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# Site finds and hoarding behaviour



PATRICK BRUUN

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Hoarding, considered as a conscious process of selecting and storing away objects of value, does not necessarily create agglomerations of coins which faithfully reflect the pattern of coins in circulation in the market. Increasingly frequent attempts to identify the composition of hoards with 'la circulation monétaire'<sup>1</sup> necessitate some comments on the circumstances connected with hoarding and the validity of hoards as indicators of the mass of coins in circulation.

Now it is clear that inflation and depreciation of coin values affect the money market; Gresham's law makes it clear that bad coins make good coins disappear from circulation. Many of these good coins are, no doubt, withdrawn for hoarding and saving, and increasingly so when the authorities are unable to maintain a stable currency. Hoarding in such circumstances becomes a precaution against the dangers of repeated depreciations of the currency.<sup>2</sup> Consequently, the hoarding process would concentrate on higher quality coins or denominations, and hoards, accordingly, would faithfully reflect the mass of coins in circulation only when the monetary system was in balance.

The early fourth century A.D. is notoriously a period of inflation and coin depreciation. Thus during this period hoards may not accurately reflect the currency in circulation. Assuming this, I now contend that site finds, when studied with circumspection, could and should be employed as a control of the composition of coin hoards when we try to assess the character of the coins in circulation at a given moment.

In this test case I propose to concentrate my attention on two denominations. The first is the billon coin created by Constantine in A.D. 311 and usually characterised by the reverse legend *VICTORIAE LAETAE PRINC PERP*.<sup>3</sup> After the first war between Constantine and Licinius the latter introduced a similar denomination in the East.<sup>4</sup> The Licinian series is easily identified by the obverses showing the left-facing busts of the rulers holding globe and sceptre.<sup>5</sup> I suggest that the value of these coins, both the western and the eastern varieties, after the peace treaty of Serdica concluded on March 1, 317, was 100 denarii; they should therefore be identified with the *centenionales*<sup>6</sup> mentioned in texts of later date. At the same time as Licinius started coining this denomination he created the well-known piece marked with *XX*, i.e. a 12.5 denarii coin,<sup>7</sup> worth half of the contemporaneous Constantinian nummi (rather than folles) of the type *SOLI INVICTO COMITI* which were valued at 25 denarii after Serdica. The 12.5 piece is the

second denomination studied in this paper.

Since the 12.5 piece disappears entirely after Constantine's conquest of the eastern part of the empire, it is a fair inference that it had proved an unsuccessful innovation. Theoretically therefore one would expect it to be poorly represented in hoards.

Now eastern hoards of a suitable date and sufficiently well published to give a correct picture of their composition are comparatively few. I have been able to study only two in detail,<sup>8</sup> namely Nagytétény<sup>9</sup> and Kailak (Pleven),<sup>10</sup> but others appear to have the same character,<sup>11</sup> namely that the 12.5 pieces are either exceptional or lacking altogether. Nagytétény is particularly illuminating: I have counted no less than 835 *centenionales*, of which more than 50 per cent (472) were struck in those eastern mints, which were coining the 12.5 pieces also.

This justifies a comparison of the hoards with the site finds. In order to counterbalance possible distortions due to geographical factors, I have decided to use the excavations of Karanis<sup>12</sup> in Egypt as a point of departure, supplemented by the available data on the coins from Oxyrhynchus,<sup>13</sup> and to compare the findings on these two sites with the results from excavations at Vindonissa<sup>14</sup> and Conimbriga,<sup>15</sup> which have been presented in modern publications of the highest standard.<sup>16</sup> The magnificent Conimbriga work, particularly, demonstrates a scientific inventiveness and a methodological approach of rare quality. The commentary in this volume is devoted almost exclusively to coin circulation.

## CONIMBRIGA

The coins found in the Conimbriga excavations represent five different phases of coining, namely:

- (1) Second-first century B.C. to about A.D. 260. The coins belonging to this period correspond to 7.69% of all coins found.
  - (2) Antoniniani from the years A.D. 260-74, comprising 21.06% of the coins.
  - (3) A long period of weak circulation from about A.D. 270 to 335 'où s'amorce cependant, en fin de phase, l'inflation imminente'. The coins struck in the period A.D. 274-306 correspond to 0.68% of all the coins.
  - (4) A second period of plentiful circulation from A.D. 336 to 361, with a peak of 1,600 coins from the reign of Constantius II.
  - (5) Finally, a weaker period from A.D. 364 to 408.
- The coins of the fourth century constitute 70.03% of the total.

