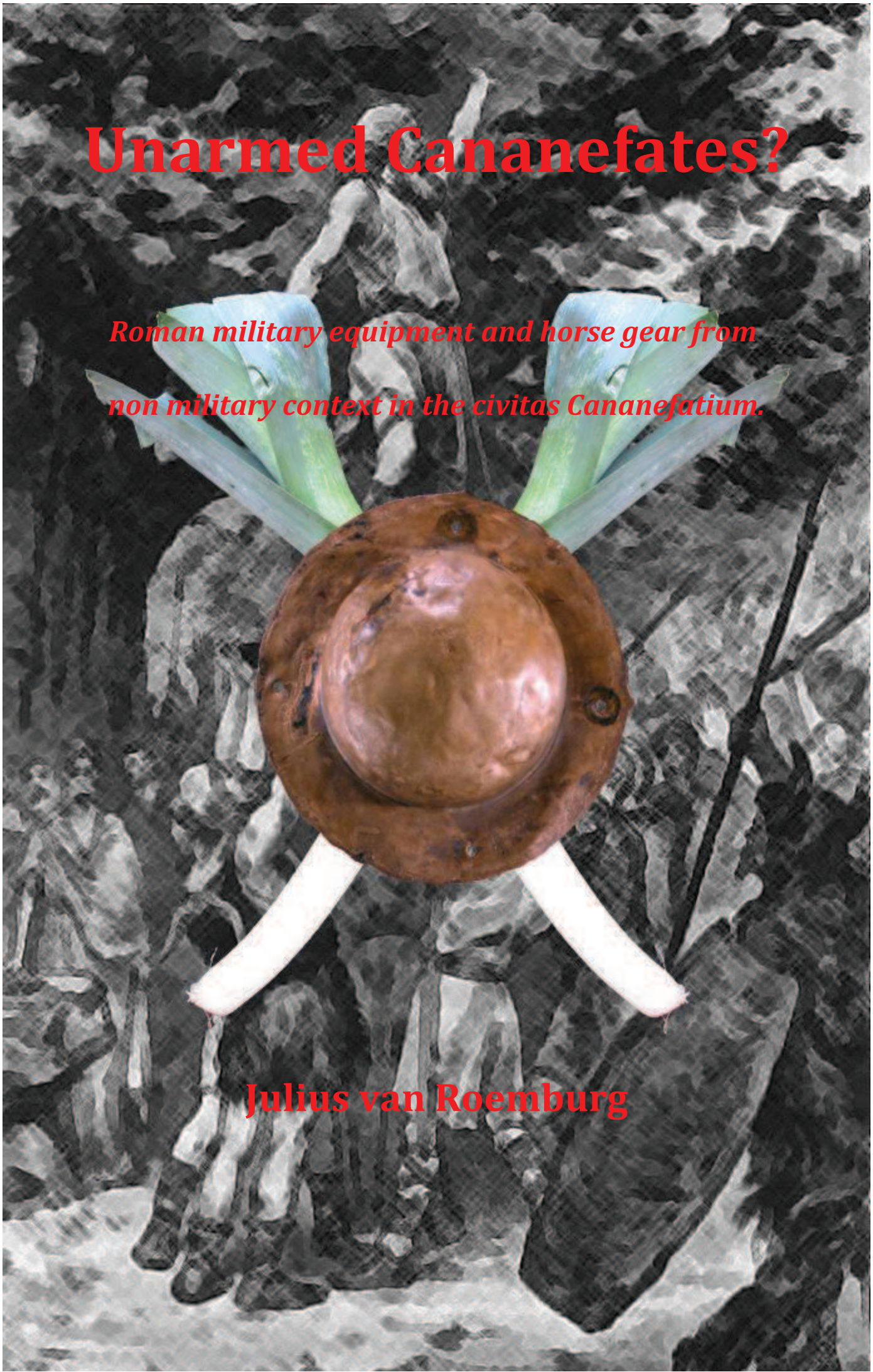
Unarmed Cananefates?

Roman military equipment and horse gear from non military context in the civitas Cananefatium.



Julius van Roemburg

Front cover illustration: bronze umbo from Rotterdam (Photo Boor: Rotterdam).

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MA-Thesis

University of Leiden, Faculty of Archaeology

Master Programme: Archaeology of North-western Europe

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Preface

When you have the same name as one of the most famous Romans and also study archaeology, you can expect a few jokes coming your way. Furthermore, everybody will expect you to specialize in (provincial) Roman Archaeology. I do not know if those jokes and expectations played a role, but in the earlier years of my study I actually tried to steer clear of Roman archaeology. However, over time, archaeological fieldwork kept throwing Roman archaeology at my feet. It started with the fieldschool at Den Haag Uithofslaan VP3, followed by fieldwork at Roman period settlements at Naaldwijk Zuidweg, Midden-Delfland Harnaschpolder, Roman roads in Utrecht, Roman period dams with culverts at Bernisse, the fortress at Vechten, and very recently Naaldwijk again. Before I knew it, I was completely "*hooked"*.

Although I initially intended to focus my research on the transition period from the Iron Age to the Roman period in Zuid-Holland, a period that is still poorly understood, the lack of material forced me to change my plans. Therefore, this thesis mainly concerns Roman military equipment from civilian contexts of the late 1st to early 3rd century AD.

This research would never have been possible without the cooperation of many people working at the various archaeological companies, municipal services, museums, depots etc. I especially would like to thank Jean Paul Bakx (erfgoed Delft), Jeroen van Zoolingen & Ab Waasdorp (gemeente Den Haag), Tim de Ridder (Vlak), Hans Koot (gemeente Rijswijk), Kees Herweijer (BOOR), Ton Immerzeel & C. van der Doef (Westlands Museum), Lourens van der Feijst (ADC), Tiziano Goossens & Michiel Goddijn (Archol), Heleen van Londen, Mark Driessen & Stefanie Hoss (University of Amsterdam), Daphne Smits (BAAC) and Jasper de Bruin (Leiden University Leiden). Furthermore, I like to thank the various sections of AWN.

It was my intention to include as many private collections as possible. To be honest, I am not completely sure whether I succeeded or not. However, I have met a number of very friendly and cooperative amateur archaeologists, who, sometimes without even having any military equipment or horse gear in their collections, helped me a great deal in understanding the metal detecting situation in Zuid-Holland.

My colleagues at RAAP West have been a great help by relentlessly inquiring about my progress, although for one the motivation for doing so seemed to be the cake and graduation party. But more importantly, the many discussions about the subject were invaluable. Special thanks go out to Jan Albert Schenk and especially Geuch de Boer for their help with the maps.

But most importantly, I have to thank Esther for her unending patience and her help to keep me on track when I was lost in the most remote corners of the Roman Empire in search of more information. And finally, although it will take many years before she can read this, I have to thank little Erlijn, for the motivation to see this to a good end.

1. Introduction

Since in 1992 the Valletta treaty was signed, the Dutch archaeological world started to change and saw the introduction of (semi) commercially operating companies. This resulted roughly a decade later in a considerably increased volume of research. However, the new (semi)commercial approach is often criticized for being less or not scientific, as it is driven by modern day infrastructural developments and not necessarily by scientific research questions (e.g. Bazelmans 2009; KNAW 2007; Raemaekers 2008) . On the other hand, the new system is responsible for a substantial part of the research taking place in areas and locations, which have been largely neglected by the 'traditional' scientific archaeological world with unsuspected results on a regular basis.

1.1 Research background.

During the last few decades, a tremendous amount of research has been carried out focusing on the rural communities during the Roman period in the Netherlands. Recurring themes in this research are Romanization and identity (Roymans 1996; 2004). Unfortunately, this research is very unevenly distributed over the Netherlands as the majority of these studies are focused on the Batavian region in the Dutch Eastern River Area (Heeren 2009; Nicolay 2007; Roymans 2004; Vos 2009; Willems 1981; 1984).

This high degree of attention for the Batavians is not surprising. Firstly, a wealth of historical sources mention the Batavians, e.g. *Historiae, Annales, Germania* (Tacitus). According to Tacitus, the Batavians were exempt from regular taxes (at least for the 1st century), based on an old treaty with Rome (*civitas antiqua*). Instead, they supplied a high number of troops for the *auxilia* (8 *cohors* and 1 *ala*) and a substantial part of the emperors' bodyguard.[1] In doing so, the Batavians were the principal supplier of Roman troops in Northern Gaul (Nicolay 2007, 7). The historical authors emphasize their prominent military role and martial prowess, e.g. '*they [Batavians] are like weapons and armor – only to be used in war*' (Tacitus, *Germ.* 29). Furthermore, the historical sources give an exceptional detailed account of the *Batavian* revolt of AD 69, in which the Batavians and their allies laid waste to parts of the Rhine *limes*.

[1] The possibility of regular taxes being collected in the Batavian area during the 2nd century AD has recently been demonstrated (Groot et. al. 2009).

Secondly, the epigraphic (military) evidence on the Batavians (veteran diploma's, gravestones, etc) found throughout the area of the Roman Empire is abundant and detailed (Derks 2009) providing an important secondary source for researchers. Thirdly, the Batavian region contains well preserved sites with excellent preserved bones and metals (including military equipment) that have been systematically mapped (Willem 1981), providing another key source for researchers. These sources and evidence have served to shape the Batavian image of an exceptionally warlike "warrior elite".

However, do the Batavians indeed have this exceptional martial identity or is that a general characteristic for all the communities along the Roman Rhine *limes*? In other words, are the Batavians representative for the other communities along the Roman Rhine *limes*? Hardly any overview studies have been made about the other known tribal areas or civitates in the Netherlands. For example, the Batavian western neighbors, the Cananefates, only received fragmentary attention (as stated by Bazelmans and De Jonge 2006, 39). In the Dutch Archaeological Research Agenda chapter on the *limes* (Van Enckevort and Vos 2006), the Cananefates are not mentioned at all in the text, although the *limes* coincides with the northern border of the *civitas Cananefatium.* The Batavians, on the other hand, are mentioned over twenty times. Furthermore, the first synthesizing work about the Cananefatian area, published in 1978 by Bloemers, is still a principal source, despite being 32 years old.

Fortunately, the first signs of change that the Cananefatian region is getting more attention are there, as more publications appear about the Cananefatian region in Dutch literature. For example, the publication of the Midden-Delfland project by Van Londen (Van Londen 2006), deals with the landscape and land division in a part of the *civitas Cananefatium*. Even more recently, the thesis of Buijtendorp about the *civitas* capital Forum Hadriani was published (Buijtendorp, 2010), in which he also looks at the surrounding area of the city. So far, however, none of these recent studies dealt with subjects like identity or the effects of the military recruitment in the region.

Without more overview studies of the other civitates or tribal areas in the Netherlands, for example the Cananefatian region, and especially the effects of military presence in those areas, the special 'martial' status of the Batavians cannot be placed into context. This research aims to contribute to creating this overview and context by analyzing the numerous and large scale excavations that have been carried out over the past decade yielding vast amounts of new data about the Cananefatian region (e.g. Goossens 2006, 2010; Siemons and Lanzing 2009; Van der Velde 2008; Van Zoolingen 2010b).

1.1.1 Armed Batavians

One of the studies that focuses on the Batavians 'martial' image is the in 2007 published PhD Thesis *Armed Batavians* by Johan Nicolay, which is about the use and significance of weaponry and horse gear from non-military context in the Rhine Delta.[2] Nicolay explored the circulation of military equipment in the Batavian civilian context and tried to link the effects of the heavy recruitment for the Roman army, with the social developments in local societies. Trends in quantity, type and context of these finds were explained against the background of the historical events and social developments of the Rhine frontier.

In doing so, Nicolay tried to address some of the critique aimed at Roman military equipment studies, which tend to treat the army as a separate entity but not as a social organization. Until recently, this resulted in the Roman military borders throughout the empire being studied separately, often detached from their broader civilian context (Nicolay 2007, 1-2). For the Netherlands, this tradition is still visible in the Dutch Archaeological Research Agenda (Van Enckevort and Vos 2006), where the *limes* has a separate chapter.

Nicolay's principal conclusion is that Roman 'military' equipment circulated in large amounts in the (Batavian) civilian world. In his concluding chapter, he describes developments for different periods within the Roman period. For the Late Iron Age, from the conquest of Gaul by Caesar, he draws mainly from written sources and archeological evidence from a larger area, as the archaeological evidence from the region is limited. Interestingly, he concludes mainly that *warriorship* was not a temporary Roman construct specific to a single ethnic group but that it represented a central value in the northwest European tribal world over a longer period of time (Nicolay 2007, 237-244).

During the early 1st. century A.D, at the same time when Gaul became pacified and weaponry virtually disappeared from the Gallic interior, a strong increase in weapons and armor can be witnessed directly at the Rhine frontier. Compared to the Gallic provinces, there was less need to express status in the civilian domain; instead Roman elements became integrated into the existing martial ideology and were used to express the traditional values (Nicolay 2007, 244-251). For this period, a recurring subject in the works of Roymans, Nicolay and Vos is the role of the veteran, who after his twenty-five year service in the Roman army returns to civilian life with Roman citizenship, and brings home part of his equipment as 'souvenir' or status symbol (Heeren 2009; Nicolay 2007; Roymans 2004; Vos 2009).

[2] The Dutch version was published in 2005 under the title "*Gewapende Bataven*". An English translation was published in 2007. In this study I shall only refer to the English version.

After the Batavian revolt and during the 2nd century AD, there is a strong decrease in true military gear like armor, swords and helmets, yet the amount of horse gear rises dramatically. Furthermore, the distinction between military and civilian equipment seems to be fading in the course of the 2nd century. This is due to the further professionalization of the *auxilia*, the placement of troops in foreign countries and perhaps most importantly, because their Batavian commanders were replaced by Romans. This break up between the ethnic background of the soldiers and the region where they were stationed meant that getting status via the army was replaced by getting status via monetary ways. According to Nicolay, the tribal warrior ideology seems to have been replaced by a more civilian ideology (Nicolay 2007, 251-254).

At the end of the 2nd and start of the 3rd century AD as a result of German pressure and raids, an increase in weapons can be observed. This may partly be due to "German" newcomers and partly because of the necessity for civilians to arm and defend themselves (Nicolay 2007, 254-258).

The central objective of this study is to test whether the ideas of Nicolay are applicable to other territories as well. Although some differences in research history, conservation and chronological developments exist, of all tribal areas in the Netherlands during the Roman period, the *civitas Cananefatium* is the best to compare with the Batavian region. Both are situated directly on the *limes*, both lie in a non villa landscape (Roymans 1996, 42; Derks 1998, 55-66), both contain a formal Roman city (Forum Hadriani and Ulpia Noviomagus) and their proximity to each other meant they shared the same political and military developments.

1.1.2 Unarmed Cananefates?

What role did the Cananefates play in the Roman army? Tacitus refers to two Cananefatian *auxilia* units (for the pre-Flavian period), which could indicate that they have fulfilled their taxes, like the Batavians, by supplying troops (Tacitus, *Ann*. 4.73; *Hist*. 4.19). After the Batavian revolt, archaeological evidence indicates the existence of Cananefatian *auxilia* units and Cananefates serving in the emperors' bodyguard. Tacitus further writes that the Cananefates were akin to the Batavians in origin, language and courage, but were smaller in number (Tacitus, *Hist.*4.15). Therefore, based on this single text from Tacitus, historians traditionally considered Cananefates as the 'little brothers' of the Batavians (e.g. Van Es 1981, 27). The Cananefates were often seen as a splinter group of the Chatti or even of the Batavians themselves (Roymans 2004, 205). However, archeological evidence (see below) seems to contradict this ethnic relation between the Cananefates and Batavians implied by Tacitus.

Nevertheless, Roymans argues that the Cananefates may have been politically part of the *civitas Batavorum* before 70 AD (Roymans 2004, 205-208). As a consequence, the Cananefates must

have been part of the Batavian recruitment pool in that period. However, if indeed the Cananefates were part of the Batavian recruitment pool, the Cananefatian veterans should have also brought their military equipment back home after serving 25 years, like the Batavians did. So, it could be assumed that similar archeological evidence could be found in the Cananefatian region as the Batavian region.

However, archaeological evidence shows distinct differences between the two regions. Finds like (triquetrum) coinage and glass bracelets that are abundant in the Batavian area are almost completely missing from the Cananefatian area (Roymans 2004; Roymans and Verniers 2009, 22-31). Also, pottery styles and house building traditions are more in line with the coastal tradition than with that of the Dutch Eastern River Area (Van Heeringen 1992). Furthermore, and most importantly, the Cananefatian region overall appears to be very poor in metal finds as compared to the Batavian region, especially military equipment and horse gear.

The amount of evidence for military equipment and horse gear from the *civitas Cananefatium* certainly looks less impressive than that from the *civitas Batavorum*. The question is why there is such a difference in archeological evidence? Some possible explanations include (not exhaustive):

- Did the Cananefates' social practices differ from the Batavians, and therefore did they not express the same martial values or identity to a same extent as the Batavians?
- If the recruitment and veteran presence and the resulting archeological evidence is compared to the population density in the two regions (e.g. veterans per capita), is the difference actually there? If so, what is the actual extent of this difference then?
- Are there different soil conditions and formation processes in the different regions that created different conservation circumstances for military equipment?
- Has there been a difference of archeological research history in the two areas, e.g. to what extent have the two areas been systematically excavated?

Without more overview studies of the Cananefatian area (so this can be compared to the Batavian area), the difference of archeological evidence between the two areas cannot be explained. This leads to the research goals and questions for this thesis.

1.2 Research objectives and questions

The principal goal of this study is to compare the findings of Nicolay for the *civitas Batavorum*, with the *civitas Cananefatium,* in order to gain further understanding about the different kinds of

use and the symbolic significance of weapons, military ornaments and horse gear, by the local populations in the Rhine Delta. Furthermore, this research tries to provide further insight into the assumed differences between the two civitates.

These goals result in the following research questions:

1. *What is the chronological and spatial distribution of Roman weaponry and military gear in civilian contexts during the Roman period in the civitas Cananefatium?*
2. *How does the chronological distribution of military equipment and horse gear compare to the Batavian region?*
3. *How do these patterns tie in with the theory of N. Roymans that certain Cananefatian auxiliary units did not exist during the greater part of the 1st century AD?*
4. *Can the explanations for the occurrence of military equipment and horse gear proposed by Nicolay for the Batavian region be applied to the civitas Cananefatium?*
5. *Is the society in the civitas Cananefatium "less military orientated"?*

1.3 Research Methods: overview

For comparative reasons, a similar approach will be employed as used by Nicolay in his thesis (Nicolay 2007). In the *civitas Cananefatium*, a survey of military equipment and horse gear found in non-military context will be conducted. These sites include urban centres (Forum Hadriani), rural settlements, cult places, rivers, and cemeteries. The 'military' *vici*, the civilian settlements which emerged next to the *castella,* are excluded from this research, as they, and their inhabitants, are so interwoven with the activity in the fortresses that they can hardly be considered as a 'non military' context.

The objects include weapons, armor, suspensions (belts and aprons) and horse gear and will be presented in a catalogue (see chapter 4 for further details). These will be typologically placed in their respective periods, following the typochronology of Nicolay. However, where appropriate, Nicolay's work is updated by recent changes in the field of Roman military equipment studies.

Nicolay defined the following periods:

- Period 1 (50-12 BC): from *Caesar's conquest of northern Gaul to Augustus*
- Period 2 (12 BC -120 AD): from *the reorganization of the army under Augustus to Hadrian*

- Period 3 (120 -250/300 AD): *investing in the frontier defenses under Hadrian*, *until the restoration of the Rhine limes under Diocletian*.
- Period 4 (300-450 AD): *from the restoration of the Rhine limes under Diocletian until the fall of Rome.*

In this research, the same periods will be used for the basic analysis. However, where the data set allows it, a further refinement will be made within the periods.

1.4 Research area:

The research area will be the presumed *civitas Cannanefatium*, of which a more elaborate description will follow in chapter two. Although its exact boundaries are not entirely clear, for the purpose of this research, the area will be defined by the current Dutch coastline in the west, the Old Meuse river to the south and the river Rhine (the old Rhine; the Roman *limes*) to the North.[3] The largest uncertainty is the eastern border of the area. Nicolay devised his borders by means of Thiessen polygons and we will take his western border, the line Woerden-Gorinchem, as the eastern border of the *civitas Cananefatium* (Nicolay 2007, 4-5; Vossen in prep). For the pre-Flavian period, Roymans expresses some doubts about the (independent) existence of the *civitas Cananefatium*, as he suggests it may have been part of the *civitas Batavorum* (Roymans 2004, 206).

Nicolay identified five aspects of the *civitas Batavorum* that he considers relevant for his research (Nicolay 2007, 4-10). The first is the location in the militarized frontier of the Roman empire. Secondly, the situation outside the provincialized core area before the formation of Germania inferior, which meant that the region was not yet divided into formal civitates until 84 AD (Nicolay 2007, 6).Thirdly, the large-scale recruitment of manpower for the Roman empire. Fourthly, the location in a 'non-villa landscape'. And finally the impact of intensive metal detecting on the quantity of finds. In broad lines, the *civitas Cananefatium* shares a number of characteristics (see chapter 2). Like the Batavian region, it is directly situated on the militarized Roman frontier (at least from ca. 40 AD onwards) and outside of the provincialized core area. Both are situated in a 'non-villa Landscape'. Differences can be observed in the remaining two aspects. There is also, like already discussed above, evidence for recruitment in the Cananefatian region, although to what extent is less certain than in the Batavian region. This shall be further

[3] The coastline in the Roman period extended further to the west, and although at least one now submerged site is known, there is not enough data from the North Sea to include this in this research.

explored in chapter 2. And finally, the impact of metal detecting on the number of finds seems far less in the Cananefatian region.

1.5 Thesis structure

In the following chapter, an overview of the main aspects of the *civitas Cananefatium* and the involvement of its inhabitants with the Roman army will be presented. Topics involved will be settlement pattern, demography, geology, and the evidence for recruiting in the area. This will be followed in chapter 3 by a short description of the used typology of Roman military equipment and horse gear. In chapter 4, the data from the Cananefatian region will be analyzed both on the regional and site level. In chapter 5, the data from the Cananefatian region will be compared with the data from the Batavian area, and will the explanations for any differences in the archaeological record be explored. In the concluding chapter, the above formulated research questions will be answered.

2. The civitas Cananefatium: an overview of the research area and the involvement of Cananefates with the Roman army.

In the first part of this chapter an overview is given of the situation in the research area for those topics that are relevant for this study. Topics include the origin of the Cananefates, settlement patterns and demographics, geological composition of the area, military presence. The second part of this chapter deals with the Cananefatian *auxilia* units, the evidence for Cananefates in the Roman army and the level of recruitment in the region.

2.1 The Cananefates.

The first reference to the Cananefates dates to AD 4/5 (Paterculus II 105) and comes from the hand of Velleius Paterculus (19 BC – AD 31). However, the reliability of this source is sometimes questioned, as Paterculus seems to lack objectivity towards his patron Tiberius.[4] Paterculus writes about the subjugation of a number of Germanic tribes by Tiberius around 4 AD, including the Cananefates. The most important written source for the Cananefates is Tacitus (56-117 AD) who mentions the tribe or its military units in both the *Annales* and the *Historiae.* His first mention concerns an *Ala Caninefas,* a cavalry unit which was deployed by the Romans versus the Frisians during the revolt of 28. AD (Annales 4.73). However, most information can be found in book four of the *Historiae* in which he details about the events during the Batavian revolt of AD 69.

Despite the historical sources, the origin of the Cananefates remains unclear. The campaigns of Caesar in Northern Gaul and the 'destruction' of the *Eburones* further unsettled the already unstable situation in Northern Belgium. It set in motion a process in which existing tribes disappeared, moved or got resettled by the Romans and new ones emerged from the remnants of others (Roymans 2004, 24-25). The Cananefates do not appear in the writings of Caesar and are thus considered to have emerged (like the Batavians) somewhere between 50 BC and 12 BC (Bazelmans & De Jonge 2006, 48; Proos 2006, 57). Traditionally, based on the writings of Tacitus, they are seen as related to the Batavians and hence are also considered as a splinter group of the

[4] Paterculus II 105. The work of Paterculus, the *Historia Romana* has not been considered as a trustworthy historical account, as it is at times inconsistent and lacks objectivity towards Caesar, Augustus, and especially his patron Tiberius. However, he seems to be trustworthy in the statement of individual facts and as a member of the military staff of Tiberius he most likely was an eyewitness during the campaigns in Germania around 4 AD (Lendering 2011, note 3).

Chatti (or possibly as a splinter group of the Batavians themselves) who were new settlers from Germany:

missi ad Canninefatis qui consilia sociarent. ea gens partem insulae colit, origine lingua virtute par Batavis; numero superantur (Tacitus, hist. 4.15)

(Envoys were sent to the Cananefates to urge a common policy. This is a tribe which inhabits part of the island, and closely resembles the Batavians in their origin, their language, and their courageous character, but is inferior in numbers)

More recent views follow the models of an ethnogenesis, in which the Romans exerted a profound influence on the formation of political entities and ethnic groups. Roymans has demonstrated this for the Batavians, and a similar model could be applied to other 'new' groups like the Cananefates (Roymans 2004). Archaeologically, a direct relationship between the Cananefates and Batavians is not visible, as there are distinct differences in building tradition, pottery styles and other portable material culture. Most noteworthy is the great difference in the number of finds of triquetrum coins and glass bracelets. Both items are nearly absent in the Cananefatian region, but are abundant in the Batavian region (Roymans 2004, 92-93; Roymans and Verniers 2009).

2.2 *Tribal areas and civitates in the Netherlands*

The boundaries of the tribal areas and civitates in the Netherlands, including that of the Cananefates, are not exactly known. According to Tacitus, who gives the relative positions of a number of tribes, the Cananefates lived on the Western part of the *insula Batavorum* bordering with the Batavians to the East, the Frisians to the North and presumably the Frisiavones to the South. Linking the historical accounts to the areas based on Thiessen-polygons gives a good impression of the tribal regions in Germania Inferior (Fig. 2.1). For this research, the Cananefatian region has been defined by the current Dutch coastline in the west. The southern and northern borders can be defined by the river Meuse (Oude Maas) to the south and the river Rhine (*limes*) to the north. The most uncertain part is the eastern border of the area. Nicolay devised his borders by means of Thiessen polygons and we will take his western border (Nicolay 2007, 4-5; Vossen in prep.) as the eastern border of the *civitas Cananefatium* (fig. 2.2).

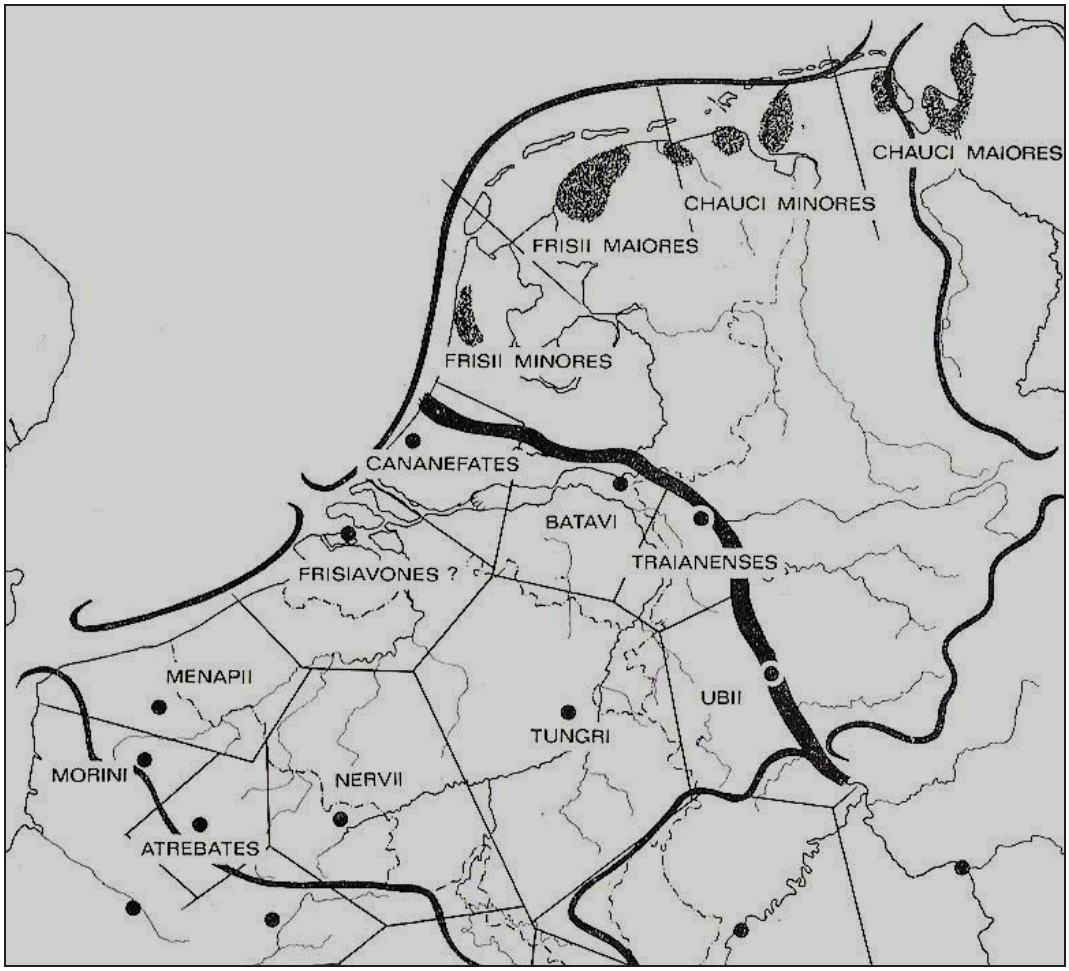


Fig 2.1: Tribal areas in Germania Inferior based on Thiessen-polygons (after Bloemers 1980).

Debate exists about the actual status of the *civitas Cananefatium* before 70 AD (pre-Flavian). It is unclear whether Rhineland frontier societies, such as the Cananefatian area, were administered in terms of the Roman *civitas* model (Nicolay, 2007, 6). Only during the reign of emperor *Domitianus* (81-96 AD), the military district of Germania was organized into provinces, thereby creating the *civitas Cananefatium* in 84 AD as part of the formal Roman governing structure. Most likely, the Cananefatian area was governed based on a tribal structure before 84 AD. However, Roymans indicates that the Cananefatian area may also have been part of the *civitas Batavorum* in a broader sense before 70 AD (Roymans 2004, 206).

2.3 Geology and landscape

The landscape of the *civitas Cananefatium* is determined by the interaction between the North Sea and the rivers Rhine and Meuse. From the end of the Weichsel ice age, when the increased temperature caused a “rapid” sea level rise, the North sea was the dominant factor covering the area with large tracts of marine sands and clays (laagpakket van Wormer, previously called Calais

deposits). Around 4000 BP, the speed at which the sea levels rose decreased enough for the beach barriers to close up, preventing the rivers to drain in the North Sea. This resulted in a large back swamp area behind the beach barrier, where large peat formations formed (*Hollandveenlaagpakket*, formation of Nieuwkoop) (Berendsen 2008; Van der Valk 2006, 16-25).

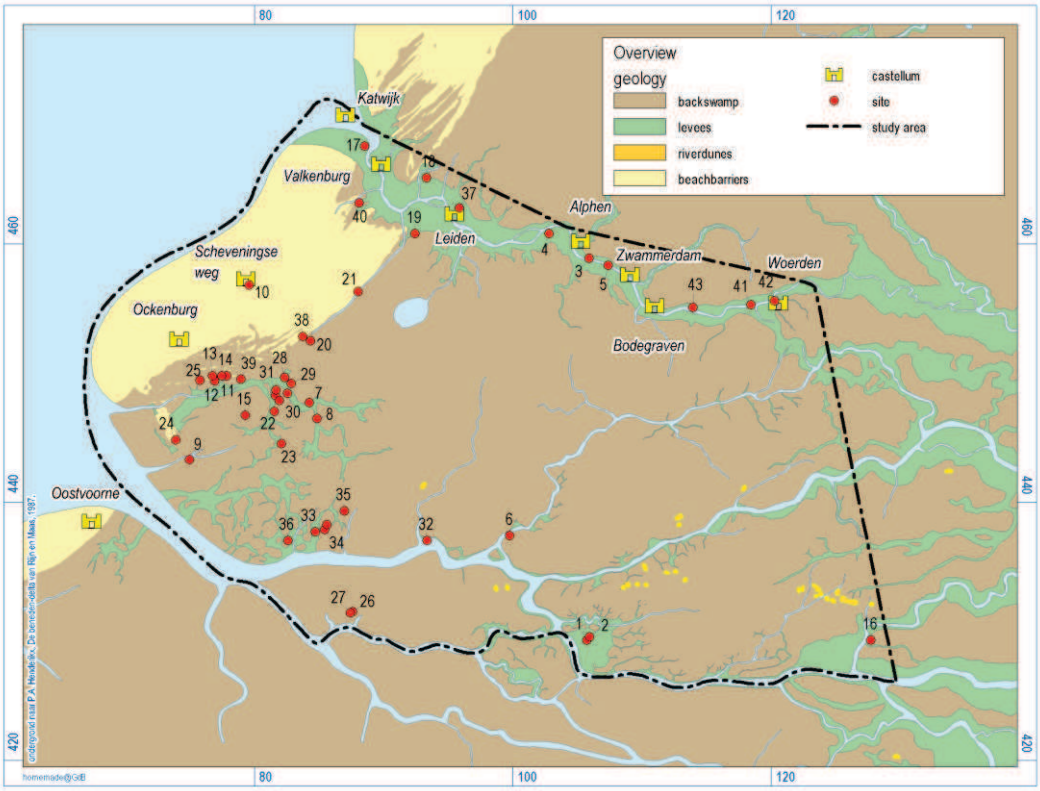


Fig 2.2: Research area with simplified geology and the sites included in this research as well as the known Roman fortresses in the region (After Henderikx 1987, appendix 1).

At the end of the first millennium BC, the sea gained access again into the Dutch interior, via the Rhine, but more importantly via incursions from the Meuse estuary (called Helinium by the Romans), which eroded parts of the peat marshes and created numerous drainage or tidal creeks (of which the Gantel in the Westland and Midden-Delfland was the largest and most important). This increased drainage of the Meuse caused parts of the peat areas to set. Consequently, these cleared or sunken areas got covered with marine deposits of the *Walcheren* member (previously called the transgressions of *Duinkerke 0 and 1*) of the Naaldwijk Formation (Berendsen 2008; Van der Valk 2006, 16-25).

By the end of the Iron Age/beginning of the Roman period, the area between the Rhine and Meuse consisted of some very distinct types of landscapes and remained rather dynamic . In the West was the area with beach barrier and dunes, directly behind it started large peat marshes

that continued east. The peat marshes were flanked to the North and South by river banks and flood plains (Henderikx 1987).

The beach barrier and dunes area have been constantly occupied from around 3800-3500 BC. The peat areas seem to have been largely empty until the Middle Iron Age (see section 2.2). From the Late Iron Age onwards, the inhabitants of the area made large efforts to manage the landscape with dams and culverts (*duikers*), a practice that only got intensified during the Roman age (De Ridder 2000; Rippon 2000, 84-90, 134-136). These waterworks have often been associated with the presence of the Roman military presence in the area. However, the Late Iron Age examples from Vlaardingen as well as Late Iron Age or Roman period examples from northern Germany have demonstrated that local communities were quite capable of building extensive water management systems themselves (De Ridder 1999; Prison 2009).

2.4 Settlement pattern and civilian sites

In the research area, a number of different types of sites can be identified. Apart from the military sites (fortresses and military *vici*) that will be discussed in section 2.5, rural settlements, urban centres, cemeteries and cult places can be identified.

As a result of the geological situation, as described in the previous section, the sites were distributed highly uneven across the area (see fig 2.3).

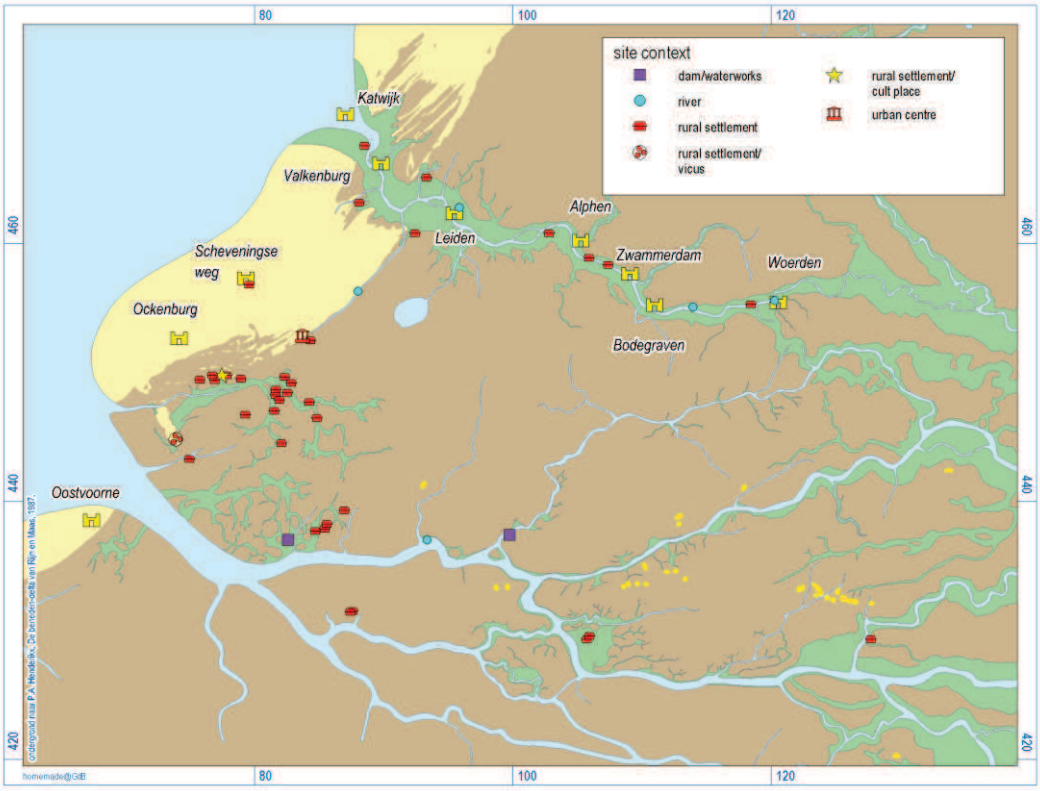


Fig 2.3: General settlement pattern (simplified) in the Cananefatian area

The map above indicates in which settlements military equipment and horse gear was found in the Cananefatian area. This map does not include all settlements, but gives an indication of the settlement pattern in the Cananefatian area; along the banks of the Meuse, the coast and along the creeks of the Gantel system.

Rural settlements

The majority of sites in the research area are rural settlements. In general, settlements are very small (+/- two contemporary houses) and show little variation in size and complexity. Only one known rural settlement exceeds three contemporary houses (Rijswijk de Bult, Goossens 2008, 162). This is also one of the few locations on the Cananefatian countryside where a house was built in stone. A very dense, often linear, settlement patterns can be observed on the river and raised creek banks in the Western part of the area.

As mentioned earlier, the peat marshes between the Rhine and Meuse in the central and Eastern part of the research area seem to have been almost uninhabited. Of the few recorded Roman finds from that area, most are dubious at best (Kok 2004, 58-59). In 2004, at the Gouderaksedijk, the first and still only *in context* finds from the Roman period were uncovered and consisted of a few sherds of pottery and a single wooden pole (Comment by M. Groenendijk, municipal archaeological service of Gouda). Although the *civitas Cananefatium* can by no means be considered as a villa landscape, proto-villas have been found at the rural sites of Rijswijk De Bult (Bloemers 1978) and Poeldijk Westhof (Blom and Van der Feijst 2009), and are suspected at a few more locations.

There are no up to date studies about the total number of rural settlements in the area. Van der Feijst (2006) analyzed all Archis-2 (a Dutch archaeological database) reports and counted a number of 339 known Roman period sites in the province of Zuid Holland[5], of which 177 were (at least partly) excavated. Of these 177 excavated sites, 137 could be qualified as rural settlements (Van der Feijst 2006, 14-16).

Bloemers, however, took a different approach and started with the settlement density in the region. Based on the extensively researched areas, he concluded that one could expect an absolute maximum of two settlements/farmsteads per square kilometer at approximately 700m intervals. Excavations have shown that those intervals at the more favorable locations on creek banks could be significantly smaller due to the linear settlement pattern (Bloemers 1978, 104). However, at the less favorable locations the occupation density would drop significantly.

[5] Van der Feijst looked at the entire province of Zuid-Holland and therefore his research area is slightly larger than the one employed here.

According to Bloemers, the maximum amount of farmsteads is 2000 in the 2nd century, which leads to a rough estimate of 700-1000 settlements (at peak).

Urban centres

The only larger civilian site in the region is the *civitas* capital *Forum Hadriani* (Municipium Aelium Cananefatium) in present day Voorburg. It was situated directly at the edge of the beach barrier and peat area, along the *Fossa Corbulonis*. The settlement probably became the *civitas* capital when the military district Germania was organized into two Roman provinces between 80 and 90 AD (Germania Inferior and Superior). Around 121-122, the city was given market rights by Emperor Hadrian, when he visited the Western parts of the Netherlands (Buijtendorp 2006, 80). Hardly anything is known about the earliest phases of the settlement (before 70 AD). However, the little available evidence suggests the presence of a rural settlement on the location.

Cemeteries

Roman period rural cemeteries (six) in the research area are rare, generally small and in some cases badly preserved or only partially excavated (Van Londen et.al 2008, 32). None of the known rural cemeteries like Katwijk-Zanderij (Van der Velde 2008), Naaldwijk-Tiendweg (Bult et. al. 1988), Rotterdam-Hoogstraat (Carmiggelt 1997), Rotterdam-Kanderlaarsweg (Meirsman and Moree 2004), Poortugaal (Goossens 1997), exceeds 70 graves. Surprising is the apparent absence of cemeteries around the urban centre of Forum Hadriani.

Cult places

Like cemeteries cult places are a rare feature in the research area. The few known examples are simple square ditched enclosures, often incorporated within a rural settlement. They are often very hard to identify as they are only set apart from the rest of the settlement by some exceptional finds (e.g. bronze vessels) and/or slightly different lay out of the ditches. In general, they are largely similar to the rural examples from the Dutch Eastern River Area (Van Zoolingen 2010b, 162). (Possible) cult places have been identified inside the settlements of Leidschendam-Leeuwenberg, Wateringse Veld and Den Haag Lozerlaan.

Larger cult places, comparable to the Gallo-Roman temple complexes of the Batavian area, appear to be missing on the Cananefatian countryside. There is, however, some evidence for

monumental temples from the urban centre of Forum Hadriani, however their location within the city and their appearance is largely hypothetical (Buijtendorp 2010, 568-589).

2.5 Chronological development and size of population

According to Tacitus, the Cananefatian area was not inhabited until the 'Cananefates' settled. Archaeological evidence on the other hand has shown this was not the case and there was (at least some) continuity from the Iron Age, as has been demonstrated in Vlaardingen (De Ridder 2000, 24). Furthermore, Fontijn has demonstrated in Maasland that the break in style and decoration between Late Iron Age and handmade local Roman period pottery is less abrupt than previously assumed (Fontijn 1995, 55-62). In Tacitus' defense, it should be noted that to Roman standards, the occupation of the area would not have appeared as significant. However, the transition from Late Iron Age to the Roman period in the research area is still poorly understood and the level of continuity is still a large issue. There seems to be a hiatus or decline in the habitation, between roughly 200 BC and 50 AD, but this is probably due to a large extent to the poor dating possibilities of Late Iron Age and handmade Roman period pottery (De Ridder 2000; Van Trierum 1986). Furthermore, erosion of the river banks around the tidal estuaries have in most areas seriously impaired the knowledge of the Late Iron Age occupation in the coastal area. As a result, there is hardly any evidence for settlements during the first half of the 1st century (before 40 AD) (Bloemers 1978, Van Londen 2006, 172).

Just before the middle of the 1st century, the amount of settlements in the region strongly increases. This process continues into the second half of the 2nd century, during which the area sees large scale land reorganization and subdivision into parcels (De Bruin 2005, 28, table 1; Van der Feijst 2006; Van Londen 2007). At the end of the 2nd century and early 3rd century, the number of settlements in the region dramatically declines (De Bruin 2005, table 1). Traditionally, this decline has been explained as a result of new transgressions (Duinkerke III). However, De Bruin links the decline in settlements also with internal unrest and raids by Germanic coastal tribes (De Bruin 2005, 31-32). The same decline, although less dramatically, can also be observed in other regions where no water logging took place. Recent developments in pottery studies also leave a third option, i.e. that the decline is enhanced by dating issues of 3rd century pottery (Verbal comment J. de Bruin).

The latest part of the 3rd and 4th century are hardly represented in the research area, although throughout the region incidental finds of 4th century coins have been found. Unfortunately, never in a proper context or with associated features (Baart 1990). So far, the only rural settlement which continues into the early middle ages is Koudekerke aan de Rijn (Van der Feijst 2006, 34;

Sarfatij 1980) on the North bank of the Rhine, hence just outside the research area. Within the research area, late 3rd or 4th century activity or occupation is not impossible for Naaldwijk Zuidweg (Van der Feijst et. al 2008; Goossens 2010), Katwijk Zanderij (Van der Velde 2008) and perhaps Voorburg Arentsburg (Buijtendorp 2010).

Based on the description above, the following figure shows the number of inhabited settlements over time in the Cananefatian area:

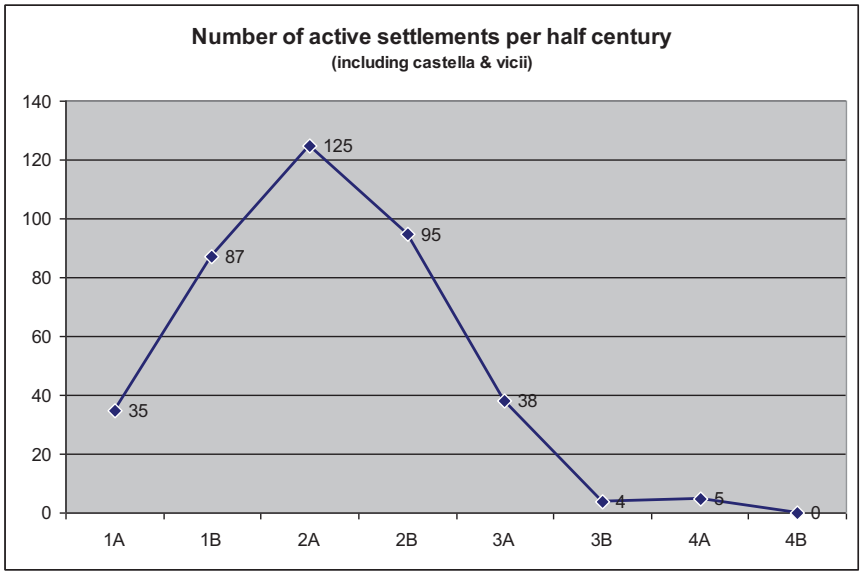


Fig 2. 4: Number of inhabited settlements per half century, based on excavated sites, including castella (after Van der Feijst 2006, 16).

However, the number of inhabited excavated settlements does not give an indication on the extent of population. So far, the only attempt to establish the size of the population in the current province of South Holland during the Roman period is from 1978 by Bloemers, who reached the conclusion that the size of the Cananefatian tribe must have been between 6.500 to 19.000 members (Bloemers 1978, 124-126). More recently, Kropff tried to reassess the status of Forum Hadriani and concludes that the Bloemers proposed population of over a 1.000 could be doubted (Kropff 2009). However, for his argumentation, Kropff focuses mainly on the production of grain (or lack thereof) in the area. In doing so, he ignores some of the other possibilities provided by the coastal wetlands (Rippon 2000, 39-54) and the capabilities of Roman authorities to ship significant amounts of food over large distances. Since the attempt of Bloemers, the amount of discovered and excavated sites has increased significantly, suggesting a population numbering towards the higher estimates of Bloemers (Van der Velde and Dijkstra 2008, 382).

