



Universiteit
Leiden

The Netherlands

The Dutch river area. Imperial policy and rural developments in a Late Roman frontier zone

Willems, W.J.H.

Citation

Willems, W. J. H. (1988). The Dutch river area. Imperial policy and rural developments in a Late Roman frontier zone. In . Retrieved from <https://hdl.handle.net/1887/11887>

Version: Not Applicable (or Unknown)

License: [Leiden University Non-exclusive license](#)

Downloaded from: <https://hdl.handle.net/1887/11887>

Note: To cite this publication please use the final published version (if applicable).

16. THE DUTCH RIVER AREA. IMPERIAL POLICY AND RURAL DEVELOPMENTS IN A LATE ROMAN FRONTIER ZONE

W. J. H. Willems

Archaeological research in the Dutch river area, the delta of Rhine and Meuse, has been a major objective in the total research effort of the ROB, the Dutch state Archaeological Service, for the last 15 years.¹ One project is concerned primarily with the Roman Period in the eastern part of the delta, the heartland of the Batavian tribal area around the town of Nijmegen, capital of the *civitas Batavorum* (Fig. 16.1). The project was set up to provide a background for the large-scale excavations of military and civilian sites in Nijmegen, but also and especially to provide data to monitor and hopefully to help us understand what happened in the area during the Roman Period. This necessarily led to an active interest in the Late Iron Age and earliest Middle Ages, the Merovingian Period, because in order to see developments in the Roman Period one has to know what went before and what came after.

The excavations and detailed regional archaeological and geological surveys² have, for the first time, provided an opportunity to gain at least some insight into developments from the late-3rd to 6th centuries. Although we are still faced with many uncertainties and hypothetical statements that need further testing, this is an encouraging development: usually these three centuries are discussed only in the concluding or introductory remarks to publications. Especially at a regional level of research new information is increasingly becoming available,³ which may well lead to a fundamental reappraisal of the potential of the archaeological database in the near future.

Before entering a discussion of late-Roman and early-Medieval developments, the stage must be set by an overview of the natural and social landscape: the geology of the river area and conditions before the late-3rd century. The eastern river area as defined on Fig.16.1 is relatively small, some 1650 km², covers only the central part of the *civitas*, which is indicated on a simplified supra-regional geological background together with a model of the administrative situation in the 2nd and 3rd centuries.

The theoretical limits of the Batavian area conform very well to natural boundaries: the Rhine in the north, the watershed between the basins of the Meuse and Scheldt in the south, the large coastal peat areas in the west, and another peat area and the Meuse valley in the east. The distribution of larger sites (*vici*) in relation to the landscape strongly suggests an administrative subdivision of the Batavian *civitas* into 5 different units which could well be identified as *pagi*.

Three of these larger sites, those around Nijmegen, are also indicated on Fig.16.2,, an overview of the settlements in the eastern river area from the mid-1st to late-3rd centuries on a very much simplified version of a detailed geological reconstruction of the river area between approximately the 2nd century BC and the 5th century AD.⁴ A sound basis for such reconstruction is provided by very intensive geological and pedological surveys during the last 30 years. It is otherwise almost impossible to obtain a clear picture of a river area where freely meandering rivers constantly changed their course and processes of erosion and sedimentation are difficult to follow.

Fortunately, Dutch geologists have always been fascinated by unraveling the complexities of this area and at the moment an absolute minimum average of two borings per ha is available. This implies that at the very least 330,000

