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Summary

My thesis "The Batavian countryside. The Roman settlement region in the Dutch *Kromme-Rijn* river area" is part of the research program *Rural communities in the civitas Batavorum and their integration into the Roman empire*, conducted at the *Vrije Universiteit* in Amsterdam, the Netherlands. The theme of this study is the spatial development of Roman settlements in the *Kromme-Rijn* area. The main objective is to develop a view of how rural Batavian communities were integrated in the Roman Empire. To do so, rural settlement patterns and their dynamics were analysed. This is contextualised by research into the socio-economical and cultural developments, which were the driving forces behind the dynamics. From the spatial analysis of the settlements in two micro regions, namely Houten and Wijk bij Duurstede, and the reconstructed road infrastructure in the study area, a synthesis concerning rural residence in the *Kromme-Rijn* area during the first centuries AD is formulated. In the future this synthesis may be used as a basis for reliable generalisation of the remaining Dutch River Area.

The information, which I used in this study, partly came from standardised Cultural Resource Management (CRM) reports that have been published from the mid 1990's onwards. Excavations conducted before 1992, the so-called pre-Malta phase, supply a much larger dataset. Little data from these excavations are accessible on a basic CRM report level and the information is fragmented and unanalysed. I have tried to disclose the data as well as possible and therefore the field structures, the dates, the chronology within the settlement and the most important finds were studied, described and schematically presented.

The opening chapter first describes the general themes and historical backgrounds. In addition, previous studies on the Batavians are reviewed. It is generally accepted that large numbers of Batavians were recruited for the Roman army and the impact of this recruitment is clearly visible in their settlements over time. A wide variety of consumption goods that indicate changing daily practices of the average Batavian peasant family are found in the settlements. Other objects indicate direct contact with the Roman army. Seal-boxes and militaria, such as weaponry and horse gear, are the most appealing examples and emphasise the link with military material culture.

Subsequently, I describe the study area and the characteristic environmental elements. Three large channel belts, namely *Houtense/Jutphase*, the *Werkhovense* and the *Kromme-Rijnse* stream ridges, are important in the genesis of the study area and the formation of areas suitable for habitation. Due to the large-scale excavations in and around modern day Houten and Wijk bij Duurstede, the occupation on a micro-regional level was documented.

In the last parts of the opening chapter the goals of my research are discussed, as is the methodology. The main research question is as follows: *In what way did Batavian rural communities integrate in the Roman Empire and how is this recognised in the spatial developments of their residential areas in the Kromme-Rijn area and in particular within the micro regions of Wijk bij Duurstede and Houten?*

The research strategy consists of making an inventory and selection of the residential areas within the study region. The dataset is composed of excavated sites and residential areas, which were found through field survey, find reports and phosphate mapping. All the rural sites were categorised, from relatively small sites to large settlements and regional or rural centres. This resulted in an overview of more than 100 different sites in the study area.

In the second chapter, the rural sites are discussed and placed in a regional framework. Additionally, military sites, such as *castella*, the road infrastructure and cemeteries were added to the site-database because they are elements of the structural lay-out of the Kromme-Rijn landscape. Despite the large amount of data, little is known about the number of households that were contemporaneous and about the chronological development of the rural sites. Perhaps this can be distilled from studies on Wijk bij Duurstede-De Horden. This is the key-site of the Kromme-Rijn area. Although, 'De Horden' is the only site of this dimension it is likely that other (large) settlements developed in the same way. Therefore, generalisations, which are based on site-level observations, should only be used with great care.

I attempted to link individual settlement developments to (micro) regional processes. To do so I assumed that 'De Horden' is representative and characteristic for other (large) settlements in the Kromme-Rijn area. This assumption is the basis of the important question: *what were the developments and dynamics of the rural landscape in the Roman period?*

In Chapter Three, the settlement Wijk bij Duurstede-De Horden is presented and analysed. At the site, which dates from the Late Iron Age to the Middle Roman period, features of a large settlement with several farmsteads were found. The yards consist of several chronologically successive longhouses with courtyards on which outbuildings and wells were present. From the Flavian period onwards most settlement elements were incorporated in large allotments or land division systems consisting of wide ditches. The ditches structured the settlement and arranged the drainage of the residential areas and also of surrounding farming and pasture plots.

