

ROMANS AND BATAVIANS: REGIONAL DEVELOPMENTS AT THE IMPERIAL FRONTIER

Willem J.H. Willems

The Batavians are certainly among the most well-known tribes in the Roman empire, both in antiquity and today. Their relation with the Romans has been the subject of much scholarly discussion in the past and the present, but most of this discussion was based primarily on literary data. With the exception of the work of Modderman (1949, 1951), however, no effort has been made to substantiate the archaeological data-base of the Batavian tribal area in the eastern part of the Dutch Rhine delta. Fortunately, in 1978 a detailed study of all archaeological evidence of the central part of this area could be started.¹ On the basis of the preliminary results of this project, it is now possible to examine some of the archaeological correlates of the acculturation processes which operated here from the Late Iron Age to the Early Middle Ages (c. 250 B.C. - A.D. 750). But first it is necessary to examine some of the theoretical concepts involved.

Since the 1954 SSRC Seminar, acculturation is often defined as culture change that is initiated by the conjunction of two or more autonomous cultural systems. In our case it is evident that the differences between the cultural systems involved are very large indeed (below p. 112 and Roymans this vol.). On the one hand is a system which may be described as a state, while on the other hand we are dealing with a society at a much lower level of social complexity. As a result of this, there is an enormous difference in the resources of the systems involved, which may be expressed in coercion. This is one of the reasons why it seems justified to view the situation in which the acculturation process develops as a case of colonialism.²

Although it is very difficult to come to grips with colonialism at a theoretical level (Horvath 1972; Bartel 1980), several aspects of the colonial situation can be identified. The presence of coercion has already been mentioned, but nearly as fundamental is the fact that there has to be a direct and important interest at stake for the colonizing party. The nature of this interest is more or less irrelevant, it may be economical, political, ideological, or something else. From an 'etic' point of view it may even be completely unintelligible; it just has to be considered important enough. It is easy to see why this should be so, for colonizing has its price: it means the expenditure of energy.

This becomes especially clear when we look at the relation between colonialism and imperialism. Imperialism also implies coercion, but it is a form of domination which consumes much smaller amounts of energy. It does not involve moving significant numbers of people, but it is primarily based on the transfer of information. The distinction between 'power' and 'force' which was made by Luttwak (1976, 195-200) will serve to clear this point. In his analysis, force is essentially a physical phenomenon which is consumed in application and wanes over distance: "... military force is indeed governed by constraints on accumulation, use, transmission, and dispersion akin to the physi-

cal laws that condition mechanical force" (op. cit., 196-7).

Power, on the other hand, works very differently: "It works not by causing effects directly, but by eliciting responses - if all goes well, the desired responses". When you use force to obtain obedience, you use energy, but when you are obeyed because of your power, it is the object of your power who is the actor and therefore the one who uses energy. The power itself is not a physical phenomenon, so it is not consumed by this action. It remains the same, just as - in principle - it does not diminish over distance. But power does not exist unless it is perceived: it is not something at the level of matter or energy, but on that of information.

Of course there is a relation between the two, in that power is based on the perception and 'correct' evaluation of force, which is obedience. Power does not work when the means of perception are lacking or when the evaluation is 'wrong' or, in other words, when prior information about force has been unintelligible or insufficient. Unless, of course, an error was made or a risk taken. In all these cases force has to be used directly, but it is evident that a careful power-policy requires much less input of energy than the use of force, where the output is proportional to the input.

Luttwak uses this distinction between power and force in his admirable analysis of Roman strategies of imperial security, but it is equally applicable in a distinction between imperialism and colonialism. Imperialism is a patron-client relationship, based on a flow of information which allows a low-cost domination because of the client's perception of the patron's power. This may well be the main reason why Roman imperialism was so effective in the East and southern Gaul, where processes of secondary state formation had straightened the way for effective control of large areas as client-states.

Colonialism, on the other hand, is characterised by the use of direct force. It is not a flow of information but a flow of energy which is decisive in this case. This makes colonialism a relatively expensive enterprise and that is why there has to be some sort of ('emic') necessity or interest at stake for the colonizer. Another consequence of the use of energy is that, in contrast to information, it is finite. Depending on the capacity of the system, somewhere a limit is reached, which brings us to the concept of the frontier.

In the imperialistic situation the frontier is dynamic. There is sufficient energy left to control or incorporate new units. In Lattimore's (1962) terminology, this would be an open frontier, the 'frontier of inclusion'. In the colonial situation, if a point is reached where an energy-surplus is no longer available, a static frontier develops, the 'frontier of exclusion'.

When we look at the individual units within an expanding empire instead of at these general processes, it is clear that both imperialism and colonialism are temporary phenomena. Eventually the frontier will move on and the area will be integrated into the empire. There are, however, situations where integration cannot be achieved. That may be caused by distance, as was the case with recent colonies overseas. But in a colonial situation, once a 'frontier of exclusion' has been established that situation will also be perpetuated in the frontier zone. Force is applied through matter, which means an administrative and military apparatus. When a permanent frontier is established that apparatus is permanently needed at the frontier. It would be too easy to say that since force is concomitant with colonialism, this leads to a permanent colonial situation. After all, the force is primarily intended for use at the other side of the frontier and may even be replaced again by the use of power, because information also keeps flowing. But the presence of a military apparatus in a region has specific consequences for the

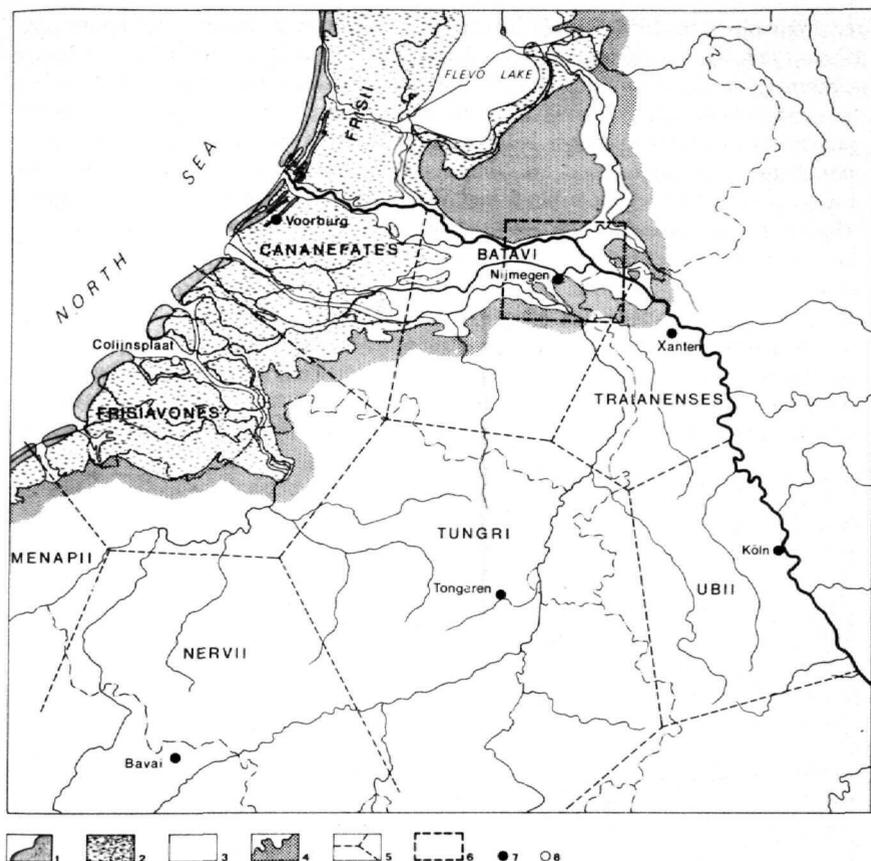


Fig. 5.1 Administrative and geological situation in the second century AD.