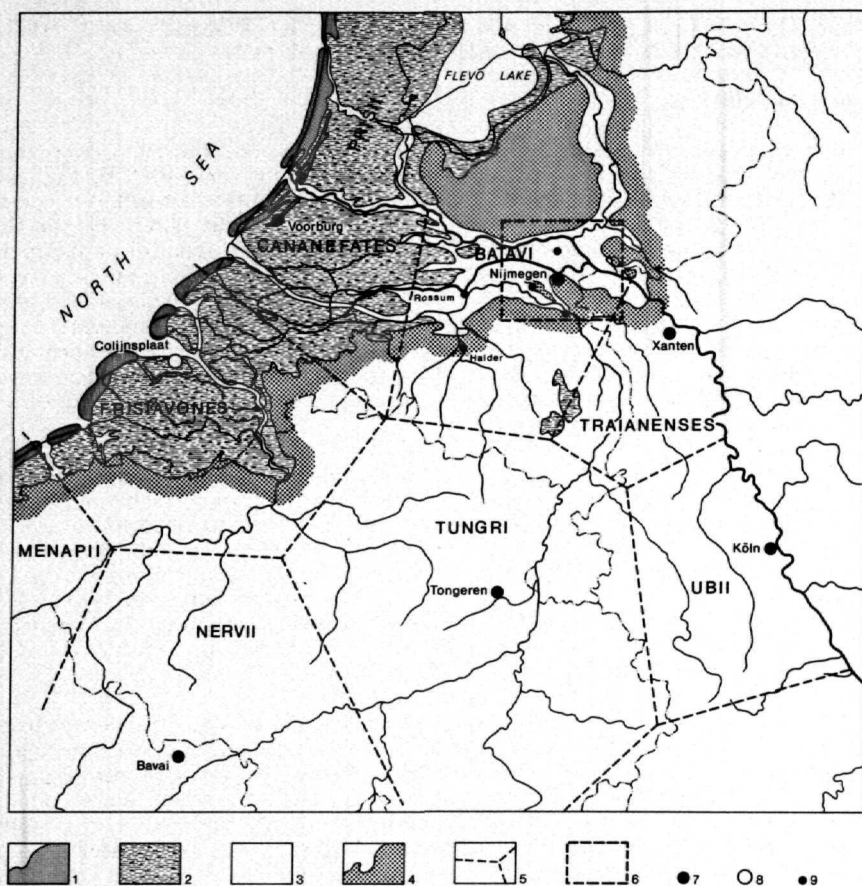


Fig. 16.1: The geological and administrative context of the Dutch river area in the second century AD: 1 coastal dunes, 2 marine clay deposits and peat, 3 Holocene fluvial deposits, 4 Pleistocene deposits, 5 theoretical boundaries of the *civitates*, 6 the eastern river area (frame of figs. 2, 4, and 7), 7 *civitas* capital, 8 possible *civitas* capital, 9 secondary centre.

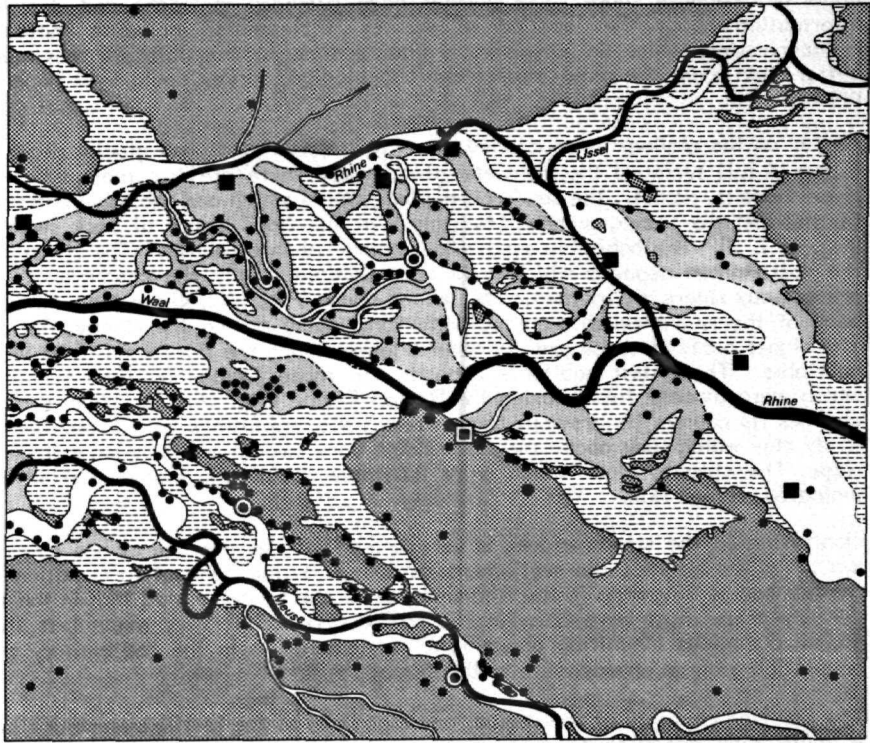


Fig. 16.2: The distribution of settlements (AD 50-270) in the eastern river area: 1 Pleistocene deposits, 2 flood basin deposits and peat, 3 bank deposits and stream-ridges, 4 meander-belts and major brooks, 5 present-day river-channels, 6 boundaries of deposits, 7 reconstructed boundaries of deposits, 8 legionary fortress and (possible) frontier fort, 9 regional centre (civitas capital) and secondary centre (vicus, pagus capital), 10 military vicus and settlement. Scale 1:300,000.

borings have been analysed for the area shown on Fig.16.2. . This is especially important because these same borings have provided abundant and detailed information about the location of former settlements, including those in Holocene areas which lie buried under later sediment. Our data are thus much better than even the most intensive archaeological survey could ever hope to produce.

As far as the geology is concerned, the Pleistocene sands and glacial deposits (Fig. 16.2,1) surround the Holocene area, where there are two main types of river deposits, namely, the sandy clays along rivers which are habitable and very fertile, and the heavy, uninhabitable clays of the flood basins of back swamps (Fig. 16.2, 2). The habitable sandy clays belong to three phases. The latest are the post-Roman deposits which have been deleted. Only the channels of the present-day rivers are marked. The second phase (Fig. 16.2, 4) are the meander-belts of the rivers which were actually functioning during the Roman Period. The higher parts of these are the natural levees along the rivers and those were habitable. The oldest habitable deposits are those formed by river-branches which were already fossil during the Roman Period (Fig. 16.2,3). When a river changes its course, its previous branch remains a sometimes very broad bed of sandy clay which rises above the surrounding back swamp and is called a stream-ridge. The stream-ridges which were habitable during the Roman Period are indicated on Fig. 16.2.

Habitation on the stream-ridges is very dense, with an average of one site per km². On the basis of the settlement data and the independent information on the number of Batavians in the Roman army, it can be calculated that in the 1st century there must have been in the entire *civitas* not very much less than 40,000 Batavians inhabiting about 1250 settlements.⁵ In the 2nd century this population grew to approximately 50,000 souls.

