

JAARBOEK
VOOR
MUNT- EN
PENNINGKUNDE

75
1988

KONINKLIJK NEDERLANDS GENOOTSCHAP
VOOR MUNT- EN PENNINGKUNDE
AMSTERDAM

Commissie van redactie

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ISSN 0920-380X

DORESTAD IN THE NINTH CENTURY: THE NUMISMATIC EVIDENCE

by Dr. Simon Coupland

Wijk-bij Duurstede is a small Dutch town in the province of Utrecht, but in the eighth and ninth centuries its site was occupied by the port of Dorestad, probably the busiest market in northern Europe. Dorestad's importance derived from its position on the lower Rhine, where maritime trade routes from Scandinavia, the Baltic and the British Isles converged and flowed into the Carolingian Empire. Contemporary authors emphasised the reputation of the port, which was described by one ninth-century annalist as "vicus nominatissimus"¹, and by another writer, a hagiographer, as "vicus famosus"².

Numismatic evidence similarly underlines Dorestad's pre-eminent role in international trade. Coins minted at the emporium during the reigns of Charlemagne (768-814) and Louis the Pious (814-840) bore the image of a ship, a symbol used otherwise only on coins from Quentovic, another important Carolingian port. During the same period coinage minted at Dorestad was carried up into Denmark, across into Germany and down into France³, while to Dorestad flowed coins from as far afield as Ampurias and Arles, Melle and Milan, Regensburg and Rouen⁴.

However, the wealth which drew merchants to Dorestad also attracted less welcome visitors. Viking raiders made repeated attacks on the emporium in the late 830s, apparently at the instigation of Louis the Pious's rebellious son, Lothar I (840-855). On his accession Lothar rewarded the Danes who had carried out these attacks, Harald and Rorik, by granting them Dorestad and

The research for this article was undertaken thanks to the grant of a Study Abroad Studentship from the Leverhulme Trust, to whom I am extremely grateful. I would also like to express my thanks to Mark Blackburn, Michael Metcalf and Janet Nelson for their helpful comments on an earlier draft of the article, and to the Cabinet des Médailles in Brussels and the KPK for permitting me to photograph coins in their collections.

1 Annals of Xanten 834: B. de Simson (ed.), *Annales Xantenses et annales Vedastini*, MGH, *Scriptores rerum Germanicarum in usum scholarum* (Hanover and Leipzig, 1909), p. 9.

2 Life of Gregory c. 5: O. Holder-Egger (ed.), *Liudgeri Vita Gregorii*, in MGH, *Scriptores* XV, 1 (Hanover, 1887), pp. 63-79 (p. 71).

3 See the map compiled by P. Berghaus for the entry on "Dorestad" in *Reallexikon der Germanischen Altertumskunde* (Berlin and New York, 1973-), vol. VI (1986), p. 80.

4 H.H. Völckers, *Karolingische Münzfunde der Frühzeit (751-800)*, Abhandlungen der Akademie der Wissenschaften in Göttingen, Philologisch-historische Klasse, Third Series, vol. 61 (Göttingen, 1965), nos. III, 21, 22-6, 46-7, 39-40, 115, 58.

the surrounding area in benefice⁵. Although the region reverted to Lothar's direct control not long afterwards, when Harald died and Rorik fled amidst allegations of treachery, Rorik returned in 850 with a powerful fleet and seized the port by force of arms. Lothar was obliged to recognise Rorik's lordship over Dorestad "et alios comitatus", in return for which Rorik agreed to pay the Emperor the customary taxes and to resist any future Viking incursions⁶. Such an arrangement evidently remained in force for the next twenty-five years, despite an attempt to expel Rorik by Lothar II (855-875) in 855 and an initially successful uprising by local inhabitants in 867⁷. As for Dorestad itself, the port suffered only two attacks during the period of Rorik's rule, the first in 857, when Rorik was absent in Denmark, and the second in 863, when he apparently protected his fiefdom by encouraging the raiders to travel further upstream, into the territory of Louis the German (840-876)⁸.

Historians have attached considerable significance to the fact that the Viking raid of 863 marks the final point in Dorestad's recorded history, after which nothing more is said about the fate of the port in Carolingian written texts. Some scholars have concluded that the emporium was so utterly devastated by the Vikings that it was no longer able to recover⁹. Others have ascribed Dorestad's sudden disappearance from the sources to a catastrophic flood which struck the coast of Frisia in 864¹⁰. However, a recent campaign of excavations at the site undertaken by Dutch archaeologists has shed fascinating new light on the nature of Dorestad's decline. These investigations reveal that commercial activity at Dorestad did not end suddenly, as a result of pirate attack or natural catastrophe, but rather over a long period, as the

5 Annals of St Bertin 841: F. Grat, J. Vielliard and S. Clémencet (eds), *Annales de Saint-Bertin* (Paris, 1964), p. 39; Nithard IV, 2: P. Lauer (ed.), *Nithard: Histoire des fils de Louis le Pieux* (Paris, 1926), p. 122.

6 Annals of Fulda 850: F. Kurze (ed.), *Annales Fuldenses, MGH, Scriptores rerum Germanicarum in usum scholarum* (Hanover, 1891), p. 39; Annals of St Bertin 850: Grat, Vielliard and Clémencet (eds), *Annales de Saint-Bertin*, p. 59.

7 Annals of St Bertin 855, 867: Grat, Vielliard and Clémencet (eds), *Annales de Saint-Bertin*, pp. 70-1, 137.

8 Annals of Fulda 857: Kurze (ed.), *Annales Fuldenses*, p. 47; Annals of St Bertin 857, 863: Grat, Vielliard and Clémencet (eds), *Annales de Saint-Bertin*, pp. 75, 95-6.

9 E.g. M. Bloch, *La Société féodale* (2 vols, Paris, 1939-40), vol. I, p. 73; L. Musset, *Les Invasions: le second assaut contre l'Europe chrétienne (VII-XI siècles)* (Paris, 1971), pp. 239, 245; R. Hodges, *Dark Age Economics* (London, 1982), p. 207, n. 21.

10 J.H. Holwerda, "Opgravingen van Dorestad", *Oudheidkundige Mededeelingen uit het Rijksmuseum van Oudheden te Leiden* XI (1930), pp. 32-96 (p. 95); J. Brøndsted, *The Vikings*, second edition (Harmondsworth, 1965), p. 47; P.H. Sawyer, *The Age of the Vikings*, second edition (London, 1971), p. 140.

river Rhine gradually changed course away from the original site of the trading centre¹¹.