Now our main interest is with the 'weak' third period, although the reasons for its apparently modest circulation can be left for others to explore.

Before analysing the finds it should, however, be stressed that, although the material published includes some hoards (A to F, separately accounted for in Appendix III, 319-25),<sup>17</sup> these only affect our period marginally; hoards A and C, of 225 and 26 coins respectively, comprise a very small number of coins of the *GLORIA EXERCITVS* type, 'Soldiers holding standard' (and other types of similar date). This is important for our assessment of the significance of the other

Constantinian coins. Had a high proportion of the Constantinian coins belonged to hoards, it would have been necessary to eliminate them from the rest of the stray finds.

In the Coin Catalogue<sup>18</sup> we are concerned with the following coins:

1. First and second tetrarchy, nos. 1175-92 18 coins
2. A.D. 307-13, nos. 1193-1205 13 coins
3. A.D. 313-24, nos. 1206-80 75 coins
4. A.D. 324-37, nos. 1281-1510 230 coins

The picture of the origin of the coins in circulation which can be derived from the numerically very modest material in these four groups is highly interesting, namely:

1. The 18 coins of the first and second tetrachies can be divided into three groups in the following way:
  - a. 3 pre-reform radiati ('neo-antonianian'), 2 of them issued at Rome, 1 at a mint not identifiable;
  - b. 5 nummi, of which 2 from Trier, 1 from Lyons, 1 from Arles and 1 from Alexandria;
  - c. 10 post-reform radiati, 4 from Rome, 1 from Ostia, 3 from Cyzicus and 2 from Alexandria.
2. All the 13 coins were struck in the Constantinian empire and were, consequently, of western origin.
3. All the 75 coins were struck within the Constantinian empire; of these only 4 originated in mints outside Gaul and Italy, namely 1 in Sirmium, 2 in Thessalonica and 1 in Heraclea.<sup>19</sup> None of the uncertain cases recorded seem to be of eastern origin.
4. Of the 230 coins 32 are of uncertain origin; of the remaining 198 no less than 54 come from the East, i.e. 27.25% (51 from identified mints and 3 from uncertain eastern mints). The figures for the eastern mints are: Thessalonica 6, Heraclea 5, Constantinople 14, Nicomedia 8, Cyzicus 13, Antioch 4, and Alexandria 1.<sup>20</sup>

One gains the impression that from Constantine's accession to the throne until the defeat of Licinius in A.D. 324, eastern coins did not circulate, at least in the Iberian peninsula.<sup>21</sup>

#### KARANIS

The excavations in Karanis have yielded a very high number of coins, about 30,000 in all, but of these about 5,000 were unidentifiable. The Alexandrian coins accounted for 24,257, and among these the reigns best represented were:

Probus	by	4,469 coins
Carus-Carinus	"	2,531 "
First tetrarchy	"	13,318 "
		20,318 "

The Roman coins, all except 38 aurei of Antoninus Pius and 7 stray coins<sup>22</sup> struck after the reform of Diocletian, number 1,321. There were 52 coins of the first tetrarchy, all the coins from the reform of Diocletian down to the end of the House of Constantine (excepting Gallus and Julian) number 403.

The distribution by mints can be analysed, and shows a clear dominance of the eastern mints (table II, p. 7).<sup>23</sup> I present below (Table I) the top of that table together with the corresponding figures from Oxyrhynchus,<sup>24</sup> where the total of identified coins to the death of Arcadius was 744.

TABLE I

Mints most frequently represented in the site finds of Karanis and Oxyrhynchus after the reform of Diocletian

	Karanis	Oxyrhynchus
Alexandria	189	263
Antioch	144	106
Constantinople	120	47
Cyzicus	71	66
Nicomedia	41	84
Heraclea	25	17

At Karanis no more than 686 coins have been attributed to mints; about 600 additional coins were partially identifiable, although their mint-marks were illegible.

In view of our aim of comparing the circulation of the Constantinian coins in Conimbriga and in Karanis, the fact that no eastern coins issued during the years 307-24 were found on the Iberian site, is a convenient point of departure.

The reign of Licinius roughly coincides with this period; Crispus and Licinius II were elevated to the rank of Caesar in 317 but disappear from the coinage, Crispus on his death in 326 and Licinius II in conjunction with his father's defeat. A survey of the Karanis coins with obverses of these three rulers (Table 2) therefore gives a general idea of the provenance of the coins struck during the period in question.