Besides the individual floor plans of the main buildings, the outbuildings are also discussed and presented in maps. The chronological, typological and functional characteristics of the buildings are also reviewed. Subsequently, the different residential phases are described and I analyse the genesis of the settlement type. The use of demarcating ditches, which resulted in a rectangular system with ditches directed to the hinterland, is characteristic for the development of this site. The consecutive spatial stages of 'De Horden' may be typical for settlement genesis in this region. The socio-economic and cultural processes, which are behind the spatial development, may therefore also be characteristic for the study area. The information from Wijk bij Duurstede-De Horden is used in a 'development-model' that serves as an example for settlements in the Batavian countryside.

Another well-researched site from the Roman period in this area is Wijk bij Duurstede-De Geer. At this site the features are of a poorer quality than at 'De Horden'.

The remaining part of Chapter Three compares these two sites and the ditch systems and theories on landscape design in particular. A new finding is the similar pattern and orientation of the ditches surrounding the settlements at both sites. A higher level of planning than one on settlement level is inferred. The systematic planning and design is probably based on the Roman *actus*. A different geometric principle, based on the Golden Section, is also reviewed, but eventually rejected as classification mechanism.

Chapter Four describes the excavated settlement areas from the second micro region of the study area, Houten. The town centre and several surrounding areas/fields were excavated from the 1950's onwards. Although the excavations were not analysed to a basic CRM report level, they present a wide variety of data on residential areas, ditch systems, burials and remarkable finds. Some settlement areas were excavated more recently and are published in CRM reports. Most sites are located southeast of the present day centre of Houten and they are all rural settlements. The settlement sizes are variable and most

were founded in the Late Iron Age and continue to the Middle Roman period. At a few sites occupation continues to the Late Roman period.

The boundaries of the sites are generally unknown. Most sites were not fully excavated and this complicates interpretation. As a result the chronology of many Houten sites was not established. However, the development-model from 'De Horden' was useful to study these sites. In this part of the analysis I focused on the central elements of a site, such as the longhouses and ditch systems of the settlement area. Because it is difficult to assign outbuildings, wells, pits and other courtyard related structures to a period or main building, I paid less attention to these structures.

Two excavated localities at Houten are discussed in depth because they produced unusual occupation features. At the sites 'Burgemeester Wallerweg' and 'Molenzoom' evidence for stone construction and painted stucco was found.

The following Chapter Five is dedicated to the material culture, which is used to reconstruct occupation dynamics and -intensity of the settlements. Some find categories are particularly useful because they are so-called guide fossils and they are characteristic for specific periods or developments. Several types of glass bracelets and Celtic coins are distinctive for the late La Tène-period, which precedes the Roman period. By studying their distribution, the population density from the Late Iron Age can be reconstructed. The study of the La Tène-glass presents clues for two production sites in the Kromme-Rijn area. The coins, and in particular the *triquetrum* type, were made and used by the Batavians in the context of establishing and maintaining the networks of the tribal elites. The bronze *Avaucia* coins, of which many came from the *castellum* Bunnik-Vechten, are often from military contexts and they circulate as supplement of the small Roman denominations. However, *Avaucia* coins are also found in rural contexts and the Batavian units that served in the Roman army since the Early Augustan period may explain this. They probably regularly visited their home villages in the countryside during leave. On the occasion of those visits they spent or perhaps lost the money left over from the army camps and military *vici*. On the other hand, the coins may also be the result of achievements, deliveries or other transactions between the army and the local population at the beginning of the first century AD.

The transition from the Late Iron Age to the Early Roman period is an interesting one. In this period a split-off group from the Chatti established themselves in the River Area and integrated with the native population; this ethno-genesis led to a new local community, the Batavians. Little is known about the settlements during this period of transformation, but my analysis of the finds is useful to understand the dynamics and intensity of the populations in the Kromme-Rijn area. It is possible to reconstruct which rural sites already existed during the Late Iron Age and to what extent they continued in the Early, Middle and Late Roman times.

Besides the bracelets and coins, Chapter Five discusses other find categories, such as *militaria*, which allow a better understanding of the 'militarisation' of the countryside. Italian-type *terra sigillata* and other Early Roman pottery are also assessed. By analysing the material and cultural remains, the amount and manner of contact between the Batavians and Romans during the Early Empire is reconstructed. Particular Early Roman *fibula* types found at the settlements areas, aid in this reconstruction. For the Late Roman period the presence of some metal finds, such as *fibulae*, hairpins and belt fittings are characteristic and improve the understanding of the population intensity of the countryside from 270 AD onwards.