Having convincingly demonstrated the gradual nature of the change in Dorestad's fortunes, the leaders of the excavations, W.A. van Es and W.J.H. Verwers, set out to establish the chronology of the site's decline. They were able to call upon four independent types of material evidence. Firstly, the most recent of the pottery types which were found at Dorestad continued well into the second half of the ninth century, and perhaps even into the early tenth century¹². Secondly, the latest date given by Carbon-14 analysis was the middle of the ninth century or a little after, though the authors noted that the other datings were all considerably earlier¹³. Thirdly, a number of wooden wells at the site could be dated by dendrochronology, of which the majority dated from the eighth century, but of which the latest was evidently constructed *circa* 850¹⁴. Finally, the excavations also unearthed a significant number of Carolingian coins, including two important hoards, and this material was examined in conjunction with earlier known finds in order to build up a picture of the changes in Dorestad's prosperity during the late eighth and ninth centuries. Considerable significance was attached to this numismatic evidence, which was said to reveal that "an important change in Dorestad's economic situation must have occurred around AD 830. At about that date, the regular influx of Carolingian coins, which had characterized the preceding period of at least fifty years, decreased considerably and the official Carolingian mint, which had been operated for a long time at Dorestad itself, stopped its issues"¹⁵.

Two distinct factors were therefore adduced to point to a change in Dorestad's prosperity *circa* 830: a decline in the number of coins in circulation and the cessation of minting. However, a reappraisal of the numismatic evidence raises serious doubts concerning both these matters, as this paper will argue. With regard to the scale of coin imports, a re-examination of the nineteenth-century records of coin finds from Dorestad suggests that the influx of coinage slackened not around 830 but at least ten years later, and that on the contrary there seems to have been a particularly large number of coins in circulation during the 830s. These records also imply that economic activity at the site came to a virtual standstill by the mid-860s. As for the cessation of

11 W.A. van Es and W.J.H. Verwers, *Excavations at Dorestad I: The Harbour. Hoogstraat 1* (Amersfoort, 1980); the same authors also included a summary of their findings to date in the *Reallexikon der Germanischen Altertumskunde*, vol. VI, pp. 65-76.

12 Van Es and Verwers, *Dorestad*, p. 297.

13 Van Es and Verwers, *Dorestad*, p. 297.

14 Van Es and Verwers, *Dorestad*, p. 298.

15 Van Es and Verwers, *Dorestad*, p. 297.

minting, there are good reasons for believing that the Dorestad mint continued production until at least 850, and perhaps as late as 860. The numismatic evidence therefore indicates that the decline of Dorestad should be dated one or two decades later than was proposed by van Es and Verwers, since it suggests that the port enjoyed an economic boom until *circa* 840, when a period of decline ensued, ending in the virtual cessation of commercial activity by the mid-860s.

The Influx of Carolingian Coinage in the Ninth Century

The analysis of the coin finds from Dorestad in Van Es and Verwers' work was undertaken by H. Enno van Gelder, who compiled a histogram of such finds as an index of the fluctuating level of coin imports to the port over the period 752-855¹⁶. Van Gelder based his calculations on five sets of figures: the three coin hoards found at Dorestad in 1845/6 and 1972 (two hoards) and the single finds made there in the nineteenth and twentieth centuries.

There is no doubt concerning the composition of the three hoards, which are well documented. The 1845/6 hoard contained twenty-two coins of Charlemagne and twenty-six of Louis the Pious, the 1972 hoards twenty-five coins of Pippin III (751-768) in one instance and seventeen of Charlemagne, fifteen of Louis the Pious in the other¹⁷. It is nonetheless clear that such deposits should not be included in any general survey of the number of coins found on the site which is intended to reveal the chronological fluctuations of coin imports. The deposition of a parcel of coins on a particular occasion is not comparable with the chance loss of individual coins over a number of years. Only the latter material can give an idea of the rise and fall in the number of coins in circulation over the course of time, and hence the changing level of economic activity at the site. The inclusion of these three hoards in Van Gelder's analysis of the coin finds from Dorestad consequently gives a misleading impression of the scale of coin imports by exaggerating the number of coins in circulation in the late eighth and early ninth centuries.

This leaves only two sets of figures which can be used to determine the level of commercial activity at Dorestad in the ninth century: the nineteenth- and twentieth-century stray finds. The number and types of the coins found during the recent excavations at Hoogstraat I were fully and impeccably recorded by Van Gelder, who also included a summary description of the

16 H. Enno van Gelder, "Coins from Dorestad, Hoogstraat I", in Van Es and Verwers, *Dorestad*, pp. 212-24 (p. 222).

17 1845/6 hoard: L. de Coster. "Explications faisant suite aux précédentes notices sur l'attribution à Charlemagne de quelques types monétaires", *Revue belge de numismatique*, Third Series, vol. I (1857), pp. 30-54 (pp. 34-6); 1972 hoards: Van Gelder, "Coins from Dorestad", pp. 212-21.

other finds from the 1969-75 excavations. In all, five coins of Pippin III were discovered, along with two pre-reform and twenty-one post-reform deniers of Charlemagne, six of Louis the Pious's mint-signed coins and fifteen of his *Christiana religio* issues, and two coins of Lothar I¹⁸. By contrast, the nineteenth-century finds are but partially and poorly documented.

Van Gelder based his figures for these finds on the generally thorough and reliable study of Carolingian coinage in the late eighth century which was published by H.H. Völckers in 1965¹⁹. However, in the particular case of the Dorestad material, Völckers' lists of coins cannot be used without great caution. Firstly, as Van Gelder noticed, Völckers mistakenly included the 1845/6 Dorestad hoard as if it were a collection of single finds²⁰. Similarly, Völckers also listed the contents of a hoard found in an uncertain location in Frisia as if they were stray finds from Dorestad²¹. However, the most important reason for citing Völckers' figures only with extreme caution is that they were unavoidably incomplete, because of the partial nature of the nineteenth-century documents on which they were based. As the author himself commented: "De Coster hat auch wiederholt betont, dass ihn die vielen Gepräge der Münzstätte Dorestad oder die häufigen Christiana Religio-Pfennige nicht interessiert hätten und dass sie eingeschmolzen wären, ohne dass eine Beschreibung oder Zählung stattgefunden hätte"²². It is therefore vital to go back to the original nineteenth-century reports of finds from Dorestad in order to see whether they reveal any more about the chronological distribution of the coins. This investigation has led me to conclude, *contra* Van Gelder, that the most common type of coinage found at Dorestad was almost certainly the *Christiana religio* issue of Louis the Pious, which, as has been noted, was markedly under-represented in Völckers' work because of the unavailability of accurate figures of the numbers found.