1. coastal dunes
2. marine clay deposits and peat
3. fluvial deposits
4. pleistocene deposits
5. theoretical boundaries of the civitates
6. area studied in detail (see fig. 5.2)
- 7/8. (probable) civitas capitals

social, economic, demographic, and other structures within that area which should be comparable to a colonial situation and which should also be archaeologically traceable. A first approach to this problem is discussed below.

GEOLOGY

As was already mentioned, the core of the Batavian area, which later became the civitas Batavorum (Bogaers 1960/61), was located in the eastern part of the Rhine delta. Fig. 5.1 outlines the general situation in the second century A.D. against a simplified geological background. The theoretical boundaries between the civitates (adap-

ted from Bloemers 1980, fig. 2) match fairly well with traditional assumptions (cf. Rürger 1968, fig. 1), although discrepancies remain. As far as the civitas Batavorum is concerned, these are only of minimal importance. It seems fairly certain that the civitas consisted of two geologically and ecologically very different regions: a southern part on the pleistocene sandy soils and a northern part in the river-clay area. This latter part, between the Meuse and the Rhine, is the classical 'insula Batavorum'. It is the central part of this region, around the civitas capital Ulpia Noviomagus (Nijmegen), which has been studied.³ Although this area may seem to be rather small, enough information about sites in other parts of the civitas is available to allow for general conclusions.

In fig. 5.2 the geology of this central area is presented in greater detail. The map gives the (partially reconstructed) situation during the Roman Period. The pleistocene soils are largely composed of ice-pushed ridges in the North and East and of eolian deposits (coversands and loess). In between are the holocene fluvial deposits, which may be divided into channel and bank deposits (sandy clay) and flood-basin deposits (heavy

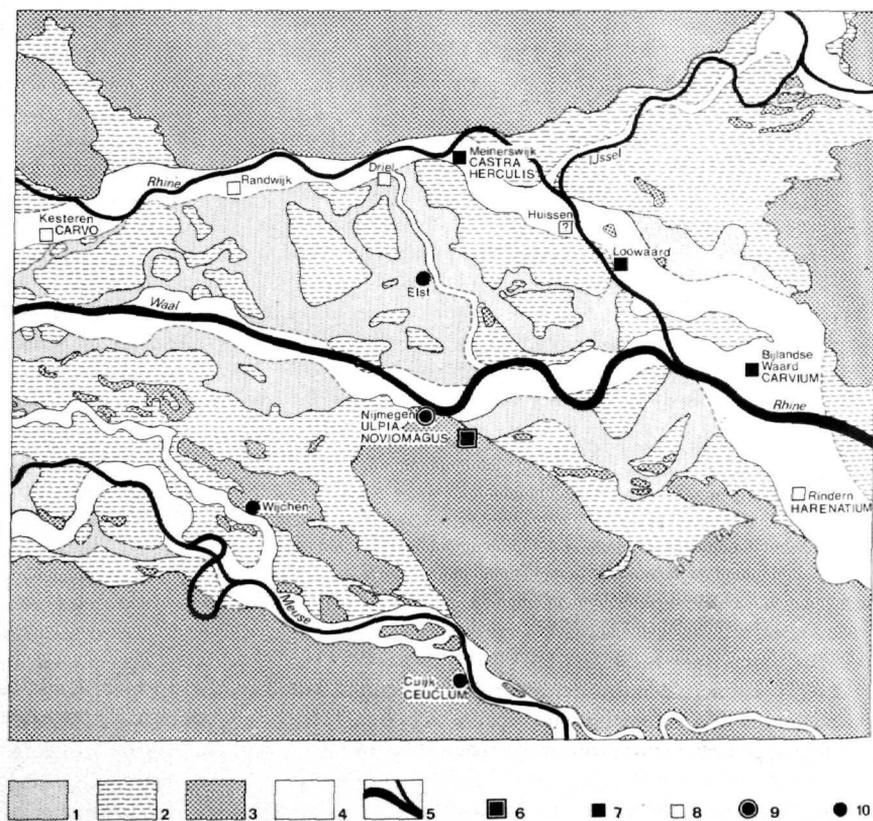


Fig. 5.2 Geological situation of the eastern river area during the Roman period (partially reconstructed). 1. pre-Roman channel and bank deposits; 2. flood-basin deposits and peat; 3. pleistocene deposits; 4. channel and bank-deposits of functioning rivers; 5. channels of present-day rivers; 6. legionary fortress; 7. fort; 8. probable fort; 9. civitas capital; 10. local centre.

clay). Only the former are habitable and provide arable land. They can be divided into three chronological categories. Very important are the pre-Roman deposits, the relatively high-lying remnants of former river-courses which were entirely habitable. A second category is formed by the deposits of the river-courses which were functioning during the Roman period. The higher parts of their banks must have been permanently habitable. Unfortunately, a rather large part of these deposits has been eroded by post-Roman river-courses, whose deposits form the third category. They are not indicated on the map (except for the actual, present-day channels), but replaced by a reconstruction of the Roman system.

Unfortunately, it is not possible to reproduce detailed distribution-maps here (cf. note 1). This is partly due to the very dense occupation of the area during the periods studied. During the data-collection stage a grand total of no less than 650 sites was reached, while well over 500 sites are included in the final analysis. Nearly 400 of these are in the river area, and most of them are settlements. The reason for this enormous number of settlements is the high probability of discovery in the river-clay soil. On the detailed soil maps of the region, certain places have been indicated separately because of their special properties. These so-called 'ancient settlement-soils' are characterized by humus-rich, very dark soil and numerous spots of phosphate in the subsoil. These spots are identifiable by eye because of their greenish colour and do not, or not in any observable quantity, occur in this form under arable or grassland in the river area.

All these ancient settlement soils have been mapped in great detail - in part also because of their high agricultural value today - which has created an exceptionally favourable situation for archaeological purposes. By studying surface collections from these sites, it is possible to get a very good - perhaps even nearly complete - overview of all settlements which have been occupied for some length of time. Another major advantage of ancient settlement-soils over sites discovered by surveys in other areas is that excavations have shown that they indeed invariably indicate the site of a former settlement, so the problem of interpreting stray finds is eliminated to a large extent.

THE LATE IRON AGE

During the Late Iron Age, a period of approximately 250 years, occupation in the area was already very dense: about 200 settlements have been recorded. Although there are undoubtedly differences between the settlements, it proved impossible to qualify or quantify these in any way. Some, especially on the pleistocene sand ridge near Wijchen (see fig. 5.2), seem to be somewhat larger, but this may be due to a longer occupation history. Continuity from the Early Bronze Age or even Late Neolithic is in this permanently habitable area not uncommon. All settlements, therefore, seem to be more or less the same.

Unfortunately, Late Iron Age burials are completely lacking. Any analysis of social complexity by analysing the burial-program of the society is thus impossible. On the other hand, the absence of *all* burials makes it very likely that they were fairly similar in their material aspects. That does not preclude the possibility of immaterial differences, but it makes the presence of a well-developed, hierarchical social structure at least unlikely.

