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CALIGULA ON THE LOWER RHINE: COIN FINDS FROM THE ROMAN FORT OF ALBANIANA (THE NETHERLANDS)

I. Introduction (**)

The 2001-2002 excavations of the Roman fort at Alphen aan den Rijn (the Netherlands) have yielded a large amount (735 pieces) of Roman coinage. Coin finds of this size are a rarity in the Netherlands. Comparable numbers are known only for the Roman settlements in Nijmegen, Maastricht and Vechten (1). Not just the sheer volume of the assemblage makes it of considerable scientific interest; but the composition of the assemblage also provides unique possibilities for numismatic and historical research.

Before we can proceed to an analysis of the assemblage, a short overview of the excavations, including geographical position, phasing and occupation of the fort, must be given. Afterwards the coin finds will be discussed in chronological order. Only then can we start the analysis of the coin finds. This analysis is separated in two parts. In the first part we will try to establish a foundation date for the fort on the basis of the coin finds. Since it is not possible to give an exact date for a site on the basis of coin finds alone, we will first try to establish a relative chronology for the site by comparing the coin assemblage with more or less contemporary sites along the Rhine. Once this has been achieved, we will propose an absolute date for the site. Secondly an important aspect of this study will consider the problem of coin supply and coin circulation in the different areas of the north-western empire in the early stages of the Limes-system. In relation to this some purely numismatic aspects of the assemblage will be discussed, such as the circulation period of coins, the pro-

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(**) I would like to thank Dr. J.P.A. van der Vin, Prof. Dr. M. Erdrich and Dr. J. van Heesch for their careful reading of the text and their comments. I. Wellington corrected my English, for which I am very grateful. All remaining mistakes are my own.

(1) Though the finds from Maastricht are mainly fourth-century coins, while the coins found in Vechten were nearly all excavated in the previous centuries, without proper registration of contexts.

portions between the different denominations and the provenance of the coins. This will be combined with an historical interpretation of the fort at Alphen aan den Rijn.

II. The Roman fort *Albaniana*

Ever since the small excavation campaigns in the 1970's and 1980's, the presence of a Roman fort at Alphen aan den Rijn had been expected (Fig. 1). This was finally proven true in a large-scale campaign in 1998 (2). The excavations of 2001 and 2002, which yielded the numerous coin finds, clarified the layout of the fort, which can be identified with the fort *Albaniana* on the Peutinger map (3). In the city centre of modern Alphen aan den Rijn, on the bank of the Old Rhine, a Roman infantry fort (*castellum*) was located, which was rebuilt several times in wood and finally in stone. In the second century AD a bathing facility (*thermae*) was built on the outside of the fort. Before that date a complex system of quay and harbour structures had been constructed in the bed of the Old Rhine. On the basis of historical sources the fort is supposed to have been inhabited between approximately AD 50 and 270. A large inscription, found in two parts in 1998 and 2001, testifies to the renovation of


the fort in the reign of Septimius Severus. Surrounding the fort are at least four, possibly five, ditches; each belonging to a different occupation phase. Furthermore, the excavations have revealed the foundations of both an earth and timber and a brick wall, and also traces of the *porta principalis dextra*, built in stone, and its wooden predecessors. Inside the fort, in the *praetentura*, wooden structures belonging to the first occupation phase were discovered, which are interpreted as the remains of three barracks, the track of the main road through the fort (*via principalis*) a *fabrica* (workplace) and a granary (*horreum*). In medieval and modern times part of the terrain was levelled, which explains the absence of any recognisable features in the *retenantura* (such as the headquarters of the fort), and traces of later occupation phases in the *praetentura*. The waste deposits in the bed of the Old Rhine, covering the entire habitation period of the site, remain largely intact.

Finally one should bear in mind that the coin finds discussed in this paper were only found during the excavations of 2001 and 2002, so mostly in the inner structures of the fort, the wall and ditches and in the river bed. If necessary references will be made to coin finds from previous campaigns, or coins found by amateur archaeologists, notably from the area around the *thermae* and other locations outside the walls of the fort.

### III. The coin finds

#### 1. Reliability of the data

Since a metal detector was used on a regular basis, the number of coin finds (and other metal objects) found during the 2001-2002 excavations, was very high. We can safely assume that the majority of the coins lost in Roman times have been found. Contrary to coin assemblages excavated before the introduction of the metal detector, there is no bias towards the larger denominations (*sestertii* and precious metal). However, this sometimes makes comparisons with other assemblages quite difficult.

The condition of the individual coins differs greatly, and as a consequence the opportunity for specific coin identification. The coins that have been found in the wet, oxygen deprived, layers of the riverbed show a characteristic river patina, often encountered in coins found in the Dutch river delta. This patina has preserved the original appearance of the coins — a red glow when made of copper, a golden colour when made of brass. However, coins found inside the fort are usually very corroded or covered in thick layers of debris. After cleaning a considerable part of those coins were surprisingly readable, though approximately twenty percent of the coins could only be roughly identified.
2. Republican and imperatorial coins

Sixteen *denarii* from the Republican period and two halved bronzes struck in the imperatorial period were found during the 2001-2002 excavations. Since Republican *denarii* are known to have been a substantial part of coin circulation until the monetary reform of Nero, and became very rare only in Trajan's reign, their presence at Alphen aan den Rijn is not remarkable (⁴). Their importance in first century coin circulation is shown by the fact that nearly half of the *denarii* found at Alphen aan den Rijn had been struck in Republican times.

As can be concluded from table 1 the minting date of the *denarii* is not evenly spread over the entire period. Most coins were struck in the forties BC, and slightly less in the eighties and fifties of that century. However, coin assemblages from other imperial sites show more or less the same pattern. This implies that this distribution is not related to chronological or geographical factors of the site, but to a differing intensity of coin output in Rome (⁵). A high volume of coin output can usually be explained by periods of internal or external warfare, when troops had to be paid. The best example of this are the legionary *denarii*, issued in huge volumes by Mark Antony prior to the battle of Actium. Due to their low silver content those coins — of which one plated specimen has been found at Alphen aan den Rijn — kept circulating well into the third century (⁶).

<table>
<thead>
<tr>
<th>Date</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 100 BC</td>
<td>2</td>
</tr>
<tr>
<td>&gt; 90 BC</td>
<td>0</td>
</tr>
<tr>
<td>&gt; 80 BC</td>
<td>3</td>
</tr>
<tr>
<td>&gt; 70 BC</td>
<td>0</td>
</tr>
<tr>
<td>&gt; 60 BC</td>
<td>0</td>
</tr>
<tr>
<td>&gt; 50 BC</td>
<td>2</td>
</tr>
<tr>
<td>&gt; 40 BC</td>
<td>5</td>
</tr>
<tr>
<td>&gt; 27 BC</td>
<td>0</td>
</tr>
<tr>
<td>legionary <em>denarii</em></td>
<td>1</td>
</tr>
<tr>
<td>unknown</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

Table 1. Republican and imperatorial *denarii* found during the excavations at Alphen aan den Rijn, grouped by period of manufacture.

Republican bronzes have not been found during the excavations. Two halved bronzes struck in the imperatorial period (44-27 BC) have been


(⁶) Among others Peter (see n. 4), p. 39 and Van der Vin (see n. 5), p. 27.
found, though they were too worn to allow closer identification. Most likely they belonged to the so-called Copia or Vienna series. Those series play an important part in coin circulation on early military sites such as Neuss, Nijmegen-Kops Plateau and Nijmegen-Hunerberg (7). As soon as the large-scale production of Nemausus coins and (somewhat later) the altar series of Lugdunum commenced their importance swiftly dwindled (8), and they are only occasionally present in first century AD contexts.

3. Augustus

During the excavations at Alphen aan den Rijn forty coins issued in the reign of Augustus were found, seven of those are denarii, 32 asses and one semis. Several coins (four asses and a semis) could, due to heavy wear, only be identified as Augustan, on the basis of their pictorial style or the countermarks (9), but could not be ascribed to a specific type or series. The majority of the denarii were struck in Lugdunum, five of them of the so-called Gaius and Lucius type. This type, depicting the designated heirs of Augustus, was issued in large quantities between 2 BC and AD 4. Because of the abundance of the type a prolonged issuing period or several auxiliary mints have been proposed (10). The type is abundant on Augustan sites throughout the north-western empire (11), but is still present in large numbers on later sites, until the large-scale production of denarii by the Flavian dynasty (12).


(9) Once TIBIM, once AVC and TI. and once CAESAR and TIB. All of them are typical late-Augustan or Tiberian countermarks on Augustan coins, CHANTRAINE (see n. 7), p. 36-38.

(10) RIC (12), 55. F. BERGER, Kalkriese 1. Die römischen Fundmünzen (Römisch-germanische Forschungen, 55), Mainz, 1996, supposes a mint in Spain, since dies of the type have been found there.

