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## **Tiny Travellers: Study of the Near Eastern beads of Merovingian cemeteries from the south-eastern Netherlands in relation to international exchange networks**

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Archaeology Bachelor Thesis

Arends, A.A.H.



Front image: Art made by Arends 2021

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Study of the Near Eastern beads of Merovingian cemeteries from the south-eastern Netherlands in relation to international exchange networks.

A.A.H. Arends

World Archaeology Bachelor Thesis

Leiden University, Faculty of Archaeology

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Rural Riches project

M. Langbroek MA

Dr. M.E.J.J. van Aerde

Merovingian beads

Material culture/ international networks

Time period: 450-700 AD

Area: south-eastern area of the Netherlands, including the sites of Hoogeloon-Broekeneind, Alphen-Chaam Molenstraat, Bergeijk-Fazantlaan, Veldhoven-Huysackers, Veldhoven-Oeienbosdijk, Dommelen-Kerkackers, Uden-Schepersweg, Geldrop-Zesgehuchten site C, Meerveldhoven, Lent-Lentseveld, Wijchen-Centrum, Elst- 't Woud, Apeldoorn- 't Loo, Sittard-Kemperkoul, Posterholt-Achterste Voorst, Maastricht-Vrijthof, Maastricht-Pandhof, Echt, Obbicht-Oude Molen and Stein-Groote Bongerd.

19-2-2021 till 13-6 -2022

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## *Preface*

This research is the result of my obsession with 'pretty things', material culture and jewellery. In the first year of my bachelor studies I came into contact with Langbroek and her bead research. She needed some help with the sorting of Merovingian beads and I haven't left since. The amount of information we can get from a single string of beads, that for a long time only was regarded as a female fashion item, is remarkable. Within a single string, beads attest various ages, origins, materials, shapes and production techniques. Specific techniques or raw materials can be traced back to a place of origin. This makes it possible to reconstruct connections between regional and international spheres. With my research I will evaluate the correlation between types of beads and time periods. Based on this I will provide evidence for the fluctuation of the international connections during the Merovingian period.

I would like to express my gratitude to my parents and siblings, grandparents and further family, my dear friends, roommate, classmates and co-workers. I'd also like to thank my supervisors for their expertise and help. For all the people who supported me, when I felt like I got lost in a sea of beads.

# 1 Introduction to the research

## 1.1 Introduction

Archaeological excavations of Merovingian (400-750 AD) cemeteries in the Netherlands have revealed graves with very elaborate burial gifts. A major category of these gifts are beads of various materials and shapes (Langbroek 2016, 75-76). Beads are a regular occurrence in Merovingian cemeteries and their numbers are up into hundreds of thousands. They are mostly deposited in inhumation graves of woman and children (Langbroek 2021, 278). Within a single string, beads attest various ages, origins, materials, shapes, and production techniques. Therefore, beads can give us a lot of information. Specific techniques or raw materials can be traced back to a place of origin. This makes it possible to reconstruct connections within and between regions far apart from each other (Arends 2020, 4). In this thesis, I want to research what beads that were made in the Near East recovered from Dutch Merovingian cemeteries can convey about these early medieval international connections. Presently, the study of the Merovingian period has scientifically proven (Pion 2014a, 34; Degryse and Shortland 2019, 2) that artefacts, including beads, from foreign origins are present in the Merovingian bead assemblage but the exact numbers and distribution in the Netherlands is never documented. For this reason, a comparative study of the distribution patterns of Near Eastern beads in Dutch Merovingian graves from different areas in the Netherlands has not been made. The study of Merovingian beads in great detail is fairly new in the Netherlands. There is no typology nor typo-chronology for medieval beads in the Netherlands. Very recently the first steps towards a typo-chronology were made by Teunissen (2021) for her bachelor thesis at the Saxion Hogeschool. Her study focusses on the beads found at sites in Noord-Brabant. Overall, the bead assemblages of an unknown amount of Dutch Merovingian sites have never been studied. The selected research area for this study is the south-eastern region of the Netherlands, which includes twenty sites from the regions of Noord-Brabant, East Rhine and Limburg. The study material are beads produced in the Near East which have been found in graves dating to the Merovingian period. In this chapter the background of the research will be presented.

### 1.1.1 The Rural Riches project

This thesis will be a contribution to the Ph.D.-research of M.B. Langbroek, which is part of the Rural Riches project led by Prof. Dr. F. Theuws. This five-year research project focusses on the examination of the archaeological record of the early Middle Ages to study the post-Roman economy of Northern Gaul during the period of 460 till 640 AD ([merovigianarchaeology.org](http://merovigianarchaeology.org)). For a long period of time scholars have thought that the vast demand for objects to sustain the lavish burial traditions of early medieval societies came from the privileged social classes (the court, the army, and the church). A top-down model was suggested, in which the elite was the driving factor of the economy and provided objects for the lower classes (Theuws 2020, 892-893; Drauschke 2006, 71). As has been argued by Henri Pirenne back in the 1920s, the long-distance exchange networks were fundamental for the grow of the medieval economy in post-Roman northwest Europe (Hodges 2012, 3). The

social-economic model of elite control that is applicable to the later Carolingian period (750-950 AD) seems out of place to explain the richness of the graves for the Merovingian period. This model also seemingly neglects the probability that rural populations had access to trade networks (Langbroek 2018a, 140-141). Therefore, the European Research Council Project Rural Riches aims to create a more fitting reconstruction of the Merovingian economy. Thus far, the archaeological records seem to indicate that the influence of the rural population in the growth of the economy was greater than previously believed. The Ph.D. research project of Langbroek is a part of this project. Her research is focussed on the exchange dynamics of the Merovingian economy by using beads as proxy objects ([merovingianarchaeology.org](http://merovingianarchaeology.org); personal communication Langbroek). My personal research will be conducted as part of Langbroek's ongoing research. The focus of this research, however, is on a smaller geographical area and a limited number of beads, since only the beads produced in the Near East will be analysed.

### 1.1.2 The research area

The area of focus of this study is the south-eastern region of the Netherlands. The cemeteries and burial finds that have been published for this area, are well published. The research area belongs to the region Northern Gaul (figure 1.1). The sources of knowledge for Northern Gaul mainly consist of excavated cemeteries. Historical sources are limited for the Merovingian period. In this vast geographical region different social-political, economic, religious, infrastructural, and cultural practices were in place. After the 'fall' of Roman authority during the fifth century distinct areas of Gaul started to develop in their own way. Therefore, the Merovingian society of the sixth century and that of the seventh century AD were relatively different from each other (Theuws 2020, 884; Pion 2014a, 10; Langbroek 2018a, 140-141). It should be noted however that the agricultural landscape and towns of the Roman period endured, though in a modified way. Out of Late Antique motifs developed new trends in arts and crafts in combination with some new-found motifs (Tys 2012, 24). Pion suggests in his research on Merovingian beads in Belgium, that Near Eastern beads are a sixth century phenomena (Pion 2014a, 135-143).



Figure 1.1: Map of the research area highlighted in blue within Northern Gaul (created by Arends 2021).

The locations of Merovingian cemeteries were deliberately chosen, often near ancient monuments such as roman *villae* or prehistoric tumuli. The cemeteries were thus located far from inhabited areas (Halsall 2010, 204). This was attested for the site of Bergeijk (Theuws and Haperen 2012, 32). The lavish burial practice has mainly been attested for the area between the Rhine and the Seine (Pion 2014a, 10). Furthermore, the quantity and quality of the grave goods varies greatly between graves and cemeteries (Pion 2014a, 10). Towards the eight century, the end of the Merovingian and the beginning of the Carolingian period, burial practices and society were changing. This change was initiated by the growing influence of Christianity. The deceased of the local community were no longer buried in cemeteries outside of the settlements (Knippenberg and Theuws 2019, 10; Theuws and Haperen 2012, 164; Pion 2014a, 10). Instead, the cemeteries gradually shifted towards the residential areas and close to the local church, often future parish churches (Pion 2014a, 10). The amount of grave goods regularly declines during the seventh century AD and disappears in the eight century (Pion 2014a, 10). It is generally assumed that during the medieval period long distance networks slowly disappeared (Langbroek 2016, 138). However, the fact that Near Eastern beads were still present in the early medieval period seems to indicate that a wide and long-distance exchange network was still functioning. The Near Eastern beads in early medieval graves therefore provide a wonderful opportunity to try and study this process of decline. In this study the beads are perceived as representative evidence (proxy materials) for the long-distance connection networks.

Merovingian strings of beads usually contain a large number of copies of various bead types reflecting the trend of that time (Pion 2014a, 11). These beads attest of various ages, origins, materials, shapes, and production techniques. Therefore, they can give us a lot of information. Some specific beadmaking techniques or raw materials can be traced back to a place of origin (Pion 2014a, 34; Degryse and Shortland 2019, 2). Based on this information it is possible to reconstruct connections between different regions. The aim of this research is to establish the distinct types and amounts of Near Eastern beads that occur in the Dutch Merovingian bead assemblage. In addition to when and where these beads were distributed within the research area. This could indicate exchange connections between regions, when they were active and when Near Eastern beads were included in this active exchange. Hopefully, a pattern can be observed in the types of beads attested from the Near East. This might display a preference for specific bead types. If the exchange connections between Northern Gaul and the Near East declined after the sixth century, as has been suggested, the results of this thesis research will indicate so.

In other words, the main **research question** is:

- What can Near Eastern beads recovered from Dutch Merovingian cemeteries convey about early medieval international connections?

This question will be answered by the **sub questions**:

- How many beads of Near Eastern origin are present in cemeteries within the research area?
- Do the attested Near Eastern beads show a change or continuity in number and bead types through time?
- What is the distribution of Near Eastern beads in different cemeteries across the research area?
- Are there any additional relationships between the Near Eastern beads visible in the accumulated data?

To gather information on these topics, the following literature is selected. For the information about the sites of Bergeijk, Maastricht-Vrijthof, Posterholt, Sittard, Obbicht and Stein, and their bead assemblages the ANASTASIS publications shall be used. The group of selected sites is extended with personal documentations of Langbroek on the beads of Lent, Wijchen, Elst, Apeldoorn- 't Loo, Echt. In addition, some archaeological excavation reports and the descriptions of Willemsen (2014) were selected. These additional excavation reports include an Archol report on the site of Uden, the report of Glasbergen on the cemetery of Hoogeloon, the publication of Heeren and Hazenberg on the cemetery of Wijchen and the publications of Verwers which address Veldhoven-Oeienbosdijk, Meerveldhoven, Alphen and Elst. A second publication for the cemetery of Alphen was published by RAAP. Furthermore, the dissertation of Kars (2011) on the cemetery of Maastricht-Pandhof and the BA thesis of Teunissen van Manen (2021) for the sites of Noord-Brabant are incorporated in the literature. The analysis and interpretations on the study material are based mainly on the work of Langbroek, Pion and Theuws. To place the research in a historical and archaeological context information about the Merovingian period will predominately be derived from the publications of Theuws (2020), Hodges (2012) and Volkmann and Theune (2001). Background information on the use and study of beads will be based on the publications of Mannion (2015), Sciama (1998), Willemsen (2014), Langbroek (2016, 2018, 2021) and Bos (2016). With a more scientific perspective on the studied material the publications of Degryse and Shortland (2016), Pion (2014, 2016), Neri *et al.* (2019), Freestone (2006), Dodt (2016), Matthes *et al.* (2004), Greiff and Nalbani (2008), Auzina *et al.* (2015), and Vrielynck *et al.* (2018) are selected, to gain a better insight in the archaeometry studies of glass and glass beads from the Merovingian period. For the research on beads created from other materials than glass the research of Drauschke (2008, 2010), Auzina *et al.* (2015), Willemsen (2014),

Siegmund and Weiss (1989) will be used. In the discussion most sources presented previously in the background chapters were applied again to back up statements and assumption based on the outcomings of this thesis. Information on the Near East will be derived from Lailou and Morrisson (2007) and Burbank and Cooper (2010). Additionally, the publication of Tys (2020) will be used to provide additional information on Merovingian Northern-Gaul.

## 1.2 Reading guide

In the next chapter, chapter 2, the research background on beads will be discussed with a focus on the Merovingian period. Chapter 3 will give general information on bead studies and the main typochronology used for this study, concerning their production techniques, origins, and various appearances. The last paragraph focusses specifically on Near Eastern beads and their characteristics. In chapter 4 the methodology and the different stages of the research process will be clarified. Additionally, the research area, the specific sites and the selected study assemblage will be presented. The following paragraph will provide the approaches on how the data will be accumulated, documented, and presented and their associated practical issues. Besides explaining why, they have been selected, the typologies will be described and compared. Finally, the sources of information that will be used for this research will be provided. The next chapter, chapter 5, will present the results of the examination of the study material. For each area and the associated sites, a couple of tables, figures and graphs will be provided in accordance to the research topics stated before. Additionally, an overview of all sites and all bead types will be presented. The conclusion of this chapter will discuss the subquestions of this research. In chapter 6, the results will be analysed and reviewed. The main research question will be discussed, and the used methodology will be evaluated. This chapter will finish with some proposals for further research. The final chapter, chapter 7, will be the conclusion. A short summery will conclude the discussed topics from the previous chapters and state an answer to the research questions.

## 2 Merovingian bead research

### 2.1 Introduction

This chapter will provide the results of former and ongoing research concerning Merovingian beads, to introduce a wider academic context for this thesis research. First the general bead research topics will be presented, the second paragraph shall focus on Merovingian beads. These beads will be briefly discussed from a sociological and an economical perspective.

### 2.2 Bead usage in general

Through time and space humans have decorated their body with different kinds of decoration. The act of decorating is driven by an almost universal deep-seated urge and desire to express individuality (Sciama 1998, 15). Glass beads are part of this phenomenon and have remained in use from prehistoric periods until today. From their production, usage, exchange and re-use to their final deposition, beads can provide information of human life histories and their given meaning. The meaning assigned to beads can differ based on social, chronological, or geographical context. The meaning of beads can extend their value as a form of personal adornment, a functional object or as a chronological marker (Mannion 2015, 90). Although beads are generally very useful to relatively date sites, they can provide more, for instance social and economic, information about the past, as has been attested by the elaborate research of Langbroek (2016-2021), Mannion (2015) and Pion (2014-2018). Jewellery, including beads, can be an expression of character, status, culture, religion, or communal habits. They can carry emotional or personal values (gift, family heirloom, experiences, or events). Some beads have specific symbolic meaning, associated with certain shapes or raw materials. For instance, the supernatural qualities associated with gemstones. Amber beads were thought to have healing abilities and beads made from rock crystal were ascribed purifying abilities. Similar types of beads could be worn for protection (Langbroek 2016, 96-97; Willemsen 2014, 49). This type of jewellery can be categorized as amulets. The Somali Zigula culture provides a modern anthropological case for the meaning of beads and their use (figure 2.1). The values of the worn beads represent individual as well as communal principles. For example, the tiny white beads the woman wear are associated with a common founding ancestress. The complete string of beads reflects the life stages or experiences of the individual while it also connects to the ancestress. Therefore, the collection of beads together form a material biography of an individual woman (Mannion 2015, 91; Sciama 1998, 17). Another modern anthropological example for the use and meaning of beads are the veils of Bedouin tribes from the north of the Sinai (figure 2.2). The women wear elaborately decorated veils or *burqas* consisting of a headband and a separately attached face panel. The veils display the social status and wealth of a woman (Bos 2016, 142). The values of the worn beads represent individual as well as communal principles. Beads are added to the veil for (amuletic) protective purposes. White beads and shells can either be added to the headband in a fringe or as separate tassels. These elements serve as amulets associated with femininity and fertility. Strings made of individual prayer beads hang along the owner's cheeks. The blue net-patterned beads serve as protective elements.

Additionally, the material of the beads, triangular patterns of bead strings and even the sound of colliding beads during movement have amuletic associations (wearableheritage.com; ancientbeadwork.com; Bos 2016, 126-142). Bedouin tribes in this region are often traders and come into contact with various materials and objects from more distant origins. These materials are added to the veil, as a result these veils display elements associated with different nationalities. This is one of their characteristic features (wearableheritage.com).



Figure 2.1: Apron made of glass beads by the Zigula (Britishmuseum.org/collection object Af1926,-.180).



Figure 2.2: Bedouin veil from North Sinai containing various methods of bead decoration (ancientbeadwork.com).



### 2.3 Merovingian bead use

In this paragraph the use of beads during the Merovingian period will be viewed from a sociological and an economical perspective. These perceptions are based on archaeological observations from excavations and literature. Beads are very common and available during the early medieval period. Across Europe hundreds of thousands of beads have been deposited in female burials from 400 till 750 AD (figure 2.3, 2.4 and 2.5). In contrast to their abundance in cemeteries beads are less common in settlements (Langbroek 2021, 278).

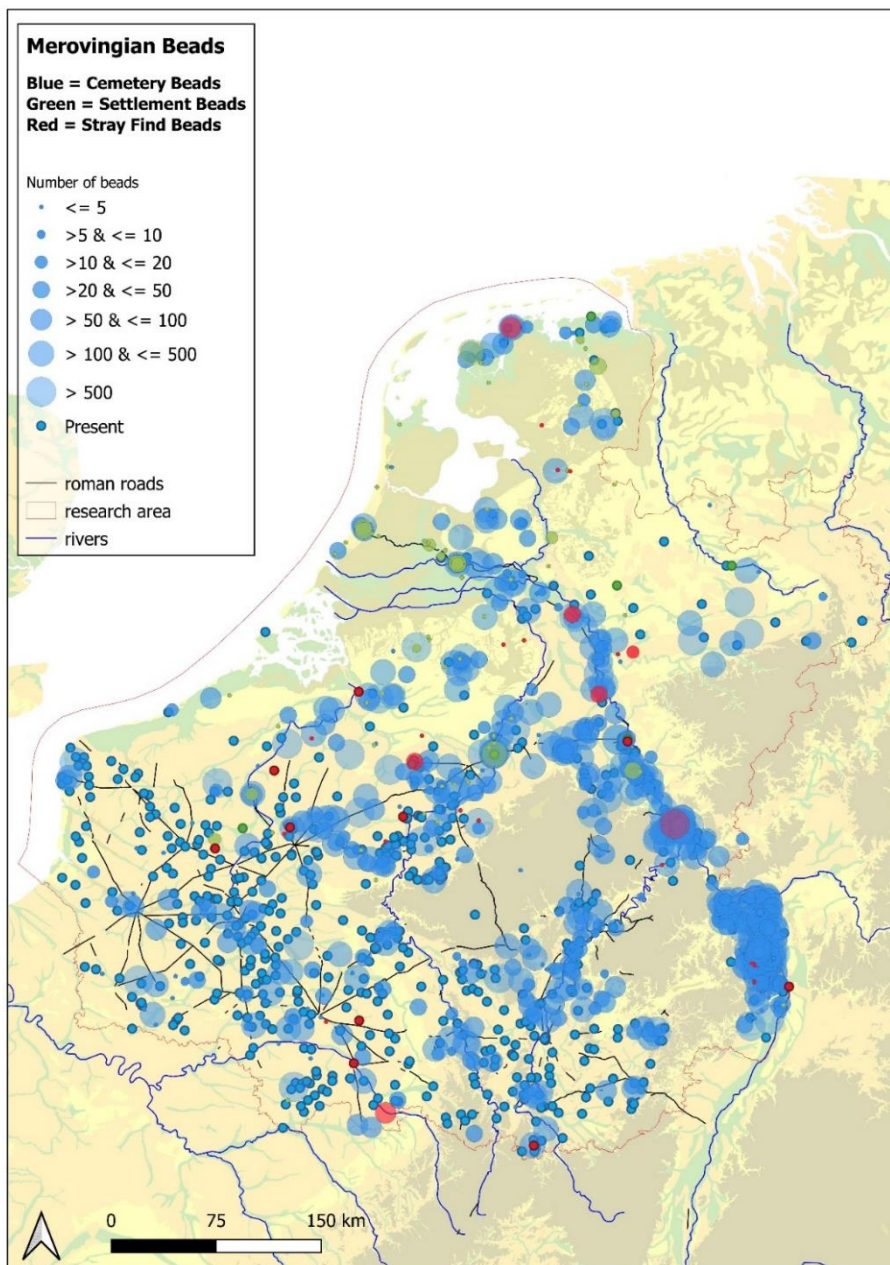


Figure 2.3: Find locations beads dating to the Merovingian period in Northern Gaul ([www.earlymedievaleurope.org](http://www.earlymedievaleurope.org) Online Database ERC Rural Riches).