Chapter Fives leads to several main conclusions: 1) the Kromme-Rijn area is not a 'cultural vacuum' when the Romans arrived in the first century AD; 2) in the pre-Roman period the area was an integrated part of an inter-regional network; 3) at least one in three Middle Roman rural sites originates from Late

Iron Age/Early Roman settlements; 4) at least at one third of the settlements militaria was found; 5) at only 15% of all Middle Roman settlements continuation to the Late Roman period took place.

Chapter Six is the final chapter of this thesis and the relevant conclusions of the research are discussed and the research questions answered. Different subjects are considered in this synthesis. At first I discuss the demographic developments of the study area. In general the Middle Roman period is seen as a time of rapid population expansion and the number of settlements in this period grows compared to preceding times. However, because find categories from the Late Iron Age/Early Roman period are difficult to recognise, the number of pre-Flavian settlements have a systematic low estimate. In addition, the cemeteries are missing from the earliest periods and these issues complicate demographic analysis. By using two models, the settlement model and the recruitment model, it is possible to determine the population size in the Middle Roman period. From this reconstruction the population in the preceding and following periods is also estimated. The recruitment model uses historic documentation on the Batavian troops, which is used to calculate the minimal demographic basis that was needed to draft the soldiers. The settlement model calculates population size based on 1) the reconstructed number of settlements, 2) the average number of houses per settlement and 3) the average number of people per household. During the Middle Roman time the population size in the Kromme-Rijn area was relatively large. The Kromme-Rijn area was densely populated compared to the neighbouring Pleistocene sand region, the Eastern River Area and also several foreign territories. Only in the micro region Tiel are comparable numbers available concerning the settlement and population density per km². The total number of residents in the Kromme-Rijn area in the Middle Roman period, including military presence and residents of the *vici*, is estimated at approximately 4000 people.

The recruitment issue regarding the service in the Roman army is another consideration of Chapter Six. The central question is: *what were the demographic and social consequences of the large numbers of Batavians that enrolled in the army for the local rural communities?* It is often thought that at least one man per household took service, but there are historical examples of Batavian brothers who served simultaneously and often in the same regiment. Because I use a different and higher population density number I re-examined old recruitment numbers. The main difference of my analysis compared to other authors is that their estimates for contemporaneous households per settlement are too high. My calculations, based on the excavation data from the Kromme-Rijn area, demonstrate that two to three contemporary households per settlement are standard.

To maintain the known Batavian troops, after losses in battle, wounded, discharges, natural labour turnover and dishonourable discharge, 330 recruits were annually needed to join the army. Subsequent, the number of recruitments per nuclear family, the number of households that was needed for this and the population size in the *civitas* is calculated. With 1500 settlements in the *civitas* and two and a half households per settlement (as was the case in the Kromme-Rijn area), the number of able men per nuclear family was probably between one and a half and two persons. The reconstructed population size of the *civitas* could be then circa 21.000-29.000 people and this is less than the estimated population from the settlement model (16.000-37.500).

My analysis also presents a potential imbalance between the numbers of remaining men and women at the Batavian countryside. This does, however, not imply that the rural communities completely consisted of women, children and elderly, such as veterans. A surplus of women also does not imply a shortage of men or absence of able men. The large numbers of young men

who enrolled in the army were not an inhibiting factor, but may have been a stimulus for the farming communities because economic pressure concerning good farmland was distributed evenly over the rural community. In addition, the young men escaped poverty by joining the army. The army should not only be seen as a drain, but also as contributor, because military compensations and rewards partly went back to the rural areas.

It appears that the demographic issues caused by the large number of recruitments were surmountable for the rural communities. This practice of supplying soldiers most likely started gradually and developed to a long-standing tradition on which the communities relied. It is more difficult to establish the social consequences of the recruitment. Because the communities relied on the Roman army for income and a certain social position, it is likely that Batavian communities became dependable on the Roman Empire and therefore vulnerable in economic terms. The gradually acquired surplus of women may have destabilised the demographic balance of the Batavian society. On the other hand, the departing men found a better future in the army and perhaps gave more space to the remaining population as explained above.