Both the archaeological data and the information obtained from the classical sources (cf. Roymans, this vol.) are therefore in agreement. In the Late Iron Age we are probably dealing with a tribal level of social complexity, with petty chieftains at the most. In the first century B.C. the river area was probably occupied by Menapii and/or Ebu-

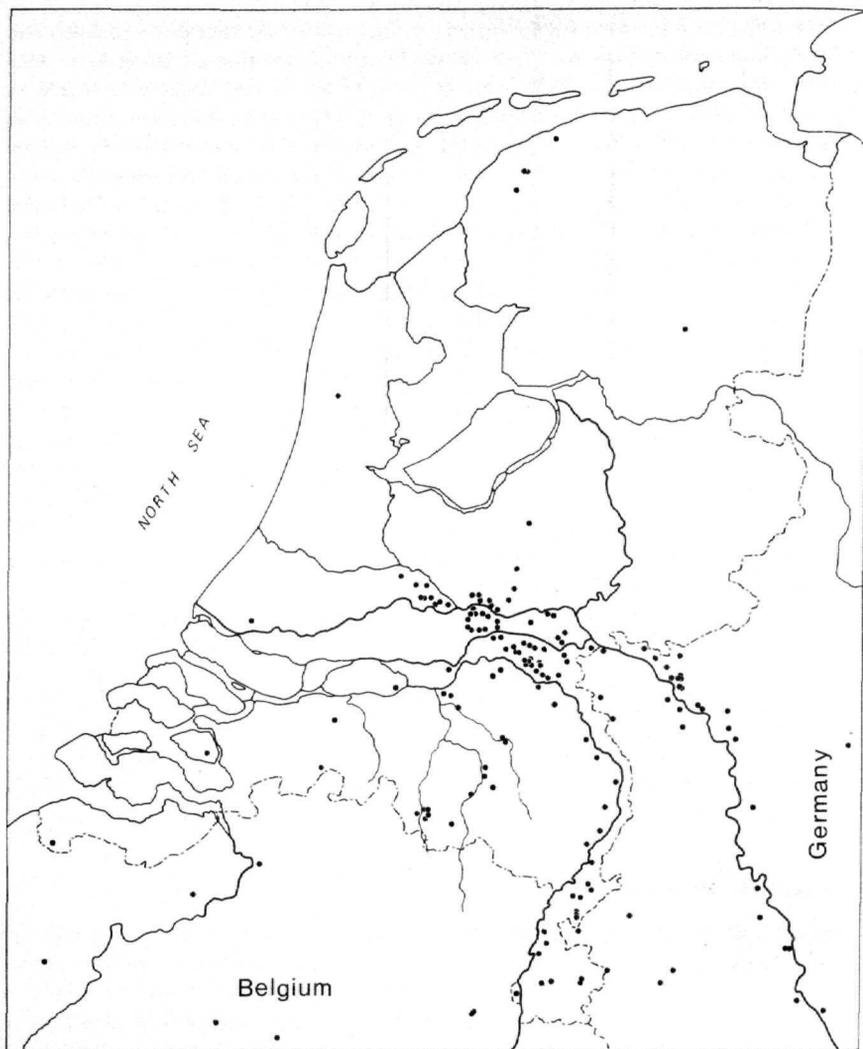


Fig. 5.3 The distribution of La Tène glass bracelets. After Peddemors 1975; Haevernick 1960; Reichmann 1979.

rones, tribes which were definitely at a lower level of social organization than those in central and southern Gaul. Throughout the Iron Age contacts with the South are attested, but in the Late Iron Age especially these may have taken the form of regular long-distance trade relationships. These may have included imports of metal into the river area and certainly a regular supply of querns of basaltlava and crude glass or materials for glass-manufacture. The latter because Peddemors (1975) has shown that a certain type of glass bracelet was probably manufactured somewhere around Wijchen. The distribution of the La Tène glass bracelets is very interesting in this respect (fig.

5.3). It appears that there are three routes along which these bracelets are predominantly found and which meet in the Dutch river area: a route along the Rhine, another along the Meuse and a third along the smaller rivers of North-Brabant. These are, of course, obvious routes for trade relations with the South, where these artifacts occur in large numbers, especially in Switzerland and Rheinhesen (Haevernick 1960). Since export of the finished product from a central source somewhere in these areas is unlikely (Peddemors 1975; Haevernick 1960, 75 ff), an alternative explanation for their consistent association with trade routes may be offered.

A discussion of Late Iron Age exchange patterns falls outside the scope of this article, but in view of the relative abundance - and possible production - of the bracelets in the river area some preliminary remarks about their function will be made.⁴ La Tène bracelets have always been thought of as adornments, but they may well be something else besides that. Apart from being an object of exchange, they could at the same time be a medium of exchange. Dalton (1978) distinguishes two sorts of 'money-like things' in 'stateless' societies: primitive valuables and primitive (or commodity) money, the first being associated with ceremonial, the latter with petty or peripheral market exchange. Transactions in which primitive valuables are used, are part of social relations, while primitive money may also be used in a more 'commercial' type of exchange. Therefore, the latter usually consists of uniform things, such as bars of salt, copper wire, or cowrie shells, which facilitate exchange with foreigners. There are several reasons why La Tène bracelets may have had a similar function. They are non-utilitarian and fairly uniform commodities, probably manufactured by specialists in a number of different regions over a large part of Europe. They are introduced within an inter-tribal socio-economic network that, judging from other materials, is becoming increasingly complex. In the southern areas large numbers of complete bracelets occur in high status burials, while in surrounding regions such as Holland or Bohemia and Mähren, mainly fragments are known from settlements. Glass bracelets are, of course, fragile. It seems, however, that deliberate halving or quartering, analogous to that of coins, may also have occurred. Evidence for this is supplied by fragments which were secondarily bent into small open rings and others with round-melted fractures. These cannot be worn, and an interpretation as 'amulets' seems too easy a solution.⁵

To judge from the evidence collected by Haevernick, hoards may also have occurred. Combinations of complete bracelets are ascribed to burials, but in several instances that is only an interpretation for lack of precise data on find-circumstances.

Finally, it is very peculiar that the bracelets disappear abruptly around the time of the Roman conquest. According to Haevernick, they are technically very sophisticated and even better than Roman glass. Their disappearance has been attributed to war, genocide, and the like, but this explanation seems rather poor, particularly because they are only regarded as sophisticated and highly valued trinkets. In that case they would more probably have remained in use or gone slowly out of fashion. The fact that they disappear in the beginning or just before the Roman occupation may point to two things. Firstly, that their function disappeared because the context in which they functioned had changed. That could be, because the existing socio-economic network must have been disrupted by the Roman colonization. But that does not mean that the general system of an 'embedded' economy (Polanyi et al. 1957) was altered. The concept of an only partially 'disembedded' economy - even in later Roman times - (cf. Hodder 1979; Reece 1979) seems much more promising than that of a full-scale market economy.

Another or additional explanation may, therefore, be the appearance of functional

equivalents to the bracelets. It could be very significant that there are no direct replacements for the bracelets-as-adornments (e.g. Roman glass or other bracelets, which are very rare), but there certainly are equivalents to the bracelets-as-primitive-money. In the river-area we have first the arrival of Celtic coins, which are shortly afterwards followed by Roman coinage. The fact that Celtic coins are also a form of primitive money is generally accepted (although there are disputes about bronze and potin coinage), and they also disappear when Roman coins start to serve as a standard of value.

The appearance of Celtic coins in the eastern Dutch river area also leads to a next subject, which is the arrival of the Batavians in the region. It is generally assumed that this must have happened in the second half of the last century B.C. For the moment, it is extremely difficult to get a clear picture of what happened. There are no indications for discontinuity in the region: neither in the occupation of settlements, nor in pottery traditions or anything else. It is highly unlikely, therefore, that Tacitus' (Hist. IV, 12) *seditio domestica* should be interpreted as a migration of an entire tribe or his *vacua cultoribus* be interpreted too literally.