(11) BERGER (see n. 10), p. 25-31 gives an overview of the sites where the type has been found.

(12) PETER (see n. 4), p. 39.
Like the silver coinage, the majority of the bronze coins were issued in *Lugdunum*. Without exception they belong to the first or second altar series. The first series, minted between 7 and 3 BC, and to a lesser extent the second series, was issued in enormous quantities and distributed across north-western Europe.

Three *asses* are clearly copies of the altar series. Copies are a common phenomenon in the Rhine area, where they were probably manufactured to compensate for the lack of small change in the entire Julio-Claudian period. Copies of the altar series were still probably being made in the *Claudian period*.

One coin was minted in the provincial mint of *Calagurris* in Spain. Coins of this type are a small but fairly constant part of late Augustan or Tiberian coin assemblages. The remaining Augustan coins found at Alphen aan den Rijn were struck in Rome. Nine of those belonged to the

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(14) Below paragraph 3.6 and 5.3.

(15) As testified by copies with an obverse showing the portrait of Claudius and a reverse depicting the altar at Lugdunum, PETER (see n. 4), p. 72.


<table>
<thead>
<tr>
<th>Denomination</th>
<th>Catalogue</th>
<th>Mint</th>
<th>Date</th>
<th>Total number</th>
<th>Counter-marked</th>
</tr>
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<tr>
<td>Denarius</td>
<td><em>Gaius/Lucius type</em></td>
<td><em>Lugdunum</em></td>
<td>2 BC-AD 4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>RIC (I²) 201A</em></td>
<td></td>
<td>8 BC</td>
<td>1</td>
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</tr>
<tr>
<td></td>
<td><em>RIC (I²) 257</em></td>
<td>Italia</td>
<td>32-29 BC</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>As</td>
<td>Moneyers’ II/IV</td>
<td>Roma</td>
<td>16-6 BC</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Moneyers’ IV</td>
<td></td>
<td>7 BC</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><em>RIC (I²) 471</em></td>
<td></td>
<td>AD 10-12</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Altar I</td>
<td><em>Lugdunum</em></td>
<td>7-3 BC</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Altar II</td>
<td></td>
<td>AD 8-14</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Altar III</td>
<td></td>
<td>7 BC-AD 14</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Altar copy</td>
<td>Gaul</td>
<td>after 7 BC</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>RPC 445/446</em></td>
<td><em>Calagurris</em></td>
<td>2 BC-AD 14</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>?</td>
<td>?</td>
<td>27 BC-AD 14</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td>14</td>
</tr>
</tbody>
</table>

Table 2. Augustan coins found during the excavations at Alphen aan den Rijn.
Moneyers' issues, minted between 16 and 6 BC (17). As on most sites along the Rhine, those coins usually bore the early Tiberian countermark CAESAR (18) or TIBIM, indicating that the coins were shipped north years after their manufacture, countermarked and distributed among the army (19).

Because of the irregular supply of small change and often the complete lack thereof, both the altar series and the Moneyers' issues are thought to have been in circulation until at least to the middle of the first century AD (20).

4. Tiberius

The only gold coin found inside the fort is an aureus of the Pontif Maxim-series, issued by Tiberius. Three denarii are of the same type. Though aurei are rare as site finds, the type was issued in large quantities in gold, but above all in silver, in Lugdunum. Together with the Augustan Gaius and Lucius denarii it is the most common pre-Neronian denarius type in hoards and site finds (21).

Besides coins of precious metal, 42 Tiberian bronze coins have been found at the fort Albaniana. Twenty of those formed a hoard (see below). The majority of the remaining coins belonged to the series in honour of the deified Augustus and depict the altar panel of Providentia. Furthermore three copies of this type were found. Though the official type seems to have been minted in Rome between AD 22 and 30 (22), a considerable

(17) The date of manufacture of those issues has been a matter of much scholarly debate, a starting date ranging between 23 and 16 BC and a final date somewhere between 7 and 2 BC. For the details of the discussion: H. Mattingly, *Coins of the Roman Empire in the British Museum, I, Augustus to Vitellius*, London, 1923 and K. Kraft, *Zur Datierung der römischen Münzmeisterprägung unter Augustus*, in Mainzer Zeitschrift, 46/47, 1951/2, p. 28-35.

(18) This specific countermark is thought to have its origin in the Lower Rhine area. First put forward by C.M. Kraay, *The Behaviour of Early Imperial Countermarks*, in R.A.G. Carson and C.H.V. Sutherland (eds.), *Essays in Roman Coinage presented to Harold Mattingly*, Oxford, 1956, p. 113-136. Later confined to Nijmegen by D.W. Mac Dowall, A.V.M. Hubrecht and W.J.A. De Jong, *The Roman Coins, Republic and Empire up to Nerva* (Description of the collections in the provincial museum G.M. Kam at Nijmegen, 12), Nijmegen, 1992. Most likely this is incorrect, since Mac Dowall explains the countermark by the presence of a legion in Nijmegen in the early Tiberian period, which is unlikely.

(19) Kraay (see n. 18), p. 136.

(20) Peter (see n. 4), p. 52-56.

(21) RIC (12), 90.

(22) S. Klein and H.-M. von Kœnel, *The Early Imperial Aes Coinage: Metal Analysis and Numismatic Studies*, in SNR, 79, 2000, p. 53-106 analysed the metal alloy of both well-dated Tiberian coinage and the Providentia asses and suggested an issue of the latter in 22/23, though it might have continued until 34. Manufacture of the coin type from 14 onwards has been proposed as well, on the basis of an inscription mentioning the altar of Providentia, testifying its existence already in 16 or earlier: W.
number of unofficial mints in Gaul kept issuing the type into Claudius' reign (23). Those local copies are often of remarkable quality, while some of those minted in Rome are not. Therefore it is difficult to discern between them, and every researcher uses his own criteria. The coins from Alphen aan den Rijn are in most cases too worn or corroded to decide in favour of or against a copy.

<table>
<thead>
<tr>
<th>Mint</th>
<th>Denomination</th>
<th>Catalogue</th>
<th>Date</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lugdunum</td>
<td>aureus</td>
<td>RIC (I) 25</td>
<td>14-37</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>denarius</td>
<td>RIC (I) 26 type</td>
<td>14-37</td>
<td>3</td>
</tr>
<tr>
<td>Roma</td>
<td>sestertius</td>
<td>RIC (I) 51</td>
<td>22-23</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>dupondius</td>
<td>RIC (I) 43</td>
<td>22-23</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>as</td>
<td>RIC (I²) 81</td>
<td>22-30</td>
<td>12</td>
</tr>
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<td>1</td>
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<td></td>
<td></td>
<td>?</td>
<td>14-37</td>
<td>2</td>
</tr>
<tr>
<td>Turiaso</td>
<td>bronze</td>
<td>RPC 413</td>
<td>14-37</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>?</td>
<td>14-37</td>
<td>1</td>
</tr>
<tr>
<td>?</td>
<td>copy</td>
<td>copy of RIC (I²) 81</td>
<td>22-30</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>26</td>
</tr>
</tbody>
</table>

Table 3. Tiberian coins found during the excavations at Alphen aan den Rijn (hoard excluded).

Apart from those very common coins a few other Tiberian coins have been found in the fort. Those issued in Rome were only minted in small volumes, as a consequence they are rare in site finds in general. The two coins that were minted in Turiaso are, like the Augustan coins from Spain, a small but constant factor in coin assemblages from the Lower Rhine area (24).

The hoard of twenty Tiberian asses, which will be discussed in depth in paragraph 5.1, consisted of nineteen copies of the Providentia-type. Most of them are very barbarous in style and a few are die-linked. It is not sure whether the twentieth coin, which can be identified as RIC (I²) 71-73, is a copy or not.

5. Caligula

The overwhelming majority (320 pieces) of the coin finds were issued in Caligula's reign. As table 4 shows most of them were minted in the


(23) RIC (I²), 99; CHANTRAINE (see n. 7), p. 22-23 mentions several overstrikes of this type on coins of both Caligula and Claudius.

(24) PAZ GARCÍA-BELLIDO (see n. 16).
years 37-38, while only four coins could be ascribed to the period 39-41. Since this phenomenon has been observed on numerous sites (25), including Rome itself (26), the most likely cause is a decrease in coin output in the years 39-41 (27). Besides the well dated issues, a lot of so-called Agrippa-asses were found, which are generally dated to the years 37-41. However, this coin type belongs to a group of types — RIC (I2) 55-58 — of which the production date is a matter of much debate. Due to the scope of this paper, the discussion can not be dealt with in depth, but it is worth considering in passing that a manufacturing date in Tiberius' as well as in Claudius' reign has been proposed (28). In the case of the Agrippa-asses consensus seems to have been reached on a minting date in Caligula's reign, be it on the basis of pictorial style (29), the absence or presence of specific countermarks (30), metallurgical analysis (31) or depicted theme (32). However this only included the regular coins of the type. Like the Tiberian Providentia-asses a large scale minting of irregular types, perhaps in semi-official mints in Gaul, is generally believed to have continued well into Claudius' reign (33). Due to the often heavy corrosion of the coin finds from the excavations at Alphen aan den Rijn, only one specimen could be with certainty identified as an irregular Agrippa-as. Most other coins of this type seem to have been struck in varying styles on flans that differed widely in size.