In a recent PhD thesis about Forum Hadriani, the carrying capacity of the region is used to estimate the maximum size of the rural population between 15.000-17.500 (Buijtendorp 2010,

764). From the same calculation, Buijtendorp also estimates the maximum amount of farmsteads at 2.000. Bloemers took the opposite approach and started with the settlement density in the region, resulting as well in an estimated maximum of 2.000 farmsteads (see section 2.3). Vos, in his thesis about the Kromme-Rijn area (Vos 2009) also started with the estimated number of settlements for his demographic calculations. In table 2.1 the calculations of Vos for the Batavian region have been repeated with the above discussed data for the Cananefatian region.

.**Table 2.1: Population size for both the Batavian (after Vos 2009, 219) and the Cananefatian region during 2nd century.**

	civitas Batavorum	*civitas Cananefatium*
number of sites	1000-1500	800-1000
households per site	3-4	2
households	3000-6000	1600-2000
number of adults per household (2)	6000 – 12000	3200 – 4000
children per household (4,5-8)	18.000/24.000-32000/48000	7200/12800 -9000/16000
Total rural population	24000-60000	10400-20000

We start with a maximum of two thousand households (maximal one thousand rural settlements consisting of two houses) for the region as proposed by Bloemers. According to Vos, the birthrate could be as high as eight children per household. This results in a minimum of 7200 and a maximum of 16.000 children. Assuming two adults per household, the total rural population amounts to 10.400 – 20.000 for the Cananefatian region.

2.6 Military installations and military occupation in civitas Cananefatium.

Being situated in the frontier zone of the Roman empire meant there was a significant military presence in the research area. In order to make sense of the 'military' finds from rural sites, it is important to have a basic idea of the location of the military sites, the number and types of troops in the area.

For the earliest part of the 1st century AD (before ca.37- 40AD), there is no evidence for the existence of Roman fortresses in the research area. The *castella* at Velsen I and II (ca. 15-28/30

and 30-43/47 AD)[6] and Bunnik-Vechten (from 4/5 AD), outside the research area, remain the nearest examples with such an early date. As a consequence, it is impossible to make an estimate about the military presence for this period although it is often assumed that locally recruited auxiliary units were stationed in or near their region of origin (Alföldy 1969; see also section 2.6 for a discussion about Cananefatian units).

When the conquest of Germania was abandoned and the Rhine frontier was established by emperor Claudius around 40 AD (see table 2.1), a series of Roman forts were built along the Rhine . A total of six forts located on the Rhine are known to be located within the *civitas Cananefatium* (see fig. 2.2. and table 2.2). The c*astellum* of Woerden is situated on the hypothetical border of the *civitas* (see fig. 2.1) and therefore it is impossible to say whether it belongs to the *civitas Cananefatium* or *Batavorum*.

Table 2.2: the limes fortresses in the research area (Bechert and Willems 1995, Blom and Vos 2008, 11-12, Vos and De Hingh 2006).

Modern Place name	Name	Type fort	Date	Assumed occupation
Katwijk	Lugdunum	(presumed) *castellum*	?-4th cent.	• *Cohors Raetorum* CR (120-?)
Valkenburg	Praetorium Agrippinae	*castellum*	39-69' 70-240 250-400 (?).	• *Cohors III Gallorum equitata* (around 40.AD) • Half *ala* (ca 42-69) (*Ala I Cananefatium* (?))[7] • *Cohors IIII Thracum equitata PFD* (ca. 70-170)
Leiden-Roomburg	Matilo	*castellum*	50-275	• *Cohors I Lucensium Hispanorum PF (ca. 103-110 AD)* • *Cohors XV voluntarium civium Romanorum PF (around 200 AD)* • *Numerus exploratorum Batavorum (after 205 AD)*
Alphen a/d Rijn	Albaniana	*castellum*	Ca. 40– mid 3de cent.	• *Cohors IV Breucorum*
Zwammerdam	Nigrum Pullum	*castellum/* naval base	Ca. 47 –69 , 80-275	• *Cohors V[oluntariorum]* Probably parts of a *Cohors quinc. Equitata* (80-275)
Bodegraven		mini-*castellum*		• *Cohors II Asturnum (flavic period)*
Woerden	Laurium	*castellum*	Ca.41-69 80-260	• *Cohors XV voluntariorum* (CR PF) (Flavic – mid 2nd cent.) • *Cohors III Breucorum* (mid 2nd cent.-?)

[6] Although the dating of Velsen I and Velsen II is still disputed and both sites could have been in use simultaneously rather than consecutive, I have listed the more traditional dates (Van Enckevort 2009).

[7]The presence of the *Ala Cananefatium*/*Caninefas* is highly hypothetical as direct epigraphic evidence is lacking (De Hingh and Vos 2006, 107).

From the mid- 2nd century, attacks of coastal raiders made it necessary to build defenses along the coast. All the way up to Northern Belgium (mini)*castella* are found. From the *civitas Cananefatium* two such forts are known, both situated in The Hague: the mini-*castellum* of Ockenburgh (ca. 150-175) and the probable *castellum* from the Scheveningseweg (ca. 170 -200) (Waasdorp 1999, 172-174, Goddijn 2007). The late 2nd century developments at the site of Naaldwijk Zuidweg could also be part of this coastal defense system (see chapter 4 for a discussion about this site). Directly South of the research area on the Southern bank of the Meuse estuary, now in the middle of the Brielse Lake at Oostvoorne (see fig 2.2), the presence of a fortress is suspected based on old reports of stone building material and a few dredging finds (Bogaers 1974, 70-78).

Apart from the known fortresses, the amount of building material with stamps of the *C(lassis) (G)ermanica P(ia) (F)idelis,* (the Roman fleet of Germania) found throughout the area, is an indication that in the Meuse estuary naval installations/stations could be present as well.[8] However, the discussion still continues about their exact nature and location. For example, a harbor is suspected at Naaldwijk Zuidweg, where the *fossa corbulonis* most likely let out in the Meuse. In addition to building material, an inscribed bronze plate bearing a reference to the Classis was found at that location. Unfortunately, the large scale excavations have not yet yielded conclusive evidence that the site is indeed a navel/military base (see section 4.5.5 for discussion, or Van der Feijst 2008; Goossens 2010).

No legions were permanently stationed in the *civitas Cananefatium*. However, it can be assumed that detachments (*vexilatio*) of either *Legio X Gemina* from Nijmegen or the other legions who were part of the *Exercitus Germania Inferior* were from time to time present in the area.[9] Building material with Legion stamps is known from multiple sites like Zwammerdam (*Legio XXX Ulpia Victrix,* Haalebos, J.K., 1977), Alphen aan den Rijn (*Legio I* and *Legio XXX*, Haalebos 2000, 121-124) as well as Forum Hadriani (*Legio XXX,* Bink and Franzen 2009, 228).

Until the Batavian revolt of 69 AD, it is often assumed that most *auxilia* units, including the Cananefatian ones, served in their own region (Alföldy 1968). As of yet, no pre-Flavian inscriptions of Cananefatian *auxilia* units are known from the Cananefatian area. The only indication for Cananefatian troops operating in the area comes from the above mentioned writings of Tacitus. However, based on the lack of evidence from the entire Dutch region during this period, De Weerd argues that the pre-Flavian limes zone was not permanently guarded, and

[8] CGPF stamps are found at Naaldwijk, Maasland, Poeldijk, Den Haag Wateringseveld, De Lier Leehove. In some cases this concerns secondary used material and this can probably serve as an indication for the temporary nature of Naval activity/sites.

[9] The following legions were at certain times part of the EXGERINF: during the 1st. century: Legio I Minerva, VI Victrix, X Gemina, XXII Primigenia. From the 2nd Century: Legio I Minerva and XXX Ulpia Victrix (Haalebos 2000, 121-123).

that Roman troops only occupied the Rhine *castella* when the situation required it (De Weerd 2006, 21-22). As a consequence, it is hard to assess the amount of troops (Cananefatian or otherwise) stationed in the research area during the 1st century.

Estimates for the military occupation of *Germania Inferior* during the 1st century AD range between 35.000 and 42.000. During the 2nd century this number decreased, however still numbering above 20.000 (Kunow 1987, fig. 32). Bloemers also made an attempt to estimate the military presence in the Cananefatian area (Bloemers 1978, 124-126). Based on the number of fortresses and their estimated occupation, he reached a number between 2400-2880. In his calculations, he did not take into account the possible fortress around the Scheveningseweg in The Hague, because the site was not excavated or discovered yet. Although he did not include every fortress known today, the calculations of Bloemers could still present a too high number of troops, as he calculated with full strength units and took a complete unit for each fortress. From other areas, it is known that *auxilia* units manning multiple fortresses at the same time (Kandler and Vetters 1986). Another approach, dividing the total estimate for the province by the length of the border (ca. 320km), give a number of around 65 soldiers per kilometer for the beginning of the 2nd century. For the *civitas Cananefatium* (ca. 30 km.) that would mean a number of around 2000 soldiers. Buijtendorp argues that the occupation in the coastal area may have been denser as a result of the need to guard the coast as well as the Rhine *limes* and reaches an average of 3000 (Buijtendorp 2010, 968-970).

The *limes* defense collapsed after the mid 3rd century. There are some indications that some *castella*, like Katwijk and Valkenburg, again saw some occupation at the beginning of the 4th century. Although this period is poorly researched, this re-occupation seems short lived, and may not have been very significant (De Hingh and Vos 2005, 112).

2.7 Recruitment and the Cananefatian auxilia units

From both the literary and archaeological sources, two "Cananefatian" *auxilia* units are known; the *Ala Canninefas/Ala I Canninefatium* and the *Cohors I Canninefatium*.[10] Compared to other tribes from *Germania Inferior*, this is in absolute numbers not an exceptional high number (table 2.2). However, when taking into account the size of the region (see fig. 2.1) and population, the Cananefates are well represented (Van Driel-Murray 2008, fig 1). Of the smaller tribes, they are the only ones supplying multiple units. Furthermore, epigraphic evidence demonstrates that individual Cananefates did feature in other military units. Below the available evidence will be discussed, and what it means for the level of recruitment in the c*ivitas Cananefatium.*

[10] In Roman inscriptions various spellings occur.

Table 2.3: Ethnic auxilia units (after Roymans 1996, table 1)

Tribe	*# Cohors*	*# Ala*
Cananefates	1	1
Batavi	8	1
Frisiavones	1	
Menapii	1	
Tungri	4	1
Sugambri/Cugerni	4	
(Baetasii)	1	
Ubii	2	
(Sunuci)	1	
Nervii	5	
Treveri		1(2)
Morini	1	

Ala Canninefas/Ala I Cannanefatium

The first mention of a Cananefatian cavalry unit is the *Ala Canninefas,* which according to Tacitus was deployed during the Frisian revolt of 28 AD (Tacitus, *Annales* 4:37). Although this is the only mention of this unit, and hence it is not known whether it was a regular *auxilia* unit, it is generally regarded as the direct predecessor of the *Ala I Cannanefatium,* which is well attested after 70 AD (Alföldy 1969). Roymans however, has some doubts about this, as the *Ala Caninefas*/*Ala I Cannanefatium* is not mentioned anywhere in Tacitus' detailed account of the Batavian revolt (Tacitus, *Historiae*, book 4). Considering most other known *auxilia* units from Germania Inferior and Belgica do feature in this account, he takes it as an indication that the unit did not exists around AD 69, especially since the Cananefates were at the heart of the revolt and one would expect the involvement of the *ala*. Thus according to Roymans, the *Ala Canninefas* must have been a irregular and temporary unit and must have been disbanded sometime between the end of the Frisian revolt and the year 69 (Roymans 2004, 206). Alternatively, one could argue that the unit was simply not in the area at the time. (De Weerd 2006)

After the Batavian revolt, there is more evidence for a Cananefatian *ala,* now known as *Ala I Cannanefatium.* Like the Batavian *auxilia* units, it served outside of its own tribal region. It first was stationed in Germania Superior, as attested by a number of military diplomas dating to 74, 76, 82 and 90 AD (Pferdehirt 2004, appendix.1). The unit probably took part in the Dacian conquest (101-106) and from around 116 AD the unit is stationed at Gerulata in *Pannonia Superior*, where it is attested to at least 154 (Stein 1932, 125-126). During the 2nd century, the Pannonian border was far from peaceful. Raids by Quadi and Sarmatians, between 136-138 AD were followed by the Marcomannic wars (AD 166-180) during the reign of Marcus Aurelius, and almost every fortress on the Pannonian *limes*, including the one at Gerulata, was either destroyed or badly damaged (Soproni 1980, 220-221). A number of *auxilia* units perished during these wars. The *Ala I Cananefatium*, however, can still be followed to the early 3rd century as

attested by an inscription from Northern Italy which names the Carthagian *Marcus Helvius Clemens* as the *praefectus* of the unit (CIL XI 2699).

During the reign of Antoninus Pius, at least part of, the *Ala I Canninefatium* was detached to the field army in North Africa (*Mauretania Caesariensis*), as indicated by a tombstone found in Tipasa. On this tombstone, a member of the Ala I Cannanefatium, named Adiutor, is shown wielding the *contos* (lance) in the 'sarmatian' two handed style (Schleiermacher 1984, 170). This image raises a few questions. The *Ala I Canninefatium* is nowhere indicated as *Contarii* (lance armed) and is therefore assumed to have been armed with spear and shield and not with lances.[11]. Furthermore, the lance was not a weapon traditionally used by horse troops originating from Germania, where warriors on horseback are generally considered to have carried a spear and shield. Unfortunately, the gravestone does not mention the soldiers' ethnic background, so it's unknown whether he was actually an ethnic Cananefate or not. Bogaers argues that the name *Adiutor* is common in Germania Inferior and could therefore very well have been a Cananefate (Bogaers 1957, 92).

The only gravestone, which mentions the actual ethnicity of a soldier from the unit, is a gravestone of a Treveri found at Gerulata dating to the mid 2nd century (fig. 2.5, CIL III 4391). It can be argued that the lack of ethnic information of the deceased on gravestones can indicate that the ethnicity of the deceased is the same as the ethnic origin of the unit, and that only 'foreign' soldiers had the need to express their place of origin on gravestones. However, the presence of a Treveri in the unit and the probable change in weaponry (and assumed change in combat style) are indications that the *Ala I Cannanefatium* has lost its homogenic ethnic composition in the course of the 2nd century.

[11] A fragment of a gravestone depicting a lance armed cavalryman has been found at Gerulata. However the inscription has not survived, and thus it is not sure whether the buried soldier was part of the Ala I Cananefatium (Lupa 3866; http://www.ubi-erat-lupa.org).

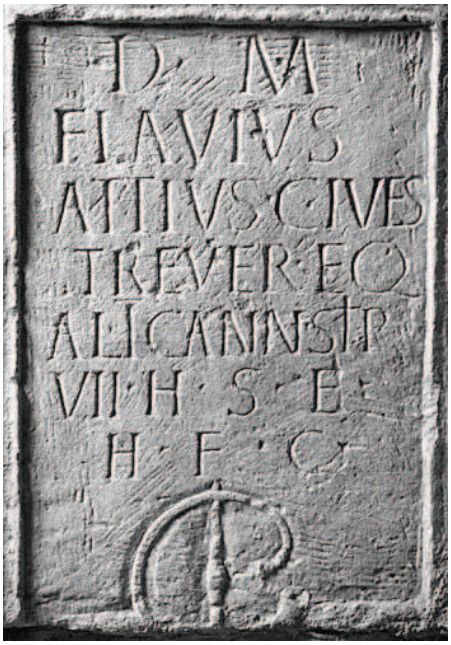


Fig 2.5: Grave Stone of Flavius Attius, found at Gerulata, Rusovce
(CIL III 4391, photo: Xántus János Múzeum Györ)

Cohors I Canninefatium

Evidence for the *Cohors I Canninefatium* is rather scarce; archaeologically the unit is only visible from a 2nd century inscription and building material from Dacia (Haalebos 1999). For the pre-Flavian period, we again have to rely on Tacitus who mentions Batavian and Cananefatian cohorts in his *Historiae*. Unfortunately, he never specifies whether this concerns one or more Cananefatian units. However, after the Batavian revolt there is only evidence for one Cananefatian cohort, and therefore it is generally assumed that this must also have been the case for the preceding period (Alföldy 1969).

However, there are some indications that Cananefatian troops may have been part of the eight known Batavian cohorts of the 1st century. As mentioned above, Tacitus writes about the *Batavorum et Canninefatium cohors* that accompanied the army of Vitellius to Italy in 69, while further in the same text he only mentions Batavian cohorts (Roymans, 2004, 207; Tacitus, Hist. IV 19). Roymans takes this as an indication that the Cananefatian cohort was part of the Batavian ones (8 in total) and therefore that the recruitment area for the Batavian cohorts was much larger than the *civitas Batavorum* itself and must have included the Cananefatian and possibly other tribal areas. This also solves some of the demographic issues for the Batavian region, as the Batavians during this period seemed to be taxed in manpower beyond their capacity (Roymans 2004, 206).

Alföldy on the other hand reaches a different conclusion from exactly the same text; he interprets it as being eight Batavian cohorts plus one separate Cananefatian one (Alföldy, 1969, 51). Bloemers also discusses the same passage and he considers it possible proof for the existence of a separate Cananefatian cohort for the pre-Flavian period (Bloemers 1978, 82). One would assume a historian describing the events some forty years later to rely largely on official documents and therefore must have been talking about an official Cananefatian Cohort. For now, I will assume the unit did exist during the pre-Flavian period and will come back to this issue in the concluding chapter 6.

The evidence from the Flavian period is slightly more extensive but also leaves questions. The only evidence that can be dated is a diploma of the army of Dacia Porolissensis from the year 164. The cohort most likely is a *cohors quingenaria* (500 men) as the diploma mentions *alae*, *cohors milliariae* and *cohors quingenaria* separately (Alföldy, 1969, 51: Diploma CIL XVI 185). Alföldy takes this as evidence that for the pre-Flavian period, there could only have been one Cananefatian cohort. The unit cannot be followed in such great detail as the *ala*, but they seem to have been stationed at the fortress of Tihau in *Dacia Porolissensis*, where a large amount of building material bearing the unit's stamp have been found (Benes, 1978, 117; Haalebos 1999, 197-210). There is no evidence available about the date and duration of their occupation of the fortress in Tihau. However, Haalebos argues that most 'germanic' units stationed in Dacia during the 2nd century (Haalebos 1999, 202) took part in the original conquest of Dacia (101-102 and 105 106 AD). Therefore, it can be assumed that the *Cohors I Canninefatium* took part in this Dacia conquest as well.

Other units.

Although there are no other units bearing the title "Cananefatian", Cananefates do feature in various other Roman military units. The most famous of these is the *Equites Singularis Augusti*, the horse guards of the Roman Emperor, raised by Emperor Trajan. Like in its predecessor, the *Germani Corporis Custodes,* Batavians and Ubii still made up the majority of guardsmen, however during the 2nd century AD small numbers of Cananefates, Frisiavones, and soldiers from other Germanic tribes are included as well as attested by various gravestones (Speidel 1994a & b).

D(is) M(anibus). T(ito) Aur(elio) Felici, eq(uiti) sing(ulari) Aug(usti),
tur(mae) Ulpi Victoris, nat(ione) Canonefas; v(ixit) a(nnis) XXVIII, mil(itavit)
3 a(nnis) X. T(itus) Aur(elius) Verax vix. (vexillarius) amico optimo f (aciendum)
c(uravit). (CIL VI 3203)

A number of Cananefates feature in other 'ethnic' units. In 1970, a military diploma was found in Poeldijk. It details of a Cananefatian soldier who served in an Austrian cavalry unit (*Ala I Noricorum CR*) which was stationed in Germania Inferior from 70 AD onwards (Bogaers, 1979, 357-372). A gravestone found in Cologne (CIL XIII 8316) details about a *A(H)emilius Lasci(us), ci(vis) Cannan(efas),* who served in the *Cohors I Latabi(corum).* A few Cananefates probably also served in the legions as is demonstrated by a centurion of Legio XXX (Byvanck 1943 II 513, Byvanck Excerpta II 868).

Fig 2.6: Grave Stone of (H)emilius Lasci(us) found in Cologne (CIL XIII 8316, Museum RGM Köln).

Total recruitment in the civitas Cananefatium.

At full strength, a situation which appears to have been a rare occurrence in the Roman army (Warry 1990), the two Cananefatian units amounted for a total of around a thousand soldiers. There are no indications that the Cananefatian units had their own tribal leaders as officers during the pre-Flavian period. Therefore, it may be safe to assume that those 'Roman' or 'foreign' officers originally brought a few 'foreign' troops or non-commissioned officers with them to form the nucleus of the newly raised units (and perhaps for personal safety as well). For the pre-Flavian period, there is no other evidence available than the two comments from Tacitus and we have to assume that the amount of 'ethnic' Cananefatian soldiers serving in the Roman army cannot have exceeded a thousand and could have been significantly less.

Despite the increased epigraphic evidence as described above, it is much harder to assess the amount of Cananefates serving in the Roman army after the Batavian revolt as the ethnic makeup of units is largely abandoned. However, with evidence of men serving in other units, and at least a few indications that there were still Cananefates serving in the named units, the total number of 'Cananefates' serving in the Roman army must have been greater than in the pre-Flavian period. Although highly speculative a number of around a thousand seems acceptable.

Considering a soldiers' supposed service period of 25 years, not taking into account any casualties, at least 40 new recruits were necessary every year to maintain thousand troops. In times of war, this number may increase dramatically. However, it was quite possible for a Roman soldier to fulfill his tour of duty without seeing battle. The few sources available give the impression that casualty rates in ancient warfare seem to be very unbalanced between victor and defeated, indicating that most casualties occurred after one side has broken and fled (Scheidel 2007, 427). The generally much better armored and disciplined Roman army would, apart from the major disasters, sustain relatively light casualties and we can assume that battle was not the main cause of death for the Roman soldier (Scheidel 2007).

Vos however, argues that the role of the Batavians, as an elite fighting force would mean they would see more battle and would sustain higher casualties than other units in the Roman army (Vos 2009, 217). They were more often attached to the active field armies and Tacitus account of the battle at *Mons Graupius* in Northern Scotland shows they were used to spearhead attacks in order to prevent Roman casualties (Tacitus, *Agricola* 35-36). Although this assumed increased casualty rate would mean a higher pressure on the recruitment pool it would also mean less soldiers would make it to their pensions. The discussion becomes important to see whether Roymans is right about the recruitment area for the Batavian units during the 1st century AD. If it did indeed incorporate the other tribal areas (including that of the Cananefates), it can be argued that the same high(er) casualty rate would apply as well, resulting in a higher number of recruitment in times of war.

Nevertheless, instead of battle losses, infectious disease was probably the number one cause of death for a soldier in the Roman army. Scheidel has suggested that the death rate caused by disease in the Roman period may be comparable to present day death rates in rural communities in developing countries, indicating that around 50% of all recruits will die of illness during their service (Scheidel 2007, 427). Reports written on pottery sherds (*ostraca*) from the fortress of the Roman fortress at Bu Njem in Libya, give an impression about soldiers health. Of the 62 daily reports, 41 deal with health and illness. Similar figures are available from Vindolanda where out of the 296 present men of the first cohort of Tungrians, fifteen were sick (*aegri*), six were wounded (*volnerati*) and ten were suffering from inflammation of the eyes (*lippientes*) (Bowman 1994, 16).

When after the Batavian revolt *auxilia* units were stationed abroad, it is generally accepted that they started to recruit locally in the area where they were stationed and consequently greatly eroding the ethnic nature of *auxilia* units (Carroll 2001, 105). The varied personnel make up of *auxilia* units can be illustrated by an inscription on a piece of lead from the military site at Bodegraven. On it, 22 names appear which can be linked to almost every corner of the empire (Haalebos 2007, 114-122).

Although there is not much discussion anymore amongst archeological scholars about recruiting locally and the ethnic diversity of *auxilia* units, it still generates some problems. So far, nobody properly defined how local this 'local recruiting' exactly was. With so many troops concentrated on the frontier, this "local" recruitment would have taken an extremely heavy toll on the border provinces or civitates. The research area might have been populous enough to form two ethnic units, but I think it is very unlikely they could support all the "foreign" units stationed in their *civitas*. Therefore, the term "local" recruitment should not be taken too literally.

A recent article by Saddington shows that more aspects play a role in recruiting (Saddington 2009, 83-89). He argues that recruits were grouped and organized per province, and generally not by tribal affiliation. They could be sent abroad and then distributed amongst the units in those provinces. Skill, or weapon specialization, also played a role, as is demonstrated by a single Cretan soldier in *Coh. I Sagittariorum*, a unit of Syrian archers stationed in Germania Superior. Therefore, specialist units (like archers, slingers etc.) were more likely to draw recruits from their original areas and retain a more ethnic, homogenous character. In ancient times, it was not uncommon to name certain styles of fighting after the region it originated from. For example, the word Cretan could refer to any archer fighting in the 'Cretan' style rather than to an ethnic Cretan (Warry 1990).

Although ethnic recruitment in a unit's tribal home area seems to have been abandoned, an alternative scenario has recently been presented by Van Driel-Murray. The inhabitants of the *vici* next to the army camps are partly made up of the relatives of soldiers. However, based on certain types of female shoes and brooches originating from Northern Germania she proposes the theory that soldiers could have been married prior to joining the Roman army and brought their family along to their postings. This could result in ethnic enclaves near the army camps that could be used as a recruitment pool (Van Driel-Murray 2008).

Number of Veterans.

Assuming 5 AD as the date of the subduing of the *Cananefates* by Tiberius is correct, the Cananefatian units are not likely to have been raised before that date. Taking into account a

military service of 25 years, the first veterans could only have appeared after 30 AD at the earliest in the Cananefatian region. And it would have taken another few decades before they would appear in serious, archaeologically visible, numbers.

Both Bloemers (1978) and Willems (1984) have introduced models to calculate the 'military' carrying capacity of a region. Vos also used these models to calculate the situation for the Batavian area (Vos 2009, 217-219). However, there is a far greater certainty about the number of Batavians in the Roman army than there is for the Cananefatians (see section above). If we continue the demographic calculations of Vos, started above in table 2.2. and add the data for the Cananefatian region as discussed above, we should be able to get an idea about the recruitment pressure and number of veterans in the region (see table 2.4).

Table 2.4: Population size versus potential number of recruits for both the Batavian (after Vos 2009, 219) and the Cananefatian region.

	civitas Batavorum	***civitas Cananefatium***
number of sites	1000-1500	700-1000
households per site	3-4	2
households	3000-6000	1400-2000
number of adults per household (2)	6000 – 12000	2800 – 4000
children per household (4,5-8)	18.000/24000-32000/48000	6300/11200 -9000/16000
potential pool of young men	9000-24000	3150-8000
adult men	3000-6000	1400-2000
Total potential of men	12000-30000	4550-10000
men of fighting age (=1,2-2 per household)	3600 -12000	1680-4000
Total rural population	24000-60000	9240-20000

Vos argues that up to two men per household could serve in the Roman army simultaneously. His argumentation is based on epigraphic examples of multiple Batavians from the same family, like a father and son, or two brothers enlisted in the same unit (Vos 2009, 219). Therefore, if we look at the total potential of men (of all ages) in the regions (= one adult plus the number of children per household divided by two, assuming a boy girl ratio of 1-1), we come to a total of ca. 5200-10.000 for the Cananefatian region. Taking the potential number of soldiers per household (1.2-2) this results in a recruitment pool of 1920-4000 in the Cananefatian region.

As discussed above, it can be assumed that roughly a thousand Cananefatians served in the Roman army, which is an acceptable number for the Flavian period onwards. In the table above (table 2.4) it is established that this number falls well within the maximum capacity of the region. If we compare both regions it becomes apparent immediately that the Batavian region seems taxed more heavily. While the Batavians really need to recruit more than 1,2 persons per household to reach the assumed number of 5000 soldiers, the Cananefatians have to supply less than one person per household to reach a 1000.

If we take the survival rate of 50% after 25 years, as proposed by Scheidel, roughly 50 new recruits and 20 veterans annually can be assumed. For the pre-Flavian period, due to the possible lower amount of Cananefates in the Roman army, this number could possibly be half this amount. At this rate, it would have taken between 40-50 years before each household had one member in the army and even longer before veterans are expected to become widespread over the villages in the region.

Like already mentioned above, the first batch of veterans should not be expected before 30 AD and therefore only after 70 AD should we expect them in any serious numbers. Although, it is not known how active the Cananefatian auxiliary unit has participated in battles, at least one battle in the pre-Flavian period is known where they suffered a defeat. Because Tacitus still considers Cananefates as brave as the Batavians, perhaps we can take that as an indication that they sustained heavy losses before retreating. If this is true, it might have delayed the return of veterans even further.

3. Roman military equipment

In the following chapter, a short overview will be presented of the typology of Roman military equipment used for and encountered in this research.[12] For comparative reasons, the typology used by Nicolay (see appendix 2) will be followed (Nicolay 2007, 13-63). However, where necessary it will be updated with developments and new discoveries since 2005. Below a summary of the typology of Nicolay is presented, after which I will discuss some of the critique on the typology of Nicolay and recent developments in the field of Roman military equipment studies. However, it is not the aim of this work to add, change or challenge the existing typologies, as the data set does not contain enough closed context finds to warrant such ambitions.

3.1 The typology of Nicolay.

In his research, Nicolay grouped all equipment in four, for the Dutch region relevant periods, although these periods do not always coincide exactly with the dating for all typological developments. Also, the dating of Roman military equipment is still a dynamic and much debated subject (see section 3.2). The boundaries of those typological developments are also not as strict as sometimes is implied in the literature. These periods will be described in chronological order below, in which typological developments for Roman military equipment for each period will be briefly discussed.

Period 1: (ca. 50-12 BC) from *Caesar's conquest of northern Gaul to Augustus.*

The auxiliary units employed during the Republican period were irregular troops, probably of temporary nature, and would have been armed with their own local non standardized equipment. Legionary equipment was standardized, but the legions were still, although Caesar made some exceptions,[13] largely made up of Roman citizens. Hence, as auxiliary units were not officially part of the legions, legionary equipment would at this time not have been available to the *auxilia* units drafted on the lower Rhine. Throughout the Roman world, the evidence for this period is rather scarce and for certain item categories not much is known.

[12] For a more elaborate description see Nicolay 2007 chapter 2; Bishop and Coulston 2006.
[13] *Legio V Alaudae*, raised by Caesar around 52 BC was made up entirely of recruits from Gaul who did not had citizenship yet.

Helmets would include types of Buggenum (Type A) for Legionary soldiers and Port-type (Type B) for the *auxilia*.[14] Armor could consist of mail (A) and scale (B), but both types are common throughout the entire Roman period, without many typological developments (Nicolay2007, 14).

The sword employed by the legions in this early period is the so called *Gladius Hispaniensis* (A1), which is derived from a Spanish example. Like the *Gladius Hispaniensis* the republican dagger (type A) also was of Spanish origin. It features a waisted blade with big midrib and a long point. The *pilum*, a heavy throwing spear, is in use by both legionary and auxiliary troops until the end of the 3rd century. Two types are distinguished, depending on how the iron shank was mounted on the wooden shaft. The first (type A) features a wide tongue which is inserted into the wooden shaft and secured with rivets. The second (type B) has a round or square socket in which the wooden shaft is inserted (Nicolay 2007, 34).

Spears and lances were primarily used by the auxilia and cavalry. Their shape does not change much during the Roman period and are therefore not specifically datable enough to assign them to different periods (Nicolay 2007, 31). The Romans made a distinction between (throwing) spears and lances (Tomlin 1999, 135-137). However, archaeologically this distinction is not easy to make. The most common spear or lance point has a leaf-shaped blade (type A), which either has the widest point at the middle (type A1) or at the base of the blade (type A2). Not much is known about the form of republican belts. The little evidence available, mainly from Spain, suggests that a belt with belt plates was already in use, but must have been more exception than rule. The same applies to republican horse gear of which hardly anything is known (Bishop and Coulston 2006, 67, 69).

Period 2: (12 BC-AD 120) from *the reorganization of the army under Augustus to Hadrian.*

The beginning of this period sees a large scale reorganization and formalizing of the *auxilia* forces, and consequently far reaching changes in military equipment and more standardized Roman equipment became available to the *auxilia* troopers.

In this period, the plate armor (Type C*, lorica segmentata*) was introduced. The strict division between legionary and *auxilia* equipment, with the former wearing plate armor and the latter mail is being challenged by new archaeological data. Plate armor fittings are found with such a frequency in auxiliary *castella* that it cannot be maintained that plate armor was exclusively worn by legionary soldiers. The introduction of this type of armor took place at the beginning of the period as attested by finds from the site of Kalkriese in Germany, which is likely the location of

[14] In especially the Anglo-American literature the Buggenum helmet is referred to as *Montefortino C* and the Port-type is referred to as the *Coolus* helmet.

the battle of the Teutoburg forest in 9 AD. This Kalkriese type plate armor (type C1) can be dated from early Augustan to the early Claudian period after which it is superseded by the Corbridge type (C2) (Nicolay 2007, 21).

Shields can be divided into two types, curved rectangular for the Legionary (type A) and flat (or very lightly curved) round-oval flat for the auxiliary units (type B). For both types the rim was reinforced with a bronze binding. The umbo for legionary shields was round with a square edge which followed the curve of the shield (Nicolay 2007, 22-23).

Helmets from the previous period, the *Buggenum* and *Port types* are replaced by helmets of the *Hagenau* (C) and *Weisenau* (D1) types. The *Hagenau* helmet worn by the legions, was made of bronze and was a further development of Type A, with a larger neck guard, added brow guard and crest knob. The Weisenau helmet was initially primarily worn by the *auxilia* and was made predominately of iron. [15] From 70 AD, later variants of the Weisenau helmets also replace the *Hagenau* type worn by the legions. In later variants from of the Weisenau helmet (D2) the large neck guard slopes down (Nicolay 2007, 14-15).

The *Gladius Hispaniensi*s is replaced by a number of different models. The *Mainz* type (A2) with its typical long pointed tip, was in use during the Claudian-Neronian period.[16] From the mid-1st century, it slowly is replaced by the *Pompeii* type (A3), which has a very short triangular tip. Apart from these 'official' Roman swords, a forth type (A4) that seems to be derived from the *gladius* but also features distinct non-Roman features (Nicolay 2007, 25-27).

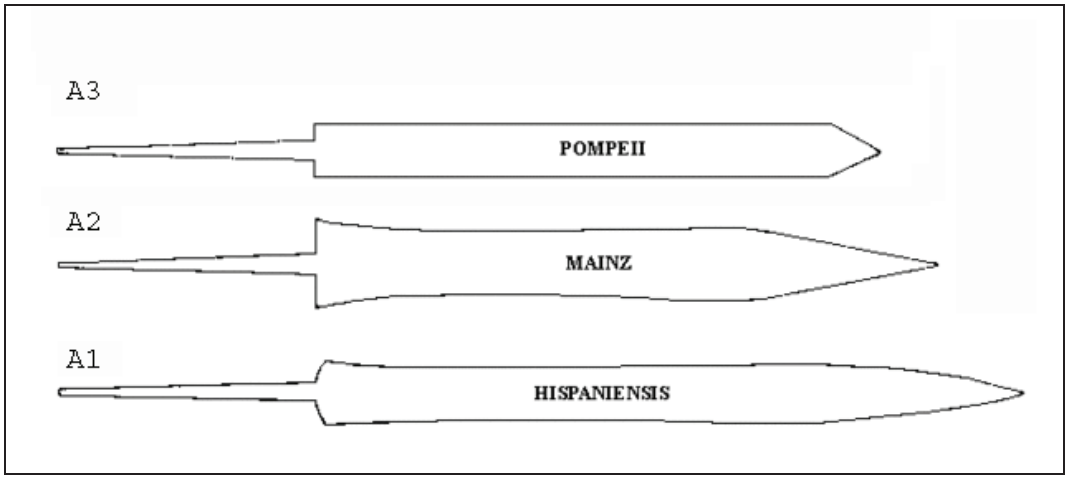


Fig. 3.1: Shapes of 1st century sword blades

[15] In other, mainly the Anglo-American literature, the Weisenau helmet is still often called the Imperial-Gallic or Imperial-Italic helmet for which an elaborate typology exists (Robinson 1975). Although the chronological and functional development recognized by Robinson has since then been proven incorrect, the use of the names is still widespread.

[16] Some authors recognize another type of sword, the Fulham type. However, others regard it as a small variation within the Mainz group.

The cavalry used a longer sword, the *spatha* (type B). Native long swords were probably used up to the Augustan period, but also a clear Roman type developed during the 1st century. The so called Newstead type (B1) sword was a combination of the Roman Pompeii type *gladius* and the late La Tène sword. For this early *spatha* nothing is known about the design of the scabbard or how it was suspended (Nicolay 2007, 26).

Daggers used in period 2 (Type B) have short waisted blades with a pointed tip and a pronounced midrib. They can be divided into two subtypes, the Mainz (B1) and the Vindonissa type daggers (type B2). The first has a broad blade with a simple midrib, while the latter has a long tapering point and deep grooves along the midrib. The limited available chronological evidence suggests the Mainz type dates to the first half of the 1st century, while the Vindonissa type can be dated in the 2nd half (Bishop and Coulston 2006, 83; Nicolay 2007, 29).

Evidence for the use of belts in this period is extensive. The belt consisted of a pelta/kidney shaped buckle that was hinged to a belt plate (Type A). Nicolay identifies five variants for the buckle and four variants of belt plates (Nicolay 2007, 34-35). Belt buckles of the type A, variants 1 and 2 are found from the late Augustan period and are replaced during the early Flavian period by types A variants 3-5 (Nicolay 2007, 34). A typical feature of the 1st century belt was the apron, worn by both Legionary as well as *auxilia* soldiers until the early 2nd century. Apron fittings are not easily recognized and are often confused with certain horse gear fittings, and therefore tend to be unrepresented in the archaeological record (Nicolay 2007, 38-39).

Horse gear becomes a prominent find category from the beginning of the 1st century and can be divided into saddle, bridle and girth fittings.[17] The Roman cavalry used a horned saddle constructed from wood, leather and bronze, which was in use during the whole Roman era. Three types of decorative saddle fittings have been recognized: openwork (type A), decorated with raised circles (B) and rectangular tinned and niello decorated (C) (Nicolay 2007, 47-48).

To control the horse either bits or hackamores were used. The latter, however, is not present in the data set and shall not be described. Bits come in four variants, of which only type A and D are present in the research area. The first is the ring bit (type A), which consisted of two jointed metal bars directly attached to the reigns via two large rings. It remained in use from the Late Iron Age through the entire Roman era. The last variant (type D) has only been in use during the first half of the 1st century and was of Roman origin. It featured a solid bar which was attached to as semicircular shank (cat. no.35.9, Nicolay 2007, 46-47).

[17] Decorative bridle mounts however are identical to girth fittings, therefore bridle here refers to the functional parts such as bits, hackamores and reign guides. The same applies to some saddle fittings and the fittings hanging from saddle straps. Therefore, these will also be grouped with the girth fittings.

The remaining horse gear fittings belong to the girth, which is the system of straps that keep the saddle in place. The functional parts consist of strap junctions, buckles and fasteners. However the great majority of girth fittings (strap mounts, looped strap mounts and pendants) are purely decorative. Of the functional gear only strap junctions have been attested in the research area. These junctions link the various leather straps which secure the saddle at the front and the back. Three types can be distinguished, of which two belong to period 2. The first is the ring junction (Type A), which consist of a simple solid bronze ring where three or four straps are attached to (fig. 3.2). The straps are attached to the ring with a bronze plate with a thick loop terminating on the reverse in a narrow backplate. Six variants of these junction fittings have been identified (see appendix 2), of which variants A1 and A3 occur from the Augustan period while the remaining appear in the Claudian period and remain in use until the early 2nd century (Nicolay 2007, 49).

The second is the *phalera* junction (type B), which is typical for the Claudio-Neronian period. It consists of a decorative disc with a depressed centre and raised perimeter (see fig. 3.2). At the reverse are a number of fixing bars or round loops through which the straps run through or are attached at in a similar manner as the ring junction (Nicolay 2007, 49).

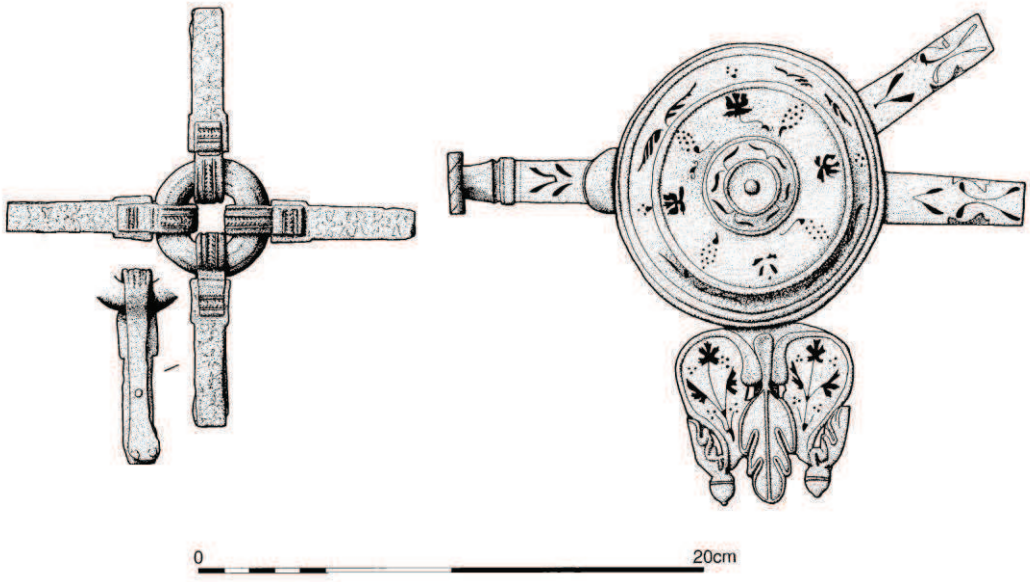


Fig. 3.2: Ring junction from Rheingönheim (left) and phalera junction from Magdalensberg (after Bishop and Coulston 2006, fig. 70).

The girth is usually highly decorated with various types of mounts. The period 2 strap mounts (Type A) are attached to the girth via a thin prong that goes through the leather and is secured at the back with a washer or a narrow back plate. Some variants (see appendix 2) of decorative

horse gear fittings appear in the Augustan or Tiberian period (A1-3, 8, 9, 13) , whilst the remaining appear in the Claudian/Neronian period (A 4-7, 10-12, 14-17) and all remain in use until the early/mid-2nd century. Due to the increased variety through time, the early examples become relatively rare in the latest part of the 1st century. Therefore, if the early examples make up a large part of the total period 2 horse gear, this could be taken as an indication for at least some items to date before 70 AD. Horse gear decorated with Niello is prevalent in the Claudian-Neronian period (Nicolay 2007, 52-53).

Pendants are a further decorative element of horse gear. They can be found on various locations on the girth, attached individually or suspended from phalera junctions or strap mounts. The period 2 pendants (type A) can be divided in ten variants (see appendix 2). Lunate and phallic pendants were already in use from the Augustan period onwards while the remainder appear during the late Augustan/Tiberian period (A1-3, 8) or Claudian-Neronian period (A4-7, 10)(Nicolay 2007, 55-56).

The last type of horse gear present in the research area are bells of which five different types can be distinguished (see appendix 2). Types A-C are in use from the Augustan or late Augustan/Tiberian period.

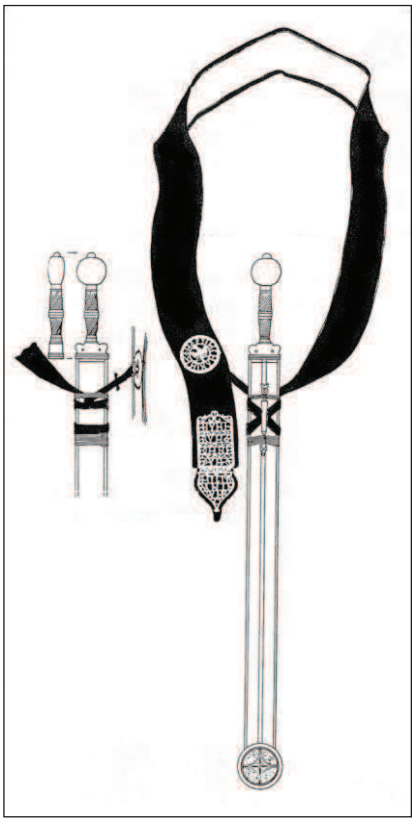
Period 3: (120-200/250 AD) investing in the frontier defenses under Hadrian, until the restoration of the Rhine limes under Diocletian.

In this period, quite a few changes occur in the Roman military equipment. Although some of these changes are already underway at the beginning of this period the majority took place around 140-150, which has prompted Bishop and Coulston to call these changes the Antonine Revolution (Bishop and Coulston 2006, 128). The majority of items cannot be dated with any more precision than mid 2nd to 3rd century. According to Nicolay the division between military and civilian is fading during this period, and especially swords, daggers, suspension and horse gear should not be regarded as pure military equipment (Nicolay 2007, 211-235).

Most developments can be seen as the result of simplifying production and reducing production costs. This is most apparent with the (gradual) supersession of the Corbridge plate armor (C2) with the easier to manufacture Newstead type (C3), which according to Nicolay took place in the early 2nd century. However, this date is challenged by new discoveries (see section 3.2 further down this chapter for discussion and implications). Small changes also took place in mail (and possibly scale) armor where the S-shaped mail fasteners are replaced by pairs of small, sometimes highly decorated breastplates.

During the 2nd century, the shields are predominately flat round or oval (type C) and the different units can no longer be recognized. Metal shield edgings are replaced by leather, although finds from the *castellum* at Iža in Slovakia (Bishop and Coulston 2006, 138) show that metal shield edgings still occurred sporadically in the later part of the 2nd century (see section 3.2).

New helmets of the *Niederbieber* type (G) are introduced for both legionary, auxiliary and cavalry troopers, replacing the *Weisenau* and *Weiler/Guisborough* types. Nicolay places this development at the beginning of the 2nd century, however other authors place this development towards the end of the 2nd century (Bishop and Coulston 2006, 142.). Face masks remain in use, however the masks are now attached to *Guisborough* type helmets instead to *Weiler* types of the previous period.



Apart from the Spatha becoming the most commonly used sword for both infantry and cavalry, the suspension of the sword also changed. From the mid 2nd century, it now was suspended from a baldric, or *balteus*, by means of a scabbard slide (fig 3.2). The baldric was fitted with, often highly decorative, metal fittings including a round baldric phalera, with the typical semicircular loop on the reverse, and a rectangular terminal from which a heart or tear-shaped pendant was suspended (Nicolay 2007, 40).

Fig. 3.3: The Baldric, (after Oldenstein 1976, 227-228).

The apron fell out of favor during the first quarter of the 2nd century (Nicolay 2007, 39). For the belts, the peltate buckle remained in use, however the hinge was replaced by a rectangular loop around the mid 2nd century (type B. cat. no. 17.7). For wide belts, a ring buckle was introduced (Type C). The rings themselves are not specific enough to identify, however the fittings (round or square double headed studs) for securing the leather straps which are folded around the ring, are more specific and a few of them have been found in the area (cat. no. 20.7) (Nicolay 2007, 34-38).

Massive changes can be observed in horse gear fittings, although the horse grave of Beuningen shows that both the period 2 and the new period 3 types could occasionally be used together (see section 3.2). The new decorative fittings (type B) feature a knobbed prong that is pushed through a slit in the leather and they replace the system with washers or back plates. Twenty different variants of these have been recognized, however it is not possible to date these variants more precisely than mid 2nd and 3rd century (Nicolay 2007, 53; Oldenstein 1976, 165; Also see appendix 2 for a list of variants).