Figure 2.4: Beads *in situ* from grave 3 from the cemetery of 't Loo (feature 140) (picture by Langbroek in RAAP-report, forthcoming).

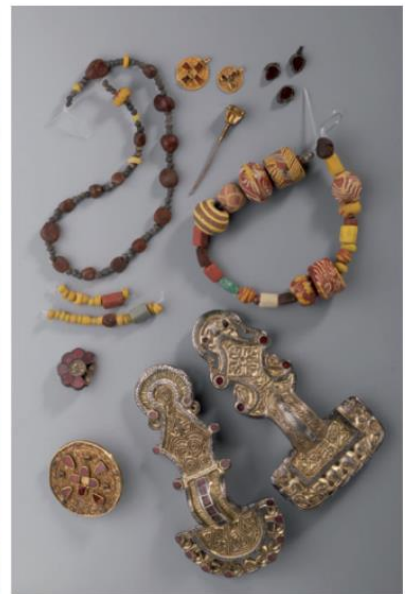


Figure 2.5: Beads and other artefacts from grave 413 of the Bossut-Gottechain cemetery (pictures by Vrielynck and Baty in Pion 2014a, 11).

### 2.3.1 Beads in a sociological perspective

It can be suggested that the concepts mentioned in paragraph 2.2 are also applicable for Merovingian bead strings. Given that the beads were mostly found in female graves (gender-based assumption since often no skeletal remains preserved to study biological sex), they were likely associated with female networks (Langbroek 2016, 83; Langbroek 2018a, 147; Langbroek 2021, 292). Merovingian beads are mostly recovered from the excavation of grave contexts and not from settlements. This suggests they could be involved in specific rituals, such as transitions between life stages (Hodges 2012, 15-18). Some beads remained in circulation for many years before they were deposited in the graves. Though their use-life did not necessarily end here; there is evidence that some graves were reopened and that bones and grave goods, including beads, were removed from the grave. Evidence includes pits dug into graves and disturbed human remains. This act can be interpreted not as grave robbery but intentional, people were retrieving beads in order to wear them again (Aspöck 2011, 299-300, 310; Van Haperen 2017, 149; Langbroek 2016, 81-82; Volkmann and Theune 2001, 543-544). This is suggested by the fact that graves were reopened a few decades after the deceased had been buried. The diggers would likely still remember the deceased (Van Haperen 2017, 150). In addition, occasionally beads excavated from graves seem misplaced and are much older than the grave itself. This also supports the suggestion that beads were deliberately taken from graves to be re-used (Langbroek forthcoming).

### 2.3.2 Beads in an economical perspective

It is generally expected that people of high social ranks wear precious jewellery to display their status. The jewellery (beads, but also fibulae, bracelets, and rings (figure 2.3)) found in Merovingian graves, however, belong to the rural population (Theuws 2020, 889-890). The relatively large amount of valuable jewellery in the graves of the rural population is remarkable. This wealth in grave goods is observed in Merovingian cemeteries throughout northern Gaul (Benelux, the German Rhineland, and North-France). These cemeteries were not only situated along the coastline or large rivers, but also in remote areas. Consequently, it can be assumed that the population had access to trade networks and made effort to obtain these materials. While some of the glass beads were locally made, others originate from distant regions like the Mediterranean, the Near East, the Baltic, or India (Pion and Gratuze 2016, 53-54; Pion *et al.* 2020, 833). It is likely that the beads travelled along with other exchange products. They are material indicators of long-distance trade networks that were active during the Merovingian period. Certain production techniques or designs are characteristic of the Near East (Pion 2014a, 10; Langbroek 2018a, 140-141, 143, 145-148; [merovingianarchaeology.org](http://merovingianarchaeology.org)). The technique of production can be recognized by basic aspects which are further explained in the following chapter. These aspects are incorporated in general bead studies and will also form the base for my research.

## 2.4 Conclusion

Beads are an ancient and widespread characteristic of human history. They can hold multiple connotations besides their decorative function. In one string of beads, we can find a diversity of materials, origins, generations and most likely, values and meanings. Beads can be associated with communal and individual principles. The study of beads can provide information about the social and economic aspects of the Merovingian population. In the following chapter the characteristics of Near Eastern beads and how they are determined in the study assemblage shall be presented.

## 3 Near Eastern beads in Merovingian context

### 3.1 Introduction

In this chapter, it will be explained, how a Near Eastern bead can be recognized in the study material. An insight in the material will be achieved with an overview of the production techniques, their characteristic aspects, and the associated place of origin. This overview will include a chronological estimation for the occurrence of Near Eastern bead types. At the end of this chapter the different bead types will be shortly described and pictures will provide examples. Most of the beads can only be assigned to a general region of origin, as it is unclear in which exact location they were produced. Nevertheless, there are exceptions, for some of the beads we can say with more certainty where they were produced. This study will focus on 'Near Eastern' beads in the widest sense of the word. It concerns the beads produced in the region of the eastern Mediterranean, the Levant, Egypt, and Mesopotamia. The beads assumed to be produced in the Near East will be discussed in more detail in this chapter.

## 3.2 Typology

Since in this research, most of the beads were categorized as Near Eastern based on pictures, the reference images of several typologies were key. The main point of reference, and the base of this research, was the typochnology of Pion (2014) evaluated and updated in 2018 by Vrielynck, Mathis and Pion. This typochnology divides the beads based on their color, shape, decoration, measurements, production technique, raw material, chemical composition, age, and place of origin. Especially the last criteria were of great use in this study. Pion assigns beads into categories based on their production technique instead of color or shape. The production techniques can be linked to places of origin. Hence, the Near Eastern beads discussed in this study are based on these categories of beads with are proven to be produced in the Near East. The estimated age of the beads according to Pion has been documented in order to reflect upon later in the study. It should be noted that the dates discussed in this study does not refer to the beads but to the date of the grave in which they were found. These date are based on the publication of the concerning site. Pion's typochnology will be elaborately explained in this chapter. It should be noted that the beads of the studied material were already determined by Langbroek for the cemeteries of Lent, Wijchen, 't Loo, Elst and Echt. Teunissen has determined the beads from the sites of Bergeijk, Veldhoven, Dommelen, Uden, Geldrop and Meerveldhoven with Langbroek's supervision. Additional typologies used to determine the beads include those of Siegmund (1997) and Koch (1977). However, these typologies categorize beads based on color and shape and not technique. Therefore, they are outdated and not suitable for present bead studies. Pion is very suitable for the beads from the sixth century and the early seventh century. Nonetheless, not all beads of the second half of the seventh century phase are included in this typochnology. The information on the beads from the later periods (from the second half of the seventh century) are less reliable since Pion's typochnology includes only one cemetery from this period. Therefore, his data is limited. The first steps in resolving this gap have been taken. A bead catalogue was made for the seventh century cemeteries of Bergeijk, Dommelen, Geldrop, Veldhoven Meerveldhoven, Veldhoven-Huysackers, Veldhoven-Oeienbosdijk and Uden. This was accomplished by Teunissen-van Manen (2021) for her bachelor thesis at Saxion Hogeschool.

### 3.3 Production techniques of early medieval beads

The techniques that were used to produce a bead can indicate the place of origin. For instance, no traces of production of drawn beads have been found in western Europe. The few known workshops are all situated in the east Mediterranean area. A key site has been found in Alexandria, Egypt. Here moulds are recovered that were supposedly used for shaping drawn segmented beads (figure 3.1). Additionally, the knowledge of producing drawn beads has been maintained in Indo-pacific regions for several centuries. Therefore, we can assume that the drawn beads found in Dutch Merovingian graves were produced in the Near East and transferred to the European mainland (Pion 2014a, 198-199). Another example are the production centres for wound beads that have been excavated in Maastricht (Sablerolles *et al.* 1997, 293-313), Rijnsburg (Dijkstra *et al.* 2010, 175-199). The production of beads was evident based on glass waste and half-fabricates (Langbroek 2021, 282). In the following paragraph the production techniques of Merovingian beads found in the Low Countries will be described and explained. These techniques are categorized by Constantin Pion in his dissertation of 2014. Since his typochronology forms the base of this research, the terms he uses to describe the categories will be applied to this research as well. For every production technique it is explained how this technique works, where it is practiced, during which period and how the technique is recognized in the final product.

#### 3.3.1 Drawn beads – Pion type A

Drawn beads were produced in the area along the coastlines of the Indian and Pacific Ocean where they have been made since the first millennium BCE (Pion 2014a, 37). In the Merovingian period their production was common in Egypt, the Levant and India. These beads were produced by drawing a large hollow mass of glass into long tubes which were then segmented, which could be achieved with several methods (see figure 1.1 and figure 1.2 of production techniques in the appendix) (Neri *et al.* 2019, 1107; Pion 2014a, 40). One way of segmenting the long glass tubes was by cutting them once the tube had cooled down: cold cutting. These beads occasionally were given a hot finish, by reheating the which gave the bead a smooth surface (figure 3.2A, B) (Pion 2014a, 41). The beads could also be cut when they were still warm, this is referred to as 'warm cutting'. The edges of the bead are smoother compared to the cold cut beads (figure 3.2C) (Pion 2014a, 47). Another way to create beads from a glass tube is by strangulation (figure 3.3). Once the glass has cooled down enough, single, or multiple beads are created by strangling the glass with the help of a mould or tweezers (Pion 2014a, 41-42). Drawn beads are generally monochrome in color and are small, though their shape and length may vary. According to Pion, they predominately occur during the late fifth and sixth century AD (Pion 2014a, 135-140). Within the category of drawn beads, there are two types of which the production location lies beyond the Near East. Pion type A1.1 beads originate from India (Pion 2014a, 201; Pion and Gratuze 2016, 55-56). When beads of this type were determined they are left out of the study. Pion type A1.2 beads originate from the Middle East (Pion 2014a, 217) and are included in the study.

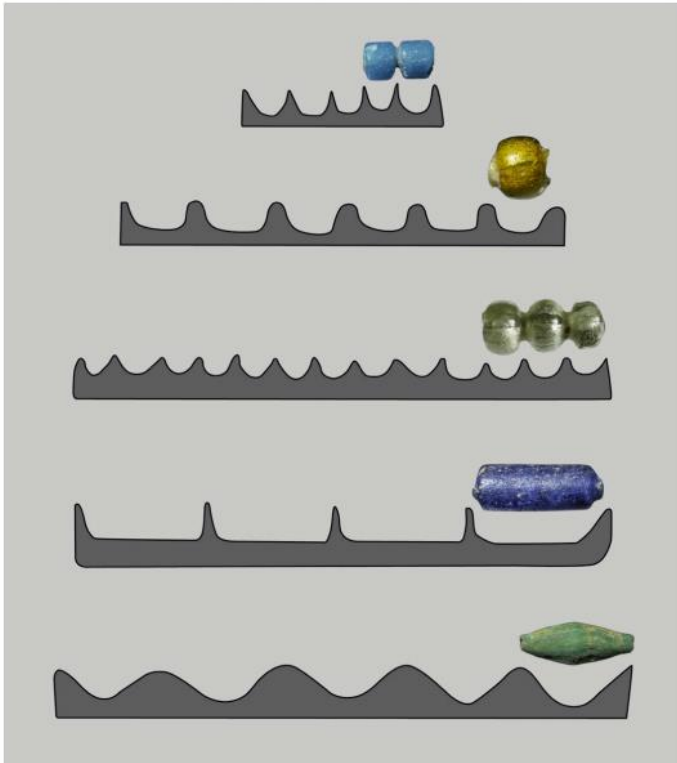


Figure 3.1: Various profiles of moulds found at Kom el-Dikka (Alexandria, Egypt) in relation to several Merovingian drawn bead types (after Rodziewicz 1984, in Pion 2014a, 45).



Figure 3.2: A. beads with cold cut edges, B. beads with cold cut edges and a hot finish and C. beads with warm cut edges (after Vrielynck *et al.* 2018).



Figure 3.3: Beads with strangled ends (after Vrielynck *et al.* 2018).



### 3.3.2 Metal foil beads – Pion type A4.2

A special category of drawn beads are the so-called metal foil beads. These three-layered beads consist of two glass layers with a thin layer of metal foil in between. This foil could be either gold or silver (figure 3.4) (Pion 2014a, 47). The production technique remained in use from 300 BCE till the thirteenth century AD (Greiff and Nallbani 2008, 359). The beads are often damaged once retrieved during excavations: usually the outer layer has broken away, and the metal foil is no longer complete or visible. They can be single-segmented beads or consist of multiple segments. The ends of these type of beads are strangled. This could have been done with special tweezer-like instrument or a mould where the glass tube was rolled over. There is evidence that they were produced in Egypt (see the second and third bead in figure 3.1) (Greiff and Nallbani 2008, 372, 374; Pion 2014a, 42, 199; Spaer 1993, 12). According to Pion, metal foil beads are characteristic for the oldest periods of Merovingian cemeteries in Belgium, and date in Pion's phases P1, P2 and P3 (Pion 2014, 135-141). In Europe they disappear from the archaeological record around 600 AD, only to be revived after 700 AD. The Merovingian versions are smaller than the later Carolingian beads. During the Carolingian period the metal foil beads often occur together with mosaic beads. This could indicate a common place of origin (Greiff and Nallbani 2008, 360-361).



Figure 3.4: Beads consisting of two layers of glass with a thin metal foil in between (Pion 2014a, 49).

### 3.3.3 Wound beads – Pion type B

These types of beads are the most common and easiest to produce. The hot glass is wound around a mandrel (see figure 1.3 of production techniques in the appendix). The sizes and shapes of wound beads varies greatly. They can have multiple colors and very elaborate to simple designs (Pion 2014a, 53). During the early medieval period wound beads were produced in Great Britain and continental Europe, including the Netherlands, Germany, Lombard Italy, the Balkan, Viking Scandinavia, and the Caucasus in the ninth to tenth century (Neri *et al.* 2019, 1107). Since this category of beads were mostly locally produced and do not originate from the Near East, they will be mostly left out of this study. The exceptions are two specific types of wound beads.

### 3.3.3.1 Confetti beads – Pion B6.1-1c, d

The surface of this type of wound bead is covered in only white or also red, green, and yellow dots, hence the name. Confetti beads were first attested during the late second century in the Mediterranean. They occur in the Merovingian record around the second half of the fifth century and the beginning of the sixth century. The main glass body can have assorted colors. The translucent cobalt blue ones are of Near Eastern/ eastern Mediterranean production (picture 3.5A). The black bodied beads that occur during the seventh century are supposedly European products, these are not recorded in Pion (picture 3.5B). Confetti beads were likely created by rolling the hot wound bead through small pieces of colored glass (Pion 2014, 191-192). The confetti beads have a strong similarity with so-called end of the day beads. These beads have a long continuity and are known from East-African (including Egypt) and Venetian context (Bos 2016, 134; metier-magazine.nl).

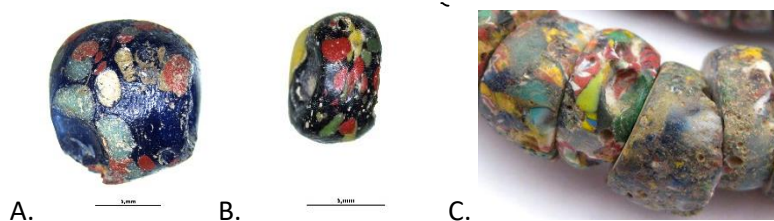


Figure 3.5: A. Near Eastern or east Mediterranean confetti bead from the cemetery of Lent-Lentseveld grave 2 (picture by Langbroek, forthcoming), B. European confetti bead from the cemetery of Dommelen-Kerkackers grave 4-2 (picture by Langbroek, forthcoming), C. African End of the day beads (after metier-magazine.nl).

### 3.3.3.2 Reticella beads – Pion type B10.1

Though reticella beads are wound they were likely produced in the eastern Mediterranean. These beads have an extraordinarily complex technique of production (see figure 1.4 of production techniques in the appendix). A couple of rods of two-colored or three-colored twisted glass were wound around a wound glass core. The rods are twisted in two different direction and are placed opposite each other. This creates a zig-zag pattern on the surface (figure 3.6) (Pion 2014a, 68, 72). The exact place of origin is still debated since no production place has been found so far. Some reticella beads were local, Anglo-Saxon productions. The more skillfully made and fancier ones are believed to be imported together with the mosaic beads (discussed below). Hence, they should come from Egypt or surrounding area. The reticella beads counted to Near Eastern beads in this study belong to the latter category (Pion 2014a, 227-228; Auzina *et al.* 2015, 56; Mattes *et al.* 2004, 114-116).

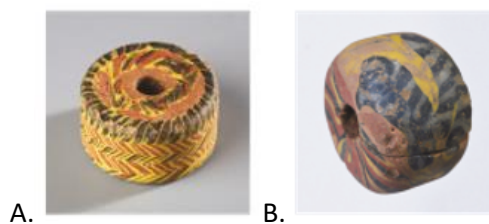


Figure 3.6: A. Reticella bead of Near Eastern production, B. Reticella bead of Anglo-Saxon production (after Vrielynck *et al.* 2018).

### 3.3.4 Folded beads – Pion type C

These beads are fabricated with the use of a prefabricated piece of glass. This is heated and fold around a mandrel. Where the two ends of the glass meet a seam is formed (see figure 1.5 of production techniques in the appendix). The bead can be shaped by working it on a mandrel. If these beads are reheated the seam will disappear, and it will become harder recognizable as a folded bead. Multicolored folded beads (figure 3.7) are created by placing several prefabricated glass pieces together, which are then heated together in the oven and finally folded around a mandrel. Some reticella beads might have cores produced with the folding technique (Pion 2014a, 72-73). These beads are more common in the eastern Mediterranean than in the West. In the Mediterranean, this technique has been known since the third century BC and continued till the thirteenth century AD. The main production consisted of cordiform, fusiform and cylindrical shaped translucent blue beads. A large number of the translucent blue beads were fabricated in Fustat (Egypt) between the seventh and thirteenth centuries (figure 3.8). They resemble the blue or green copies found in Gaul during the late sixth century. The prismatic beads (types C1.1-01/04) date to the second half of the sixth or seventh century (Pion 2014a, 222-223).



Figure 3.7: Multicolored folded bead with visible seam from the cemetery of Lent-Lentseveld, grave 5 (pictures by Langbroek).

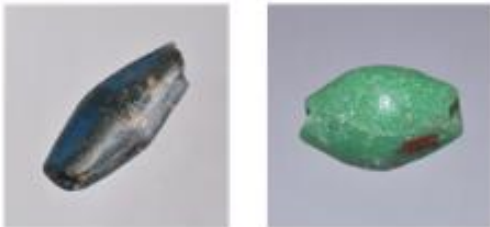


Figure: 3.8: Folded beads from Egypt (after Vrielynck *et al.* 2018).

### 3.3.5 Perforated beads – Pion type D

For this technique relatively low temperatures are required (600-800°C). Basically, any piece of glass can be heated and fabricated into a bead by piercing an iron mandrel through the glass (see figure 1.6 of production techniques in the appendix). The piercing causes the edges around the perforation to raise. By rolling the bead these raised edges come together and two small seams are formed at their junction (figure 3.9) (Pion 2014a, 73). Perforated beads emerged during the second part of the sixth century and at the end of the century they disappeared (Pion 2014a, 219). Pion assumes that the perforated beads share a common origin, the Near East, with the drawn beads with warm cuts. This assumption is based on their shared color pattern, their brief period of use and their particular techniques and morphology (Pion 2014a, 219). Archaeometry shows that the perforated beads were made of reused (Roman) glass (Pion 2014a, 219).



Figure 3.9: Perforated bead with visible perforation ‘scar,’ cemetery of Wijchen-Centrum, single beads (pictures by Langbroek, forthcoming).

### 3.3.6 Mosaic beads – Pion type E

These beads are known for their complex design and have multiple names. The name mosaic bead is derived from the production technique. Merovingian mosaic beads are primarily fabricated from multiple individual tiny inlays and layers (Volkman and Theune 2001, 525-526). During the production, the glass probably laid flat. The segments are made by assembling glasses of distinct colors, thereby creating a pattern inside a cylindrical rod. Designs can vary between flowers, spirals, and *ocelli* (eyes) (figure 3.10). These segments were made separately and could have been produced in different workshops. Once several segments were combined and the mosaic was finished, the glass was wrapped around a mandrel to form the bead (see figure 1.7 and 1.8 of production techniques in the appendix). Another name for this type of glass is ‘thousand flower’ or ‘millefiori’ glass (Pion 2014a, 75). The technique originates most likely in Assyria (Volkman and Theune 2001, 523). The red glass on the edges of some of the mosaic beads reveal a chemical composition that differs from wound red beads that were made in Europe (Mattes *et al.* 2004, 141). This indicates that they were produced outside of the European mainland. These Merovingian mosaic beads with red edges appear strikingly similar to mosaic beads known from Egypt, produced during the second and third centuries AD (figure 3.11). Therefore, we can assume that the mosaic beads found in Merovingian cemeteries were produced in Egypt as well (Volkman and Theune 2001, 528; Pion 2014a, 226).