(25) For example in Vindonissa: C.M. KRAAY, *Die Münzfund von Vindonissa (bis Trajan)* (Veröffentlichungen der Gesellschaft pro Vindonissa, 5), Basel, 1962; in Neuss: CHANTRAINE (see n. 7); Nijmegen-Kops Plateau: VAN DER VINK (see n. 7); Augst: PETER (see n. 4) and Avenches: H.-M. VON KAENEL, *Die Fundmünzen von Avenches. I. Teil, von den Anfängen bis Titus*, in SNR, 51, p. 47-128.


(27) *RIC* (I2), 104-105.

(28) Since *RIC* (I2) 55 depicts Caligula's mother, it was undoubtedly issued in his reign, though in which years is not known. H.-M. VON KAENEL, *Die Organisation der Münzprägung Caligulas*, in SNR, 66, 1987, p. 135-156 proposes three issues, contemporary with Caligula's regular coinage, since this coin type is very common (though not among the coin finds of Albaniana). *RIC* (I2) 56 is contributed to Caligula, since the person depicted on the reverse is thought to resemble him. CHANTRAINE (see n. 7), p. 20-21 persists in a Claudian origin of the type. Much disputed is *RIC* (I2) 57 which shows Germanicus, Caligula's father on both obverse and reverse. The scene depicted though is a triumph he held in 17, which could argue for an issue in Tiberius' reign. For a further discussion n. 37.

(29) VON KAENEL (see n. 28), p. 152.

(30) CHANTRAINE (see n. 7), p. 18-19.

(31) KLEIN and VON KAENEL (see n. 22), p. 82.

(32) Marcus Agrippa was Caligula's maternal grandfather.

(33) *RIC* (I2), 112; VON KAENEL (see n. 28), p. 152.
Another remarkable feature of the Caligulan coins found in the excavations at Alphen aan den Rijn is the large number of countermarked coins. Sixty-five coins bore the countermark TICLAVIM (34), one coin bore a different but illegible countermark and 44 coins bore an illegible countermark that could well be TICLAVIM. Obviously those letters are the initials of Caligula’s successor Claudius, which dates this specific countermark early in his reign (35). In contrast to other Claudian countermarks (36) this type seems to have been solely applied to Caligulan coins.

(34) M. GRÜNWALD, Die römischen Bronze- und Kupfermünzen mit Schlagmarken im Legionslager Vindonissa (Veröffentlichungen der Gesellschaft pro Vindonissa, 2), Basel, 1946, pl. XIV, nr 97.
(36) CHANTRAINE (see n. 7), p. 38.

### Table 4. Caligulan coins found during the excavations at Alphen aan den Rijn.

<table>
<thead>
<tr>
<th>Denomination</th>
<th>Catalogue</th>
<th>Date</th>
<th>N without counter-mark</th>
<th>N with counter-mark</th>
<th>Total Number</th>
</tr>
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<tbody>
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<td>2</td>
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<td>RIC (12) 36 type</td>
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<td>37-38</td>
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<tr>
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<td>RIC (12) 37 type</td>
<td>37-41</td>
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<td>1</td>
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<td>RIC (12) 46</td>
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<td>3</td>
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<td>Dupondius</td>
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<td>RIC (12) 49</td>
<td>40-41</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>RIC (12) 56</td>
<td>37-41</td>
<td>15</td>
<td>4</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>RIC (12) 57</td>
<td>37-41</td>
<td>15</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>As</td>
<td>RIC (12) 35</td>
<td>37-38</td>
<td>32</td>
<td>23</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>RIC (12) 35 type</td>
<td>37-41</td>
<td>7</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>RIC (12) 38</td>
<td>37-38</td>
<td>33</td>
<td>40</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>RIC (12) 38 type</td>
<td>37-41</td>
<td>6</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>RIC (12) 47/54</td>
<td>39-41</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>RIC (12) 58</td>
<td>37-41</td>
<td>63</td>
<td>21</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>RPC 1172</td>
<td>37-38</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Copy</td>
<td>copy of RIC (12) 38</td>
<td>37-</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>copy of RIC (12) 58</td>
<td>37-</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>210</strong></td>
<td><strong>110</strong></td>
<td><strong>320</strong></td>
</tr>
</tbody>
</table>
not only in the Alphen assemblage, but in others as well (37). Surprisingly
the specific countermark can be observed on all Caligulan coin types in
the Alphen assemblage, including RIC (I²) 55, 56 and 58 — confirming
their manufacturing date, but not on the type RIC (I²) 57. This alone is
due to the relatively small numbers, not enough evidence to propose a
different minting date for the type, but others have doubted a Caligulan
date before (38).

Apart from the Caligulan coins minted in Rome, and perhaps partly in
Gaul, one coin from the mint in Corinth has been found during the 2001-
2002 excavations. The coin was minted in the years 37-38 and is a rarity
outside the eastern Mediterranean (39).

6. Claudius

The excavations of the fort Albaniana have yielded (besides 65
bronzes) only one Claudian denarius. Silver coinage issued by Claudius is
a rarity in site assemblages (40), just like Caligulan precious metal.
Though this is partly caused by a decrease in coin output in this period,
the monetary reform of Nero plays an important part. He decreased the
fineness of the denarius, which quickly drove older denarii of a higher
fineness out of circulation (41). Likewise rare are the three Claudian qua-
drantes, twice RIC (I²) 1, once RIC (I²) 84, struck in 41 in Lugdunum
and Rome respectively. Though post-Augustan quadrantes are less rare
than they were previously thought to be (42), three Claudian quadrantes
from a single site is quite remarkable.

(37) Below paragraph 6.2
(38) R. Wolters, Der Germanicus-Dupondius, die Tabula Siarensis und der römische
Vergeltung auf die Okkupation Germaniens, in NZ, 101, 1990, p. 7-16 proposes a manufac-
turing date early in Tiberius’ reign. His main argument is the description in the Tabula
Siarensis of two triumphal arches, erected in honour of Germanicus shortly after his
death. The monuments on those arches seem to be depicting the same scenes as on
the Germanicus dupondius, which led Wolters to conclude that the monuments and
the coin type are, nearly, contemporaneous. However in the collection of the Bibliothè-
que nationale in Paris a specimen of RIC (I²) 57 is known which does bear the counter-
mark TICLAVIM: J.-B. Giard, Bibliothèque Nationale. Catalogue des monnaies de
(39) A. Burnett, M. Ambyndy and P. pav Rippolés, Roman Provincial Coinage, I.
(40) J. van Heesch, De munccirculatie 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.) (Koninklijke musea voor kunst en archeologie, monografie van nationale archeolo-
gie, 11), Brussel, 1998, shows that Caligulan and Claudian precious metal is much rarer
on sites in the civitates of the Nervii and the Menapii than Tiberian precious metal
coingage.
(41) In line with Gresham’s law: bad money drives out good money.
(42) F. Kemmers, Quadrantes from Nijmegen: Small Change in a Frontier Province,
in SNR, 82, 2003, p. 17-35.
The minting date of the other Claudian bronze coins is less clear. The debate centres on the title *Pater Patriae* (PP). All Claudian coin types have a variant with and without this title. Since it is known that Claudius assumed the title PP in 42 (43), it seems logical to date all his coins without the title in 41, and the rest from 42 onwards. However, coins without PP are more common by far than ones with the title, which seems illogical considering the much longer minting period of the latter. Different solutions to this problem have been proposed. Sutherland aligns the bronze coinage with the well dated silver coinage on which the title PP is only used from 50 onwards (44). Von Kaenel points out that the coins with PP are much more frequent in Italy, while the coins without PP that are found in the north-western empire are usually copies. He explains this as a large consignment to this area in 41, while the ones issued after 42 were never supplied in bulk to the north (45). A third option is the existence of an auxiliary mint in Gaul, which continued to strike coins without PP long after the official mint had introduced types with the legend (46). As shown in table 5 the majority of the coins found