Pendants also change; attachment loops for pendants became closed (although the older method remained in use) and most period 2 forms disappear. Only lunate, phallic and peltate pedants are being continued from the previous period, however in a slightly modified form. Four new forms appear: Acorn shape[18] (B6), Round, Oval or Tear shape (B1) (Nicolay 2007, 56. Also see appendix 2 for the list of variants.).

The period 2 ring and *phalera* junctions were replaced by strap junctions in the form of openwork discs (Type C). The harness straps were mostly directly attached to the perimeter of the openwork disc. The Type C junction fell into disuse at the end of the 3rd century (Nicolay 2007, 50).

Period 4: (c. AD 300-450) from the restoration of the Rhine limes under Diocletian until the fall of Rome.

This period sees the introduction of a new broad type of belt, the pilum is replaced by the *plumbata*, and a new type of sword, the *semispatha* is introduced alongside the spatha. The use of plate armor is abandoned, in favor of scale and mail. The guard or ridge helmet (type H) is introduced, which features a helm cap existing of two halves which are joined together. Both very simple (Intercisa) or highly decorative (Deurne, Berkasovo) are known (Bishop and Coulston 2006, 211-212).

A complete new beltset makes its appearance during the 4th century. Four variants of this broad belt have been identified (type D-G, see appendix 2). A specific feature of belts D and E is a pair of tweezers suspended from the belt. A few tweezers have been recovered in the research area, however they remain the only evidence for these late period belt.

[18] Acorn pendants can easily be confused with acorn shaped furniture handles. The latter lacks the loop. Therefore a few acorn pendants, although published as horse gear have been dismissed for this research.

Despite the Roman army becoming more mobile and relying more and more on cavalry, there is hardly any information on horse gear. The little evidence available suggests that period 3 horse gear may still have been used into this period (Bishop and Coulston 2006, 227-228, Nicolay 2007, 63). A good indication for this are the two period 3 bells found together with the 4th century 'golden' ridge helmet from Deurne (Stuart 1986, 117). As mentioned in the previous chapter during this period, hardly any rural occupation is attested in the research area and as a consequence hardly any finds can be dated to this period. A possible issue with an overrepresentation of period 3 horse gear caused by the continued use into period 4 therefore, does not seem likely for the *civitas Cananefatium*.

3.2. Critique on the typology of Nicolay, and recent developments in the field of Roman military equipment studies.

Although Roman military equipment has been well studied, the dating of many items is still a subject of debate and is less secure than is sometimes implied by the literature. The horse grave from Beuningen, where horse gear is actually found together with a horse, is a good example that seems to challenge the typology of Nicolay. Both period 2 and 3 equipment were found in the same grave and appear to have been part of the same set of horse gear (see fig. 3.4; Nicolay 2007, catalog 27.1-16, Zwart 2001). Furthermore, multiple ownership inscriptions on single pieces of military equipment have shown that equipment gets handed down from soldier to soldier, suggesting a substantial period of usage (Haalebos 1977). The theory about returning veterans bringing equipment home as souvenirs may even further prolong the use of items, especially in non military context.

From a typological standpoint, the periods devised by Nicolay are not without problems either. As already mentioned above, many period 3 developments are only taking place in the mid 2nd century during the so called "Antonine revolution". Therefore, a number of period 2 items must have been in use well into the 2nd century. Placing the transition of the periods around 120 AD may lead to an overrepresentation of military equipment in the 1st century and early 2nd century (Bishop and Coulston 2006, 128-148).

Also from an historical standpoint, the effects of, for example, the 3rd century crisis in the Roman empire and army will never be properly reflected in the periods chosen by Nicolay. Furthermore, the direct consequences of the Batavian revolt will not show up in the large period 2. Surprisingly, in his final conclusions, Nicolay abandons his periodization and uses the historical events instead of the typological changes on which he founded his research (Nicolay 2007, 237-258).

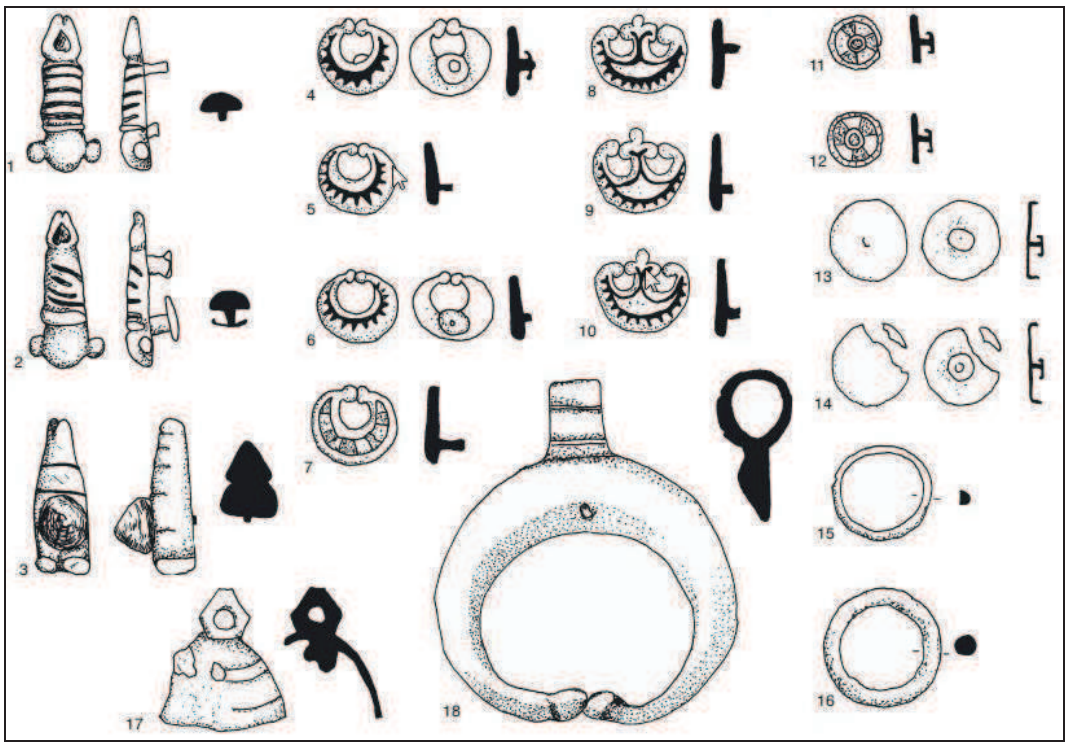


Fig. 3.4: Bridle components from the horse burial at Beuningen-Molenstraat with a period 2 date for items 1-6, 13, 14, 17 and period 3 date for item 7-12 and 18 (after Zwart 2001, fig 32.).

A few more issues exist with individual items. Shield edgings are assumed to have changed from metal to leather by period 3, however the finds from the *castellum* at Iža in Slovakia and Dura Europos in Syria show that metal shield edgings still occurred in the later part of the 2nd century and even 3rd century (Bishop and Coulston 2006, 138). Therefore, the strict placement in period 2 may lead to overrepresentation for that period.

A number of authors place the transition from *Corbridge* to *Newstead* plate armor after the middle of the 2nd century. According to Bishop and Coulston, the supersession took place during the reign of Antoninus Pius (138-161) and thus having a large overlap into period 3 (Bishop and Coulston 2006, 141). With the large amount of troops spread to every corner of the entire empire, it is unlikely this supersession of items was a quick process. Furthermore, recent evidence from Spain shows that the use of the *Corbridge B* plate armor continued up to 250/300 AD (Fernandez 2007, fig.10). Therefore, it may be misleading to place every piece of Corbridge armor exclusively to period 2. In the research area, at least one Corbridge armor strap has been recovered from a late 2nd century context (cat. no. 10.2) and also the few context dates provided by Nicolay for armor from rural settlements lay in the 2nd century (Nicolay 2007, 102, cat. no. 242.2; 112, cat. no. 166.1).

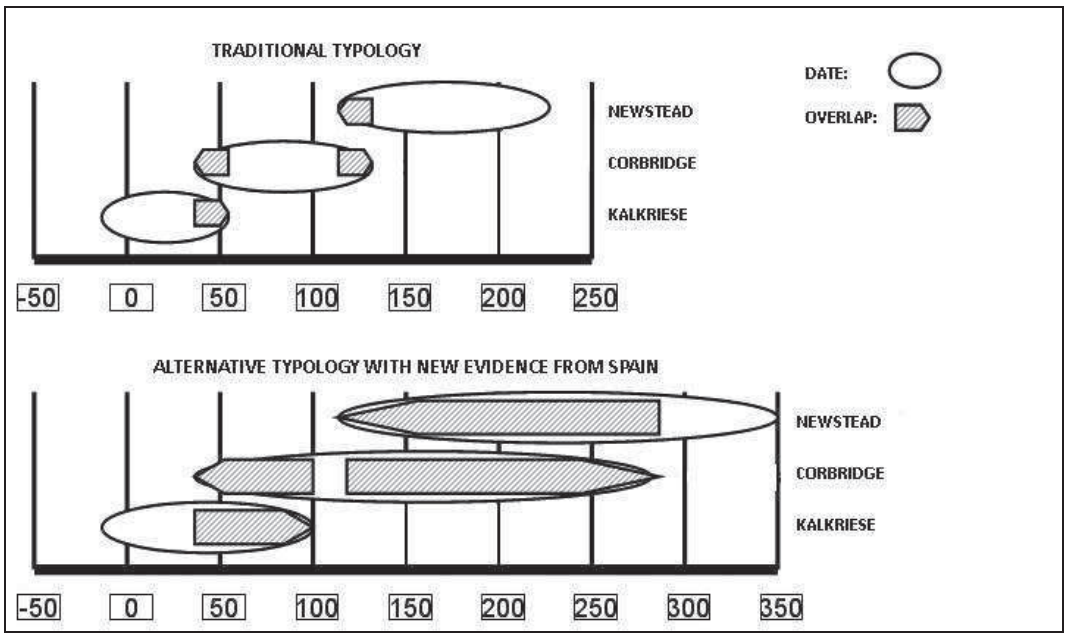


Fig. 3.5: Alternative typochronology for plate armor, with above the traditional typology used by Nicolay and below the new extended typology (after Fernandez 2007, fig. 10).

Despite the existing grey areas described above, the typology is employed rather rigorously by Nicolay in his research. The dating issues described above for the Corbridge armor straps and shield edgings may have far reaching impact on the analysis by Nicolay. Of the 190 items of weaponry (both offensive and defensive) for period 2 in the Batavian area, 69 (36%) consist of the Corbridge type armor strap and a further 26 (13.6%) are shield edgings (Nicolay 2007, 70). If only a small portion of them should be placed at a later date, the decline in weaponry during period 3, as observed by Nicolay, may not be as significant. This problem may be increased by the tendency for especially the Corbridge straps to be overrepresented in data sets (Nicolay 2007, 67).

When a sample is large enough, an occasional wrongly dated piece will not distort the general trend. However, the data set from the Cananefatian area is expected to be much smaller. Therefore, more scrutiny is necessary when placing items in a certain period and although for the basic analysis the typology of Nicolay will be followed. Although, for comparative reasons the typology of Nicolay will be employed, where necessary, the above discussed uncertainties will be taken into account. All graphs and maps in both chapter 4 and 5 will display the data according the typology of Nicolay, and in the text the implications of the alternative dates will be discussed.

4. Roman military equipment from the civitas Cananefatium.

In this chapter, the data generated by the survey will be presented and analyzed. The survey has yielded 358 finds of military equipment and horse gear from the study area (see appendix 3 for more details about the individual items). The chapter starts with describing how the data was collected and to what degree the data set is representative for the research area. This is followed by an analysis of the geographical and chronological distribution of the finds across the research area and a description of a selection of relevant sites to provide more context.

4.1 Survey method and completeness.

For this survey, a number of different approaches have been employed at the same time. Firstly, a literature study was conducted, via snowball sampling (e.g. Goodman, 1961) starting with the latest literature, via a systematic search of the filed excavation reports and finally by a systematic search of the *Archeologische Kroniek van Zuid-Holland (Tijdschrift Holland, 1968 -2011).* During this literature review, it was found that a number of excavation results are not well published and even properly published excavations do not always contain complete catalogues of the metal finds.[19] Therefore, where necessary, additional information was retrieved from the excavators, authors or depots.

To complement the literature study, a thorough survey of the Archis2 data, the Dutch archaeological database, was performed. All find and observation reports (*vondstmeldingen* and *waarnemingen*) with either the cultural indication *Roman* or *Indigenous-Roman* (*inheems-Romeins*) have been collected from the database. However, Iron Age sites in Zuid-Holland in Archis2 do not have a specific 'culture' assigned to them. Therefore, the Iron Age sites had to be found via a search for the individual items. One level deeper, at the level of individual finds, all find and observation reports containing metal objects with a date in the Iron-Age to Early Middle Ages have been collected from the database. This resulted in a large number of reports containing undated metal work (especially iron nails and slug material). Additionally, the Archis2 research notifications (*onderzoeksmeldingen*) over the last five years for excavations and test-trenching have been requested, in an attempt to include the most recent, unpublished, information.[20]

[19] Excavation results of many older excavations are only published in summarized form in annual chronicles, without much attention for individual finds.
[20] Research older than five years is assumed to have been updated from research notification into a find or observation report.

Unfortunately, Archis2 is neither very practical, user friendly nor very reliable for research purposes concerning individual finds. With Archis2 being a very complex, time consuming system with a very large number of users, the survey indicated that the database is rife with mistakes and incomplete records. Furthermore, with the cleaning and restoration of metal finds being a time consuming process, in many cases the metal finds are entered in Archis2 before they are cleaned and hence before they are properly examined. Especially for larger excavations, metal finds (other than coins and brooches) seemed to be lumped together rather than entered per category. Also, the data presentation and table structure means that a large amount of cross referencing is required to collect the data as the same record will show up in many different searches. Nevertheless, despite all these flaws in the system and after extensive clean-up of the data, Archis2 gave a good impression of the amount and distribution of sites and research in the research area and provided therefore a good first stepping stone, as it is complemented by other methods.

Thirdly, to further complement the literature study and Archis2 survey, all municipal archeological services in the research area have been contacted for their input, which in almost every case yielded some yet unpublished finds. In the case of the municipal archeological services, these finds include a spearhead from Vlaardingen Hoogstad, horse gear and a sword scabbard chape from the Harnaschpolder (Delft) and an armor strap from the J.W. Frisolaan in The Hague. Archaeological service companies, who have been active in the research area, have also been contacted to inquire about their latest results or additional data on older research. These include the ADC, BAAC, Archol, AAC and RAAP. Additionally, museum and depot collections have been consulted, of which the Rijksmuseum van Oudheden has the largest collection. Others include Museum Swaensteyn, Westlands museum, Museon and the Stedelijk museum Schiedam. Due to a large reorganization of the Provincial Archaeological Depot of Zuid-Holland, not all finds in their collection were available for examination. Nevertheless, these finds are included in the data set, although no picture or drawing are available and the original determination of the finds had to be used without the possibility of re-examination.

Finally, in an attempt to complement the data set even further, it was attempted to access private collections, which proved to be harder than the previous sources. Amateur archaeologists have been contacted both via the municipal services, museums and via the various sections of the AWN. The results were rather limited. Metal detector hobbyists have been contacted via various online forums as well as via the municipal services.[21] Response was small, although a few people came forward with some very interesting finds from rather unusual locations, for example the citycentre of Delft. Metal detecting in Zuid-Holland concerning Roman sites seems to be very

[21] Bodemvondstenwereld.nl, pieppiep.nl, jozefherman.forum2go.nl, muntenbodemvondsten.nl.

limited (see section 5.1). However, without a doubt, there are still a number of amateur archaeologists that have not been reached.

4.2 Archaeological collection methods of the finds.

The finds included in the data set were retrieved by a variety of methods (see fig. 4.1). The majority of the finds have been found during archaeological excavations (83%). Amateur metal detector finds are rather scarce as most sites are either deeply buried below post Roman deposits or not accessible due to present day infrastructure. Also, the lack of agricultural land in the research area which is plowed annually, severely limits the possibilities for metal detector hobbyists, as no new finds are brought to the surface. Therefore, metal detector hobbyists in the area have to rely on occasional construction work (Voorburg), sand extraction pits (Katwijk Zanderij), or ground depots (N11 dump in Alphen aan den Rijn) or spoil heaps from archaeological excavations (Rijswijk).

Amateur archeologists have been very active, especially in the pre-metal detecting era and have collected many finds and performed a large number of (small scale) rescue excavations, during the large scale infrastructural works and city expansion of the 1950's-80's. Any reported stray finds have been included with the category of (detector) amateurs in this research. However, the finds found during excavations conducted by amateur archaeologists have in this research been grouped with the excavations. Due to the often rushed and small scale excavations, the amount of metal finds collected by amateur archaeologists is small. Furthermore, the available funds to amateur archaeologists did not always allow for the professional cleaning, restoration and preservation of all metal finds (Comment by D. van der Kooij, AWN Rijnstreek).

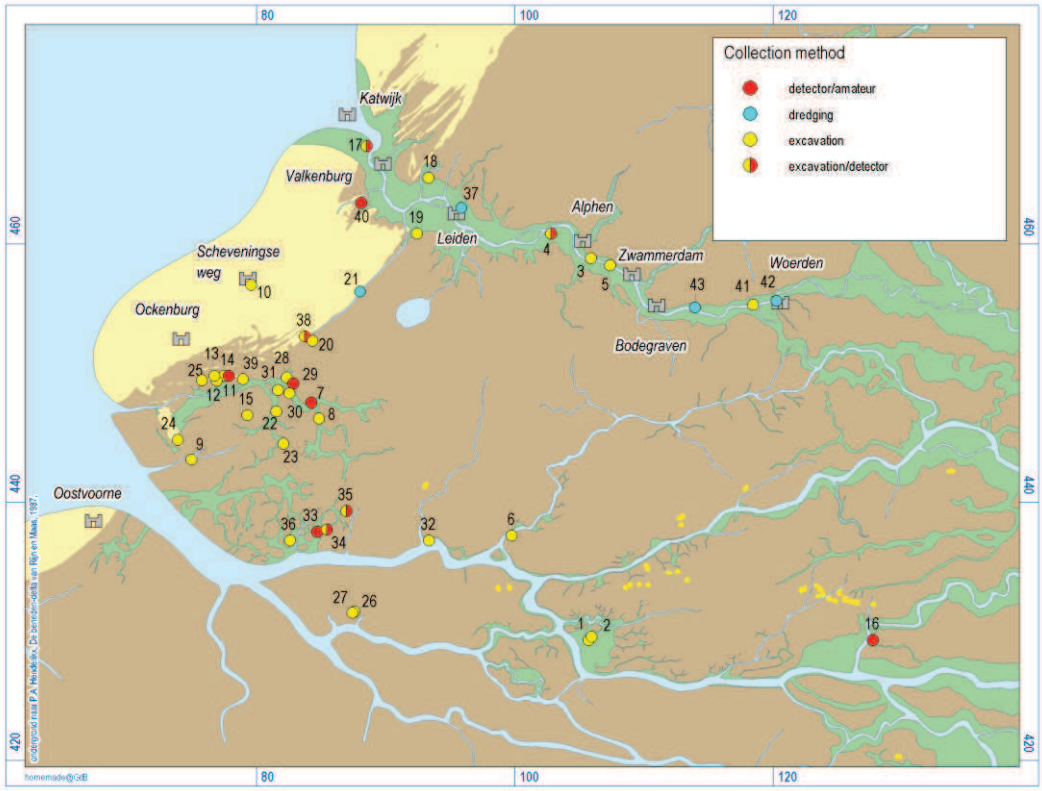


Fig. 4.1: Archaeological find circumstances

Dredging and river finds are occasionally recorded but never numerous, and only make up 2,5% of the data set. However, despite their small number, they contain some of the most remarkable finds from the region (see section 4.9). The use of the heavy (marine) dredging equipment is preventing observation of finds during the operation (Meuse). Some Roman, as well as many older finds are recorded from the Maasvlakte (near Oostvoorne), which was constructed by means of sand suppletion, with sand collected from the North Sea. There is no way to ascertain the origin of these finds, however it could be assumed that many finds from the mouth of the Meuse estuary have been washed into the North Sea.

4.3 Data overview: find contexts

The survey yielded a total of 358 finds of military equipment and horse gear, from a total of 45 sites.[22] The majority of these sites (65%) can be classed as rural settlement (fig. 4.2 and 4.3), followed by finds in urban centres (32%). The remaining 3% include finds from rivers and cult places. Finds from features like dams and culverts with no direct associated settlements have for

[22] A few more items have been brought to my attention after finishing my survey and analysis, however these would not have changed the overall picture.

analytical purposes been added to the river finds. Cult places have been identified on multiple settlements, but only in one case could a find of military equipment exclusively be linked to it (see section 4.8). The six identified cemeteries in the research area have not yielded a single piece of military equipment or horse gear (see section 4.7).

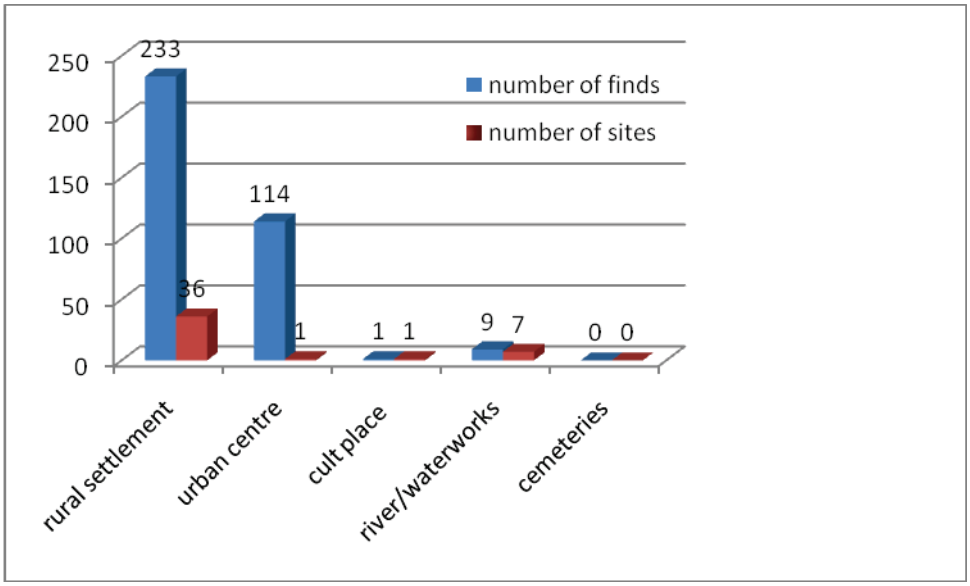


Fig. 4.2: Total number of finds per context and number of sites per context which have been incorporated in this research.

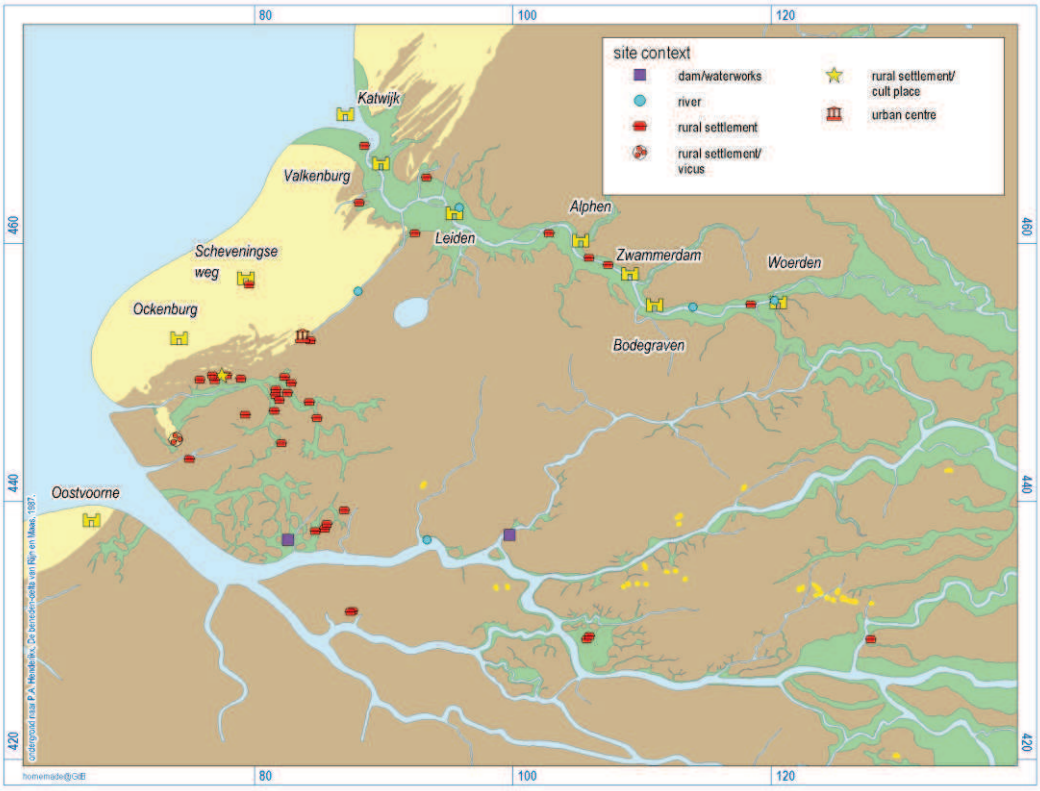


Fig. 4.3: Spatial distribution of the different find contexts.

The number of finds per site shows a very high variation, as can be seen in figures 4.4 and 4.5. Two sites (Katwijk Zanderij (17.1-81) and Voorburg Arentsburg/Forum Hadriani (38.1-114) are responsible for over 50% of the total number of finds in the dataset. For rural settlements, Katwijk-Zanderij alone is responsible for 33% of the total number. The amount of data from rivers and cult places is too small (2.7% of total) to be viable for an in depth analysis or to identify relevant patterns. In the following analysis, the possible distorting effect of Katwijk and Voorburg will be taken into account and discussed when analyzing trends.

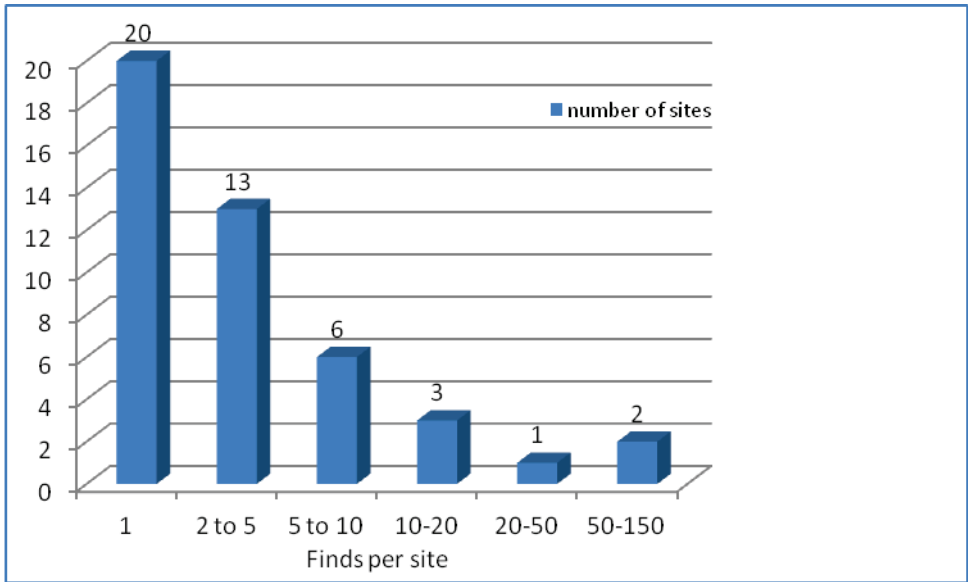


Fig. 4.4: Number of sites vs. the amount of finds per site.

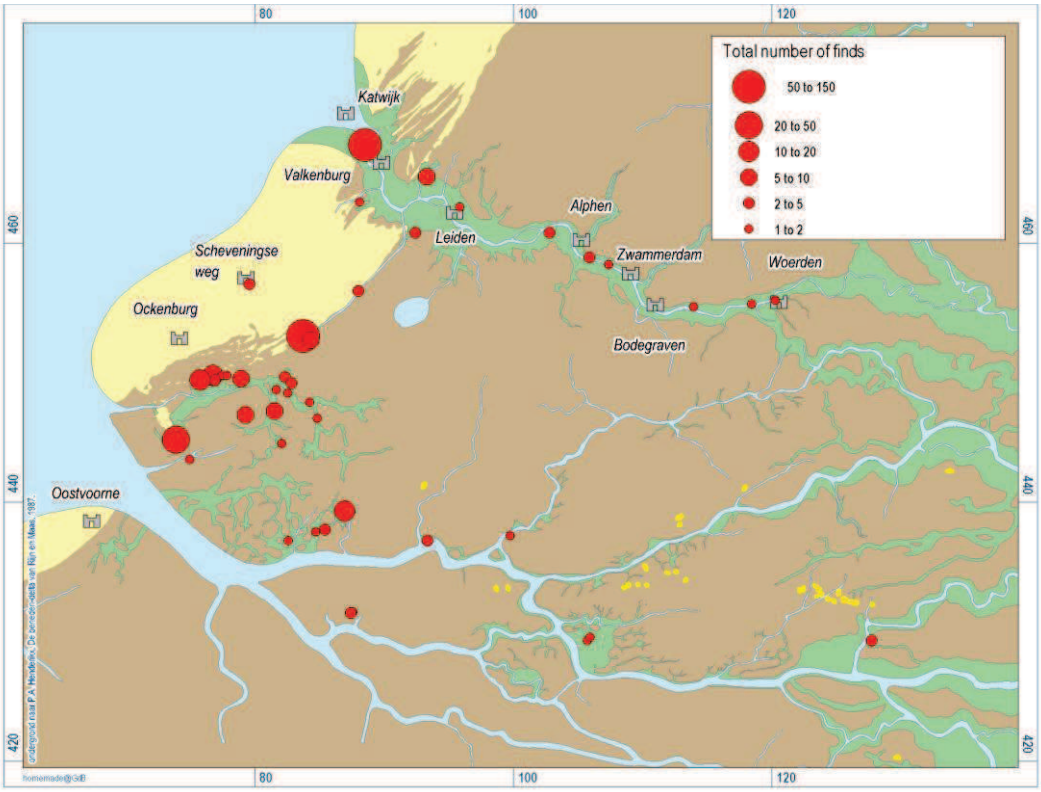


Fig. 4.5: Number of finds per site.

The spatial distribution of sites where military equipment and horse gear is found largely follows the general distribution of the Roman settlements (see chapter 2) and modern day research in the area. A concentration of sites can be seen in the Westland and Midden-Delfland area along

the raised creek banks of the Gantel creek system. Roman period occupation in this area was dense, however recent developments in that area over the last decade have probably caused the region to be overrepresented in the data set. The expansion of towns and cities during the last decade have caused large tracts of glass greenhouses to be replaced by housing, resulting in a large number of (large scale) archeological research in the area (such as the ADC excavations at Poeldijk, Wateringen and Harnaschpolder and the Midden-Delfland project of the University of Amsterdam).

The beach barrier area most likely is underrepresented in the data set. It has been poorly researched because the area has been continuously inhabited and the post-Roman and present day habitation has either destroyed sites or prevented large scale excavations. Furthermore, large parts are preserved for nature reserves and drinking water areas, which did not allow for much research.[23] Especially the apparent absence of sites between The Hague and the mouth of the Rhine are most likely caused by this research hiatus. Only a few rural sites in this area, like Katwijk Zanderij and Naaldwijk Zuidweg have been properly excavated. However, both these sites and the military sites at the Scheveningseweg and Ockenburg yielded large quantities of finds, and show how much metalwork can be expected in well covered sites in the beach barrier area (Waasdorp 1988;1999; Van der Feijst 2008).

The Rhine river banks are probably also slightly underrepresented as traditionally, research was largely focused on the fortresses, instead of the rural settlements. In the research area, the majority of the Roman fortresses are located beneath modern day town centres, which has partly saved them from destruction by clay extraction for the tile and brick industry. As a consequence, the civilian occupation between the *castella* is still poorly understood, although in recent years some progress has been made in this area, with excavations of the sites at the Goudse Rijpad (Vos 2004) and Leiden Pomona (Stronkhorst 2004).

Finally, the riverbanks and old channel belts of the Meuse further inland are most likely underrepresented as well, due to fragmentary preservation and research, usually rescue excavations performed by local amateurs (Van Beemt 1967). A large number of Roman finds and sites have been reported on the channel belts of Papendrecht and Alblasserdam. Unfortunately, most come from residual context and have only been researched by amateur archaeologists with modest resources, and only a very small amount of metal objects have been uncovered (Dijkstra et. al. 1999; Van den Beemt 1967).

[23] For example Meijendel in the municipality of Wassenaar.

4.4. Chronological and Spatial patterns

The chronological development in the occurrence of military equipment and horse gear shows a clear trend (fig. 4.6). The latest part of the Iron Age (period 1) is not represented at all. This is in line with the apparent absence of occupation as discussed in chapter 2 and the general scarcity of metal objects found in (late) Iron Age contexts (Van Heeringen 1992). The only evidence for Later Iron Age weaponry in the area are clay sling shots found in Schiedam and a probable bone arrowhead that has been uncovered at Vlaardingen, *de Vergulde Hand* (verbal comment R. Bakx). As described in chapter 3, Roman military equipment, especially suspension and horse gear, is also less visible during this first period.

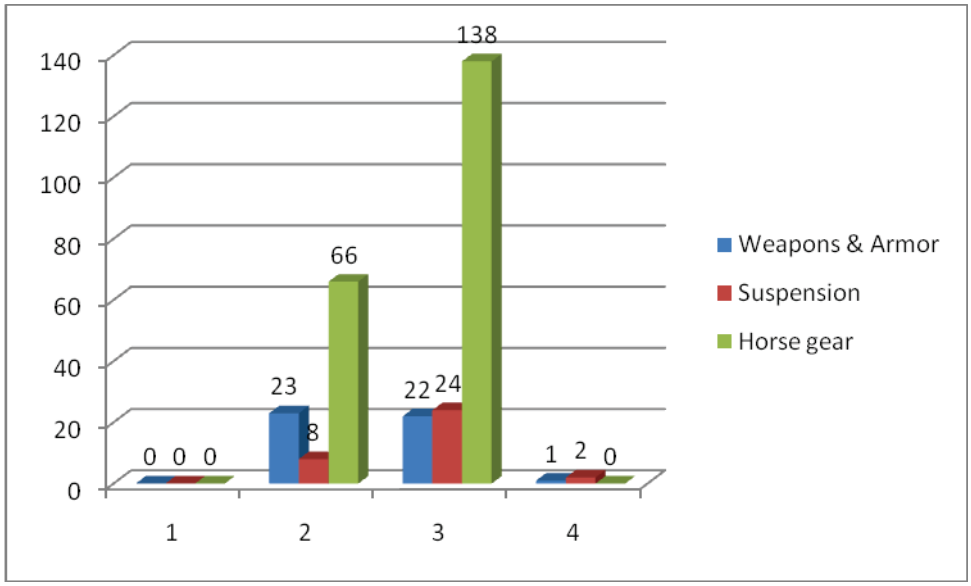


Fig. 4. 6: Chronological pattern for the weaponry, suspension and horse gear from the civitas Cananefatium.

As mentioned in chapter 2, from the mid 1st century AD, a strong increase in settlements as well as Roman influence can be observed and consequently the number of finds from period 2 is much higher, with both weaponry and horse gear well represented. Figure 4.6 shows that period 3 has a clear increase in horse gear and suspension, while the amount of weaponry and armor appears to be stable. Below will be explored whether this is an actual increase of the occurrence of military equipment and horse gear or merely a reflection of the increased number of settlements (see chapter 2) or result of typological choices (as discussed in chapter 3).

As was to be expected from the limited amount of evidence for 4th century settlements, the last period is again very poorly represented. A single barbed *pilum* or spearhead (cat. no. 38.39) can be dated to this period as are two belt components (cat. no. 17.44, 24.14). The lack of finds is more a reflection of the settlement pattern of the period as described in chapter 2, rather than a

reflection of developments in the use of military equipment. The data for this period is simply too small to warrant any far going conclusions.

4.4.1 Chronological patterns of military equipment: weaponry

Although graph 4.6 shows that the amount of weaponry (both offensive and defensive) remains stable from period 2 to 3, when looking at more detail a clear change from armor towards swords as the most prominent find type can be observed (fig. 4.7). In this graph, a number of 44 items have been included; a further 30 items of weaponry, including spears, pila, could not be assigned specifically to one period. Due to the relative low total number of finds, these 30 unassigned items could easily change the distribution. However, the few available context dates (see site descriptions further down this chapter) give the impression of a fairly even distribution over periods 2 and 3, with period 2 dates for the weaponry of Katwijk-Zanderij, Vlaardingen and Voorburg, and a period 3 date for the spears and bolt heads from Schiedam Polderweg and Midden-Delfland.

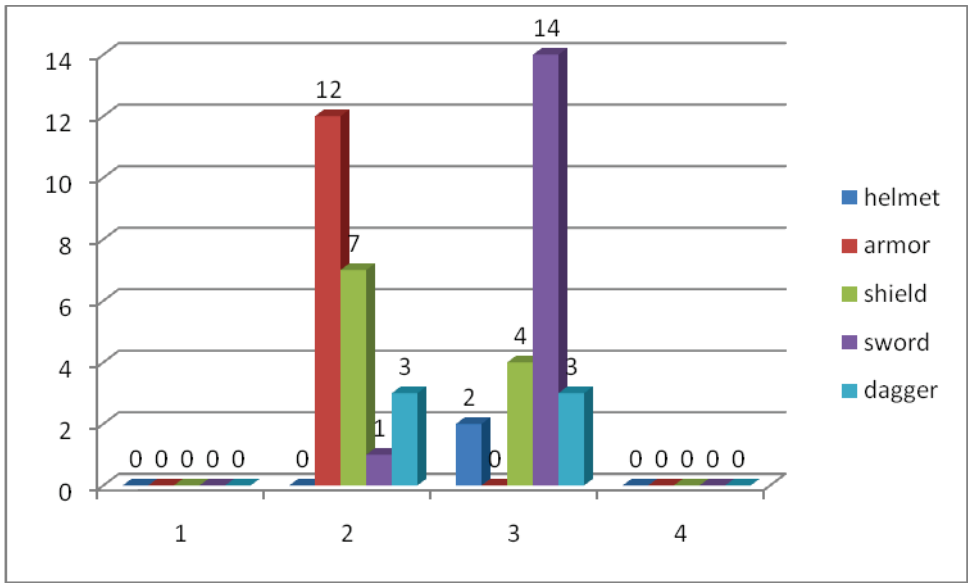


Fig. 4. 7: Chronological development of finds of military equipment from all contexts.

As discussed before, the military equipment from period 2 is largely influenced by the finds from Katwijk Zanderij (see fig. 4.8). That site is responsible for 40% of the period 2 armor and 70% of the shield components (all edgings). As discussed in chapter 3, the dating of shield edgings and the Corbridge armor straps is not as secure as implied by the typology of Nicolay. However, the early dates of the remaining finds from Katwijk, especially horse gear, do make a period 2 date acceptable (see section 4.5.2.).

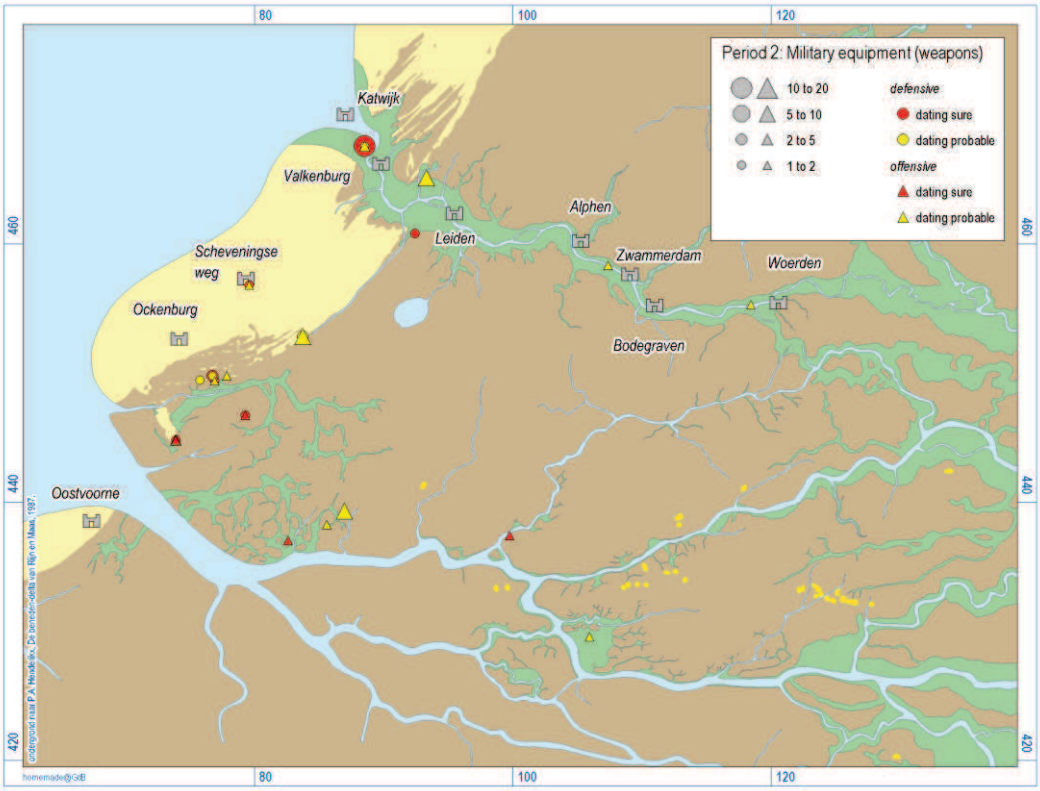


Fig. 4.8: Spatial distribution of period 2 (12BC-120AD) weaponry and armor.

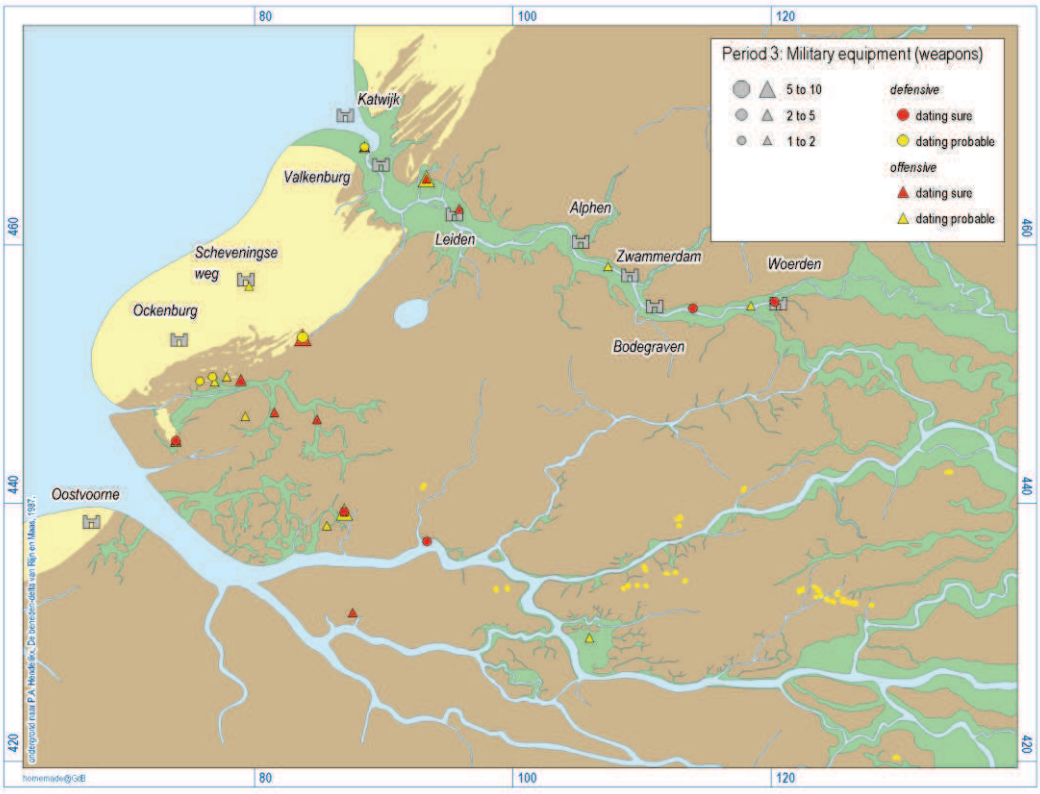


Fig. 4.9: Spatial distribution of period 3(120-200/250) weaponry and armor.

The decrease of armor in period 3 is not very surprising as the armor in that period is less visible and less securely datable. The period 2 armor is completely made up of Corbridge type plate (C2) armor. As already discussed above, the strict placement of this type of armor into period 2 cannot be maintained. In the data set, at least one piece of this armor has been uncovered at a settlement with a starting date in period 3 (cat. no. 10.2, Waasdorp 1995, 374-376). Furthermore, the easy recognizable and numerable straps and fittings of especially the Corbridge armor can easily result in an overrepresentation of this armor type. The same applies to shields, where shield edgings make up the majority of the period 2 finds and can occasionally be dated to period 3.

Apart from an undatable blade fragment from Forum Hadriani (cat. no. 38.40), all sword finds consist of scabbard parts, with scabbard chapes and slides being the most prominent. The increase in sword parts in period 3 is striking. However, period 3 scabbard chapes and slides are very recognizable and robust pieces, while earlier scabbards are more fragile and tend to be preserved in a much more fragmentized way and therefore are more difficult to recognize.

As fig. 4.9 shows, Katwijk is no longer an outlier in period 3 (5% of total number of period 3 weaponry), but it is Voorburg (Forum Hadriani) with seven pieces of sword scabbards that is the most productive find spot (41% of total number of period 3 weaponry).

Despite the large changes in the makeup of find types from period 2 to 3, the changes in the spatial distribution are limited. Both the offensive and defensive weaponry are distributed fairly evenly over the research area. At 26 different sites, offensive or defensive weaponry has been found. Period 2 material is present on nine sites while period 3 is present at thirteen sites. The majority of sites, however, yielded no equipment that could specifically be dated.

One would assume concentrations of military equipment on rural settlements near the *castella*. However, not many settlements in the *limes* zone have been properly excavated.

4.4.2 Chronological patterns of military equipment: suspension

In the research area, 46 pieces of suspension, only belts and baldrics, have been found (see fig. 4.10 for distribution per period). Apron fittings seem to be absent, however identifying apron fittings is not without problems, as almost similar fittings were used in horse gear.

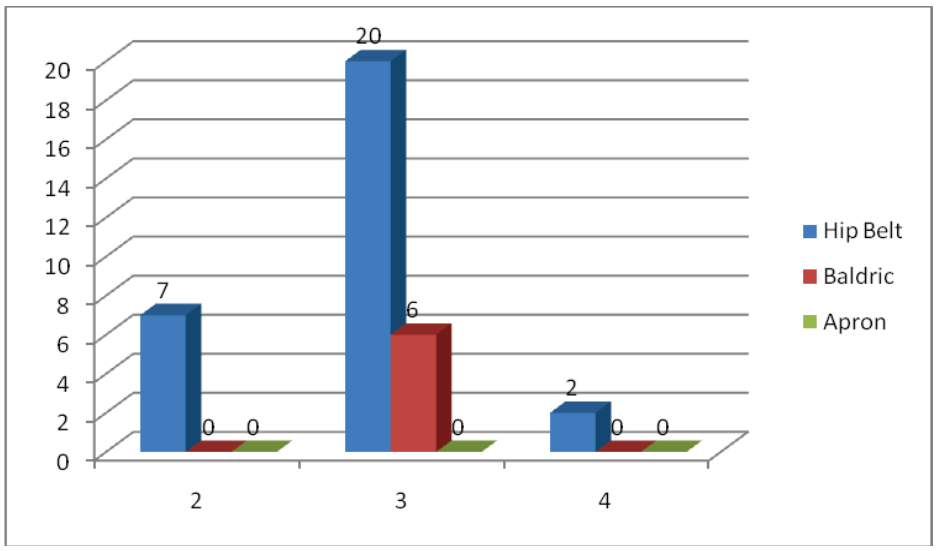


Fig. 4.10: Composition of suspension finds.