Figure 3.10: Types of mosaic beads found in the Merovingian graves 35, 32, 27, 15, 13-1 at the cemetery of Lent-Lentseveld (pictures by Langbroek, forthcoming).



Figure 3.11: Types of mosaic beads found in Egypt (Petrie Museum catalogue object 22739 and 22768).

### 3.3.7 Other material beads – Pion type F1-8

This category contains other materials that were used to create beads. These materials include amber, (semi-precious) stone, meerschaum, bone, ceramics, and shell which are worked by cutting the raw material. Metal beads also are categorized under this type (Pion 2014a, 106). Apart from amber, these beads are rare to find in Merovingian graves (Pion 2014a, 106-107; Langbroek 2021, 286). The beads made of amethyst, rock crystal, marble, shell, and meerschaum are Near Eastern beads. This will be further discussed in the next paragraph about raw material origins.

### 3.3.8 The final category of Pion - type G

This category incorporates the pre-medieval beads. Some are prehistoric beads but most of them are Roman beads. These can occasionally be found in Merovingian graves. This category is purely chronological and consist of beads of various production techniques. Additionally, perforated Roman coins are also included (Pion 2014a, 108). A specific type of Roman bead that stands out are the melon beads (Pion type G1.2-05) (figure 3.12). These beads were produced in Egypt during the Roman period. These beads were made of faience, probably with a mould but they also could have been modelled by hand (Pion 2014a, 174; Langbroek 2021, 282). They are (light) blue of color and have a characteristic rimmed surface. These beads were still in circulation during the Merovingian period (Heeren and Hazenberg 2010, 116-117). While they were produced in Egypt, they are excluded from the study assemblage since they were produced before the Merovingian period.

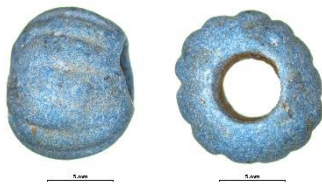


Figure 3.12: Roman faience melon bead from the cemetery of Lent-Lentseveld grave 21 (pictures by Langbroek, forthcoming).

### 3.4 Chronology of Merovingian beads

Pion has divided the early medieval beads of his study in five chronological categories. In this paragraph the Near Eastern beads assigned to each period will be described. Table 2.1 in the appendix displays an overview of the Near Eastern beads according to the typochronology of Pion (2014). The P categories of Pion will only be taken into consideration for this research, since it is based on Belgium sites. The date of the graves according to the site publications will be the main chronological indicator. In the discussion chapter the categories of Pion will be evaluated and compared to the beads and the date of the graves as attested in the Netherlands.

Pion categorizes Merovingian beads in the following periods. Category P1: the end of the fifth century and the first half of the sixth century. The jewelry bears a resemblance to those found in the tombs of Late Roman Empire although the number of beads and types of the adornment increases in the second half of the fifth century. They mainly contained monochrome drawn glass beads. Beads had various shapes and colors, main colors were gold, silver, black, green, blue, and green blue. Some imitate precious materials such as jet, turquoise, silver, and gold etc. During this period the silver and gold foil beads occur (Pion 2014a, 135-138). Category P2: the second half of the sixth century. During this phase, the concept of beads resembling precious stones declines. It is in the category of P2 that we find the substantial majority of polychrome beads, mosaic beads, folded or perforated. During this period, the reticella beads occur (Pion 2014a, 138-140). Category P3: the end of the sixth century and the begin of the seventh century. Mosaic, folded, and perforated beads start to disappear (Pion 2014a, 140-141). Category P4: the first part of the seventh century. During this period no more drawn beads occur and Near Eastern beads are exceedingly rare. The amethyst beads are assigned to this period (Pion 2014a, 142-143). The final category is P5: the seventh century, during this period no beads of Near Eastern origin occur anymore (Pion 2014a, 143).

### 3.5 Origins of the raw materials

In addition to the production techniques, the raw material of a bead can also reveal its origin. It should be mentioned however that the raw material could have been imported and that the creation of the beads occurred in the research area. The materials that are included in the study assemblage are glass, amethyst, rock crystal, marble, shell, and meerschaum. Therefore, only these materials will be discussed here. The first part will discuss all non-glass materials and the last part is dedicated to glass beads.

#### 3.5.1 The sources of non-glass raw materials attested in Merovingian bead assemblages

Except for amber, most (gem)stone beads were likely imported from the Near East. The amethyst beads were made in the Byzantine Empire (figure 3.13A). A production location is found in Alexandria, and for the origin of the raw material the areas of south India and Sri Lanka, Egypt, Ethiopia, or the Near East are viable options (Pion 2014a, 229; Drauschke 2010, 52). According to Willemsen (2014, 150) amethyst beads originate from Egypt. These beads occur in graves in Northern Gaul in the sixth and seventh century, with a peak occurrence around 600 AD. Generally amethyst beads are very rare during the Merovingian period, however their distribution is wide across Europe (Willemsen 2014, 150; Drauschke 2010, 55). Rock crystal (figure 3.13B) is one of the most dense and strong materials used in Merovingian beads. The material is tough to work, hence they were not cut but grinded and polished into shape (Auzina *et al.* 2015, 76). They occur as large or occasionally small faceted beads. Rock crystal was believed to hold purifying abilities (Willemsen 2014, 51). At the site in Alexandria where production remains of amethyst working have been found, remains of rock crystal working have been found as well. Hence it can be assumed that these beads came from the same location. The raw material occurs at several locations within Europe (the Alps and Ardennes in Northern Gaul), the Mediterranean and further away. It is also possible that rock crystal was imported from India together with other gemstones (Auzina *et al.* 2015, 76; Drauschke 2010, 52). There are Merovingian beads made of stone. This study includes marble beads. Marble (figure 3.13C) occurs on multiple locations around the Mediterranean basin. The material is relatively easy to work yet durable. The stone was appreciated for its luster, colors and patterns. Marble is associated with Roman architecture and art (Greenhalgh 2009, 26, 35-36). Meerschaum (sepiolite) is occasionally found as cylindrical beads in the Merovingian graves (figure 3.13D). They are typical sixth century beads. Meerschaum beads are very porous and easily damaged, therefore they are difficult to shape. It should be kept in mind that it is difficult to differentiate meerschaum from other chalky materials and not all beads categorized as meerschaum are in fact meerschaum. The suspected origin of the material is the eastern Mediterranean. A large source exists in Turkey, however no production centers from the sixth century have been found there (Auzina *et al.* 2015, 70-72; Drauschke 2008, 414). Shell disc beads (figure 3.13E) are made from warmwater oysters, their suspected origin is in the eastern Mediterranean or beyond (Siegmond and Weiss 1989, 301). These beads are also known as mother-of-pearl beads. The material loses its shine in the ground. These white thin beads resemble chalk or limestone beads it is possible that they occasionally have been misinterpreted. Shell disc beads occur in seventh century Merovingian graves (Auzina *et al.* 2015, 82-83).



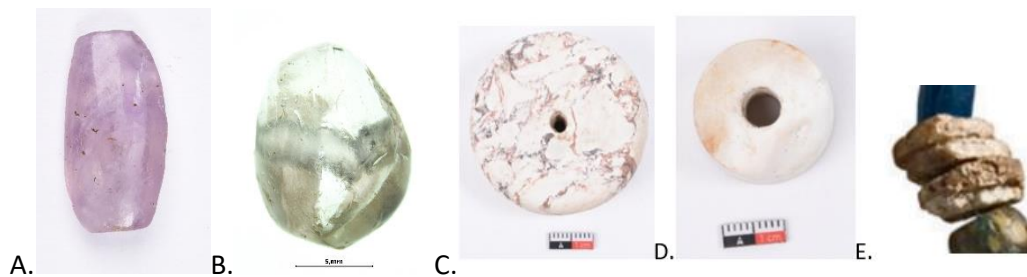


Figure 3.13: Non-glass beads from Dutch Merovingian cemeteries, A. Amethyst bead from the cemetery of Wijchen-Centrum, single beads (picture by Anne Dekker, Langbroek forthcoming), B. Rock crystal bead from the cemetery of Lent-Lentseveld, grave 5 (picture by Langbroek, forthcoming), C. Marble bead from the cemetery of Lent-Lentseveld grave 16 (picture by Anne Dekker, Langbroek forthcoming), D. Meerschaum bead from the cemetery of Lent-Lentseveld grave 34 (picture by Anne Dekker, Langbroek forthcoming), E. Shell disc bead (Theuws and Haperen 2012, 192).

### 3.5.2 The sources of raw glasses attested in the Merovingian bead assemblage

The majority of Merovingian beads are made of glass. Beads were created not only with different production techniques, as described before, but also from various types of raw glass. Moreover, places of primary (raw glass production) and secondary (manufacture of glass objects) glass modification can differ. To estimate the origin of a glass bead, information about the production technique and the chemical composition of the raw glass have to be combined (Pion 2014a, 176).

#### 3.5.2.1 Primary glass modification

The origin of the raw glass can be determined by chemical analysis (Freestone 2006, 21-23). During the early medieval period most beads were fabricated from raw glass with the same chemical composition as the Roman soda glass ( $\text{SiO}_2\text{-Na}_2\text{O-CaO}$ , Natron soda-lime glass) (Volkman and Theune 2001, 522; Matthes *et al.* 2004, 125). Natron soda-lime glass is fabricated with pure hydrated sodium carbonate, likely collected from dry Egyptian lakes (Neri 2019, 1108). This type of raw glass thus originates from the Near East. Besides natron soda glass, beads were made from plant ash soda-lime glass and aluminous soda glass (Pion and Gratuze 2016, 54-55). The aluminous soda glass originates from the Indian peninsula and Sri Lanka (Pion and Gratuze 2016, 55-56). There are two types of plant ash soda glass. The first one is characteristic for mosaic glasses and occurs frequently in red and green glasses of Antiquity. This type of glass contains similar levels of potash and magnesia levels. The second type contains higher levels of magnesia than potash. This type was likely fabricated during antiquity and the early Middle Ages in the inland of Mesopotamia. Plant ash glasses started to replace the natron glasses in the Mediterranean region in the ninth century. During the seventh century, in western Europa a local variation of glass developed by exploiting the ashes of forest plants. This local type is called potash-lime glass (Pion and Gratuze 2016, 54; Greiff 2008, 364; Dodt 2016, 136).

### 3.5.2.2 Secondary glass modification

Relying only on the chemical composition to assign an origin to glass beads can be misleading, since raw glass was exchanged and reused, as well as final products. The tradition of making natron soda glass remained in use continuously for several hundred years, yet the coloring techniques show variation. For instance, the chemical receipt for red in European beads is different than that of the Near East. The levels of Iron oxide in mosaic beads are significantly lower than in the polychrome and monochrome red beads. Hence, it was concluded that mosaic beads were manufactured outside of Europe (Matthes *et al.* 2004, 141, 144). Further examining the specific chemical compositions of coloring elements has indicated that the coloring of raw glass was executed at various places within the Merovingian Kingdom. Many of the wound monochrome (and polychrome wave decorated beads) were manufactured within Europe. While their raw material consists of natron type glass from primary sources in Egyptian and Levantine coastal areas or from recycled materials such as Roman tesserae (Volkman and Theune 2001, 522; Matthes *et al.* 2004, 127; Neri 2019, 1108; Pion and Gratuze 2016, 54-55; Dijkstra *et al.* 2010, 175-199). Evidence for glass working has been recovered in Cologne (Dodt 2016, 137). Here, among other glass objects, large wound glass beads better known as glass spindle whorls (figure 3.14) were produced from European potash-lime glass (Dodt 2016, 136). Glass beads produced with drawn, perforated, folded and mosaic inlay techniques were produced outside of Europe (Neri *et al.* 2019, 1107; Pion 2014a 42, 219, 222-223, 226, see paragraph 3.3 on production techniques for examples). A specific category of raw glass is the high alumina soda glass. This glass did not circulate as raw material and is only attested in western Europe during the fifth and sixth century as finished objects, predominately beads. Which indicates that these beads were produced in the Indian subcontinent or Sri Lanka (Pion and Gratuze 2016, 55-56).



Figure 3.14: Cologne spindle whorls (RBA D039150 in Dodt 2016, 136).

### 3.6 The beads with an origin in the Near Eastern

Based on the information provided in this chapter a quick overview is created of the production techniques that are characteristic for beads of Near Eastern origin. Table 3.1 displays the production technique and associated recognizable features visible in the glass body of the beads. Additionally, the table includes the raw material, estimated period and place of origin of the beads.

Table 3.1: Overview of bead production types (based on Pion 2014, 36-37, 52-56, 72-73, 75).

TECHNIQUE	MATERIAL	DATE	ORIGIN	CHARACTERISTICS
<b>DRAWN BEADS</b>	Glass	Sixth century	India, Egypt, Mesopotamia	Production technique creates lines in the glass parallel to the perforation hole. The ends can be strangled or cold cuts with sometimes a hot finish. The latter makes the edges smoother.
<b>WOUND BEADS</b>	Glass	Sixth and seventh century	Europe and beyond	The technique creates production lines around the centre of the bead. These beads can have very elaborate decorations.
<b>FOLDED BEADS</b>	Glass	Sixth century	Eastern Mediterranean (especially in Egypt)	This production technique creates a seam where both ends of the folded glass touch. Except when the bead is heated again, which makes the seam disappear
<b>PERFORATED BEADS</b>	Glass	Sixth century	Near East	These beads are made by piercing the glass. This leaves a scar and one perforation hole is larger than the other
<b>MOSAIC BEADS (MILLEFIORI BEADS)</b>	Glass	Sixth century	Egypt	These beads consist of different pieces of detailed mosaic glass. Another category of beads that is often associated with these beads are the reticella beads.
<b>CUT BEADS</b>	(gem)-stones	Sixth and seventh century	Europe, Baltic, Near East	These beads are created by cutting the stone into the shape of a bead. The perforation hole is made with the use of a drill.

### 3.7 Conclusion

There is a great differentiation between the beads alleged to be produced in the Near East. Besides several types of raw material, the methods of manufacturing beads from raw glass can give a crucial insight in the origin of a bead. The characteristic features that can be assigned to different production techniques will be the main form of identification of Near Eastern beads in the study assemblage. The typochronology of Pion forms the base of this categorization. For this study, the following beads will be interpreted to be from Near Eastern origin: drawn, folded and perforated beads, confetti beads, (some) reticella beads, mosaic beads and beads made from amethyst, rock crystal, marble, shell and meerscham.

## 4 Methodology: study assemblage and documentation

### 4.1 Introduction

In this chapter the methods that were used to find an answer to the research questions of this study are presented and explained. In the previous chapters Merovingian beads and approaches of determining Near Eastern beads have been introduced. Building upon this typological explanation, this chapter will provide the practical methods of research. In the first paragraph the selected sites and study material are presented. Then, the general methods on how the material will be examined are explained. This includes aspects as access to the study material, literature, and databases. A short paragraph will present the used typologies and the chapter finishes with the methods of documentation. Here the used database, excel sheets, criteria and labels are explained.

### 4.2 The study assemblage

The focus of this study are beads produced in the Near East, which found their way through time and space to end up in Dutch Merovingian cemeteries. In order to study these beads a number of excavated cemeteries are selected. These consist of nine sites from the east of Noord-Brabant, seven from Limburg and four from along the Rhine. Combined, a total of twenty sites forms the extent of this study. The number of beads varies for every site and the exact number of beads excavated from each site is sometimes uncertain. Eventually, 10.193 beads from 384 graves are subject of this research (tables 4.1, 4.2, 4.3). The sites of Bergeijk-Fazantlaan, Maastricht-Vrijthof, Posterholt-Achterste Voorst, Sittard-Kemperkoul, Obbicht-Oude Molen and Stein-Groote Bongerd were published by The ANASTASIS project. This project aims to publish the data from formerly excavated Dutch Merovingian cemeteries that never were published (Theuws and Van Haperen 2012, 6). These publications include detailed information and pictures of the bead assemblages. Therefore, they provide an easily accessible and well-documented source of information needed for this study. The sites of Dommelen-Kerkackers, Geldrop-Zesgehuchten site C, Uden-Schepersweg, Veldhoven-Huysackers, Veldhoven-Oeienbosdijk, Meerveldhoven, Lent-Lentseveld, Wijchen-Centrum, Elst- 't Woud, Apeldoorn- 't Loo and Echt, have been added because they have been studied and made available by Langbroek and/or Teunissen van Manen. The cemetery of Bergeijk was also studied by Langbroek. Other sites that were added with different publications and have not been studied by Langbroek are Alphen-Chaam Molenstraat, Hoogeloon-Broekeneinde and Maastricht-Pandhof.

#### 4.2.1 The sites

The research area is divided in three subregions: Noord-Brabant, East Rhine, and Limburg. For each subregion, a couple of sites are selected. For each site at least the date, the number of excavated graves and recovered beads is provided. Additional specific information will be given when excavations are more thoroughly analysed and published.

##### **Noord-Brabant:**

The first research area consists of nine sites located in the east of Noord-Brabant: Hoogeloo-Broekeneind, Alphen-Chaam Molenstraat, Bergeijk-Fazantlaan, Veldhoven-Huysackers, Veldhoven-Oeienbosdijk, Dommelen-Kerkakkers, Uden-Schepersweg, Geldrop-Zesgehuchten site C and Meerveldhoven (figure 4.1). They can all be considered as small cemeteries dating roughly to the seventh century AD. Most of the sites are rural or farmyard cemeteries (Theuws and Van Haperen 2012, 27). The discovered number of beads varies per site (table 4.1).



Figure 4.1: Location of the selected sites in Noord-Brabant (created by Arends, with the use of Microsoft Edge maps).

Table 4.1: Overview and basic information of the selected sites of Noord-Brabant.

SITE	TOTAL NUMBER OF GRAVES	NUMBER OF GRAVES WITH BEADS	NUMBER OF BEADS ORIGINALLY FOUND	NUMBER OF MEROVIGIAN GLASS BEADS AVAILABLE FOR STUDY	USE PERIOD OF CEMETERY	ADDITIONAL REMARKS	SOURCES
HOOGELOON-BROEKENEIND	41	6	151	151	sixth-seventh century		Glasbergen 1955, 8, 19-31, 38; Willemsen 2014, 202
ALPHEN-CHAAM - MOLENSTRAAT	53	24	779	779	470-750 AD		Verwers 1977, 169; Verhoeven and Jansen 2019, 5, 102
BERGEIJK - FAZANTLAAN	125	35	385	246	c. 590 and c. 730/ 740 AD	One of the larger cemeteries in this area. However, it is still considered a small rural cemetery. First settlers	Theuws and Van Haperen 2012, 79, 152)
VELDHOVEN - HUYSACKERS	23	1	38	38	?	Entire cemetery is excavated but only one grave hold beads. Publication forthcoming.	Theuws forthcoming
VELDHOVEN-OEIENBOSDIJK	27	9	43	43	550-700 AD	A small cemetery next to a farm. Partly excavated	Verwers. 1973, 313; Willemsen 2014, 202
DOMMELEN - KERKAKKERS	24	5	154	154	650-725 AD		Theuws and Van Haperen 2012, 16,164; Willemsen 2014, 201; Theuws forthcoming
UDEN - SCHEPERSWEG	29	9	288	288	c. 550-725 AD	Small rural cemetery. The oldest graves likely belong to the local founding ancestors. Associated with a major settlement	Knippenberg and Theuws 2019, 9, 42
GELDROP - ZESGEHUCHTE N SITE C	21	1	27	27	650-675 AD		Theuws and Van Haperen 2012, 164; Willemsen 2014, 201; Theuws forthcoming
MEERVELD-HOVEN	63	23	621	598	seventh century		Verwers 1978, 251-252, 268; Willemsen 2014, 202
<b>TOTAL</b>	<b>406</b>	<b>113</b>	<b>2.486</b>	<b>2.324</b>			

### East-Rhine:

The second research area consist of four selected sites; Lent-Lentseveld, Wijchen-Centrum, Elst- 't Woud and Apeldoorn- 't Loo (figure 4.2). The first three sites are situated along the Rhine River. Since not all four sites are located within one province another geographical area was chosen to refer to. This is the East Rhine basin in the Netherlands (figure 4.3), further referred to as East Rhine or the East Rhine region. The use period for these cemeteries can be assigned to the sixth century AD.