<table>
<thead>
<tr>
<th>Denomination</th>
<th>Catalogue</th>
<th>Date</th>
<th>Number</th>
<th>Countermark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denarius</td>
<td>RIC (I²) 77</td>
<td>50-54</td>
<td>1 -</td>
<td></td>
</tr>
<tr>
<td>Sestertius</td>
<td>RIC (I²) 96 type</td>
<td>41-54</td>
<td>2 -</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RIC (I²) 98 type</td>
<td>41-54</td>
<td>1 -</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RIC (I²) 99</td>
<td>41-50</td>
<td>2 -</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RIC (I²) 99 type</td>
<td>41-54</td>
<td>2 -</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RIC (I²) 115</td>
<td>50-54</td>
<td>1 PRO</td>
<td></td>
</tr>
<tr>
<td></td>
<td>?</td>
<td>41-54</td>
<td>1 -</td>
<td></td>
</tr>
<tr>
<td>Dupondius</td>
<td>RIC (I²) 94</td>
<td>41-50</td>
<td>4 1 x PRO + IMP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RIC (I²) 94 type</td>
<td>41-54</td>
<td>3 1 x?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RIC (I²) 104</td>
<td>50-54</td>
<td>1 -</td>
<td></td>
</tr>
<tr>
<td>As</td>
<td>RIC (I²) 95</td>
<td>41-50</td>
<td>1 -</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RIC (I²) 100</td>
<td>41-50</td>
<td>5 -</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RIC (I²) 100 type</td>
<td>41-50</td>
<td>10 -</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RIC (I²) 113</td>
<td>50-54</td>
<td>1 -</td>
<td></td>
</tr>
<tr>
<td></td>
<td>?</td>
<td>41-54</td>
<td>1 -</td>
<td></td>
</tr>
<tr>
<td>Quadrans</td>
<td>RIC (I²) 1</td>
<td>41</td>
<td>2 -</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RIC (I²) 84</td>
<td>41</td>
<td>1 -</td>
<td></td>
</tr>
<tr>
<td>Copy</td>
<td>copy of RIC (I²) 100/116</td>
<td>41-</td>
<td>26 3 x BON</td>
<td></td>
</tr>
<tr>
<td></td>
<td>?</td>
<td>41-</td>
<td>1 -</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>66</td>
<td></td>
</tr>
</tbody>
</table>

Table 5. Claudian coins found during the excavations at Alphen aan den Rijn.

(44) RIC (I²), 116-119.
(46) Mac Dowall (see n. 18), p. 21.
in *Albaniana* indeed belong to the type without PP (eleven *versus* 3 pieces) (47), but a large part of the Claudian bronze coins (twenty pieces) are too worn or corroded to allow any closer identification.

Three more aspects of the Claudian coin assemblage should be mentioned. In the first place only a limited number (three) of the regular bronze coins had been countermarked, but all three with well known late Claudian marks (48). A similarly small proportion of countermarked Claudian coins can also be observed in the coin assemblage of the Roman fort at Valkenburg (*Praetorium Agrippinae*). On the contrary, all Claudian *dupondii* and *sestertii* from the neighbouring fort at Zwammerdam (*Nigrum Pullum*) bear a countermark (49). Secondly the ratio of *sestertii* in the total Claudian bronze coin assemblage is remarkably high (fourteen percent), even higher than the amount of *dupondii* (10.5 percent) (50). Finally a large number of Claudian copies have been found during the excavations, always depicting Minerva on the reverse. Though those copies are sometimes hardly discernable from regular issues, the majority of them are very barbaric in character (51). Three of them bear the countermark BON, which probably indicates the copy was thought fit for legal use (52).

7. *Nero*

The excavations of the fort *Albaniana* have yielded twenty-three Nero-nian coins, all bronzes. Seven *sestertii* have been found together in a burnt layer, which qualifies them as a hoard (53). Apart from those, two *semisces*, six *asses*, four *dupondii*, two *sestertii* and one copy were found.

In Nero's reign bronze coinage was minted both in Rome and *Lugdunum*, but in the north-western empire coins minted in *Lugdunum* are more frequent by far. The Alphen coin assemblage completely aligns with this, only one coin can be attributed to the mint in Rome, fifteen to the mint in *Lugdunum*, the remaining seven being too worn to allow closer identification (54).

(47) Claudian bronze coins found in the Netherlands nearly always belong to the type without PP, personal comment J.P.A. van der Vin, Rijksmuseum het Koninklijk Penningkabinet, Leiden.
(48) CHANTRAINE (see n. 7), p. 38-39.
(50) Below paragraph 5.2.
(51) Below paragraph 5.3.
(53) Below paragraph 5.1.
TABLE 6: Neronian coins found during the excavations at Alphen aan den Rijn (hoard excluded).

Though Nero ruled from 54 onward, he only started minting bronze coins in small quantities in 62, and in larger quantities from 64 onward (55). The 66-67 issues from Lugdunum were produced in especially large amounts. Remarkably though, in the Alphen assemblage the coins minted prior to 66 equalled the number of coins minted afterward (seven each), without taking into account the hoard (all coins in the hoard were minted in 65).

8. The period AD 68-69

Only two coins found during the excavations in Alphen aan den Rijn were minted in the period AD 68-69. Due to the scarceness of coins of those short-lived emperors, this was to be expected. The coins in question are a denarius issued by Vitellius and a sestertius issued by Galba.

9. The Flavian emperors

The 2001-2002 excavations at Alphen aan den Rijn yielded 37 Flavian coins, twenty of Vespasian’s reign, two of Titus’ reign and thirteen of Domitian’s reign. Two coins could only be identified as ‘Flavian’. Due to heavy corrosion a large proportion of the coins could not be identified to either exact minting date or mint. However those coins that could be identified show a peak for Vespasian’s coins in 71 (nine coins) and 77-78 (two coins), and for Domitian’s coins a peak in 82 (two coins) and 90-91 (four coins). The majority of the Vespasianic coins seem to have been

(55) RIC (I²), 158.
minted in *Lugdunum* (five coins), rather than in Rome (one coin). Both the peaks for specific years and the dominance of Lugdunensis coins are completely in line with the pattern from other coin assemblages in Upper and Lower Germany (56). The same holds true for the ratio of the different denominations. The tendency towards larger denominations than the *as* is shown quite clearly in table 7 (57). The *dupondius* amounts to nearly twenty percent of the total assemblage, which is quite high when compared to Julio-Claudian assemblages, especially Augustan ones.

<table>
<thead>
<tr>
<th>Denarius</th>
<th>Sestertius</th>
<th>Dupondius</th>
<th>Dupondius/As</th>
<th>As</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vespasian</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Titus</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Domitian</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Flavian</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2</strong></td>
<td><strong>3</strong></td>
<td><strong>7</strong></td>
<td><strong>2</strong></td>
<td><strong>23</strong></td>
</tr>
</tbody>
</table>

Table 7. Flavian coins found during the excavations at Alphen aan den Rijn, grouped by emperor and denomination.

10. *Nerva* and adoptive emperors

Coins issued between 96 and 138 were very scarce in the Alphen assemblage. Two Nervian *sestertii*, six Trajan’s coins and one Hadrian’s *as* were found. Remarkably those Trajan’s coins that could be dated to an exact year range were nearly all minted in 101-102 (three coins) and only one dated to 114-117.

11. *Antonine* dynasty

Only three Antonine coins were found during the excavations of the fort: a *sestertius* minted by Marcus Aurelius as *Caesar*, a *sestertius* minted by Lucius Verus when he was co-ruler with Marcus Aurelius and an unattributed *denarius*. Though small in number, those coins show the increased role of the *sestertius* in the second century, probably caused by an empire wide inflation.

12. Other

For one coin no parallels have yet been found. The brass coin was clearly minted in a Roman provincial mint, its obverse showing a female head with a small turret on top, and the — only partially readable — legend MHN. On the reverse a basket filled with poppies is depicted, an

(56) For example Kemmers (see n. 7); Peter (see n. 4), p. 78-79 and A.S. Hobley, *An Examination of Roman Bronze Coin Distribution in the Western Empire A.D. 81-192* (BAR International series, 688), Oxford, 1998.
(57) For example Peter (see n. 4) p. 83.
a few letters can still be read .Ω..ΕΛΑ.. The scene on the reverse in combination with the legend probably indicates the mint at Elaia, on the Ionian coast. However the obverse is not known on any Elaian coins. Possibly the lettering on the obverse refers to the deity Men, although the depiction is atypical.

13. Illegible

Due to the relatively poor preservation conditions, a considerable amount of the coin assemblage (23 percent) could only be roughly identified. Those coins have been grouped under the heading ‘Julio-Claudian’ if the coin is either countermarked or halved or showed a typical Julio-Claudian portrait; under the heading ‘second century’ if the coin is rather squat and angular in form and under the heading ‘1st-2nd century’ where all that can be known for certain is that the coin was not minted in the third or fourth century.

<table>
<thead>
<tr>
<th>Date</th>
<th>Total Number</th>
<th>N with counter-mark</th>
<th>N halved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Julio-Claudian</td>
<td>61</td>
<td>28</td>
<td>5</td>
</tr>
<tr>
<td>1st-2nd century</td>
<td>108</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2nd century</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 8. Coins found during the excavations at Alphen aan den Rijn, which could not be closely identified.