One of the few clues we have is formed by the Celtic coins. Roymans and Van der Sanden (1980) discuss silver triquetrum coins, a concentration of which has been found near Rossum, and which are apparently derived from gold coins concentrated in North-Hessen. This is the area of the Chatti, of whom the Batavians were a segment. Roymans and Van der Sanden propose to interpret these silver coins as a 'Batavian' emission. It could be an élite affair, and one of the rare archaeological traces of a very restricted number of (high status?) migrants.

EARLY ROMAN PERIOD

It has become clear that the social organization of the inhabitants of the river area in pre-Roman times was a relatively simple affair. The egalitarian settlement pattern exemplifies that, and it is not surprising that the first and most drastic changes, in the beginning of the first century A.D., become visible in that pattern. Almost overnight a different settlement pattern appears, characterized by a large centre in Nijmegen and emerging secondary centres in places such as Cuijk and Elst. This new pattern has absolutely nothing to do with the previous one: it is clearly related only to Roman (military) interests. The large settlement near the military camps in Nijmegen is located on an ice-pushed ridge which seems to have been virtually uninhabited in the Iron Age. With the exception of Elst, all other important settlements in the area are either themselves military camps or closely related to them.

In this period we are, in fact, dealing with colonization by military means, not with some form of imperialistic domination. That is, of course, also deducible from the classical sources and the time-table they imply. There is hardly room for a slow acculturation process which prepares the way for an imperialistic patron-client relationship. Nor may such a relation be inferred from the fact that the Batavians apparently did not oppose their subjugation and achieved a so-called favourable treaty. One may wonder about the attractiveness of a treaty under which one is obliged to provide auxiliary troops for the Roman army which, at a certain moment, may have amounted to eight or nine cohorts and an ala (3800-4800 young men)!

It is too early yet for a detailed analysis of what happened in the region between 12 B.C. and c. A.D. 50. The native pottery remained the same (there is no such thing as 'Batavian' pottery) and seems to have been used only sporadically by the army or other immigrants (compare Greene 1979). This provides serious dating problems for individ-

ual native settlements, but in general it seems that the Iron Age settlements continued relatively unchanged. Only very gradually did imported Roman pottery and other items seep through from the newly founded 'Roman' settlements. Both surface collections and excavations indicate that even Flavian pottery was still scarce outside the forts and vici, even in local settlements only a few kilometres removed from such places. It took until the second century before wheel-turned pottery was widely used throughout the region.

If any conclusion on this evidence may be reached, it must be that at least at a material level there was not much or a very one-sided form of interplay between the region and its new superstructure. According to the classical literature the Batavians did not have to pay tribute, and in combination with the lack of material evidence for intraregional interaction with the 'Roman' immigrants this suggests relative economic isolation of the local population and an almost total dependence of the army on sources outside the region.

MIDDLE ROMAN PERIOD

The middle-Roman period lasted from c. A.D. 50 to c. A.D. 270. The year 50 is chosen because the Rhine *limes* was established around the middle of the first century. It is therefore the point in time when the 'frontier of inclusion' changed into a 'frontier of exclusion' and an equilibrium reached which was to last for two centuries. The Batavian revolt of A.D. 69-70 is nothing more than an anti-colonial native revolt, which are quite common in colonial situations with strong acculturative pressures (cf. Dyson 1971, 1975). It is not suitable to serve as a divide between two periods, although it obviously had a (temporary) disruptive effect and a (lasting) psychological impact.

During the second half of the first century, the settlement pattern changed again (or continued to change), but the results of this development become clearly visible only in the second century. During the middle-Roman period, the density of settlements increased further, to nearly 300 settlements in the area studied. Also, a much greater diversity develops, both in size and character of the settlements. There are small sites, probably consisting of one or two farmsteads, but also much larger ones. Some of those, on both sides of the Meuse and the Waal, turned out to be villae. There is evidence for quite a few sites which could be very similar to the recently published villa of Druten (Hulst 1978). Because these villae almost invariably had native farmsteads as predecessors, it seems quite appropriate to assume they were owned by native farmers, becoming rich by surplus-production. Evidence for newly founded villae is almost completely lacking, except for a few villae urbanae on the unfertile glacial ridge around Nijmegen (but all with a wonderful view!).

Surplus-production does not automatically imply a market economy, but in any case a large superstructure had to be maintained. Apart from the regional centre, the town Ulpia Noviomagus, there are also a few local centres which I will term vici. They are settlements which are much bigger than all others and which are also marked off by the quality of the finds. In the area studied, these are located in Cuijk, to the South of Wijchen, and in Elst (compare fig. 5.1). For the entire civitas Batavorum, Rossum and Halder should probably be added.

Apart from these civil settlements, there are the military forts and associated vici. They also have their centre in Nijmegen, which for a short time housed an entire legion. The rest lies along the Rhine *limes*. Fig. 5.2 gives some important additions to the map published by Bogaers and Rüger (1974). There is a new site in the Loowaard with a strong

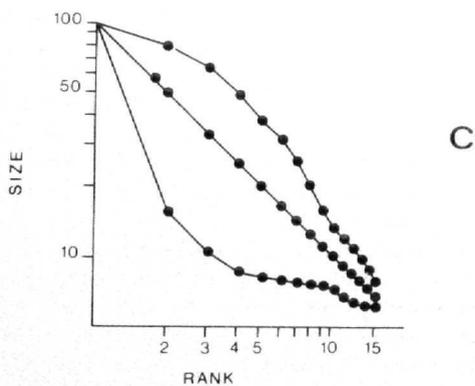
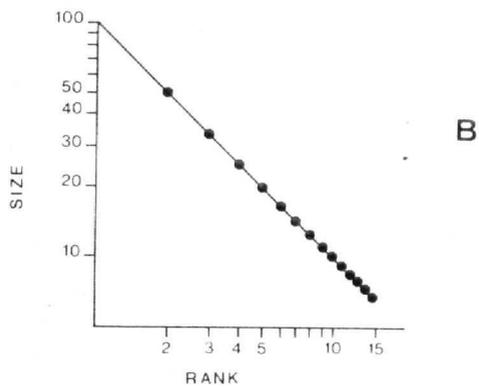
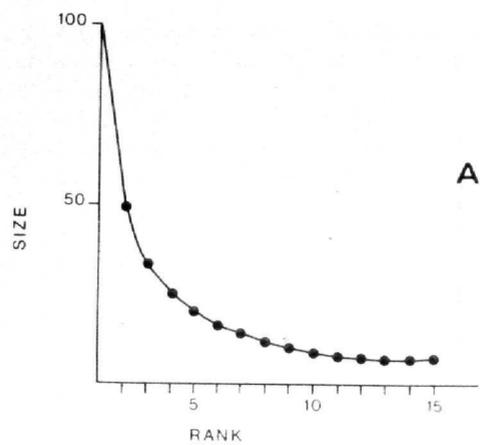


Fig. 5.4 Rank-size distributions of settlements conforming to the rank-size rule (a, b) and convex and primate deviations (c).

military component. The well-known site in Huissen is, however, extremely near. Especially because the finds of Huissen were found in a secondary context, we may well be dealing with material from only one fort. The next fort, in Meinerswijk near Arnhem, was discovered during a survey in 1979, followed by a small excavation (Willems 1980, Willems in press). Yet another new fort is suspected near Driel because of the material discovered there, but definite proof is still lacking pending a trial excavation. Because of the geological situation - resulting in an easy passage across the Rhine which was already used in the Bronze Age - a completely hypothetical fort is situated near Randwijk. It seems inconceivable that this broad passage should not have been guarded by a fort. This could well have been eroded by the Rhine in post-Roman times, as was the case with Carvium (Bijlandse Waard).