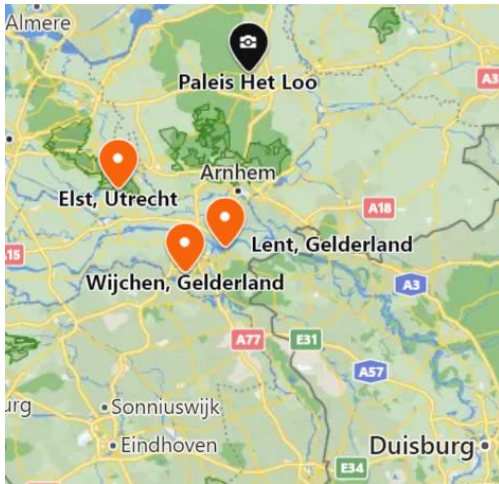


Figure 4.2: Map of the selected sites in the Est Rhine River area (created by Arends, with the use of Microsoft Edge maps).



Figure 4.3: Indication of the East Rhine basin in the Netherlands (picture after Drenthe.nl).

Table 4.2: Overview and basic information on the selected sites of the East Rhine region.

SITE	TOTAL NUMBER OF GRAVES	NUMBER OF GRAVES WITH BEADS	NUMBER OF BEADS ORIGINALLY FOUND	NUMBER OF MEROVIGIAN GLASS BEADS AVAILABLE FOR STUDY	USE PERIOD OF CEMETERY	ADDITIONAL REMARKS	SOURCES
LENT - LENTSEVELD	79	28	1204	1224	sixth century		Langbroek forthcoming
WIJCHEN - CENTRUM	345	68	964	1016	300-650 AD	one of the largest Merovingian cemeteries of the Netherlands	Heeren and Hazenberg 2010, 17, 20; Langbroek forthcoming
ELST - 'T WOOD	260	46	1778	1722	late fifth till eight centuries		Verwers and van Tent 2015, 5, 87
APELDOORN - 'T LOO	?	2	78	78	seventh century	Only two graves are excavated	Langbroek 2020, 2-3,5; Langbroek forthcoming
<b>TOTAL</b>	<b>684</b>	<b>144</b>	<b>4024</b>	<b>4040</b>			

### **Limburg:**

The third and last research area consists of seven sites; Sittard-Kemperkoul, Posterholt-Achterste Voorst, Maastricht-Vrijthof, Maastricht-Pandhof, Echt, Obbicht-Oude Molen and Stein-Groote Bongerd (figure 4.4). The sites are located in the southern part of Limburg, five of them are close to the Meuse River. The cemeteries are mostly rural and quite large, they date roughly from the sixth century AD. The sites of Maastricht are exceptional, not only in the size of the cemeteries but also in the number of recovered beads (table 4.3).

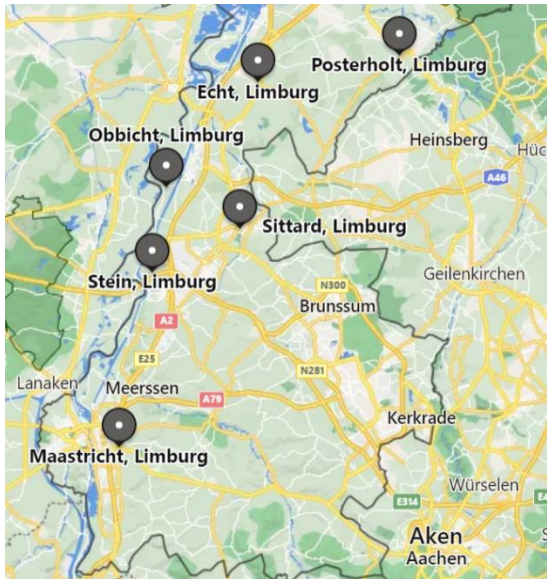


Figure 4.4: Map of the selected sites of Limburg (created by Arends 2021, with use of Microsoft Edge maps).



Table 4.3: Overview and basic information of the selected sites of Limburg.

SITE	TOTAL NUMBER OF GRAVES	NUMBER OF GRAVES WITH BEADS	NUMBER OF BEADS ORIGINALLY FOUND	NUMBER OF MEROVIGIAN GLASS BEADS AVAILABLE FOR STUDY	USE PERIOD OF CEMETERY	ADDITIONAL REMARKS	SOURCES
SITTARD-KEMPERKOUL	88	20	926	875	c. 550-700 AD	A rural cemetery used by multiple families. The total number of burials was estimated to be a 100	Kars <i>et al.</i> 2016, 19, 50, 251
POSTERHOLT-ACHTERSTE VOORST	92	27	186	183	c. 580-750 AD	Rural cemetery, not entirely excavated, the total estimated number of graves is 241. Also graves from the Late Bronze Age, Roman and Carolingian period	De Haas and Theuws 2013, 56, 162, 165
MAASTRICHT VRIJTHOF	341	37	1039	1039	c. 510-680 AD		Theuws and Kars 2017, 186
MAASTRICHT PANDHOF	?	24	1393	1393	fourth till end seventh century AD		Theuws and Kars 2017, 6
ECHT	?	2	67	67	1st half seventh century AD	assumed to be a large cemetery	Langbroek forthcoming
OBBICT-OUDE MOLEN	68	9	260	176	c. 510-670 AD		Kars <i>et al.</i> 2016, 22, 241, 263
STEIN-GROOTE BONGERD	72	8	118	96	c. 510-680 AD		Kars <i>et al.</i> 2016, 231, 246, 271
<b>TOTAL</b>	<b>?</b>	<b>127</b>	<b>3989</b>	<b>3829</b>			

#### 4.2.2 Access to the study material

For this study, the available beads of the sites mentioned above will be examined. All beads are recovered from graves of Merovingian cemeteries or Merovingian phases of cemeteries in the south-east of the Netherlands. Due to the considerable number of sites and material, but also the covid-19 restrictions, not all beads could personally be examined. Most of the study was executed by the use of pictures of excavated cemetery publications. In addition, the database of Langbroek was made available for this study. The included sites are stated in the first part of 4.2. The remaining sites were determined based on pictures. The bead assemblages that could be personally examined included the beads of the cemetery of Uden, which was given on loan by Archol. It was possible to visit the Noord-Brabants Museum in Den Bosch to examine the beads of the cemetery of Meerveldhoven. On location it was established that some beads from the cemetery of Alphen were present, therefore they were analysed as well. The other beads were examined in the RAAP publication of Alphen-Chaam. Additionally, I was able to visit the Rijksmuseum van Oudheden in Leiden to examine the beads of grave 9, 45, 88 and 122 of the cemetery of Bergeijk.

### 4.2.3 The study material

The strategy to obtain relevant data is to examine all the beads from the selected cemeteries. This examination will establish the diverse types and amounts of Near Eastern beads that occur in the Dutch Merovingian bead assemblage and how these are distributed within the research area of the south-eastern Netherlands. Near Eastern beads are recognized based on production technique and physical appearance. The production types for Near Eastern fabricated glass beads are drawn, perforated or folded. The metal foil and mosaic beads could be recognized based on their visual characteristics. Reticella beads were also counted as Near Eastern beads, although it should be considered that the definite origin of these beads is still debated (Pion 2014a, 228). The beads produced on the Indian peninsula were excluded since this area lays beyond the Near East. However, the difference between Indian drawn beads and Near Eastern drawn beads is not visible on a picture and can only be determined with the use of a microscope. For the sites of the Limburg subregion, a separate category in the documentation was created to include the drawn beads of uncertain Indian or Near Eastern origin. As stated in the previous chapter: this study concerns the beads produced in the region of the eastern Mediterranean, the Levant, Egypt, and Mesopotamia, together addressed as the 'Near East.' Additionally, the changes and continuities of specific Near Eastern bead types through time is documented. This might display a preference, or more likely, the availability, of specific bead types. The beads will not be dated individually. While the typochronology of Pion assigned chronological indicators for every bead type these will not be used as the dates are based on beads in Belgium and not the Netherlands. To prevent a self-fulfilling prophecy, this research will use the date of the grave as provided in the site publication to chronically categorize the bead assemblage. The typochronology of Pion does suggest a change in the presence of Near Eastern beads during the sixth and seventh century in Belgium. To verify if this is also evident in the Netherlands, the date of the Near Eastern beads according to Pion will only be included in the documentation to compare this date with the date of the publication. Furthermore, the graves will be divided in three chronological periods: the period before the seventh century, the transition period between the sixth and the seventh century and the seventh century and later. The transition category was created because some graves are dated broadly to the late sixth and early seventh century by their excavators, and thus could not be assigned to either of the sixth or the seventh century. Nevertheless, the decision was made to include the transitional period in the 'before the seventh century-category' and not make an additional category, since the oldest potential date for the graves is the sixth century.

### 4.3 Documentation

The results are documented in excel. The information from the excel sheets are converted into tables. The study is divided in three stages. First the individual sites were examined, the collected information was combined to create an overview for every subregion. The subregional data was then compared and combined for the entire research area to answer the subquestions. In this paragraph the documentation tables and categories for every stage are explained.

#### 4.3.1 Documentation of the individual sites

Every site has two individual excel sheets. For every site, an excel sheet was created with all the graves that contain beads (table 4.4). This table is organized by grave-numbers and sometimes also find-numbers or picture-numbers, depending on the documentation preference in the cemetery's publication. First, for every grave, the number of found beads and the date of the grave is documented (according to the publication). The date of the beads according to Pion (2014) was also included. In some cases, the number of beads given in publications does not match the number of beads that was counted by me. In several other cases beads were missing and were consequently not depicted in the accessed publications. When this happened an additional category 'Number of beads available for study' was created. After the number of beads was established, the number of Near Eastern beads and their types are determined. A concise description of the production technique of the bead or, if possible, the determined bead type according to Vrielynck *et al.* (2018). Remarks and pictures were occasionally added. The references to the publications or other source material are included for every grave.

Table 4.4: Empty example of the table documenting the graves with beads for every site.

GRAVENR	DATE GRAVES (PUBLICATION)	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...
<b>TOTAL</b>	...	...	...	...	...	...	...

As was mentioned above, Langbroek had already determined the bead assemblage for the cemeteries of Lent, Wijchen, Elst, Echt, 't Loo according to the typochronology of Pion. The beads from the cemeteries of Dommelen, Bergeijk, Geldrop, Uden and Veldhoven were determined by Teunissen van Manen and approved by Langbroek. For this study, the Near Eastern bead types from those datasets were filtered out. An additional excel sheet was created to document these types and in which numbers they are present in the cemetery. This table was only created for cemeteries that contained Near Eastern beads (table 4.5). Here the periods as assigned to the bead types in the typochronology of Pion (2014) or Vrielynck *et al.* (2018) were included in the table. For the remaining cemeteries, of which the beads have not been determined, the beads were sorted by production technique. This decision was made because the production technique is the main criteria to identify a Near Eastern bead. For every bead type it was documented in which grave they occurred and in what number. Finally, the total number of beads for every bead type was calculated.

Table 4.5: Empty example of the site bead typology table.

BEAD TYPE (PION)	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE	REMARKS
...	...	...	...	...	...
...	...	...	...	...	...
<b>TOTAL</b>	...	...	...	...	...

With the information from the two excel sheets, the absolute numbers and percentage of Near Eastern beads from the total number of beads for every cemetery are calculated. These numbers and percentage are then documented for the chronological periods; before the seventh century, also including the transitional period between the sixth and seventh century (table 4.6 and graph 4.5), and the period of the seventh century and later (table 4.7 and graph 4.6). The tables subdivide the bead assemblage in the beads not from the Near East, the Near Eastern beads from one or two chronological period(s), and the total number of beads in the cemetery.

Table 4.6 and 4.7: Empty format tables for Near Eastern and non-Near Eastern beads attested in graves from before the seventh century (including the transition period) and the seventh century and later (based on complete site table in appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	...	...
NEAR EASTERN BEADS - BEFORE SEVENTH CENTURY	...	...
NEAR EASTERN BEADS - TRANSITION PERIOD	...	...
<b>TOTAL NUMBER OF BEADS</b>	...	...

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	...	...
NEAR EASTERN BEADS	...	...
<b>TOTAL NUMBER OF BEADS</b>	...	...

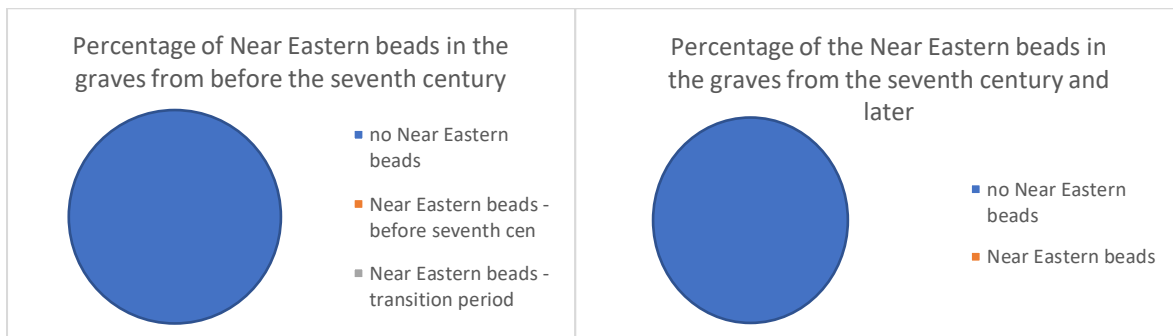


Figure 4.5 and 4.6: Empty examples of the graphs displaying the percentage of Near Eastern beads in the graves from before the seventh century (including the transition period) and the seventh century and later (after table 4.6 and 4.7).

#### 4.3.2 Documentation of the subregions

In this section the tables used to document the combined data of all the sites of every subarea will be presented and explained. For every research subregion (Noord-Brabant, East Rhine and Limburg) an overview excels sheet (table 4.8). In this table, the cemeteries within an area can be compared.

This table lists the sites of the concerning subarea and displays the total number of graves, the graves with beads and the percentage of the graves with beads from the total amount of graves of the cemetery. Next, the total number of beads, both the total number of beads found at the site according to the publication and the number of beads that could actually be studied, is documented. Then for every cemetery the recognized Near Eastern beads, the period when the cemetery was in use during the Merovingian period, the time period(s) associated with the determined beads based on Pion (2014) or Vrielynck *et al.* (2018). Finally, the percentage of the Near Eastern beads of total amount of beads in the cemetery are documented.

Table 4.8: Empty example of the overview table, created for every subregion.

SITE	TOTAL NUMBER OF GRAVES	NUMBER OF GRAVES WITH BEADS	% GRAVES WITH BEADS OF TOTAL NUMBER OF GRAVES	NUMBER OF BEADS ORIGINALLY DOCUMENTED	NUMBER OF MEROVINGIAN BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	USE PERIOD OF CEMETERY	PION PERIOD BASED ON BEADS	% NE BEADS OF TOTAL NUMBER OF BEADS
...	...	...	...	...	...	...	...	...	...
<b>TOTAL</b>	...	...	...	...	...	...	...	...	...

A second table was created by combining the typology tables for every site, resulting in an overview of the total numbers of certain types of beads in the subregions (table 4.9). Besides the addition of the last category 'site,' where the sites that contain the concerning bead type are documented, this table consist of the same categories as the typology table for the individual sites. The numbers and percentages of Near Eastern beads from the total bead assemblage were documented in two separate ways. First, a table organized by production technique (table 4.10). This table lists the main production techniques, their absolute number of beads and their percentage of the total bead assemblage. Second, two tables documenting the graves divided in chronological periods (table 4.11 and 4.12) with associated graphs. These chronology tables slightly differ from the ones used to document the individual sites, as the absolute numbers of beads from the individual sites are included. The column for category 'site' in table 4.11 will be multiplied for every site of the subregion. The lay-out of the graphs based on table 4.11 and 4.12 is completely the same as in figure 4.5 and 4.6 and has therefore no example.

Table 4.9: Empty example of the typology table for every subregion.

BEAD TYPE (PION)	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE	REMARKS	SITE
...	...	...	...	...	...	...
...	...	...	...	...	...	...
<b>TOTAL</b>	X	X	...	...	X	X

Table 4.10: Empty format table displaying the number and percentage of the types of Near Eastern beads in the total assemblage of the subregion (based on table 4.9).

BEAD TYPE	NUMBER	PERCENTAGE
UNCERTAIN	...	...
DRAWN	...	...
WOUND	...	...
FOLDED	...	...
PERFORATED	...	...
MOSAIC	...	...
OTHER	...	...
<b>TOTAL</b>	...	...

Table 4.11 and 4.12: Empty format tables for Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of the subregion and during the seventh century and later (based on complete site tables in the appendix).

CATEGORY	SITE	ABSOLUTE NUMBERS	PERCENTAGE
NO NEAR EASTERN BEADS	...	...	...
NEAR EASTERN BEADS – BEFORE SEVENTH CENTURY	...	...	...
NEAR EASTERN BEADS - TRANSITION PERIOD	...	...	...
<b>TOTAL NUMBER OF BEADS</b>	...	...	...

CATEGORY	SITE	ABSOLUTE NUMBERS	PERCENTAGE
NO NEAR EASTERN BEADS	...	...	...
NEAR EASTERN BEADS	...	...	...
<b>TOTAL NUMBER OF BEADS</b>	...	...	...

### 4.3.3 Documentation of the total research area

The last step in this research was to compare and combine the results of the three subregions. Consequently, six more overview tables were created. The first creates a complete overview of the studied sites of the research area and combines the total numbers for the sites, with and without Near Eastern beads (table 4.13). The table displays the graves, including the graves without beads, with beads and the number of graves with Near Eastern beads. Additionally, the studied beads, the recognized number of Near Eastern beads, the period when the cemetery was in use during the Merovingian period, and the percentage of the Near Eastern beads of total amount of beads of the cemetery are documented.

Table 4.13: Empty example of the overview table of all sites of the research area (based on the overview tables from Noord-Brabant, East Rhine, and Limburg).

SUBREGION	SELECTED NUMBER OF SITES	SITES WITH NE BEADS	TOTAL NUMBER OF GRAVES	NUMBER OF GRAVES WITH BEADS	GRAVES WITH NE BEADS	NUMBER OF BEADS ORIGINALLY FOUND	NUMBER OF MEROVIGIAN GLASS BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	USE PERIOD	% NE BEADS OF TOTAL NUMBER OF BEADS
NOORD-BRABANT	...	...	...	...	...	...	...	...	...	...
EAST RHINE	...	...	...	...	...	...	...	...	...	...
LIMBURG	...	...	...	...	...	...	...	...	...	...
<b>TOTAL</b>	...	...	...	...	...	...	...	...	...	...

A typology table displays the variety of the Near Eastern bead types and the numbers in which they are attested in the graves and sites (table 4.14). The categories of this table are the same as those of the subregion tables. Moreover, the numbers and percentages of Near Eastern beads from the total bead assemblage were documented in the similar two ways as for the subregions. First, organized by production technique (table 4.15). Second, divided in chronological periods, calculated, and documented in two tables (table 4.16 and 4.17) with associated graphs. An additional table is created to display the numbers of beads, and Near Eastern beads, from undated graves for every subregion (table 4.18). After all the data had been gathered, a final excel sheet was created. It displays how much beads of a certain production technique occurred during the period before the seventh century, the transition period, and the period of the seventh century and later. This was completed for every subregion and results in the overview table 4.19. Another table with the number of beads from undated graves will be associated with table 4.19.

Table 4.14: Empty example of the table displaying the types of attested Near Eastern beads in the study assemblage of the complete research area (based on all site tables of Noord-Brabant, East Rhine, and Limburg in the appendix).

BEAD TYPE (PION)	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE	REMARKS	SITE
...	...	...	...	...	...	...
...	...	...	...	...	...	...
<b>TOTAL</b>	...	...	...	...	...	...

Table 4.15: Empty format table displaying the percentage and number of the types of Near Eastern beads in the total assemblage of the research area (based on table 4.14).