14. Summary

In summary it is clear that the majority of the coins found during the 2001-2002 excavations at Alphen aan den Rijn were minted in the pre-Flavian period (Fig. 2). The number of coins steadily decreased from the Flavian emperors onwards, leaving only a single coin from the reign of Marcus Aurelius. Among the Julio-Claudian coins, Caligulan coins predominated by far, whereas the number of Neronian coins was even smaller than the number of Claudian coins. Bronze coinage minted in the reigns of Augustus and Tiberius is difficult to date to the year exactly, but is only present in relatively small numbers. Significantly, a considerable number of Augustan coins bears a Tiberian countermark, while approximately one-third of the Caligulan coins bears an early Claudian countermark.
IV. The chronology of the fort Albaniana based on coin evidence

1. Methods

It is difficult to date a site on the basis of coin finds alone. Such a date will always have to be supported by evidence from other find categories such as Samian ware. Furthermore one should bear in mind that a date to an exact year for a single site is not possible, if not supported by dendrochronological or historical data. What is possible is the proposition of a relative date for the site by comparing it with other sites in the area.

In the case of the fort Albaniana a comparison with the nearby forts of Valkenburg (Praetorium Agrippinae), and Zwammerdam (Nigrum Pul- lum) should prove fruitful, followed by a comparison with strongholds more to the east like Vechten (Fectio) and Nijmegen. Afterwards a comparison should be made with well-excavated and published sites outside the immediate Lower Rhine region. However in doing so one should realize that differences in the number of coins per period on different sites were probably caused not only by chronological factors, but also by differences in coin supply or habitation density.
On the basis of the Alphen coin assemblage one should expect a strong decrease in the garrison in the Flavian period, followed by a complete abandonment of the site by the middle of the second century. However this is in contrast to other archaeological finds on the site and historical sources. To the east and west of the area excavated in 2001-2002 both professional and amateur archaeologists have reported finds of considerable numbers of second century coins (58). Furthermore, an inscription found in the fort mentions a renovation of the fort in the reign of Septimius Severus (59). Though coins minted in the first half of the third century are rather scarce in the Dutch river area, which is most likely caused by infrastructural problems and a diminished occupation force, second century coins are not rare (60). Therefore it seems unlikely that the decrease in coinage from the earliest second century, and the absence of any coins minted after the mid-second century, is caused by either the abandonment of the fort or a halt in coin supply. Most likely the upper layers of the site were washed away during flooding of the Rhine or were shovelied away by later inhabitants. As a consequence the coin assemblage can only be used to gain insight in the earliest habitation period(s) of the fort Albaniana.

2. Relative chronology

Naturally a discussion on the founding date of the fort Albaniana focuses on the extraordinary large number of Caligulan coins. This is even more pronounced as the coins issued in previous reigns are relatively few in number and are known to have an extended circulation period (especially the precious metal issues and copies) (61). Furthermore, a considerable number of Augustan coins bear specific countermarks, indicating that their actual introduction into the Lower Rhine coin pool occurred several decennia after their manufacture (62). Of course one should question whether a peak of Caligula coins in a given coin assemblage indicates a starting date for the site in his reign, which was very short lived indeed. To test this we will first try to establish a relative chronology of the site.


(59) Haaebos (see n. 2), p. 113-117; Polak (see n. 3), p. 16.


(61) Above paragraphs 3.2, 3.3 and 3.4.

(62) For example the countermark CAESAR, above paragraph 3.3.
TABLE 9. Percentages of coins per emperor — the number of pre-Flavian coins being 100 % — on several military sites.

Since the total number of coin finds differs for each excavated fort, a comparison of their coin assemblages should be based on ratios rather than on sheer numbers. For a selection of Roman forts (63) the percen-
tages of coins per emperor were compared (64), after the number of pre-
Flavian coins for each site had been set to 100 percent. It appeared that
the fort Albaniana is not the only fort with a peak of Caligulan coins, but
that this applies to the forts at Valkenburg and Burghöfe as well. Only
the Zwammerdam coin assemblage shows a peak for Claudius, whereas
Aislingen and Oberstimm have a peak for Tiberius. Augustan coins form
the majority at Vechten, Xanten, Neuss, Vindonissa, Hofheim and
Rheingönheim. The Neronian coins form a peak in the coin finds of the
canabae legionis at Nijmegen (65). But do those peaks correspond with
the founding dates of the forts? Two observations can be made to answer
this. Firstly in the case of Vechten, Xanten, Neuss and Vindonissa it is
known on the basis of predominantly pottery finds that Roman habita-
tion started in the (late) Augustan period. Therefore, in these cases the
peak in the coin assemblage coincides with the starting date of the site.
Secondly, on the basis of epigraphical evidence and pottery finds, habita-
tion in the canabae legionis of the Tenth Legion Gemina in Nijmegen is
known to have started only in the Flavian period. If the post-Neronian
coins are not taken into account, the peak of Neronian coins indicates
that the coins of the reign closest to the starting date of the site repre-
sent the largest group. Furthermore it is clear that in the Flavian assem-
blage the amount of Caligulan coins is very small, which proves that a
peak of Caligulan coins is not caused by an unexceptionally large produc-
tion volume (with thus a higher survival rate), but by a chronological
factor.

In line with those two observations — a) a peak in coins in a specific
reign roughly corresponds with the foundation date of a site, even if this
site is inhabited for a long time and b) the number of coins per emperor
steadily increases to this peak — the other coin assemblages can be ar-
ranged. Both Aislingen and Oberstimm have a peak in Tiberian coin
finds. However in Aislingen the ratio of Tiberian coins equals that of Au-
gustan coins, which indicates the fort in Aislingen was founded before the
one at Oberstimm, but later than the Augustan forts.

At Burghöfe the number of coins per emperor steadily increases, reach-
ing a peak in the Caligulan period, and slowly dwindling afterwards. This
situates the site chronologically later than Oberstimm. Remarkably
though the coin assemblage from Burghöfe contains quite a large quan-
tity of Republican bronzes. Since the number of coins then show a strong
decrease in coin finds until the Caligulan period, this is not evidence for a

(64) To allow a comparison between the coin lists of the different forts, all coins
were identified on the basis of RIC (12). This caused some shifts in the number of coins
per emperor. This was most clear in the case of the Agrippa-asses, which had been
attributed to Tiberius instead of to Caligula in previous editions of RIC.

(65) Only the coins belonging to the Flavian circulation pool have been included,
those belonging to the Augustan legionary fortress have not been taken into account.
late Republican/Augustan starting date. It is likely that those Republican bronzes were introduced in the area in Caligula’s or Claudius’ reign (66).

As at Burghöfe the coin assemblages at both Alphen aan den Rijn and Valkenburg show a clear peak in Caligula’s reign. However, on these sites the number of Tiberian coins is smaller than the number of Augustan coins, which is in conflict with the above stated hypothesis of a slowly increasing number of coins towards the peak. Another difference with the Burghöfe assemblage is the strong decrease in Claudian coins, which is much more gradual in Burghöfe. Perhaps this might be explained by a relatively short and intense use of both forts.

A decrease in the number of Tiberian coins with regard to the Augustan coins can also be observed at Hofheim and Rheingönheim. Though both castella reach a peak in the total number of coins in Augustus’ reign, the pattern of the assemblage is comparable to those of Alphen aan den Rijn and Valkenburg. In the four forts the number of coins issued in the imperatorial period is smaller than the number of Republican coins, but the number of Augustan coins is higher, followed by a decrease in Tiberian coins, an increase in Caligula’s reign, a decrease in Claudius’ reign and a further decrease in Nero’s reign. While just sharing the same pattern is perhaps no evidence of a comparable chronology, a closer look at the Republican and Augustan coins in Rheingönheim and Hofheim will shift the problematic peaks a bit. In both forts the peak in Republican coins is caused by the large number of Republican bronzes, which, as shown above, most likely belonged to a (mid) first century circulation pool. In addition, the large number of Augustan coins contains a considerable proportion of irregular altar series coins. Those coins were most likely still being produced into the fourth and fifth decade of the first century (67). If those two factors are taken into account, the peak in coinage shifts from the Republican/Augustan period to the Caligulan/Claudian period, which makes the coin assemblage of the four forts even more similar, and thus gives them the same relative chronology. The position of the fort at Burghöfe, whose coin assemblage has no decrease in Tiberian coins, is unclear. This may indicate a slightly earlier starting date of the site (68).

(66) Peter (see n. 4), p. 42-43. The main evidence for an introduction of those coins in the area in the years 40-50 is the absence of clearly Augustan or Tiberian pottery on the site.


(68) Schönbberger (see n. 63), p. 136 proposes a starting date for Burghöfe contemporaneous with that of Oberstimm, which is in its turn later than Aislingen. One should
Finally the fort at Zwammerdam, with its strong dominance of Claudian coins, is later in date than any of the above-mentioned forts, but earlier than the canabae legionis.