The settlement patterns are also discussed in this last chapter. Although there is little information, a relatively simple pattern can be discerned. There are a limited number of types of settlements and the differences between the types may suggest some form of hierarchy. Small agricultural settlements form the base of this pattern. This type of sites is the largest group and is spread over the higher stream ridges of the entire study area. This settlement pattern hardly differs from the Iron Age pattern. Only the numbers and density of sites increase during Roman times compared to the (Late) Iron Age. Next to these small sites there are larger settlement types with a minimum of four contemporary farms. At some of these locations the farm buildings are partly made out of stone, but there are also sites with so-called wooden *porticus* farms that are enclosed by ditches. 'De Horden' at Wijk bij Duurstede is the best-known example of this type of settlement. In the Kromme-Rijn area there is a maximum 15 of these larger sites in use at the same time.

At the top of the settlement hierarchy are the *vici*, which served as rural centres. Although perhaps Houten may have had this function, this type of settlement was not found in the Kromme-Rijn area. However, I think that the military *vici* near *Fectio* and *Levefanum* fulfilled this part in the regional settlement pattern. Their local or regional market function may have consisted of the storage and transshipment of goods and exchange in the broadest sense. The driving force behind this was the army. The two military *vici* are located at the ends of the study area and theoretically cover a service area of ten km wide. Different types of analyses were conducted to understand the hierarchical relations between the small and large sites in the research area. One of these analyses is the Thiessen-polygon model. In addition, the road patterns were also studied and compared for continuity to the Late Roman period. I found that half of the large Middle Roman sites continued to the Late Roman period, including the sites with stone constructions. The latter settlements should be studied in more detail to understand who lived in these stone farms. A connection with discharged soldiers from the Roman army, the veterans, is a promising hypothesis.

Finally, two other elements regarding the Roman settlement pattern are discussed, 1) the layout of the settlements and the connected field systems, and 2) the sites with stone construction. The systematic layout of the settlements and field systems perhaps indicate a higher level of organisation than one at the local community level. Regarding the stone construction one may wonder if the concept of stone housing ever became ingrained in the Batavian *civitas*. The persistent continuity of the traditional wooden farmhouse construction, which originates in the prehistory, indicates that this was not the case. However,

the analysis of the so-called *porticus* farmhouses perhaps presents a different view.

These *porticus* farmhouses and other houses with outposts only appear in a strict zone that probably concurs with the boundaries of the Batavian administrative district. Of the houses with outposts, there are two distinct exceptional types. The posts in these buildings were so far removed from the walls that they could not have carried the eaves of the roof. The wooden posts created a porch roof at the short ends of a house or one around the whole house, a so-called *porticus*. The latter are special constructions and not found at every rural settlement. These *porticus* farmhouses were excavated at Wijk bij Duurstede, Druten, Oosterhout, Nistelrode, Tiel, Breda and Oss. According to some authors only the building at Oss may have had a tiled roof. Slofstra suggested a development from wooden to stone buildings or villas and he argued that the *porticus* farmhouses at these sites were proto-villas. Presently, the term proto-villa is avoided, but researchers all agree that the new construction styles and techniques, such as the *porticus*, were applied under (Gallo) Roman influences and borrowed from villa architecture. Stone construction is also often explained in villa-terms, even in the non-villa landscape of the Batavian *civitas*.

I challenge these ideas and advocate that the Roman army camp was the frame of reference for these new types. The *porticus* was a common construction at the front of the soldier barracks, which the average Batavian would have encountered regularly. This roofed veranda offered welcome additional space to the small barracks. A large part of the social life of a soldier probably took place under the *porticus*. Subsequently, after 25 years of service and living under this type of veranda the discharged Batavian soldiers introduced the *porticus* to their rural homelands, where it was applied in traditional farmhouse construction. It is no surprise that many architectural elements, such as the *porticus*, originate from the army camps and not from the villa-world. It is one indication that there was a strong military link between the Roman army and Batavian rural communities. The material culture, including for example seal-boxes and militaria, is another indication for this link. The *porticus* farmhouses are probably also a clue that veterans were present in the Batavian countryside. The social interpretation of these *porticus* buildings, which I named 'veteran farmhouses', is new. In addition, it is likely that the roofing of these farms was not made of reeds, but for example from timber planks or wooden shingles. I expect that the angle of the roof was lower than is generally assumed and that it shows visual resemblance to the exterior of a barrack. Furthermore, I argue that many of the stone buildings in the Kromme-Rijn countryside -and elsewhere- may be explained in a similar light and these buildings are stone variants of the 'veteran farmhouses'. It is likely that discharged officers lived in these more luxurious residences. Their networks supplied the opportunity to obtain these scarce building materials and their wealth made it possible to buy them.