BEAD TYPE	NUMBER	%
UNCERTAIN	...	...
DRAWN	...	...
WOUND	...	...
FOLDED	...	...
PERFORATED	...	...
MOSAIC	...	...
OTHER	...	...
<b>TOTAL</b>	...	...

Table 4.16: Empty example of the table displaying the Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of the complete research area and the transitional period (based on the overview tables from Noord-Brabant, East Rhine, and Limburg).

CATEGORY	NOORD-BRABANT	% OF TOTAL NUMBER OF BEADS	EAST RHINE	% OF TOTAL NUMBER OF BEADS	LIMBURG	% OF TOTAL NUMBER OF BEADS	ABSOLUTE NUMBERS	% OF TOTAL NUMBER OF BEADS
NO NEAR EASTERN BEADS	...	...	...	...	...	...	...	...
NEAR EASTERN BEADS - BEFORE SEVENTH CEN	...	...	...	...	...	...	...	...
NEAR EASTERN BEADS - TRANSITION PERIOD	...	...	...	...	...	...	...	...
<b>TOTAL NUMBER OF BEADS</b>	...	...	...	...	...	...	...	...

Table 4.17: Empty example of the table displaying the Near Eastern and non-Near Eastern beads attested in graves from seventh century and later of the complete research area (based on the overview tables from Noord-Brabant, East Rhine, and Limburg).

CATEGORY	NOORD-BRABANT	% OF TOTAL NUMBER OF BEADS	EAST RHINE	% OF TOTAL NUMBER OF BEADS	LIMBURG	% OF TOTAL NUMBER OF BEADS	ABSOLUTE NUMBERS	% OF TOTAL NUMBER OF BEADS
NO NEAR EASTERN BEADS	...	...	...	...	...	...	...	...
NEAR EASTERN BEADS	...	...	...	...	...	...	...	...
TOTAL NUMBER OF BEADS	...	...	...	...	...	...	...	...

Table 4.18: Empty format table for the beads without dated context from the complete research area.

	NOORD-BRABANT	EAST RHINE	LIMBURG	ABSOLUTE NUMBERS
NOT DATED	...	...	...	...
NEAR EASTERN BEADS	...	...	...	...

Table 4.19: Categories of bead types attested in the three chronological periods based on the complete research area (based on individual sites tables and typochronology table in appendix).

CHRONOLOGICAL PERIOD	UNCERTAIN	DRAWN	WOUND	FOLDED	PERFORATED	MOSAIC	ROCK CRYSTAL	AMETHYST	MEER-SCHAUM	OTHER	TOTAL NUMBER OF BEADS
SIXTH CENTURY AND EARLIER	...	...	...	...	...	...	...	...	...	...	...
TRANSITIONAL PERIOD	...	...	...	...	...	...	...	...	...	...	...
SEVENTH CENTURY AND LATER	...	...	...	...	...	...	...	...	...	...	...
TOTAL NUMBER OF BEADS	...	...	...	...	...	...	...	...	...	...	...



## 4.4 Problems and pitfalls

At the start of this study several difficulties with the available resource material and literature were considered. Furthermore, during the research and documenting the results there were some overlooked or unexpected problems. In this section these difficulties and their consequences will be presented and explained.

### 4.4.1 Available data sources

Within the used literature, the amount of information on beads was uneven. Authors write about different informative aspects of beads, or none, based on what they personally deemed important. Another factor for uneven information is the date of excavation and to what extent the site was excavated. Not all excavators take the presence of beads into account or only collected the large and/or polychrome beads. The found beads were not always properly documented, lacking counted numbers, descriptions, and pictures. This changed over time and present excavations are more meticulous in the field. The publications used for this research have different approaches to presenting results. For example: the cemetery of Alphen has been excavated and published in two parts: the first in 1950 and the second in 2015 (Verwers 1977; Verhoeven and Jansen 2019) and their chapters on the found beads are different in information. Sometimes the numbers of documented beads differed from the number that could be examined due to miscalculations or missing beads. It should also be taken into consideration that not all Dutch Merovingian sites are included in this study, not even all Merovingian sites in the selected research area. For example, the Merovingian sites of Rhenen-Donderberg and Wageningen-Diedenweg/Geertjesweg.

### 4.4.2 Examining the study material

Characteristics of glass bead production techniques can be recognized in the appearance of the bead. Thus, it is possible to recognize Near Eastern beads from pictures. Nevertheless, not all types of encountered beads are included in the typochronology of Pion. Notables are shell disk beads, red gemstone beads and marble beads. Pion is less accurate for the determination of beads from the seventh century onwards. This indicates that the typochronology of Pion has its limits. Moreover, during this research some problems or limitations occurred concerning the assumption that it is possible to recognize Near Eastern beads from pictures. A number of publications did not include pictures, or even drawings, of the found beads. The pictures could be of bad quality, or the beads are very small, making it near impossible to determine them. Microscopic analysis is the best way to determine production technique. Furthermore, the production technique could be misleading. During the late Merovingian period, some local workshops started to create beads that resemble beads originally made in the Near East, such as confetti, reticella and glass melon beads (Langbroek, personal communication; Pion 2014a, 227-228; Vrielynck *et al.* 2018, 9; Teunissen van Manen 2021, 13, 18). In addition, not all folded beads are fabricated in the Near East (Pion 2014a, 223). To recognize that certain beads were made within Europe with production techniques associated with the Near East requires expertise.

## 4.5 Conclusion

This chapter has provided a practical insight in the study assemblage and the documentation of this study. The boundaries of the definition Near Eastern beads have been defined and the selected material and sites were presented. It has been made clear that the study region is subdivided in three subregions that will be separately examined, documented, and presented in the results chapter. Only at the final stage of the study the complete study area will be discussed. Moreover, this chapter has explained the limitations and possibilities of getting access to the selected study material. The study material will be examined and documented in excel. Distinct types of tables will be used to document and present the data, subdivided in information on the graves, the bead types and the chronology. This data examination will be focussed on the number and type of Near Eastern beads in every grave, for every cemetery. In more exact terms: this study examines the bead assemblages of 384 graves from twenty sites situated in three subregions: Noord-Brabant, Limburg, and East Rhine. This results in a total of 10.193 glass and non-glass beads available for study.

## 5 Results

### 5.1 Introduction

In this chapter the results of the research of the bead assemblages of the selected sites are presented. The results will be presented separately for Noord-Brabant, East Rhine, and Limburg, followed by the fourth section, where the results of the subregions will be combined and compared to create an overview of the complete research area. The subquestions of this research can be answered with facts, which will be provided in this chapter. Therefore, the subquestions will be answered in the chapter's conclusion. Every section of a subregion starts with a brief introduction. In the second paragraph the sites and associated graves that contained Near Eastern beads will be presented. Consequently, the graves and cemeteries that contained no beads of Near Eastern origin will be left out. For every site there will be a table with the relevant graves, the date of these grave, how many beads the grave contained, how many of these are of Near Eastern origin and a description of the Near Eastern beads. A table will show the variation in typology of the Near Eastern beads within the cemetery. Pictures of the attested types of Near Eastern beads are provided. Mostly the pictures will be taken from the publication of the concerning cemetery, however if this is not possible, pictures from Vrielynck *et al.* (2018) will be used instead. Finally, the Near Eastern and non-Near Eastern beads in the period before and during/after the seventh century will be compared. The third paragraph contains an overview table of all the sites of Noord-Brabant. In addition, the number of Near Eastern beads before the seventh century, the transitional period, and the period during the seventh century and later are compared. The fourth paragraph concerns the types of beads and the frequency of the Near Eastern beads for all the sites of the subregion. At the end of this paragraph the most common Near Eastern bead types are displayed with the use of pictures. Finally, a conclusion of the results for the described region will close the section. After all the subregions are presented, the fourth section will provide an overview of the complete research area according to the same lay-out as the previous sections.

## 5.2 Results of Noord-Brabant

### 5.2.1 Introduction

The nine selected sites for this subarea are: Hoogeloon-Broekeneind, Alphen-Chaam Molenstraat, Bergeijk-Fazantlaan, Veldhoven-Huysackers, Veldhoven-Oeienbosdijk, Dommelen-Kerkackers, Uden-Schepersweg, Geldrop-Zesgehuchten site c and Meerveldhoven. A total of 2.324 beads have been examined and 264 Near Eastern beads are recognized. Only four cemeteries contained beads of Near Eastern origin. These cemeteries are Alphen-Chaam Molenstraat, Bergeijk-Fazantlaan, Dommelen-Kerkackers and Uden-Schepersweg. For the complete tables, excavation maps and additional pictures, including the beads not from the Near East, see the tables 3.1 to 3.10 and figures 3.1 to 3.39 of Noord-Brabant in the appendix.

## 5.2.2 Noord-Brabant cemeteries

### 5.2.2.1 *Alphen-Chaam Molenstraat*

The cemetery dates from 470 till 750 AD and consists of fifty-two inhumation graves and one cremation burial (figure 3.3 in the appendix). The site of Alphen-Chaam Molenstraat has been excavated and published in two separate projects, one in 2015 (Verwers 1977) and one in 2015 (Verhoeven and Jansen 2019). Therefore, two separate tables were created to document the graves and beads. The publication of Verwers revisits the results of the partial excavation of Alphen-Chaam Molenstraat in 1950 and was published in 1977. It contains a very general descriptions of the beads. No pictures (except for the three mosaic beads) or total amount of beads are provided. Therefore, only the Near Eastern beads that could be determined with certainty are documented in this study and the number of beads was counted personally. There could be more Near Eastern beads. According to the publication of Verwers, 322 beads have been found during the excavation in 1950 (see Alphen table 3.2 in the appendix). Four of the fourteen graves contained together eight Near Eastern beads (table 5.1; based on Verwers 1977, 172-173, 180-182). The determined Near Eastern beads consist of one reticella bead (figure 5.1A), two perforated green beads with mosaic inlays (figure 5.1-B) and two types of drawn beads (figure 5.1C, 5.1D). These beads were determined and examined at the Noord-Brabants Museum in Den Bosch. One string of beads studied in the Noord-Brabants Museum with findnumber 12515.07 could not be linked to any grave as described in the publication. Additionally, three mosaic beads were determined based on the publication, they are all similar in shape, but their decorations are different for every bead (figure 5.1B). The drawn bead of findnumber 12515.03 seems chronically 'out of place.' The grave dates from the mid-seventh century while the bead, according to Pion P2, is assigned to the second half of the sixth century (table 5.1). This could be an heirloom bead, a bead that was kept in circulation for a prolonged period before it was placed in a grave (Mannion 2015, 92-93). The second excavation in 2015 excavated the same site and partially the same graves, forty inhumation and one cremation burials were examined during this excavation. The chapter on the 457 found beads is written by Nederstigt (Verhoeven and Jansen 2019, 102). Six of the forty graves contained beads of Near Eastern origin (table 5.2, based on Verhoeven and Jansen 2019, 108-114, 204-205, 209-210, 212, 217). This results in a total of 230 Near Eastern beads. The number of Near Eastern beads is significantly higher than for the first excavation. Most of these beads are drawn green-blue, blue, metal foil and colorless beads (figure 5.2, figure 5.3 and figure 5.4; table 5.3) and one mosaic bead (figure 5.2). Besides glass beads there are eight beads made of gemstone, two of rock crystal (figure 5.3) and six of a red gemstone (possibly garnet) (figure 5.3). Nederstigt assumes that these wine-red gemstones are amethyst. However, their color does not correspond with the characteristic purple of amethyst. Therefore, the suggestion that these are re-defined as red gemstone, possibly garnet, is made here. The total number of beads for Alphen-Chaam Molenstraat is 779. Combining the results of the two excavations gives a total of 138 Near Eastern beads for the cemetery (table 5.3). The majority of the beads are drawn monochrome beads. The graves with the highest number of beads of the area are grave 22-27, that contained 171 Near Eastern beads and grave 14, which contained fifty-one Near Eastern beads. The graves can be divided in three chronologic categories. Comparing the time periods, it shows that the percentage of Near Eastern beads is the highest (41,70% which relates to 231 beads) during the period before the seventh century (table 5.4 and figure 5.5).

The transitional period has 0,54% (three beads (table 5.4 and figure 5.5)) and the Near Eastern beads of the period of the seventh century and later make up 1,09% (one bead) of the total bead assemblage (table 5.5 and figure 5.6). The tables also display that the 554 beads in the period before the seventh century are particularly higher than the 92 beads attested in the period of the seventh century and later.

Table 5.1: The Near Eastern beads of Alphen-Chaam Molenstraat of the 1950 excavation.

FINDNR.	GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	PAGE IN PUBLICATION
12515.04	grave 24	Transition sixth to seventh century	P2	17	3	reticella (Pion: B10.1-01b), 2x perforated and inlay (pion: D2.1-2)	172, 180
12515.5	grave 4	First half sixth century	P2	7	3	E2.1-01, E2.1-02, E2.2-02	172, 180
12515.03	grave 3	Middle seventh century	P2	22	1	drawn red-brown bead Pion: A3.3-06	173, 180,182
12515.07	?	?	P2	101	1	blue-green drawn bead (pion: A1.2-07)	?
<b>TOTAL</b>					<b>8</b>		

Table 5.2: Near Eastern beads of Alphen Molenstraat of the 2015 excavation.

GRAVE NR	DATE GRAVE	DATE BEAD (PION)	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
4	510-590	P2	7	1	E1.2-03		108, 204
14	460-490	P1-P3	225	51	6x red gemstone, 2x rock crystal (F2.1), 1x A4.2-01, 21x A3.1-01, 18x A3.1-04, 2x A3.1-03 and 1x A4.4-01	Red gemstone is possibly garnet	109, 209-210
16	475-510	P2	7	1	A4.2-01		110, 212
19	?	P2	1	1	A4.2-01		106, missing??
22-27	475-510	P1-P3	198	175	4x A3.4-04 or A4.1-02, 9x A3.4-01, 12x A4.2-01, others are A3.1-04		114, 217 (grave 22), 205 (grave 22-23-27), (grave 27 is missing)
23	?	P1-2	2	1	A3.1-04		110, 114 missing??
<b>TOTAL</b>				<b>230</b>			



Figure 5.1: The Near Eastern beads of Alphen-Chaam divided by findnumber; A. the reticella and the folded bead of 12515.04 (after Vrielynck *et al.* 2018), B. three mosaic beads of 12515.5 (after Verwers 1977, 181), C. the drawn bead of 12515.03 (after Vrielynck *et al.* 2018), D. the drawn bead of 12515.07 (after Vrielynck *et al.* 2018).



Figure 5.2: A. the mosaic Near Eastern bead from grave 4 (after Verhoeven and Jansen 2019, 108), B. drawn bead from grave 16 (after Verhoeven and Jansen 2019, 212), C. drawn bead from grave 19 (after Verhoeven and Jansen 2019, 217), D. drawn bead grave 23 (after Vrielynck *et al.* 2018).



Figure 5.3: The types of Near Eastern beads of grave 14 (after Verhoeven and Jansen 2019, 209).



Figure 5.4: The types of Near Eastern beads of grave 22-27 (after Verhoeven and Jansen 2019, 217).

Table 5.3: Near Eastern Bead typology (based on tables 5.1 and 5.2).

BEAD TYPE (PION)	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE	REMARKS	PUBLICATION
A1.2-07	P3	?	1	1		Verwers 1977
A3.1-01	P1-P2	14	21	21		Nederstigt 2019
A3.1-03	P1-P2	14	2	2		Nederstigt 2019
A3.1-04	P1-P2	14, 22-27, 23	18,150,1	169		Nederstigt 2019
A3.3-06	P2	3?	1	1		Verwers 1977
A3.4-01	P1-P3	22-27	9	9		Nederstigt 2019
A3.4-04/A4.1-02	P1/P1	22-27	4	4		Nederstigt 2019
A4.2-01	P1-P3	14, 16, 19, 22-27	1,1,1,12	15	silverfoil	Nederstigt 2019
A4.4-01	P3	14	1	1		Nederstigt 2019
B10.1-01B	P2	24	1	1	reticella	Verwers 1977
D2.1-2	P2	24	2	2	perforated with mosaic inlay	Verwers 1977
E1.2-03	P2	4	1	1	Mosaic	Nederstigt 2019
E2.1-01	P2	4	1	1	Mosaici	Verwers 1977
E2.1-02	P2	4	1	1	Mosaic	Verwers 1977
E2.2-02	P2	4	1	1	mosaic	Verwers 1977
F2	-	14	6	6	red gemstone	Nederstigt 2019
F2.1	P1-P2	14	2	2	rock crystal	Nederstigt 2019
<b>TOTAL</b>				<b>238</b>		

Table 5.4: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of Alphen-Chaam (based on Alphen table 3.2 and table 3.3 in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	57,76%	320
NEAR EASTERN BEADS - BEFORE SEVENTH CENTURY	41,70%	231
NEAR EASTERN BEADS - TRANSITION PERIOD	0,54%	3
<b>TOTAL NUMBER OF BEADS</b>	<b>100%</b>	<b>554</b>

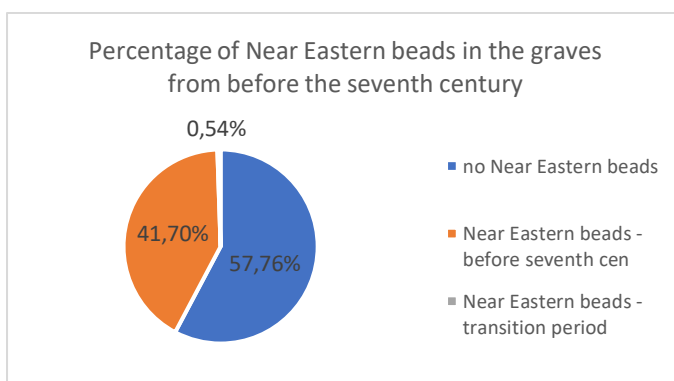


Figure 5.5: Percentage of Near Eastern beads in the graves from before the seventh century (after table 5.4).



Table 5.5: Near Eastern and non-Near Eastern beads attested in graves from seventh century and later of Alphen-Chaam (based on Alphen table 3.2 and 3.3 in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	98,91%	91
NEAR EASTERN BEADS	1,09%	1
TOTAL NUMBER OF BEADS	100	92

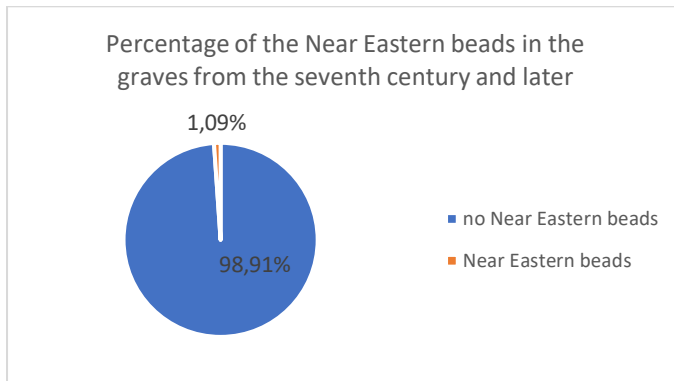


Figure 5.6: Percentage of Near Eastern beads in the graves from the seventh century and later (after table 5.5).

#### 5.2.2.2 Bergeijk-Fazantlaan

This cemetery dates from 550 till 750 AD and consist of 125 graves of which thirty-five hold beads (figure 3.10 in the appendix; Theuws and Van Haperen 2012, 152; Willemsen 2014, 201). The cemetery was excavated in two campaigns, one in 1957 and one in 1959. Not the complete cemetery was excavated (Theuws and Van Haperen 2012, 30). Many of the graves had been reopened after burial and beads were taken from the graves. Of the beads that were excavated, at least 139 were lost after the excavation (Theuws and Van Haperen 2012, 79). For this research 246 Merovingian glass beads are available. After examination it was determined that two of the graves contained a total of seven Near Eastern beads (table 5.6; Theuws and Haperen 2012, 192, 197). This concerns one blue-green drawn bead and six shell disc beads (figure 5.7; table 5.7). The shell disc beads are not recorded in the typo-chronology of Pion. However, they are included in the typology of Siegmund (1998). They occur in seventh century Merovingian graves and are made from warmwater oysters, their suspected origin is in the eastern Mediterranean or beyond (Auzina *et al.* 2015, 82-83; Siegmund and Weiss 1989, 301). These are the only examples of shell beads found in the entire research area (Noord-Brabant, East-Rhine, and Limburg). The graves can be divided in two chronologic categories, the ones from the transition period and the ones from the seventh century and later. The percentage of Near Eastern beads of the complete bead assemblage is higher (15,79% which relates to six beads) during the period of the seventh century and later (table 5.9 and figure 5.9) compared to 0,48% in the transition period (table 5.8 and figure 5.8). The total number of beads is a lot lower in seventh century graves than in the graves from the transition period.