This impression is gained from the study of a number of nineteenth-century texts. For instance, L.J.F. Janssen, who excavated at Dorestad in the early nineteenth century, wrote that he had found two coins of Pippin III, seven of

18 I am grateful to Arent Pol for giving me access to the file on Dorestad in the Koninklijk Penningkabinet. The finds included one portrait coin of Charlemagne (METALLGERMAN: MG 313 var.) and one of Louis the Pious (Dorestad: MG 330/331). The coins of Lothar were both Dorestad temple issues (MG 525 and 530).

19 Völckers, *Münzfunde*, pp. 139-49.

20 Völckers, *Münzfunde*, nos. III, 20, 29, 35, 44, 48, 69, 72, 78-9, 85-6, 90, 93-8, 101, 104, 106-7, 113-4, 120, 152-63, 164.

21 Völckers, *Münzfunde*, nos. III, 103, 138-51, 166, 169, 170, 171. This point was not remarked by van Gelder.

22 "De Coster also repeatedly emphasised that neither the many issues of the Dorestad mint nor the numerous *Christiana religio* pennies had interested him and that they had been melted down without having been described or counted". Völckers, *Münzfunde*, p. 52 and n. 5.

Charlemagne, of which only one was pre-reform, one of Louis the Pious's portrait type, four with the mint-name in field, one issued by Lothar I and "een aanmerkelijk getal denarii" of Louis the Pious's *Christiana religio* type²³. Coins of Louis the Pious were also said to have been the most common found, outnumbering those of Charlemagne²⁴. Similarly, the nineteenth-century collection of Carolingian coins in the University at Leiden, most of which were evidently discovered at Dorestad, contained one coin of Pippin III, three of Charlemagne (one of them pre-reform), three portrait coins of Louis the Pious, two with the mint-name in field, two deniers each of Lothar I and Charles the Bald (840-877), and seven *Christiana religio* issues of Louis the Pious, one of them an obole or half-denier²⁵. The collection of coins unearthed at Dorestad which was assembled by Balfoort but then acquired by de Coster also contained Louis's *Christiana religio* type "en abundance"²⁶, but de Coster deemed the coins so common that he neither purchased them nor even recorded their number²⁷. Furthermore, when Rethaan Macaré referred to the coins of Charlemagne and Louis the Pious found at Dorestad, it was the *Christiana religio* type which he singled out as being unearthed 'in groot aantal'²⁸.

These coins were neither listed by Völckers nor included in Van Gelder's table and histogram of coin finds, which consequently under-represented the number of *Christiana religio* issues found at Dorestad. When they are taken into account, considerable doubt is cast on Van Gelder's conclusion that the *Christiana religio* type was rarer at Dorestad than the preceding issues of Charlemagne and Louis the Pious. This in turn casts doubt on Van Gelder's further deduction that there must have been a sharp decline in Dorestad's economic situation around 830, which was based on the belief, widespread at the time of writing, that the *Christiana religio* coinage was minted between 829 and 840²⁹. On the contrary, the very large number of *Christiana religio*

23 L. J. F. Janssen, *Oudheidkundige Mededeelingen* (4 vols, Leiden, 1842-5), vol. I, pp. 34-6; vol. II (1843), pp. 90, 98-9, 123-6, 152.

24 Janssen, *Mededeelingen*, vol. II, p. 170.

25 P. O. van der Chijs, *De Munten der Frankische- en Duitsch-Nederlandsche Vorsten* (Haarlem, 1866), pp. 95, 124, 128-30, 133-4, 145-8, 150, 159. On the provenance of the coins see also C. A. Rethaan Macaré, *Tweede Verhandeling over de bij Domburg gevonden Romeinsche, Frankische, Brittannische en andere Munten* (Middelburg, 1856), pp. 56, 60-1.

26 L. de Coster, "Restitution de quelques monnaies à Charlemagne", *Revue belge de numismatique*, Second Series, vol. II (1852), pp. 369-403 (p. 391).

27 De Coster, "Restitution", p. 374.

28 Rethaan Macaré, *Tweede verhandeling*, p. 60.

29 I have recently sought to demonstrate that the type was in fact minted from 822 or 823, but this is not significant in the present context: S. C. Coupland, "La chronologie des émissions monétaires de Louis le Pieux (814-840)", *Bulletin de la Société française de numismatique* 43, 7 (juillet 1988), pp. 431-3.

issues found on the site suggests that the 830s represented a period of considerable economic prosperity at Dorestad. It is true that some of these *Christiana religio* issues may have been imported after 840, since very large numbers remained in circulation alongside the new coinages being minted by Lothar I, Charles the Bald and Pippin II of Aquitaine (838-845). Yet the relative paucity of finds of these later coinages at Dorestad, as revealed by the figures reproduced below, suggests that the great majority of Louis's *Christiana religio* issues did indeed reach Dorestad during the 820s and 830s.

If the numismatic evidence thus suggests that Dorestad's economy was booming during the latter part of the reign of Louis the Pious, it also indicates that this was merely the continuation of an established trend. For the sizeable number of finds of post-reform deniers of Charlemagne and early issues of Louis the Pious similarly points to a substantial monetary influx during the early years of the ninth century, particularly when it is taken into account that these coinages circulated for significantly shorter periods than Louis's *Christiana religio* type. It therefore seems apparent that commerce was flourishing at Dorestad throughout the whole of the period from the mid-790s until at least 840.

By contrast, relatively few coins have been found on the site from the 840s and 850s. Only one coin of Pippin II of Aquitaine has been discovered, some fifteen of Lothar I and at least seven of Charles the Bald³⁰. Once again, these figures almost certainly under-represent the true number of finds, however. First, it is likely that several of the coins which have traditionally been ascribed to Charlemagne were in fact struck by Charles the Bald. This is, for example, true of at least six of the forty-five deniers attributed to Charlemagne in the Balfort collection, which are of types now known to have been minted by Charles the Bald between 840 and 864³¹. In other instances, where the coins in question were not fully described, the attribution to one ruler or the other cannot now be verified. Second, it is equally likely that significantly more coins of Lothar I were unearthed at the site than have been recorded.

30 Pippin II: De Coster, "Restitution", pp. 375, 400-1 (Völckers III, 167; 168 is a coin of Charles the Bald, while 166 and 169 are part of the "Frisia" hoard). Lothar: L. de Coster, "Renseignements pour servir à la numismatique de la seconde race", *Revue belge de numismatique*, Second Series, vol. III (1853), pp. 357-69 (pp. 365-6) (Völckers III, 177-81 plus one other); Janssen, *Mededeelingen*, vol. I, p. 35 (Völckers III, 176); Van der Chijs, *Munten*, pp. 158-9 (three deniers: Völckers III, 172 and two others); Völckers III, 173-5 (170-1 are part of the "Frisia" hoard); 401.0.0; 434.1.1 Charles the Bald: de Coster, "Restitution", pp. 380-1, 400 (Völckers III, 183, 194-7, 199-200; all the other coins attributed by Völckers to Charles the Bald could equally be ascribed to Charlemagne, except 185 which was definitely coined by Charlemagne, and 201 which was not found at Dorestad).