Summarizing the relative chronology of the above mentioned sites, confined to the period between Augustus' reign and the Flavian period, their order is as follows: first Aislingen, then Oberstimm, most likely followed by Burghôfe; then more or less contemporaneous Alphen aan den Rijn, Valkenburg, Hofheim and Rheingönheim, and finally Zwammerdam.

3. Absolute chronology

Several historical sources inform us that by senatorial command after his death all Caligulan coins had to be collected and melted down (69). This act was part of a larger damnatio memoriae, including the eradication of the emperor's name from inscriptions and a shattering of his busts. Although it is doubtful whether the population heeded this call, or was even able to, the remarkable fact is that Caligulan coinage indeed appears to disappear out of circulation quite rapidly (70). However Caligulan coins are not rare as site finds, so presumably instead of sending the coins back to Rome, they were demonetized. In an area like the Rhine zone, which was not regularly supplied with bronze coinage, this will have caused considerable problems. As a solution one could have resorted to countermarking the Caligulan coins with the name of the new emperor. A probable example of this practice would be the countermarked coins with TICLAVIM at Alphen aan den Rijn.

Regarding the probable demonetization of Caligulan coins, the Caligulan coins without a countermark found in Alphen aan den Rijn, will therefore have been lost in Caligula's lifetime or shortly afterwards. In the reign of Claudius, and, given the purpose of the countermark, most likely at the beginning of it, the majority of Caligulan coins still in circulation were countermarked. Of course the individual savings of a soldier were probably not subjected, but rather the unit's treasury. Though it is not known how long the countermarked coins remained in circulation, their strong regional distribution pattern (71) indicates that the coins were already present in the Lower Rhine area before the countermark TICLAVIM was applied.

realise however that at this time the Agrippa-asses — abundant in Burghôfe — were still being regarded as Tiberian in origin.

(69) Suetonius, De Vita Caesarum, Divus Claudius 11 and Cassius Dio, L., 22.

(70) Perrin (see n. 4), p. 68 has shown that Caligulan coins are structurally less worn than slightly earlier or later coin types and are very rare in second century contexts. The coin finds of the Flavian canabae legionis at Nijmegen show that already in the Flavian period Caligulan coins are much rarer than Claudian or Tiberian ones.

(71) Below paragraph 6.2.
Therefore both the Caligulan coins with and without countermark found in Alphen aan den Rijn indicate that habitation on the site will have started in Caligula's reign or shortly afterwards.

Another argument against a starting date later in Claudius' reign is provided by the coin assemblage of Zwammerdam. In this fort, with a very high amount of Claudian coins, the countermark TICLAVIM has not been found. On the other hand nearly all Claudian dupondii and sestertii found at Zwammerdam bear a countermark (72), while hardly any Claudian coins found at Alphen bear one. The peak of Claudian coinage at Zwammerdam indicates a starting date in his reign for the site. If this were at the beginning of his reign, the coin assemblage would resemble the Alphen assemblage much closer: a larger number of Caligulan coins, the presence of the TICLAVIM countermark and a low amount of countermarked Claudian coins.

V. Numismatic aspects of the coins from Alphen

Now that a starting date for the site has been proposed, we will look further into the particular aspects of the coin assemblage.

1. Two hoards

Two coin hoards were found during the excavations in Alphen aan den Rijn. In both cases the coins were stuck together in a lump, indicating that originally they must have been deposited in some kind of purse. When analysing coins found in a settlement, hoards should not be included, since they do not mirror the daily use of coins but an extraordinary event. Usually the hoards will have been hidden as savings, given the absence of our modern banks. Usually the owner will have retrieved such a hoard when in need of it. We do not know why the hoard was never dug up in some cases. It may have been due to the death of the owner, by violence, war or otherwise, but a demonetization of the hidden coinage is likely as well (73).

The first hoard consists of seven coins, practically unworn Neronian sestertii, all struck in Lugdunum in 65, four of the Annona type, one of the Decursio type, one of the Roma type and one of the type depicting the temple of Janus. It was found in a burnt layer, which explains why it had never been retrieved. As described in 3.7 the Neronian coins struck prior to 66 found in Alphen aan den Rijn outnumber the Neronian coins struck afterwards. However, latter coins were struck in large volumes and, as a consequence, are also dominant in coin assemblages. Further-

(72) Haalebos (see p. 49), p. 204-205 and De Weerd (see n. 35), p. 269.
more it is assumed that the Neronian coins only reached their height of circulation in the Flavian period (\textsuperscript{4}). Since hardly any Flavian coins have been found inside the fort Albanian, where the hoard was found, the hoard was probably deposited prior to 69. The fact that all of the sestertii are hardly worn contributes to this hypothesis. It is tempting to connect the burnt layer and the hoard to the great destructions of the year 69/70, the year of the Batavian revolt. If this is true, then in the western empire part of the Neronian coins were distributed during his reign.

The second hoard, found along the main road through the fort, consists of twenty Tiberian asses. As described in 3.4 they are all copies, the obverse showing the deified Augustus. Though in theory the coins could have been struck any time after the first emission of the originals in 22, a production date in the fifth or sixth decade, the height of copying, is just as possible. Remarkably the coins are, with one exception, all of the same type, some are even die-linked. This could be explained by a personal predilection of the owner, but it is more likely that the hoard is just a sample taken from a much larger consignment of copies. How this consignment ever came to Alphen aan den Rijn, by official means, by local manufacture or shipped from further upstream, is guesswork, as is the date of concealment of the hoard. However, the existence of the hoard does not contradict the suggested foundation date of the fort sometime around 40.

2. Denominations used

Nearly 75 percent of all the coins found during the excavations at Alphen aan den Rijn are asses \textsuperscript{(5)}. Both the smallest denominations and the aureus are rare. This is usual for coin assemblages on military sites, though it is not known to what extent this corresponds with the frequency of denominations in use in the Roman period. We should expect that the lower the value of a lost coin, the lower the effort which would be put into retrieving it. Therefore the scarcity of the smallest denominations — semis and quadrans — in the Alphen assemblage indicates that they were a rarity in the circulation pool. In contradiction to this theory is the aureus, found inside one of the barrack on the floor. This aureus represents nearly a double month’s wages for an auxiliary soldier \textsuperscript{(6)}. Therefore it is rather unlikely the aureus was accidentally lost. Presumably the owner hid it inside the barrack, but was never able to retrieve it, or it was deposited as some sort of sacrifice.

\textsuperscript{(74)} As shown by the ratios in Augst: Peter (see n. 4), p. 75.
\textsuperscript{(75)} Table 10.
\textsuperscript{(76)} M.A. Speidel, Roman Army Pay Scales, in JRS, 82, 1992, p. 87-106.
<table>
<thead>
<tr>
<th>Denomination</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quadrans</td>
<td>3</td>
<td>0,4</td>
</tr>
<tr>
<td>Semis</td>
<td>6</td>
<td>0,9</td>
</tr>
<tr>
<td>As</td>
<td>522</td>
<td>74,5</td>
</tr>
<tr>
<td>Dupondius</td>
<td>75</td>
<td>10,7</td>
</tr>
<tr>
<td>Sestertius</td>
<td>60</td>
<td>8,8</td>
</tr>
<tr>
<td>Denarius</td>
<td>34</td>
<td>4,9</td>
</tr>
<tr>
<td>Aureus</td>
<td>1</td>
<td>0,1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>701</td>
<td></td>
</tr>
</tbody>
</table>

**Table 10. Number and ratio of coins per denomination found during the excavations at Alphen aan den Rijn.**

The combined value of all the coinage found during the excavations is approximately 473 sestertii. If one compares this with the amount of money that would have entered the fort, given an occupation force of five hundred soldiers for at least thirty years, all receiving at least 150 denarii a year \(^{(7)}\), which equals almost nine million sestertii, one realises the limited scope of our knowledge.

The ratio between the different denominations changes per emperor \(^{(78)}\). In the course of the second century a tendency towards larger denominations, especially the sestertius, can be observed. This widely known phenomenon \(^{(79)}\) is most likely associated with increasing inflation during this century. The ratio of sestertius for the emperors Caligula and Claudius is much higher than should be expected for the mid-first century. However such a high ratio, especially for Claudius, can be observed on other military sites as well, usually in the Lower Rhine area, whereas on civilian sites, and to a lesser extent military sites in Upper Germany, the ratio is (much) smaller. A possible explanation might be found in the relatively low amount of precious metal issued by both emperors \(^{(80)}\). In order to be able to pay the troops their wages in still manageable and transportable quantities, the government might have resorted to the next biggest denomination \(^{(81)}\). For civilians this problem did not exist, which explains the more 'normal' ratios on such sites.

\(^{(77)}\) Speidel (see n. 76), p. 87-88. Since the wages of auxiliaries are not exactly known for this period, the most appropriate statement was used: 50 denarii per stipendium in 72.