Like the plate armor, belts have a tendency to be overrepresented in find complexes as it is quite possible to include multiple parts of the same belt in the data set (Nicolay 2007, 67-68). However, this is definitely not the case for period 2 as all seven finds consist of single buckles from seven different sites (see fig. 4.11).

As described in chapter 3, belt buckles are amongst the few items that can be dated more precisely. The dataset includes two buckles of the type A1 (cat. no. 4.2 and 9.1) with a probable date before 70 AD. The belt plates included in this research are generally in a very poor condition and it is has been impossible to assign the majority of them to a specific type or period. Despite the poor condition, it seems the highly decorative embossed pieces are largely absent.

As can be seen in fig. 4.10, period 3 sees the introduction of the Baldric of which six items have been found in the area at five different (rural) sites (see fig. 4.12). Rather striking is the absence for evidence of the Baldric from Forum Hadriani, although that site is responsible for a large percentage of the sword scabbard pieces (see above), which are supposed to be suspended from the Baldric.

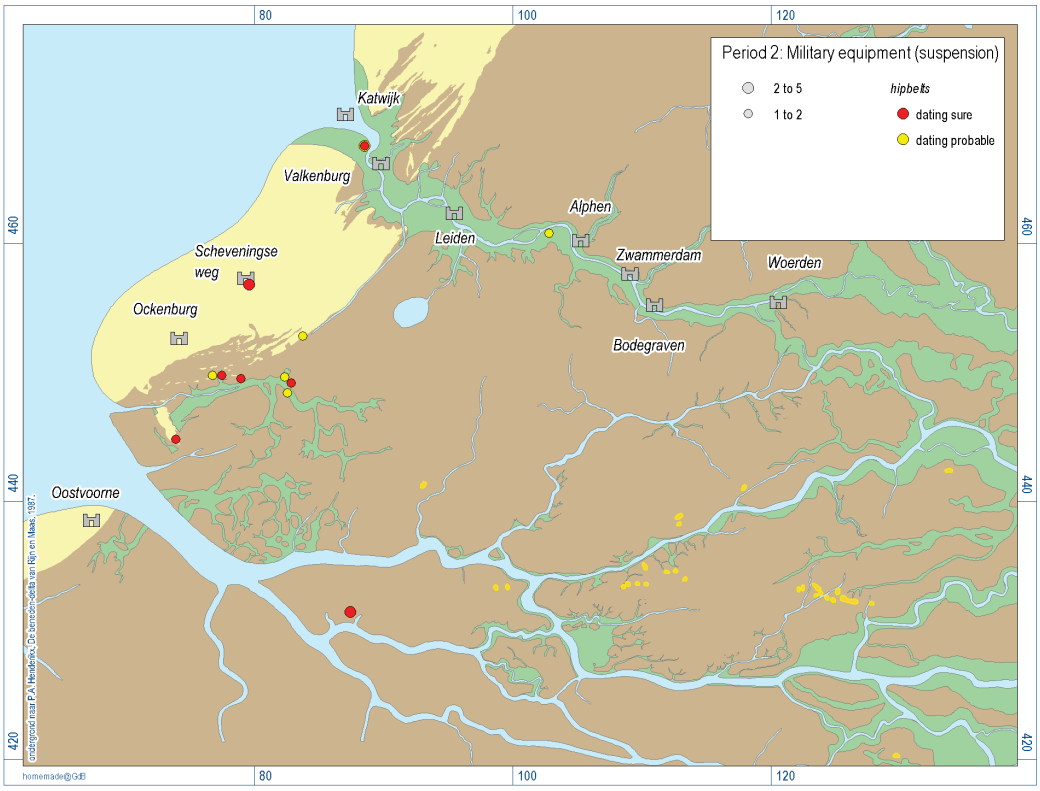


Fig. 4.11: Spatial distribution of period 2 suspension.

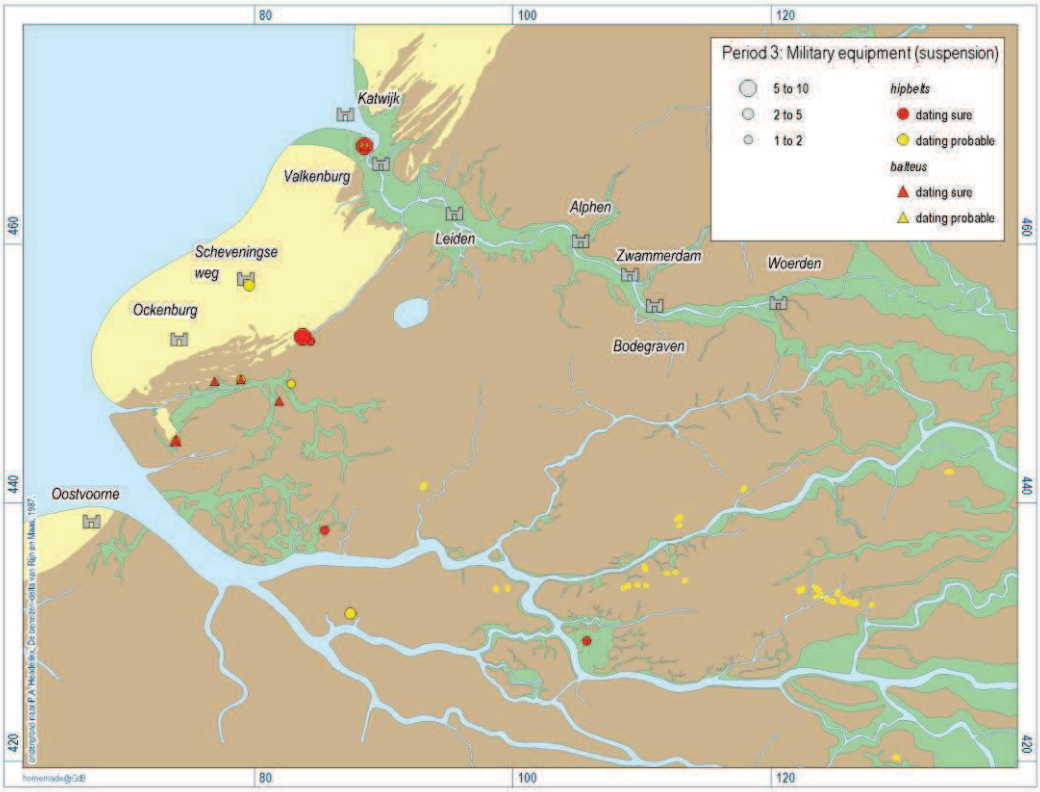


Fig. 4.12: Distribution of period 3 suspension.

4.4.3 Chronological patterns of horse gear

The largest find category in the data set is horse gear. As discussed in chapter 3, horse gear cannot be entirely regarded as military. Nicolay argues that the 1st century horse gear indeed is military, but that the distinction between military and civilian fades during the 2nd century. A total of 223 pieces of horse gear have been found in the area. The majority of these consist of various girth fittings, the remainder being bridle (3) and saddle parts (1). All properly datable pieces are presented in fig. 4.13.

With 61 pieces, the period 2 horse gear may look well represented, however it is only present at eleven sites, with especially Katwijk Zanderij (n=32) and Forum Hadriani (n=15) greatly influencing the total number (see fig. 4.14). The remaining eight sites only feature up to a maximum of four pieces each. Typologically, the period 2 items cannot be exclusively assigned to pre- or post 70AD, however the majority most likely will belong in the Flavian period (see further down).

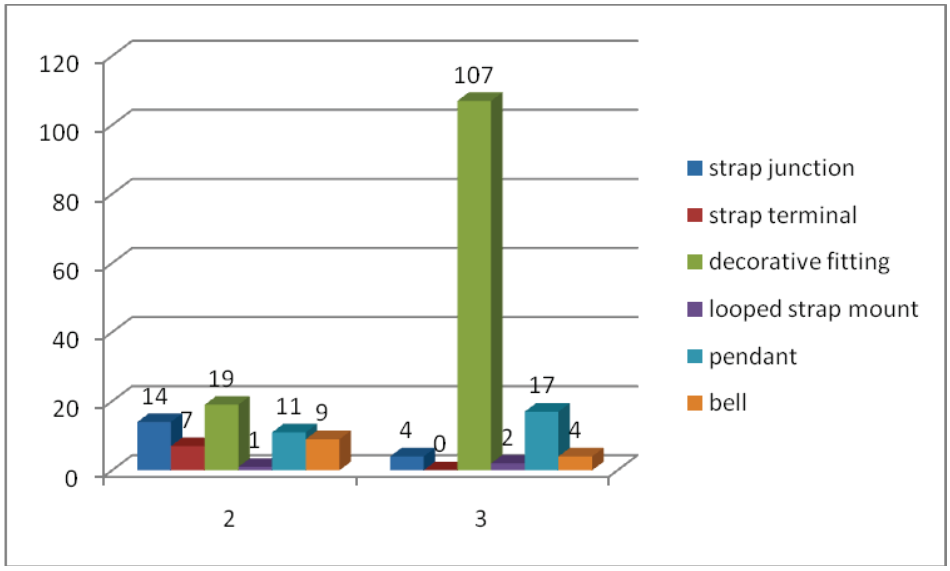


Fig. 4. 13: Composition of Horse gear finds from the civitas Cananefatium.

In period 3, the design of horse gear changes from the functional to the decorative with an increase in the number of pendants and a tremendous increase in the number of the various decorative mounts, while the remaining items, such as strap junctions, terminals and bells decrease in number. For the strap junctions, the decrease is easily explained by the changes in the design as described in chapter 3. The same applies to the disappearance of strap terminals. The decrease in bells is harder to explain although a similar trend can be observed in the Batavian area (Nicolay 2007, Fig 3.3). Horse gear from period 3 is also more evenly distributed over the

area and is present at 23 sites (see fig. 4.15). Especially Forum Hadriani is responsible for the majority of the data (n=71), while the remaining site average at 3.4 items each.

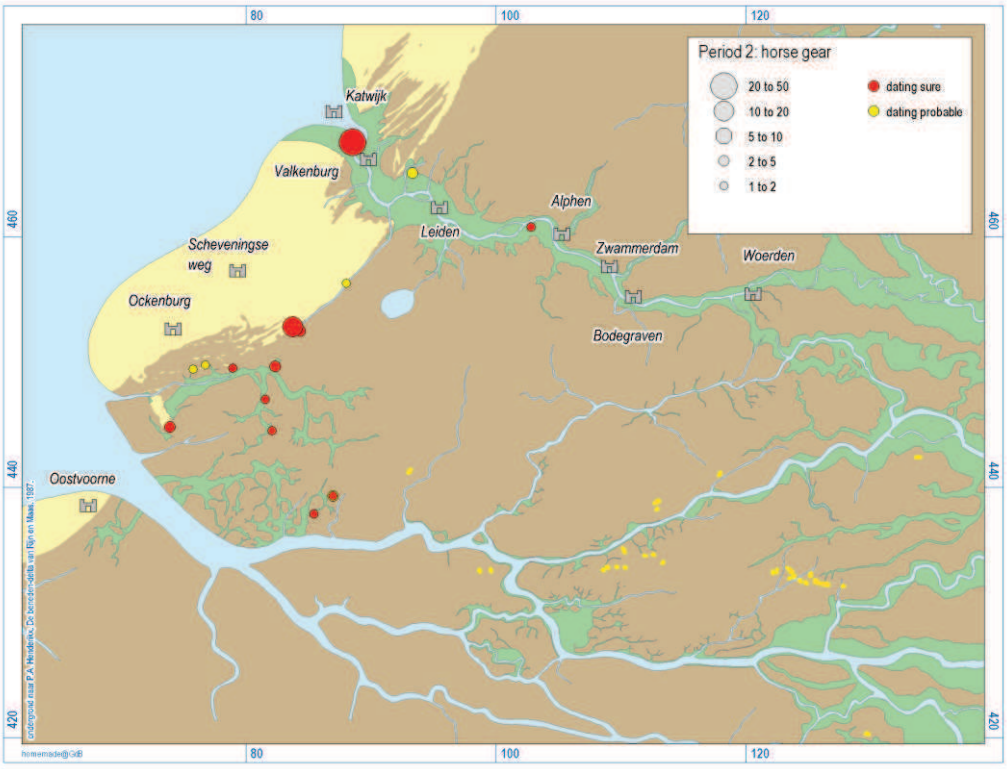


Fig. 4.14: Spatial distribution of period 2 horse gear.

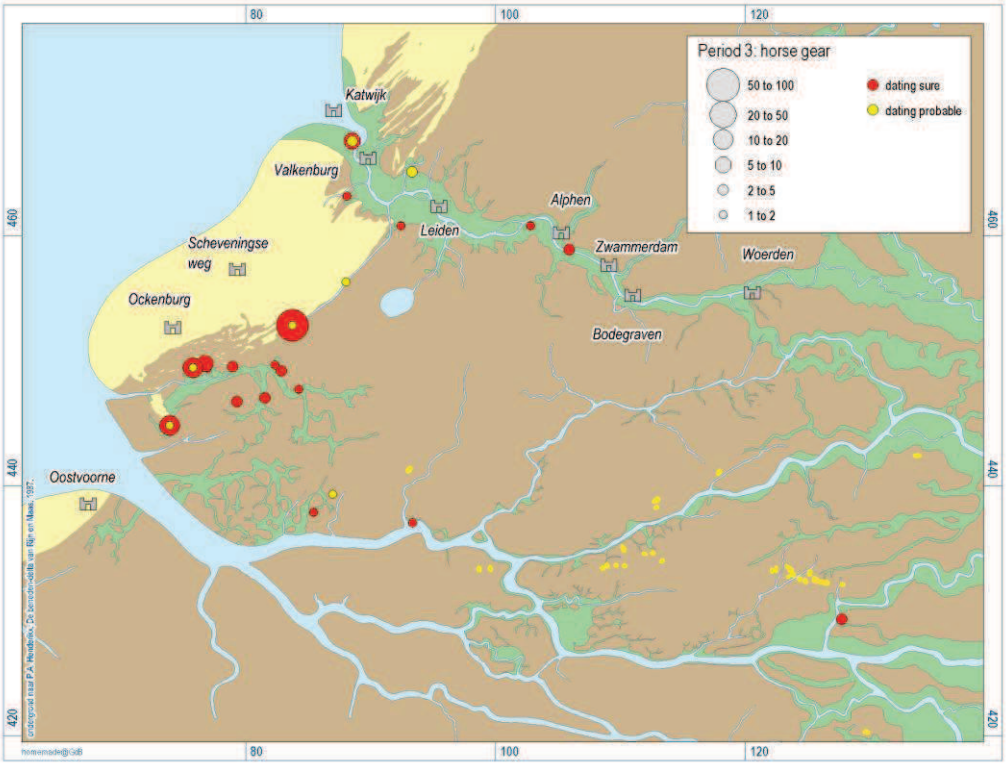


Fig. 4.15: Spatial distribution of Period 3 horse gear.

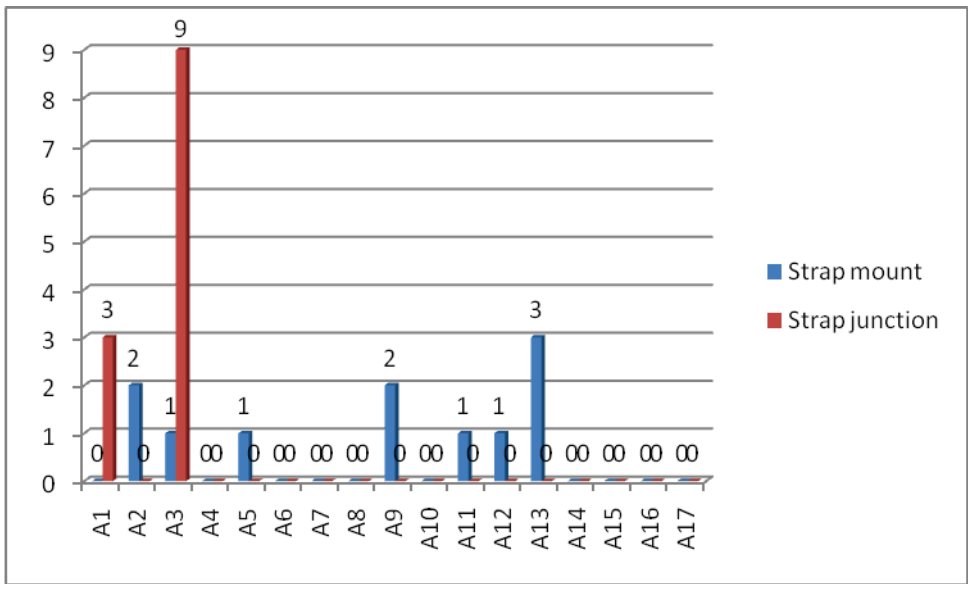


Fig. 4.16: Composition of period 2 horse gear strap mounts and junctions.

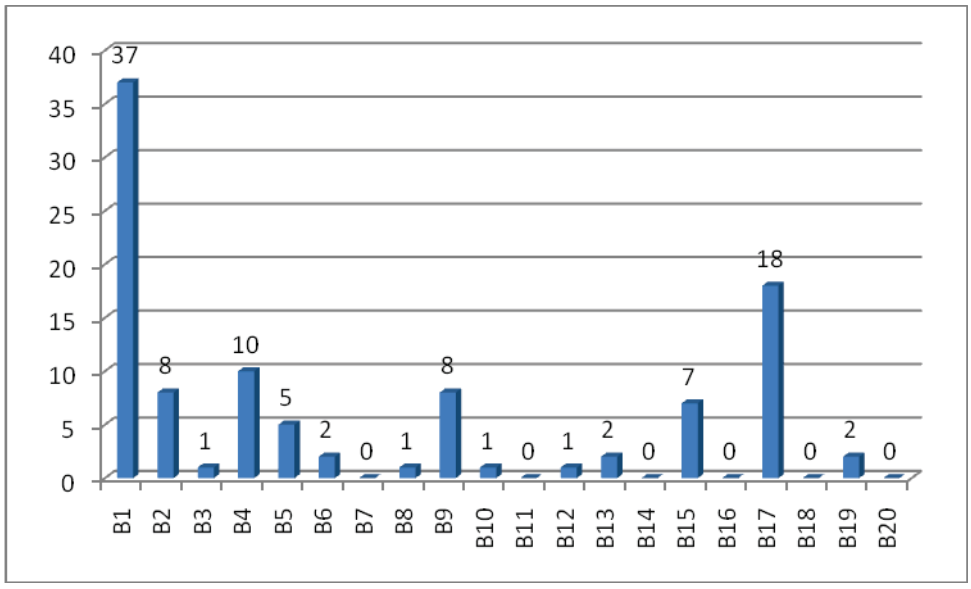


Fig. 4.17: Composition of period 3 horse gear strap mounts.

As discussed in chapter 3, the period 2 strap mounts and strap junctions, can be divided into a group with a starting date in the Augustan/Tiberian period, and a later group, with a starting date in the Claudio/Neronian period. In fig. 4.16, the various types of strap mounts and junctions have been presented. When looking at the different decorative mounts, the typical early examples which occur from the Augustan period onwards (A1, A3, A8, A9) are only represented by three pieces from Katwijk Zanderij. The same applies to strap junctions of type A3 of which nine are found at Katwijk Zanderij and one more at Rijswijk de Bult. A number of these early types will date before 70 AD (see section 4.5.2 for a in-depth discussion of the dating of the Katwijk Zanderij horse gear). The remaining only appear during the Claudian-Neronian period.

Decorative fittings from period 3 are more numerous (see fig. 4.13 and 4.17). Especially the relatively simple type A1 is very common throughout the research area, as are the vulva shape mounts of type B17. The with B17 associated phallic pendants are however very rare.

4.5 The sites: rural settlements

In the research area, 36 rural settlements (see appendix 1) have yielded weapons, suspension components or horse gear. A selection of these sites and objects will be described and discussed below in more detail. These sites either provide context to the finds or need further discussion because their nature is not entirely unambiguous.

Military equipment and horse gear becomes a regular feature in rural settlements in the Cananefatian countryside after 70 AD, peaking after the mid 2nd century (see fig.4.18). Before the Flavian period, the presence of military equipment is very rare.

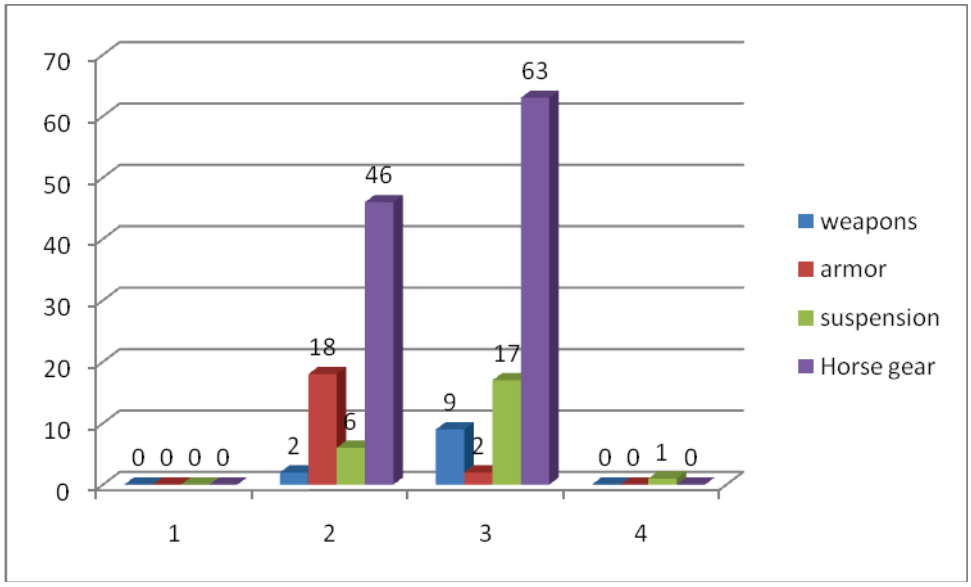


Fig. 4.18: Composition of militaria and horse gear from rural settlements.

The first sub-section 4.5.1 discusses the finds from castella as a point of reference and possible indications for veterans on rural settlements. The subsequent sections describe the material finds from rural settlements in different regions.

4.5.1 *Recognizing military sites and veterans.*

In order to judge the composition of military equipment from rural sites it is important to get a basic impression of the typical material from military sites in the region The amount and composition of military equipment found at the various fortresses in the region varies greatly (see table 4.1). However, without exception they show that at military sites one should expect a great variety of weapon categories. This table will serve as a reference point for the discussion about the possible military nature of some individual sites in this section, which are classified as rural.

Table 4.1: Weapon, armor and suspension finds from a number of castella or military vici from the research area.

	Alphen a/d Rijn (Zee 2004, table 27)	**Leiden Roomburg** (De Bruin 2001; Rodenburg 1998)	**Den Haag Scheveningseweg** (Waasdorp 1999, 55-69)	**Zwammerdam** Haalebos 1977, 217; Haalebos 1981)	**Woerden** (Blom and Vos 2007, 242-245)
Helmet (parts)	30	2	1	1	2
Body Armor	153	52	5	4	50
Shields	42	1	1	5	1
Dagger (scabbard)	22			2	1
Sword (scabbard)	22	3	18	4	2
Spears (incl. butts)	65	2	3	7	3
Pilum	7	1		2	
Artillery (bolts)	7	7			
Arrows		2	2	5	1
Sling			1		1
Suspension	32	8	3	12	10

To get a further idea about the nature of the military equipment and horse gear on rural settlements it is important to look at other evidence for the presence of veterans. In the Kromme-Rijn area, Vos identified, apart from the militaria, a number of other aspects that could indicate the presence of veterans on rural settlements (Vos 2009, table 6.11). The first is the size of the settlement and the presence of stone buildings or houses with a *porticus* or veranda, which possibly are influenced by military barracks. Secondly, the presence of *horrea*. Furthermore, the ability to read or write most likely was learned during a military career. Evidence for writing would include seal boxes, the *stilus* and inkpots. Finally, ownership graffiti on *terra sigillata* is a practice common in the army that does not have a function in rural settlements. These aspects are used to identify (ex-)military presence on rural settlements.

4.5.2 Rural Settlements in the limes zone.

For a long time, there has been little attention for the civilian countryside between the fortresses on the *limes* and only during the last decade the picture is getting more clear due to more excavations on those locations. Large tracts of the *limes* road have been found. Excavations, like the one at Goudse Rijpad in Alphen aan den Rijn, have shown that apart from various military installations, also rural settlements can be found in the *limes* zone. The settlements and sites directly located on the *limes* zone, however, can be somewhat problematic to interpret. A settlement like Katwijk Zanderij (see below) is in some aspects, e.g. house building tradition and pottery assemblage, clearly rural. However, when compared to other rural settlements in the research area, such as *Het Goudse Rijpad* in Alphen aan den Rijn, and Pomona Mitylschool in Leiden, a relatively high presence of military equipment raises questions whether the site is truly civilian. Less thoroughly excavated or published sites like Alphen Hoorn (Lemkes) and Alphen de Schans are even more difficult to interpret. For example, interpretations for Alphen Hoorn have fluctuated between 'civilian' and 'military' a couple of times since the site was first encountered in 1968 (Beunder 1969; Aldred et. al. 1992).

Katwijk Zanderij

Situated right along the Rhine frontier between the *castellum* of Valkenburg (ca. 2km) and the 'Brittenburg' of Katwijk (ca. 5km), the site at the Zanderij consists of a rural settlement and cemetery. The site was discovered during sand extraction that started around 1858. The site has since been frequently visited by (metal detector) amateurs and parts have been excavated in 1996 by the ROB and in 2005 by the ADC (Van der Velde 2008, 9-31). Of all rural settlements incorporated in this research, this site yielded the largest amount of finds (n=87).

Occupation of the site starts around the middle of the 1st century AD and continues until approximately 190 AD, after which there seemed to have been a break in the occupation until the site got re-inhabited in early 3rd century when the plot-based layout was abandoned and houses were built to a different orientation. A number of Late Iron Age finds have been uncovered, which are stratigraphically separated from the Roman features. There are also scarce indications for late 3rd or 4th century activity on the terrain, but no clear proof of occupation. Probably flooding and sand drifts caused a break in the occupation until the site got re-inhabited during the late 5th century. (Van der Velde 2008, 55-90)

A cemetery was located about 80 meters to the north east. This cemetery was established during the first phase of occupation (40-70 AD) along the lower flank of the large dune. The, sex and age could not be determined for all burials, except for the higher amount of buried women, which is

typical for rural cemeteries in the region (Hessing 2008, 104). A few graves contained bronze jewelry or brooches but no military equipment or horse gear was found. (Hessing 2008, 93-105). However, it cannot be excluded that some of the material in the collections of the amateur archaeologists comes from disturbed graves.

Compared to other rural sites in the research area, the amount of metal finds from the settlement at Katwijk is very high. The excavations by both the ROB and ADC yielded 347 metal objects (excluding coins) of which 41 can be assigned to either military equipment (27) or horse gear (14). On top of this, a further 43 objects (15 pieces of military equipment and 27 pieces of horse gear) are coming from the collections of various local amateur archaeologists. The campaigns of the AWN yielded a further three pieces of horse gear. The high number of military equipment and horse gear, both in absolute numbers as in terms of percentage, raises questions about the rural nature of the site. Being situated directly on the *limes* road between two fortresses makes it easy to give a 'military' explanation for this, like the nearby presence of a watchtower. Alternatively, one could argue that the amount of metal work is caused by the relative fast covering of the site due to sand drift, good conservation conditions, and the prolonged activity of metal detector hobbyists (see section 5.1). In this research, this latest explanation is followed as no military features have been found on the site (apart from the high amount of military equipment and horse gear), and the houses, pottery assemblage and cemetery have a clear rural character.

The majority of the military equipment, including two spearheads and all armor fragments, were found in a single excavation trench. This trench also contained a large amount of the brooches (20 of 68) and indications for metal working. The house plans, found in this trench seem to post date the majority of the metal finds (De Bruin 2008, 242).

The Zanderij is one of few rural sites in the research area with a strong presence of early (period 2) horse gear. Furthermore, although typologically not exactly datable, there are indications that the military equipment, including the spearheads, should be dated to this period as well (De Bruin 2008, 237-238). The assemblage of horse gear mainly includes types that have been in use from the Augustan period onwards (strap junctions type A3). Coupled with the relative low number of horse gear finds with a starting date in the second half of the 1st century, we can assume, as discussed in section 3.1, that at least some material from Katwijk dates before 70 AD. Some of the armor straps from the detector collections appear to have the circular grooves typical for the early Corbridge type plate armor (De Bruin 2008, fig 11.11.1). One particular piece of horse gear contains an anthropomorphic figure, which De Bruin has identified as a Medusa figure and therefore should, according to Oldenstein, date in the late 2nd century (Oldenstein 1976, 941). However, as the identification took place by photographs, it might not have been a

medusa but rather an imperial figure. Imperial propaganda on military equipment is again typical for the period before 70 AD (Nicolay 2007, 145-149).

What is interesting to see in light of the high amount of horse gear is that Zanderij has, relatively for the region, a high percentage of horse bones (25% of total during the Roman period). The possibility of horse breeding for the nearby *castella* is therefore suggested by the authors (Cavallo et. al. 2008, 361-362). However, in order to draw conclusions about horse breeding for the Roman army, the composition of the bone material should be studied per phase of the settlement (Groot 2008, 81-83), which unfortunately was not possible with the bone material from Katwijk Zanderij. The withers heights of the animals from Katwijk Zanderij do seem to indicate Roman influence. With an average withers height of 137 cm, the horses from Katwijk Zanderij are larger than the average indigenous horse (132 cm.). However, they remain below the supposed norm for Roman military horses of 142 cm (Cavallo et. al 2008, 361-362).

Despite the high amount of military equipment and horse gear, the remaining indications for the presence of veterans are not overwhelming. A single sherd of Terra Sigillata contains graffiti, however it only concerned the first letter (V) of a word or name. A single seal box, dating in the 1st century, has been found by a metal detector hobbyist (De Bruin 2008, 247). Three structures have been identified as possible *horrea* by the excavators, however this interpretation is not convincing (Van der Velde 2008, 63-64).

4.5.3 Rural Settlements along the Meuse banks

Schiedam West Abtspolder-Polderweg

The Schiedam Polderweg site was excavated in several phases from 1988 until 1995 by the AWN, BOOR and the IPP (Van Londen 1996, 4). It is one of the few sites in the research area that yielded an impressive amount of military equipment. The settlement was located on a raised creek bank, and was only partially excavated, as the boundaries of the settlement could not be established. The occupation of the site can be divided in four stratigraphically separated phases. Although the separate phases are only relatively dated, the settlement can be dated in the 1st and 2nd century AD based on the dating of brooches (Van Londen 1996, 8).

The settlement itself did not yield any military equipment. However, during the excavation campaign of 1995 to the south-east of the youngest house, a concentration of worked wood and logs was found just inside the creek. On the creek bed beneath this concentration of wood, a large number of artifacts were uncovered. In an earlier trench, dug by the AWN between 1989-1991, a parallel row of posts had been interpreted as a track way along the water's edge, which

seemed to lead up to this concentration of wood. Below the wood in the deepest layers of the creek bed lay a large concentration of finds consisting of large quantities of mostly imported pottery, human bone (including a piece of cranium) and approximately 250 metal objects. These metal objects included weapons (lance/spear (3) and bolt heads (1)), a scabbard chape, shield-boss and horse gear as well as numerous (unused) nails, brooches, tweezers and a pair of compasses, all belonging to period 3. The only exception is a period 2 bit shank (35.9) (Van Londen 1996 and unpublished excavation documentation).

The bronze *umbo* recovered by the AWN (fig.4.19) does typologically not fit in very well with known Roman shield bosses, and as of yet there are no direct parallels for this type of shield boss in the Dutch archaeological record. Roman shield bosses do not have the cross shaped attachment, nor the opening in the centre. Both features and its shape have more in common with examples from the Early Middle Ages, however during that period shield bosses are exclusively made of iron and the find circumstances clearly place this shield boss in the Roman period. For comparable finds, we must look beyond the Roman frontier to Germany or Scandinavia, where this shape of shield boss and attached appliqués were more common, although no direct parallel can be found there either (Ilkjaer 2002; Raddatz 1987, taf. 54).

Fig. 4. 19: 'Germanic' umbo from the Polderweg (photo author).

Large find concentrations in creek beds are not exceptional in the region. Often these find concentrations can be considered waste dumps (Heeren 2009, 96). However, find concentrations around dams and the mouths of culverts do seem to have been purposely deposited in order to create a more stable creek bed (Kruidhof in prep; De Ridder 1999). Nevertheless, due to the

exceptional composition of this find concentration the site has been interpreted as a place for ritual deposition, rather than a rubbish dump (Van Londen 1996, 14).

This deposition and the youngest phase of the settlement have sometimes been considered to have military aspects (comment J. de Bruin; Van Londen 1996, 15). The main arguments for a non civilian nature of the site are the presence of a bolt head, the inscription with the word *milites* and a pair of compasses (Van London 1996). Especially the bolt head has been taken as an indication for a military nature of the site. Nicolay has listed ten bolts from non-military sites in the Batavian region (table 4.2), showing that the occurrence of bolt heads in rural settlements is rare, but not improbable. Furthermore, the presence of bolt heads at the cult place of Empel can be taken as a support for the ritual nature of the finds from Schiedam West.

Table 4.2: Artillery Bolt heads from civilian context in the Batavian region (after Nicolay 2007).

Site	*Quantity*	*Interpretation*
Wijk bij Duurstede (De Horden)	2	Rural settlement
Werkhoven (Achterdijk/Klaproos)	1	Rural settlement
Kesteren (De Woerd)	4	Rural settlement
Empel (De Werf)	2	Cult place
Aalst (De Morgen)	1	Rural settlement

The worked piece of bone found with a Latin inscription '*militis',* meaning 'of a soldier' (Van Londen 1996, 16) could indicate further military links of this site. In a military setting, however, the inscription *milites* (of a soldier) would have had absolutely no meaning. Therefore, if this is indeed an inscription indicating ownership, it is more likely it concerned a single soldier (veteran?) amongst others (civilians?).

Vlaardingen Hoogstad (cat. no. 36.1)

Vlaardingen is situated on the North Banks of the Meuse/Helinium. Despite the presence of numerous Iron Age and Roman period sites, the amount of metal finds from the area is extremely poor. Only one site yielded military equipment (Hoogstad 6.36), yet there are a few indications from other locations that more can be expected. The site of the *Vergulde Hand*, where very well

preserved wooden buildings from both the (Middle and Late) Iron Age and Roman period were excavated, showed that the Iron Age armament was probably made of bone rather than metal.[24]

The Hoogstad 6.36 site was excavated between 1993 and 1996 by the municipal archaeological service of Vlaardingen (VLAK). In a tidal creek, a series of dams and culverts were found of which the oldest dates in the Late Iron Age (De Ridder 1999, Dam 8, with a C14 date of 175 BC, and a dendro date of 17 BC).

Fig. 4.20:The creek system (left) with find spot (red dot) and the various dam (D) and ditches (G) and the spearhead from Vlaardingen Hoogstad (right) with detail of the socket (photo Vlak).

In a ditch, dug into a dried up creek bed (fig. 4.20, ditch G3), a spearhead was found. The shape of the spearhead fits very well with Nicolay's type A1, however the attachment holes, and their position in the socket are a feature that is not entirely common for Roman spearheads (Bishop and Coulston 2006, Nicolay 2007). The accompanying finds and C14 dates of associated waterworks (Dams 2 and 3) date the ditch between 70-120 AD (comment T. de Ridder). No traces of an associated settlement were recovered.

4.5.4 Rural Settlements in the Westland and Midden-Delfland clay area (Gantel system).

The largest tidal creek during the Late Iron Age and Roman period was the Gantel, which ran from the Meuse bank land inwards through the modern day Westland area up to Den Haag and Delft. The raised creek banks were a favorable settlement location.

W*ateringseveld (Hoge veld) (cat. no. 15.1-7)*

[24] Some bone arrowheads of the Middle/Late Iron Age were found at that site (comment R. Bakx).

The site at Wateringseveld, situated almost directly next to the site at Wateringen Juliahof, was excavated between 2001-2003 and 2005-2006 by the Municipal Archaeological Department of The Hague. Occupation of the site started in the mid 1st century (around 40 AD) and continued in six different phases until the early 3rd century. Two houses, an outhouse and two ditches can be ascribed to this earliest phase. The high percentage of handmade pottery (98%) suggests a high degree of self-sufficiency or limited access to Roman goods (Siemons 2009, 355).

In phase four of the settlement (130-160), the lay-out of the site completely changes and is now determined by a large scale ditch system based on the Roman *actus* that seems to connect with the ditch system used at Wateringen-Juliahof. The ditch system can be followed to the northern roadside ditch of the Roman road running between Forum-Hadriani to Naaldwijk (Siemons and Lanzing 2009).

One of the houses of phase six has a row of postholes parallel to its southern wall, which can be interpreted as a *portico* (Siemons and Lanzing 2009, 62, house 107). The addition of a *portico* to local farms is well documented in the Batavian region and can be taken as a indication for the presence of army veterans (Vos 2009, 237-251). Apart from this unusual feature of this house, a substantial portion of the metal finds are concentrated in this area and in the ditches surrounding this house (fig. 4.21). The majority (80%) of the iron nails, an indication for Roman building techniques, were found on this parcel, as well as all three seal boxes, which can be regarded as evidence for the knowledge of writing (Derks and Roymans 2006, 129).

Of the 703 metal objects that were uncovered, only seven qualify as military equipment (three) or horse gear (four). None of them can be directly associated with the so called 'veterans' farmstead' of phase 6. Two pieces of horse gear (cat. no. 15.1 and 15.3) come from the north eastern ditch of parcel D, and can therefore perhaps be associated with a house of phase 5 (160-190) (see fig. 4.21 and table 4.3). Although the metal finds, especially seal boxes, furniture mounts and iron nails are concentrated around the house with *porticus*, the distribution of the military equipment and horse gear is quite random over the site (see fig 4.21).

Table 4.3: Overview of military equipment and horse gear from Den Haag Wateringseveld, context and context dating.

Cat. Nr.	Object	Find context	Context dating	Period
15.1	Strap mount (vulva)	Ditch (432)	160-190 (/220)	3
15.2	Strap mount	Pit (397)	uncertain	3
15.3	Strap mount (enamel)	Ditch (432)	160-190 (/220)	3
15.5	Shield edging	Ditch (308)	-	2
15.6	Scabbard ring	Ditch (442)	70-100	2
15.7	Slingshot	Ditch (433)	150 - ?	1-4

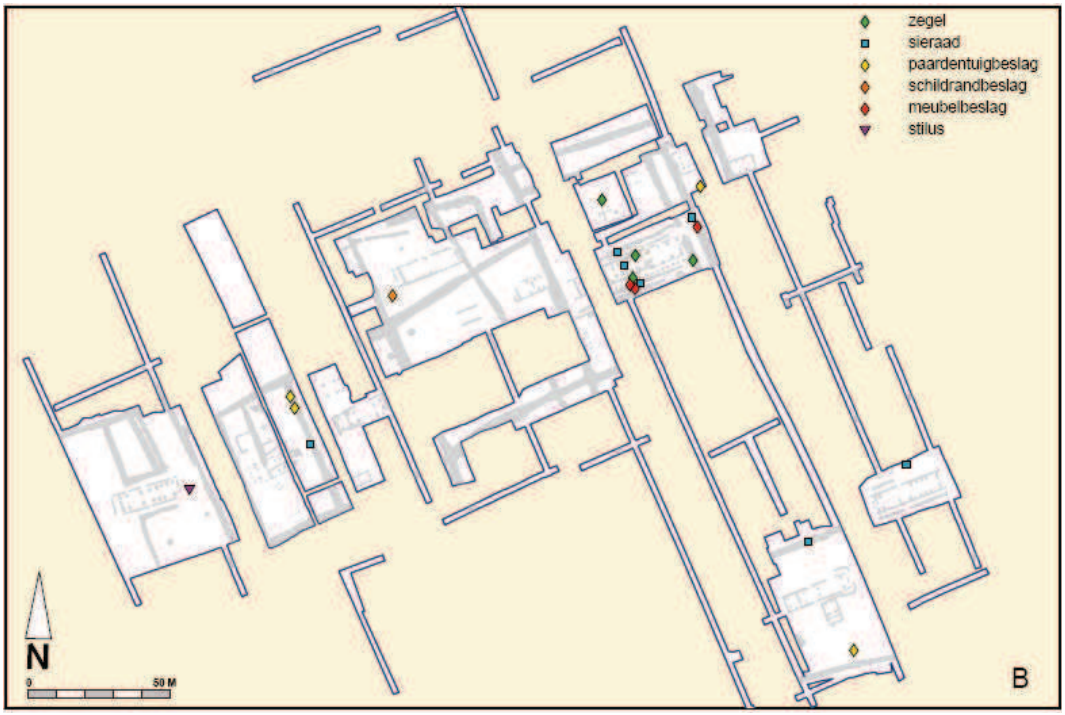


Fig. 4.21: distribution of metal finds at Wateringseveld.(Siemons and Lanzing 2009, 274)

One outbuilding could, based on its size, qualify as a *horreum*. However, the excavation did not establish whether the feature consisted of a wall ditch or not. A number of indications for writing have been found, including an inkpot, *stilus* and three seal boxes (Siemons 2009, fig 11.11). No *graffito* on *Terra Sigillata* was found. Another possible military (veteran?) connection is provided by a complete burial in ditch 422, of a horse with an exceptional withers height (150 cm.) and age (20 years). The amount of horse bones on the site, however, is not exceptionally high (max 11% in the 2nd century), as opposed to amounts of up to 20-30%, which is not uncommon for settlements in the Batavian region (Nicolay 2007, 218).

Wateringen Julia-Hof (cat. no. 39.1-7).

Excavated by Hollandia (2005) and ADC (2006), the site at the Julia-Hof is situated close to and probably connected with the sites at Den Haag Wateringse-Veld (Gerritsen and Duurland 2006; Eimermann 2009). The settlement is situated on the northern creek bank of the Gantel along the Roman road from Forum Hadriani to Naaldwijk. Occupation starts around the middle of the 1st century with a single house parcel and continues to at least the first part of the 3rd century. During the 2nd century, the site is reorganized and incorporated into a rectangular ditch system which can be followed to the sites at Wateringseveld (see above). No cemetery has been uncovered although four human cremation burials have been found on various locations just south of the settlement (Eimermann 2009, 65-66).

A total of 117 metal finds dating to the Roman period were uncovered during the excavation of 2006. A further three come from the 2005 test trenches. Seven of these are relevant for our survey and include scabbard slides (two), one part of a *balteus*, and decorative horse gear studs (two) and one pendant (see table 4.4). The interpretation of the last item is not entirely sure, as it concerns a U-shaped piece that is interpreted as either a strap terminal for a hip belt or unknown type of sword scabbard chape (cat. no. 39.4) (Langeveld 2009, 119-121).

Table 4.4: Overview of military equipment and horse gear from Wateringen Juliahof, context and context dating.

Cat. No.	Type	Context	Context date	Typological Period
39.1	Sword Scabbard B2			3
39.2	Baldric			3
39.3	Hip belt?			3?
39.4	HG Strap mount A7?			2
39.5	HG Pendant A1	Ditch	150-230	2
39.6	HG Strap mount B15			3
39.7	Sword Scabbard B2		150-230	3

Contexts of the finds is problematic when looking at the typological dates. The period 3 mount with trumpet motive has been found in close association with a three-aisled farm (WJ-01) dating between 70-150 (Eimermann 2009, 40). The period 2 horse gear pendant on the other hand, has been found in the youngest ditch system dating after 150, in which also one of the period 3 scabbard slides has been found. A curved perforated disc (cat. no. 39.4) is listed as horse gear in the excavation report as mid 2nd –3rd century horse gear. However, following the typology of Nicolay, this item should rather be placed in the 1st or early 2nd century (period 2).

Other elements of a military connection are largely missing from this site. Horse bones are only a small percentage of the total spectrum of mammals (5%) and the only specimen for which a withers height could be established is very small (126 cm.) (Van Dijk 2009, 150). One terra sigillata plate (Dr 18/31) bears a name (QVIN[---]) in graffiti (Eimermann 2009, 100).

Den Haag Uithofslaan VP3 (13.1-14)

The ongoing and still largely unpublished research by the municipal archaeological service of the Hague at the Uithofslaan started in 2001 and has brought to light four Roman period sites of which so far two yielded some remarkable (metal) finds (VP3, cat 13.1-14; VP4 (12.1-4). Again, these sites are located on the creek banks of the Gantel creek system.

Fig. 4.22: Bronze vessel with relief decoration of what appears to be a cavalryman, Den Haag Uithofslaan.

Activity on the most northern site (VP3), starts around 70 AD and continues until ca. 230 AD. However, despite the presence of late 2nd and early 3rd century finds, no house can be dated later than 150 AD (Van Zoolingen 2010a).[25] A fragment of an altar stone and a bronze incense vessel depicting a (military?) horseman and his horse may hint to a nearby cult place or ritual nature of the site.

[25] The settlement extends beyond the excavation trenches so the later houses could simply have been missed.

Table 4.5: Overview of military equipment and horse gear from Den Haag Uithofslaan VP3, context and context dating.

Cat.no	Type	Context	Context date	Typological period
13.1	Armor Tie hook (C2)	Find layer	-	2
13.2	Armor Tie hook (C2)	House plan	70-150[26]	2
13.3	Armor Tie hook (C2)	Find layer	-	2
13.4	Shield grip?	Ditch	-	?
13.5	Buckle A varia	Parcel ditch	100-230	2-3
13.6	Sickle shaped pendant (HG)	Pond	120-230	3
13.7	Strap mount B12 (HG)	Ditch	120-270	3
13.8	Strap mount B17 (HG)	Find layer	-	3
13.9	Strap mount B1 (HG)	Outhouse	100-200?	3
13.10	Bell (HG)	Depression	-	?
13.11	Strap mount B9 (HG)	Pit	100-270	3
13.12	Strap mount B1 (HG)	Pit	100-270	3
13.13	Strap mount B13 (HG)	Parcel ditch	120-230	3
13.14	Wagon, reign guide (D2)	-	-	3

Although the armor straps do not have a clear context date, the general date of the settlement makes it likely that they date after 70 AD (see table 4.5).

Midden-Delfland – Harnaschpolder

The expansion of the city of Delft and the construction of a large water purification plant necessitated large scale excavations in the Harnaschpolder. A number of rural Roman settlements there have yielded military equipment and horse gear. One has been excavated by the Municipal Service of Delft (MDHP12, 2007/2008, Bakx in prep.), and two others by the ADC. (AHR-01, AHR-02, Goossens 2006).

MDHP12 (cat. no. 22.1-3)

The site is located on the originally higher parts of the Harnaschpolder, where the soil is made up of sandy and clay bank and stream deposits (of a side branch) of the Gantel-creek system. The

[26] Based on a brooch of the type Almgren 15 from the same structure.

settlement started around the middle of the 1st century AD and is much older than the nearby sites AHR1 and 2. [27] Occupation of the settlement continued until at least the second half of the 2nd century. A dump of early 3rd century pottery has been found in one of the parcel ditches, but could not be linked to the uncovered features of the settlement (Bakx, in prep).