31 De Coster, "Restitution", pp. 380-1, nos 40-5 (see previous note).

Lotharingian hoards and stray finds from Dorestad alike show that Lothar's Dorestad temple coinage was by far the most common contemporary issue in circulation in the North during the 840s and 850s. Yet the very commonness of the type made it uninteresting to nineteenth-century collectors, who also found its coarse design unattractive, preferring "les plus belles monnaies"³². As in the case of Louis the Pious's *Christiana religio* issues, numismatists such as de Coster consequently made little effort to acquire Lothar's Dorestad coins and did not bother to keep a record of the number found³³.

Nevertheless, even allowing for the fact that the true number of finds was almost certainly higher than has previously been recognised, it is apparent from the reliable figures which are available that there was a drop in the amount of coinage in circulation at Dorestad in the years after 840. This may seem surprising in view of the very large number of finds of Lothar's Dorestad temple type in northern hoards, and the probable explanation for this discrepancy will be considered below. The impression that there was a decrease in the influx of coinage after 840 is strengthened by the complete absence of the otherwise common *Gratia Dei rex* coinage introduced by Charles the Bald in 864: this fact suggests that Dorestad had ceased to play any significant role in long-distance trade by the mid-860s.

In short, the evidence of the coin finds from Dorestad indicates a sustained economic boom from *circa* 795 to *circa* 840, followed by a relatively rapid decline in the 840s and 850s, until by the mid-860s there is no sign of continuing commercial activity.

The Mint at Dorestad in the Ninth Century

The finds of coins which are known or believed to have been struck at Dorestad in the eighth century were fully documented and discussed by Völckers³⁴; only the two hoards from Dorestad³⁵ and that from Breuvery³⁶ need to be added to his list.

Table one (p. 25) records the finds of ninth-century coins bearing the name of Dorestad: these fall into seven categories.

32 The quotation is taken from P.C.J.A. Boeles, "Les trouvailles de monnaies carolingiennes dans les Pays-Bas, spécialement celles des trois provinces septentrionales", *Jaarboek voor Munt- en Penningkunde* 2 (1915), pp. 1-100 (p. 31).

33 De Coster, "Restitution", p. 374.

34 Völckers, *Münzfunde*, pp. 93, 207.

35 See note 17 above.

36 J. Duplessy, *Les Trésors monétaires médiévaux et modernes découverts en France* (Paris, 1985-), vol. 1, 751-1223, no. 56.

1. Prou 62³⁷; MG 100-104, 642³⁸.



This type was minted by Charlemagne from the reform of 793/4 until at least 800, and probably for several years thereafter³⁹. The obverse bears the legend +CARLVSREXFR around a cross, and the reverse +DORESTADO encircling the monogram of Carolus. Obols of this coinage were also struck, bearing a monogram filling the field on the obverse and the mint-name around a cross on the reverse. It is important to emphasise that these coins can only be ascribed to Charlemagne, and not to Charles the Bald, since the latter never exercised control over Dorestad⁴⁰.

2. Prou -; MG 105.



During the latter years of Charlemagne's reign the monogram coinage was replaced by a new type, on which the imperial bust was portrayed with the legend KAROLVSIMPAVG on the obverse, and a ship surrounded by the mint-name +DORESTADO on the reverse.

37 M. Prou, *Catalogue des monnaies françaises de la Bibliothèque nationale: les monnaies carolingiennes* (Paris, 1892).

38 K.F. Morrison and H. Grunthal, *Carolingian Coinage*, American Numismatic Society Numismatic Notes and Monographs, no. 158 (New York, 1967).

39 J. Lafaurie, "Les monnaies impériales de Charlemagne", *Comptes-rendus de l'académie des inscriptions et belles-lettres* 1978, pp. 154-76; P. Grierson and M.A.S. Blackburn, *Medieval European Coinage* (Cambridge, 1986-), vol. 1, *The Early Middle Ages (5th-10th Centuries)*, pp. 208-9.

40 *Contra* MG 642; Völckers, *Münzfunde*, no. III, 185; Berghaus, "Dorestad", p. 79. The same is true of the rare gold coins or ornaments from Dorestad bearing the name of a King Charles: MG 643.

3. Prou 63-4; MG 330-1.



This portrait type was continued with slight changes by Louis the Pious from his accession in 814 until 818⁴¹. On the obverse the imperial title was altered to HLVDVVICVSIMPAVG, while the reverse legend became DORE-STATVS, now reading from the top of the coin rather than the bottom.

4. Prou 65-8; MG 332-6.



In 818 the Emperor introduced an entirely new coinage type, which featured the title +HLVDVVICVSIMP encircling a cross on the obverse and the mint-name DOR-ESTA-TVS in three lines filling the reverse field.

The three-line type was minted until 822 or 823⁴², when a significant change in minting policy occurred. From this date until virtually the end of Louis's reign, all mints in the Empire coined a single anonymous type, which retained the obverse design of the previous coinage but replaced the mint-name on the reverse by the legend XPISTIANARELIGIO around a temple. Whether such coins were struck at Dorestad and, if so, whether the local issues can be identified will be considered below. Most mints continued to strike the *Christiana religio* type until the Emperor's death in 840.

5. Prou -; MG 337.



Towards the end of the reign of Louis the Pious, probably in 839 or even 840, a small number of coins were struck on which the anonymous reverse formula was replaced by a mint-name, although the temple and obverse design were retained. These coins are known only from Dorestad and Maastricht.

41 The dating of Louis's coinage types is discussed in the article cited in note 29 above.

42 See previous note.

6 Prou 74-8; MG 525-30.



The new type thus created was continued throughout the north by Lothar I, and as the table of coin finds reveals, large numbers of coins have been unearthed with the mint-name DORESTATVSMON around a temple on the reverse and the imperial title +LOTARIVSIMPERAT, invariably in a barbarous form, around a cross on the obverse. During the same period Lothar also minted *Christiana religio* issues under his own name, and the question of whether any of these were produced at Dorestad will be discussed below.

7. Prou 69-73; MG 521-4.



The last known ninth-century coinage bearing the name of Dorestad similarly bore the imperial title, usually debased, around a cross on the obverse, but went back to the portrayal of the mint-name in three lines, DOR-ESTA-TVS, on the reverse. Various dates have been suggested for the production of these two coinage types struck in Lothar's name, and since the matter is obviously of particular significance with regard to the dating of Dorestad's economic decline, it will be examined at length below.