TABLE 2

Provenance of the coins from Karanis issued A.D. 308-26 with obverses of the Licinii and Crispus

Ruler	Coins in all	Eastern mintage	Balkan and Italic mintage	Arles
Licinius I	23	19	3	1
Licinius II	11	6	3	2
Crispus	11	2	6	3

This table, generally speaking, confirms the picture of the distribution by emperor and mint given by table III in the Karanis publication (cf. p. 8f).<sup>25</sup> This

table shows that the obverses of the members of the first tetrarchy and of Daza, 55 altogether, comprise 4 coins from Aquileia, 3 from Carthage, 5 from Rome, 1 from Siscia and 4 from Heraclea.

Looking at the distribution of mints in the perspective of a longer period, the 75 coins<sup>26</sup> with obverses of Constantine may be summarised as in Table 3.

TABLE 3  
Provenance of Karanis coins with obverses of Constantine

Time of issue	Eastern mintage		Central empire		Gaul	Number of coins
	Alex.	Other	Balkans	Italy		
-313	—	1	1	—	—	2
313-247	2	1	2	11	8	24
324-37	12	15	7	2	1	37
Posthumous	10	1	1	—	—	12
Total	24	18	11	13	9	75

It is interesting to note that the provenance of the coins struck during the reign of Licinius was eastern to a small extent only, whereas, after the victory of Constantine, Alexandria and the other eastern (Asian) mints dominate. The distribution of mints does, however, also to a large extent reflect the fact that obverses of Constantine were not struck in Licinius' lifetime with the same frequency as those of Licinius himself.

The second purpose of the comparison was to check the representation and the circulation of the two main denominations issued in *aes*, namely the argentiferous centenionalis (equalling 100 denarii) issued with a silver content of 10 scruples of silver to a pound of *aes*<sup>28</sup> and the half-nummi marked on the reverse with XIII (equalling 12.5 denarii), and containing no silver at all.

Altogether there are 21 coins, 10 of which were issued at Alexandria,<sup>29</sup> 6 at Antioch,<sup>30</sup> 3 at Nicomedia<sup>31</sup> and 2 at Heraclea.<sup>32</sup> The centenionales number 18, 3 coins are marked XIII.<sup>33</sup>

#### VINDONISSA

The site finds in Vindonissa have recently been catalogued with care and insight by Professor Thomas Pekáry.<sup>34</sup> The coins are not particularly numerous; for the 21 years up to the abdication of Diocletian Pekáry records 39 pieces, roughly 2 per annum. The next period closes with the death of Daza in A.D. 313; 50 pieces, i.e. 6 a year, are recorded. The period A.D. 313-20 yields almost 80 coins, 11 per annum; but for the years 320-4 the ratio rises to 20 a year, and Professor Pekáry assumes that, at least for a brief period, troops must have been garrisoned in Vindonissa (p. 16). For the years 324-30 the annual ratio is 6 (in all 36 coins), but subsequently the economic activity of the community increases; for the five

years 330-5 160 coins have been recorded, corresponding to 30-5 per annum. The picture does not change for the last years of the reign of Constantine.

In tabulated form the frequency of site finds and the occurrence of coins struck by mints other than Gallic emerges in Table 4.

TABLE 4  
Coins of non-Gallic origin found in Vindonissa

Period	Number of coins	Coins per annum	Central empire		Eastern
			Italy	Balkans	
284-305	39	2	15 <sup>35</sup>	1 <sup>36</sup>	1 <sup>37</sup>
305-13	50	6	8	3	2
313-20	80	11	14	7	1
320-4	80	20	17	8	1
324-30	36	6	5	4	2 <sup>38</sup>
330-5	160	30-35	10	24	4
335-41	200+	30-35	17	19	4

The majority of the coins struck in the years 313-20 are Sol coins, but the centenionales are not infrequent (24 coins, nos. 658-81). Among the coins of the following period there is one centenionalis (no. 683); the only eastern coin<sup>39</sup> is a half-nummus marked with XIII in the field.

\* \* \*

The following points seem to emerge from this comparison:

(1) The absence of coins struck by Licinius among the finds in Conimbriga is coupled with the occurrence of very few coins of Licinian mintage in Vindonissa. No satisfactory explanation can be offered for this except the possibility that coins struck by Licinius must have been regarded with suspicion and therefore not readily accepted in the West.

(2) For the period covered by the reign of Licinius western, and particularly Italic, coins are comparatively frequent in Karanis (Tables 2-3); the same applies to Oxyrhynchus.