Another part of Chapter Six is devoted to the socio-economic basis of the study area. The River Area was fertile and although it did not have the same excellent farming qualities as the southern loess area, the local rural communities were able to live off the land. However, there are only a few clues for the cultivation of cereals popular with the army in the study area. It is therefore assumed that spelt and bread wheat were imported by the army from regions outside the River Area. The rural communities continued to cultivate cereals from the traditional prehistoric food range, such as oat, emmer wheat and barley. Barley may have been used as fodder and sold as such at marketplaces or to the army. It is apparent that there was a surplus system and that the rural communities were integrated in an economic network, which was producing for a

larger market, namely the army. Incidentally, this was not optional for the rural groups as the Roman Empire always imposed considerable levies on conquered people and all subjected areas underwent systematic exploitation of resources. This economic system collapsed during the Late Roman period. The decline in wealth and stability was caused by frequent invasions of Germanic tribes from the mid-third century AD onwards. There are also clues that the economic decline in the Batavian region already started several decennia before these invasions. It is unclear what the causes were.

The final paragraph of Chapter Six deals with the integration of Batavian rural communities and the Roman Empire. This integration process clearly developed along different lines than in, for example, Gallia, because the political-geographic location of the Lower Rhine area and the deployment of the Roman army played a major role. Not only the many young men who enrolled into service and later returned to their homelands, but also the common army language, which gave access to the Roman society, acted as a cohesive between the rural and military world. Through the network that connected soldiers and ex-soldiers, the local Batavian communities were socially integrated in the larger Roman world. Veterans played a mediating role. One may question, however, how many veterans returned to this area and as a result how quickly this rural society underwent militarisation. Although there are different opinions on the number of actual returnees, it does not matter if under- or overestimates are used to resolve this issue. If one considers the calculations by Scheidel, the supposed 'militarisation' of the rural communities will take at least one generation.

How can settlements in the study area be used to understand the integration in a spatial sense? I suggested that at site-level the settlements develop according to a model (paragraph 3.5) in which continuous and further systematic organisation of the houses occurred within an acculturated landscape. This new organisation of the landscape and the place of the settlements and houses in this landscape are in sharp contrast with the preceding Iron Age. In a spatial sense the field systems determine the average Batavian settlement from the end of the first century AD onwards. For some allotments the systematic planning and design is probably based on the Roman *actus*. This may imply changes in land use and/or taxes and a change in Roman control on the civil administration of land ownership and land returns.

The landscape of the province *Germania inferior* appears different compared to the Iron Age in a general sense. For the first time the land was cultivated and acculturated on a large scale and the diversity of the settlement types increased. This, however, does not mean that there was one spatial concept or model for the evolution of settlements in regional Roman landscapes. There is, for example, little variability between the settlements in the Kromme-Rijn area. Although towns and villages still appear absent and no temples have been recognised and villa's are not present, spatial developments did take place. These developments point to a far-reaching level of integration with the Roman world. The native farmhouse also underwent some changes, but it remained the most common house in this region. Roman farmhouses are more robust and have a heavier foundation than prehistoric farms. Additionally, some had outposts that were placed so far from the walls that they created a type of roofed veranda. The frame of reference for these added architectural elements is, in my opinion, Roman military architecture. The so-called *porticus* farmhouses may also have looked different because the roof slope was much more gradual compared to average farms. The contrast with traditional prehistoric construction was emphasised by (partly) stone build houses in addition to the wooden types. There are no signs of great wealth from the graves or the rural residency. There is, however, a different diversity. I demonstrated that some farms in ordinary

hamlets in the Kromme-Rijn countryside differ from the average longhouse. From a social perspective these houses with a veranda or *porticus* are considered 'veteran farmhouses'. Ex-soldiers probably lived in these houses, which also appeared different because of the gradual roof slope. The stone counterparts of these farms probably belonged to veterans with higher military ranks. After their discharge they were better off financially and capable of building something more valuable than ordinary soldiers.

At a higher settlement level a larger village with central economic and religious functions is expected. In the Kromme-Rijn area the military *vici* near the *Levefanum* and *Fectio* army camps played this central role. Here (im)material goods and services were collected and redistributed from and to the countryside. In conclusion, based on a variety of spatial and architectural developments of houses and settlements it is clear that the Batavian rural communities in the Kromme-Rijn area were fully integrated in the wider Roman world.