At first sight, the table of finds of mint-signed Dorestad coins appears to present a picture of minting at the emporium which is substantially at variance with the image revealed by the stray finds from the site which were considered above. In particular, the small number of finds of Charlemagne's monogram coinage issued at the Dorestad mint presents a marked contrast to the large number of coins of this type unearthed at Dorestad itself. Conversely, the multitude of finds of Lothar I's Dorestad temple coinage in ninth-century hoards contrasts sharply with the relatively few finds of coins dating from Lothar's reign at Dorestad. However, this apparent discrepancy only underlines the fact that the figures in the table cannot be taken as a direct indication of the productivity of the mint at any one particular time. Factors such as the number of hoards from a given period and the size of each individual hoard must always be taken into account. Thus the small number

and size of known hoards containing Charlemagne's post-reform royal deniers undoubtedly give a false impression of the number in circulation at the time, and the very large number and size of the known hoards containing Lothar's temple type similarly overemphasise the scale of that coinage.



Christiana religio issues of Louis the Pious attributable to Dorestad.

The table of finds also gives an incomplete picture of coin production at Dorestad because of the omission of the anonymous *Christiana religio* coinage of Louis the Pious. Many of the hoards in the table contained large numbers of coins of this type, which, as we have seen, was being minted during the 820s and 830s, when the emporium was evidently at the height of its prosperity. Is it possible to determine whether the type was struck at Dorestad itself, and, if so, to identify the issues which were produced there? The existence of *Christiana religio* issues struck by Louis the Pious which display clear stylistic similarities to the Dorestad temple types of Louis and Lothar was signalled by Van Gelder more than twenty-five years ago. On the evidence of the Carolingian hoard found at Ide, Van Gelder identified two distinct groups of such coins⁴³, although in his more recent analysis of the Roermond hoard the coins have been classified as a single group⁴⁴. My own entirely independent research has led me to precisely the same conclusions as Van Gelder regarding both the classification of these coins and their attribution to the mint producing the Dorestad temple types.

41 The dating of Louis's coinage types is discussed in the article cited in note 29 above.

42 See previous note.

43 H. Enno van Gelder, "De Karolingische muntslag te Duurstede", *Jaarboek voor Munt- en Penningkunde* 48 (1961), pp. 15-42 (pp. 31-2); *idem*, "Le trésor carolingien d'Ide", *Revue numismatique* 1965, pp. 241-62 (pp. 250-1).

44 H. Enno van Gelder, "De Karolingische muntvondst Roermond", *Jaarboek voor Munt- en Penningkunde* 72 (1985), pp. 13-47 (pp. 27-8).

As has been indicated, the primary grounds for the classification and attribution of these coins are stylistic. On both the *Christiana religio* issues and the Dorestad temple coinage the obverse cross is large, while the temple on the reverse is crude and squat, with a small central cross and often a discrepancy in the angle between the inner and outer lines of the roof. The letters and lines of the designs on both faces are generally thick and poorly formed. The legends are frequently blundered, and the letter S is often reversed. Van Gelder also noticed that nearly all of the coins of both types were struck on regular die axes of 0°, 90°, 180° or 270°, in addition to which some were also struck on unusually large flans⁴⁵. Some of the coins depart from the standard design by featuring a bar beside or below the temple⁴⁶, while others have a pellet beside, below, or beside and below the temple⁴⁷.

The proposed attribution of this large group of *Christiana religio* issues coined by Louis the Pious to the Dorestad mint is obviously consistent with the evidence of the stray finds from the site, which suggest that Dorestad was enjoying a commercial boom at the time of the type's emission. Furthermore, two other factors lend additional support to the ascription of this group to Dorestad.

Firstly, the presence of large numbers of coins of this group in Frisian hoards⁴⁸, as well as at Roermond and Pilligerheck⁴⁹, suggests that they were the product of a northern mint. The same finds also indicate that the output of the mint in question must have been sizeable: for instance, at least ninety coins of this group were present at Roermond, of which eight pairs were struck from the same obverse dies and six pairs from the same reverse dies⁵⁰. There are very few northern mints which might be expected to have produced such a large output, and Dorestad is undoubtedly the most likely candidate. Secondly, there is an obvious stylistic continuity between these *Christiana religio* issues of Louis the Pious, the rare Dorestad temple types coined in the

45 Van Gelder, "Duurstede", pp. 81-2; *idem*, "Ide", pp. 250-1; *idem*, "Roermond", pp. 19-20.

46 *Ide* no. 23; Roermond groups 10r, 10x; see also Münchner Münzhandlung Karl Kress, Auktion 140 (7-8 August, 1967), no. 172 (Pilligerheck sale).

47 *Ide* no. 21; Roermond group 10v; Kress 1967 nos. 174, 176, 178, 208.

48 Van Gelder, "Ide", p. 251.

49 I have been able to study photographs of the Roermond hoard thanks to the kindness of M. Lafaurie in Paris and Arent Pol of the KPK, to whom I am most grateful. In the case of the Pilligerheck hoard I was forced to rely on the photographs in the two auction catalogues cited in notes 46 above and 65 below. It is significant that no coins of this group were present among the 256 *Christiana religio* issues of Louis the Pious found at Hermenches (Vaud), which I was also able to study thanks to M. Lafaurie.

50 This figure includes coins with and without additional marks beside and/or below the temple. It combines the die-links discovered by Van Gelder, which I was able to verify at the KPK, and others found in my own examination of the hoard.



Christiana religio issues of Lothar I attributable to Dorestad (1: Wagenborgen; 2: Roswinkel; 3: Groningen).

name of the same emperor, and the comparable Dorestad temple coinage minted by Lothar. Moreover, a small number of the *Christiana religio* issues struck in Lothar's name can also be attributed to Dorestad on stylistic grounds. One such coin, found in Groningen in the nineteenth century, bears the retrograde obverse legend +IOTAHVZIPERA, which is paralleled only on Lothar's Dorestad issues⁵¹. The reverse legend is also barbarous, reading +HSTIAHAIEIMNO, and the form of the temple is likewise similar to that found on the Dorestad coinage. In addition, two *Christiana religio* issues of Lothar which were found at Wagenborgen and Roswinkel display the stylistic characteristics of the Dorestad coinage, but bear the obverse legends +IOTAHVSIPIXACVS and +IOTAPIVZIIEXACVZ respectively⁵². The blundered form is similar to Lothar's mint-signed Dorestad coinage, but the use of the title *rex augustus* is surprising. The coins may have been struck in 840, before Lothar had consolidated his hold over the region, or perhaps during the revolt of 833-834, when he was only entitled to call himself *imperator* in Italy. Whichever is correct, a few *Christiana religio* issues were evidently coined in Lothar's name at the Dorestad mint.