The carrying capacity of the region, and especially of the fertile Holocene clays, is more than adequate to feed such a population and also the considerable overhead in the form of military and administrative personnel, and others, along the Rhine-*limes* and in Nijmegen. In fact this never happened and there are various clues indicating that the river area was never socially and economically truly integrated in Gallo-Roman society and that its structure was artificially maintained until the invasions of the late-3rd century. This can be illustrated in several ways.⁶

First, the Iron Age subsistence strategy, which was primarily geared towards stockbreeding, changed into an economy with more arable cultivation only around the mid-2nd century AD and then still on a limited scale. Evidence comes from excavations as well as pollen analysis. The import of grain is also illustrated by the recent excavation of a barge at the frontier fort of Woerden (Bogaers & Haalebos 1983). Its last cargo was grain and the weeds mixed with that grain have shown that it cannot have been grown in the river area but that it was imported from a limestone/loess region. This can be found in a zone from the German Rhineland over the southern Netherlands into Belgium. This is the region with the densest concentration of villae: even without the new evidence, precisely the zone where one would expect grain-imports to be coming from.

Another indication is state expenditure in the *civitas*, calculated on the basis of army costs. Following recent figures proposed by MacMullen (1984) and Hopkins (1980), it can be calculated that in Flavian times the tax product of 670,000 people was expended in the Batavian area with only 40,000 people living there. In the 2nd and 3rd centuries, when there were 50,000 inhabitants, expenditure was still equivalent to the tax product of 270,000 people. There are also a

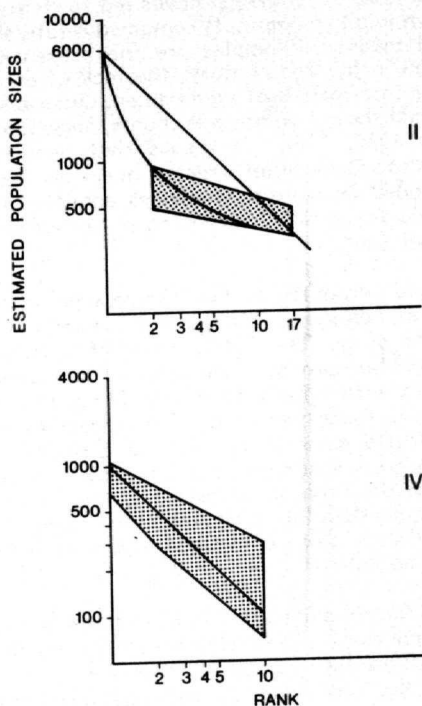


Fig. 16.3: Hypothetical rank-size distributions of settlements in the area of the civitas Batavorum in the 2nd and 4th centuries. The estimated range of variation is shaded.

number of archaeological and epigraphical data which show that the ambitious Flavian foundation of the town of Nijmegen never led to its further development into a proper Roman town in all respects. It remained relatively large and had to be supported by unusual means. Examples are the presence of potter's kilns within its perimeter even in the 2nd century, the lack of an amphitheatre, and the fact that of the four inscriptions of councilmen, **decuriones**, we know their profession in two cases and those two are merchants, **negotiatores**, which is very unusual indeed (Willems 1986, 418). It means that people were needed as **decuriones** who, according to Drinkwater's recent overview for Gaul (Drinkwater 1983, 199), were never under normal circumstances admitted to such a position. The very limited evidence for a rich landowning elite in the river area (*villae*) fits into this picture rather well.

The artificially maintained character of the Roman superstructure in the river area is, as argued before (Willems 1983; 1984), mostly the result of the permanent presence of the army. This led to a kind of 'colonial' situation which prevented the usual integration-process, and internal development leading to a balanced economic system with a hinterland supporting its own superstructure. The capital at Nijmegen was much too large. The tentative rank-size curve⁷ of 2nd century Batavian settlements (Fig. 16.3) is strongly primare and the development towards a lognormal curve in the 4th century is not at all gradual. It was in fact the result of the Frankish invasions of the late-3rd century, which suddenly reduced the superstructure because the town, *Noviomagus*, was abandoned and its reduced population converged in a heavily fortified centre on the river Waal, the so-called Valkhof.

Although the **limes** did no longer exist after AD 275 there is no reason to assume that the **civitas Batavorum** as an administrative entity or the Batavians as a nation ceased to be after the Frankish invasions. In addition to the archaeological evidence, this can also be deduced from the fact that the Batavians are still mentioned in the *Notitia Dignitatum*, which does **not** list other nations such as the coastal groups of *Cananefates* and *Frisiavones*. There are also a number of reasons (Willems 1986) to conclude that the native warrior élite of the early Batavian tribal society had, already at the beginning of the 3rd century, developed into a kind of military caste of Roman Batavians.

That is also the reason why, well before barbarians could rise to important positions in the Roman army, from Constantine onwards, high-ranking Batavians were already in such positions. An example is a certain Aurelianus Ianuarius, Batavian and **vir perfectissimus**, who we know from an inscription (CIL III, 10981) to have been **dux** of the province of Pannonia Superior in AD 303. An even better example could be of the **dux** Postumus, who founded the Gallic Empire. This man was probably also a Batavian and he is surely the only person who could be the **alumnus** under whose reign Batavian lands were settled by Franks⁸. We know which Batavian lands are meant, because these Franks were repulsed by Constantius Chlorus and his action was directed towards the area encompassed by both branches of the Rhine and thus to the region between Waal and Lower Rhine, the northern part of the **civitas Batavorum** (*Betuwe*). Fig. 16.4 shows the settlement sites in the eastern river area from the late-3rd to early-5th centuries. It does not illustrate what has just been mentioned, but for most sites between Waal and Lower Rhine there is more evidence for late- than for early-4th-century habitation.