The settlement yielded two house plans. The first is a square 10x10m. plan, with at the north side a possible *porticus.* The house is surrounded by a square ditch, in which at least 3 phases can be distinguished. An opening in the north eastern ditch connects with the next parcel that contains a typical byre-house (20x 6,5m.) (Bakx, in prep).

The metal finds from this excavation include brooches, coins, and parts of bronze vessels. Four finds have been identified as relevant for this study. All have been found in the culture layer which only got preserved in a depression of a residual channel. The first being a scabbard chape, which based on its small size will probably have been used on a dagger scabbard (cat. no. 22.3). The remaining two, a bell (cat. no. 22.1) and a decorative enamel inlayed strap mount (cat. no. 22.2) belong to horse gear. Finally a spear or lance head has been recognized in a lump of rust after x-ray photos have been taken.[28]

AHR-01 (Southern settlement)

This settlement and its northern neighbor (AHR-02) are during the Roman period newly founded settlements with a starting date in the 2nd century. Although there is some evidence for earlier activity on the location, the first phase of the settlement starts around 150 AD and is laid out in a strict parceling plan. In general the settlement shows a higher degree of Roman influence and contains less local features. For example, one house probably has a *porticus*, and the amount of handmade pottery is minimal (Goossens 2008, 171-15). End date of the site is rather exceptional in the Midden-Delfland region. In general occupation in the Midden-Delfland region seems to end around the end of the 2nd century or beginning of the 3rd, yet this settlement continues until approximately 260/270 AD (Goossens 2006, 429).

Of the 61 recovered metal items only two could be regarded as military equipment or horse gear. The first is a buckle of a baldric (cat. no. 44.1), the second is a *pelta* shaped strap mount (cat. no. 44.2), both dating in period 3. Although, a high amount of the metal objects (50%) has been recovered from Roman age features, the military equipment and horse gear has been recovered from the find layer, without proper context. (Hensen 2006, 273)

[27] Based on a high proportion of decorated handmade pottery, and glass ribbed-bowls.
[28] Comment by JP. Bakx, the spearhead is not included in the total number of the survey as it only came to light after my analysis was done.

The percentage of horse bones shows a peak in period 4 of the settlement (225-260 AD) with 13%. Overall for the entire period in which the settlement was active the amount lies at 8.7%. It generally concerns young animals (<2,5 years) with a maximum withers height of 140 cm.

AHR-02 (Northern settlement).

Roughly 400 meters away, the northern settlement (ca. 125-200 AD) yielded far less material (Goossens 2006). Only seventeen metal objects have been recovered from the northern settlement, of which the majority was found in a very corroded state. Occupation of the site also seems less intensive and less continuous then on the southern settlement. No house plans have been uncovered and only clusters of pits have been found between the parceling ditches.

Fig. 4. 23: Strap Mount (bottom left) and fragments of horse gear/belt plate from AHR2 (After Hensen 2006)

The only clear find was a single period 3 strap mount (see fig. 4.23; cat. no. 45.1), coming from a ditch surrounding the settlement. More interestingly however, is a very fragmented decorative mount for either a belt or horse gear (see fig. 4.23; cat. no. 45.2), which has been retrieved from a pit, which is part of a cluster of large pits containing a number of almost complete animal burials. The fragmented nature of the find did not allow exact determination, however the still recognizable prongs for fastening the piece to the leather, place this piece in period 3. It was found on top of a very thin layer of organic material, most likely the remains of leather. The excavators identified this find as a deliberate deposition, and others have been discussing a possible ritual nature of the entire cluster of pits (Hensen 2006, 156; Therkorn and Besselsen 2008, 243-254).

Table 4.6: Overview of military equipment and horse gear from Harnaschpolder AHR2, context and context dating.

Cat. no.	Find nr	context	Period	Date
45.1	-	Ditch (201)	3	
45.2	513	Pit (531)	3	150-175 AD

Although the pottery from the pit cannot be more sharply dated than 1st to early 3rd century, the pit seems to belong to phase 2 (150-175 AD) of the settlement (Goossens 2006, 126). The pits in cluster A contain almost complete skeletons of sheep, dog, cattle, but no horse. The total amount of horse bones is low (3.6%, after correction for complete skeletons).

Rijswijk De Bult

Situated between the Westland region and Forum Hadriani a rather surprisingly small amount of metal finds are coming from the municipality of Rijswijk, with one notable exception. Rijswijk-De Bult is perhaps the most famous and without a doubt the most important site for Roman provincial archaeology in Zuid-Holland. The excavation which started in 1967 was the first large scale excavation aimed at a local rural settlement and the research and its publication by Bloemers has set the standard for almost three decades (Bloemers 1978; Van Londen et. al 2008, 5). The excavation brought to light a small settlement that started out in the late 1st century BC (Van Londen 2006, 167) or early 1st century AD (Bloemers 1978, 37), which by the start of the 3rd century had grown in to a proto villa complex, partly built of stone, with a *hypocaustum* and painted plaster walls. This remains the only completely excavated stone-building on the Cananefatian countryside. Two consecutive buildings with a portico have been interpreted by Bloemers as temples (Bloemers 1978, 189-191). However, they have recently been reinterpreted as either houses (Goossens 2008, 164-165) or *horrea* (Vos 2009).

Despite being excavated without the use of a metal detector the site yielded numerous metal objects, including three pieces of horse gear. No military equipment was found, however a stone mould for casting *cingulum* buckles (type A4) was recovered from the find layer. The strap junction (cat. no. 28.2) was found in one of the ditches belonging to phase 1b (ca. 30-60 AD) of the settlement, and this makes it the only item in the research area with a context date before 70 AD. The remaining finds were not found in a clear context (Bloemers 1978, 303-311).

The ROB excavated a second settlement some 700 meters to the south-east, which did not yield any military equipment. However, local hobbyists have retrieved two pieces of horse gear (29.1 and 2), and a possible belt plate (29.3) from the spoil heap (Comment by H. Koot, municipal archaeological service of Rijswijk).

4.5.5 Rural Settlements in the beach barrier area

Four sites lie in the beach barrier area. Katwijk Zanderij however, has already been discussed with sites in the *limes* zone. Of the remaining three, Naaldwijk Zuidweg is also part of the Meuse banks, and Poeldijk Westhof can also be considered as part of the Gantel system. The remaining site at the Jan Willem Frisolaan in The Hague has not been completely published and will not be discussed.

Poeldijk Westhof, vindplaats B (late 1st to 3rd century AD)

Following preliminary research by the Municipal Archaeological Service of Delft, ROB and ADC, the settlement at Poeldijk Westhof was excavated in 2006 by the ADC. The site is situated on the edge of the Gantel creek system and beach barrier in Poeldijk, in the direct vicinity of a stone 'villa' where in 1970 a military diploma was found (Bogaers 1979, 357 approximately one km.). The earliest traces of occupation on the site date from the end of the 1st century and consist of two parcels with byre houses, although they may not have been contemporary (Blom and Van der Feijst 2007, 98).

Thanks to systematic use of metal detectors a total of 146 metal item were recovered, of which seventeen are either military equipment or horse gear. The most interesting find was a large lump of rust, which after cleaning turned out to be the remains of mail body armor, the *lorica hamata* (fig 4.24). In the research area this is the only find of actual body armor; elsewhere only fittings have been preserved. The rings have a diameter of eight mm. (Van der Feijst 2007, 65-66). The mail armor cannot be dated on typological grounds with any more precision than Roman. However, the general development of the settlement makes a date before 70 AD very unlikely (Blom and Van der Feijst 2007, 98). Furthermore, all other military equipment and horse gear should typologically be dated in period 3.

A square ditched enclosure (Blom en Van der Feijst 2007, 29; structure GS1) that could be interpreted as a 'cult place' within the settlement (Van Zoolingen 2010b, 158) contained a complete *dolium.* Directly next to it, six large lumps of rust, with a total weight of eight kilo were found. X-ray photos showed the lumps of rust contained a number of folded iron plates, 40-60mm wide, and a number of tools. From photographs the plates have been identified as the hoops of a barrel. However, because the items were never restored it cannot be excluded it concerned a disassembled *lorica segmentata* (Van der Feijst 2007, 61-62).

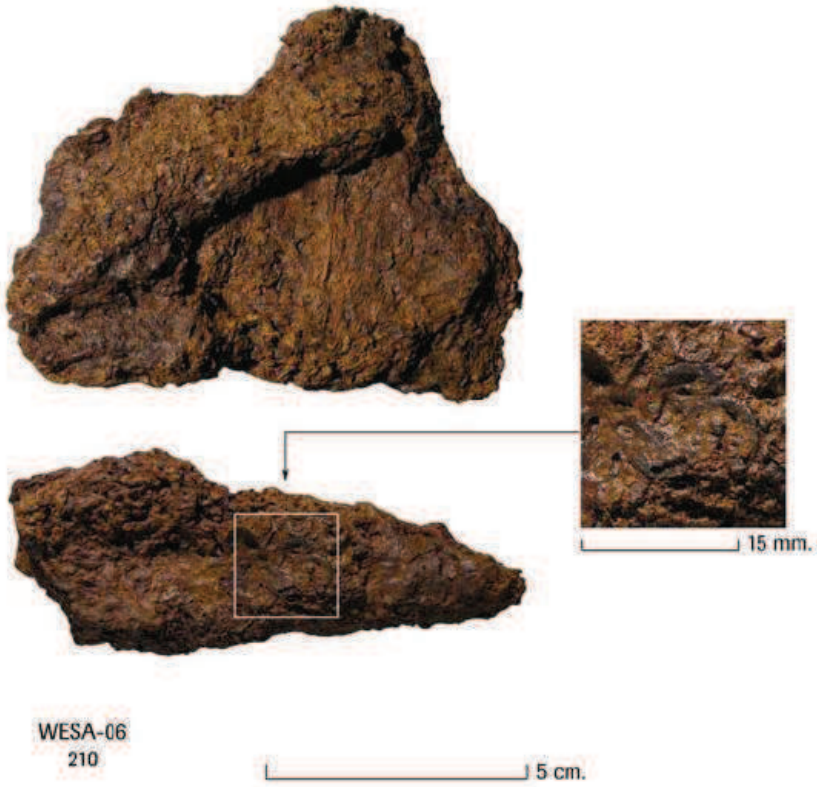


Fig. 4.24: Mail armor from Poeldijk (Van der Feijst 2009)

One of the two acorn shaped items although presented in the ADC report as a horse gear pendant (Van der Feijst 2007, 66, find nr 41), has been left out of the data set, because it is more likely to have been part of a furniture handle.

Naaldwijk-Zuidweg/Hoogwerf (cat. no.24.1-31)

Naaldwijk-Zuidweg/Hoogwerf is one of the key sites in the *civitas Cananefatium*, as this site has been subject of many excavations starting with Holwerda in 1907 and 1935. Research continued in 1975 by the ROB, and from 2003 onwards, parts of the site were excavated almost annually, by ARC (2003), ADC (2004, 2005, 2011) and Archol (2007, 2008) in cooperation with the University of Leiden (Van der Feijst et al. 2007; Goossens 2010).

Naaldwijk, now in the middle of the Westland area, was in Roman times situated on a recurved spit (haakwal) on the northern bank of the Helinium estuary. The settlement was probably located near the mouth of the *Fossa Corbulonis* and a road junction, where the road from

Municipium Aelium Cananefatium/Forum Hadriani linked up with the road on the North bank of the Helinium (Waasdorp 2003, 54).

Despite the long time and large scale of the archaeological research, the exact nature of the site has not been established yet. Although there are some indications for Late Iron Age or early Roman occupation, the first clear settlement traces date after the middle of the 1st century. In this period the site seems to start as a typical rural settlement, consisting of native farmsteads. The layout of the site completely changes around the third quarter of the 2nd century when the site is divided into parcels and a very abrupt change in structures and material culture can be observed (Van der Feijst 2008, 207-209; Goossens 2010, 39-41). Van der Feijst reaches the conclusion that the settlement develops into a *vicus* in the vicinity of either a Roman naval base or road junction (Van der Feijst 2008, 208). Goossens, in the preliminary report over the 2007 excavations, reaches the same conclusion although he finds a naval base more likely (Goossens 2010, 189). The vicus phase ends during the second quarter of the 3rd century, after which only in the first half of the 4th century some new activity can be identified (Goossens 2010, 42-42).

Fig. 4.25: Bronze plate with inscription referring to the Classis Germania found at Naaldwijk (Van der Feijst et. al. 2008, fig. 6.1).

No distinctive traces of a military site have been uncovered, and the theory about a military presence is largely based on the military stamps on building material (CGPF)[29] and pieces of bronze statues that were found on the site. Amongst the statue parts is a bronze hand reported by Holwerda, and a bronze plaque with the inscription of *Classis Germanica* was found, which is assumed to have been attached to the base of a statue of a Roman emperor (fig 4.25) (Derks

[29] Similar stamped bricks are known from multiple sites in the region, including: Forum Hadriani, Maasland Honderdland (1), Den Haag Wateringseveld (3), De Lier (1)

2008, 149-157). Statues of emperors should be expected in military fortresses and formal Roman cities. Apart from these imperial statues, parts of statues (arms) were also found belonging most probably to an almost life-sized statue of a deity, which is too large for a simple house altar (verbal comment M. Kruidhof, ArcheoWest).

These remarkable finds are not to be expected on a rural settlement. However, the still unpublished 2008 and 2011 excavation results have shown that a large portion of the Bronze material are coming from 4th century context, meaning that most metal items should be considered scrap metal collected from elsewhere, probably in the direct vicinity of Naaldwijk (verbal comment J. de Bruin and L. van der Feijst).

Furthermore, the amount of military equipment (n=12) and horse gear (n=18) is not so numerous to support a military interpretation of the site (see reference table 4.1). Knowledge about Roman naval installations or bases and their occupation is very limited. The few indications available show that they vary extremely in size and structure and a strong garrison or permanent occupation is not necessarily needed (Konen 2000, Starr 1941). Also, the high degree of local handmade pottery, compared to the *vici* near the fortresses on the *limes,* points towards a more rural nature of the site. For these reasons Naaldwijk Zuidweg/Hoogwerf has been included in this study while other *vici* have been excluded.

Excavations up to 2007 yielded 31 'military' finds. Unfortunately, the metal finds of the 2008 and 2011 excavation were at the time of writing being conserved by Restaura and thus not available for examination or identification, and have therefore not been included in this research. However, hardly any of this military equipment and horse gear has been found in a clear archeological context and therefore it is uncertain whether these should also be regarded as scrap metal.

On typological grounds, six items date to period 2, and therefore pre-date the '*vicus*' phase. These include tie-loops for plate armor C2 (cat. no. 24.4), which according to Nicolay should be placed in period 2. However, the development of the settlement and the strong 2nd and 3rd century peak in the material make it more likely that the armor belongs to period 3 (Van der Feijst 2008, 137; see also discussion about the dating of plate armor in section 3.2). One item (24.14) can according to the typology of Nicolay be assigned to a period 4 belt, however this is not entirely certain (Van der Feijst et al. 2008, appendix 3, 260).

Only a small number of the military equipment or horse gear has been found in archaeological meaningful context, the remainder being found in either the find layer or later retrieved from the spoil heap. A simple horse gear strap mount (type B1, cat. no. 24.27) has been found in a ditch

(s21) dating to the 3rd century which also contained some remarkable pieces of bone, including part of a human skull, grey seal and sea eagle (Van der Jagt 2010, 166).

4.5.6 Rural settlement summary

The above site descriptions have been summarized in table 4.7. The picture that emerges from the rural settlements is that the presence of military equipment and horse gear should not be explained in a single way. The few available finds with a proper context show that within the settlements some items are purposely deposited or can be interpreted as general waste/lost items. From some settlements there are indications for metalworking, and therefore some of the military equipment can be regarded as scrap metal. A few settlements seem to support the veteran model of Vos, where we find Romanized building techniques, *horrea*, and evidence for writing (Vos 2009).

Table 4.7: Overview of settlement characteristics for rural settlements.

Site	#m	Size	*Horrea*	*Portico*	*Graffito*	Writing	Horse bones	Metal working	Other
Rijwijk de Bult	4	4	xx	1?	-	-	18%[30]	X	Stone Villa
Harnaschpolder MDHP12	4	2	-	1	?	-	?	-	
Harnaschpolder AHR1	5	2	-	2	-	-	7,9%	-	
Harnaschpolder AHR2	2	-	-	-	-	-	3,6%	-	Ritual
Den Haag Hoogeveld	7	2	X	1	-	xxx	2,7%	-	
Wateringen Juliahof	7	2	X	-	x	x	5%	x?	
Katwijk Zanderij	82	2	X	-	x?	-	25%	xx	
Naaldwijk Zuidweg	31	?	-	-	x	xxx	1,2%	xxx	
Schiedam Polderweg	10	2	-	-	x	-	?	-	Ritual
Poeldijk Westhof B	17	2	-	-	-	-	10%	-	

[30] Only data is available from the period 150-300. Including the data from the earliest phases of the settlement will most likely result in a lower percentage.

4.6 Urban centres: Forum Hadriani (Voorburg)

Although the site was already discovered in the middle ages, the first 'modern' excavations on the site of Forum Hadriani started in 1827 by Reuvens, who already suspected the site to contain the remains of a Roman city (Halbertsma 2006, 217-233). Almost a hundred years later, Holwerda performed another excavation on the site and interpreted it as a Roman naval base based on a few metal items and brick stamps (Buijtendorp 2006, 234-249; Holwerda 1923). Holwerda's incorrect interpretation meant a loss of interest in the site for almost 60 years, which resulted in the area being completely covered with buildings with only limited attention of professional archaeologists. The absence of a municipal archaeological service did not help the situation either. Unfortunately, a number of those reported finds can no longer be traced (Buijtendorp 2010, 89-92). Only recently, two large scale modern excavations, by BAAC and AAC took place on the site, providing valuable additional data.

The settlement of Forum Hadriani starts out in the later Iron Age or early 1st century as a rural settlement of which very little is known, as only in a few locations in the first phases have been found or recognized. However, based on Roman imports, the presence of a local elite is suggested for the earliest period (Buijtendorp 2006, 66-69). Roman influence becomes apparent in the second half of the 1st century after Corbulo ordered the digging of a canal in AD 47. When Domitianus, between 80 and 90 AD reorganized the military district of Germania into two regular provinces, the *civitates* also got formalized and the site in Voorburg became the official centre of the region. Forum Hadriani was elevated to the status of *Municipium* around 120 AD when Emperor Hadrian visited the Northern provinces, and probably Voorburg itself, on his way to Britannica (Buijtendorp 2006b, 80).

The site continues until at least 270 AD and is one of the few known sites in the research area with such a late date.[31] And where the area shows a decline at end of the 2nd and early 3rd century, at Forum Hadriani large scale developments can be witnessed in that period, including the building of city walls (De Jonge 2006, 151). A few coins indicate that the site may have been used during the 4th century, however by then it had clearly lost its function as urban centre. Period 4 may also be attested by a single barbed spear head of probable German origin.

The 2007-2008 excavation by AAC yielded almost 5.000 metal objects of which only 37 could be identified as either belt components or horse gear (Hoss, in prep.). At the time of writing, the iron objects were not yet preserved and cleaned and were therefore not available for examination. However, based on the initial pre- cleaning quick scan of the material, an artillery bolt head and a

[31] Katwijk Zanderij and Naaldwijk Zuidweg are the sites with late 3rd and possible 4th century activity.

lancehead may be among the iron objects (comment S. Hoss). The majority of these have been recovered from the harbor area and *Fossa Corbulonis.*[32]

Not all finds that have been reported over the years could be recovered for this study. However, the 114 finds that have been included in the data set, provide a relevant sample for the site.[33] The following figure (fig. 4.26) shows the type of military equipment and horse gear found at Forum Hadriani:

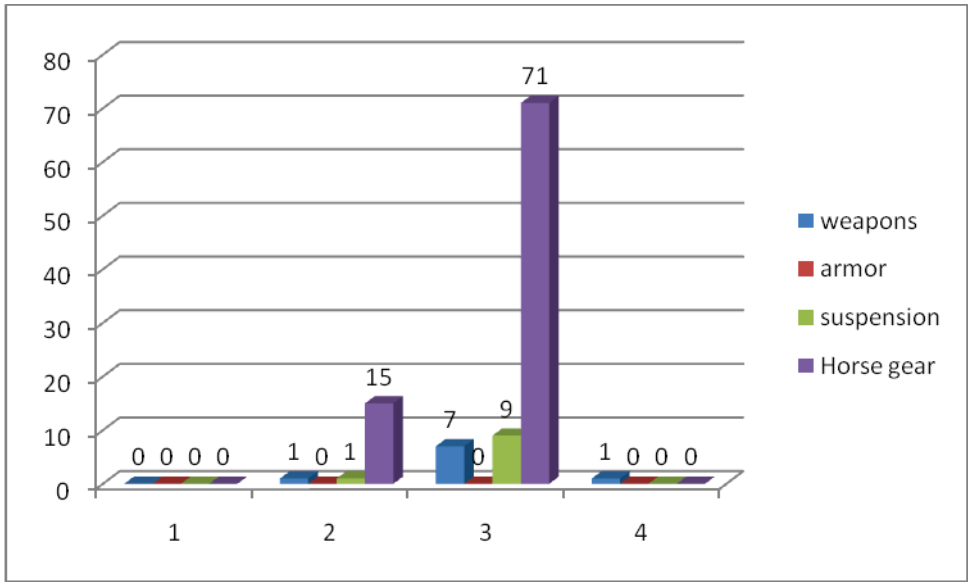


Fig. 4.26: Composition of militaria from the urban centre of Forum Hadriani.

The increase in horse gear between period 2 and 3 is quite dramatic compared to the general trend in rural settlements (see fig. 4.18). However, this may be explained by the late starting date of the site. Armor is missing completely from Forum Hadriani, while weapons are well represented in period 3.

A number of actual weapons have been recovered over the years, including a fragment of a sword blade, five spear or lanceheads, two *pila*, of which one has a barbed tip (38.39) and may therefore date to period 4 (Bishop and Coulston 2006, 200-202). Swords are further represented by four scabbard slides and two chapes, all dating around the end of the 2nd and early 3rd century (period 3).

[32] Due to uncertainty the iron objects have not been included in the database. More detailed information on find spots are not available yet.
[33] For example, the items reported in archis observation report 22115, which included three pieces of horse gear, could not be retrieved until after finishing this study. These finds belong to the collection of the Stadsmuseum Leidschendam-Voorburg (formerly Museum Swaensteyn), but although they have been contacted early on these items were due to personnel changes, overlooked by their staff.

The absence of armor parts, which have a tendency to be overrepresented, is rather striking. Pieces of armor are not uncommon on settlements in the surrounding countryside (see sections 4.3 and 4.5). Although the majority of finds date to period 3, the earlier phase of the settlement is represented by fourteen pieces of horse gear, a single pilum and a single belt plate.

Contexts or exact locations of the older and chance finds are not exactly known, yet a picture emerges of a general random distribution over the terrain. Figure 4.27 shows the site of Forum Hadriani with the locations of the various excavations. The amount of finds from the main excavations are listed in table 4.8.

Table 4.8: Overview of Weapon (offensive and defensive), Suspension and Horse gear finds from the large excavations at Forum Hadriani.

	Weaponry					**Suspension**					**Horse gear**				
	1	2	3	4	-	1	2	3	4	-	1	2	3	4	-
Reuvens		1	1		2			3				7	18		
Holwerda					3		1						1		
BAAC			5					1				2	25		
AAC					2?			5				6	27		1

So far, only the excavation by BAAC provides more insight in the distribution of horse gear and military equipment. The majority of horse gear and military equipment found by BAAC dates in period 3 and especially the scabbard slides are typical for the later parts of the 2nd and early 3rd century. A significant number of them have been found in an open area in the city that appears to be cleared around 180-185 AD, after which the area remained largely open for at least a decade. A number of wells date from this period and it is suggested that the open area functioned as a horse pen with watering possibilities (Buijtendorp 2010, 568).

According to Kropff, this “concentration” of military equipment is an indication for a (small) military presence or garrison at Forum Hadriani (Kropff 2008) . A similar explanation has been proposed for concentrations of weaponry in other cities, for example, Xanten. However, the concentrations of military equipment in Xanten feature a larger variation and larger time depth, and most importantly contain pieces of armor (Lenz 2006). Therefore, a ‘military’ explanation based on five scabbard slides does not seem valid, especially not when taking into account the general distribution of military equipment and horse gear over the other areas of the city.

Although without a doubt, some armed soldiers (or police) were present or frequented the city, alternative explanations need to be sought. Nicolay has listed six alternative explanations for the presence of military equipment and horse gear in urban centres (Nicolay 2007, 190):

- Short deployment of soldiers in construction work
- Military conflicts
- Trophies brought home by veterans
- The presence of metal workshops
- Use of military equipment by non-soldiers
- The deposition of militaria in urban sanctuaries

Stone buildings are extremely rare in the *civitas Cananefatium* and are mostly restricted to the military fortresses and Forum Hadriani itself. Considering the low amount of stone buildings in the region, it can be assumed that the demand for civilian engineers was low. Stamps on building material show that the military was responsible for supplying a large amount of the building material (Bink and Franzen 2009, 228-229).and is probably the nearest source of construction expertise. Therefore, the short deployment of soldiers in construction work at Forum Hadriani is not unlikely

There is no clear evidence for military conflict at Forum Hadriani. However, De Bruin suggests that re-used stone building material used in the foundations of the 3rd century stone building from Rijswijk de Bult (see above) must have originated from Forum Hadriani. This could indicate a period of destruction, perhaps as a result of military conflict during the period of unrest at the end of the 2nd century (De Bruin 2005, 31).

A large number of veterans does not return home but decides to settle in nearby urban centres after retiring from the army (Nicolay 2007, 190). Whether this is the case for Forum Hadriani can not be demonstrated. The limited available find contexts from Forum Hadriani for military equipment or horse gear prevent further analysis. Nevertheless, a sherd found in Forum Hadriani with the inscription '*Veterani*' does point to the presence of veterans in the city (Buijtendorp 2010, fig. 21.1).

There is ample evidence for metal working from Forum Hadriani. Large amounts of slug material, lead drops and shredded metal have been found in both the excavations of BAAC (Hendriksen 2009, 303, 310) and AAC (Buijtendorp 2011, 460). However, direct evidence for the production of military equipment or horse gear is lacking. Evidence for the production of military equipment from nearby Rijswijk-de Bult (see above) and Den Haag Scheveningseweg (Waasdorp 1999, 101) shows that military equipment was produced locally.

Although there is evidence (e.g. altar stones) of urban sanctuaries at Forum Hadriani, their location and appearance is largely unknown or hypothetical (Buijtendorp 2010, 568). None of the evidence points to sanctuaries for the deities *Mars* or *Hercules Magusanus* (Buijtendorp 2010, 568), which are the most likely recipients of offered military equipment (Nicolay 2007, 190).

Fig. 4.27: Forum Hadriani, with the various excavations as mentioned in the text. (after BAAC). The most recent excavation by the AAC is indicated by the purple rectangle in the bottom right corner.

4.7 Cemeteries

Roman period cemeteries in the research area are rare, generally small and in some cases badly preserved or only partially excavated (Van Londen et.al 2008, 32). The few known rural cemeteries like Katwijk-Zanderij (Van der Velde 2008), Naaldwijk-Tiendweg (Bult et. al. 1988), Rotterdam-Hoogstraat (Carmiggelt 1997), Rotterdam-Kanderlaarsweg (Meirsman and Moree 2004), and Poortugaal (Goossens 1997) did not yield any military equipment or horse-gear. However, for Katwijk-Zanderij, it cannot be excluded that some of the finds done by metal detector hobbyists are coming from the cemetery (see above). Just outside the research area, the large cemetery at Spijkenisse Hartel-West consisting of 170 graves, did not yield any military equipment either (Döbken 1991). As already mentioned above, no cemeteries have been found around the urban centre of Forum Hadriani. The cemetery at Valkenburg Marktveld, which is partly military, is the largest cemetery in the region (Smits 2006). Despite of having over 700 graves, no military equipment or horse gear was found. The conservation of metal on the site was extremely poor and only the presence of metal in the graves could be determined, but no identifiable objects were uncovered (Bult and Hallewas 1986, 51).

In general, grave finds are very poor in metal finds. In those cases where metal is recovered, it generally concerns iron nails for the construction of the burial pile or small shoe nails (Bult et al. 1988; Carmiggelt 1997; Goossens 1997).

4.8 Cult places

Like cemeteries, cult places are a rare feature in the research area. The few known examples are square ditched enclosures, largely similar to examples in the Dutch Eastern River Area (Van Zoolingen 2010b, 162). (Possible) cult places have been identified inside the settlements like Leidschendam-Leeuwenberg and Wateringse Veld and Den Haag Lozerlaan. These are nothing more than separately ditched enclosures within the settlement, often with a few exceptional finds to set them further apart from the settlement. A small fragment of a stone altar has been found at Den Haag Uithofslaan. Although the surviving part of the inscription only consists of a single letter H, it has been suggested that the altar may refer to Hercules (-Magusanus?) (De Hingh and Van Ginkel 2009, 102). Together with the above mentioned incense vessel, this may point to a cult function for (part of) that site as well (Van Zoolingen 2010b). The exceptional number of statue(parts) found in Naaldwijk may also point to the presence of a cult place in the direct vicinity of that settlement (comment J. de Bruin).

However, none of these cult places, except the one at Lozerlaan, has any military equipment or horse gear directly associated with it. At the Lozerlaan, the ditch surrounding the cult place

contained a number of metal finds including scrap metal, a bronze container, a brooch and a heavily corroded bronze applique of possible military nature (Van Zoolingen 2010b, 99; cat. no. 11.1).

Although situated roughly 30 kilometers north of the research area in "Frisian" territory, it is worth to mention the cult place at Velserbroek (B6). This site with its roots in the middle Iron Age consist of a large find concentration/deposition of metal objects and horse bones, without any associated features. The site has sometimes been regarded as a place of deposition for the spoils of victory of the Frisian revolt of 28 AD (Bosman 1995, 89-91). However, the assemblage has a greater resemblance with finds from the later Velsen II, making the above theory not plausible. Alternatively, the finds are explained as the deposition of scrap metal retrieved from the Roman fortress after it was abandoned around 50 AD (Bosman 1996, 91-98).

4.9 Rivers

In the research area, a small number of finds (n=9) come from a river context. The interpretation of river finds is always problematical as they can include accidental lost items, waste dumps from settlements, washed out material from eroded settlements or fortresses and finally the purposely (ritual) deposited material. Due to the dense military presence along the river Rhine, it is impossible to exclude a military nature of these finds.

All river finds incorporated in the data set have been found at least 300 meters from the nearest fortress. In the Cananefatian region, most fortresses have not been eroded, and excavations at Alphen aan den Rijn (Zee 2004) have shown that, although the majority of the (military) metal finds has been found in the Rhine bed, they have not been washed away over a great distance.

A quick survey of the few river finds (especially from the Rhine) shows them to be very different in nature than the finds from rural settlements or even from the urban centre of *Forum Hadriani* in Voorburg. Amongst the nine items from a river context are two complete helmets, and a highly decorated sword scabbard, items that are missing from the other contexts in the research area. Below, I will discuss the finds from rivers, including these three exceptional pieces.

4.9.1 The Rhine

Woerden

At the most north-eastern corner of the research area, near the *castellum* of *Laurium* (ca. 320 m.), a probable 3rd century 'parade' helmet (type F2/G3) was found during dredging operations.

Amateur archaeologists who were given the opportunity to look through the debris of a dredging operation encountered amongst more recent finds, Roman pottery, a bronze hinge of a bucket and a tuff altar (grave?) stone. The helmet however, was found by one of the dredgers and unfortunately illegally sold off. Ownership is still disputed meaning proper examination, conservation and restoration is still pending (Nicolay et al. 2008).

Fig. 4.28: Helmet dredged up from the River Rhine near Woerden. (photo archeobrief)

The helmet appears to be a hybrid of the Niederbieber and Weiler-Guisborough types (Nicolay et al. 2008, 6). It has the relatively simple bow with sloping neck guard of the Niederbieber types, however it misses the characteristic cross shaped reinforcement and peak. The crest, on the other hand, is typical for the Guisborough types. Based on parallels from Vechten and Heddernheim, it probably concerns a (semi) masked variant. The parallel from Heddernheim did not have a full face mask, but single piece face guard with a T-shaped opening for the eyes and nose. This latest type seemed to have originated from the development of the cheek pieces of the Niederbieber helmets, which increasingly got larger until they enveloped the entire face and joined up around the chin. Nicolay et al. date the helmet between the last quarter of the 2nd century and first quarter of the 3rd century, while not dismissing an earlier date. However, the closest parallel to this helmet, the helmet from Heddernheim, is dated in the 3rd century and only in the second half of the 3rd century do these helmets disappear completely (Nicolay et.al 2008, Bishop and Coulston, 2006, 177-178, 220).

Fig. 4.29: Eagle crest of the Woerden helmet (photo Archeobrief).

Fig. 4.30: The helmet from Bodegraven (photo RMO).

Bodegraven (helmet)

In 1937, a near complete and highly decorated brass cavalry helmet (type Niederbieber G3,) was found near Bodegraven (Wierickerschans/Weijpoort) in an old Rhine streambed, during sand extraction for the new Utrecht-Den Haag highway (Stuart 1986). Originally, the find was taken as an indication for a nearby *castellum* or watchtower. However, due to the lack of other evidence from the find spot, this find should, according to Holwerda, be considered a stray find, and should not be directly associated with the nearby presence of a fort. The nearest fort, therefore, is Bodegraven at ca. 2.8 kilometers. The patina on the helmet is typical for finds from river beds indicating that the helmet has been there since the 3rd century (Brunsting 1953, 124).

It is decorated on the outside with rather crudely engraved pictures of dolphins and dancing males. On the inside of the neck guard, a number of illegible names (ownership signs?) are engraved. This type of helmet can be dated between 175-225, however this particular piece is generally dated in 3rd century (Bishop and Coulston 2006, 177). The engraved dolphins may hint to a late date as dolphins became a popular feature on, for example, late Roman belt buckles (Bishop and Coulston 2006, 220).

Leiderdorp(sword scabbard)

In 1876, parts of a silver sword scabbard were dredged from the river Rhine near Leiderdorp, some 400 m. away of the castellum of *Matilo* in Leiden. The bottom part got preserved and has a medallion shape with on both sides a relief depiction of an emperor, respectively emperor Trajan and his successor Hadrian. Both portraits are surrounded by text: Imp(erator) Caes(ar) Nerva Traian(us) Aug(ustus), and: Aug(ustus) Cae(ar) Hadrianus (Stuart 1986, 108-109).

Fig. 4.31: Sword scabbard from Leiderdorp with depictions of Hadrian(right) and Trajan (left) (photo RMO).

The scabbard was most likely manufactured during the reign of Hadrian (117-138 AD) and is the sole exception of imperial imagery in the wider region after period 2 (Nicolay 2007, 144; see also chapter 5). Typologically, this piece offers a few problems. Although it is listed by the Rijksmuseum van Oudheden and P. Stuart as a sword scabbard, the medallion style chape is more typical for 1st century dagger scabbards, while round chapes for sword scabbards are only introduced at the end of the 2nd century (Bishop and Coulston 2006, compare fig. 41 with fig. 44 & 45). The metal edging of the scabbard is more typical for 1st century scabbards (Bishop and Coulston 2006, compare fig. 41.2 with fig. 101).

Valkenburg Marktveld and Woerd gullies

At Valkenburg, a number of both metal and bone items were found in the Marktveld and Woerd gully of the Rhine. Although Valkenburg Marktveld and De Woerd as *vici* have been excluded

from the data set, these finds should be mentioned nonetheless. Nicolay regards the site at the Marktveld as a rural settlement, after native byre-houses appear on the site after the mid-2nd century (Nicolay 2007, 213). If these items were included in the data set the amount of sword scabbard parts would even have been more prominent in the Cananefatian region.

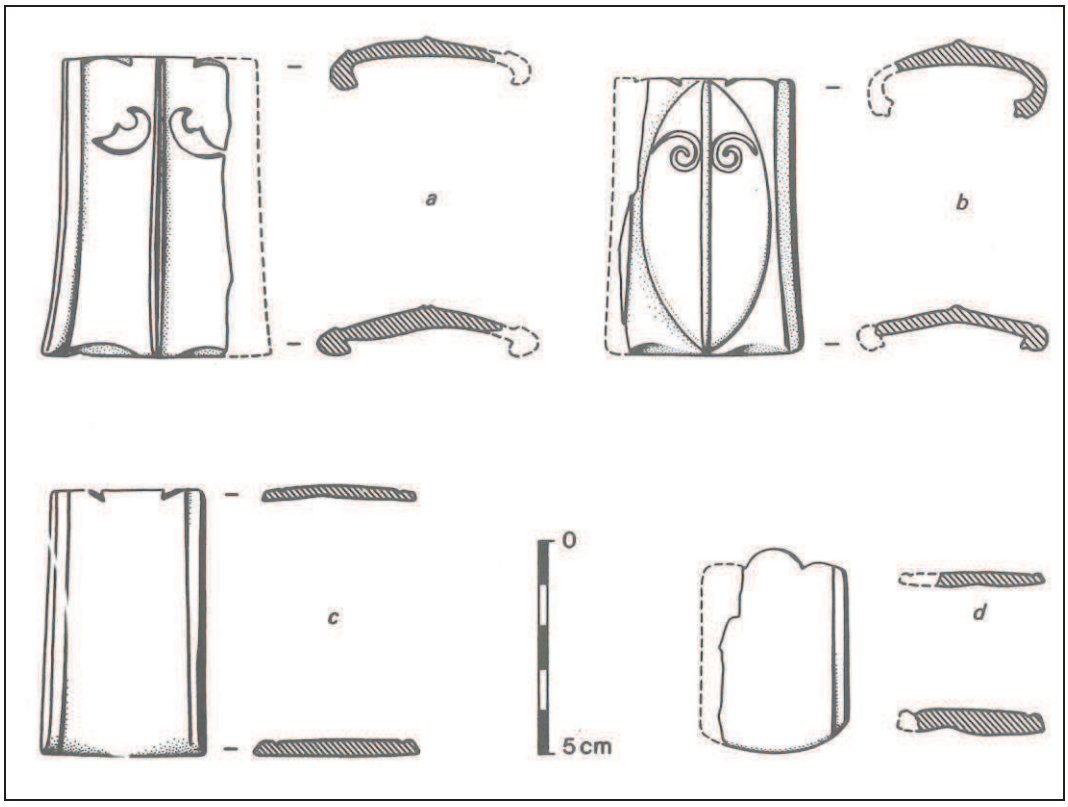


Fig. 4.32: Bone scabbard chapes from Valkenburg. A: Marktveld settlement, B: Marktveld gully, C: Woerd gully, D: Marktveld settlement (Verhagen 1988, 36).

4.9.2 The Meuse estuary

Although a number of finds have been recovered from the tidal creeks of the North bank of the Meuse (Vlaardingen, Schiedam, Capelle aan den IJssel), hardly any finds have been dredged up from the river itself. A single bronze umbo (32.1) has been recovered from the river bed during excavations for the Willemspoor tunnel at Rotterdam (Carmiggelt and Guiran 1997, 86-90).

A number of other finds are found in the mouth of the river Meuse, but these are generally associated with its Southern bank, where large scale dredging for the construction of harbors took place. Due to their association with the south bank, they have been excluded from the data set, but for the sake of completeness will be described in this section. One example is a collection of items found in Rozenburg (fig 4.34) while cleaning a discharge pipe during the construction of

the Benelux harbor (Haalebos 1974). It consists of a number of period 2 and 3 horse gear, and a period 3 scabbard slide. The presence of the period 2 horse gear is rather exceptional as it is not very common in rural settlements in the area and the military presence at Oostvoorne is associated with the coastal defenses of the mid or late 2nd century (Bogaers 1974; Goddijn 2008; Waasdorp 1999, 168-174).

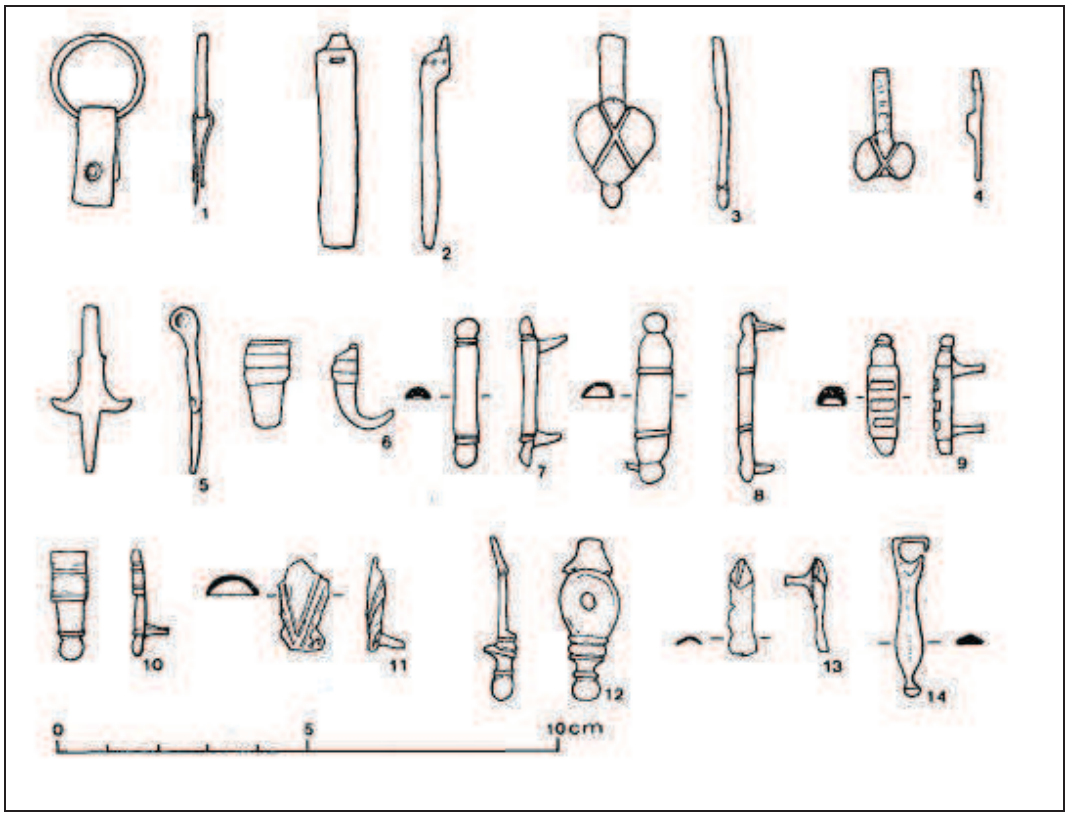


Fig. 4.33: Collection of River finds from Rozenburg: period 2 horse gear (nr. 7-13), period 2 buckle needle (nr. 5), period 3 scabbard slide and horse gear (2 and 3-4) (Haalebos 1974).

4.9.3 River finds comparison

The finds from the Meuse seem the result of washed away (or recently demolished) settlements. Although a military nature of these settlements cannot be excluded, the finds themselves also feature on rural settlements elsewhere in the region. The situation on the Rhine however, is quite different. The finds from Valkenburg Marktveld are most likely washed away material or waste from the settlement. However, the helmets and sword scabbards from the Rhine are exceptional and should therefore not immediately be attributed to the erosion of sites. Although the collection of finds from river context is too small to warrant far reaching conclusions, especially in the Rhine, there seems to be a majority of period 3 finds. In the following chapter,

the river finds from the Cananefatian region will be compared with the finds from the Batavian region and some alternative interpretations will be discussed.

4.10 Chronological patterns of the different find contexts

In this chapter, the spatial and chronological distribution of military equipment and horse gear in the research area was described as well as the sites within rural settlements, urban contexts, cemeteries, cult places and river contexts.

Military equipment and horse gear becomes a regular feature in rural settlements in the Cananefatian countryside after 70 AD, peaking after the mid 2nd century (see fig. 4.18). Before the Flavian period, the presence of military equipment is very rare. The same pattern can be observed in the urban centre of Forum Hadriani, although horse gear is more prevalent than military equipment (see fig. 4.26), highly influenced by the developments at that site as described in section 4.6.

Military equipment and horse gear remains a rare feature in the remaining contexts. It is almost non-existent at cult places and cemeteries. River context feature some exceptional pieces, largely dating towards the end of the 2nd or early 3rd century, but still remain a rare feature.

The amount of finds from rural settlements and Forum Hadriani during the last decade is rather striking, and therefore we can assume that the low amount of military equipment and horse gear found before ca. 1990 is partly caused by methodological circumstances.

In the following chapter, the above data will be compared, where possible, with the data from the Batavian area.

5. Cananefates vs. Batavians.

In the previous chapter, an overview and analysis has been presented of the military equipment and horse gear in the *civitas Cananefatium*. In this chapter, this will be compared with the data from the Dutch Eastern River Area, the *civitas Batavorum*, in order to identify differences and/or similarities. All data about military equipment used in this chapter referring to the *civitas Batavorum* is based upon the data provided by Nicolay.[34] As a result, all new finds from the Batavian area since 2005, although numerous, are ignored.[35] Acquiring the additional data from the Batavian area would have taken this research beyond the scope of a MA-thesis. Demographical and settlement data is largely based on Vos and his research in the *Kromme Rijn* area (Vos 2009).

5.1 Representativeness of the data set for comparison

At first glance, the amount of finds (n=358) from the *civitas Cananefatium* is small compared to the results from the Batavian area (n=2703). However, a number of factors could have resulted in a distorted data set making a direct comparison not valid.

Area size, population and number of sites

Firstly, rather obvious, is the size difference of both areas and density of occupation. Our research area is roughly 2500 square km, which in Roman times consisted for almost 40% of uninhabitable peat marshes. This makes the *civitas Batavorum*, with 3800 square kilometers, one and a half times larger, and even almost three times when the largely uninhabited peat marshes are left out of the comparison (Vos 2009, 212-214). As mentioned in chapter 2, in the *civitas Cananefatium*, there are roughly 800 – 1000 probable sites of which 177 sites have been (partly) excavated (as of 2005), of which seven are *castella,* and another ten military *vici*. Estimated sites for the *civitas Batavorum* are over 1250 probable sites (Nicolay 2007, 4). The population for the *civitas Batavorum* is estimated at around 50.000 people (Vos 2009, Willems 1984, 235), making the population roughly two and a half times larger than the highest estimates for the Cananefates.

[34] The data set for the Batavian area is available via www.acvu.nl/nicolay as an excel file.
[35] A quick survey on various internet fora for metal detector hobbyists has shown a small but steady stream of new finds amounting to roughly 150-250 finds. Furthermore archaeological excavations like Geldermalsen-Hondsgemet with 163 finds (Van Renswoude and Van Kerckhove 2009), Houten Hofterrein, Odijk Vinkenburgweg (Vos 2009, appendix 4).

Furthermore, the time depth of the occupation in the *civitas Cananefatium* is quite different, with the majority of settlements starting in the mid 1st century and terminating at the end of the 2ndor early to mid 3rd century. With the issues of continuity from the Iron Age still not being clarified and with only a few sites with a clear occupation in the late 3rd or 4th century, it is almost impossible to make a comparison for periods 1 (50-12 BC) and 4 (300-450 AD), which are well attested in the Batavian area.

Apart from these actual differences, there are some further methodological and post depositional factors that should be taken into account.