(3) Although the material is scanty, denominations generally not found together in hoards<sup>40</sup> occur together on sites. Karanis had no less than 18 eastern centenionales and 3 half-nummi; Vindonissa had for the period 313-20 80 coins, mostly Sol, but among them 23 centenionales; in the following period (320-4) the only eastern coin was a 12.5 piece.

The absence of the half-nummi in certain eastern hoards is consequently due to hoarding behaviour, to a general distrust of the coin. We may therefore, generally speaking, conclude that the hoarder selected the objects he saved with care, and tried to avoid objects without value. Hoards thus may not reflect the coins in circulation at a given moment, if the monetary conditions are out of balance.

## Additional note: HOARDING BEHAVIOUR IN KARANIS

The coins of Karanis offer another and much more eloquent demonstration of hoarding as a means of escaping the evils of inflation and coin depreciation. Of the vast mass of Alexandrian coins, a very high number was found in hoards. The find report accounts for no less than 38 hoards, all of them, except one which was numerically insignificant,<sup>41</sup> from the period preceding Diocletian's monetary reform. A very large part of the 13,000 coins of the first tetrarchy found in Karanis had been hoarded and, curiously enough, hidden in the same series of four houses — as a matter of fact, the majority of all the Karanis coins come from this very site, 27,000 in all.<sup>42</sup> Of 24 hoards found in the same block of houses, 13 comprised a very high percentage of tetrarchic coins. Again, these thirteen hoards can be divided into two groups, one without any coins of the Caesars of the first tetrarchy, the other comprising hoards with coins of all the four members of the first imperial college. The hoards of the first group include a strong representation of coins of Probus and of Carus and his family; consequently Diocletian and Maximian do not dominate these hoards. The main constituents of the hoards of this group are shown in Table 5.

TABLE 5

Main constituents of Karanis hoards buried before the nomination of the first tetrarchic Caesars

Hoard no.	Number of coins	Obvs. of Diocl. and Maximian	Obvs. of Probus	Obvs. of Carus and his family	Illegible
22	523	92 + 20 = 212	208	110	45 <sup>43</sup>
24	1489	426 + 340 = 766	105	147	468
25	2329	642 + 331 = 973	967	195	161
29	4500	864 + 498 = 1362	1383	285	1367
36	2891	914 + 356 = 1260	852	478	134

In eight further cases the burial date is between the date of the appointment of the Caesars Constantius and Galerius and that of the Diocletianic monetary reform. The main constituents of these eight hoards are shown in Table 6.

TABLE 6

Main constituents of Karanis hoards of Alexandrian coins of the first tetrarchy

Hoard no.	No. of Coins	Obvs. of coins of tetrarchs	Illegible	Not listed
16	1103	428 + 307 + 11 + 3 = 749	172	
18	2484	1173 + 867 + 18 + 10 = 2068	12	
19	1439	527 + 434 + 15 + 21 = 997	160	
21	762	264 + 204 + 3 + 5 = 476	145	
23	1486	460 + 341 + 8 + 6 = 815	476	
33	59	21 + 16 + 1 + 0 = 38	9	<sup>2</sup>
34	2944	1274 + 934 + 20 + 8 = 2236		162
35	1419	640 + 484 + 14 + 12 = 1150	81	

A calculation of the percentages of the tetrarchic coins among all the legible coins in each hoard demonstrates their common structure. In each hoard as an entity, the coins of Diocletian amount to almost 50%, those of Maximian are 10–12% less frequent, and the coins of the Caesars are barely represented (Table 7).

TABLE 7

Percentages of the coins of the individual tetrarchic rulers among the legible and listed coins of some Karanis hoards

Hoard no.	Coins of individual tetrarchs of all tetrarchic coins (%)	Sum of percentages
16	46.7 + 33.0 + 1.2 + 0.3 =	81.2
18	47.5 + 35.1 + 0.7 + 0.4 =	83.7
19	41.2 + 33.9 + 1.2 + 1.6 =	77.8
21	42.8 + 31.1 + 0.5 + 0.8 =	75.2
23	45.5 + 33.8 + 0.8 + 0.6 =	80.7
33	43.8 + 33.3 + 2.1 + 0.0 =	79.2
34	45.8 + 33.6 + 0.7 + 0.3 =	80.4
35	47.8 + 36.2 + 1.0 + 0.9 =	85.9

Were it not for the fact that all the hoards in question were found within the same comparatively limited area,<sup>44</sup> it would be tempting to generalise and regard the composition of the single hoards as the outcome of the normal circulation of coins in Karanis. A further analysis of the individual coins might reveal, for instance, the time required for the Alexandrian coins to reach Karanis. Such a study would, however, exceed the limits of the present paper, although it might facilitate the establishment of the date of the hoard burials and thereby also, possibly, the initiation of Diocletian's monetary reform in Egypt. The frequency of the coins of Diocletian as compared with those of Maximian suggests, though, that the output of obverses of the individual rulers was uneven. Consequently the coins struck in the names of the two Caesars may have been much more infrequent than those struck for the Augusti. Without further study we cannot say whether the comparatively few coins of the Caesars represent a slow circulation of coins or a low frequency of striking.