The Germanic groups that are reported to have settled in the northern and western part of the Dutch river area are so far very difficult to identify archaeologically. There is some pottery, which is inconclusive, and there is the negative evidence of scarcity of imported wheel-turned wares. At least we have

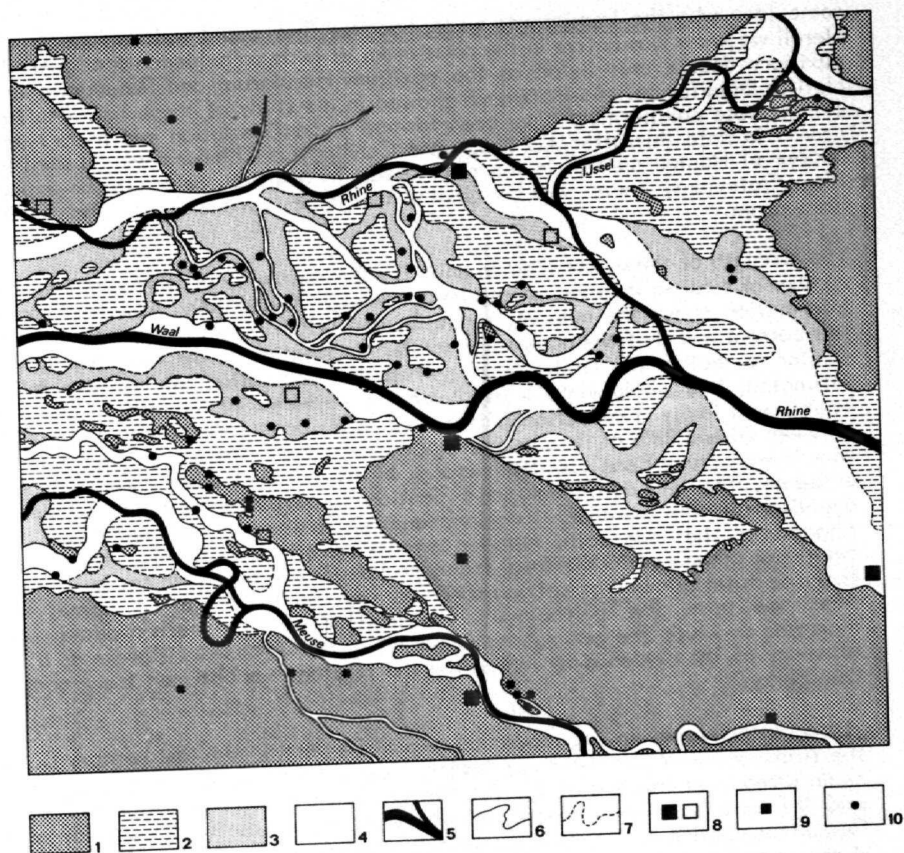


Fig. 16.4: The distribution of settlements (AD 270 - c.425) in the eastern river area: 1-7 see fig. 2, 8 fortified (military) settlement and possible stronghold of unknown status, 9 small fort (burgus), 10 settlement. Scale 1:300,000.

some idea who the immigrants were, because they could well be one group of Heruli we know was active in the river area. It is no coincidence that there is an auxiliary double unit listed as the *auxilium Herulorum* and *Batavorum* in the *Notitia Dignitatum*. As Hoffmann showed in his study of these lists (Hoffmann 1969), those *auxilia* must have been formed under Diocletian and there is every reason to date this after AD 293, when Constantius Chlorus reestablished some degree of Roman control in the river area. In addition, as was to be expected from Batavians, there was originally also one cavalry unit, the *vexillum Batavorum*.

The strength of these late-Roman units is not known very precisely, but the total number of soldiers involved should be between 1700 and 2000. Assuming that our information about the number, strength, and origin of these troops is more or less correct and that the number of soldiers in relation to the total population is similar to that in the first century, when that population can be more reliably estimated, this would yield a population of between 10,000 and 14,000 souls. That would imply a reduction of the river area population in about AD 300 to between 20 and 28% of its size in AD 200. Obviously, there are several reasons why these assumptions could be wrong, but they do at least agree with other evidence. The very detailed surveys mentioned above have provided an adequate overview of the number, location, and chronology of settlements. It is remarkable that the total number of sites from the late-1st to early-3rd centuries, compared to the total from the late-3rd to early-5th centuries, shows that the total number of settlements was reduced to 25% of its former level! Also, we have the palynological evidence from radiocarbon-dated pollen diagrams on which the general overview in Fig. 16.5 is based. It presents a brief summary of the evidence by indicating the fluctuations between tree- and non-tree-pollen.