Conservation of metals

The first difference is the conservation properties of the soil in the different (parts of the) research areas. Nicolay states that in the western part of the Rhine delta, metal finds are also well preserved, as the soils are, like in the Batavian region largely made up of clay and clayey-sands (Nicolay 2007, 10). This, however, is for a large part of the Cananefatian area an oversimplification and does not take into account the differences between the riverine deposits in the Batavian region and the marine deposits in the Cananefatian region. And there are a few factors that have a negative influence on the conservation of metals in coastal areas. Bronze (copper-alloys) and iron form the majority of the data set in both regions, therefore I will shortly discuss the conservation characteristics of both types of metal.[36]

Without going into too much detail, the conservation of iron and copper-alloy objects is largely influenced by the presence of oxygen and sulphates, which both increase the reduction rate of iron (Fe) into oxides(FeO) and copper (Cu) into copper oxides(CuO)). Huisman differentiates three main types of soils: Oxygen-rich, Anoxic Sulphate rich and Anoxic Sulphate-poor. The marine settlements in the research area can largely be placed in the second type; an Anoxic Sulphate rich environment. In the dune area, when sites are buried deep enough, infiltrating rainwater of which the oxygen is broken down by the above lying sands, creates an anoxic Sulphate poor environment. Poorly covered sites in the dune and beach barrier area will have an oxic environment. On the other hand the Dutch Eastern River Area largely consists of Anoxic Sulphate poor soils, although some plough soils can be considered Oxygen-rich (Huisman 2009)

Due to large scale incursions of sea water in the *civitas Cananefatium*, both before, during and after the Roman period, there is a higher degree of salinity in the soils, notably in the marine deposits of the *laagpakket van Walcheren* (see section 2.2.). Salt enhances the conductivity of

[36] Both datasets also contain gold, silver, tin and lead objects, however their number is so small that any differences in quantity are not relevant for comparison.

soil water, which facilitates charge transfers. These charge transfers increase the amount of Chloride ions, a constituent of salt, which increases the rate of corrosion of iron, copper and copper alloys (Huisman 2009, 118). Salt levels between both regions differ greatly as can be demonstrated by the salinity of the water. Before 1900, the salt concentration in the Rhine did not exceed 0,01- 0,02g Cl-/l. Discharge of salt by especially French Potassium mines upstream of the river Rhine have strongly increased the salt content of the river during the past hundred years. From the 1970's, the yearly average has been around 0,150 g Cl-/l, with values up to 0,200 g Cl-/l in dry years (Huisman et. al. 2000). In the future, this may lead to an increased deterioration of metal objects in the Batavian area. However, this is still a fraction of the salt levels in the coastal area of Zuid-Holland. In the tidal estuaries, salt contents range between 10-16 g. Cl-/l with the North sea averaging around 35 g Cl-/l (Paalvast 2000). The transgressions that took place before, during and after the Roman period have severely increased salt content in the soil, especially in the heartland of the Cananefates, the modern day Westland.

The relatively high number of metal finds found at sites like Naaldwijk Zuidweg, Katwijk Zanderij, Den Haag Scheveningseweg perhaps show how much influence the salinity has on the sites located in the marine deposits behind the dune area. These three sites are all located on dune sand where the higher density of sweet rain water creates a protective sweet water bubble which pushes the salt water back and provides a more stable soil water level. Although the salt level may be a convenient explanation for the low amount of metalwork in the Cananefatian region, the occasional exceptions to the rule proof that salt is not the only factor. Finds from the gully's at Leiden Roomburg or Schiedam Polderweg show that even in a salt rich tidal creeks conservation can occasionally be good (see graph 2.2 for Leiden and section 4.5.1 for Schiedam). The finds in gullies probably show that the salt effect is diminished as long as finds remain waterlogged continuously. If this is not the case, the salt levels have the above described effect.

Research history and urban developments.

Secondly, the research history of both areas differs greatly. It were basically the writings of Tacitus that marked the Batavian area as more interesting than others. Furthermore, Holwerda's poor interpretation of his excavations at Voorburg, Naaldwijk and Ockenburg at the beginning of the 20th century was a major setback for research in the Cananefatian area. The excavations by Bloemers in Rijswijk in 1970 actually marked the slow start of research in the Cananefatian area, but by that time a large part of the region was already completely built up without much archeological research taking place.

A number of excavations took place during the 1950's and 70's, when towns and cities expanded dramatically and large parts of the modern day infrastructure in the research area was built. Due to the rapid developments, most research were rescue excavations at best, very often conducted by local amateurs with limited resources. As metal detectors only became available in the early 1980's (Nicolay 2007, 9), this meant that a large part of the research area had already been urbanized without the possibility of metal detection. In the Batavian area, present day large scale urban development started at least a decade later and is still relatively modest compared to the Cananefatian area. The data set, with nearly 60% of the finds being collected in the last ten years, makes it very clear that the more recent excavation in the Cananefatian area have yielded a substantial larger number of metal finds, including military equipment and horse gear.

Research focus

The Cananefatian area has for a long time been considered as very poor in metalwork. Excavation results from the last decade are gradually changing this view. However, until recently, the professional attention was not focused on metal. Therefore, experienced metal detectorists were/are less likely to be employed on excavations in the Cananefatian area and metal finds are regularly poorly published, without complete catalogues (e.g. De Bruin 2008; Van Londen 1996). Furthermore, the unique and excellent conservation circumstances for organic material in the coastal wetlands have presented excavators with unique finds that have further diverted the focus away from metal finds.

Metal detecting and visibility of sites

The situation for the metal detector hobbyists in the Cananefatian area is completely different from the Batavian area. Especially in the Westland/Midden-Delfland region, post Roman deposits have buried many sites to such depths (over 50 cm below surface), that they have become unreachable for both the metal detector and the farmers plough. Furthermore, the ground use in the region is another factor severely limiting the activity of detector hobbyists. Apart from the large urbanized area, the agricultural land mainly consists of grass pastures or glass greenhouses and as a consequence, fields are not annually ploughed.

Apart from the negative effects on conservation, the salt content in marine deposits and the acidity of peat can severely distort the signal of the detector (Gesink 2005, 86). In general, the soil in the research area requires high quality detectors and a detectorist with a fair amount of local experience. Other practicalities, like the countless metal parts of the glass greenhouses that

are left in the ground in the modern day Westland area, are also a serious deterrent (Verbal comments from various metal detector hobbyists). Therefore, detector amateurs have mainly been restricted to the spoil heaps from regular excavations, soil deposits, like the 'stort' at Alphen aan den Rijn, or had to utilize the few occasions where the topsoil was removed during construction work (Forum Hadriani) or sand extraction (Katwijk Zanderij). The more ad-hoc nature of opportunities for metal detectorists in Zuid-Holland also makes them harder to reach, as single finds are less likely to be reported than larger collections. As a result, the data set for the Batavian area consists for over 50% of finds by detector amateurs (Nicolay 2007, 74), whilst for the Cananefatian area this is only 15 % of which 78% concerns the collections from Katwijk-Zanderij.

The above summed up differences are largely impossible to quantify. Although conditions in the Cananefatian area are less favorable, this cannot automatically be taken as proof that there is more. However, in the following comparison, I will try to take these differences into account. In table 5.1, the above described differences have been quantified. Firstly, the difference in size of the area and size of the population has been set at 60%. Secondly, the duration of habitation is different, i.e. settlements in the Cananefatian area only seem to start from middle of 1st century (mid period 2), while settlements in the Batavian region are immediately visible of period 2.

Thirdly, the differences in the impact of metal detecting on the quantity of finds between the two regions has been estimated via the percentage of metal detector finds in both data sets. For the Cananefatian region, this amounts to ca. fifteen percent while in the Batavian region this is over fifty percent. Therefore, the difference between both regions has been estimated at ca. 30%.

Fourthly, conservation of metals is different in both regions. Above, it was described that the salt content in the marine clays in the Cananefatian region has negative effects on the conservation of both iron and copper (and copper-alloys). However, it is not exactly known how much this accelerates the degradation process and some sites in the Cananefatian region are much better preserved. The effects of the differences in conservation conditions have been estimated at a hypothetical ten percent.

Fifthly, there might be a difference in terms of research focus. The effect of a research bias is impossible to quantify. However, every archaeologist knows that finds attract more finds, and this is particularly true with chance finds. It is assumed in this research to be a hypothetical 10%.

Finally, the modern urban development and research history is different between the two areas. The modern day urban development of the Batavian region is still extremely modest as compared with the Cananefatian region. This difference is also assumed in this research to be a hypothetical 10%.

Table 5.1: Hypothetical effect of regional differences on the size dataset for the Cananefatian region.

	Civ. Batavorum	*Civ. Cananefatium*	Difference
Area size and number of the population	ca. 40-50.000	10.000-20.000	-50-60%
Time depth of Roman occupation	50 BC-450 AD	40-270 AD	-20%
Metal detecting and visibility of sites	High (50% of data set)	Minimal (>20% of data set)	-30%
Conservation of metal	Good	Good (Beach barriers and creek beds) Poor (marine clays)	-10%
Research focus	Long time high attention	Moderate attention	-10%
Modern day urban developments	Moderate	High	-10%
Total			**17.35%**

Although the resulting percentage contains a high level of uncertainty, it provides a good starting point for our comparison. For period 2 and 3, one cannot expect the *civitas Cananefatium* to exceed 15-20% of the total for the Batavian region. Everything above 25-30% can be considered relatively high, while percentages dropping below 10% can be regarded as low.

To test this assumption, the number of finds from both datasets for period 2 and 3 are compared. With 358 finds from the Cananefatian region compared to the 2503 finds from the Batavian region, the Cananefatian area finds is roughly 15% of the Batavian area finds. Therefore, this falls within the average and datasets are viable for comparison.

I will take two approaches when comparing the two areas. I will look at the overall chronological developments first, after which I will look at the different find contexts.

5.2 chronological comparison

Period 1.

As mentioned in the previous chapter, not a single period 1 or Late Iron Age find was encountered in the *civitas Cananefatium*. With 56 finds (La Tène period: n=49, period 1: n=6)

from the Batavian area, the situation may look different there, the period is also not that well attested. The majority of the finds (n=39) come from only two sites, the cult place of Empel and dredge pits at Kessel Lith. Only four items have been recovered from rural settlements[37], while the remaining thirteen also come from rivers or (probable) cult places. The occurrence of La Tène and Roman military equipment or horse gear seems to be highly ritualized in this period. And the concentrations of finds can easily result in a distorted picture.

Although less dramatically, the Batavian area suffers similar problems with the underrepresentation of later Iron Age and early Roman sites. In many cases the activities during the Roman period settlements will have largely disturbed the earliest phases dating to the Iron Age. Furthermore, excavation of the Roman period features will most likely destroy the underlying earlier features (Vos 2009).

Period 2.

In period 2, a large discrepancy between both areas can be seen with the total amount of military equipment and horse gear found in the Cananefatian region (n=97) just below 8% of the Batavian region (n=1239). Although rivers and cult places remain an important find context, there is now also ample evidence from rural settlements and urban centres in the Batavian region. Still a division can be made between cult places, rivers and the rural settlements in the type of military equipment. The latter mainly feature belt components, sword scabbards and horse gear, while the first two feature armor, helmets and weaponry (swords).

For the earliest part of period 2, we are again severely hampered by the lack of settlements in the Cananefatian region. Only after 40 AD, rural settlements (as well as Roman influences) in the Cananefatian region become visible. Most military equipment can typologically not be dated any more specific than 0 - 120 AD (see chapter 3). However, of those military items that can be dated more specific in period 2, some of the early military equipment (0 – 50/70 AD) seems to be missing from the Cananefatian region (see chapter 4). Contrary to the *civitas Cananefatium*, there is ample evidence from the Batavian area for those typical early equipment within the period 2 items. The pre-Flavian period in the Batavian area is visible with large amounts of Type A1 belt buckles, the presence of the Kalkriese plate armor (type C1), early helmet types, and the Mainz type *gladius* (see chapter 3).

[37] The recently published excavation at Geldermalsen Hondsgemet yielded three more Late Iron Age objects, two phalera shaped strap mounts and a spear butt which can be linked to a rural settlement(Van Renswoude 2009).

Period 3.

Although in absolute numbers the difference between both regions remains high, the general impression of the material is rather similar as are some of the trends. In both areas we see a strong decline in armor and shields.[38] In both areas, swords now make up the largest portion of military equipment. With a total number of fourteen sword parts for the *civitas Cananefatium* compared to 37 in the Batavian area, they are relatively well represented. Defensive weaponry (armor, shields and helmets, n=18) are in this period poorly represented in the Batavian area, and can mainly be found in rivers and cult places. In the Cananefatian region the same picture emerges, with five items of which three come from rivers and a fourth item coming from a ritualized context within a rural settlement.

It should be taken into account however that shields and armor are less visible in this period. However, as discussed above for both regions a number of the period 2 Corbridge armor straps should be dated in period 3 as well. For the Cananefatian region, this may amount to 50% of the items (see section 4.5), however without going back to all individual finds, it is hard to assess how much this would be for the Batavian region. Nicolay provides context dates for two Corbridge armor straps from rural settlements, which strikingly both date to period 3. The first comes from a ditch at Kesteren de Woerd dating to 150-270 AD (Nicolay 2007, 112, cat. no. 166.1), the second comes from the residual channel at Tiel-Passewij (Nicolay 2007, 102, cat. no. 242.2) with a date between 150-200 AD. On the other hand, two Corbridge type armor straps from the ritual complex of Empel have a context date of 25-40 AD (Nicolay 2007, 122).

In the Batavian area, horse gear makes up a much larger portion of the total number of finds, especially when looking at rural sites. This can probably partly be explained by the focus on horse breeding in the Dutch Eastern River Area, where horse bones make up a substantial larger percentage of the total bone spectrum found on rural sites (Nicolay 2007, 218; Nieweg 2009, 306). Alternatively, period 3 horse gear could be overrepresented in the Batavian area due to its probable continued use into period 4. (see chapter 3). The near absence of period 4 settlements in the Cananefatian area means the graph from our research area is confined to period 3.

Period 4.

In the Batavian area, the late Roman period (period 4) is well attested with 154 recorded finds mainly consisting of belt components (96%), the remaining being two helmet parts, arrow heads and a sword. Amongst these finds are eleven complete belt sets from the late Roman cemetery

[38] As discussed in the previous chapter this is largely caused by both armor and shields becoming less visible and the strict dating before 120 which has become dubious by recent discoveries.

at Rhenen that have each been counted as one (Nicolay, cat. no. 253.1-11) The finds are recovered in varied contexts, however the majority is found in rural settlements (79%, n=121), while cemeteries make up another 11% (with all the complete sets). In the Cananefatian area, both period 4 settlements and cemeteries are largely missing and hence it is impossible to compare the regions.

5.3 Context comparison

Apart from the chronological comparison, it is interesting to compare the different types of sites and in some cases individual sites with each other.

Rural settlements

Rural settlements in both areas tend to be small, often not exceeding more than two (Cananefatian region) or four (Batavian region) contemporaneous houses. The time depth of the settlements in the Batavian area however, is much larger, with many settlements going back to the Iron Age and continuing well into the 3rd century. (Heeren 2009, 229). As discussed in chapter 2, the majority of settlements in the Cananefatian region do not seem to start before 40 AD and many are abandoned around the end of the 2nd or early 3rd century.

When looking at the general patterns, the areas have much in common. When looking at the different groups of finds, like already mentioned above, a large difference between the number of horse gear can be observed: for period 2 and 3 the amounts from the Cananefatian area are below 10% of the numbers from the Batavian area. Compared with that, the differences for most military equipment are very small, especially considering the less favorable conditions in the Cananefatian area as described in the first section of this chapter.

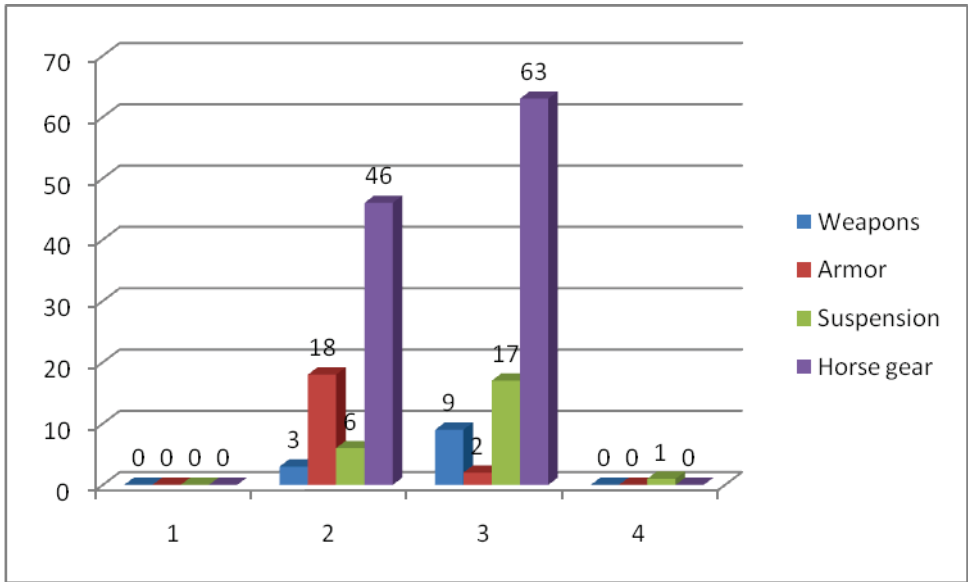


Fig. 5. 1: Military equipment and horse gear from rural settlements in the civitas Cananefatium (armor includes helmets and shields).

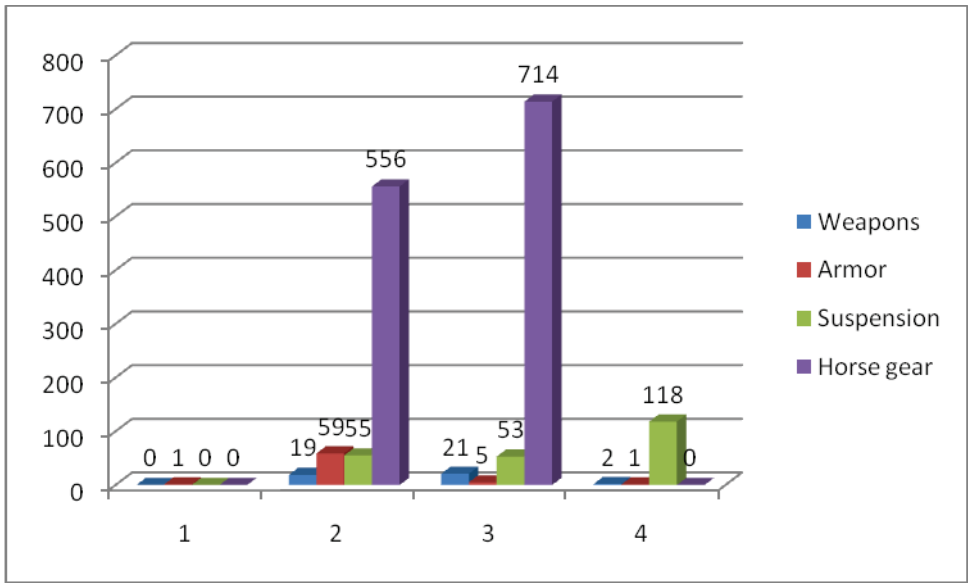


Fig. 5.2: Military equipment and horse gear from rural settlements in the civitas Batavorum (armor includes helmets and shields).

The largest difference is the proportional difference between the amount of military equipment and horse gear in periods 2 and 3. With 64 and 69% (for respectively period 2 and 3) in the Cananefatian region versus 80 and 90% for the Batavian area, the discrepancy between military equipment and horse gear in the Cananefatian area is smaller. Especially for the 1st century this difference is quite remarkable considering that the Batavian region should have a proportionally higher number of infantry veterans (8 cohorts) than cavalry veterans (1 ala plus imperial guard). A reason for this can partly be found in the collection method of the finds, as metal detector hobbyists may be more likely to find and recognize horse gear, therefore increasing the

percentage for the Batavian area where the data set consists of a larger percentage of amateur finds. Another possible explanation for the high amount of horse gear compared to military equipment is the possibility of continued use of period 3 horse gear into the 4th century. However, period 2 shows the same discrepancy so this is most likely not a proper explanation. Settlements in the Batavian region, however do show a significantly higher amount of horse bones (Cavallo et. al. 2008, table 18.15; Groot 2008). Therefore, we can assume horse gear must have played a more prominent role in the Batavian area.

For period 2, in both regions small amounts of weaponry at rural settlements can be observed. The graph 5.2 only contains swords and daggers as the remaining weaponry cannot be assigned to a specific period. With three items, the amount of weaponry in the *civitas Cananefatium* is roughly 15,7% of the amount in the Batavian area. Armor (including shields and helmets) is relatively well represented in both areas during period 2, while virtually absent in period 3. In the *civitas Cananefatium* armor is the main find group of military equipment for period 2. The majority of the finds consist of the various straps of the Corbridge type plate armor, which as discussed above should not be exclusively be assigned to period 2. A second large category are shield edgings, while the amount of remaining items are neglectable.

The amount of defensive weaponry on rural sites in the Cananefatian region makes up over 30% of the amount in the Batavian region, which is surprisingly high. One possible explanation is the tendency of plate armor to be overrepresented in the relatively small dataset for the Cananefatian region due to the high number of straps per set of armor. However, plate armor seems to be relatively more prominent in the Cananefatian region, which is surprising considering a legion was stationed in the Batavian region during the later part of period 2 (see urban centre description below).

In period 3, armor virtually disappears (although this may be due to dating issues). Weaponry in both areas mainly consists of sword scabbard slides and chapes. With 42% of the weaponry in the Batavian region, the Cananefatian has a relatively higher percentage of weaponry on rural sites.

The suspension finds show a clear pattern. Many buckles from the Batavian region date before 70AD and are therefore not likely to show up on the Cananefatian countryside. The increase in buckles from period 2 to period 3 is much greater in the Cananefatian region, and during period 3 the amount of belt components on rural settlements in the Cananefatian region is roughly 30% of the amount in the Batavian region. When zooming in a little further on the belt components the Baldric stands out as the amount from the Cananefatian region is 50% of that of the Batavian region.

Urban centres: Forum Hadriani vs. Ulpia Noviomagus.

After the destruction of Oppidum Batavorum during the Batavian revolt, a new urban centre was established at Nijmegen, which around 100AD received market rights, probably as a compensation for the transfer of *Legio X Gemina* to the Balkans (Van Enckevort and Heirbaut 2010, 241). As Oppidum Batavorum was destroyed before Forum Hadriani had developed into an urban centre, it will be left out of the comparison and here only the data from Ulpia Noviomagus will be used (Nicolay 2007, inv 209.1-184). The finds from the associated cemeteries will be discussed separately.

Although some marked differences can be observed between both towns the occurrence of military equipment and horse gear is very similar, with a very high percentage of horse gear and only very limited amounts of military equipment.

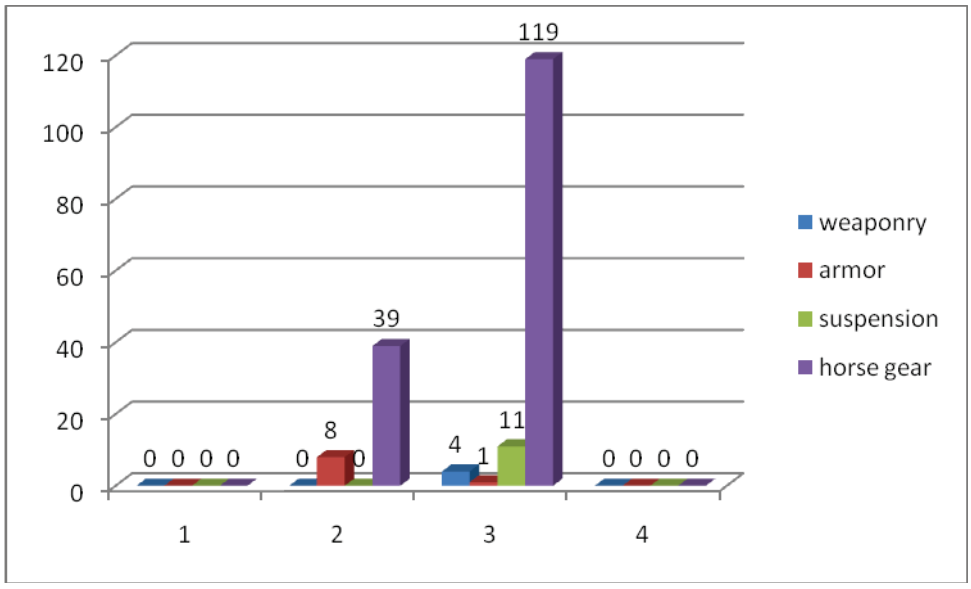


Fig. 5. 3: Composition of the military equipment and horse gear from Ulpia Noviomagus (after Nicolay 2009).

The greatest difference between the two is the absence of armor at Forum Hadriani, while nine pieces (Nicolay 207, 209.1-9) have been recovered from Ulpia Noviomagus. Eight of these are tie-loops or hinged buckles of the Corbridge type plate armor, which in this case will probably date to period 2 during which Nijmegen had for a few decades (70-103 AD) a legionary garrison (Van Enckevort and Heirbaut 2010, 241). The only period 3 piece of defensive weaponry concerns a piece of a helmet skull.

Offensive weapons at Nijmegen are only present in the form of period 3 scabbard slides(n=3) and a scabbard chape (Nicolay 2007, 209.11-14). At Hadriani the amount of offensive weaponry is

slightly greater and is also represented by period 3 scabbard slides (n=5) and chapes (n=2), as well as five spear and one pilum heads (see section 4.6)

Cemeteries

As mentioned in the previous chapter, no cemetery in the Cananefatian area yielded military equipment or horse gear. Finds from cemeteries in the Batavian area are almost equally rare with 58 (2% of total) finds from the Batavian cemeteries. If we exclude the period 4 belt sets that are a regular feature in 'germanic' graves, only 41 items from cemeteries in the Batavian region remain. These are divided between horse gear (n=27) with a very high percentage of period 2 phallic pendants (33%), and military equipment (n=15).

Over half (54%, n= 22) of the Batavian cemetery finds, come from the cemeteries around the urban centres and fortresses of Nijmegen (Nicolay 2007, sites 203-207). A very rich walled garden tomb from the Ulpia Noviomagus cemetery, already contained four items: three spearheads and an umbo with grip (Koster 1993; Nicolay 2007, cat. no. 204.1-5).

Cemeteries associated with rural settlements, like the sites of Tiel Passewaaij and Esch, De Kollenberg, show a different picture. The first yielded four items, two spear/lance heads and two horse gear fittings, against a background of 380 graves and over 106 finds from the settlement (Heeren 2009, 86; Nicolay 2007, inv 241.1-4 and 242.1-106). The data from the Batavian area clearly shows that horse gear and military equipment is not a regular feature in cemeteries during the early and middle Roman periods in the Batavian countryside and that they are more connected with the urban centres at Nijmegen than with the rural settlements.

As described in the previous chapter in the Cananefatian region, only a few cemeteries are known and even less are well excavated or published. Of the assumed cemeteries around Forum Hadriani, not a single trace has been found so far.

One of the ways to express military identity is including military equipment in graves as part of the burial rituals. However, in both regions, military equipment and horse gear played no or very marginal role in the burial rituals and can therefore not be used as military identity markers.

Cult places

In the Batavian area, the picture for cult places is very different from the Cananefatian region, with the number of finds from the Cananefatian region being a mere 0,5% of the Batavian region. Nicolay included in his research 220 finds from four cult places, and an additional 31 from two

possible cult places. The great majority of these however, (n=208) are coming from one site at Empel-de Werf (Nicolay 2007, 120). This means that 95% (or 82% if the possible cult places are included) of the data comes from the ritual complex at Empel-de Werf. The site of Kessel Lith, despite its ritual character, has been listed as a river find by Nicolay and is therefore discussed in the river context instead of this discussion on the cult places.

If Empel-de Werf is taken out of the equation and the remaining finds (n=12) from Batavian cult places are compared with the cult place finds in the Cananefatian region (n=1), the proportional difference (9%) is much less dramatic. There is, however, a profound difference in the character of cult places that yielded military equipment or horse gear in both regions. The cult place in the Cananefatian region at the Lozerlaan is a small ditched enclosure incorporated in a rural settlement and can therefore be considered a private cult place. The cult places identified in the Batavian region have roots in the Late Iron Age and three of them (Westeraam, Elst-Grote Kerk and Empel-de Werf) grew out into monumental temple complexes with a public function during the 1st century (Nicolay 2007, 120;Leenders 2010, 2).

The cult place at Empel-de Werf was originally an open air sanctuary dating from the Late Iron Age that in Roman times grew out into a monumental Gallo-Roman temple complex. An exceptional amount of metalwork, over 2000 items, has been recovered. These include coins, brooches, bronze vessels and military equipment. The military equipment features a number of weapons (n=29), body armor (n=24), shields (n=14) and helmets (1), suspension (n=23) and horse gear (n=110). The temple complex was dedicated to Hercules-Magusanus, a deity with a strong martial identity. Hercules-Magusanus is assumed to have been the principal deity of the Batavians.

With possible exceptions of temples at Forum Hadriani, there are no monumental cult places in the Cananefatian area. Although the spread of inscriptions shows that revering Magusanus is not restricted to the Batavian region (Derks 1998, fig 3.5), there is no reliable evidence available that Hercules-Magusanus was revered in the Cananefatian region.

Rivers (and dredge pits)

The amount of finds from rivers and dredge pit in the Batavian area is high (n=431, 15,9%), especially when compared to the few items from the western Rhine delta (see section 4.9). The majority of these finds are a result of the intensive sand and gravel dredging operations since the end of the 19th century (Nicolay 2007, 124) The different nature of river deposits in the western Rhine delta made that area less attractive for the sand and gravel industry. Furthermore, the more clay rich deposits in the western part are making it more difficult to spot the items during

dredging operation. On top of this in the Meuse estuary, larger marine dredging equipment is used, making it even harder to observe material.

A large amount of the river finds in the Batavian area have been found before the 1930's. It is not impossible that the total number is slightly inflated by dubious practices of antiquarians. According to Louwe Kooijmans this is especially true for the items from the RMO labeled "dredged up from the river Waal" and according to him, this label should be translated as "of unknown provenance" (Comment by R. Kok, Louwe Kooijmans 1979, 17).

The river finds from the Batavian area may also include a number of finds from washed away fortresses, like Lobith-De Bijland (n=13), Maurik (n=7) and Rijswijk (G) (n=3). East of the fortress of Fectio (Bunnik), the locations of most fortresses are not exactly known and have for large portions been eroded (Van Dockum 1995, 77-81). The situation in the Cananefatian area is very different and most Roman fortresses have not been washed away. Striking is that the majority of the military equipment from the fortresses in the western Rhine delta are also preserved in gully's (Zee 2004).

Nicolay identified a total of seventeen dredge pits and twenty river locations that yielded military equipment or horse gear ranging from the La Tène period up to the 4th century, which still result in a relevant sample:

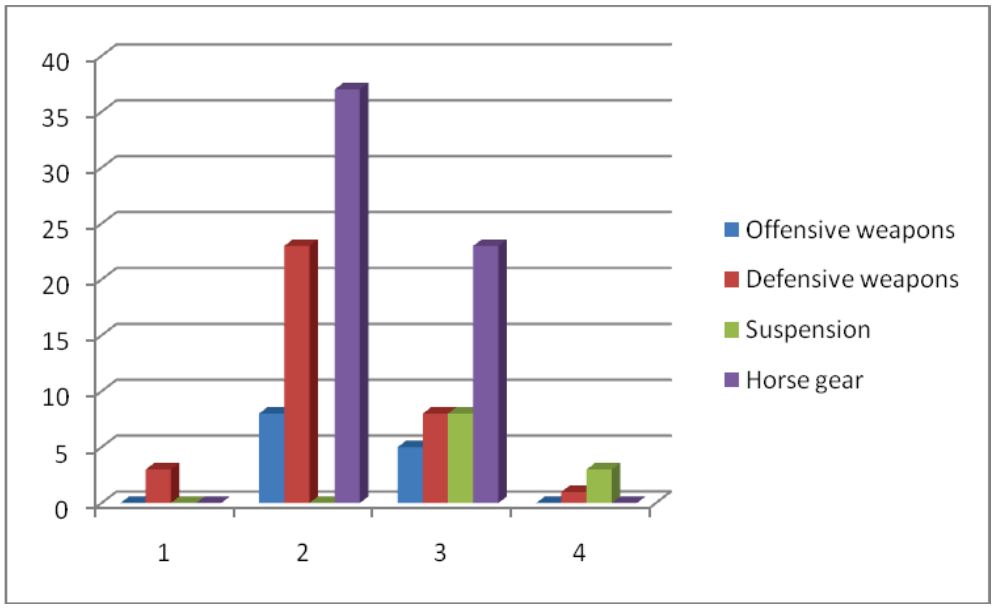


Fig. 5. 4:: *Composition of River finds (excluding dredge pits and the finds from Doorwerth) in the Dutch Eastern River Area (after Nicolay 2007, fig 3.5)*

Nicolay discusses the nature of these river and dredge pit finds and reaches the conclusion that despite the presence of finds from eroded fortresses and settlements, settlement waste dumps and accidental lost items, there are strong arguments that a large part of the finds have been purposely deposited in the rivers, especially helmets. (Nicolay 2007, 181-189).

Helmets and swords form a prominent find group amongst the river finds. Of the 44 Roman helmets and helmet parts from the Batavian area, 32 are coming from rivers or dredge pits. Ten helmet parts have been found in rural settlements, but these finds are almost exclusively the smaller parts of the helmet, like crest knobs and decorative mounts, or fragmented pieces. As seen in the previous chapter, river finds from the *civitas Cananefatium* are not very numerous, although as described above find circumstances are less favorable. The presence of some very remarkable pieces (especially the helmets from the Rhine) may hint to similar deposition practices in the Cananefatian territory. However, the few river finds from the Cananefatian area mostly date to period 3 instead of period 2, where a clear peak in the Batavian region and further upstream of the river Rhine can be observed.

5.4 Conclusion

The comparison in both regions is rather problematic due to the large differences. The less preferable circumstances in the Cananefatian region for both the conservation and the chance of recovery of items was important. However, less favorable circumstances may indeed result in less finds but it will never prove the existence of more. However, it is almost certain that a part of the difference in the occurrence of military equipment and horse gear is caused by methodological aspects. This becomes very apparent when looking at the larger excavations of the last decade, which almost without exception yielded finds of military equipment and/or horse gear. The overall chronological trend in both areas shows both similarities as well as differences.

When urban centres (during the 2nd century) and cemeteries and are concerned there are many similarities. River finds and finds from cult places on the other hand, show great differences both proportional as in absolute numbers, suggesting a different approach to the ritual dealing with weaponry and horse gear.

On rural settlement In terms of percentages, weaponry, especially period 3 sword scabbard parts, are more common in the Cananefatian area then in the Batavian area. Also the proportion of horse gear versus military equipment is much lower in the *civitas Cananefatium* especially in rural settlements. Furthermore, the amount of sites without horse gear in de western Rhine Delta is also much higher. The Batavian area is known for horse breeding (and training?) with at

certain sites percentages of horse bone over 30%, while in the Cananefatian area percentages are rarely exceeding 10% (see section 4.5.6).

6. Conclusions

The *civitas Cananefatium* has for a long time been regarded as extremely poor in metal finds. The last decade, this view has gradually changed, as almost every larger recent excavation is yielding a fair amount of metal finds including military equipment and horse gear. Due to significant differences in methodology, post depositional processes, as well as the general development of the region (both during the Roman and modern age), it is very hard to compare it directly with the Batavian area. In general, the conditions, as described in chapter 5, for conservation and recovery of items in the *civitas Cananefatium* are less favorable when it comes to metal finds. However, despite the less favorable conditions, with 358 finds, the amount of military equipment and horse gear from civilian context in the *civitas Cananefatium* is quite substantial.

Below, I will answer the research questions as formulated in chapter 1.

1. What is the chronological and spatial distribution of Roman weaponry and horse gear in civilian contexts during the Roman period in the civitas Cananefatium?

Per period I will give a short description of the nature of the finds and the find contexts (rural settlements, urban centres, cult places, cemeteries or rivers). Any further interpretations will follow under question 3.

Period 1: 50-12 BC

Not a single piece of military equipment or horse gear was found in the research area for period 1. Also, for the rest of the later Iron Age, evidence is absent. The only weaponry possibly dating to this period are some clay sling shots from Schiedam and (possible) bone arrowhead from Vlaardingen. As discussed in section 2.5, this is most likely caused by the fact that habitation between 200 BC and 40 AD is archaeologically largely invisible. Although the region was most likely not completely empty, the level of habitation was relatively low and of a wandering nature in a very dynamic landscape. The absence of finds from this period makes it impossible to draw conclusions.

Period 2: 12 BC- 120 AD

During period 2, Roman military equipment and horse gear appears on civilian sites in the *civitas Cananefatium*. Because the habitation in the region and archaeological visible Roman influence only seems to pick up around the middle of the 1st century (or Batavian revolt), it would have been preferable to divide this period further down (e.g. pre-70AD and post-70AD). Unfortunately,

the material does not allow for that as more specifically datable objects are missing in the data set.

Archaeologically visible developments of settlements in the region only picked up around the middle of the 1st century after the creation of the Rhine *limes* and the local inhabitants gaining access to Roman goods. Furthermore, it is generally assumed that the Batavian revolt eroded the powerbase and influence of the Batavians, resulting in opportunities for the coastal tribes to develop more independently. Therefore, the majority of the period 2 military equipment and horse gear dates to the second half of this period, with only a few exceptions (e.g. horse gear from Katwijk Zanderij and single piece of horse gear from Rijswijk-de Bult) dating solely pre-Flavian.

During this period, the first developments in military equipment and horse gear can be found at the urban centre of Forum Hadriani and the majority of rural settlements in the interior on the creek banks of the Gantel system. Evidence lacks on the presence of cult places, rivers and cemeteries during this period.

Period 3: 120-250/300 AD.

During the 2nd century, the region sees a strong increase in the number of horse gear, while the amount of military equipment remains more or less stable. It is hard to assess if this is due to the increase in population or an increased availability of Roman material culture. Military equipment occurs both in existing settlements and during this period newly founded ones. In this period, also direct evidence (diploma) for the presence of veterans is present as well as indirect evidence in the form of graffito, writing, and byre-houses with a *porticus*. Of the military equipment, sword and dagger scabbards are prevalent.

The amount of horse gear is also rising dramatically during this period, however the total for the entire region is strongly influenced by the high amount present at Forum Hadriani. On rural settlements, this increase is less prominent. Although the pattern in the spatial distribution is highly influenced by recent developments and resulting research bias, clear concentration of finds and sites can be observed in the modern day Westland area, the heartland of the Cananefatian region. During this period, the first evidence for military equipment in 'ritual' settings, like cult places or river depositions, is observed. Towards the end of this period, some scarce evidence for 'germanic' influences in military equipment starts to be observed.

Period 4: 300-450 AD.

The later 3rd and 4th century are hardly represented in the research area. The few sites where habitation or activity is attested in this period are all military in nature, with the possible

exception of Forum Hadriani, Naaldwijk Zuidweg and Katwijk Zanderij, where a small number of finds can be assigned to period 4. The lack of evidence does not allow drawing representative conclusions.

2. How does the chronological distribution of military equipment and horse gear compare to the Batavian region?

A direct comparison of both regions is difficult because of the varying developments in settlement patterns, research history, conservation circumstances, and the accessibility of sites for metal detector hobbyists. In absolute numbers, the data set for the Cananefatian regions is roughly 15% of the data collected by Nicolay for the Batavian region. Relatively however, when taking into account the size of the population of both regions and the different find and conservation circumstances in the Cananefatian region, this difference is smaller than it may seem at first glance.

The overall chronological development shows a large difference between both regions, however when focusing on the various contexts, similarities can be identified. I have presented the results of the comparison in a rather simplified form in table 6.1.

Table 6.1: Comparison of the occurrence of military equipment and horse gear in the various contexts between the Cananefatian and Batavian regions.

	Rural settlements		Urban Centres		Cult Places		Cemeteries		Rivers	
	c. Can	c. Bat.	c. Can	c. Bat	c.Can.	c. Bat.	c.Can	c. Bat	c.Can	c.Bat
1	None	Rare	N/A	N/A	N/A	Common/ Rare	N/A	None	None	Common
2	Common /Rare	Common	Common (from 70 AD)	Common	None	Common/ Rare	None	Rare	None/ Rare	Common
3	Common	Common	Common	Common	Rare	Rare	None	Rare	Rare	Common/ Rare
4	Rare	Common	N/A	N/A	N/A	Rare	N/A	Common	None	Rare

Military equipment during the later Iron Age (period 1) is mainly found in a ritual context, like cult places and ritual depositions in rivers. On rural settlements, it is extremely rare and therefore the lack of material from the few Late Iron Age settlements in the Cananefatian region should come as no surprise.

In period 2, differences between the Batavian and Cananefatian areas in all contexts are large in the beginning, however some contexts (urban centres and rural settlements) start to converge

after the Batavian revolt. Contrary to the *civitas Cananefatium*, there is ample evidence from the Batavian area for pre-Flavian equipment within the period 2 items. According to Nicolay, the practice of depositing military equipment in cult places or rivers is especially prolific in the pre-Flavian period. From the Flavian period onwards rural settlements, urban centres and cemeteries begin to show similar patterns, while also the differences between cult places and rivers are diminishing. However, differences in absolute numbers remain high for most items.

The various contexts in the Batavian region throughout period 2 show very different patterns, with military equipment (both offensive and defensive) being the most prominent find category in rivers and cult places. On rural settlements in the Batavian region, however, evidence of military equipment is less prominent and concerns mostly belts and horse gear. In the Cananefatian region, there is no evidence for period 2 cult places or river deposition. The rural settlements however show similar patterns, however with a proportionally higher amount of defensive equipment (see 5.3).

During the 2nd century and 3rd (period 3), the rural settlements in both regions show very similar patterns, with military equipment in the Cananefatian region relatively more common, However, the amount of horse gear in the Batavian region is extremely high (90% of total), while in the Cananefatian region this remains below 70%. The urban centres in both regions show comparable numbers with very high amounts of horse gear (80-90%) and only limited amounts of military equipment and belt components. River depositions decrease strongly in the Batavian region while in the Cananefatian region, although the absolute number of finds is far from significant, the practice of weapon depositions becomes only visible during this period. River deposits often consists of swords and helmets, which is also the case for the few examples from the Cananefatian region.

In the late Roman period (period 4), military equipment and horse gear becomes largely invisible. However, belt components are common in 'Batavian' cemeteries and rural settlements. During the 4th century, military equipment and horse gear virtually disappears in the Cananefatian region (however on a few late Roman settlements from the region, the little available evidence also concerns some belt components).

3. How do these patterns tie in with the theory of N. Roymans that certain Cananefatian auxiliary units did not exist during the earliest part of the 1st century AD?

As already mentioned in chapter 2, Roymans casts some doubts about the existence of the Cananefatian *auxilia* units for the pre-Flavian era. Instead, he proposes that the Cananefatian region was included into the recruitment sphere of the Batavians during that period.

To answer this research question, it would have been necessary to be able to make a clear distinction between the pre- and post-Flavian material within period 2. However, as described in this thesis, this distinction can only partly be made, as only a small amount of the military equipment and horse gear can be dated specifically to the pre-Flavian period. Besides, almost no pre-Flavian dated equipment was found in the Cananefatian area. The little evidence available, concerns a number of horse gear components from Katwijk Zanderij and two belt buckles from De Lier and Alphen aan den Rijn. Would this mean the units did not exist, and that the Cananefatian area was included in the Batavian recruitment pool? Unfortunately, the evidence available as identified and analyzed in this research is not conclusive.
However, some other theoretical arguments may be brought to bear. Assuming Paterculus is correct with his date of 5 AD of the subduing of the Cananefates, we should not expect the recruitment of the Cananefatian units before that date. Therefore, as calculated in chapter two, we should only expect the first veterans to return to their villages around 30 AD at the earliest and not before the middle of the 1st century can we expect larger numbers of veterans. Based on the evidence presented in this thesis, the veterans in the Cananefatian area can only be seen post-70 AD. Also, the earliest diplomas mentioning the *Ala I Cannanefatium* dates from the year 74 AD. Unfortunately, we do not know whether these diplomas involve actual Cananefates or how long these particular soldiers served in this unit. New units can be assumed to be formed around a nucleus of seasoned soldiers from other units, so it is also not possible to simply subtract the twenty-five service years from the date of the diploma.

Nevertheless, evidence for larger numbers of veteran presence in the Batavian region is visible from ca. 40 AD (Heeren 2009, 254), which is roughly 60 years after the Batavians started supplying troops to the Roman army. This is consistent with the Cananefatian timeline, as it took roughly 60 years (ca. 5–70 AD) between the subjugation of the Cananefates and the first evidence for the possible presence of veterans. Besides, the post-Flavian patterns in military equipment between the two regions are comparable with a time-lapse in the first half of the 2nd century. It can therefore be an indication that a Cananefatian auxiliary unit existed pre-70 AD, although later than the first Batavian units.

Furthermore, if the Cananefates and the other coastal tribes would have been part of the eight known Batavian cohorts as suggested by Roymans, one would assume they would have developed similar ways of dealing with military equipment as their Batavian comrades, with whom they then had served together for many years. Even if one of those eight cohorts would have been entirely made up of Cananefates and other non-Batavians, they should have been

influenced enough by the Batavian imagery and identity and the label applied to them by the Romans to have left some evidence.

This would also confirm the specific statement from Tacitus about a Cananefatian auxiliary unit in 28 AD. If the Batavians did recruit Cananefates into their units, it could not have been on such a scale that would have caused Tacitus to name them. Although these arguments might not be sufficient to draw far reaching conclusions, it gives some indication for the existence of a pre-Flavian Cananefatian auxiliary unit.

4. Can the explanations for the occurrence of military equipment and horse gear proposed by Nicolay for the Batavian region be applied to the civitas Cananefatium?

During the last decades of the Iron Age in the Batavian area and in North-West Europe in general, the presence of Iron Age weaponry and early Roman military equipment is explained as a reflection of the martial values of the iron-age societies and the presence of a warrior-elite and their armed retainers or *Gefolgschaft.* In the Batavian area, weaponry is encountered in a few ritual contexts during this period, like river deposition and a cult place, but hardly any in rural settlements.

As discussed above, evidence from the Cananefatian region is lacking. However, considering the general scarcity of finds on rural settlements and the limited places where finds occur elsewhere, it cannot be completely excluded that finds in the Cananefatian region simply have been missed, or have not been preserved. However, during this period, the settlement pattern, political and geological situation in the *civitas Cananefatium* appears to be very unstable due to a renewed phase of transgressions. Therefore, it was the absence of a population with well defined leader(ship), local elite, or central place which prompted Tacitus to write that the Cananefatian area was empty. It may thus be that there was nobody strong enough to have a substantial, archaeological visible "*Gefolgschaft"*. And it was exactly the local elite and their armed retainers that had something to offer to the Roman army in the form of armed manpower and in return gained access to Roman military equipment and luxury or prestige goods. It is not likely that the Cananefatian area was actually empty as some reliable evidence points to the contrary (e.g. 50 BC – 12 AC in Vlaardingen, Rijswijk-de Bult).

From the 1st century AD, the large amount of military equipment in the Batavian region is explained via a life cycle model for the *auxilia* soldiers, who upon returning to the civilian world after their twenty-five years of service in the army, go through a rite of passage where some of the equipment is offered in cult places or purposely deposited in rivers, while a part is taken home as souvenir or badge of honor. As described above during the first half of the 1st century AD, the difference between the two regions is immense. Only when the Romans started investing

in the Cananefatian (after 40 AD) region and the local population gained access to Roman goods, the settlements become visible and the first scarce evidence of military equipment and horse gear can be observed. By that time, the Batavians already had a well established Roman (military) presence for over 60 years. The different patterns are partly caused by the settlements in the Cananefatian region, which only become visible around the middle of the 1st century.

The ritual treatment of weaponry in the early 1st century seems to have its roots in the practices of the Late Iron Age and it can be argued that the Batavian *auxilia* were based on the traditional *Gefolgschaft*. As the evidence showed, the Cananefates do not seem to have shared this tradition, so similar practices should not be expected.

