomenon: the need of small change at the frontier. Only this time the government is acting. This does not only imply awareness by the central government of a monetary problem in a remote frontier province, it also implies that it was considered important enough to be dealt with. Two possible

40 R. Reece, Roman Monetary Impact on the Celtic World – Thoughts and Problems, in: B. Cunliffe (ed.), Coinage and Society in Britain and Gaul: Some Current Problems (London 1981), p. 25.

41 Idem.

42 Idem, and R. Reece, Money in Roman Britain: a review, in: R.F.J. Jones (ed.), Britain in the Roman Period: recent trends (Sheffield 1991), pp. 29-34.

43 D.G. Wigg, The Function of the Last Celtic Coinages in Northern Gaul, in: C.E. King, D.G. Wigg (eds.), Coin Finds and Coin Use in the Roman World. Studien zu Fundmünzen der Antike 10 (Berlin 1996), p. 431, with further references.

44 Idem, p. 432.

45 Idem.

explanations present themselves. One might be the monetary policy of Domitian, who centralised the mint in Rome again. As an extension he could have stopped the use of local imitations and other *ad hoc* solutions.[46] Another possibility is the war against the Chatti (AD 83)[47] during which Domitian's presence is attested in Mainz,[48] to the northeast of which the battles were fought. All the legions stationed in Germania Superior must have taken part in this campaign, along with the *legio XXI* from Bonn and *vexillationes* from the other three legions in Lower Germany,[49] including the *legio decima gemina* from Nijmegen. We have seen that apart from Nijmegen two other consignments of quadrantes can be recognised, one to Vindonissa and one to Mainz, whose legions, or part of them, were involved in the war with the Chatti. Perhaps shortly after the war the quadrantes were distributed among the participating legionaries,[50] possibly by a field mint,[51] either to alleviate the shortage of small change or, perhaps, as a donative.[52] Of course those two options are not mutually exclusive.

46 As the *canabae* was only inhabited from 70 AD onward, the Claudian copies found on the terrain were evidently still circulating in the early Flavian period.

47 K. STROBEL, Der Chattenkrieg Domitians, historische and politische Aspekte. Germania 65, 1987, pp. 423-452.

48 Idem, p. 442.

49 RE pp. 1211-1829, *s.v.* legio (E. RITTERLING), p. 1276.

50 I. CARRADICE, Coinage and Finances in the Reign of Domitian, A.D. 81-96. BAR Int. Ser. 178 (Oxford 1983), p. 116 dates RIC 436 to AD 82, because the honorific title GERM is still missing, which Domitian acquired after the war against the Chatti in AD 84. This corresponds to the theory that the quadrantes were distributed during or shortly after this war, before Domitian had officially claimed his title.

51 The suggestion of a field mint is rather speculative. Only a stylistic and metallurgical analysis of the coins can prove it right or wrong.

52 Although donativa are usually thought to have been paid in silver, donativa in bronze existed as well, as shown by numerous Julio-Claudian bronze coins bearing the countermarks of munificent generals, see e.g. CHANTRAINE (above, n. 21), pp. 33-34 with further references.

Zusammenfassung

Bei Ausgrabungen der flavischen *canabae legionis* (der Zivilsiedlung vor den Toren des Legionslagers) der Legio X Gemina in Nijmegen (Niederlande) wurden 303 Quadranten des Domitian gefunden, alle vom gleichen Typ. Diese enorme Menge steht im Gegensatz zur Theorie, wonach Quadranten eine beschränkte chronologische (die julio-claudische Periode) und geografische (Italien) Verteilung hatten. Bei genauer Betrachtung zeigen die Münzfunde in Nordwesteuropa und in Italien, dass Quadranten an sich nicht selten sind. Der Fundkomplex von Nijmegen ist zwar bei weitem der grösste, aber Quadranten sind längs des Limes in Ober- und Untergermanien ein konstanter Faktor. Auf der Basis ihres Verteilungsmusters wird hier vorgeschlagen, dass in den frühen Regierungsjahren des Domitian Lieferungen von Quadranten nach Nijmegen und wohl auch nach Mainz und Vindonissa erfolgten, um die Region mit Kleingeld zu versorgen, das angesichts des niedrigen lokalen Preisniveaus und wegen des Fehlens von offiziellen kleineren Nominalen benötigt wurde. Diese Geldlieferungen standen wohl im Zusammenhang mit dem Feldzug gegen die Chatten und mit Domitians Anwesenheit in Germanien.

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