Human interference in the landscape was at its peak in the last century BC and the first century AD. The river forest, mostly alder woods, started to expand again already at the end of the 1st century and had increased markedly by the mid-3rd century. The decrease of culture indicators during the heyday of the Roman occupation with a demonstrably growing population is not as curious as it seems to be. It is connected to the changing economy mentioned above. The Batavian pastoralists of the late-Iron Age warrior society in the river area slowly changed into farmers with a more balanced economic system, and that meant that the huge drainage basins or back swamps formerly used to graze herds of cattle were now covered by alder woods again. But the curve continues its downward trend and it is evident that in the 4th century parts of the stream-ridges must also have been covered with woods again. This implies a reduced population.

That the river area cannot have been a pleasant place to live in is, of course, related to its exposed position at the imperial frontier. The late Roman policy of imperial defence was no longer the *limes*-based preclusive system of forward defence. Although sometimes this ideal was nearly reached again, from Constantine onwards we are dealing essentially with a system of defence-in-depth (cf. Luttwak 1976). Important elements in this system are strongholds at or even beyond the line considered to be the frontier, fortified road stations, and a number of mobile, regional field armies. As a defensive strategy for the empire this worked quite well. There are a number of historically attested Frankish invasions which are normally used to illustrate the lack of Roman force. But these were in fact all stopped at some point and thus illustrate the effectiveness of the system. For the frontier regions, however, that cannot have been much consolation because they were the first to be affected. For the Dutch river area the most dramatic events occurred after the usurpation of

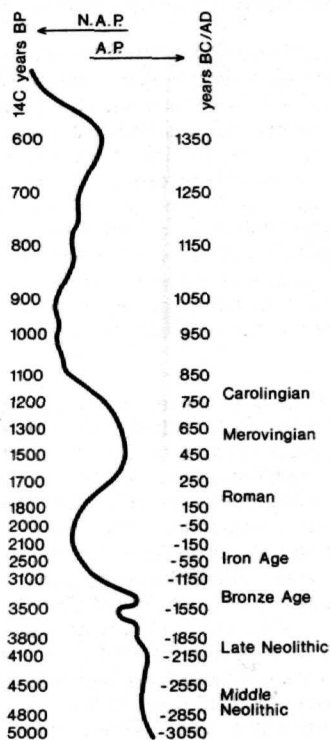


Fig. 16.5: Curve of the relative frequencies of tree (A.P.) v. non-tree (N.A.P.) pollen, based on C14-dated pollen diagrams from the eastern river area. After Teunissen 1982, fig. 11.

Magnentius in AD 350, when the Constantinian defensive system was depleted of troops and a massive Frankish invasion followed. History says that from that time onwards there was no more *civitas Batavorum* and leads one to suspect that the Frankish *Salii* had settled in and south of the river area. Archaeology confirms this picture. For example, the coin evidence indicates that the huge inner ditch around the fortified Valkhof site in Nijmegen, as well as an outer ring of double ditches, were filled in shortly after AD 350.

However, the *caesar* Julianus is reported to have subdued these *Salii* and to have restored Roman power up to and beyond the Rhine. For no good reason this has been denied in some recent literature and it has even been assumed that the area of the former Batavian *civitas* was reduced in the north. As illustrated by Fig. 16.4, even though some of the fortifications there are not beyond all doubt, this is very definitely not true. There are also a number of refortified former *limes* forts further to the west. As Groenman-van Waateringe (1986) has shown, this is even true for the well-known fort of Valkenburg. Dendrochronological evidence proves that we must now reckon with a 4th-century Valkenburg period 7. In addition, there is of course still the enigmatic Brittenburg at the mouth of the Rhine. It now lies several hundred meters into the sea but a plan by a 16th-century artist is clearly reminiscent of a double horreum and a late-Roman fortification.

We cannot prove this, but there is every reason to see this site as a transshipment base for the British grain we know was transported to the German Rhineland. For the same reason the Dutch river area must have been of great strategic importance, which explains all the trouble that was taken to control it. The Germanic *Salii* were evidently reliable *foederati*, and were supplied with goods from the Roman hinterland. The apparently increased number of sites south of the Rhine is an indication for relative stability. Coin series of a number of fortified sites, with characteristic peaks indicating Constantinian or Valentinian refortification, or both, show that the troops were regularly paid. I am not prepared, by the way, to attach any specific importance to the considerable numbers of very small coins from the House of Theodosius on some of the sites. Their presence is directly dependent on the use of metal detectors and represents the pool of circulation in the last decades of effective control of the Roman state in the river area. These coins may well have been discarded when they became obsolete, and that happened when they could no longer buy the gold needed for taxes which nobody claimed any more.

This appears to have happened not too long after the Vandals crossed the Rhine at Mainz in AD 406. But this disaster, which eventually meant the end of the western Empire, did not have much direct consequence in the river area. The new Germanic population had rapidly developed a Romano-Germanic culture of its own, which is reflected, for example, in the burial ritual. There are also a number of objects, such as long hairpins and characteristic *Stützarmfibulae*, which are the Germanic variety of the crossbow-fibulae. The distribution of these and many related artefacts can be found in Böhme's well known study on Germanic grave goods (Böhme 1974). They show close relations with people in the north, on the North Sea coast.