As far as the structure of the region is concerned, it is obvious that the situation of the local centra was determined by the landscape and that of the other large settlements by strategic demands. Therefore, many assumptions of geographical models for studying spatial distributions and site relationships cannot be satisfied here. This is not the case for the so-called *Rank-Size Rule*, which can also be employed in a tentative analysis of the 'colonial' structure of the area.

RANK-SIZE DISTRIBUTIONS

The rank-size rule was developed in geography, and is essentially an empirical observation of regularity in settlement-sizes. In its basic form, it states that the size of the n th settlement is $1/n$ the size of the largest settlement in the system. Thus, assuming that the largest settlement has a value of 100 and the system conforms to the rule, then the second settlement would be $100/2 = 50$, the third $100/3 = 33$, and so on (see fig. 5.4a). This results in a lognormal distribution which, if the values on the axes are transformed to a logarithmic scale, appears as a straight line with a gradient of 45° to the horizontal (fig. 5.4 b).

Several explanations of this regularity have been advanced.⁶ Their rationale is based on Simon (1955), who demonstrated that lognormal distributions are the end-product of a large number of stochastic growth processes. This view is criticized by Johnson (1981, and 1977, 497), who argues that a linear distribution is not necessarily a limiting case (a systemic steady-state) or that, conversely, non-linear need be indicative of system change as is implied by, for example, Berry's (1961) work on economic development and Crumley's (1976) hypothesis on urbanization. He suggests that lognormal rank-size distributions are the product of highly integrated settlement systems, while non-linear distributions are produced by a relatively low degree of integration.

There are two non-linear distributions: a convex and a concave (or 'primate') distribution (fig. 5.4c), the first one having one or more too large settlements, while the second is characterized by one dominant, or primate, settlement. Both these distributions are in some way a product of boundary definition (Johnson 1981). Thus, an almost classical interpretation of a primate distribution is its relation to a colonial system, but this only holds true as long as the system is defined by the boundaries of the colony. The primate settlement is (at a higher level), also part of a larger scale system which may well have a linear or convex rank-size distribution.

A more serious 'cause' of a primate distribution - for analytical purposes - is the deletion of the middle range section (the second, third, and further settlements) from an otherwise linear distribution, either because they have not been located or because they are outside the boundaries of the region under examination. On the other hand,

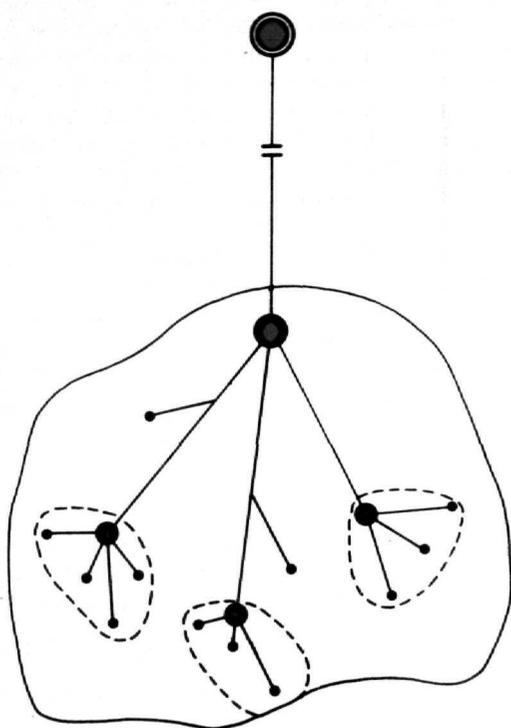


Fig. 5.5 Model of a dendritic system. After Smith 1972b.

effective control from a centre may have suppressed the development of such middle-range settlement, a situation which again reminds us of the colonial situation. The resulting primate distribution is normally connected with dendritic settlement systems (Smith 1972a, 34 ff and 1972b) in which lower centres are tributary to only one higher level centre (see fig. 5.5).

It is possible to propose such a dendritic settlement system for the *civitas Batavorum* during the second century. All military forts and *vici* (approximately twelve from Vleuten to Rindern) are of course commanded from (or through) the Nijmegen headquarters and there are only five non-military settlements which could have functioned as local centres linked to Nijmegen: Rossum for the western river area, Elst for the area between Rhine and Waal (the *Betuwe*), Wijchen for the area between Waal and Meuse, Cuijk for the riverine area South of the Meuse, and Halder for the sandy soils of Brabant.

Composing a rank-size distribution for the region is another matter. Except for Nijmegen, there are very few data with which relative settlement size could be measured. In

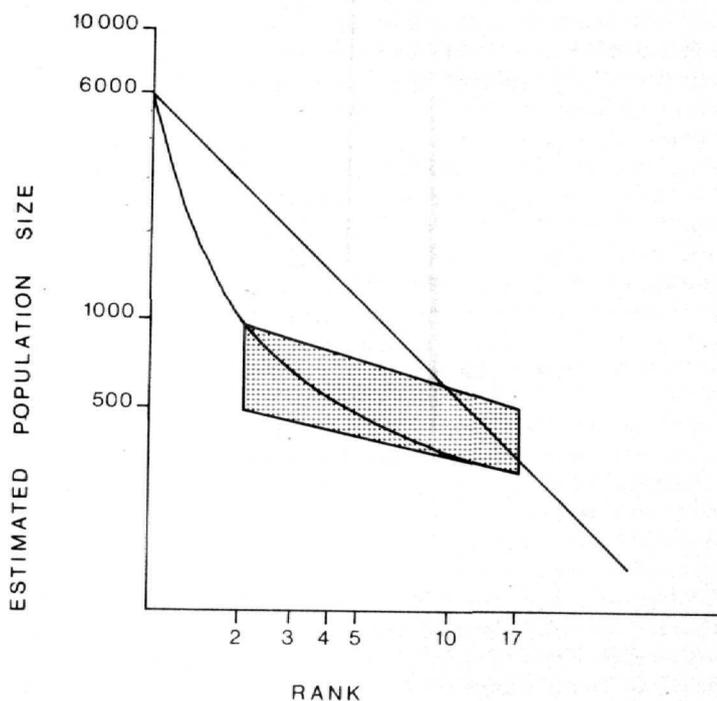


Fig. 5.6 Hypothetical rank-size distribution of settlements in the civitas Batavorum in the mid-second century AD. The range of variation is shaded.

fact, only very rough estimates of population sizes are possible; but, fortunately, we are dealing with proportional relations and on a logarithmic scale the estimates should be quite a bit off the mark to produce real changes in the distribution.

A rank-size curve for the second century A.D. is presented on fig. 5.6. For Nijmegen, a population estimate of 6000 is used, comprising the population of Ulpia Noviomagus, a closely associated commercial(?) centre on the bank of the Waal, and military personnel (which was reduced in numbers after the departure of the 10th legion in A.D. 104). Considering the size of Ulpia alone (c. 40 ha), this estimate is certainly reason-

able: estimates of population densities in urban areas in this period range from c. 60 to 200/250 people/ha⁷, and a recent estimate of the population of Ulpia (Bogaers 1979, 62) reaches a figure of 5000. The forts were, in principle, garrisoned by a cohort, which gives a maximum of 480 men. Quite a few (if not all) of them, however, were smaller, as is testified by the plans of Valkenburg and Zwammerdam. There are also estimates for populations of the associated vici, ranging from c. 250-500 (Bloemers 1978, 125). Of all the forts + vici in the region, the largest settlement could have an absolute maximum of 1000 people, the smallest is estimated at a minimal figure of 350. Because it is impossible at this moment to give estimates for each settlement, fig. 5.6 gives the range of variation of the estimates (a minimum of 600 for the largest fort and a maximum of 500 for the smallest).