\(^{(78)}\) Fig. 3.


\(^{(80)}\) RIC (1\(^2\)), 104 and 121-126.

\(^{(81)}\) This does not imply that the wages were being solely paid in sestertii, but rather that a proportion of the wages, previously paid in precious metal, was now being replaced by sestertii.
Fig. 3. The proportions of the different denominations per emperor.
Table 11. The percentage of sestertii per emperor on several sites.

<table>
<thead>
<tr>
<th>Site</th>
<th>Caligula</th>
<th>Claudius</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alphen aan den Rijn</td>
<td>7,2</td>
<td>13,6</td>
</tr>
<tr>
<td>Augst</td>
<td>0</td>
<td>1,3</td>
</tr>
<tr>
<td>Avenches</td>
<td>1,8</td>
<td>0</td>
</tr>
<tr>
<td>Civitas Nervorum</td>
<td>5,1</td>
<td>4,4</td>
</tr>
<tr>
<td>Hofheim</td>
<td>0</td>
<td>8,3</td>
</tr>
<tr>
<td>Neuss</td>
<td>6,3</td>
<td>10,8</td>
</tr>
<tr>
<td>Nijmegen-canabae legionis</td>
<td>5,3</td>
<td>6,6</td>
</tr>
<tr>
<td>Nijmegen-Kops Plateau</td>
<td>1,7</td>
<td>14,6</td>
</tr>
<tr>
<td>Rheingönheim</td>
<td>4,3</td>
<td>17,7</td>
</tr>
<tr>
<td>Valkenburg</td>
<td>7,4</td>
<td>41,7</td>
</tr>
<tr>
<td>Vechten</td>
<td>8,3</td>
<td>19,7</td>
</tr>
<tr>
<td>Vindanissa</td>
<td>4,6</td>
<td>21,2</td>
</tr>
<tr>
<td>Xanten</td>
<td>16,7</td>
<td>30</td>
</tr>
<tr>
<td>Zwammerdam</td>
<td>0</td>
<td>36</td>
</tr>
</tbody>
</table>

3. Mints

As shown in table 12 the majority of the coins found at Alphen aan den Rijn were minted in Rome. Since Caligulan coinage, the majority of the finds, was solely minted in this city, this is no surprise. However when taking a closer look, coins of Nero and Vespasian that were found in the fort were nearly all minted in Lugdunum, as is usual in coin assemblages of the north western empire. This once again confirms that whenever the mint at Lugdunum was opened, the troops in the Germanies and Britain were being paid with these coins.

Furthermore hardly one percent of the total number of coins were minted in one of the provincial mints in Spain or in the east. This indicates that those issues mainly circulated in their area of manufacture and only arrived in the north western provinces by the movements of individuals.

The amount of copies, presumably manufactured somewhere in Gaul or Germania is rather high (11.7%). Most of them are based on either Claudian (27 pieces) or Tiberian (22 pieces) prototypes. Though some can hardly be discerned from regular coins, the majority are undoubtedly barbaric, both in pictorial style and the flan itself. Usually these copies are thought to be a local initiative to meet a shortage in small change (82), which was not produced between 43 and 64. Though in Britain those copies may have been manufactured by the army (83), a part of the copies in Gaul and the Rhine zone are thought to have been made in

(82) C.E. King, Roman Copies, in King and Wieg (see n. 67), p. 237-264 for a comprehensive overview of copies and copying.
(83) Ibidem.
local settlements (84), as testified by both die-links and the very celtic character of the copies (85). If this is true, it is evidence for intensive contact between the local population and the army as well as for a monetized native society. Though this is likely for the Upper Rhine area and Gaul (86), and to a certain extent for the Batavian area, with its history of locally produced rainbow cups and AVAVCIA coins, it should be excluded for the area of the Cananefates. Native settlements in this area, where the fort Albaniana is situated, have yielded hardly any Roman coins, certainly hardly any pre-Flavian ones (87). Furthermore the area has no pre-Roman minting tradition. Therefore the copies found in Alphen aan den Rijn are not so much evidence for close contact between the natives and the military, but rather for either a close contact between the fort Albaniana and forts further upstream, or for the production of the copies in the fort itself.

<table>
<thead>
<tr>
<th>Mint</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roma</td>
<td>424</td>
<td>78.5</td>
</tr>
<tr>
<td>Lugdunum</td>
<td>46</td>
<td>8.5</td>
</tr>
<tr>
<td>Gallia</td>
<td>63</td>
<td>11.7</td>
</tr>
<tr>
<td>Turiasso</td>
<td>2</td>
<td>0.4</td>
</tr>
<tr>
<td>Calagurris</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Corinth</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Asia Minor</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Italia</td>
<td>2</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>540</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 12. Number and ratio of coins per mint of the coins found during the excavations at Alphen aan den Rijn.

4. Circulation period

Since the latest occupation layers of the fort Albaniana have not been found, the circulation period of the majority of the coinage remains unknown. However, we can observe some trends for the coins minted prior to the establishment of the fort around 40. The presence of Republican, Augustan and Tiberian denarii in the Alphen coin assemblage was to be expected, for those coins are known to have been a major part of the coin pool until the Neronian period (88). In second century hoards they

(84) Wigg (see n. 67), p. 430-431.
(85) Ibidem.
(86) As testified by the manufacture of small bronze coins in several oppida like the Martberg and the Titelberg.
(88) Above paragraph 3.2, 3.3 and 3.4.
are still a small but constant factor (89). In contrast, bronze coinage minted prior to Caligula's reign is not abundant at Alphen aan den Rijn. However it should be noted, that the earlier a specific coin type was struck, the fewer of this type appear in the Alphen assemblage. For example the Nemausus issues are absent, while the number of coins of the first altar series equals the number of coins of the second altar series (90). Furthermore it looks like the enormous influx of Caligulan money drove older bronze coinage out of circulation at a much faster rate than in already existing settlements (91).

VI. Albaniana and the limes system

Now that we have given an overview of the coin finds and some numismatic aspects of the assemblage and established a foundation date for the fort Albaniana, we should ask how this fits in with both our knowledge of the Dutch limes system and the known mechanisms of coin supply and distribution in this period.

1. Caligula on the Lower Rhine

A foundation date of around 40 for the fort Albaniana is in conflict with existing theories on the development of the Dutch limes system. According to this theory a chain of forts, forming an impenetrable border, did not exist until 47 (92). Prior to this date the only existing fortifications were the forts at Nijmegen-Kops Plateau, Vechten — founded in the Augustan period, Velsen — of a Tiberian date — and, from 40 onwards, Valkenburg. Those last three forts functioned as a triangle to control the occasional uprisings of the Frisians (93). Only in 47 when Claudius decided to abandon the conquest of northern Germany, in order to face the front only in Britain, were all troops withdrawn behind the Rhine and a chain of forts was established.

(89) Ibidem.
(90) Though the second altar series was presumably struck in smaller quantities: J. van Heesch, Some Considerations on the Circulation of Augustan and Tiberian Bronze Coins in Gaul, in Wiegels (see n. 16), p. 153-170.
(91) For example in Augst, founded in the fifth decade BC, Tiberian bronze coins are present in equal numbers as Caligulan and Claudian bronze coins in features of the period 30-70: Peters (see n. 4), p. 60-61 and 118-119.
What could have happened between Caligula’s reign and 47 to cause the need for at least two forts (94) in the western Dutch river delta? Historical sources mention two events in Caligula’s reign that have hitherto not been situated on the Lower Rhine.

In the first place a military campaign in 39 (95), when Caligula himself travelled to Mainz to suppress turmoil among Germanic tribes east of the Rhine, which was satisfactorily solved. At the same time, however, the commander in chief of the Upper Rhine army, Gaetulicus, turned out to be plotting against the emperor, aided by two of the latter’s sisters. The plot was discovered and Gaetulicus executed, and in one event the entire Rhine army was cleaned and new commanders appointed. The new commander of the Lower Rhine legions is said to have forced Germanic tribes, which had progressed as far as Gaul, back across the Rhine. Though troops will have been needed for this campaign, soldiers were already present in Nijmegen, Velsen, Vechten, Xanten and Bonn. The foundation of two extra forts would not have been necessary, unless the disobedient tribe were the Frisii Minores, who could be controlled by a triangle of forts: Vechten, Velsen, Valkenburg and Alphen aan den Rijn.