At least some of the metalware seems to have been produced in the river area. Another interesting original development can be observed in the pottery. For example, the well known terra nigra-like carinated cups of type Chenet 342, which are a mixture of Roman technique and native forms and quite numerous in the river area. On one site, sherds have been found which could conceivably be kiln refuse, and local production is also supported by the distribution pattern. Other forms of terra nigra-like wares with a mixture of Roman and Frankish

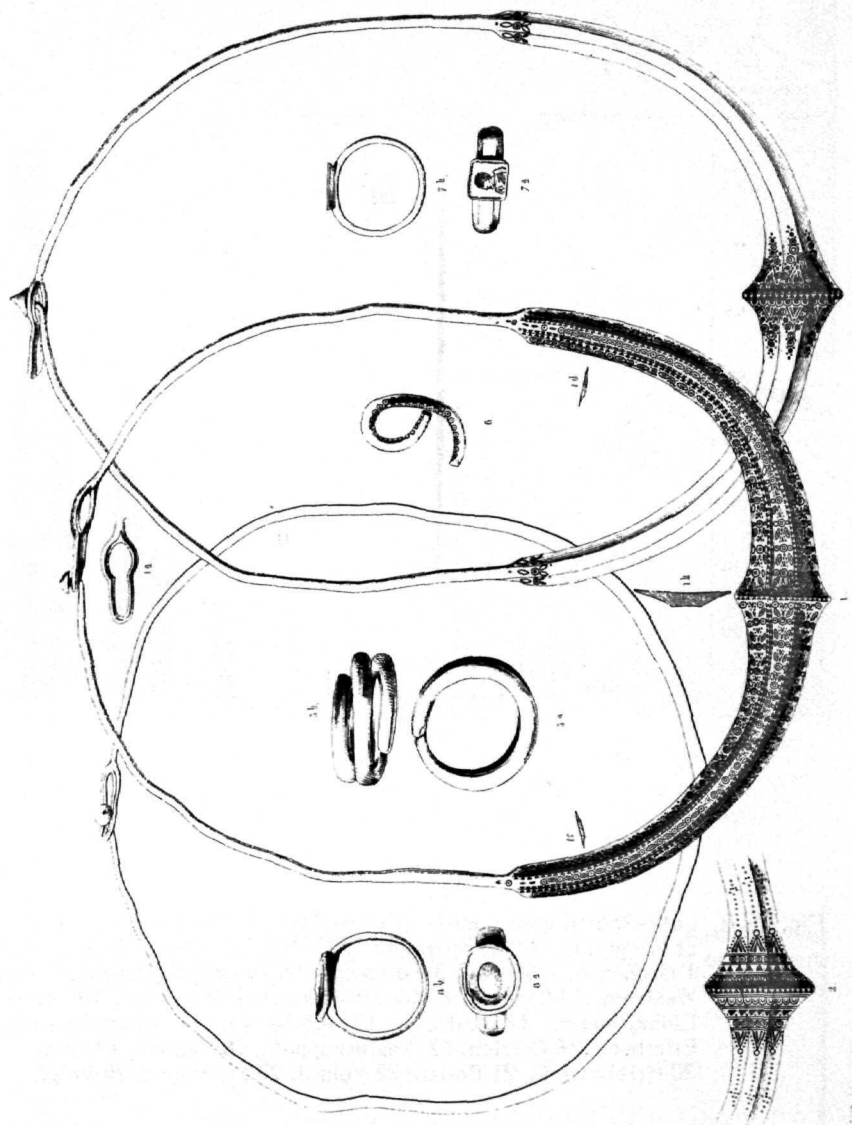


Fig. 16.6: Some of the gold torcs and other objects in the second hoard from Velp, discovered in 1851 (see Fig. 16.7, 22). After the original publication by L.J.F.Janssen (1852). Scale c. 2:3.

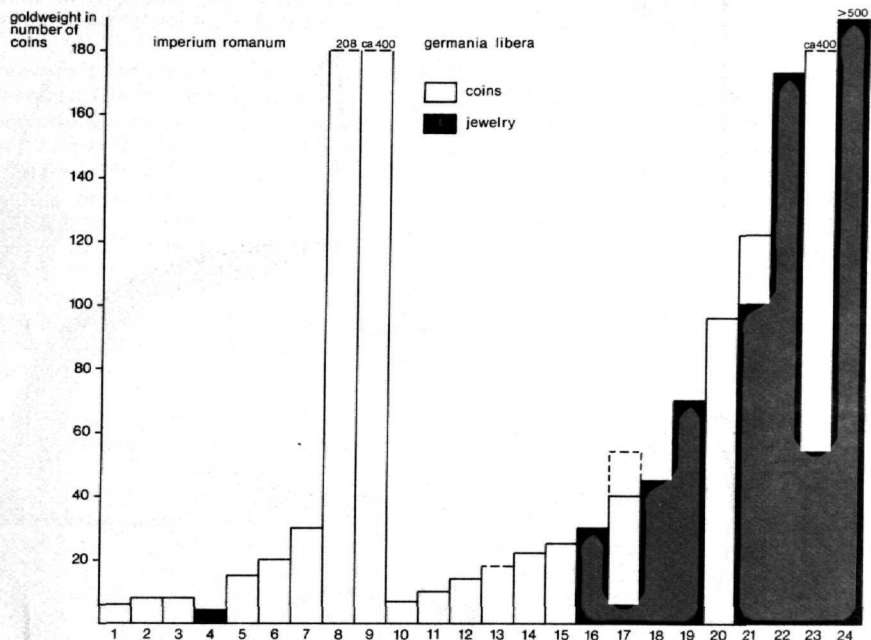


Fig. 16.7: Late-Roman gold hoards. Goldweight of Jewelry calculated in solidi of 4.5 grams. After Bloemers 1983, fig. 31, with additions. Hoards: 1 Grandhan, 2 Suarlée, 3 Furfooz, 4 Nijmegen, 5 Obbicht, 6 St.Denijs-Westrem, 7 Würselen, 8 Xanten-Menzelen, 9 Xanten, 10 Spradow, 11 Eidinghausen, 12 Nottuln, 13 Körbecke, 14 Gross-Bodungen, 15 Ellerbeck, 16 Ostrich, 17 Westerkappeln, 18 Rhenen, 19 Olst, 20 Krietenstein, 21 Beilen, 22 Velp II, 23 Dortmund, 24 Velp.