The local centres should also fall into this range. Elst has a maximum size of 15 ha, Wijchen, Cuijk, Rossum, and probably Halder no more than 10. Maximum population estimates for these sites would be 6 houses per ha x 8 persons per house which gives c. 700 people for Elst and c. 500 for the others. Because the space occupied by public buildings such as the temples of Elst (Bogaers 1955) and Cuijk (Bogaers 1966) and industrial areas as in Halder (Willems 1977) should also be taken into consideration, the actual figures must be lower than this, ranging between 300 and 500 people.

It is evident that all these estimates are unreliable, even within the fairly large margins of error indicated. Notwithstanding this problem, the clearly primate distribution on fig. 5.6 can be accepted without reserve, although its actual shape may be different from the one suggested. The reason for this is simple: even if we take the extremely low estimate of 4000 for Nijmegen, the rank-size rule still predicts a second centre of $4000:2 = 2000$, a third of 1333, and so on. These middle-range settlements are definitely lacking: 1000 is already a very high estimate for the second largest settlement and figures over 1000 are completely out of the question.

All this implies that even during the second century A.D., when the region was economically flourishing and an integrated settlement system could theoretically be expected, this is not the case. Instead, the primacy of the system and its dendritic nature clearly point to political minimization of economic competition as was to be expected in the 'colonial' situation of a frontier zone.

This interpretation is, of course, related to the question of boundaries. It is obvious that Nijmegen was part of a larger system at the level of the province *Germania Inferior*, which in its turn is part of an even larger system encompassing at least the neighbouring provinces of *Germania Superior* and *Gallia Belgica*. This fact is in agreement with the interpretation of the primate distribution offered, it does not change the regional distribution itself.

Another question is whether the boundaries of the region, the *civitas Batavorum*, have been drawn in an analytically meaningful way. There are several arguments why this should be so. The region has excellent natural boundaries (see fig. 5.1): the river Rhine to the North, peat areas to the West and South East (the Peel region), and a watershed to the South which is, at the same time, the approximate border of *Germania Inferior* and *Gallia Belgica*. It is also a separate administrative unit (Bogaers 1960-61), clearly distinct from that of the *Traianenses* to the East (Rüger 1968, 96 ff), and also from that of the *Cananefates* to the West (Bogaers 1960-61; Rüger 1968, 96; Bloemers 1978, 79 ff). Notwithstanding all the evidence for two separate *civitates* of the *Cananefates* and *Batavi*, the formation of the former may have happened at a fairly late date and even then one could still accept a large degree of social and economic unity of both *civitates*. But supposing this should be the case, it would still not drastically alter the

primacy of the rank-size curve. The capital of the *civitas Cananefatium* (Forum Hadriani / Municipium A(ur)elium Cananefatium) had an estimated population of 1050 people (Bloemers 1978, 124), and although that figure may have been somewhat higher it is hardly likely that it should be tripled or doubled. Since there are no other settlements nearly as large as Forum Hadriani, the primate distribution remains virtually unaltered even when the boundaries of the area are extended to include two *civitates* which means the entire Rhine-Meuse delta.

In view of this result, it is interesting to look at the rank-size relationships from a diachronic perspective. Because of the lack of precise data, this presents more difficulties than the curve for the second century. On the other hand it is, as we have seen above, especially the size of the first versus those of the largest other settlements which determines the shape of the curve.

The only period before the second century for which an estimate seems at all possible, would be the Flavian period. The civil population of Nijmegen must have been smaller then, but on the other hand the military population of the fortress (initially probably an entire legion, but in view of the plans of the successive fortresses not more than 4/5ths of a legion during most of the period) and the number of people living in the *canabae legionis* were much larger. The total population can therefore be estimated at 7000 to 8000 people.

Because the development of the *vici* had only just started in the Flavian period, the largest sites outside Nijmegen should be even smaller than during the second century. The relative scarcity of Flavian imports outside Nijmegen confirms this. Therefore, whatever the real population numbers may be, it is obvious that the tentative rank-size curve for the Flavian period (fig. 5.7a) must be even more primate than the second century curve. Considering the massive use of direct (military) force after the Batavian revolt, this is hardly surprising since Nijmegen was the centre through which that force was applied.

The fact that the 10th legion was withdrawn from the area in A.D. 104 represents, to some extent, a (renewed?) reliance on power instead of force for the river-area. The fact that this withdrawal did not finally result in a more integrated pattern is due to the continued application of force on the region North of the frontier, through a military and administrative apparatus situated in the frontier zone, thereby perpetuating a 'colonial' structure in that region.

LATE ROMAN PERIOD

Occupation of the river area in the late-Roman period was, as was to be expected, far less dense than during the preceding centuries. The nearly 300 settlements in the area investigated were reduced to a quarter of that number: between 60 and 70 settlements have been located. What this means in terms of population-decline is uncertain, because at least a few of the rural settlements seem to be much larger. On the other hand, the town of *Ulpia Noviomagus* had been almost completely deserted. All that remained was a fortified settlement (on and around the Valkhof, Wynia 1979, fig. 71).

Although again really reliable estimates are impossible, it seems that the marked primacy of the previous rank-size distributions has disappeared because of the reduction in size of Nijmegen (fig. 5.7b). What the exact curve would look like, is impossible to say in this case. It could still be slightly concave, it could conform to the rank-size rule, and it could even be convex. In any case, there are several settlements (of which we know *Ceuclum*, *Castra Herculis*, and *Quadriburgium* by name) to fill up the middle-

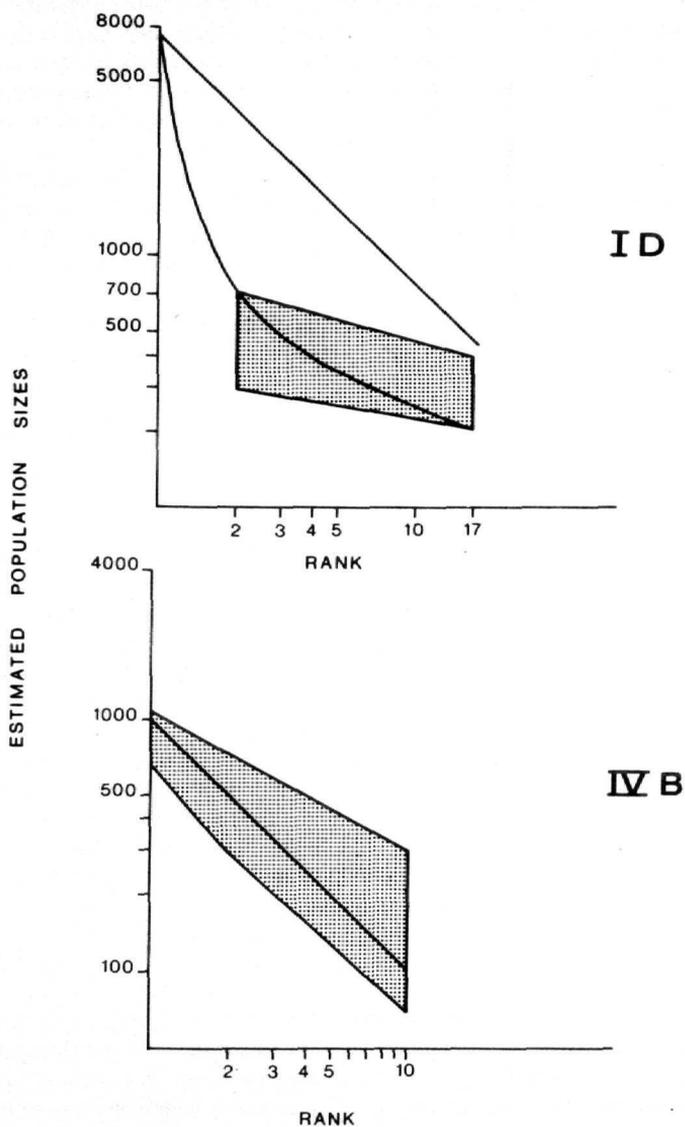


Fig. 5.7 Hypothetical rank-size distributions of settlements in the area of the civitas Batavorum during the Flavian period and second half of the fourth century. The range of variation is shaded.

range of the curve.