However, in the same article which first demonstrated the stylistic links between the Dorestad temple coinage and certain *Christiana religio* issues of Louis the Pious, Van Gelder questioned whether these coinages were struck at the official Dorestad mint. Instead he proposed that they were the product of an unofficial atelier, either in Dorestad itself or perhaps elsewhere in Frisia and he has repeated this view in more recent publications⁵³. This assumption

51 Van der Chijs, *Munten*, pl. XIV, 1; see also p. 154.

52 Wagenborgen: KPK Inv. 17730. Roswinkel: photograph held at the KPK (see p. 23 below).

53 Van Gelder, "Duurstede", p. 34; *idem* "Ide", p. 251; *idem*, "Roermond", p. 28.

led Van Gelder to suggest that there was an interruption in minting at Dorestad in the 830s, which in turn led Van Es and Verwers to conclude that there was a significant deterioration in Dorestad's economic situation at that time.

Four principal factors were cited by Van Gelder as evidence for his hypothesis. These were: (i) the composition of the ninth-century coin hoard found at Achlum in Frisia in 1852, (ii) an apparent interruption in the technological development of the Dorestad mint *circa* 840, (iii) the irregular spelling of Lothar's name on the Dorestad coinage, together with its generally coarse fabrication, and (iv) the similarity between the three-line types minted by Louis the Pious and Lothar. On closer inspection, however, none of these factors appears as significant as Van Gelder believed.

Van Gelder's interpretation of the Achlum hoard was essentially based on the work of P.C.J.A. Boeles, who in an article written in 1916 reconstructed the original contents of the hoard, which had been dispersed soon after its discovery. Boeles cited the presence of coins of Charles the Bald and Pippin II of Aquitaine, combined with the absence of the otherwise common Dorestad temple coinage of Lothar I, as evidence that minting of the latter did not begin until after the date of the hoard's deposition, which Boeles estimated as *circa* 845⁵⁴. However, it should be pointed out that on the basis of this argument, the total absence of coins of Lothar I in this hoard would imply that the Emperor did not commence striking coinage *anywhere* in the north until after 845, a position which seems totally untenable. The flaw in Boeles's argument, which was repeated by Van Gelder, lies in the fact that the hoard's contents were reconstructed some sixty years after its discovery. In the light of the composition of other comparable Dutch hoards it appears more than likely that the Achlum find originally contained many other coins in addition to the two parcels of which Boeles was aware, and that the unrecorded specimens included deniers of Lothar I. Certainly the Achlum hoard cannot be cited in support of the thesis advanced by Boeles and Van Gelder as long as serious doubts remain about its original composition. The many other, more reliably documented contemporary hoards suggest on the contrary that Lothar's temple coinage was struck in an number of northern mints at the same time as the comparable issues of Charles the Bald and Pippin II, that is, from 840 onwards.

The second factor advanced by Van Gelder as evidence for an interruption in minting at Dorestad in the 830s was an apparent discontinuity in the technology of coin production there. Van Gelder's research revealed that the

⁵⁴ Boeles, "Trouvailles", pp. 39-40; compare Van Gelder, "Duurstede", pp. 25, 30.

three-line type minted by Louis the Pious was consistently struck on regular die-axes of 0°, 90°, 180° or 270°, indicating a desire for technical uniformity displayed by few other imperial mints of the period⁵⁵. The vast majority of Lothar's Dorestad temple coinage displayed the same feature, but a number which bore a relatively correct obverse legend (IOTARIVS rather than IOTAMVS), and which were presumably therefore produced early in the series, were struck at irregular angles⁵⁶. Van Gelder concluded that there must have been an interruption in minting of at least ten years for the knowledge of this technique to have been lost in this way⁵⁷. This argument contains three inherent weaknesses, however. First, the sample of coins cited by Van Gelder numbered only three; coins reading IOTAMVS are also known which were struck at irregular angles⁵⁸, and the single specimen known to Van Gelder which had the fully correct inscription LOTARIVS appears to have been struck on a regular die-axis⁵⁹. Second, there was indeed a lengthy interruption between the production of the two types, since the *Christiana religio* issue was minted for nearly twenty years in the interval. As has been noted, the great majority of the *Christiana religio* coins of the Dorestad group was similarly struck on regular die-axes, though I have not yet been able to ascertain the number of exceptions to this rule. Third, the minting of the overwhelming majority of the Dorestad temple coinage and the comparable *Christiana religio* issues on regular die-axes implies that they were the products of a well-organised and long-established mint, not an unofficial local atelier. This impression is reinforced by the very large scale of production.

Van Gelder's third argument against attributing Lothar's Dorestad temple coinage to the official mint was the irregular spelling of the Emperor's name and the generally poor quality of the coins. Such features are not in themselves conclusive, however, since coins of an equally poor appearance were minted at Huy by Lothar and at Auxerre by Charles the Bald⁶⁰, and the attribution of these issues has never been questioned. By contrast, Van Gelder's attempt to liken the Dorestad coins to the Frisian imitations of Louis the Pious's gold solidi⁶¹ is quite unjustified, given the incomparably larger scale of the Dorestad coinage and the markedly greater barbarity of

55 Van Gelder, "Duurstede", p. 26.

56 Van Gelder, "Duurstede", p. 29.

57 Van Gelder, "Duurstede", pp. 32-3.

58 For instance, Ide no. 69.

59 This can be inferred from a comparison of what is written on pp. 22 and 29.

60 Huy: e.g. Ide coin q; Kress 1967 nos. 282, 297 (unattributed). Auxerre: e.g. Prou 582-3; Grierson and Blackburn, *Medieval European Coinage*, vol. 1, no. 482.

61 Van Gelder, "Duurstede", pp. 34-5.

the imitation solidi. Furthermore, the deterioration of the obverse legends of Lothar's Dorestad temple types can be seen to be paralleled to a lesser degree on the comparable *Christiana religio* issues of Louis the Pious and to a greater degree on the three-line type struck at Dorestad later in Lothar's reign. There is thus no stylistic reason why all three coinages cannot be attributed to the official Dorestad mint, particularly when it is borne in mind that the port seems to have entered a period of economic decline in the 840s, and at the same time came under the control of Danish warlords, who may have attempted to introduce their own moneyers⁶². Either or both of these factors may have caused the lower technical standards of the coinage which have been observed⁶³.