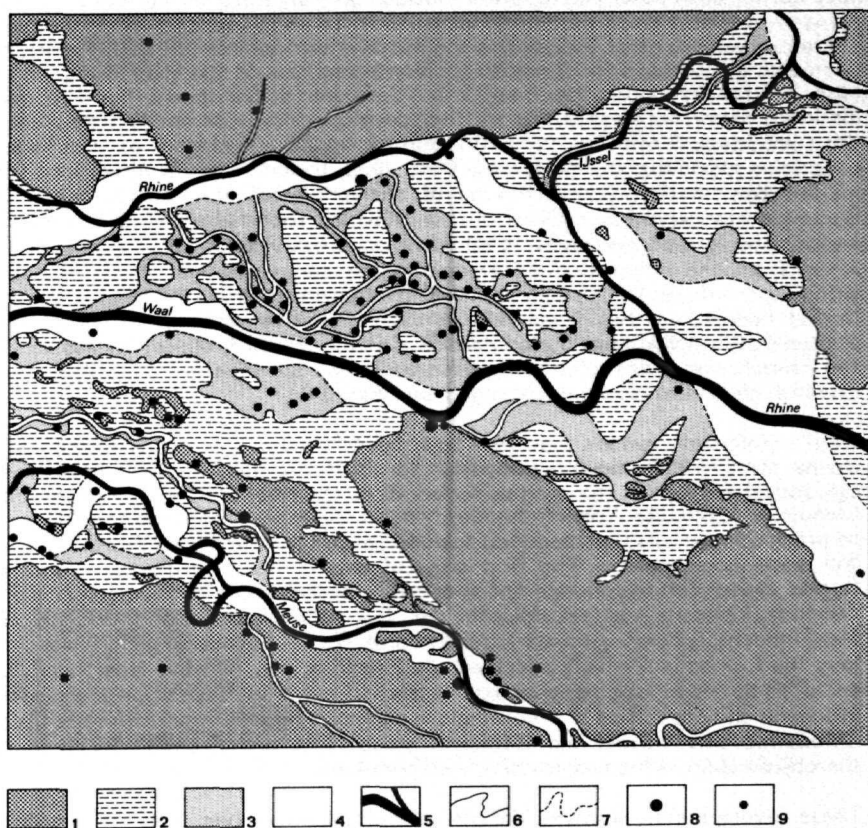


Fig. 16.8: The distribution of settlements (c.AD 425-750) in the eastern river area: 1-7 see Fig. 16.2, 8 (possible) large settlement, 9 settlement. Scale 1:300,000.

characteristics seem to have been developed in the river area as well and they have earlier been described as 'lower Rhenish grey sigillata derivatives'.⁹

There are various other indications for the new and viable mixture of Roman and Germanic elements in the Frankish society in and around the river area. In any case the former and rather egalitarian Germanic tribal groups had become a distinctly stratified society. But further developments were not to take place in the river area. From the early 5th century we have a number of gold hoards, containing characteristic gold torcs (Fig. 16.6), undoubtedly manufactured from melted down solidi and some kind of status symbol of Frankish chieftains. Bloemers has recently provided an overview of such hoards (Bloemers 1983), including a few earlier ones. Two more have been added to this on Fig. 16.7. Apart from the interesting difference in the composition of the gold hoards within and outside the Roman frontier, it is also relevant that four of the five largest hoards, the two from Velp in the Dutch river area and the two from Xanten in Germany, were buried precisely at the frontier, almost on the bank of the Rhine. I see no reason why these could not all have been the *thesauri* of Frankish chieftains or, we might say, lesser kings.

Their unfortunate owners may well have been killed in the events leading to or during the Frankish move southward. In about AD 450, the Salii had already established a kingdom reaching as far south as the river Somme in France under Chlogio or Cloio, the first of the Merovingian kings we know by name. This can be profitably seen as a second step towards state formation, by creating a larger and more viable polity. The first step, of course, had been the move into the former *civitas Batavorum* which can in many ways be seen as the nursery of the Frankish kingdom. After all, it was the royal lineage of the Salii, the Merovingians, whose members later became Rex Francorum, and it was their law, the Lex Salica, which later became Frankish law. On the other hand, this could partly have been, as it were, a historical accident, caused by the personal influence and capacities of Merovingians such as Childeric and especially his son Chlodoweg who unified the different groups into one Frankish kingdom and thereby completed the process of state formation.