These rather vague considerations would imply a socially and economically much more integrated system than before, which would be in agreement with the fact that the area is no longer a frontier zone. That is to say: no longer the region immediately behind the middle-Roman 'frontier of exclusion', because evidently it is still a border region. The change in the structure of the region seems to be related to the different character of the frontier, caused by an overall change in the strategy of imperial defence in late-Roman times.

Before going in to this, it is necessary to review first some of the archaeological evidence. It has often been assumed (Von Petrikovits 1938, 236, 240; Bogaers 1968) that the insula Batavorum, the Betuwe-region between Waal and Rhine, was no longer part of the empire. Bogaers (1968) carried this argument even further and reconstructed a late-Roman limes along the Waal. As was already pointed out by Van Es (1972, 101), there is not a shred of archaeological evidence for this hypothesis, which is why he left the matter unresolved.

The inventory of sites in the eastern river area has, however, resulted in a fairly large number of settlements with imported late-Roman kitchen-wares in the Betuwe. In fact, the overall densities of sites South and North of the Waal are the same, and a rapid decrease of sites with wheel-turned kitchen-wares in the late-Roman period can only be observed North of the Rhine. Furthermore, a small excavation on one of the ancient settlement soils in Meinerswijk (near Arnhem) has revealed the existence of a fort with a late-Roman period. For several reasons (Willems 1980), this could well be the late-Roman stronghold *Castra Herculis*, which is then situated on the Rhine and not on the Waal. Apart from this site, there are several others where late-Roman military presence may be suspected (fig. 5.8). These are Huissen (Bogaers/Rüger 1974, 73), Driel (Willems 1980), Rhenen (Böhme 1974, 185), and Maurik (Bogaers/Haalebos 1972; Haalebos 1976).

Even further to the West, late-Roman material along the former limes is not lacking. It was found in Wijk bij Duurstede - *Levefanum*, Vechten - *Fectio*, Utrecht - *Traiectum*, Vleuten, Woerden, Alphen - *Albaniana*, and Valkenburg. The most western fort, the *Brittenburg*, cannot be dated to the late-Roman period by the available finds. The plan, however, is strongly reminiscent of a late-Roman fort and need not be early-Mediaeval at all. For the moment, real evidence for both interpretations is lacking.⁸

Although there is, in fact, quite a lot of late-Roman material along the former limes, it would be a gross misinterpretation to regard this as evidence for a reconstruction of that limes in the 4th century. Especially in the West, the evidence is not nearly good enough for that and, moreover, the hinterland in the western river area seems to be virtually devoid of late-Roman settlements (a.o. Bloemers 1978, Ch. 6). Part of the explanation of the habitation pattern in the entire river area must undoubtedly be sought in the constantly shifting actual '*Machtgrenzen*' (Von Petrikovits 1938), but since one cannot even hope to reconstruct these in sufficient detail (*op. cit.*, 240) it seems more profitable to turn to a more general analysis of the changing strategies of imperial defence.

This is provided by Luttwak (1976), who developed several models of frontier organization. During the middle-Roman period, the organization reflected a system of 'forward defence'. Almost all troops are located at the frontiers, which consist of natural or constructed barriers. The system is characterized by excellent lines of communication and control of the regions in front of the limes. The forts were not built to withstand siege but served to check infiltration and minor raids. When necessary, coun-

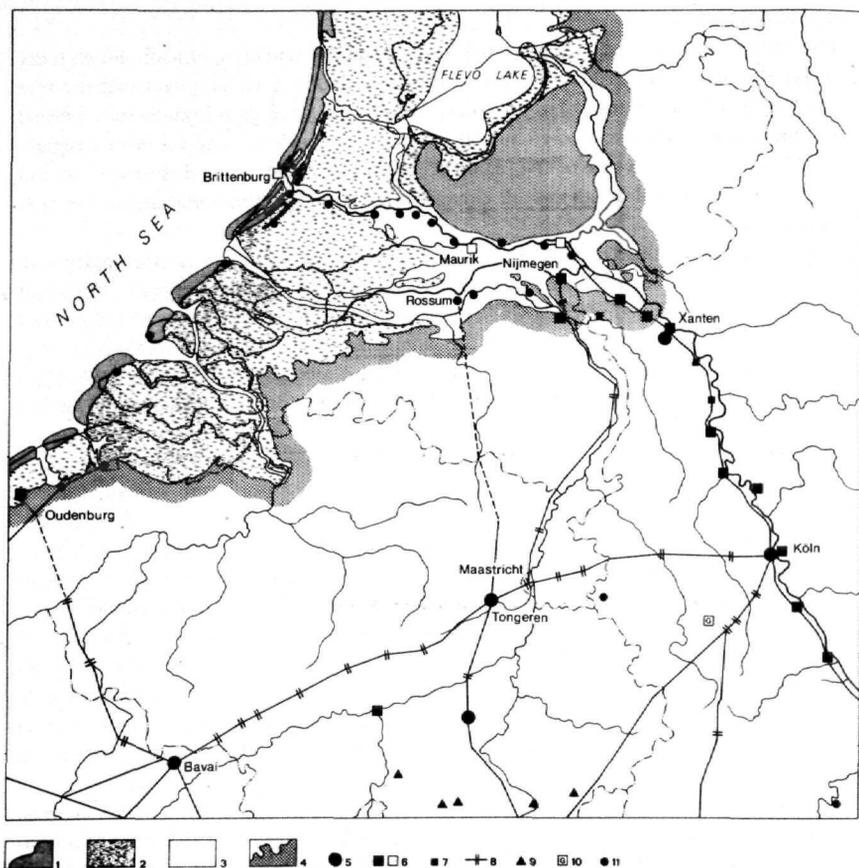


Fig. 5.8 Defensive system and geological situation in the late-Roman period. 1. coastal dunes; 2. marine clay deposits and peat; 3. fluvial deposits; 4. pleistocene deposits; 5. fortified towns; 6. (possible) fortified (military) settlements; 7. watchtowers (burgi); 8. road forts (burgi and fortified settlements); 9. mountain refuges; 10. fortified granary (burgus); 11. sites with late-Roman material (but of very different importance; see text).

ter-offensives were launched to intercept an enemy before he could cross the frontier (see Luttwak 1976, fig. 3.3).

This system contrasts markedly with the late-Roman strategy of the 'defence-in-depth'. This became necessary because the 'barbarians' had become capable of concentrating overwhelming forces on any one section of the frontier. A system of preclusive defence would, under these circumstances, be utterly impossible because of its cost. Furthermore, it was not resilient because there was nothing behind the first line in case of a breakthrough.