Table 5.6: The Near Eastern beads of Bergeijk-Fazantlaan.

GRAVE NR	DATE GRAVE	DATE BEADS	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
9	670/80-mid eighth century	P5	14	6	6 shell, S: Per2.15(H-I) Pion:F?	shell disc bead: mid-seventh century and later (Siegmond)	192
19	565-640/50	P2	63	1	Blue-green bead (Pion: A2.1-04)		197
<b>TOTAL</b>				<b>7</b>			

Table 5.7: Near Eastern bead types (based on table 5.6).

BEAD TYPE	TIME PERIOD	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE	REMARKS
<b>PION: A2.1-04</b>	Pion: P2	19	1	1	
<b>PION: F? S: PER2.15(H-I)</b>	Siegmond: mid seventh century	9	6	6	shells
<b>TOTAL</b>			<b>7</b>		



A. A2.1-04      B. Shell disc

Figure 5.7: The Near Eastern beads of Bergeijk-Fazantlaan, A. the drawn bead from grave 19 (picture after Theuws and Van Haperen 2012, 197), B. the shell disc beads from grave 9 (picture after Theuws and Van Haperen 2012, 192).

Table 5.8: Near Eastern and non-Near Eastern beads attested in graves from the transition period of Bergeijk (based on Bergeijk table 3.4 in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
<b>NO NEAR EASTERN BEADS</b>	99,52%	207
<b>NEAR EASTERN BEADS - TRANSITION PERIOD</b>	0,48%	1
<b>TOTAL NUMBER OF BEADS</b>	100	208

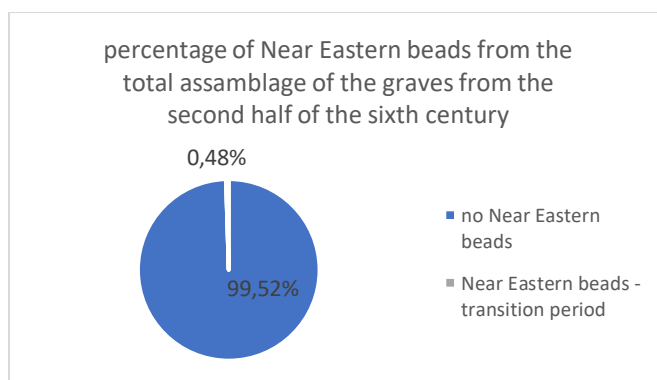


Figure 5.8: Percentage of Near Eastern and non-Near Eastern beads from graves from the transition period (after table 5.8).

Table 5.9: Near Eastern and non-Near Eastern beads attested in graves from seventh century and later of Bergeijk (based on Bergeijk table 3.4 in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	84,21%	32
NEAR EASTERN BEADS	15,79%	6
TOTAL NUMBER OF BEADS	100	38

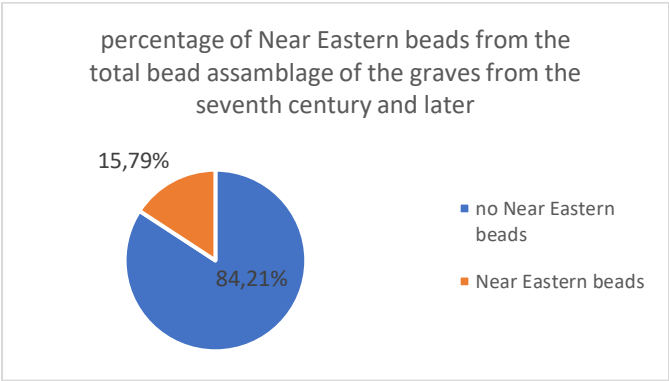


Figure 5.9: Percentage of Near Eastern and non-Near Eastern beads from graves of the seventh century and later (after table 5.9).

### 5.2.2.3 Dommelen-Kerkakkers

This site is not a cemetery but a farmstead settlement which includes twenty-four burials. These burials date from 650 till 725 AD and five of them contain a total of 154 beads (Theuws forthcoming; Willemsen 2014, 201; table 5.10). In two graves four beads are of Near Eastern origin have been recognized (table 5.10; Theuws and Haperen 2012, 16, 164; Willemsen 2014, 201; Langbroek 2021). These beads include two different mosaic bead types, one drawn and one perforated bead (figure 5.10 and figure 5.11; table 5.11). Grave 2 contains two more perforated beads, but these were identified to be of European origin. The mosaic beads appear damaged (figure 5.10 and 5.11) which indicates that they were intensively worn. Together with the fact that the Near Eastern beads are assigned to the sixth century by Pion (2014) but found in late seventh century graves, strongly suggest that these beads are family heirloom beads (Langbroek forthcoming; Volkmann and Theune 2001, 543-544; Mannion 2015, 92-93). The graves of Dommelen all date from the seventh century and later. Therefore no chronological comparison can be made. It is, however, visible in the data that the percentage of Near Eastern beads from the total number of beads is low (table 5.12 and figure 5.12).

Table 5.10: The Near Eastern beads of Dommelen (based on Dommelen table 3.7 in the appendix).

GRAVE NR	DATE GRAVE	DATE BEADS	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	NEAR EASTERN BEAD TYPES	REMARKS	PAGE IN PUBLICATION
4-2	675-700	P2	14	1	Pion: E1.2-03/ Koch: 2-3	mosaic bead	Theuws forthcoming; Langbroek 2021 determination table
2	675-700	P1-3	50	3	Pion: A3.1-01b/ E1.2-02 (Koch 2-3)/ D1.1-03	one drawn, one mosaic bead, one perforated	Theuws forthcoming; Langbroek 2021 determination table
<b>TOTAL</b>				<b>4</b>			

Table 5.11: Near Eastern bead types (based on table 5.10).

BEAD TYPE (PION)	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE
A3.1-01B	P2?	2	1	1
E1.2-02 (KOCH 2-3)	P2	2	1	1
E1.2-03 (KOCH 2-3)	P2	4-2	1	1
D1.1-03	P1-3	2	1	1
<b>TOTAL</b>				<b>4</b>



Figure 5.10: A. The beadstring of grave 4.2 of Dommelen, with a close-up of the Near Eastern mosaic bead (pictures by Langbroek).

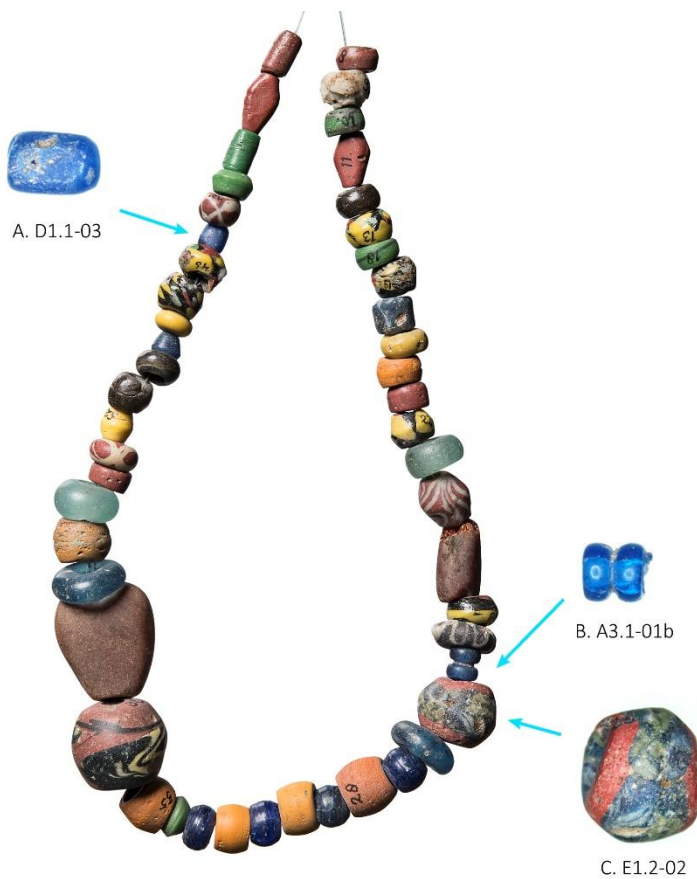


Figure 5.11: The Near Eastern beads of grave 2, A. perforated, B. drawn, and C. mosaic bead (pictures by Langbroek and Dekker).

Table 5.12: Near Eastern and non-Near Eastern beads attested in graves from seventh century and later of Dommelen (based on Dommelen table 3.7 in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	97,40%	150
NEAR EASTERN BEADS	2,60%	4
TOTAL NUMBER OF BEADS	100%	154

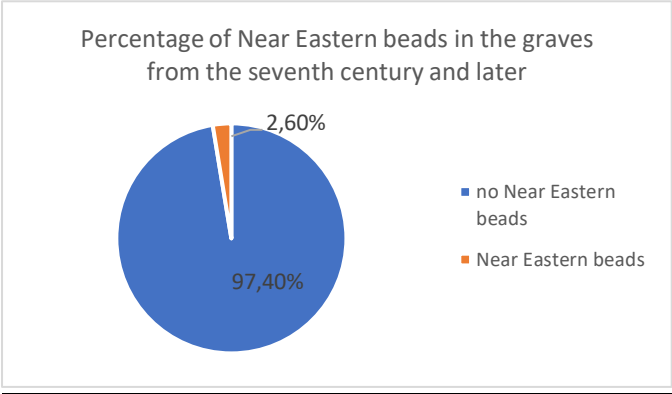


Figure 5.12: Percentage of Near Eastern and non-Near Eastern beads from graves of the seventh century and later (after table 5.12).

#### 5.2.2.4 *Uden-Schepersweg*

This site dates from 550 till 725 and consists of at least twenty-nine and possibly thirty-two burials (figure 3.22 in the appendix). Besides the cemetery a large settlement dating from the late medieval period has been excavated (Knippenberg and Theuws 2019, 9). Only one or two residences can be dated to the same period as the cemetery, it is highly likely that the settlement associated with the Merovingian cemetery is situated where now the highway A50 is located. The site was excavated in 2014-2015 (Knippenberg and Theuws 2019, 9). Nine graves contain a total number of 288 beads. After examination it was determined that two graves contain together fifteen beads of Near Eastern origin (table 5.13; Knippenberg and Theuws 2019, 345-347, 373-377; Langbroek 2021; Teunissen van Manen 2021). Six different Near Eastern bead types have been recognized (table 5.14). These include ten folded beads from the same type, two different types of perforated beads, one drawn bead, one reticella and one meerschaum bead (figure 5.13 and 5.14). This cemetery contains the only folded beads, the only meerschaum bead and the second reticella bead in the Noord-Brabant subregion. The beads from grave twenty-nine were personally examined, the beads from grave 19 were studied from photographs. The fifteen Near Eastern beads of the complete cemetery are all from before the seventh century, most date from the transition period between the sixth and seventh century (table 5.18 and figure 5.15). The fourteen graves of the seventh century and later contain no Near Eastern beads and are therefore not included.



Table 5.13: The Near Eastern beads of Uden.

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
19B	550-590	P2	12	2	B10.1-02b, F4.1	reticella bead, meerschaum	345-347
29	565-620	P2-P3	42	13	10x C2.2-02a, D1.1-2, A3.4-01b, D1.1-03?	many folded beads are broken	373-377
<b>TOTAL</b>				<b>15</b>			

Table 5.14: Near Eastern bead types (based on table 5.13).

BEAD TYPE (PION)	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE
A3.4-01B	P3	29	1	1
B10.1-02B	P2	19b	1	1
C2.2-02A	P2	29	10	10
D1.1-03?	P1-P3	29	1	1
D1.1-2	P1-P3	29	1	1
F4.1	P1-P5	19b	1	1
<b>TOTAL</b>				<b>15</b>

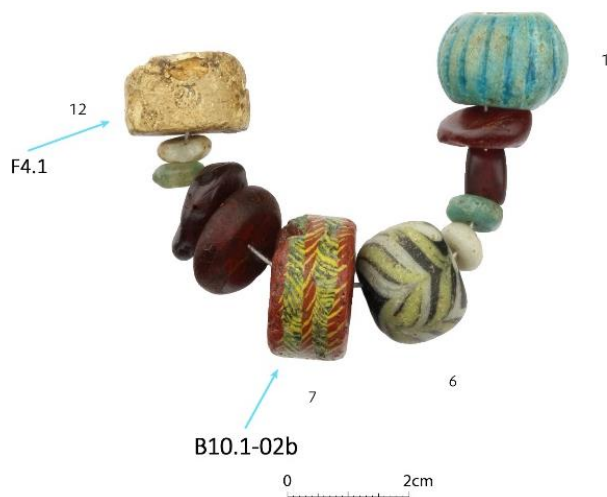


Figure 5.13: The Near Eastern beads of grave 19B, a meerschaum and a reticella bead (picture by Hemminga).

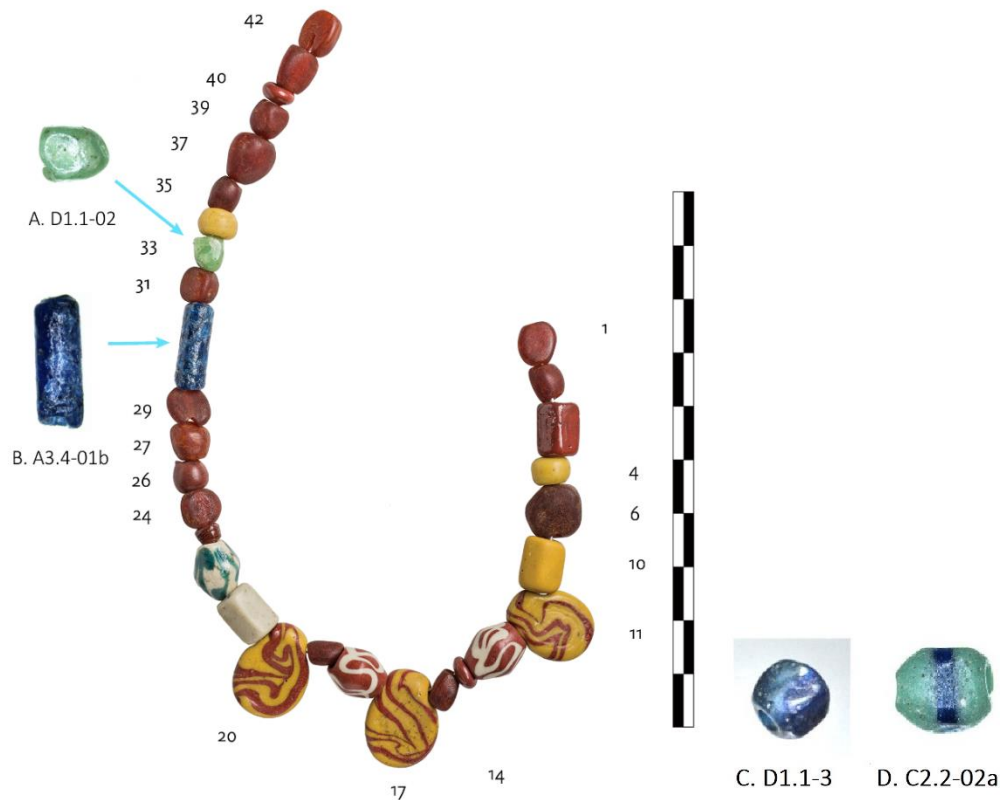


Figure 5.14: The Near Eastern beads from grave 29, A. and C. two perforated beads, B. a drawn bead D. one folded bead (pictures by Hemminga and Langbroek; after Vrielynck *et al.* 2018).

Table 5.15: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of Uden (based on Uden table 3.8 in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	94,25%	246
NEAR EASTERN BEADS – BEFORE SEVENTH CENTURY	0,77%	2
NEAR EASTERN BEADS - TRANSITION PERIOD	4,98%	13
<b>TOTAL NUMBER OF BEADS</b>	<b>100%</b>	<b>261</b>

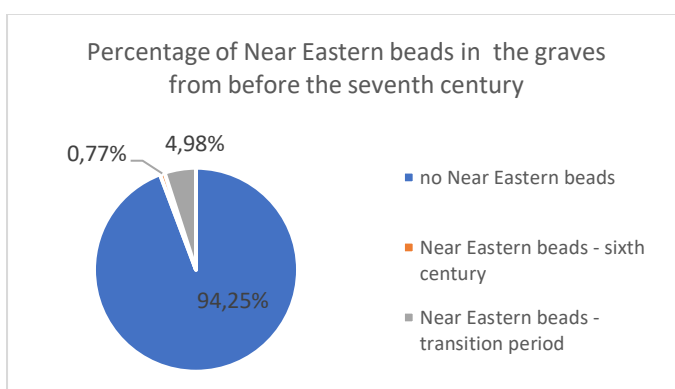


Figure 5.15: Percentage of Near Eastern and non-Near Eastern beads from graves from before the seventh century (after table 5.15).

### 5.2.3 Beads from the Near East in Noord-Brabant: an overview

The studied cemeteries of Noord-Brabant are all approximately dated to the seventh century (table 5.16, based on the complete site tables 3.1 to 3.10 of Noord-Brabant in the appendix). Though, some cemeteries started during the end of the sixth century and the cemetery of Dommelen continues after the seventh century (table 5.16). All cemeteries together have 406 graves of which 113 graves contain a total of 2.324 beads, this is 27,83% of the graves (table 5.16). Sixteen graves contained a total of 264 beads of Near Eastern origin (table 5.16) which is 11,36% of the total amount of beads (figure 5.16). Striking is the cemetery of Alphen-Chaam Molenstraat. This is the only cemetery in this subregion that dates to the early and mid-sixth century. After Alphen, Uden-Schepersweg and Veldhoven-Oeienbosdijk are the oldest with a start in the second half of the sixth century. The number of Near Eastern beads in Alphen is extremely high compared to the other cemeteries. 90,15% of the Near Eastern beads of Noord-Brabant come from Alphen which makes up for 9,57% of the complete bead assemblage. What is also noteworthy, is that Meerveldhoven has no Near Eastern beads while it has the highest percentage of graves with beads and also the greatest number of beads after Alphen (table 5.16). The cemetery of Meerveldhoven dates predominantly to the seventh century (Verwers 1978, 265). Bergeijk-Fazantlaan is also a mainly seventh century cemetery, it has the highest number of graves with beads but the amount of Near Eastern beads here is relatively low as well (table 5.16).

#### **Chronological distribution of Near Eastern beads**

The graves of all the selected sites in Noord-Brabant are divided in three chronological periods. This section will show the combined results. The percentage of Near Eastern beads from the complete bead assemblage is the highest in the period before the seventh century. Here 233 beads make up for 16,56% (table 5.17 and figure 5.16). The transitional period has an additional seventeen beads, which relates to 1,29% (figure 5.16). The complete bead assemblage from before the seventh century consists of 1318 beads, the number of beads dating to the seventh century and later is 822. The Near Eastern beads of the later period make up 1,34% of the total bead assemblage for this period. In absolute numbers this is eleven Near Eastern beads (table 5.18 and figure 5.17). There are 186 beads without a date, this includes three Near Eastern beads. They are not included in the tables and associated graphs.

Table 5.16: Overview table of all sites of Noord-Brabant.

SITE	TOTAL NUMBER OF GRAVES	NUMBER OF GRAVES WITH BEADS	% GRAVES WITH BEADS OF TOTAL NUMBER OF GRAVES	GRAVES WITH NEAR EASTERN BEADS	NUMBER OF BEADS ORIGINALLY DOCUMENTED	NUMBER OF MEROVIGIAN GLASS BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	USE PERIOD OF CEMETERY	PERIOD BASED ON BEADS	% NE BEADS OF TOTAL NUMBER OF STUDIED BEADS
HOOGELOON-BROEKENEIND	41	6	14,63%	0	151	151	0	sixth-seventh century	P5	0%
ALPHEN-CHAAM - MOLENSTRAAT	53	24	45,28%	10	779	779	238	470-750 AD	P3	38,21%
BERGEIJK - FAZANTLAAN	125	35	28%	2	385	246	7	c. 590 and c. 730/740 AD	P4-P5	2,84%
VELDHOVEN - HUYSACKERS	23	1	4,35%	0	38	38	0	?	P5	0%
VELDHOVEN-OEIBOSDIJK	27	9	33,33%	0	43	43	0	550-700 AD	P3-P5	0%
DOMMELEN - KERKAKKERS	24	5	16,67%	2	154	154	4	650-725 AD	P5 and later	2,60%
UDEN - SCHEPERSWEG	29	9	31,03%	2	288	288	15	c. 550 – 725 AD	P2-P5	5,32%
GELDROP - ZESGEHUCHTEN SITE C	21	1	4,76%	0	27	27	0	650-675 AD	P5	0%
MEERVELDHOVEN	63	23	36,51%	0	621	598	0	620-670/700	P5	0%
<b>TOTAL</b>	<b>406</b>	<b>113</b>	<b>27,83%</b>	<b>16</b>	<b>2.486</b>	<b>2.324</b>	<b>264</b>	<b>X</b>		<b>11,36%</b>

Table 5.17: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of Noord-Brabant (based on the complete site tables 3.1 to 3.10 of Noord-Brabant in the appendix).