As for the similarity between Louis and Lothar's three-line types, which led Van Gelder to assume that the two coinages were successive, this has no connection with local developments at Dorestad. Louis the Pious replaced the coin type bearing the mint-name in field by the *Christiana religio* issue throughout the Empire in 822 or 823, and Dorestad was no exception, as has been demonstrated. Similarly, Lothar I struck coinage bearing the mint-name in field in a large number of mints during the course of his reign. These included Tours, the Italian mints of Milan, Pavia, Treviso and Venice, the new mints at Dinant, Maubeuge and Namur, and at least five mints which had previously coined Lothar's temple types: Cologne, Dorestad, Maastricht, Metz and the Palace. Of these coinages only the Italian issues have been found in significant numbers, and it seems that in the north of Lothar's realm the type was not introduced until late in the Emperor's reign, probably in the early 850s. It may even have been continued under Lothar II, despite the fact that the coins entitle Lothar as Emperor, since of the mints known to have produced this type only Strasbourg, Trier and the Palace struck coinage in the name of a King Lothar. Even so, Van Gelder's suggestion that the Dorestad three-line type did not come into production until after the death of Lothar I in 855⁶⁴ is unlikely in the light of contemporary hoards such as those from Roermond, Pilligerheck and Wagenborgen. These hoards include the Dorestad three-line coinage alongside large numbers of deniers struck by Charles the Bald before 864, but none of the common *Gratia Dei rex* coinage which replaced all other types after that date.

It therefore seems clear that none of the reasons advanced by Van Gelder

62 The possible influence of the Danish presence was also noted by van Gelder, "Duurstede", p. 33; *idem*, "Ide", p. 245.

63 In this context it is also of interest that the one Dorestad temple coin which has hitherto been analysed contained only between sixteen and twenty-five percent silver, a remarkably low figure for the period: Van der Chijs, *Munten*, p. 158.

64 Van Gelder, "Duurstede", pp. 33, 36.

for deducing that there was an interruption in minting at Dorestad in the 830s stands up under close examination. On the contrary, there are good reasons for believing that the pattern of minting which can be observed at several other mints in Lotharingia was also followed at Dorestad. This entailed the production of *Christiana religio* issues from 822 or 823, their replacement by a mint-signed temple type after Lothar's accession in 840, and the introduction of coinage bearing the mint-name in field towards the end of Lothar's reign, probably in the early 850s. The only unusual feature in the case of Dorestad was the coining of a mint-signed temple type in Louis's name *circa* 840, although even this was matched at Maastricht.

It could of course also be remarked that another atypical characteristic of the Dorestad mint was the sheer volume of coinage which it produced. Although it has already been pointed out that the exceptional number of hoards deposited in Frisia in the 840s and 850s exaggerates the level of production at Dorestad, the presence of 136 Dorestad temple types at Pilligerheck and 40 at Roermond indicates the continuing importance of the Dorestad mint at this date. At first sight, this may appear to contradict the evidence of the stray finds from Dorestad that the emporium was in decline after 840. However, it should be recalled that the Roermond hoard contained no fewer than ninety *Christiana religio* issues of Louis the Pious attributable to Dorestad, more than twice as many coins as of Lothar's Dorestad temple type. The comparable figures for the Pilligerheck hoard cannot be established until the coins are available for study. Even so, at least twenty of the 121 *Christiana religio* issues from the find which were offered for sale by Kress in 1967 can be ascribed to Dorestad, as can five of the twenty-five others which were put up for auction in Cologne in 1986⁶⁵.

In short, the evidence of ninth-century coin hoards confirms the evidence of the stray finds from Dorestad in some respects and complements it in others. The paucity of hoards from the early ninth century means that nothing of significance can be deduced from them about the level of production at the Dorestad mint of Charlemagne's two post-reform coinages or Louis the Pious's portrait issue. Subsequent hoards reveal a similar picture to that portrayed by the stray finds, namely of large-scale minting of Louis's three-line type during the four or five years of its emission, followed by massive output of *Christiana religio* issues during the 820s and 830s. The hoard evidence thus confirms that the latter years of Louis's reign marked a period of intense commercial activity at Dorestad, and perhaps represented the peak

65 Kress 1967 nos. 168, 172, 174, 176, 178, 208, 217, 220-1, 223-5, 229, 233, 236, 246, 252-3, 263, 268; Kölner Münzkabinett, Auktion 41 (7-8 April, 1986), nos. 556, 560, 564, 569-70.

of the port's prosperity. However, the image of rapid economic decline in the years after 840 which is suggested by the stray finds from the site is qualified by the evidence of the coin hoards. These imply that the Dorestad mint continued to produce large amounts of coinage in the 840s, albeit of a reduced technical standard, but that output then dropped sharply in the 850s. The last known coin type may possibly have been struck in the late 850s, but was in any case minted on no more than a limited scale. There is nothing in the hoard evidence to contradict the impression given by the site finds that economic activity at Dorestad had all but ceased by the mid-860s.

This revised chronology has significant implications for our perception of the reigns of Louis the Pious and Lothar I. In particular, it reveals that the end of Louis's reign witnessed not a dramatic decline in Dorestad's fortunes, as has previously been believed, but on the contrary a period of remarkable prosperity. This runs counter to the view, widespread among Carolingian historians, that Louis's later years were characterised by deterioration and disintegration throughout the Empire. It is also evident that the Viking raids on Dorestad in the 830s were not directed against a site which was already in decline, as has recently been argued⁶⁶, but were rather made against a flourishing market which was likely to offer rich pickings to the attackers.

If the reign of Louis the Pious thus represented an era of sustained prosperity in Dorestad, it is equally plain that this era came to an end during the reign of Lothar I. As we have seen, the numismatic evidence seems to indicate that although a decline set in after 840, it was not until *circa* 850 that a sharp downturn occurred. It is therefore noteworthy that Dorestad first came under the control of Danish overlords for a few years in the early 840s, and was held in benefice by Rorik for some twenty-five years after 850. Should the port's commercial decline consequently be attributed to a loss of confidence on the part of international traders, suspicious of these Danish poachers-turned gamekeepers? Or did the Rhine's ever-decreasing navigability persuade Lothar that to cede Dorestad to Rorik in benefice would not entail very much of a loss after all? Alternatively, was there perhaps an overall slump in North Sea trade as a result of the increasing number of Viking attacks on Frisia, Francia and the British Isles? The numismatic evidence cannot provide an explanation for Dorestad's decline and eventual disappearance. Yet it does indicate where the historian should look for such an explanation — in the era of Lothar and Rorik, not in the reign of Louis the Pious.

66 R. Hodges and D. Whitehouse, *Mohammed, Charlemagne and the Origins of Europe* (London, 1983), p. 163.

Postscript.