In trying to place the hoard burials within the framework of the political history of Egypt, we approach a field, where Dr Sutherland, both in *Roman Imperial Coinage* (Vol. vi) and earlier,<sup>45</sup> has made contributions of fundamental importance. He has maintained that there was an overlap of three years during which both Greek Alexandrian tetradrachms and Latin folles were issued, whereas Jean-Pierre Callu regards tetradrachms and nummi (folles) as successive coinages with 29 August, 296 as the terminal date for the tetradrachms.<sup>46</sup> The Karanis hoards do not solve this controversy, because it seems clear that the reason for the burial was the monetary reform, the refusal to accept the new nummi and the unwillingness to let them mix with the traditional currency.<sup>47</sup> How far political events affected Karanis it is hard to ascertain, but it is not devoid of interest that Diocletian, on papyri

from this very locality, is recorded as Augustus on 19 August 296, and anew on 15 December 296, whereas the usurper Domitian is hailed Augustus in Karanis on 20-21 November the same year.<sup>48</sup> We have no corresponding records from Oxyrhynchus - but no hoards of Alexandrian tetradrachms either.

## NOTES

- See, for instance, Jacques Schwartz, 'La circulation monétaire dans l'Égypte du IV<sup>e</sup> siècle', *Schw. Münzbl.* 9, (1959), 11-17, 40-4; Dietmar Kienast, 'Der Münzfund von Ankara 270-310 n. Chr. Studien zu Besonderheiten des Geldumlaufes im Ostteil und Westteil des Imperiums', *JNG xii* (1962), 65-112; Jean-Pierre Callu, 'La circulation monétaire de 313 à 348', *Actes du 8ème congrès international de numismatique*, New York-Washington, Sept. 1973 (Paris/Basel, 1976), 227-42.
- This has been very convincingly demonstrated by the Finnish scholar Pekka Sarvas, 'Den finska myntskatterna från 1700-talet', *Nordisk numismatisk årsskrift* (1967), 23-146, and 'De svenska myntskatterna från 1700-talet', *NNA* 1969, 116-72. In a contribution to the *Aufstieg und Niedergang der römischen Welt* [ANRW] iii, under the heading 'Die Geschichte Konstantins im Spiegel der Münzprägung. Die Anfänge einer neuen Systematik' (forthcoming), I have tried to apply the theories of Mr Sarvas to the early fourth-century Roman coinage.
- The creation and development of this denomination has been dealt with in my contribution to the ANRW iii. The identification of this denomination has been possible with the aid of the metallurgical findings of Dr Lawrence H. Cope.
- This has been established by the chemical analyses undertaken by Dr Cope and kindly communicated to me.
- In RIC vii, marked as J<sup>1</sup>, busts.
- Whereas I have calculated the value of the coin expressed in denarii on my own, I owe the identification of the coin with the centenionalis to Dr J. P. C. Kent of the British Museum (J. P. C. Kent, *Roman Coins* (London, 1978), 51).
- This contention is borne out by analyses carried out by Dr Cope and kindly communicated to me, showing that these coins did not contain any silver at all, whereas the Sol coins were produced from metal containing 4 scruples of silver to the pound.
- For further particulars, cf. ANRW iii.
- Andreas Alföldi, 'Il tesoro di Nagytétény', *RIN* 1921, 113-90.
- E. Genova, 'S'Krovishche ot rimski monet ot Pleven', *Arkheologija* 6, no. 4 (1964), 52-7.
- Callu, op. cit., 236, n. 49, in addition records a hoard from Antinöe and one from Nebek without any 12.5 pieces; in a hoard from Macin and from Upper Egypt there is just one specimen. In two unpublished Algerian hoards Dr Callu has recorded 3 and 1 12.5 pieces, respectively. He further mentions 'le trésor
- In addition there are 16 coins, which have not been catalogued because they were not taken to the United States for classification, but incorporated with the material of Egyptian museums.