CATEGORY	HOOGELOON	ALPHEN	BERGEIJK	V.HUYSACKERS	V.OEIBOSDIJK	DOMMELEN	UDEN	GELDROP	MEERVELDHOVEN	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	151	320	207	0	0	0	246	0	144	81,03%	1068
NEAR EASTERN BEADS - BEFORE SEVENTH CEN	0	231	0	0	0	0	2	0	0	16,56%	233
NEAR EASTERN BEADS - TRANSITION PERIOD	0	3	1	0	0	0	13	0	0	1,29%	17
<b>TOTAL NUMBER OF BEADS</b>	<b>151</b>	<b>554</b>	<b>208</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>261</b>	<b>0</b>	<b>144</b>	<b>100%</b>	<b>1318</b>

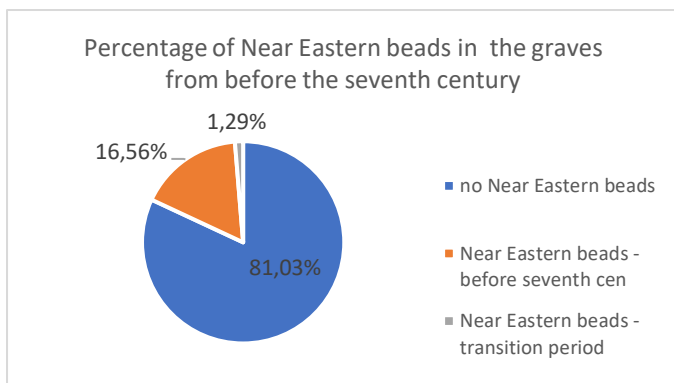


Figure 5.16: Percentage of Near Eastern beads in the graves from before the seventh century (after table 5.17).

Table 5.18: Near Eastern and non-Near Eastern beads attested in graves from seventh century and later of Noord-Brabant (based on the complete site tables 3.1 to 3.10 of Noord-Brabant in the appendix).

CATEGORY	HOOGELOON	ALPHEN	BERGEIJK	V.HUYSACKERS	V.OEIENBOSDIJK	DOMMELEN	UDEN	GELDROP	MEERVELDHOVEN	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	0	91	32	0	43	150	14	27	454	98,66%	811
NEAR EASTERN BEADS	0	1	6	0	0	4	0	0	0	1,34%	11
TOTAL NUMBER OF BEADS	0	92	38	0	43	154	14	27	454	100%	822

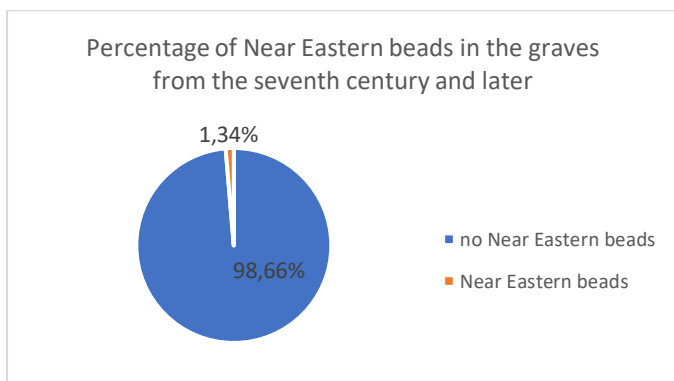


Figure 5.17: Percentage of Near Eastern beads in the graves from the seventh century and later (after table 5.18).

#### 5.2.4 Types of Near Eastern beads attested in Noord-Brabant

Table 5.19 below shows an overview of the distinct types of Near Eastern beads found in Noord-Brabant. The most frequent type of bead is A3.1-04 (169 beads). Grave 22-27 from Alphen contains 150 of these beads. The second most frequent type is A3.1-01 (21 beads) and the third is A4.2-01 (14 beads). The abundance of the other types is ten beads and lower (table 5.19). Besides type E1.2-03, which occurs in two sites, all other types are only attested in one site. The three most attested production techniques of Near Eastern beads in the Merovingian bead assemblage of Noord-Brabant are the drawn (85,16% of the Near Eastern beads), beads of other raw material than glass such as rock crystal and shell (5,68%) and folded beads (3,79%) (table 5.20). The mosaic beads make up 2,27% of the assemblage and the perforated beads 1,89%. Wound beads are predominantly produced in Europe and far less in the Near East. As expected, there are few wound beads from the Near East (0,76%), nonetheless, they are present. The grave that contains the most types of Near Eastern beads is grave 14 of Alphen (seven types and fifty-one beads), second is grave 22-27 of Alphen (five types) which contains the highest number of Near Eastern beads (175 beads) and the third is grave 29 of Uden (four types and thirteen beads) (table 5.19; table 5.2 and table 5.13). These three graves also contain the largest amounts of Near Eastern beads (table 5.19; table 5.2 and table 5.13). For the cemeteries of Alphen, Bergeijk and Uden the date of the Near Eastern beads according to Pion correspond with the date assigned to the graves in which they were found according to the publication (table 5.2; table 5.6 and table 5.13). These cemeteries are dated from the late fifth/sixth till the seventh/eighth century (5.16). Hence, it appears that the Near Eastern beads occur in the oldest graves of the cemeteries. An exception to this is the cemetery of Dommelen. The Near Eastern beads of this cemetery date to the (late) sixth century while they were found in late seventh century graves (see 5.2.2.3 Dommelen-Kerkakkers). An overview figure was created for the most common Near Eastern beads (figure 5.18). This figure shows the periods in which the bead types occur. Given that only one bead type occurred in more than one cemetery this figure is based on the number of beads that was found for every bead type. The considerable number and variation of drawn beads does not occur in the other examined cemeteries (table 5.19).

Table 5.19: The types of attested Near Eastern beads in the study assemblage of Noord-Brabant (based on tables 5.1, 5.2, 5.6, 5.10 and table 5.13).

BEAD TYPE (PION)	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE	REMARKS	SITE
A1.2-07	P3	?	1	1		Alphen
A2.1-04	P2	19	1	1		Bergeijk
A3.1-01	P1-P2	14	21	21		Alphen
A3.1-01B	P2?	2	1	1		Dommelen
A3.1-03	P1-P2	14	2	2		Alphen
A3.1-04	P1-P2	14, 22-27, 23	18, 150, 1	169		Alphen
A3.3-06	P2	3	1	1		Alphen
A3.4-01	P1-P3	22-27	9	9		Alphen
A3.4-01B	P3	29	1	1		Uden
A3.4-04/A4.1-02	P1/P1	22-27	4	4		Alphen
A4.2-01	P1-P3	14, 16, 19, 22-27	1,1,1,12	15	silverfoil	Alphen
A4.4-01	P3	14	1	1		Alphen
B10.1-01B	P2	24	1	1	reticella	Alphen
B10.1-02B	P2	19b	1	1	reticella	Uden
C2.2-02A	P2	29	10	10	Folded	Uden
D1.1-03	P1-3	2	1	1		Dommelen
D1.1-03?	P1-P3	29	1	1		Uden
D1.1-2	P1-P3	29	1	1		Uden
D2.1-2	P2	24	2	2	perforated with mosaic inlay	Alphen
E1.2-02 (KOCH 2-3)	P2	2	1	1		Dommelen
E1.2-03 (KOCH 2-3)	P2	4-2/4	1/1	2		Dommelen/Alphen
E2.1-01	P2	4	1	1	mosaic	Alphen
E2.1-02	P2	4	1	1	mosaic	Alphen
E2.2-02	P2	4	1	1		Alphen
F2	-	14	6	6	red gemstone	Alphen
F2.1	P1-P2	14	2	2	rock crystal	Alphen
F4.1	P1-P5	19b	1	1	meerscham	Uden
S: PER2.15(H-I) PION:F?	-	9	6	6	Shell discs	Bergeijk
<b>TOTAL</b>				<b>264</b>		

Table 5.20: The percentage and number of the types of Near Eastern beads in Noord-Brabant (based on table 5.19).

BEAD TYPE	NUMBER	NUMBER WITH ALPHEN 2015*	%	% WITH ALPHEN 2015*
DRAWN	5	226	16,13	85,61%
WOUND	2	2	6,45	0,76%
FOLDED	10	10	32,26	3,79%
PERFORATED	5	5	16,13	1,89%
MOSAIC	2	6	6,45	2,27%
OTHER	7	15	22,58	5,68%
<b>TOTAL</b>	<b>31</b>	<b>264</b>	<b>100%</b>	<b>100%</b>

\*= Alphen 2015 refers to the beads of the site of Alphen Molenstraat which were excavated in 2015 and published later in 2019 than the first batch of beads in 1977. Due to the extreme difference in the number of beads the percentage changes drastically. For this reason, the numbers and percentages without them are also noted.

Pion P1-3:



A3.1-01



A3.1-04



A4.2-01



A3.4-01

Pion P2:



E1.2-03



C2.2-02a

Pion P5:



shell disc

Pion P?:



red gemstone

Figure 5.18: Overview of the common types of Near Eastern beads in Noord-Brabant, divided in periods (based on table 5.19; after pictures after Vrielynck *et al.* 2019; Theuws and Haperen 2012, 192; Nederstigt 2019, 209).



### 5.2.5 Conclusion

Four of the nine selected sites from Noord-Brabant contained beads of Near Eastern origin. The four sites are Alphen-Chaam Molenstraat, Bergeijk-Fazantlaan, Dommelen-Kerkkackers and Uden-Schepersweg. Overall, the number of Near Eastern beads is low compared to the total bead assemblage. Nevertheless, every category of production technique correlated with the Near East is present in the studied beads. Within the Near Eastern bead assemblage of Noord-Brabant the far majority consists of drawn beads. Besides glass beads some beads of other materials that were determined include rock crystal, shell, meerschaum, and a red gemstone. The percentage of Near Eastern beads is higher in the period before the seventh century and lower in the period of the seventh century and later. Most of the Near Eastern beads were thus found in the oldest graves of the studied cemeteries. Dommelen shows an interesting concept, here sixth century beads were found in late seventh century graves. The Noord-Brabant cemeteries date mainly to the seventh century. This might be explanatory for the low percentage of beads that can be associated with Near Eastern bead production compared to the complete bead assemblage of this area. Evaluating the occurrence of the Near Eastern beads and the dates of the graves, there is a slight differentiation between the Kempen region (Veldhoven, Meerveldhoven, Geldrop, Dommelen and Bergeijk) and Alphen and Uden. The Kempen region is roughly dated to the seventh century. The other two cemeteries were earlier in use from the sixth century onwards. These sites, Alphen and Uden, contain more Near Eastern beads than those of the Kempen region. Alphen has two graves with bead strings that mainly consist of Near Eastern beads. Of the 264 Near Eastern beads for Noord-Brabant, 238 are from Alphen. This cemetery greatly influences the results of this area and should not be overlooked.

## 5.3 Results of East Rhine

### 5.3.1 Introduction

The second subregion of which the results are presented is the East Rhine region. The selected sites are Lent-Lentseveld, Wijchen-Centrum, Elst- 't Woud and Apeldoorn- 't Loo. A total of 4040 beads have been examined and 869 Near Eastern beads are recognized. After examining the bead assemblages, it became clear that only three cemeteries contained beads of Near Eastern origin. These cemeteries are Lent-Lentseveld, Wijchen-Centrum and Elst- 't Woud. The cemetery of Apeldoorn- 't Loo did not contain beads of Near Eastern origin, therefore this cemetery will not be discussed. For the complete tables please see tables 3.11 to 3.14 and figures 3.40 to 3.66 from East Rhine in the appendix.

## 5.3.2 East Rhine cemeteries

### 5.3.2.1 *Lent-Lentseveld*

This site is a cemetery from the sixth century AD and consists of seventy-nine burials. The cemetery was excavated in 2015. From the burials, twenty-eight contain a total of 1224 beads (Langbroek forthcoming). After examination twenty-two graves contained a total of 276 beads of Near Eastern origin (table 5.21; Langbroek ongoing research). The grave that contains the most Near Eastern beads is grave 40 with seventy beads. Grave 13 contains thirty-nine Near Eastern beads, which is the second highest number. The third is grave 43, that contains twenty-nine Near Eastern beads (table 5.21). Several graves contained more than one string of beads. For example, grave 26-1 and grave 26-2 are the two bead strings from grave 26. All bead categories made with production techniques associated with the Near East are present in this cemetery (table 5.22). The categories of drawn and mosaic beads show a lot of variation. Some mosaic beads and stone beads could not be determined. The total number of drawn beads is 177 of which sixty-nine are metal foil beads. There are four wound beads that originate in the Near East, two reticella beads and two confetti beads. Lent has twenty-three folded beads; six of which are monochrome. There are seven polychrome folded beads with a colored band around the middle of the bead and ten polychrome beads with borders in a different color than the main body. The total number of perforated beads is twenty-nine. Five perforated beads are heart shaped, seventeen are more rectangular, four are faceted beads and one is hexagonal. Lent has a total of thirty-eight mosaic beads. There are twenty global, biconical or barrel shaped beads, of which fourteen have red borders. Besides these, fourteen hexagonal prismatic shaped beads with red borders are present together with one which has yellow edges. Additionally, there is one possible cylindrical mosaic bead (E3.1?). The category of non-glass beads includes two marble beads (F5?), one rock crystal and one meerschaum bead. There is one bead made of an unknown material. The most common Near Eastern bead type in Lent is A4.2-01, a segmented silverfoil bead (figure 5.19). This bead occurs in seven graves and has a total number of fifty-nine beads of the 276 Near Eastern beads found in Lent. Another type of bead that occurs in seven graves is A3.1-07. This is a red drawn bead with strangled edges (figure 5.19) and there are twenty-nine beads of this type in Lent. The marble beads are striking since they are very rare in a Merovingian context (no source). Besides the marble beads, the bead assemblage of Lent contains six other beads that could not be identified in Pion's typochronology (figure 5.20). Every grave dates to the sixth century. None of the graves can be dated to the transitional period of the late sixth and early seventh century. Therefore no chronological comparison can be made. Nevertheless, the data does show that the percentage of Near Eastern beads is 22,55% of the complete assemblage. In absolute numbers this relates to 257 Near Eastern beads (table 5.23 and figure 5.21).

Table 5.21: The Near Eastern beads of Lent.

GRAVE NR	DATE GRAVE	DATE BEADS	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS
2	500-600 (650)	P1	52	12	A1.2-01 (4) B6.1-01d (2) A4.3-01a (2) A2.1-01 (2), A4.2-01 (2)	55 beads according to numbers
5	520-570	P2	72	26	F2.1-01 (1) E1.2-03 (4) E2.1-03 (2) E1.2-? (4) C3.1-01 (2) A2.1-02 (2) C2.2-02a (4) E1.2-02 (3) A2.1-03 (3) D1.2-03? (1)	
9	425-525	P1-P2	25	4	A2.1-04 (2), E2.1-02 (2)	
13-1	500-600	P1-P2	82	37	E2.1-02 (1), A4.2-01 (19), C1.4-02 (1), D1.1-02 (2), E2.? (1), E1.2-? (1), A2.1-04 (3), E2.2-01 (1), A4.1-01 (2), A3.1-07 (2), D1.2-04? (3), A4.? (1)	Child grave
13-2	500-600	P1-P2	22	2	E3.1-? (1), A3.1-04a (1)	
16	500-600	P1	26	3	A1.3-04 (1), A2.1-03 (1), D1.7-01 (1)	
16-2	500-600	P1	1	1	F5? (1)	
20-1	500-600	P1-P2	92	19	A4.1-01 (1), A1.2-01 (7), A3.1-09 (2), A3.4-01a (2), A1.2-06 (2), E2.1-01 (1), F? (1), E2.1-02 (1), A4? (2)	
21	500-600	P1	12	6	E? (1), E2.1-03 (1), E1.1-01? (2), A3.1-07 (1), E2.? (1)	One possible Roman bead, child grave
23	500-600		32	2	C3.3-01 (2)	also 2 Roman drawn beads
26-1	500-600	P2	63	10	A3.1-01b (6), A3.1-07 (2), A 4.2-01 (2)	Child grave
26-2	500-600	P2	37	7	A3.6? (6), A4.2-01 (1)	
34-1	480-560	500-525	P1	3	A4.2-01 (3)	
34-3	480-560	P1-P2	1	1	F4.1	
35	530-560	P1-P2	41	5	B10.1-02? (1), C1.4-01 (1), E1.1-01 (2), E1.1-02 (1)	European?
36	500-600	P1	11	7	D1.1-03 (2), A4.1-01 (1), A3.4-01a (2), A3.5-03 (1), A1.3-01 (1)	
40	500-600	P1-P2	127	70	E2.1-02 (3), A2.1-04 (5), A2.1-01 (1), A3.4-05 (1), A4.2-01 (9), A3.1-07 (18), D? (2), C? (1), C3.? (2), D1.2-04? (11), D1.2-03? (1), E? (1), D1.5? (3), C3.3-01 (2), A1.2-04 (6), A4.1-01 (1), D1.1-03? (1), E1.1-02 (1), D1.2-? (1)	7 extra counted but are no beads
41	500-600	P2	27	1	B10.1-02a	
42	500-600	P1-P2	28	4	C1.4-01 (2), C3.3-01 (2)	
43-1	500-600	P2	50	15	A4.2-01 (5), A3.1-04b (6), E1.2-02 (2), A3.1-01b (2)	
43-2	500-600	P2	31	14	A3.4-11 (1), A3.1-07 (4), A4.2-01 (4), A3.1-04b (4), A3.2-01 (1)	
50	500-600	P1-P2	19	2	E2.1-02 (1), A2.1-04 (1)	
50-2	500-600		1	1	F5? (1)	Turkey?
51	500-600	P2-P3	48	1	D1.5-01 (1)	
53	500-600	P2	71	21	A4.2-01 (14), A3.1-07 (1), C1.4-01 (1), C2.2-03 (2), A3.1-04a (2), A3.2-01 (1)	
55	500-600	P2	5	2	C2.2-01 (1), A3.1-07 (1)	
<b>TOTAL</b>				<b>276</b>		

Table 5.22: Types of Near Eastern beads of Lent (based on table 5.21).