Therefore, the defence-in-depth is based on the interception of an invading force inside the empire by a strategic reserve of mobile troops. This was of course hardly beneficial for the border-regions, but it greatly increased the security of the empire as a whole because the system is much more resilient. It can survive serious and prolonged pen-

etration without complete collapse.

To this end, several measures had to be taken (Luttwak, fig. 3.2). Forts were heavily fortified, as well as the towns which had to become defensible. In order to slow down enemy incursions, road forts along the highways were necessary. Food and fodder had to be stored in strongholds which made it hard for the invader to get at them and at the same time they were readily available to the defence-troops once a counter-attack could be launched. Finally, it became necessary to have a large and mobile strategic reserve in the hinterland.

During the 4th century, the river area was part of the province of *Germania Secunda*, an enlarged successor to *Germania Inferior*. The addition of the *civitas Tungrorum*, formerly part of *Gallia Belgica*,⁹ may in itself already be a reflection of a change in the defensive system, which called for a deeper organizational structure than the rather small territory of *Germania Inferior* could hold. As becomes clear from fig. 5.8, all the elements of a defence-in-depth system are indeed present in the southern and eastern part of the province. Heavily fortified strongholds near but also well behind the frontier are present, as well as walled towns and mountain refuges. Major roads were blocked by strongholds at regular intervals and even fortified granaries have been identified (Bechert 1978).

To the North and West, the situation is completely different. Except for the dune area, the western part consists entirely of peat and clay deposits, crossed by several rivers and their tributaries. This could have been partially suitable for habitation (Dunkirk I deposits and well-drained peat), just as it was until well into the 3rd century (Bloemers 1978, 87-8). The first effects of the Dunkirk II transgression may, however, have rendered the area almost entirely unsuitable for habitation, an interpretation which agrees well with the lack of late-Roman sites.

This does, however, not necessarily imply that there was nothing to be defended, especially because the rivers provided easy access to areas further to the East for invaders coming from the North Sea. The *Litus Saxonicum* was a defence system on both sides of the English Channel, designed to meet the threat of such raids. Oudenburg is the northernmost fort which was certainly part of this system, but it could well have reached as far as the Brittenburg. Possible intermediate strongholds are, from South to North, Brugge (Thoen 1978¹⁰), Aardenburg¹¹, Domburg, and Westerschouwen (Boersma 1967) on the mouth of the Schelde, and although that is largely hypothetical, Oostvoorne on the Helinium (Bogaers 1974).

All this leaves us with the northern border of the province, the former limes along the Rhine in the river area. For the western part of this line, the interpretation of the archaeological evidence is perfectly clear in one way: it was not a 4th-century limes. Not only are the finds few and far apart, apparently there was also nothing to defend. Moreover: whereas the middle-Roman system of preclusive defence could function from the narrow strip of land South of the Rhine, the late-Roman system of rearward defence could not.

It seems more profitable, therefore, to view the late-Roman finds along the Rhine in the West as indications of a trade-corridor, used to transport goods from Britain to the border-provinces. In this respect especially the grain imports come to mind, which are mentioned by several classical sources. Caesar Julianus is reported to have personally accompanied a fleet of 600 ships with British grain up the Rhine in A.D. 359. There is, by the way, no real reason why one should read 'up the Waal' in this case. There is no archaeological support for this and the Waal cannot have been a safer route because there was no limes at all. On the contrary, the abandoned forts along the Rhine should

have provided very attractive halting-places for convoys of ships.

The same explanation could be forwarded for the eastern part of the Rhine but that would not account for the distribution of sites with late-Roman coarse pottery, which clearly indicates that the Rhine still formed a border there. In fact, it seems that the entire region East of the line Rossum-Maurik (both possible late-Roman strongholds) and up to the Rhine remained part of the empire till the very end of the Roman occupation. It must, however, have been the most forward part of the defence-in-depth system and thus from time to time outside the oscillating 'Machtgrenze' discussed by Von Petrikovits (1938).

At this moment, it seems possible to point to at least one such oscillation, namely the refortification of a number of 'towns' by Julianus in A.D. 359 (Amm. Marc. XVIII, 2, 3-6), among them Quadriburgium (Qualburg?) and Castra Herculis (Meinerswijk?). All in all, the changed strategy of imperial defence implied a withdrawal of large parts of the military and administrative apparatus from the border region which, for the eastern river area, is probably reflected in a change in the rank-size distribution of settlements. The other result, increased insecurity for the inhabitants, is reflected in the decreased number of settlements and, possibly, a concentration of the population on those sites.

Finally, it seems that the use of the concept of a limes in this period had better be banned altogether.¹² It is too intimately connected with a system of forward defence to be of any use in a period when the theoretical and effective frontier is no longer identical. Therefore, although the notion of a late-Roman Waal-limes is clearly contradicted by the archaeological evidence, it would be useless to replace it by an equally non-existing Rhine-limes. It seems we will have to live with an essentially 'fuzzy' zone in which, because of the decreasing imperial control and the growing number of Frankish settlers from across the frontier, a new regional structure was already developing.

NOTES

1 I am grateful to the Netherlands Organization for the Advancement of Pure Research for a grant which enabled me to study the archaeological material from 1978-80. The first report on this project (containing detailed geological and distribution maps) will be published in the 'Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek, Vol. 31, 1981'.

2 During the conference, several participants objected to the use of the term 'colonialism', especially because it has a number of connotations which were considered irrelevant or even misleading for the Roman situation. Although I agree that there may be several, possibly very fundamental, differences between Roman and more recent cases of imperialism and colonialism, there are certainly many similarities. The use of these terms as analytical concepts to study a range of similar phenomena is, in my opinion, entirely justified. They can be used for generalizations and in a cross-cultural analysis, where a concept like 'romanization' (with many different connotations!) would be useless, because it refers to a particular case.

3 Regional inventories of the sites on the western part of the insula and the southern sandy soils are currently being compiled by some of my colleagues. For a contrary opinion on the extent of the civitas Batavorum see Bogaers 1972, 328.

4 Of course, any assumption on function implies a great deal about possible exchange patterns which remains to be substantiated. For the moment, this is only intended as a hypothesis to direct further research on these patterns.

5 Except, of course, for the sporadic occurrences in a later cultural context, as in Merovingian graves.

6 For a review see Richardson 1973. A critical evaluation is offered by Johnson 1977, 1981.

7. See Bloemers 1978, 124 and the references cited in note 5.

8 This evidence has, also not been provided by recent (1982) excavations of the IPP in the dunes of Katwijk. These only yielded occupation-traces, presumably belonging to a vicus associated with the middle-Roman fort. The stronghold known as the Brittenburg is located between one and two kilometres to the West of this spot.

9 It is not certain whether the Civitas Tungrorum indeed became part of Lower Germany only in the late Roman period. As was argued by Bogaers (1972, 329-32), it is also possible that this situation existed already during the middle-Roman period.

10 See also Rijckaert 1978. Meulemeester & Matthys 1980 disagree with them.

11 Aardenburg was still inhabited but no longer important. The round towers are not of late-Roman date: they belong to a middle-Roman town wall, not to a late-Roman fort, see Van Es 1972 (3rd revised edition 1981, 112-5).

12 Only the scientific use of the limes-concept is meant. In late-Roman sources the word limes is also used to refer to a frontier-area, not just the frontier-line (which in itself is already a secondary meaning). See Amm. Marc. XVII, 13, 27, XX, 10, 1 and XXVI, 4, 5.

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