- The observations made on the site by the excavators in connexion with the discovery clearly suggests that the hoards at the moment of deposition physically were separate entities. It is interesting to compare the hoards of Table 5 with the 'tetrarchic' hoards. Four of them are of a very similar structure inasmuch as the coins of Diocletian and Maximian constitute slightly less than a half of the legible and listed coins of the hoards (hoard no. 22 = 43%; 25 = 44.9%; 29 = 43.5% and 36 = 45.7%). No. 24 differs from these and comes with 75% very close to the 'tetrarchic' hoards of Tables 6-7. The structure of hoards 22, 25, 29 and 36 suggest a common burial date some years before the nomination of the Caesars in A.D. 293.
- Diocletian's extension of the "Latin" folles to Egypt, *Int. Num. Congr.*, Rome, September 1961, ii, Atti, 341-6 (Rome, 1965); cf. RIC vi, Introduction to Alexandria, 645ff.
- La politique monétaire des empereurs romains de 238 à 311*, BEFAR 214 (Paris, 1969), 387f. Note that Dr Callu obviously did not know Dr Sutherland's RIC volume when he prepared the text of his book.
- Callu, op. cit., 190, n. 3, writes: 'Une réaction de défense à l'égard de la réforme monétaire n'est pas à exclure', but notes that the political events must have been motivation enough for the burial, which he, however, refers to A.D. 295-6.
- PMich. 1029; cf. Callu, op. cit., 190, n. 4.
- No. 1495 (2 coins) = RIC vii, no. 17; no. 1532 (2) = RIC vii, no. 18; no. 1533 (2) = RIC vii, no. 23; no. 1534 (3) = RIC vii, no. 28; no. 1559 = RIC vii, no. 26.
- No. 1535 (2) = RIC vii, no. 27; no. 1543 (4) = RIC vii, no. 28.
- No. 1518 = RIC vii, no. 23; no. 1538 = RIC vii, no. 24; no. 1547 = RIC vii, no. 32.
- No. 1546 (2) = RIC vii, no. 41.
- No. 1534, issued at Alexandria.
- Die Fundmünzen von Vindonissa*.
- Including four from Carthage.
- Provenance doubtful, recorded as Heraclea.
- Provenance doubtful, recorded as Antioch.
- No. 791 is included, attributed either to Heraclea or to Nicomedia.
- Sol coins and VICTORIAE LAETAE, i.e. nummi and centenionales in the same way as 12.5 pieces and the Licinian centenionalis.
- R. A. Haatwedt and E. E. Peterson, *Coins from Karanis*, University of Michigan Excavations 1924-35 (Ann Arbor, 1964).
- J. G. Milne, 'The Coins from Oxyrhynchus', *JEA* 8 (1922), 158-63.
- Thomas Pekary, *Die Fundmünzen von Vindonissa von Hadrian bis zum Ausgang der Römerherrschaft*, Brugg, Gesellschaft Pro Vindonissa (1971).
- Isabel Pereira, Jean-Pierre Bot and Jean Hiernard, *Les monnaies en Fouilles de Conimbriga*, ed. J. Alarcão and R. Etienne, iii. *Mission archéologique française au Portugal*, Musée Monographique de Conimbriga (Paris, 1974).
- Sites further away in Gaul and Britain could not be expected to yield a significant number of eastern coins, whereas both Vindonissa and particularly Conimbriga were within reach of the Mediterranean trade and market area.
- Pereira *et al.*, op. cit.
- Ibid.* There are some very slight discrepancies in the dating of the coins and in the establishment of coining periods, which, however, do not affect the overall picture of the circulation of the coins.
- Struck after Constantine's capture of the mint city.
- For a general picture of the material, see Pereira *et al.*, op. cit., 246-57 (diagrams).
- Ibid.*, 259; cf. also Schwartz, art. cit., 11-17; 49-4.
- Haatwedt and Peterson, (op. cit., n. 12 above), 4ff.
- Ibid.*
- Milne, art. cit., 161.
- Haatwedt and Peterson, op. cit.
- Table III (*ibid.*) gives 74 coins, but the commentary to no. 1505 from Aquileia discloses an additional coin issued at Lyons.
- The coins from Oxyrhynchus confirm the overall picture of the provenance of the coins (cf. Milne, art. cit., 161). Column C comprising 24 records 25 Alexandrian and 47 other eastern coins, 13 Balkan and 41 Italic coins and 18 coins from Gaul (13 of which from Arles).
- According to research carried out by Dr Cope; cf. nn. 3, 4 and 7 above.