A second event mentioned by historical sources is the failed conquest of Britain in 40 (96). Caligula assembled his troops, marched to the coast, but instead of crossing the Channel, he ordered his men to collect shells. As a sign of his great triumph he had a lighthouse built. This episode has often been seen as evidence for the emperor’s reputed madness. However, Roman historians are usually of senatorial rank, which this emperor was in ongoing conflict with (97). That might be why they described him in a very negative, even surrealistic, manner. Perhaps, this campaign to conquer Britain was not a folly after all, but a thoroughly prepared expedition that was not carried out due to the unstable political situation in Rome or the unsteady loyalty of the troops (98). Usually the destination of the emperor’s march to the North Sea is thought to have been Boulogne-sur-Mer. However massive amounts of Caligulan coinage in both Valkenburg and Alphen aan den Rijn, and considerable amounts in Vechten, would only have been supplied to this region when there was an urgent need for money. This might be explained by the foundation of several forts and the arrival of troops, necessary for a campaign against Britain. On the basis of the coin finds alone, this conclusion would perhaps not stand, but further evidence is available. In both Vechten and Valkenburg (99) staves of a wine barrel have been found with the stamp

(94) Given the fact that not all the forts in the Dutch river delta have been excavated, there is the possibility that other forts started as early as Alphen aan den Rijn.
(96) Ibidem.
(97) Ibidem.
The first line is obviously the official name of Caligula, the second refers to the imperial vineyards. Stamps on wine barrels are thought to refer to the owner of the wine and/or the vineyards. Wine produced in the imperial vineyards was meant only for the emperor himself (100). Such wine barrels on two different locations along the Lower Rhine do seem to indicate the presence of the emperor in person. The only event when Caligula made it further northeast then Mainz, is during his Britannia expedition. Both the coin finds and the wine barrels are most likely evidence for troop movements, not situated in Boulogne-sur-Mer but on the Lower Rhine. The newly erected forts in Valkenburg and Alphen aan den Rijn might have been used either to control the supply of goods and soldiers or as a forage base, or both.

2. Claudius in Britain

A link between Caligula’s failed conquest of Britain and the foundation of the fort Albaniana seems justified. However the Lower Rhine area seems to have played a part in the successful conquest of Britain by Claudius three years later. The Rhine, along which a large part of the emperor’s troops were stationed, was the easiest and fastest transport route for troops and supplies from the Mediterranean to the North. From the mouth of the river Rhine the ships could then sail along the coast to the Channel, where the crossing was to take place. A fort at Alphen aan den Rijn would have been used to control the supply lines. This hypothetical role for Albaniana can be prove by an analysis of the countermark TICLAVIM. As shown above this countermark, which is abundant at Alphen aan den Rijn and also present in Valkenburg, was applied in the early Claudian period, most likely in order to revalidate the demonetised coinage of Caligula. Apart from the countermark TICLAVIM, several other early Claudian countermarks are known that were applied for the same reason. Those countermarks are (101) TIAV (102), TICA (103) and TIB-

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(101) Very rare countermarks were not included. Though different dies are in several cases recognisable, they were all grouped by the basic type to which they belong.

(102) GRÜNWALD (see n. 34) pl. XIV, nrs 102 and 105, pl. XV, nr 114, 116-7, pl. XVI, nrs 119-120, 122 and 124.

(103) GRÜNWALD (see n. 34) pl. XIV, nr 104, pl. XV, nrs 107, 109 and 111.
CLAVIMP (104). If a distribution map is made for those four types of countermarks (105) each of them shows a strongly regional distribution. Of course most types are present in the larger coin assemblages of Vindonissa and Neuss, but the majority of the pieces have not been found outside a restricted area. TIA V is mainly confined to Upper Germany and Raetia, especially in the Mainz- and Hofheim-area. On the other hand TICA is most frequent in the area around Trier and present day Luxemburg, whereas the slightly less frequent type TIBCLAVIMP is usually found in Upper Germany. The distribution of TICLAVIM is almost completely restricted to Lower Germany and in particular Alphen aan den Rijn.

Already in 1956 Kraay noted the almost mutually exclusive distribution areas of countermarks (106). This led him to two conclusions: a) that a countermark had most likely been applied in the area where it was most abundant and b) that the circulation of bronze coinage is almost always a strictly regional affair. This theory is supported by the distribution pattern discussed above. Reasoning along this line, the countermark TICLAVIM was applied in the western Dutch river delta, either in Alphen aan den Rijn or Valkenburg. The actual number of coins countermarked with TICLAVIM is much higher in Alphen aan den Rijn, but the ratios are comparable — one should bear in mind that the fort in Valkenburg had been excavated before the metal detector was introduced.

If TICLAVIM was indeed applied in Alphen aan den Rijn or in its surroundings, then this implies some interesting observations. In the first place it indicates the presence of a person with enough authority and standing, who could give the order to countermark coins. Apparently the Dutch river delta was at that time more important than for example Nijmegen or Vechten, where there is no evidence for the application of specific countermarks. Secondly it implies that a large amount of money was needed immediately. If this need had not been felt, they would have simply discarded the Caligulan coinage and awaited new supplies from Rome. Both the importance of the small fort in Alphen aan den Rijn and the urgent need for coinage are in my opinion evidence for an involvement of the Dutch river delta in the Britannia campaigns of Claudius, not as participants in the battles, but as guardians of the supply lines.

The presence of only a single coin with the countermark TICLAVIM in Verulamium, one of the earliest Roman settlements in Britain, confirms this theory.

(104) Grünwald (see n. 34) pl. XIV, nrs 99, 100, 103, pl. XV, nrs 108 and 112.
(105) Fig. 4.
(106) Kraay (see n. 18), p. 113-136.
Fig. 4. A distribution map of several types of early Claudian countermarks. A larger symbol indicates the presence of a large number of coins with the specific countermark. Not shown on the map are the sites Verulamium (Britain) and Oberstimm (Germany).
3. Coin supply in the early stages of the limes system

Finally, having considered both the position of Albaniana in the early limes system and some interesting aspects of its coin assemblage, it should be possible to discern some patterns in the coin supply to this region and others. Some of those patterns have already been discussed in previous paragraphs.

<table>
<thead>
<tr>
<th>BRITANNIA</th>
<th>UPPER GERMANY</th>
<th>LOWER GERMANY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Republican silver</td>
<td>Countermarks on old coins</td>
<td>Countermarks on old coins</td>
</tr>
<tr>
<td>Hardly any old mixed currency</td>
<td>Republican issues</td>
<td>Denarius instead of denarius</td>
</tr>
<tr>
<td>Copies (minted in Gela)</td>
<td>Locally produced copies</td>
<td>Coins from further upstream made by auxiliaries</td>
</tr>
</tbody>
</table>

Fig. 5. A model for the supply of coinage to different regions in the period around AD 43.

It is known that in this period, around 43, the influx of newly minted Claudian coinage was minimal. If we combine a survey of early Roman sites in Britain (107) and sites in the Dutch river area and the Upper Rhine region a model may be presented (108). Bronze coinage of Claudius’s predecessors is rare on British sites — perhaps because of propagandistic reasons — but Republican denarii, and above all legionary denarii, are present in considerable numbers. Claudian bronze coinage consists largely of copies. Though the official mint in Rome had not minted them, a semi-official mint in Gaul might have issued them (109). Since the coin supplies were not sufficient to provide the troops along the Upper and Lower Rhine with the same kind of coins as those in Britain, a different solution had to be found. In the Lower Rhine delta the amount of Caligulan coins still present was apparently large enough to suffice most needs, though these coins had to be countermarked. Though Caligulan coinage was countermarked in the Upper Rhine area as well, it was only available in much smaller numbers than along the Lower Rhine. Therefore Republican bronzes were sent to this region. Those bronzes were supplemented with locally produced copies. In the Dutch river delta the copies were needed as well, but they were not produced by the native population.


(108) Fig. 5.

(109) KING (see n. 82), p. 242-246.
They were either retrieved from further upstream or made by the auxiliaries. Finally, military sites in this region received a large amount of Claudian sestertii, since the bulk of Claudian precious metal was being sent to Britain.

This model, over-simplified though it may be, shows both the regionalized supply of coinage as well as the regional character of bronze coin circulation in this period.

VII. Conclusions

On the basis of the coin finds it was possible to establish both a relative and an absolute chronology for the fort Albaniana. It was most likely built during the preparations for Caligula’s failed conquest of Britannia and played an important part — as testified by the presence of the specific countermark TICLAVIM — during Claudius’ Britannia campaign. Furthermore the Alphen coin assemblage has shown that instead of a regular influx of new coins during the lifetime of the fort, the coin supply was closely associated with military events in the region. In periods of large demand, such as the campaigns of 40 and 43, the Roman government tried to supply all regions involved with sufficient amounts of money. If new, regular, coinage was not available, the authorities took creative measures to ensure the coin supply. Examples of this are the countermarking of old coinage, supply of ancient coinage, or a switch to other denominations. This caused a regionally differentiated supply, especially in the case of bronze coinage, which hardly spread to other regions.

Post scriptum

After this paper had been finished, a number of new coin finds from Albaniana were reported to the author by amateur archaeologists. These coin finds show the same pattern as has been described above. Furthermore the first dendrochronological results of samples taken from the earth and timber wall have recently become available. They show that the trees with which the fort was built were cut down around 40 and certainly not as late as 47.