From the Flavian period onwards in the Batavian region, Nicolay identifies a decrease of military equipment, most notably armor. From the mid 2nd century, a strong increase in horse gear is observed. Nicolay states that it is unlikely this increase in horse gear is the result of increased horse breeding for military purposes, as only the functional components of horse gear are used for training of young animals. Therefore, he believes the need to express a military identity is replaced by a more 'civilian' life style. This process was probably accelerated by the Batavian revolt and the resulting changes in Batavian leadership.

Chapter 3 states that the strict placement of Corbridge plate armor in period 2 has been proved incorrect by recent evidence from Spain. This new evidence is supported by the data from the Cananefatian region, where roughly 50% of the (plate) armor can be dated in period 3. Therefore, as this is the largest find category, placing all Corbridge plate armor in period 2 has caused a strong overrepresentation for military equipment for the 1st century in the research of Nicolay. The decrease in military equipment in Nicolay's period 3 is therefore less prominent and this has far reaching consequences for the interpretation of Nicolay.

According to Nicolay, it is exactly the absence of armor in period 3 that proves that the belts, swords, spears, and horse gear from that period should be regarded as (mainly) civilian (self defense, hunting weapons etc) rather than as pure military. However, because plate armor must also be partly placed in period 3, this argument cannot be maintained. Another argument Nicolay uses to substantiate his argument is the absence of imperial imagery after AD 50. Perhaps the most telling is the sword scabbard from Leiderdorp which is the single exception to the rule that imperial imagery was no longer used from the Claudian period onwards.

Contrary to the Batavian region where ritual practices concerning military equipment seem to diminish after 70AD, in the Cananefatian region those ritual practices only become archaeologically visible during period 3, be it in modest scale. Therefore, in the Cananefatian

region, it seems logical that the manifestation of one's identity via military equipment continued throughout the 2nd century.

Around 170 and again in the 3rd century, the *limes* zone came under pressure from raiding "Germanic" groups. Although the period 3 weaponry cannot be dated with much precision, especially the sword scabbard chapes and slides are usually regarded as late 2nd or early 3rd century (period 3). Therefore, According to Nicolay, the new increase in weaponry, particularly swords, that can be witnessed in both the Cananefatian and Batavian region is explained by the need for civilian self defense in times when the Roman government/army could not provide security.

The relatively high number of swords (scabbards) from the Cananefatian region, as compared to the Batavian region, during this period, shows that other processes can be at work. It can be argued that the Cananefatian region was more at risk of raiding bands, because the fortresses on the *limes* could be circumvented via the sea. However, it is also exactly this period where we see (military) investments taking place in the region with the installation of the coastal defenses at Ockenburg and Scheveningseweg. Especially Scheveningseweg is interesting as evidence shows the manufacturing of military equipment at that location. Although a relatively prominent find group, general re-arming of the population as a reaction against raiding Germanic warbands or internal unrest does not seem likely, as many more finds should have surfaced if that was the case.

For the late 3rd and 4th century, the occurrence of military equipment in the Batavian region is explained by a revival of martial values under influence of 'germanic' newcomers. This explanation cannot be applied to the Cananefatian region. The lack of material in the later 3rd and 4th century can simply be explained by the deteriorated situation in the region. The majority of settlements seem to have been abandoned in the second half of the 3rd century. Although it is unlikely that there was no habitation at all, as proven by recent excavations in Naaldwijk, the inhabitants seem to have been largely cut off from the supply lines of Roman goods and the region was unlikely to be very appealing to newcomers.

5. Is the society in the civitas Cananefatium "less military orientated"?

The Cananefatian military identity cannot be established based on their use of military equipment and horse gear alone, especially because of the chronological differences in the development of both regions as described above. The Batavians, however, are regarded as a military orientated society, as described earlier in this thesis, so comparing the Batavian region with the Cananefatian region will give an indication whether the Cananefatian society was similarly military orientated. The differences between both regions in the occurrence of military

equipment and horse gear are partly determined by research methods, chronological developments and research focus.

Taking these differences into account, however, there is an apparent lack of military equipment and horse gear in the Cananefatian region during the first half of the 1st century. The second half of the 1st century shows a gradual increase in military equipment and horse gear and during the 2nd and 3rd centuries, a relative comparable strong presence of military equipment and horse gear can be seen in rural settlements and urban centres. Thus, the conclusion might be drawn that the Cananefatian society was not military orientated before the Romans arrived in the area and the limes was constructed, but with the Roman arrival, the Cananefatian society became increasingly military orientated.

The great differences between both regions in regards to the ritual practices, concerning military equipment and horse gear, visible at cult places, and rivers depositions also give an indication about the military orientation of both societies. It is the question to what extent these rituals are representative for the entire population or merely for the elite (officers, tribal leaders, etc) of these societies. However, the available evidence from the Cananefatian region does suggest a different cult practices, not in any way associated with a martial identity.

Another indication for the military orientation of societies is their image with other societies. In that context, Tacitus writes that the Cananefates were 'equally brave' (referring to the Batavians), as earlier described. This does not necessarily state anything on the military identity of the Cananefates. However, that the Batavians themselves relied on the Cananefates to begin the 'Batavian' revolt may be our best clue, that although the Cananefates did not express a martial identity as visible as the Batavians they should not be regarded as less military oriented.

6.1 Further research

In the above chapters, I hope to have shown that the metal work from the Cananefatian area, although relatively modest in number, can provide valuable information. During this research, I was struck by the number of publications without complete catalogues of metal finds. In the current archaeological market, it is understandable that not each and every find can be drawn or photographed. However, the lack of complete identification lists with proper references is unnecessary. Furthermore, in many publications, it is nearly impossible to retrieve the context of the individual finds, and that requires researchers to go back to the raw data of the excavation. Also, one should realize that the existing typologies for certain items are often based on such a low amount of finds that more attention should go to the find context and its date than we see now in many publications.

Another interesting aspect would be to determine the chemical composition of the metals, as was done with the bronze depot from Hallum (Caspers 2010). When a sufficient reference collection becomes available, it may provide further insight about the origins of the material and the amount of recycling.

Further research in corrosion and degradation of metals can help to establish understanding on the differences between regions. In theory, the conservation circumstances in the Cananefatian area should not be very good, due to the relative high salt levels in the water and soils. However, the few positive exceptions show that is only half the story.

Finally, I hope similar surveys will be conducted in the surrounding areas. As briefly mentioned in chapter four, the southern banks of the river Meuse have also yielded military equipment, as does the area directly north of the research area. Especially the area north of the Rhine up to and beyond the Oer IJ estuary can provide additional details, especially for the periods before 50 AD. In hind sight, that region should perhaps have been part of this research already.

Abstract:

During the last decade an unprecedented amount of excavations of Roman period rural settlements took place in the presumed *civitas* of the Cananefates, which covers a great part of the modern day Dutch province of Zuid-Holland. A number of these excavations yielded substantial more metal finds than is common for the region, including an unsuspected amount of Roman military equipment and horse gear, a find category that until recently was almost nonexistent in the region. In the neighboring Dutch Eastern River Area, the heartland of the Batavians, Roman military equipment and horse gear from civilian context has always been a prominent find category and has been the subject of extensive research (Nicolay 2007). In order to test some of the ideas from that research, a survey was conducted of all military equipment from the Cananefatian from non military context and held against the existing theories.

The comparison yielded some interesting similarities and differences between both regions and provided enough questions to challenge some of the existing theories. Throughout the Roman period differences in horse gear remain very high. However, against expectations for the later periods the Cananefatian region features relatively more military equipment than the Batavian region. This sheds additional light on the questions about the role of the veteran, the pacification of the Rhine frontier and the theory about rearming of the population during the unrest of the 3rd century.

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Appendix 1: The sites

List of sites incorporated in the dataset, where Roman military equipment or horse gear have been found. The id. number refers to Appendix 3 and the plates.

Id.	Place name	Toponym	Context	# Finds
1	Alblasserdam	De Hille (alb III)	rural settlement	1
2	Alblasserdam	Rijksweg 15	rural settlement	1
3	Alphen a/d Rijn	De Schans	rural settlement	2
4	Alphen a/d Rijn	Hoorn (Lemkes)	rural settlement	3
5	Alphen a/d Rijn	Goudse Rijpad	rural settlement	1
6	Capelle a/d Ijssel	Capelle a/d Ijssel	waterworks	1
7	Delft	Binnenstad	rural settlement	1
8	Delft	Koningsveld	rural settlement	1
9	De Lier	Leehove 2	rural settlement	1
10	Den Haag	JW Friso laan	rural settlement	4
11	Den Haag	Lozerlaan	cult place	1
12	Den Haag	Uithofslaan VP4	rural settlement	4
13	Den Haag	Uithofslaan VP3	rural settlement	14
14	Den Haag	Uithofspolder	rural settlement	1
15	Den Haag	Wateringseveld (hogeveld)	rural settlement	7
16	Gorinchem	Polder van Arkel	rural settlement	3
17	Katwijk	Zanderij	rural settlement	82
18	Leiden	Pomona	rural settlement	8
19	Leiden	Oostvliet Polder	rural settlement	2
20	Leidschendam	Leeuwenberg	rural settlement	7
21	Leidschendam	(vliet) dump in Nootdorp	river	2
22	Midden-Delfland	Harnaschpolder MDHP12	rural settlement	3
23	Midden-Delfland	Schipluiden (SN96)	rural settlement	1
24	Naaldwijk	Zuidweg/Hoogwerf	rural settlement/vicus	31
25	Poeldijk	Westhof B	rural settlement	17
26	Poortugaal	Hofterrein	rural settlement	1
27	Rhoon	Valkensteinsche Blok	rural settlement	2
28	Rijswijk	De Bult	rural settlement	4
29	Rijswijk	De Bult 2/Wilhelmina park	rural settlement	3
30	Rijswijk	Beatrixlaan (Reik10)	rural settlement	1
31	Rijswijk	Hoekpolder	rural settlement	1

Id.	Place name	Toponym	Context	# Finds
32	Rotterdam	Willemspoortunnel	river	2
33	Schiedam	Babberspolder	rural settlement	1
34	Schiedam	Kethel/Hargpolder	rural settlement	4
35	Schiedam	Polderweg	rural settlement	10
36	Vlaardingen	Hoogstad	waterworks	1
37	Leiderdorp	Rijn	river	1
38	Voorburg	Arentsburg /Forum Hadriani	urban centre	114
39	Wateringen	Juliahof	rural settlement	7
40	Wassenaar	Weteringpark	rural settlement	1
41	Woerden	Baarwoutswaarder	rural settlement	1
42	Woerden	Woerden	river	1
43	Bodegraven	Wierickerschans	river	1
44	Midden-Delfland	Harnaschpolder AHR 1	rural settlement	2
45	Midden-Delfland	Harnaschpolder AHR 2	rural settlement	2

Appendix 2 (after Nicolay 2007): Typology

Typo and Chronological classification of Roman military equipment and horse gear employed in this research and in the following catalogue. A short description has been provided in chapter 3, however for a more in-depth description one should check Nicolay 2007 chapter 2.

Functional groups in catalogue			Type categories	Type/variant/features	Period
Militaria	Defensive Weapons	Helmet	A	Buggenum	1
			B	Port type	1
			C	Hagenau	2
			D1	Weisenau type	2
			D2	Weisenau type-late	2
			E1	Weiler variant	2
			E2	Guisborough variant	3
			F1	Masked Helmet –Weiler	3
			F2	Masked Helmet - Guisborough	3
			G1-3	Niederbieber	3
			H	Guard helmet	4
		Armor	A	Chain Mail	1-4
			B	Scale Armor	1-4
			C1	Plate Armor – Kalkriese	2
			C2	Plate Armor – Corbridge	2
			C3	Plate Armor – Newstead	3
		Shield	A	Rectangular/(flattened)oval	1-2
			B	Oval	(1-)2
			C	Round/oval	3
			D	'Germanic' type	2-3
	Offensive	Sword	A1	Gladius-Hispaniensis	1

Functional groups in catalogue		Type categories	Type/variant/features	Period
Weapons	(scabbard)	A2	Gladius-Mainz	2
		A3	Gladius-Pompeii	2
		A4	Gladius-like sword	2
		B1	Spatha –Newstead	2
		B2	Spatha –Straubing/Nydam	3-4
		C	Semispatha	4
	Dagger	A	Republican type	1
	(sheath)	B1	Mainz type	2
		B2	Vindonissa type	2
		C	Kunzing type	3
		D	Peltate chape	3
	Pilum/	A	Pilum- tongue shape shaft	1-2
	Plumbata	B	Pilum-socketed shaft	1-3
		C	Plumbata	4
	Spear/Lance	A1/A2	Leaf shaped	1-4
		B	Triangular/square	3-4
		C	Multi-faceted	3
	Bow and Arrow	A	Trilobate	1-4
		B	Round	2-3
		C	Lozenge-shaped	(3-)4
		D	Leaf-shaped	(3-)4
	Artillery	A	Lozenge-shaped	1-4
		B	Round	1-4
	Sling shot	A	Almond-shaped	1-3

Functional groups in catalogue			Type categories	Type/variant/features	Period
	Suspension/Apron	Belt	A1-3	Narrow belt, buckle(pelta)	2
			A4-5	Narrow belt, buckle(pelta)	2
			B	Narrow belt, buckle (pelta)	3
			C	Wide belt, ring buckle	3
			D/E	Wide belt, buckle (animal head)	4
			F	Narrow belt, buckle (dolphin)	4
			G	Narrow belt, buckle (C-shaped)	4
		Baldric			3
		Apron			2
	Various	Signaling equipment.	A	Tuba	-
			B	Lituus	-
			C	Cornu	-
			D	Bucina	-
		Rewards	A	Torque	2-3
			B	Armband	2-3
			C	Phalera (worn on chest	2-3
			D	Phalera (horse gear)	2-3
Horse Gear	Bridle	Hackamore	A	Rhomboid	2-3
			B	Rhomboid with pointed tip	2-3
			C1/2	Round/rosette	2-3

Functional groups in catalogue		Type categories	Type/variant/features	Period
	Bit	A	Ring type	1-4
		B1	Curb, straight	1-2
		B2	Curb, omega shaped	1-3
		C1	Variant B1, straight	1-2
		C2	Variant B2, loop shaped bar	2-3
		D	Semicircular shank, ring with loops	2
	Chamfron	A	Leather, round eye guard	2
		B	Leather, pointed eyeguard	2
		C	Bronze	3
Saddle	Saddle fitting	A	Openwork	2
		B	Raised circles	2
Harness	Fastener	A	C-shaped buckle	2
		B1,2	T-shaped fastener	2
		C	Disc-shaped fastener	2
		D	Small (ring)buckle	3
		E	Heart-shaped fitting with loop	3
		F	Fitting with two strap holders	3
	Strap-junction	A1,3	Ring junction	2
		A 2,4-5	Ring junction	2
		B	Phalera junction	2
		C	Openwork, with loops	3
		D	Front and back plate	3

Functional groups in catalogue		Type categories	Type/variant/features	Period
	Strap terminals	A	Oblong, solid	2
		B	Various, openwork	3
	Decorative fittings	A1	Rectangular	2
		A2	Waisted rectangular	2
		A3	Figure eight	2
		A4	Double figure eight	2
		A5	Ribbed	2
		A6	Acorn-shaped	2
		A7	Phalera-shaped	2
		A8	Lozenge-shaped	2
		A9	Round	2
		A10	Round with knobs	2
		A11	Peltate	2
		A12	Rectangular with round knobs	2
		A13	Phallic	2
		A14	Elongated with rosette knobs	2
		A15	Rectangular with hinge	2
		A16	Heart-shaped	2
		A17	Lunate	2
		B1	Round/oval	3
		B2	Round, enamel inlay	3
		B3	Rosette-shaped	3
		B4	Mushroom-shaped	3
		B5	Shell-shaped	3
		B6	Rectangular/square	3
		B7	Lozenge-shaped	3
		B8	Shield-shaped	3

Functional groups in catalogue		Type categories	Type/variant/features	Period
		B9	Peltate	3
		B10	Almond-shaped	3
		B11	Almond-shaped, oblate ends	3
		B12	Elongated	3
		B13	Elongated and ridged	3
		B14	Winged	3
		B15	Trumpet motifs	3
		B16	Lunate	3
		B17	Vulvate	3
		B18	Phallic	3
		B19	Heart-shaped	3
		B20	Tear-shaped	3
	Looped	AA	Phalera	2
	strap mount	A	Various	2
		B	Various	3
	Pendants	A1	Leaf-shaped (trefoil)	2
		A2	Winged, with rosette	2
		A3	Winged, with animal head	2
		A4	Oval with pelta/rosette	2
		A5	Leaf shaped (single leaf)	2
		A6	Peltate	2
		A7	Round/oval/tear shaped	2
		A8	Lunate	2
		A9	Phallic	2
		A10	Lancet-/lozenge-shaped	2
		B1	Round/oval/tear-shaped	3
		B2	Heart-shaped/peltate	3

Functional groups in catalogue		Type categories	Type/variant/features	Period
		B3	Heart-shaped/phallic	3
		B4	Phallic	3
		B5	Lunate	3
		B6	Acorn-shaped	3
		B7	Openwork	3
	Bell	A	Tall, concave central part	2
		B	Hemispherical, incised lines	2(-3)
		C	Conical, square base with knobs	2
		D	Conical, square base	3
		E	Conical, faceted	3
	Bone	A	Round, cut from antler	1-4
	‘amulet’	B	Lunate, wild boar teeth	1-3
	Spurs	A	U-shaped, rectangular loops	2
		B	Semicircular, knobs/stray fittings	3
		C1/2	Semicircular, shanks of unequal length	4

Appendix 3: The Data set.

The individual finds as discussed in chapter 4 are presented here in a single table. The table follows the same structure as the typology listed in appendix 2. The catalog number (cat. no.) is made up of two parts, the first being the site id., which refers to the list in appendix 1, the second is the sequence number within that site.

The second column lists the number of the plate (referring to appendix 4) or figure (referring to the main text).

Each item is identified as either military equipment or horse gear, and is further divided into functional groups.

Specific parallels are not provided for each individual item, as the classification according to the typology of Nicolay provides enough parallels (Nicolay 2007). However, when necessary further parallels are provided.

Abbreviations:

ME: Military equipment
- OW: Offensive Weapons
- DW: Defensive Weapons
- BBA: Belts, Baldrics and Aprons

HG: Horse Gear
- H: Harness

Cat. no	Figure/ Plate	Group	functional group	Category	Type	Part	Shape/ charac-teristics	Period	Further dating	Number	Decoration	Collection	Reference	Parallel
1.1	pl. 8	ME	BBA	Hip-belt	B/C	Belt-terminal (hanging)		3		1		Prov. Arch. Depot inv. 4260	Sarfatij 1975, Jrob 1973	Oldenstein 1976, 311-314.
2.1	pl. 5	ME	OW	Pilum	B	Head	socketed	1-3		1		RMO h 1992/8.57	Hallewas 1986 & 1988	
3.1	pl. 10	HG	H	Strap mount	B2		round flat	3		1	enamel	RMO inv. h 1995/9.1		
3.2	-	HG	H	Strap mount	B1		round flat	3		1		RMO inv. h 1990/12.18		
4.1	pl. 14	HG	H	Bell	C			2		1		Prov. Arch. Depot inv. 5054	Aldred et. al 1992	
4.2	pl. 8	ME	BBA	Hip-belt	A1	single buckle	Pelta shaped	2	0-70	1		Prov. Arch. Depot inv. 5055	Aldred et. al 1992	
4.3	-	HG	H	Strap mount	B2		Round flat	3		1	enamel	private collection	Achis waarneming 18649	
5.1	pl. 5	ME	OW	Pilum	A/B	Head		1-3		1			Vos & Blom 2004 , fig. 43	
6.1	pl. 7	ME	OW/BBA	Dagger scabbard/ hip belt	?	plate	head "*pax orbis* "	2		1		Boor	Jacobs & Pavlovic 2001	Lenz 2006, 193?
7.1	-	HG	H	Strap mount	B17		vulvate	3		1		private collect. M. Hoffman		
8.1	-	ME	OW	Sword Scabbard	C	Scabbard-chape	peltate (possible fibula?)	3		1		gem. Delft	Bakx in prep.	
9.1	pl. 8	ME	BBA	Hip-belt	A1	single buckle	Pelta shaped	2	0-70	1		gem. Delft	Bult, in prep	
10.1	pl. 4	ME	OW	Spear/Lance	-	butt	round	1-4		1		Den Haag vnr.1166.1		Lenz 2006, 63
10.2	pl. 1	ME	DW	Armor	C2	hinged buckle	Rectangular/ C-shaped buckle	2		1		Den Haag vnr. 247.1		Nicolay 2005, 82.22
10.3	pl. 8	ME	BBA	Hip-belt	?	?	triangle, curled.	2-3		1		Den Haag vnr 1405.1		
10.4	pl. 8	ME	BBA	Hip-belt	A/B	Belt plate	Square	2-3		1		Den Haag vnr 468.1		
11.1		ME	BBA	Hip-belt?	A/B	Belt plate	rectangular,	2-3		1		Den Haag vnr. 17.19	Van Zoolingen 2010, p 98	
12.1	pl. 7	ME	OW	Artillery	C	Bolt head (or bit head?)		1-4		1		Den Haag vnr. 24523	in prep.	Lenz 2006, 68
12.2	pl. 1	ME	DW	Armor	C2	hinged buckle		2		1		Den Haag vnr. 105557.1	in prep.	
12.3	pl. 8	ME	BBA	Balteus	-			3		1		Den Haag vnr. 20506	in prep.	Oldenstein 1976, 428
12.4	pl. 15	HG	H	Looped strap mount	B		square	3		1		Den Haag vnr. 105501.4	in prep.	Nicolay 2007, 209.43
13.1	-	ME	DW	Armor	C2	tie-hook		2		1		Den Haag vnr. 19002.7	in prep. Van der Feijst	
13.2	-	ME	DW	Armor	C2	tie-hook		2		1		Den Haag vnr. 9084.1	in prep. Van der Feijst	
13.3	-	ME	DW	Armor	C2	tie-hook		2		1		Den Haag vnr. 9031.1	in prep. Van der Feijst	
13.4	-	ME	DW	Shield	-	Grip		2-3		1		Den Haag vnr. 455	in prep. Van der Feijst	

Cat. no	Figure/ Plate	Group	functional group	Category	Type	Part	Shape/ charac-teristics	Period	Further dating	Number	Decoration	Collection	Reference	Parallel
13.5	-	ME	BBA	Hip-belt	A-varia	single buckle	C-shaped	2		1		Den Haag vnr. 19105.5	in prep. Van der Feijst	Nicolay 2007, 208.6, Waasdorp 1999, 12.18
13.6	-	HG	H	Pendant	A8		sickle shape	2		1	tinned	Den Haag vnr. 17153.3	in prep. Van der Feijst	
13.7	-	HG	H	Strap mount	B12		Cross, elongated arms	3		1		Den Haag vnr. 19023.13	in prep. Van der Feijst	Nicolay 2007, 163.12
13.8	-	HG	H	Strap mount	B17		vulvate	3		1		Den Haag vnr. 64504.1	in prep. Van der Feijst	
13.9	-	HG	H	Strap mount	B1		hat shaped	3		1		Den Haag vnr. 18003.2	in prep. Van der Feijst	
13.10	-	HG	H	Bell	B?		damaged	2?		1		Den Haag vnr. 76528	in prep. Van der Feijst	
13.11	-	HG	H	Strap mount	B9?		peltate	3		1		Den Haag vnr. 19032.1	in prep. Van der Feijst	
13.12	-	HG	H	Strap mount	B1		round	3		1		Den Haag vnr. 19032.2	in prep. Van der Feijst	
13.13	-	HG	H	Strap mount	B13		Moulded (cross)	3		1		Den Haag vnr. 460	in prep. Van der Feijst	Nicolay 2007 93.48
13.14	-	HG	Wagon	Wagon part	D2	reign guide		3		1		Den Haag vnr. 65505	in prep. Van der Feijst	
14.1	-	ME	OW	spear(arrow?)	-	Head		1-4		1		-	Mezger 1961, archis 24313	
15.1	pl. 12	HG	H	Strap mount	B17		vulvate	3		1		vnr. 4919.4	HOP11: Simons 2009	Nicolay
15.2	pl. 10	HG	H	Strap mount	B1		round	3		1		vnr 1217.1	HOP11: Simons 2009	
15.3	pl. 10	HG	H	Strap mount	B2		round	3		1	enamel	vnr 4523	HOP11: Simons 2009	Nicolay 2007, 82.181
15.4	pl. 13	HG	H	Pendant	B3/4-varia?		pelta/phallic	3		1		vnr 3707.1	HOP11: Simons 2009	
15.5	-	ME	DW	Shield	-	Edging		2		1		vnr 2355.2	HOP11: Simons 2009	
15.6	-	ME	OW	Dagger-scabbard	-	ring		2		1		vnr.	HOP11: Simons 2009, p269	
15.7	-	ME	OW	Sling	-	bullet	round	2-3		1		vnr 6300.4	HOP11: Simons 2009	
16.1	-	HG	H	Strap mount	B1			3		1		priv. collect.: Fisher/M.R.C. Waalwijk	-	
16.2	-	HG	Wagon?	Wagon part	?	?		-		1		priv. collect: Fisher/M.R.C. Waalwijk	-	
16.3	-	HG	H	Strap mount	A2			2		1		private collection: Fisher/M.R.C. Waalwijk	-	Deschler-Erb 1999, 702
17.1	-	ME	OW	Spear/Lance	A1	Head		1-4	0-260	1		Adc vnr. 145 (db 220)	De Bruin 2008 fig 11.5	Schoenberger B16/Zanier C16
17.2	-	ME	OW	Spear/Lance	A1	Head		1-4	0-200	1		Adc vnr. 00 (db 219)	De Bruin 2008	Schoenberger B17

Cat. no	Figure/ Plate	Group	functional group	Category	Type	Part	Shape/ charac-teristics	Period	Further dating	Number	Decoration	Collection	Reference	Parallel
17.3-6	-	ME	DW	shield	A/B?	Edging		2		4		Adc vnr. 177 (db 29)	De Bruin 2008	
17.7	pl. 8	ME	BBA	Hip-belt	B	cingulum buckle	kidney	3		1		Adc vnr. 55 (db 43)	De Bruin 2008	Oldenstein 971-974
17.8	-	HG	H	Strap mount	B1		flat round	3	150-300	1		Adc vnr. 10 (db 44)	De Bruin 2008	Oldenstein 510-511
17.9	-	HG	H	Strap mount	A?			2	40-80	1		Adc vnr. 126 (db 53)	De Bruin 2008	Schoenberger Taf.26 nr.B273
17.10	-	ME	OW	Dagger-scabbard	C	Scabbard-chape	peltashape	3	100-300	1		Adc vnr. 130 (db 62)	De Bruin 2008	Oldenstein 1976, 112/Nicolay 2007, 15.2
17.11		-	-	Indet military	-			-		1		-	De Bruin 2008	
17.12	-	HG	H	Strap mount	B19		heart shape	3	150-250	1	tinned	Adc vnr. 47 (db 76)	De Bruin 2008	Schleiermacher Taf.7 nr.13&14
17.13	-	HG	H	Strap mount	A9		round flat, with hole	2		1		Adc vnr. 0 (db 83)	De Bruin 2008	Oldenstein 509
17.14	-	ME	BBA	Hip-belt	A4	Belt plate		2	50-70	1		Adc vnr. 0 (db 92)	De Bruin 2008	Unz/Deschler-Erb Taf.36&37
17.15		-	-	Indet military	-			-	-	1		Adc vnr. 73 (db 102)	De Bruin 2008	
17.16		HG	H	Strap mount	A11		Pelta	2	0-150	1		Adc vnr. 0 (db 105)	De Bruin 2008	Oldenstein 641
17.17	-	HG	H	Strap mount	B1		round flat, single prong	3		1		Adc vnr. 59 (db 54)	De Bruin 2008	Oldenstein 1977, 518
17.18	-	ME	DW	Armor	C2	Armor strap		2		1		Adc vnr. ? (db 133)	De Bruin 2008	Unz/Deschler-Erb Taf.33 nr.775
17.19	-	ME	DW	Armor	C2	Armor strap		2		1		Adc vnr. ? (db 135)	De Bruin 2008	Schoenberger B78-86
17.20	-	ME	DW	Armor	C2	Armor hinge	lobate	2		1		Adc vnr. 77 (db 152)	De Bruin 2008	Unz/Deschler-Erb Taf.34 nr.832
17.21	-	HG	H	Strap mount	B1		hat shaped	3		1		Adc vnr. 51 (db 153)	De Bruin 2008	Oldenstein 584
17.22	-	ME	OW	Dagger-scabbard	-	Ring		-		1		Adc vnr. 7 (db 190)	De Bruin 2008	
17.23		-	-	Indet military	-			-		1		Adc vnr. 0 (db 216)	De Bruin 2008	
17.24	-	ME	BBA	Hip-belt	A/B	Belt plate		2-3		1		Adc vnr. 0 (db 217)	De Bruin 2008	
17.25		HG	H	Strap mount	-			2-3	25-300	1		Adc vnr. 0 (db 45)	De Bruin 2008	Bishop/Coulston 117, 145
17.26		HG	H	Strap mount	A2		reqtangular, waisted rims	2	0-100	1		Adc vnr. 175 (db 55)	De Bruin 2008	Deschler-Erb Taf.37 nr.705, Nicolay 2007 209.72
17.27	-	HG	H	Strap mount	B4		hat shaped	3	180-260	1		Adc vnr. 130 (db 68)	De Bruin 2008	Oldenstein 561
17.28	-	HG	H	Strap terminal	A3-varia		figure of eight, rosette	2	0-125	1		Adc vnr. 2 (db 81)	De Bruin 2008	Unz/Deschler-Erb Taf.63 nr.1768, Nicolay 2007. 211.72
17.29		HG	H	Strap mount	A?			2	40-80	1		Adc vnr. 50 (db 118)	De Bruin 2008	Schoenberger Taf.23 B178
17.30		HG	H	Strap junction	A3		figure of eight	2	0-125	1		Adc vnr. 52 (db 119)	De Bruin 2008	Unz/Deschler-Erb Taf.62 nr.1716

Cat. no	Figure/ Plate	Group	functional group	Category	Type	Part	Shape/ charac-teristics	Period	Further dating	Number	Decoration	Collection	Reference	Parallel
17.31	pl. 13	HG	H	Pendant	A7		drop shaped, silver	2	0-100	1		Adc vnr. 81 (db 136)/DZH inv. 8927a	De Bruin 2008	Deschler-Erb Taf.30 nr.591
17.32	pl. 15	HG	Wagon	Wagon part	B1	reign guide	heart ornaments	2		1		Adc vnr. 0 (db 183)/DZH inv. 8931	De Bruin 2008	Rodenburg pag.126
17.33	-	HG	H	Strap mount	B1		flat round	2-3		1		Adc vnr. 50 (db 213)	De Bruin 2008	Oldenstein 505
17.34		HG	H	Strap junction	A1			2		1		Adc vnr. 0 (db 215)	De Bruin 2008	Rodenburg pag.60 links
17.35		HG	H	Strap junction	A3		figure of eight	2		1		Adc vnr. 31 (db 218)	De Bruin 2008	Rodenburg pag.56 links
17.36	-	ME	OW	Spear/Lance	A1	Head		1-4		1		2001-0320-213319AA (db 2)	De Bruin 2008	Zanier C20
17.37	-	ME	OW	Spear/Lance	-	butt	Pointed, with v-shape opening	1-4		1		2001-0320-214300AA (db 3)	De Bruin 2008	Nicloay 2007, 291.18
17.38		ME	BBA	Balteus	-	terminal mount	heart shaped, openwork	3	150-300	1		2002-0702-113215AA (db 66)	De Bruin 2008, fig 11.11;2	Oldenstein 258
17.39		-	-	Indet military	-	Decorative mount		-	-	1		2002-0702-113534AA (db 68)	De Bruin 2008	
17.40	-	ME	DW	Armor	C	tie-loop		2		1		2002-0702-124354AA (db 76)	De Bruin 2008	Nicolay Pl.10-C2-82.9
17.41	pl. 8	ME	BBA	Hip-belt	B/C	Belt-terminal (hanging)	Drop-shaped, rectangular loop	3		1		2002-0708-103834AA (db 79)	De Bruin 2008	Vgl. Oldenstein 299
17.42	-	ME	DW	Shield	-	Edging		2		1		2002-0708-105801AA (db 81)	De Bruin 2008	Nicolay Pl.15-B-25.5
17.43	-	ME	BBA	Hip-belt	-	Tabula ansata	square	3	150-200	1		2002-0708-111019AA (db 86)	De Bruin 2008	Oldenstein 753
17.44	-	ME	BBA	Hip-belt	-	tweezer		4	300-450	1		2002-0708-111340AA (db 88)	De Bruin 2008	Nicolay Pl.46-D/E
17.45	-	ME	BBA	Hip-belt	C	round fasterner	round convex	3	120-250	1		2002-0708-112040AA (db 89)	De Bruin 2008	Nicolay Pl.41-C-268.1
17.46	-	ME	DW	Shield	-	Edging		2		1		2002-1004-105816AA (db 105)	De Bruin 2008	Nicolay Pl.15-B-25.5
17.47	-	ME	DW	Armor	C?	buckle		2-3		1		2002-1004-110830AA (db 112)	De Bruin 2008	
17.48	-	ME	BBA	Hip-belt	C	terminal mount	'germanic' ring	3	175-250	1		2003-0407-105036AA (db 135)	De Bruin 2008	Oldenstein 338
17.49	pl. 1	ME	DW	Armor	C2			2	0-120	1		2003-0425-104113AA (db 157)	De Bruin 2008, fig 11.11;1	Nicolay Pl.9-C2-82.7
17.50	-	ME	BBA	Hip-belt	B?	Belt plate		3	150-250	1		2003-1211-100731AA (db 160)	De Bruin 2008	Vgl. Oldenstein Taf.81
17.51	pl. 15	HG	H	Phalera	-		Horse and phallus	2?	-	1		2001-0320-214733AA (db 4)	De Bruin 2008, fig 11.11;4	

Cat. no	Figure/ Plate	Group	functional group	Category	Type	Part	Shape/ charac-teristics	Period	Further dating	Number	Decoration	Collection	Reference	Parallel
17.52	pl. 15	HG	H	Phalera	-		with antropomorphic sculpt	2	-	1		2001-0320-220717AA (db 5)	De Bruin 2008, fig 11.11;5	Oldenstein 1976, 941
17.53	pl. 13	HG	H	Pendant	A1		trifid	2	12BC- AD 120	1		2001-0320-221100AA (db 6)	De Bruin 2008, fig 11.11;6	Vgl. Nicolay Pl.85
17.54	-	HG	H	Pendant	A7		drop shaped	2	12BC- AD 120	1		2001-0320-221232AA (db 7)	De Bruin 2008	Nicolay 284.17
17.55		HG	H	Strap mount	A13		phallic	2	0-200	1		2001-0320-230655AA (db 34)	De Bruin 2008	Oldenstein 1976, 410
17.56		HG	H	Strap junction	A3		Figure-of-eight-shaped	2	12BC- AD 120	1		2001-0321-004600AA (db 35)	De Bruin 2008	Nicolay 105.9
17.57		HG	H	Strap junction	A3		Figure-of-eight-shaped	2	12BC- AD 120	1		2001-0321-020046AA (db 41)	De Bruin 2008	Nicolay 209.67&107.1
17.58	-	HG	H	-	-	Decorative mount		-		1		2001-0321-020842AA (db 43)	De Bruin 2008	
17.59		HG	H	Strap junction	A3		Figure-of-eight-shaped	2	12BC- AD 120	1		2001-0321-021730AA (db 45)	De Bruin 2008	Nicolay 209.67, 107.1, 105.9
17.60	-	HG	H	Pendant	-	type indet	phallic	2-3		1		2002-0702-121200AA (db 73)	De Bruin 2008	
17.61		HG	H	Strapmount	A13		phallic	2	12BC- AD 120	1		2002-0702-123345AA (db 74)	De Bruin 2008	Nicolay A13
17.62		HG	H	Strap junction	B12		Cross, elongated arms,	3	120-250/300	1		2002-0708-103533AA (db 78)	De Bruin 2008	Nicolay Pl.77-B12-93.42
17.63	-	HG	H	Strap mount	B4		hat shaped	3	150-300	1		2002-0708-110016AA (db 82)	De Bruin 2008	Oldenstein 1976, 561
17.64		HG	H	Strap junction	A3		Figure-of-eight-shaped	2	12BC- AD 120	1		2002-0708-111149AA (db 87)	De Bruin 2008	Nicolay Pl.57-A3-107.1
17.65	-	HG	H	Strap mount	A3		Figure-of-eight-shaped	2	12BC- AD 120	1		2002-0708-113348AA (db 91)	De Bruin 2008	Nicolay Pl.64-A3-228.6
17.66	-	HG	H	Strap terminal	A1		rectangular	2	12BC- AD 120	1		2002-0708-114331AA (db 93)	De Bruin 2008	Nicolay Pl.61-A1-274.1t/m170.25
17.67		HG	H	Strap junction	A3		Figure-of-eight-shaped	2	12BC- AD 120	1		2002-0708-114847AA (db 96)	De Bruin 2008	Nicolay Pl.57-A3
17.68	-	HG	H	Looped strap mount	AA		Phalera-shaped	2	12BC- AD 120	1		2002-0708-115540AA (db 98)	De Bruin 2008	Nicolay Pl.81-AA-240.7
17.69	-	HG	H	Strap terminal	A1		rectangular	2	12BC- AD 120	1		2002-1004-104417AA (db 102)	De Bruin 2008	Nicolay Pl.61-A1-209.075
17.70		HG	H	Strap junction	A3		Figure-of-eight-shaped	2	12BC- AD 120	1		2002-1004-105519AA (db 103)	De Bruin 2008	Nicolay Pl.57-A3
17.71	-	HG	H	Strap mount	B6		pyramidical with knobs	3	120-250/300	1		2002-1004-105635AA (db 104)	De Bruin 2008	Nicolay Pl.73-B6-224.15
17.72	-	HG	H	Bell	C			2	120-250/300	1		2002-1004-111005AA (db 113)	De Bruin 2008	Nicolay Pl.95-C-93.11

Cat. no	Figure/ Plate	Group	functional group	Category	Type	Part	Shape/ charac-teristics	Period	Further dating	Number	Decoration	Collection	Reference	Parallel
17.73		HG	H	Strap junction	A3		Figure-of-eight-shaped	2	12BC- AD 120	1		2003-0407-102953AA (db 128)	De Bruin 2008	Nicolay Pl.57-A3-107.1
17.74	-	HG	H	Strap terminal	A4		-	2		1		2003-0407-105619AA (db 134)	De Bruin 2008	Nicolay Pl.62-A4-42.2
17.75	-	HG	H	Pendant	A7		drop shaped	2	0-125	1		2003-0425-095401AA (db 148)	De Bruin 2008	Oldenstein 1976, 192
17.76	-	HG	H	Strap mount	-			-		1		2003-0425-103315AA (db 154)	De Bruin 2008	no direct paralel
17.77	-	HG	H	Strap mount	B1			3		1		2003-0425-112312AA (db 158)	De Bruin 2008	Vgl, Rodenburg p.128 rechts
17.78	-	HG	H	Strap terminal	A1			2	12BC- AD 120	1		2003-0513-133344AA (db 159)	De Bruin 2008	Nicolay Pl.61-A1-222.119
17.79		HG	H	Strap mount	A-varia		leaf shaped	2		1		AWN 1998 V11 4	Dijkstra 2008, p200	
17.80		HG	H	Strap mount	A9		round single prong	2		1		AWN 1998 V11 5	Dijkstra 2008, p200	
17.81	-	HG	H	Strap terminal	A3		Figure-of-eight-shaped	2		1		AWN	Dijkstra 2008, p212	
18.1	pl. 6	ME	OW	Sword Scabbard	B2	scabbard slide	trapezial	3		1		gem. Leiden	Stronkhorst 2004	
18.2	pl. 4	ME	OW	Spear/Lance	A1	Head	heavily coroded	1-4		1		gem. Leiden	Stronkhorst 2004	
18.3	-	HG	Saddle	Saddle-plate	-	bronze covering of saddle horn		2-3		1		gem. Leiden	Stronkhorst 2004	
18.4	-	HG	H	Looped strap mount	A/B	rear beam		2-3		1		gem. Leiden	Stronkhorst 2004	
18.5	-	ME	OW	Artillery	-	Clay shot	round over 7.5 cm diam.	1-4		2		gem. Leiden	Stronkhorst 2004	
18.6	-	ME	OW	Sling	-	Clay shot	round under 7.5 cm diam.	1-4		2		gem. Leiden	Stronkhorst 2004	
19.1	pl. 10	HG	H	Strap mount	B1		round flat.	3		1		gem. Leiden	unpublished	
19.2	pl. 3	ME	DW	Shield	-	Edging		2		1		gem. Leiden	unpublished	
20.1		HG	H	Strap mount	A-varia			2		1		vnr 15 /1/1	unpublished	
20.2	pl. 14	HG	H	Bell	C			2		1		vnr 43 /1/3	unpublished	Nicolay 2007, 93.11
20.3	pl. 15	HG	Wagon	Wagon part	D2	reign guide	highly decorated	3		1		vnr 18/1/2	unpublished	Nicolay 2007, Figure 6.6 #9
20.4	-	HG	H	Strap mount	B5		Shell-shaped, moulded	3	175-225	1		vnr 25/2/40	unpublished	Nicolay 2007, 170.20
20.5	-	ME	OW/DW?	Sword scabbard/helmet	-	terminal knob/ crest knob		2-3		1		vnr 11/2/54	unpublished	
20.6	pl. 13	HG	H	Pendant	B6		Acorn	3		1		vnr 26/1/1	unpublished	Nicolay 2007, 105.5
20.7		ME	BBA	Hip-belt	C	Round fastener	round flat	3		1		vnr 26/1/46	unpublished	Nicolay 2007, 82.85

Cat. no	Figure/ Plate	Group	functional group	Category	Type	Part	Shape/ characteristics	Period	Further dating	Number	Decoration	Collection	Reference	Parallel
21.1	-	HG	H	Pendant	-		phallic, further details unknown	2-3		1		private, unknown	Archis waarneming 26140	
21.2	-	HG	H	Strap mount	B17		vulvate	3		1		private, unknown	-	
22.1	pl. 14	HG	H	Bell	B			2		1		gem. Delft	Bakx, in prep.	
22.2	pl. 10	HG	H	Strap mount	B2		round flat	3		1	enamel	gem. Delft	Bakx, in prep.	
22.3	pl. 7	ME	OW	Dagger-scabbard	C	Scabbard-chape	peltate	3	100-300	1		gem. Delft	Bakx, in prep.	
44.1	pl. 8	ME	BBA	Balteus	-	buckle		3		1		Prov. Arch. Depot inv. 7184	Goossens & Flaman 2006	Oldenstein 1976, 967
44.2	pl. 11	HG	H	Strap mount	B9		peltate	3		1		Prov. Arch. Depot inv. 7192	Goossens & Flaman 2006	
45.1	fig. 4.23	HG	H	Strap mount	B1			3		1			Goossens & Flaman 2006	
45.2	fig. 4.23	-	-	mount	?			3		1			Goossens & Flaman 2006	
23.1		HG	H	Strap mount	A13		phallic	2		1		SN96 vnr. 960225		
24.1	pl. 7	ME	OW	Dagger	B?	blade	s-shape, heavily corroded	2		1		ADC findnr. D1.01	vd. Feijst 2008	
24.2	pl. 5	ME	OW	Pilum	A/B	Head	square section	1-3		1		ADC findnr. D1.02	vd. Feijst 2008	
24.3		ME	OW	Spear/Lance	A1	Head	-	1-4		1		ADC findnr. D1.03	vd. Feijst 2008	
24.4	pl. 1	ME	DW	Armor	C2	Tie loop	rectangular	2		1		ADC findnr. D2.01	vd. Feijst 2008	
24.5		ME	BBA	Balteus	-	Baldric Phalera	round, conical	3		1		ADC findnr. D2.02	vd. Feijst 2008	
24.6		HG	H	Strap mount	B			3		1		ADC findnr. D2.03	vd. Feijst 2008	
24.7		ME	BBA	Hip-belt	A/B	Belt plate	rectangular openwork	2-3		1		ADC findnr. D2.04	vd. Feijst 2008	
24.8		HG	H	Pendant	-			3?		1		ADC findnr. D2.05	vd. Feijst 2008	
24.9		-	-	Indet military	-	Bronze plate		-		1		ADC findnr. D2.06	vd. Feijst 2008	
24.10		HG	H	Strap terminal	A1		rectangular	2		1	enamel	ADC findnr. D2.07	vd. Feijst 2008	Nicolay 2007, 274.1
24.11	pl. 3	ME	DW	Shield	C	Umbo	convex, circular	3		1		ADC findnr. D2.08	vd. Feijst 2008	Verhagen 1987, fig 22b
24.12		HG	H	Pendant	A7		drop-shaped	2		1		ADC findnr. D3.01	vd. Feijst 2008	
24.13		HG	H	Strap mount	B2		Round	3		1	enamel	ADC findnr. D3.02	vd. Feijst 2008	
24.14		ME	BBA	Hip-belt	E	Decorative mount	rectangular	4?		1		ADC findnr. D3.03	vd. Feijst 2008	
24.15		HG	H	strap junction	A-varia			2		1		ADC findnr. D3.04	vd. Feijst 2008	
24.16		ME	BBA	Balteus	-	Baldric Phalera	Pelta	3		1		ADC findnr. D3.05	vd. Feijst 2008	
24.17	pl. 12	HG	H	Strap mount	B17	-	vulvate	3		1		ADC findnr. D3.06	vd. Feijst 2008	
24.18		HG	H	Bell	B			2		1		ADC findnr. D3.07	vd. Feijst 2008	
24.19	pl. 11	HG	H	Strap mount	B4		Hat-shaped	3		1		ADC findnr. D3.08	vd. Feijst 2008	Oldenstein 1976 584
24.20	-	HG	H	Varia	-	strip		-		1		ADC findnr. D3.09	vd. Feijst 2008	
24.21		ME	BBA	Hip-belt	C	round fastener	round flat	3		1		ADC findnr. D3.10	vd. Feijst 2008	

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24.22	pl. 6	ME	OW	Sword Scabbard	-	(bone) scabbard chape	square bone	3		1		RMO h 1937/1.21	Holwerda 1936, fig 23	
24.23	pl. 13	HG	H	Pendant	B6		Acorn	3		1		Archol vnr. 1361	De Bruin 2009	
24.24	pl. 12	HG	H	Strap mount	B17		vulvate	3		1		Archol vnr. 774	De Bruin 2009	
24.25	pl. 10	HG	H	Strap mount	B-varia		medusa	3		1		Archol vnr. 2466	De Bruin 2009	
24.26		HG	H	Strap mount	B1			3		1		Archol vnr. 1211	De Bruin 2009	
24.27		HG	H	Strap mount	B1		round	3		1		Archol vnr. 1347	De Bruin 2009	
24.28	-	HG	H	Strap mount (or apron fitting?)	B-varia		square	3		1		Archol vnr. 1205	De Bruin 2009	
24.29	pl. 8	ME	BBA	Hip-belt	?	terminal mount	germanic'?	3		1		Archol vnr. 973	De Bruin 2009	Oldenstein 335
24.30		HG	H	strap junction	indet		uncertain	-		1		Archol vnr. 971	De Bruin 2009	
24.31	-	HG	H	Strap mount	indet		uncertain	-		1		Archol vnr. 1215	De Bruin 2009	
25.1	fig 4.24	ME	DW	Armor	A	mail		1-4		1		ADC vnr 210	Blom & Van der Feijst 2007	
25.2		HG	H	Strap mount	B8		weapon shield shape	3		1		ADC vnr 305	Blom & Van der Feijst 2007	Oldenstein 1976, 733-734, Nicolay 2007, 269.21
25.3		ME	BBA	Hip-belt	?	terminal mount	details unknown	-		1		R. de Graaf	Blom & Van der Feijst 2007	
25.4	pl. 8	ME	BBA	-	-			-		1		ADC vnr 343	Blom & Van der Feijst 2007	No direct parallel
25.5-6	pl. 12	HG	H	Strap mount	B17		vulvate	3		2		ADC vnr 39.1	Blom & Van der Feijst 2007	
25.7-8	pl. 12	HG	H	Strap mount	B17		vulvate	3		2		ADC vnr 42	Blom & Van der Feijst 2007	
25.9	pl. 12	HG	H	Strap mount	B15		trumpet	3		1		ADC vnr 39.2	Blom & Van der Feijst 2007	
25.10	-	HG	H	Strap mount	B15		trumpet	3		1		ADC vnr 157	Van den Berg 2004	
25.11	pl. 11	HG	H	Strap mount	B5		pelta shaped, double prong	3		1		ROB 3	Blom & Van der Feijst 2007	Nicolay 2007, 228.12
25.12	pl. 15	HG	H	Looped strap mount	B13		moulded	3		1		ADC vnr 189	Blom & Van der Feijst 2007	Nicolay 2007, 195.4
25.13	pl. 13	HG	H	Pendant	B6		Acorn	3		1		ADC vnr 397.10	Blom & Van der Feijst 2007	
25.14	-	HG	H	-	-		peltate	-		1		ADC vnr 397.9	Blom & Van der Feijst 2007	
25.15	pl. 10	HG	H	Strap mount	B1		convex	3		1		ADC vnr 113	Blom & Van der Feijst 2007	
25.16	-	HG	H	Bell	-		badly damaged	-		1		-	Blom & Van der Feijst 2007	

Cat. no	Figure/ Plate	Group	functional group	Category	Type	Part	Shape/ charac-teristics	Period	Further dating	Number	Decoration	Collection	Reference	Parallel
25.17	-	HG	H	-	-		uncertain	-		1		ADC vnr. 232	Blom & Van der Feijst 2007	
26.1	-	ME	OW	Sword Scabbard	-	scabbard slide		3		1	bone		De Bruin, unpublished ba-thesis	Oldenstein 1976, 65.
27.1-2	-	ME	BBA	Hip-belt?	?	Belt plate	heavily corroded	2-3		2		Grontmij vnr 672, 673	Van der Roest, in prep	
28.1	pl. 8	ME	BBA	Hip-belt	A4	mould for buckle	kidney	2	70-120	1			Bloemers 1979, p304	
28.2		HG	H	Strap Junction	A1			2	30-60	1		(nr 109)	Bloemers 1979, p304	
28.3	-	HG	H	Strap mount	B1			3		1		(vnr 63)	Bloemers 1979, p304	Oldenstein 1976 186-187. taf 56
28.4		HG	H	Strap junction	A1			2		1		(vnr 443/5246)	Bloemers 1979, p304	
29.1	pl. 12	HG	H	Strap mount	B17		vulvate	3		1		gem. Rijswijk, Collectie Pont	unpublished	
29.2	-	HG	H	Strap mount	B19		heart shape	3		1		gem. Rijswijk, Collectie Pont	unpublished	
29.3	-	ME	BBA	Hip-belt	-	Belt plate	triangle punctures	2-3		1		gem. Rijswijk, Collectie Pont	unpublished	
30.1	pl. 8	ME	BBA	Hip-belt	A-varia	single buckle		2		1		Gem Rijswijk vnr 57	unpublished	Nicolay 2007, 163.10
31.1	-	HG	H	Strap terminal?	varia			-		1		Gem Rijswijk RWHP03-vnr 1	unpublished	no proper parallel
32.1	pl. 2	ME	DW	Shield	C	Umbo	Convex	3		1		BOOR	Carmiggelt 1997	
32.2	-	HG	H	Strap mount	-		Antropomorphic	3		1		BOOR	Carmiggelt 1998	no proper parallel
33.1	-	HG	Briddle	Bit	-	details unknown	details unknown	-		1		unknown	Archis waarneming 24427	-
34.1	pl. 14	HG	H	Bell	D	-	-	3		1		RMO h 1982/8.27	Modderman 1973	
34.2	pl. 14	HG	H	Bell	A	-	-	2		1		RMO h 1982/8.26	Modderman 1973	
34.3	pl. 8	ME	BBA	Hip-belt	-	single buckle		3		1		RMO h 1982/8.25	Modderman 1973	Oldernstein 1979, 990
34.4	-	ME	OW	Sling	-	bullet	ceramic, oval	1-3		1		Van Sprang	Archis waarneming 24442	
35.1	pl. 2	ME	DW	Shield	D	Umbo	'germanic' ?	3		1		Museon	Van Londen 1996.	
35.2	pl. 7	ME	OW	Dagger-scabbard	C	Scabbard-chape	peltate	3		1		vnr SP950549	Van Londen 1996.	
35.3	pl. 7	ME	OW	Artillery	A	Bolt head	square, socketed	1-4	3	1		Museon (vnr SP950932)	Van Londen 1996.	
35.4	pl. 4	ME	OW	Spear/Lance	A1	Head	narrow sholdered	1-4	3	1		Museon (vnr SP951037)	Van Londen 1996.	
35.5		ME	OW	Spear/Lance	A?	Head		1-4	3	1		vnr 950913	Van Londen 1996.	Nicolay 2007, 82.89
35.6		ME	OW	Spear/Lance	-	socket of head		1-4	3	1		vnr 950623	Van Londen 1996.	Nicolay 2007, 291.43
35.7	-	ME	OW	Artillery	A	Bolt head		1-4	3	1		vnr. SP950126	Van Londen 1996.	