These developments, however, did not take place in the river area but in Belgium and France. From a supra-regional perspective, the Dutch delta was no longer of strategic importance when it ceased to be a trade corridor for transports between Britain and the Rhineland, and a buffer area between Gaul and Germania Libera. After a brief period of being a centre developments as a frontier zone, habitation of the region in the later 5th and 6th centuries is archaeologically almost, though not entirely, imperceptible. The palynological evidence (Fig. 16.5) confirms this, with an increase of forest and decrease of culture indicators now reaching Bronze Age levels. The river area regained its importance only slowly from the 7th century onwards.

A number of settlements were continuously inhabited, including Nijmegen which remained a peripheral Frankish stronghold. But most settlements on the distribution map of Merovingian sites (Fig. 16.8) which shows an increase compared to the Late-Roman Period, do in fact date to the 7th and early 8th centuries. They are the result of the gradual reintegration of the entire river area in the Frankish kingdom, a process which was completed by the final victory of the Franks over the Frisians in AD 720. After that, the favourable geographical position of the region led to rapid economic development and stimulated the heyday of Carolingian Dorestad as an international port of trade. But this is the start of a new cycle of developments which continues smoothly beyond the end of the first millennium.

NOTES

1. For an introduction, see Van Es 1977.
2. For an encompassing overview, with references to all relevant recent and older publications, see Willems 1986. The same information can be found in two articles in the *Berichten ROB* (Willems 1981 and 1984).
3. Müller-Wille & Oldenstein 1981 have compiled an overview of such regional inventories in Germany and the Netherlands.
4. The original map is included in Willems 1981 and 1986, Appendix 3.
5. Willems 1984, 234-237; 1986, 394-397. Batavian auxiliary troops before AD 70 numbered nine quingenary *cohortes equitatae* and one *ala quingenaria*, to which should be added c. 500 Batavians employed in Rome as *corporis custodes*, the emperor's mounted bodyguard (*numerus Batavorum*).
6. A full discussion is provided in Willems 1986, chapter 11.
7. For further discussion, see Willems 1983, 114-120.
8. *Panegyrici Latini* VI (VII), 5: *Panegyricus Constantino Augusto*. See Willems 1984, 249 but also König 1981, 51-2 for further references.
9. See Willems 1981, 171-177.

Bibliography

- Bloemers, J.H.F., 1983. "Acculturation in the Rhine/Meuse Basin in the Roman Period: a Preliminary Survey", in R.W. Brandt & J. Slofstra (eds.), *Roman and Native in the Low Countries: Spheres of Interaction*. British Archaeological Reports, International Series, 184; (Oxford): 159-209.
- Böhme, H.W., 1974. *Germanische Grabfunde des 4. bis 5. Jahrhunderts zwischen unterer Elbe und Loire: Studien zur Chronologie und Bevölkerungsgeschichte* (München).
- Bogaers, J.E. & J.K. Haalebos, 1983. "Op Zoek naar castellum in Woerden", *Spiegel Historiae* 18: 302-309.
- Drinkwater, J.F., 1983. *Roman Gaul. The three provinces, 58 BC-AD 260* (London).
- Groenman-van Waateringe, W., 1986. "The Horrea of Valkenburg Z.H.", in C. Unz (ed.), *Studien zu den Militärgrenzen Roms III* (Stuttgart): 159-168.
- Hoffman, D., 1969. *Das Spätromische Bewegungsheer und die Notitia Dignitatum* (Düsseldorf).
- Hopkins, K., 1980. "Taxes and trade in the Roman empire", *Journal of Roman Studies* 70: 101-125.
- Janssen, L.J.F., 1852. "Over de gouden halsbanden en ringen te Velp gevonden", *Bijdragen voor vaderlandsche geschiedenis en oudheidkunde* 8: 161-180.
- König, I., 1981. *Die gallischen Usurpatoren von Postumus bis Tetricus* (München).
- Luttwak, E.N., 1976. *The Grand Strategy of the Roman Empire* (Baltimore and London).
- Macmullen, R., 1984. "The Roman Emperors' Army Costs", *Latomus* 43: 571-580.

- Müller-Wille, M. & J. Oldenstein, 1981. "Die Ländliche Besiedlung des Umlandes von Mainz in spätrömischer und frühmittelalterlicher zeit". **Bericht der Römisch-Germanischen Kommission** 62: 261-316.
- Teunisses, D. (ed.), 1982. **22e Belgisch-Nederlandse Palynologendagen Nijmegen, 30 september en 1 oktober 1982** (Nijmegen).
- Van Es, W.A., 1977. "Das Niederländische Flussgebiet van der Römerzeit bis ins Mittelalter: ein archäologisches Forschungsprogramm", **Beiheft zum Bericht der Römisch-Germanischen Kommission** 58: 105-126.
- Willems, W.J.H., 1981. "Romans and Batavians. A regional Study in the Dutch Eastern River Area, I", **Berichten ROB** 31: 7-217.
- Willems, W.J.H., 1983. "Romans and Batavians: Regional Developments at the Imperial Frontier", in R.W. Brandt & J. Slofstra (eds.) **Romans and Native in the Low Countries: Spheres of Interaction**, British Archaeological Reports, International Series, 184 (Oxford): 105-128.
- Willems, W.J.H., 1984. "Romans and Batavians. A Regional Study in the Dutch Eastern River Area, II", **Berichten ROB** 34: 39-331.
- Willems, W.J.H., 1986. **Romans and Batavians. A Regional Study in the Dutch Eastern River Area** (Amersfoort).