Since this article was submitted, I have been able to visit Trier, thanks to the generosity of St John's College, Cambridge, and to see the full photographic record of the Pilligerheck hoard which is held in the Rheinisches Landesmuseum. A swift examination revealed at least 195 *Christiana religio* issues of Louis the Pious which can be attributed to Dorestad, compared with 139 mint-signed coins of Lothar from Dorestad. All but three of them of the temple type. In addition, the hoard contained two *Christiana religio* issues of Lothar I which can be ascribed to Dorestad. One of these is fragmentary, and bears the obverse legend +IO...ZIPIXACV2, comparable to the coins found at Wagenborgen and Roswinkel. The other is unique, in excellent condition, and neatly engraved, despite its barbarous legends: +IOTAMVZIPNEIPAT; & D+PIZTIAIIAPILICIO (1.65 g, Inv. 14/53). The form of the temple and the spelling of the imperial title both imply that the coin was struck in Dorestad, and the inclusion of a letter D at the beginning of the reverse inscription is therefore all the more intriguing. Did the die-cutter start to engrave the mint-name out of habit but then realise his mistake? Or did he perhaps deliberately place the initial letter of the mint-name before the anonymous inscription to mark where the coin originated? We can only speculate.

Table One

Hoards Containing Mint-Signed Dorestad Coins

Hoard	Size	Type of Dorestad Coins Present							Source
		Charlemagne		Louis the Pious			Lothar I		
		monogram	bust	bust	3-line	temple	temple	3-line	
Biebrich	49	5							Völckers XLII
Dorestad I	48	6	6						De Coster 1857
Dorestad III	32				3				Van Gelder 1980
Achlum	498			1	2				Boeles III
Apremont	755				13				Duplessy 17
Belvézet	264				3				Duplessy 40
Frankfurt	4				2				Hess 1962 ⁶⁷
Saint-Cyr	83				5				Duplessy 297
Ide	112					1	34		Van Gelder 1965
Pilligerheck	1859					1	136	3	Lafaurie 1970 ⁶⁸
Aalsum	33						22	5	Boeles VIII
Cosne II	42						2		Duplessy 109
Ekeren	97						5		De Coster 1862 ⁶⁹
Emmen	362						79		Boeles XII
Groningen	63						2		Boeles XIX
Kimswerd I	173						58		Boeles V
Kimswerd II	41						16-27		Boeles VI
Lokeren	19						15		Frère 1980 ⁷⁰
Marsum	29						2		Boeles XXII
Midlaren	81						48		Boeles XIII
Neuvy	16						1		Duplessy 238
Oudwoude	62						30		Boeles IV
Rijs	25						10		Boeles VII
Roermond	1132						40	1	Van Gelder 1985
Roswinkel	143						103	16	Boeles XIV
Wagenborgen	110						16	1	Boeles XXI
Assen	17							2	Boeles XVI

Note: The second column lists the number of coins in the hoard whose type is recorded, which is not necessarily the same as the number originally deposited.

67 W. Hess, "Geldwirtschaft am Mittelrhein in karolingischer Zeit", *Blätter für deutsche Landesgeschichte* 98 (1962), pp. 26-63 (p. 61).

68 J. Lafaurie, "Numismatique romaine et médiévale", *Annuaire de l'Ecole pratique des hautes études*, IVe section, 1969-70, pp. 323-6.

69 L. de Coster, "Lettre à M. Hoffmann", *Le Numismate* 1862-64, pp. 57-60 (p. 57).

70 H. Frère, "Le denier carolingien", *Revue belge de numismatique* CXXVI (1980), pp. 109-27 (p. 111). The hoard contained fifteen coins of Lothar's Dorestad temple type, not thirteen as Frère's note reported: Brussels, Cabinet des Médailles, Inv. II, 32364-32378.

Samenvatting

Dorestad in de 9de eeuw: de numismatische gegevens. De grote opgravingen van de ROB op de plaats van het Karolingische handelsemporium Dorestad hebben duidelijk gemaakt dat Dorestad niet door een catastrofe in 863 of 864 vervallen is, maar geleidelijk is achteruitgegaan. Van Es en Verwers¹ stelden het begin van die teruggang op ca 830, o.a. op grond van Enno Van Gelder's commentaar op de bij de opgraving gevonden munten². Hij stelde dat ca 830 de toevloed van elders geslagen munten zowel als de muntslag ter plaatse opvallend verminderd waren.

Schr. betwijfelt de juistheid van deze numismatische argumentatie. Hij meent dat de toevloed van munten pas geruime tijd later dan 830 afliep en dat de doorlopende muntslag pas ca 850 tot stilstand kwam.

Van Gelder baseerde zijn beeld van de muntcirculatie zowel op de thans opgegraven munten als op de veel talrijker ter plaatse in de 19de eeuw gevonden stukken, maar miskende daarbij dat de toenmalige onderzoekers veelal de niet zeldzame Christiana religio-munten verwaarloosden, terwijl deze juist bijzonder talrijk geweest zijn. Dit wijst op een omvangrijke geldomloop en dus economische bloei tot minstens 840.

Vervolgens betoogt schr. dat de reeks munten met vermelding van Dorestad als muntplaats (afb. 1-7) een vertekend beeld geeft, omdat hieraan toegevoegd dienen te worden — zoals Van Gelder al in 1961 aantoonde³ — munten zonder plaatsnaam met het opschrift Christiana religio, waarvan een zeer aanzienlijk deel in Dorestad geslagen moet zijn. Hij toont verder dat er munten van Lotharius I zijn met hetzelfde algemene opschrift die nauw bij die van Lodewijk aansluiten en dus ook uit Dorestad stammen en dat de munten van Lotharius met tempel en Dorestad Mon. daar eveneens stylistisch nauw mee verwant zijn; deze laatste kunnen dan ook niet, zoals Van Gelder veronderstelde, pas na een onderbreking in een vervallen Dorestad of elders geslagen zijn. Ook hieruit blijkt een voortzetting van de muntslag na 840. Schr. concludeert dat muntslag en muntomloop te Dorestad geruime tijd na 830 ongestoord hebben voortgeduurd — en daarmee de economische activiteit — tot ca 850 om pas daarna snel af te nemen. De oorzaak van het verval moet dan ook niet in de tijd van Lodewijk de Vrome (813-840) gezocht worden, maar een generatie later.

1 W.A. van Es en W.J.H. Verwers, *Excavations at Dorestad: The Harbour, Hoogstraat 1*, Amersfoort 1980.

2 Als boven blz. 212-224.

3 H. Enno Van Gelder, *De Karolingische muntslag te Duurstede*, JMP 48 (1961), blz. 11-42.