Cat. no	Figure/ Plate	Group	functional group	Category	Type	Part	Shape/ charac-teristics	Period	Further dating	Number	Decoration	Collection	Reference	Parallel
35.8	-	HG	Briddle	Bit	A	Mouth piece and ring		2-3	3	1		Museon (vnr SP950650)	Van Londen 1996.	
35.9	pl. 15	HG	Briddle	Bit	D	Fitting	round with loops	2	3	1		Museon (vnr SP950650)	Van Londen 1996.	
35.10	-	HG	H	Strap mount	A?	-	-	2?	3	1			Van Londen 1996.	
36.1	pl. 4	ME	OW	Spear/Lance	A1	Head	narrow shouldered	1-4	70-120	1		Vlak idk 364	archis wnm 409802	
37.1	fig. 4.31	ME	OW	Sword Scabbard	-		highly decorated	3	117-138	1		RMO LD 1	P. Stuart 1986, 108-110.	
38.1-2	pl. 10	HG	H	Strap mount	B1	-	round, flat, single prong	3		2		Baac find nr 59, 514	Bink & Franzen 2009	Nicolay 2007, 107.17
38.3	pl. 10	HG	H	Strap mount	B1	-	round, flat, double prong	3		1	tinned?	Baac find nr 567	Bink & Franzen 2009	Nicolay 2007, 82.180
38.4	pl. 10	HG	H	Strap mount	B1/B5	-	round, convex, double prong	3		1		Baac find nr 1090	Bink & Franzen 2009	Nicolay 2007, 211.70
38.5-6	pl. 10	HG	H	Strap mount	B1	-	round, convex	3		2		Baac find nr 645-882	Bink & Franzen 2009	Nicolay 2007, 211.67
38.7		HG	H	Strap mount	varia	-	round flat, 4 holes	2?		1		Baac find nr 990	Bink & Franzen 2009	-
38.8	pl. 11	HG	H	Strap mount	B9	-	round flat, 2 peltas	3		1		Baac find nr 134	Bink & Franzen 2009	Oldenstein 1976, 669/ Nicolay 2007, 172.3
38.9	pl. 10	HG	H	Strap mount	B2	-	round	3		1	raised circles (enamale missing)	Baac find nr 975a	Bink & Franzen 2009	
38.10	pl. 11	HG	H	Strap mount	B4	-	Hat shape	3		1	concentric circles	Baac find nr 975b	Bink & Franzen 2009	
38.11	pl. 11	HG	H	Strap mount	B4	-	Hat shape	3		1		Baac find nr 394	Bink & Franzen 2009	
38.12	pl. 11	HG	H	Strap mount	B4	-	round flat	3		1	concentric circles	Baac find nr 658	Bink & Franzen 2009	
38.13	pl. 11	HG	H	Strap mount	B6	-	square moulded	3		1		Baac find nr 820	Bink & Franzen 2009	
38.14	pl. 12	HG	H	Strap mount	B10	-	almond-shaped, flat	3		1	-	Baac find nr 598	Bink & Franzen 2009	Nicolay 2007, 209.154
38.15	pl. 14	HG	H	Bell	D	-		3		1	-	Baac find nr 1139	Bink & Franzen 2009	
38.16-18	pl. 13	HG	H	Pendant	B6	-	Acorn-shaped (no loop)	3		3	-	Baac find nr. 985, 300, 519	Bink & Franzen 2009	Nicolay 2007, 105.5
38.19	pl. 12	HG	H	Strap mount	B9-varia	-	pelta shap, flat	3		1	-	Baac find nr 82	Bink & Franzen 2009	Nicolay 2007, 222.096
38.20	pl. 12	HG	H	Strap mount	B15	-	trumpet	3		1		Baac find nr 564	Bink & Franzen 2009	Nicolay 2007, 79.31
38.21	pl. 13	HG	H	Pendant	A7	-	heart shaped	2		1		Baac find nr 572	Bink & Franzen 2009	
38.22	pl. 13	HG	H	Pendant	B2	-	heart/pelta shaped	3		1	openwork	Baac find nr 485	Bink & Franzen 2009	
38.23	pl. 13	HG	H	Pendant	B-varia	-	arrow shape	3		1		Baac find nr 659	Bink & Franzen 2009	Oldenstein 1979, 858
38.24	pl. 13	HG	H	Pendant	B6	-	Acorn-shaped(with loop)	3		1		Baac find nr 1081	Bink & Franzen 2009	
38.25-26	pl. 12	HG	H	Strap mount	B17	-	vulvate	3		2		Baac find nr 500, 570	Bink & Franzen 2009	

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38.27	pl. 12	HG	H	Strap mount	B17	-	vulvate, with loop	3		1		Baac find nr 276	Bink & Franzen 2009	
38.28	pl. 8	ME	BBA	Hip-belt	B	Belt plate		3		1		Baac find nr 671	Bink & Franzen 2009	
38.29	pl. 6	ME	OW	Sword Scabbard	B2	Scabbard slide	trapezial	3		1		Baac find nr 0	Bink & Franzen 2009	
38.30	pl. 6	ME	OW	Sword Scabbard	B2	Scabbard slide	trapezial	3		1		Baac find nr 633	Bink & Franzen 2009	
38.31	pl. 6	ME	OW	Sword Scabbard	B2	Scabbard slide	flat	3		1		Baac find nr 1268	Bink & Franzen 2009	
38.32	pl. 6	ME	OW	Sword Scabbard	B2	Scabbard slide	trapezial	3	180-200	1		Baac find nr 1322	Bink & Franzen 2009	
38.33	pl. 6	ME	OW	Sword Scabbard	B2	scabbard chape	square bone	3		1		Baac find nr 480	Bink & Franzen 2009	
38.34	pl. 4	ME	OW	Spear/Lance	A1	Head		1-4		1		RMO PR-ZM 09	-	
38.35-36		ME	OW	Spear/Lance	B?	Head	triangular	1-4		2		RMO AR 1175 a & b	-	
38.37	pl. 4	ME	OW	Spear/Lance	A1	Head		1-4		1		RMO PR-ZM 18	-	
38.38	-	ME	OW	Pilum	A	Head	tongue shape shaft	1-2		1		RMO AR 1212	-	
38.39	pl. 5	ME	OW	Pilum	-	head + shaft	barbed tip	4		1		RMP PR-ZM 10	-	Bishop & Coulston 2006, fig 127.4
38.40	-	ME	OW	Sword	-	blade (fragment)	-	1-4		1		RMO PR-ZM 15	-	
38.41	pl. 6	ME	OW	Sword Scabbard	B2	scabbard chape	Pelta	3		1		RMO AR 1160	-	
38.42	pl. 1	ME	DW	Helmet	-	crest holder		2-3		1		RMO PR-ZM 31	-	Bishop & Coulston 2006, fig 61
38.43	pl. 12	HG	H	Strap mount	B15		trumpet motive	3		1		RMO AR 1152	-	Nicoaly 2007, 284.32
38.44		HG	H	Strap mount	varia		round flat, 4 holes	-		1		RMO AR 1142	-	
38.45	pl. 11	HG	H	Strap mount	B5		pelta shaped, double prong	3		1		RMO AR 1149	-	Nicolay 2007, 228.12
38.46	pl. 11	HG	H	Strap mount	B9		peltate	3		1		RMO AR 1148a	-	
38.47		HG	H	Strap mount	B1		round, double prong	3		1		RMO AR 1148b	-	
38.48		HG	H	Strap mount	B1		round double prong	3		1		RMO AR 1148c	-	
38.49		HG	H	Strap mount	B13		molded cross	3		1		RMO AR 1153	-	Nicolay 2007, 93.48
38.50	pl. 9	HG	h	Strap mount	A5		ribbed	2		1		RMO AR 1155	-	Nicolay 2007, 64.1
38.51		HG	H	Strap Junction	C		round, cross shaped centre	3		1		RMO AR 1132	-	Nicolay 2007, 257.3
38.52	-	HG	H	Pendant	A-varia		broken	2		1		RMO AR 1093b	-	Oldenstein 1976, 192
38.53	pl. 13	HG	H	Pendant	B5		Lunate	3		1		RMO AR1158	-	
38.54		HG	H	Strap Junction	C		round open work	3		1		RMO AR1139	-	
38.55	pl. 10	HG	H	Strap mount	B2		round	3		1	enamel	RMO h 1925/12.31 u	-	
38.56	-	ME	BBA	Hip-belt	A-varia	single buckle	square	2		1		RMO PR-ZM 114	-	

Cat. no	Figure/ Plate	Group	functional group	Category	Type	Part	Shape/ charac-teristics	Period	Further dating	Number	Decoration	Collection	Reference	Parallel
38.57-59	pl. 9	HG	H	Strap mount	A-varia		reqtangular	2		3		RMO AR 1156 a, b, d.	-	
38.60	pl. 13	HG	H	Pendant	A-varia		Almond shaped	2		1		RMO AR 1093a	-	Oldenstein 1976, 192
38.61	pl. 12	HG	H	Strap mount	B15		trumpet motive	3		1		RMO AR 1151	-	
38.62-63		HG	H	Strap mount	B1		round	3		2		RMO AR 1146 a-b	-	
38.64-65		ME	BBA	Hip-belt	C	round fastener		3		2		RMO AR 1146 C-d	-	
38.66		ME	BBA	Hip-belt	-		square, openwork Swastika	3		1		RMO AR 1154	-	
38.67	-	HG	H	Strap mount	B-varia		round, 4 pins	2-3	-	1		RMO AR 1150	-	see catalog 38.7
38.68	-	HG	H	Strap mount	B9		peltate	3		1		RMO AR 1147	-	
38.69	-	ME	DW	Helmet?	?	carrying handle?		2-3		1		RMO h 1925/12.31 a	-	
38.70-72	pl. 11	HG	H	Strap mount	B4		hat	3		3		RMO AR 1137 a,b,c	-	
38.73	-	HG	H	Strap mount	B4		hat	3		1		RMO AR 1138	-	
38.74	pl. 13	HG	H	Pendant	B6		Acorn	3		1		RMO AR 1157	-	
38.75-76	-	ME	BBA	Hip-belt	B	Belt plate	openwork	3		2		AAC excavation 2008-2009	Hoss, in prep	Oldenstein 1976, 787-797, 805-807
38.77	-	ME	BBA	Hip-belt	B?	Belt plate	pelta/trumpet shape	3		1		AAC excavation 2008-2009	Hoss, in prep	Oldenstein 1976, 823-825, 843-845
38.78	-	ME	BBA	Hip-belt	B	strap end (hanging)		3		1		AAC excavation 2008-2009	Hoss, in prep	Oldenstein 1976, 388-397
38.79	-	ME	BBA	Hip-belt	B-var	single buckle		3		1		AAC excavation 2008-2009	Hoss, in prep	Nicolay 2007, 211.28, 224.4
38.80	-	HG	H	Pendant	B5		Lunate	3		1		AAC excavation 2008-2009	Hoss, in prep	Oldenstein 1976, 449, Nicolay 2007, 248.2
38.81	-	HG	H	Pendant	B3		phallic	3		1		AAC excavation 2008-2009	Hoss, in prep	Oldenstein 1976, 260-276
38.82-85	-	HG	H	Strap mount	B17		vulva-shaped	3		4		AAC excavation 2008-2009	Hoss, in prep	Oldenstein 1976, 267-272
38.86	-	HG	H	Pendant	A10		kite shaped	2		1		AAC excavation 2008-2009	Hoss, in prep	Nicolay 2007, 104.9
38.87	-	HG	H	Pendant	A6		Leaf shaped open work	2		1		AAC excavation 2008-2009	Hoss, in prep	Oldenstein 1976, 193
38.88	-	HG	H	Strap mount	B5		shell shaped with grooves, single prong	3		1		AAC excavation 2008-2009	Hoss, in prep	Nicolay 2007, 170.20
38.89	-	HG	H	Strap mount	B5		shell shaped, double prong	3		1		AAC excavation 2008-2009	Hoss, in prep	Oldenstein 1976, 696, Nicolay 2007, 228.12

Cat. no	Figure/ Plate	Group	functional group	Category	Type	Part	Shape/ charac-teristics	Period	Further dating	Number	Decoration	Collection	Reference	Parallel
38.90-96	-	HG	H	Strap mount	B1		round flat, double prong	3		7		AAC excavation 2008-2009	Hoss, in prep	Oldenstein 1976, 686-695, Nicolay 2007, 82.108, 211.70
38.97	-	HG	H	Strap mount	B9		pelta shaped, flat	3		1		AAC excavation 2008-2009	Hoss, in prep	Nicolay 2007, 20.1
38.98	-	HG	H	Strap mount	B9		four peltas	3		1		AAC excavation 2008-2009	Hoss, in prep	Oldenstein 1976, 274-276, Nicolay 2007, 108.1
38.99	-	HG	H	Strap mount	A12		rectangular	2	b	1		AAC excavation 2008-2009	Hoss, in prep	Oldenstein 1976, 188-189, Nicolay 2007, plate 67 A12
38.100	-	HG	H	Strap mount	B15		trumpet	3		1		AAC excavation 2008-2009	Hoss, in prep	Nicolay 2007, plate 78 B15
38.101	-	HG	H	Phalera?	-		plain	2-3		1		AAC excavation 2008-2009	Hoss, in prep	
38.102	-	HG	H	Strap Junction	C		openwork	3		1		AAC excavation 2008-2009	Hoss, in prep	Nicolay 2007, 257.3
38.103	-	HG	H	Strap mount	B2		round	3		1	enamel	AAC excavation 2008-2009	Hoss, in prep	Nicolay 2007, 82.181, 170.18, Heeren 2009, fig 58.15
38.104	-	HG	H	Strap mount	B3		rosette	3		1		AAC excavation 2008-2009	Hoss, in prep	Nicolay 2007, 170.19
38.105-108	-	HG	H	Strap mount	B1		round convex	3		4		AAC excavation 2008-2009	Hoss, in prep	Nicolay 2007, 300.2, 234.4
38.109-110	-	HG	H	Bell	B		half sphere	2		2		AAC excavation 2008-2009	Hoss, in prep	Nicolay 2007, 211.38
38.111-112	-	HG	H	Bell	E			3		2		AAC excavation 2008-2009	Hoss, in prep	Nicolay 2007, 211.49
38.113	-	HG	Wagon	Wagon part	B3	reign guide		2	2nd half 1st cent.	1		AAC excavation 2008-2009	Hoss, in prep	Nicolay 2007, fig 6.6 7
38.114	pl. 6	ME	OW	Sword Scabbard	B2	scabbard slide	trapezial	3		1		private, B Zijlstra	Achis 22116 (livelink 22115)	
39.1	pl. 6	ME	OW	Sword Scabbard	B2	scabbard slide	trapezial	3		1		ADC find nr 72	Eimerman 2009	Oldenstein 1976, 95 & 109
39.2	-	ME	BBA	Balteus	-			3		1		ADC find nr. 70	Eimerman 2009	Oldenstein 1976, 965-970
39.3		ME	BBA	Hip-belt	A-varia	strap terminal		2-3		1		ADC find nr. 373	Eimerman 2009	No direct paralel, perhaps Nicolay 2007, 242.14
39.4	-	HG	H	Strap mount	A7?		round, perforated	2	40-120	1		ADC find nr. 389	Eimerman 2009	Oldenstein 1976, 1135-1137

Cat. no	Figure/ Plate	Group	functional group	Category	Type	Part	Shape/ characteristics	Period	Further dating	Number	Decoration	Collection	Reference	Parallel
39.5	-	HG	H	Pendant	A1-varia		trifid, winged	2	70-120	1		ADC find nr. 392	Eimerman 2009	Nicolay 2007,
39.6	-	HG	H	Strap mount	B15		trumpet shape	3		1		ADC find nr. 551	Eimerman 2009	Oldenstein 1976, 897-940
39.7	pl. 6	ME	OW	Sword Scabbard	B2	scabbard slide	trapezial	3		1		hollandia	Gerritsen & Duurland 2006 (Hollandia reeks 107	Oldenstein 1976, 95 & 109
40.1	pl. 13	HG	H	Pendant	B5		lunate	3		1		private, unknown	Archeologische kroniek Z-H over 1994	Oldenstein 1979, 441, Nicolay 2007, 209.63
41.1	-	ME	OW	Sword Scabbard	?	terminal knob	-	2		1		ADC findnr. ?	Blom 2005 (ADC rapport 318)	-
42.1	fig. 4.28	ME	DW	Helmet	F2?	Complete	Eagle crest	3		1			Archeobrief	
43.1	fig. 4.30	ME	DW	Helmet	G3	Complete	Highly decorated	3		1		RMO h 1937/10.4	Braat 1939	

Appendix 4: Plates

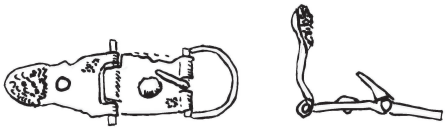
The plates contain a selection of the finds used in this study. A number of drawings have been made especially for this study by the author. The remaining, both pictures and drawings have been provided by various institutions or have already been published elsewhere (see appendix 3). The plates are therefore not always completely consistent in the way they portray the finds. Unfortunately no permission was given to use drawings or photographs from the excavations at Forum Hadriani by the AAC and the Uithofslaan VP3 by the municipal archaeological service of the Hague, as both will be published in the near future.

The catalogue has been organized by typological types as listed in appendix 2. The catalogue number consists of two parts, firstly the site id. (which refers to appendix 1) and a sequencing number within the site. Further information about the objects can be found in appendix 3 which includes references, parallels and dating.

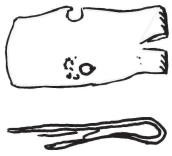
The full data set can be obtained in digital form, via the author.

C2
plate armor

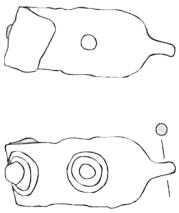
17-49



10-2



12-2

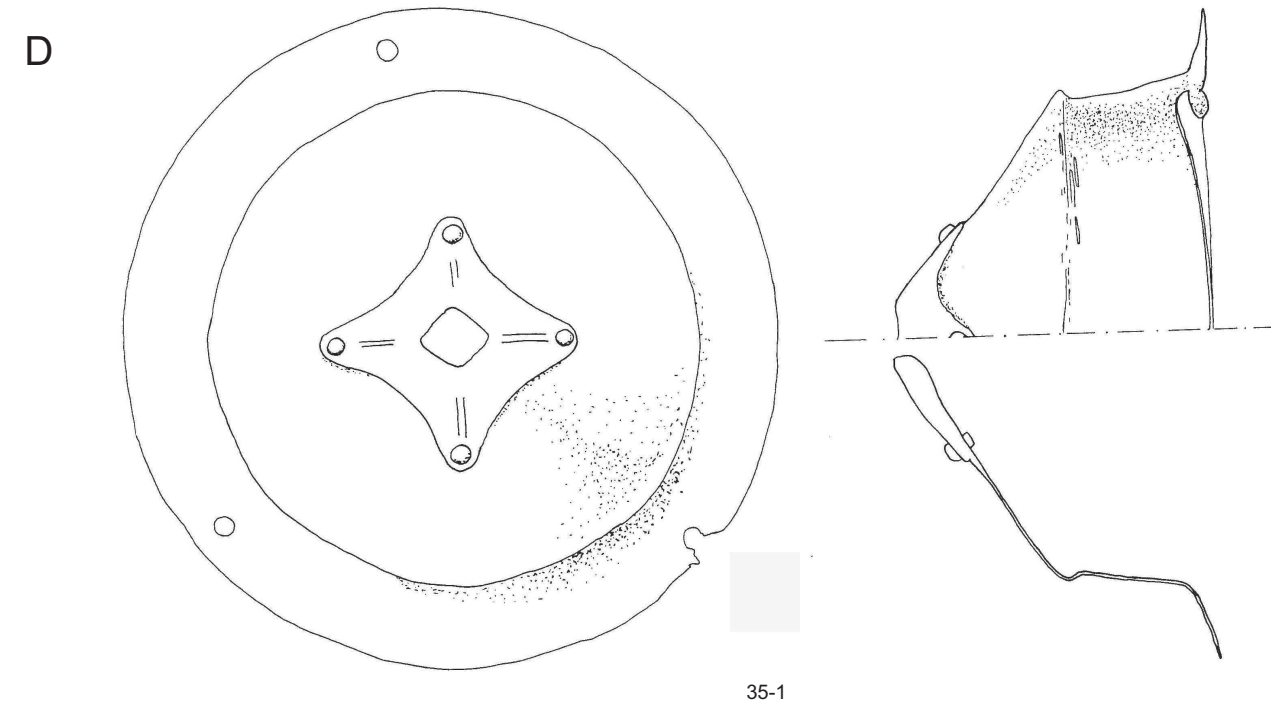


24-4

-
helmet?

38-42

Plate 1: plate armor hinges and closures, helmet crest holder. Scale 2:3



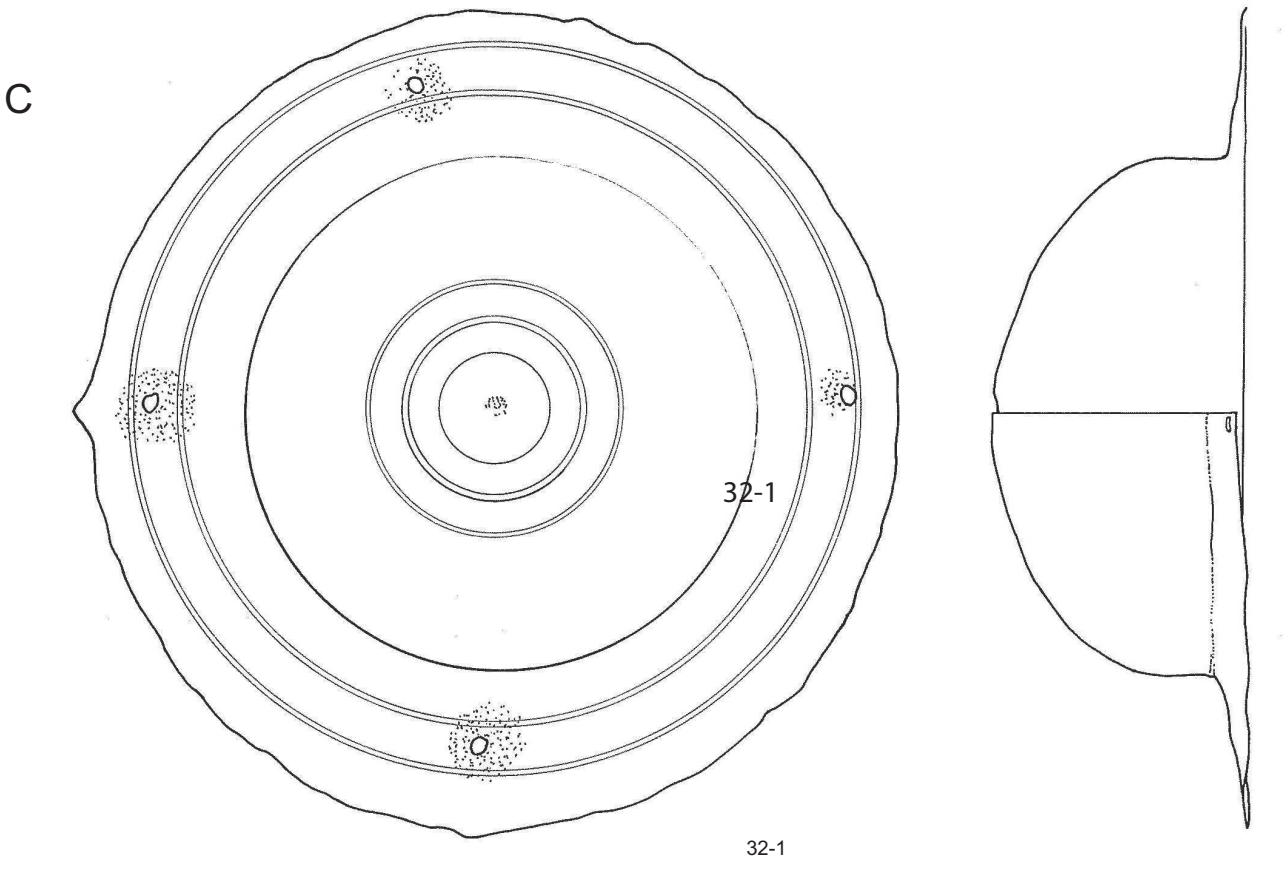
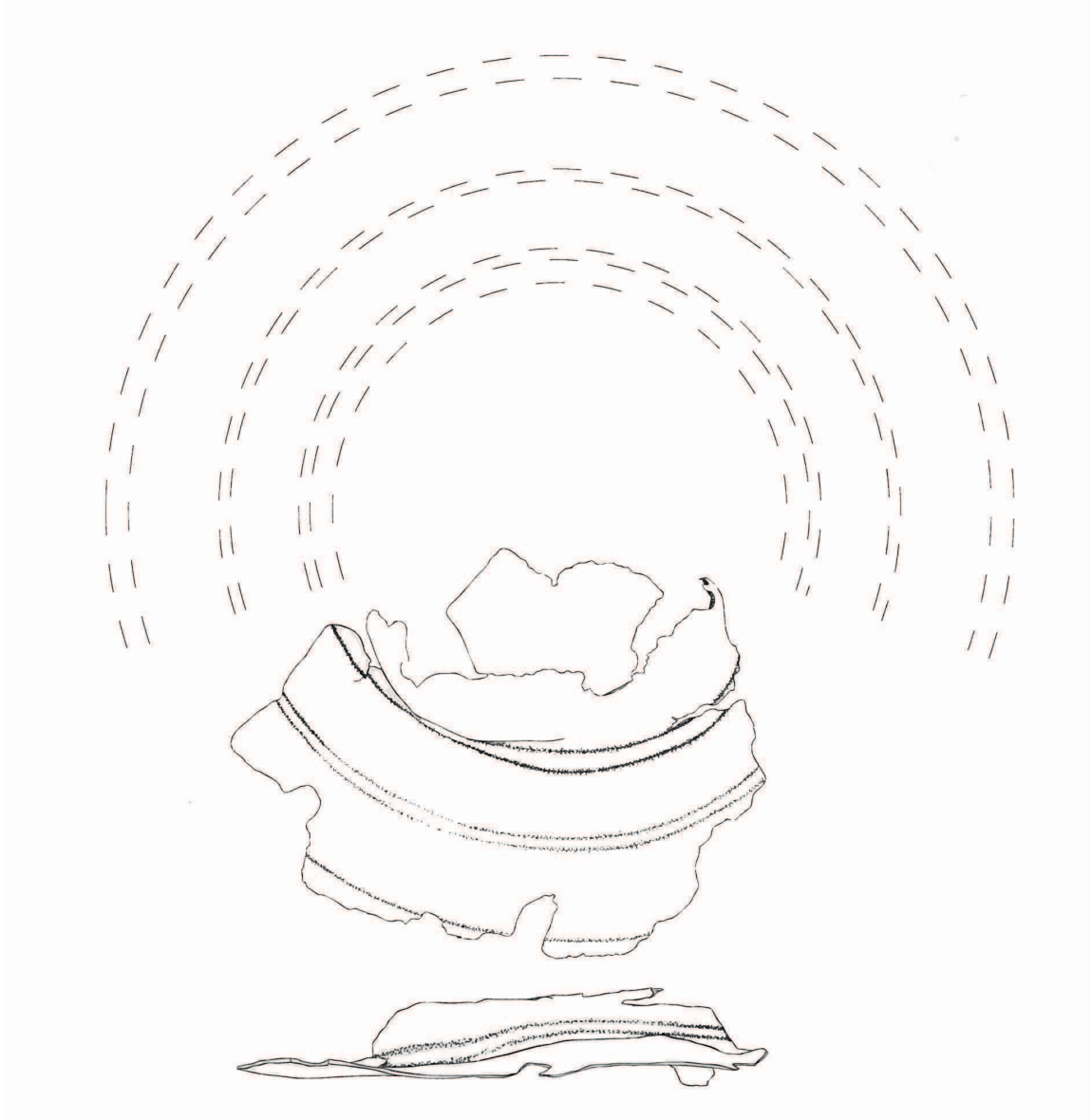
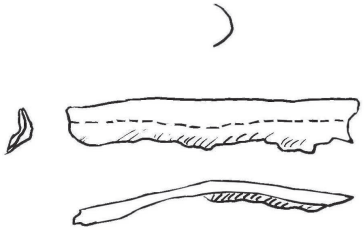


Plate 2: Shield bosses, period 3. Scale 2:3.

C



24-11

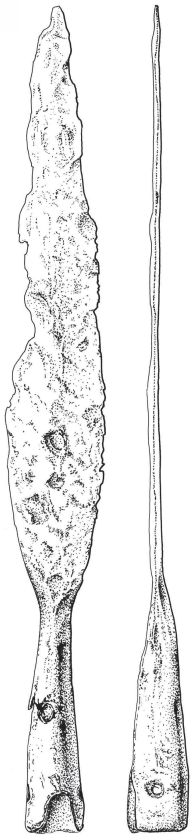


19-2

Plate 3: Shield bosses (period 3) and shield edges (period 2). Scale 2:3.

A1

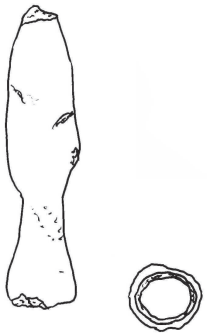
38-37



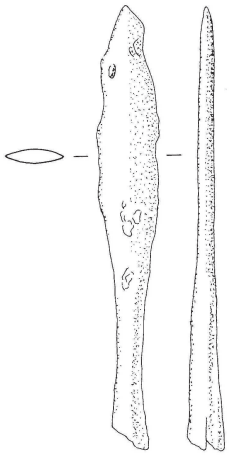
36-1

24-3

38-34



18-2



35-4

10-1

Plate 4: spearheads and spear or pilum butt spike, period 1-4. Scale 2:3

A/B

5-1
(not to scale)

24-2

B

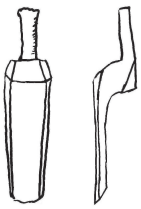
2-1
(1:4)

VARIA

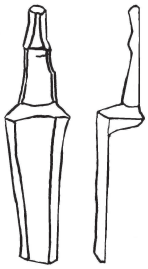
38-39

Plate 5: pilum heads (period 2-3) and spear/pilum head (period 4). Scale 2:3.

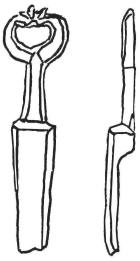
B2
(Scabbard slides)



38-29

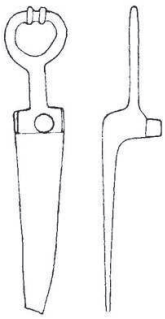


38-30

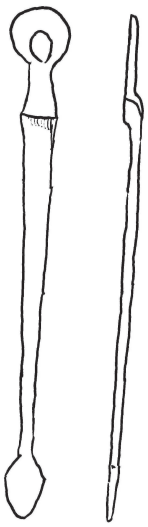


38-114

39-1



18-1



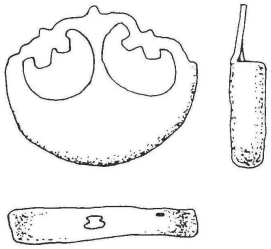
38-31

38-32

39-7

B2
(Scabbard chapes)

38-41



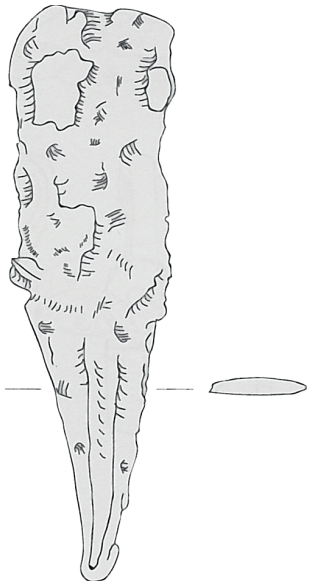
35-2

38-33

24-22
(not exact to scale)

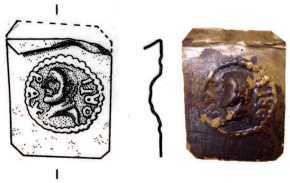
Plate 6: sword scabbards slides and chapes, period 3. Scale 2:3

B



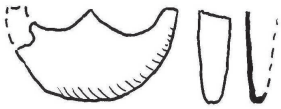
24-1

Varia



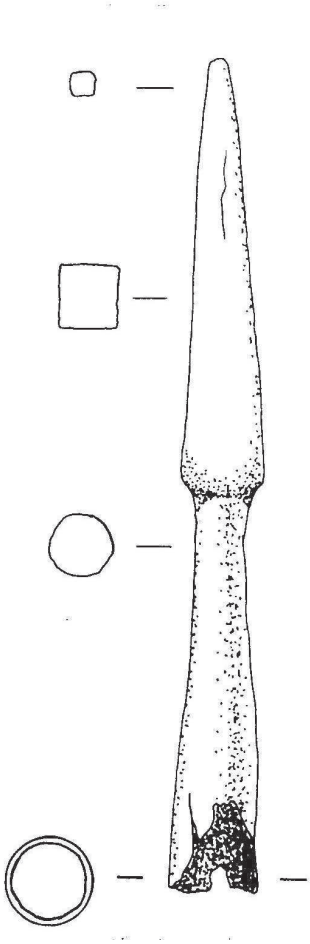
6-1

C



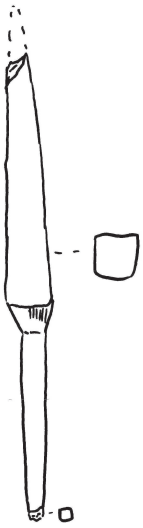
22-3

A



35-3

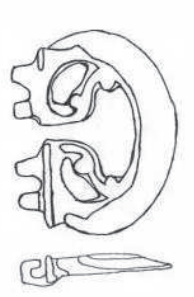
C



12-1

Plate 7: daggers, dagger sheaths and artillery boltheads (below), period 2-3. Scale 2:3.

A1



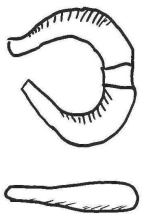
9-1

4,2

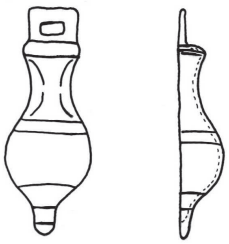
A4

28-1

A-var



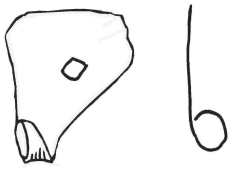
30-1



17-41

38-28

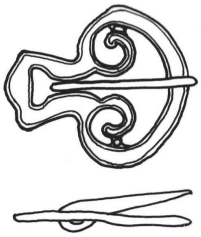
34-3



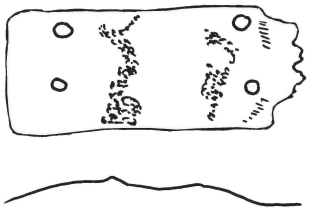
10-3

1-1

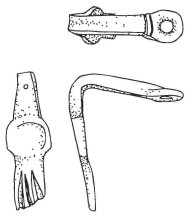
24-29



17-7



10-4

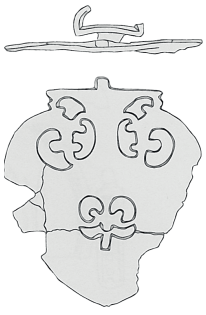


25-4

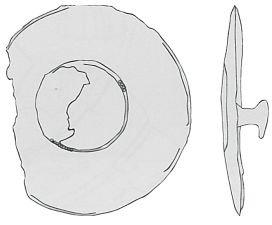
Baldric

44-4

12-3



24-16



24-5

Plate 8: belt buckles, belt plates, strap terminals, and bladric hinges and phalera. Scale 2:3

A-var

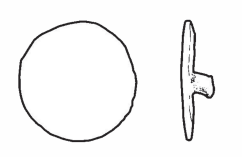
38-57

A5

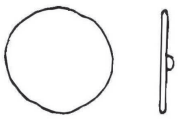
38-50

Plate 9: decorative horse gear fittings, strap mounts, period 2. Scale 2:3

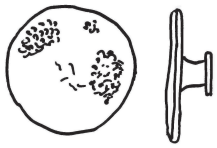
B1



15-2

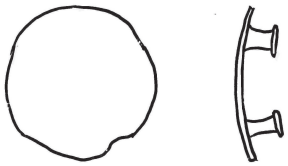


19-1

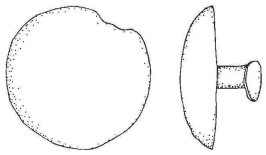


38-1

38-2



38-3



25-15

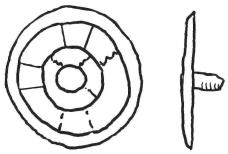
38-4
(B1 or B5)

38-6

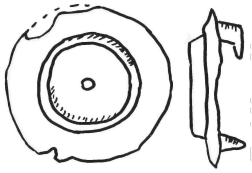
38-5

B2

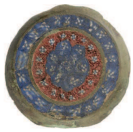
15-3



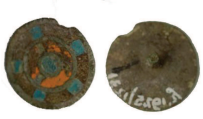
22-2



38-9



3-1

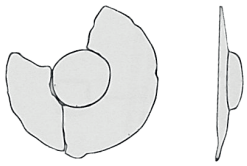


38-55

24-13

Plate 10: decorative horse gear fittings, strap mounts, period 3. Scale 2:3

B4



24-19

38-70

38-71

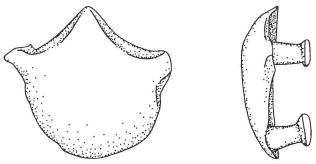
38-72

38-11

38-12

38-10

B5



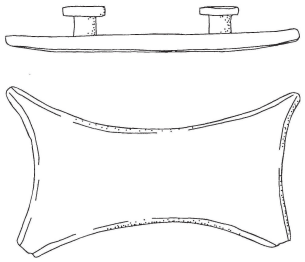
25-11

38-45

B6

36-13

B8



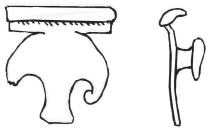
25-2

B9

38-8

38-46

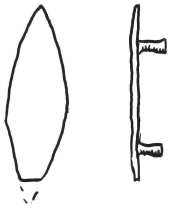
B9-var



38-19

Plate 11: decorative horse gear fittings, strap mounts, period 3. Scale 2:3.

B10



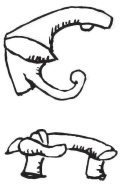
38-14

B13

38-49

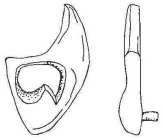
B15

38-43



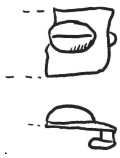
38-20

38-61

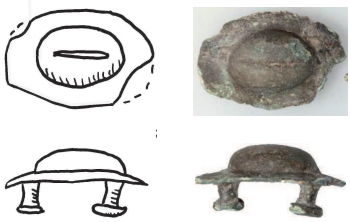


25-9

B17

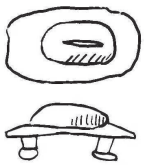


38-25

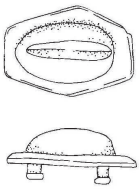


38-26

38-27



29-1



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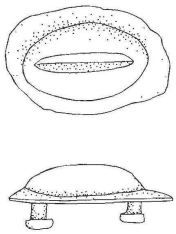

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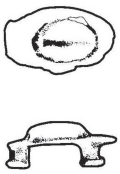
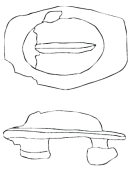


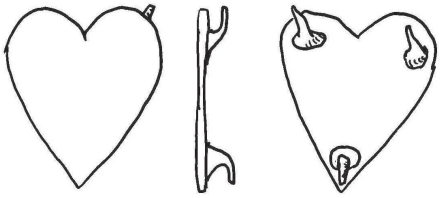
15-1

24-24



24.17

B19



29-2

B-varia

24-25

Plate 12: decorative horse gear fittings, strap mounts, period 3. Scale 2:3

A1

17-53

A7

38-21

17-31

A-varia

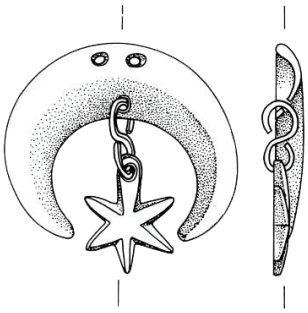
38-60

B2

38-22

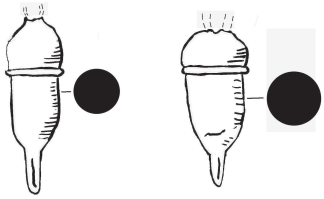
B5

38-53



40-1
(not to scale)

B6



38-16

38-17

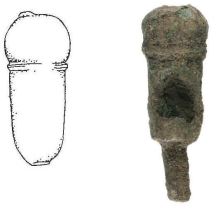
38-18

38-19

38-74

20-6

B-varia



25-13

24-23

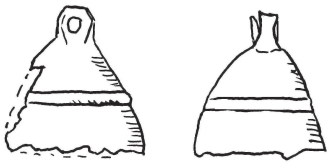
15-4

Plate 13: Horse gear pendants, period 2-3. Scale 2:3.

A

34-2

B



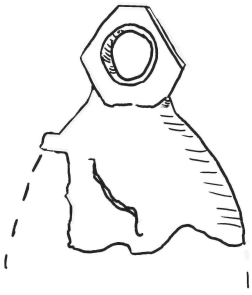
22-1

C

20-2

4-1

D

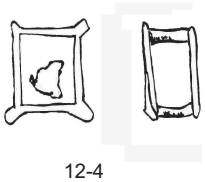


38-15

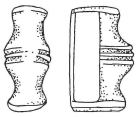
34-1

Plate 14: Horse gear bells, period 2-3. Scale 2:3.

B



12-4



25-12

B

17-51

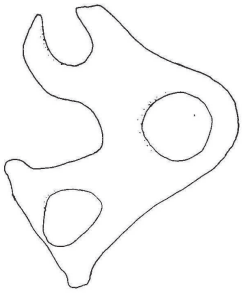
17-52

C

38-51

38-54

D



35-8

D2

20-3

B1

17-32

Plate 15: Horse gear: looped strap mounts (period 3), phalera (period 2), strap junctions (period 3), bit shank (period 2), wagon parts (period 2-3) Scale 2:3