BEAD TYPE	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE	REMARKS
A1.2-01	P2	2, 20-1	4, 7	11	
A1.2-04	P0-P1	40	6	6	
A1.2-06	P1	20-1	2	2	
A1.3-01	P3	36	1	1	
A1.3-04	P?	16	1	1	
A2.1-01	P2	2, 40	2, 1	3	
A2.1-02	P2	5	2	2	
A2.1-03	P2	5, 16	3, 1	4	
A2.1-04	P2	9, 13-1, 40, 50	2, 3, 5, 1	11	
A3.1-01B	P2	26-1, 43-1	6, 2	8	
A3.1-04A	P1a	13-2, 53	1, 2	3	
A3.1-04B	P2	43-1, 43-2	6, 4	10	
A3.1-07	P2	13-1, 21, 26-1, 40, 43-2, 53, 55	2, 1, 2, 18, 4, 1, 1	29	red
A3.1-09	P1-P3	20-1	2	2	
A3.2-01	P?	43-2, 53	1, 1	2	
A3.4-01A	P1-P3	20-1, 36	2, 2	4	
A3.4-05	P1	40	1	1	
A3.4-11	P?	43-2	1	1	
A3.5-03	P1	36	1	1	
A3.6?	P?	26-1	6	6	
A4.?	P?	13-1, 20-1	1, 2	3	
A4.1-01	P1a	13-1, 20-1, 36, 40	2, 1, 1, 1	5	Gold foil
A4.2-01	P1-P3	2, 13-1, 26-1, 26-2, 34-1, 40, 43-1, 43-2, 53	2, 19, 2, 1, 3, 9, 5, 4, 14	59	Silver foil
A4.3-01A	P1	2	2	2	
B10.1-02	P2	35	1	1	Reticella
B10.1-02A	P2	41	1	1	Reticella
B6.1-01D	P1	2	2	2	confetti beads
C?	P?	40	1	1	
C1.4-01	P2	35, 42, 53	1, 2, 1	4	
C1.4-02	P2?	13-1	1	1	
C2.2-01	P2	55	1	1	
C2.2-02A	P2b	5	4	4	
C2.2-03	P2	53	2	2	
C3.1-01	P2	5	2	2	
C3.3-01	P1	23, 40, 42	2, 2, 2	6	
C3.?	P?	40	2	2	
D?	P?	40	2	2	
D1.1-02	P1-P3	13-1	2	2	
D1.1-03	P1-P3	36, 40	2, 1	3	
D1.2-?	P2?	40	1	1	
D1.2-03?	P2?	5, 40	1, 1	2	
D1.2-04?	P2?	13-1, 40	3, 11	14	
D1.5?	P?	40	3	3	
D1.5-01	P1	51	1	1	
D1.7-01	P0	16	1	1	
E?	P2?	21, 40	1, 1	2	
E1.1-01?	P2?	21, 35	2, 2	4	
E1.1-02	P2	35, 40	1, 1	2	
E1.2-?	P2	5, 13-1	4, 1	5	
E1.2-02	P2	5, 43-1	3, 2	5	
E1.2-03	P2	5	4	4	
E2.?	P2	13-1, 21	1, 1	2	
E2.1-01	P2	20-1	1	1	
E2.1-02	P2	9, 13-1, 20-1, 40, 50	2, 1, 1, 3, 1	8	
E2.1-03	P2	5	2	2	
E2.1-03?	Roman?	21	1	1	
E2.2-01	P2?	13-1	1	1	
E3.1-?	P2?	13-2	1	1	
F?	P?	20-1	1	1	?
F2.1-01	P1-P2	5	1	1	rock crystal
F4.1	P1-P5	34-3	1	1	meerschaum
F5?	P?	16-2, 50-2	1, 1	2	marble
<b>TOTAL</b>				<b>276</b>	

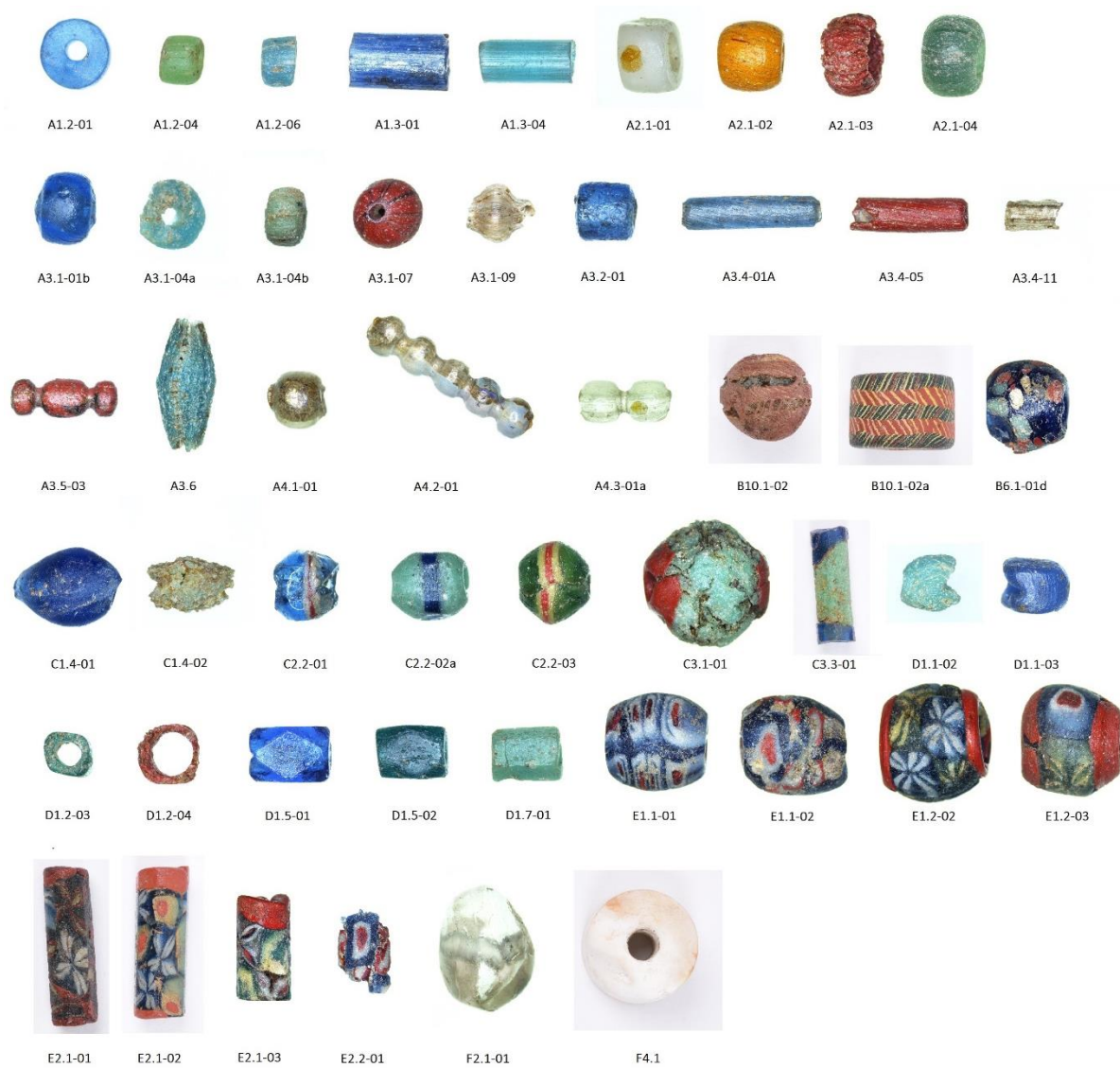


Figure 5.19: All recognized beads with a Near-Eastern origin of the cemetery of Lent (based on table 5.22; after pictures by Dekker and Langbroek, beads in possession of Nijmegen municipality).



Figure 5.20: The beads that could not be determined with a specific Pion type, grave 21, bead1; grave 40, bead 13; grave 13-1, bead 19; grave 13-1, bead 70; grave 13-2, bead 4; 20-1, bead 44; grave 16-2, bead 1 (after pictures by Dekker and Langbroek, beads in possession of Nijmegen municipality).

Table 5.23: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of Lent (based on Lent table 3.11 in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	77,45%	948
NEAR EASTERN BEADS – BEFORE SEVENTH CENTURY	22,55%	276
NEAR EASTERN BEADS - TRANSITION PERIOD	0%	0
<b>TOTAL NUMBER OF BEADS</b>	<b>100%</b>	<b>1224</b>

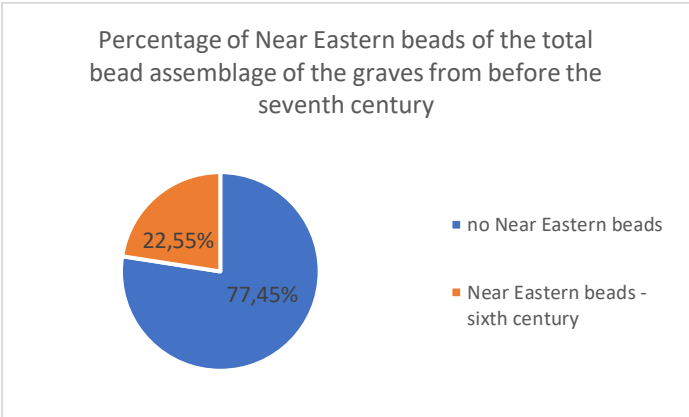


Figure 5.21: Percentage of Near Eastern beads in the graves from before the seventh century (after table 5.23).

### 5.3.2.2 *Wijchen-Centrum*

This cemetery dates from 300 till 650 AD and consists of 345 burials of which sixty-eight contained beads (figure 3.55 in the appendix). The cemetery of Wijchen-Centrum is one of the largest Merovingian cemeteries of the Netherlands (Heeren and Hazenberg 2010, 20). The cemetery was excavated in three campaigns, in 1991, 1992 and 1996. Not the entire cemetery could be excavated due to modern buildings (Heeren and Hazenberg 2010, 20-23). At least fifteen graves show evidence of deliberate disturbance, they were possibly reopened. Two of them contained both a single bead, the others contained no beads (Heeren and Hazenberg 2010, 149). The total number of examined beads is 1016. After examination twenty-seven of the graves contain a total of 200 Near Eastern beads (based on Heeren and Hazenberg 2010, 17, 20; Langbroek forthcoming). Grave 219 contains the highest number of Near Eastern beads, which is sixty-three beads. The second highest number is forty-seven Near Eastern beads from grave 156. The third is grave 235 with thirteen Near Eastern beads (table 5.24). The cemetery of Wijchen remained in use for 350 years, throughout this period beads are attested. All bead categories made with production techniques associated with the Near East are present in this cemetery (table 5.25). The Near Eastern bead assemblage of Wijchen contains 174 drawn beads of which ninety-seven are beads that consist of a single layer of glass. Other drawn beads are seventy-seven segmented metal foil beads made of two layers of glass and three additional beads with two layers of glass. Wijchen has a single wound beads, a reticella bead. There are four folded beads, three are monochrome and one is polychrome. Fourteen perforated beads are recognized, ten of these are monochrome with a round or heart shaped. One bead is prismatic and four are hexagonal of shape. There is only one mosaic bead present in the cemetery of Wijchen. Besides glass beads there are three beads made from other materials related to the Near East. This includes one rock crystal, one amethyst and one meerschaum bead (table 5.25). Table 5.25 shows that the most common Near Eastern bead in Wijchen is type A4.2-01, a segmented silverfoil bead (figure 5.22). This is the same most common bead type as in Lent. The bead type occurs in seven graves and has a total of seventy-two beads. The second most common bead is type A3.2-05, a cylindrical green strangled bead (figure 5.22). The third most common bead is A3.4-01a, a blue tubular strangled bead (figure 5.22). These are all drawn beads. There are two bead types assigned to Pion period 0, these are D1.5 and D1.7 (table 5.25). They appear similar to the oldest Near Eastern bead in the cemetery of Lent. The graves can be divided in three chronologic categories. Comparing the periods, it shows that the percentage (18,11%) of Near Eastern beads is lower during the period before the seventh century (table 5.26 and figure 5.23) and higher (27,12%) in the period of the seventh century and later (table 5.27 and figure 5.24). These percentages might give a misleading image since the absolute number of Near Eastern beads is higher (152 beads) for the period before the seventh century and lower (forty-eight beads) for the period during and after the seventh century (table 5.26 and 5.27). Additionally, the beads from graves dated to the seventh century are the same types as those in the graves of the sixth century. Table 5.25 shows that the attested Near Eastern beads all generally date from the end of the fifth to the end of the sixth century (Pion period 1-3). Some of these beads were found in graves dating to the seventh century. Hence, they seem too old for these graves. An possible explanation could be that the graves were dated too young. However, it is possible that some Near Eastern beads remained in circulation for another generation before they were deposited in the grave. Noteworthy, is grave 156, this early seventh century grave contains forty-seven of the forty-eight Near Eastern beads from the seventh century bead assemblage (table 5.24). This includes forty-six A3.2-05 beads, the second most common bead type in this cemetery. Another interesting find is bead D1.7-01 in grave 194, the bead dates from the late fifth century while the grave is dated to the late sixth and early seventh century (table 5.24 and 5.25).



Table 5.24: The Near Eastern beads of Wijchen.

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	PAGE IN PUBLICATION
<b>SINGLE BEADS</b>	-	-	44	5	D1.5-02 (1), C3.1-01 (1), D1.7 (2), F2.2 (1)	
<b>2</b>	555-640	P1-P3	1	1	A4.2-01	187-188
<b>4</b>	555-640	P1-P3	2	1	D1.1-02?	188-189
<b>8</b>	570-640	P0-P3	1	1	A3.1-09	191
<b>29</b>	450-530	P1	12	1	A3.4-01a	203
<b>34</b>	570-610	P3-P4	113	4	A1.2-05 (4)	205-206
<b>50</b>	450-530	P1	2	1	A4.1-01	216
<b>51</b>	450-530	P1-P3	19	6	A4.2-01 (6)	216-217
<b>52</b>	450-530	P1	39	11	A4.2-01 (6), A3.2-01? (1), A3.2-04 (1), A3.3-05 (1), A3.2-02 (1), A4.4-02 (1)	217-218
<b>65</b>	570-610	P2-P3	32	7	A3.1-07 (4), D1.1-02 (1), A4.3-02 (1), C1.4-02 (1)	223-224
<b>92</b>	570-640	P4	13	2	A4.2-01 (2)	240
<b>98</b>	570-640	P3	29	10	A1.2-05 (10)	243
<b>106</b>	530-640	P3-P4	14	6	A3.2-06 (5), A1.2-05 (1)	247-248
<b>127</b>	570-640	P2-P3	40	5	C1.1-? (2), D1.1-02? (3)	259
<b>132</b>	530-555	P3	16	1	D1.1-05 (1)	261-262
<b>142</b>	450-570	P1	1	1	A4.1-02	267
<b>152</b>	555-640	P2	1	1	B10.1-01b	272-273
<b>156</b>	610-640	P3-P4	150	47	A3.2-05 (46), E1.2-04 (1)	274-275
<b>160</b>	530-555	P1-P3	70	1	F4.1	277
<b>179</b>	610-640	P5	7	1	A3.1-10 (1)	286
<b>194</b>	570-610	P3 (some P4)	11	2	D1.7-01 (1), D1.1-03 (1)	293-294
<b>211</b>	555-570	P1-P2	2	2	A3.2-04 (1), A3.2-02 (1)	301
<b>219</b>	450-530	P1	83	63	A4.2-01 (51), A3.4-01a (12)	305
<b>228</b>	530-555	P2	6	2	A4.2-01 (2)	309
<b>235-CHEST</b>	530-555	?	41	13	A4.3-01a (2), A4.4-02 (2), A3.2-05 (1), A3.4-01a (2), A3.1-03b (1), A4.2-01 (4), A3.1-05 (1)	312-313
<b>239</b>	570-640	P4	14	1	A1.2-05	314-315
<b>253</b>	530-555	P2-P3	23	3	D1.1-03 (1), D1.1-02 (2)	322
<b>317</b>	450-530	P1	5	1	F2.1-01	350
<b>TOTAL</b>			<b>791</b>	<b>200</b>		

Table 5.25: Types of Near Eastern beads of Wijchen (based on table 5.24).

BEAD TYPE	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE	REMARKS
A1.2-05	P1-P3	34, 98, 106, 239	4, 10, 1, 1	16	
A3.1-03B	P1-P2	235-chest	1	1	
A3.1-05	P1a	235-chest	1	1	
A3.1-07	P2	65	4	4	red
A3.1-09	P1-P3	8	1	1	
A3.1-10	P2	179	1	1	
A3.2-01	P?	52	1	1	
A3.2-02	P2	52, 211	1, 1	2	
A3.2-04	P1b-P2	52, 211	1, 1	2	
A3.2-05	P1	156, 235-chest	46, 1	47	
A3.2-06	P3	106	5	5	
A3.3-05	P1	52	1	1	
A3.4-01A	P1	29, 211, 235-chest	1, 12, 2	15	Blue tubular
A4.1-01	P1	50	1	1	Gold foil
A4.1-02	P1	142	1	1	
A4.2-01	P1-P3	2, 51, 52, 92, 219, 228, 235-chest	1, 6, 6, 2, 51, 2, 4	72	Silver foil
A4.3-01A	?	235-chest	2	2	
A4.3-02	P1	65	1	1	
A4.4-02	P1-P3	52, 235-chest	1, 2	3	
B10.1-01B	P2	152	1	1	
C1.1-?	P2?	127	2	2	
C1.4-02	P2	65	1	1	
C3.1-01	P2	single beads	1	1	
D1.1-02	P1-P3	4, 65, 127, 253	1, 1, 3, 2	7	
D1.1-03	P1-P3	194, 253	1, 1	2	
D1.1-05	P1-P3	132	1	1	
D1.5-02	P0	single beads	1	1	
D1.7	P0	single beads	2	2	
D1.7-01	P0	194	1	1	
E1.2-04	P2	156	1	1	
F2.1-01	P1-P2	317	1	1	
F2.2	P4	single beads	1	1	
F4.1	P1-P5	160	1	1	
<b>TOTAL</b>				<b>200</b>	



Figure 5.22: All recognized beads of the cemetery of Wijchen (based on table 5.25, pictures after Dekker, Langbroek and Vrielynck *et al.* 2018).

Table 5.26: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of Wijchen (based on Wijchen table 3.12 in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	81,88%	687
NEAR EASTERN BEADS – BEFORE SEVENTH CENTURY	12,63%	106
NEAR EASTERN BEADS - TRANSITION PERIOD	5,48%	46
<b>TOTAL NUMBER OF BEADS</b>	<b>100%</b>	<b>839</b>

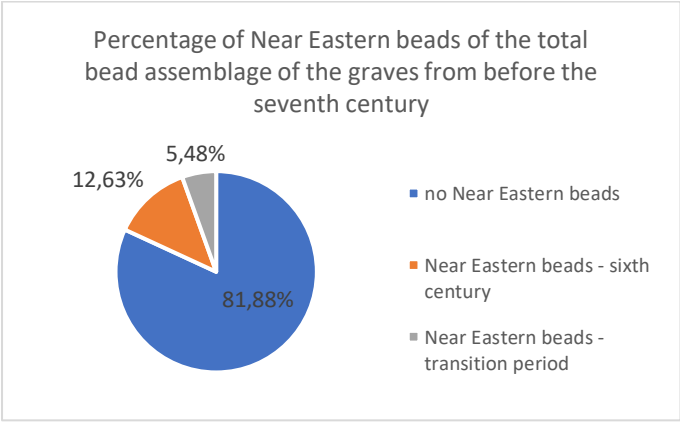


Figure 5.23: Percentage of Near Eastern beads in the graves from before the seventh century (after table 5.26).

Table 5.27: Near Eastern and non-Near Eastern beads attested in graves from seventh century and later of Wijchen (based on Wijchen table 3.12 in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	72,88%	129
NEAR EASTERN BEADS	27,12%	48
TOTAL NUMBER OF BEADS	100%	177

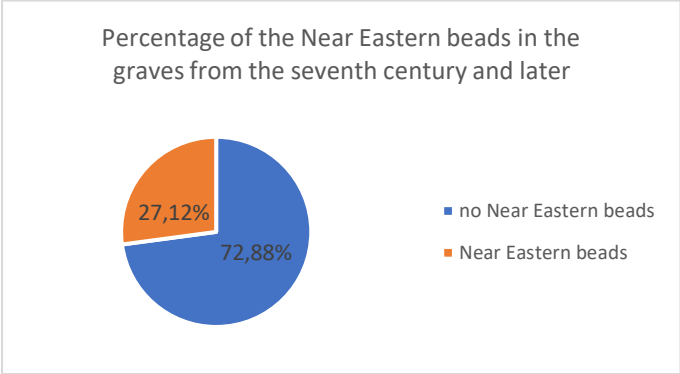


Figure 5.24: Percentage of Near Eastern beads in the graves from the seventh century and later (after table 5.27).

The cemetery of Elst dates from the late fifth till the eighth century. The cemetery was excavated in 1981. The 260 burials consist of ninety-five inhumation graves and 165 cremation graves (figure 3.63 in the appendix). Cremation became the dominant burial practice in the seventh century. The cemetery consists of forty-six burials with beads, with a total assemblage of 1722 beads (Verwers and van Tent 2015, 5, 40, 87). After examination twenty-four of these graves contain a total number of 393 beads of Near Eastern origin (table 5.28; based on Langbroek, ongoing research; Verwers and van Tent 2015, 164-165, 172-177, 183, 190-193, 197-200, 218, 220, 223). The grave that contains the most Near Eastern beads is grave 216 with ninety-eight beads. Grave 175 contains sixty-six Near Eastern beads, which is the second highest number. The third is grave 161 with thirty-seven Near Eastern beads (table 5.28). All bead categories made with production techniques associated with the Near East are present in this cemetery (table 5.29). The bead assemblage of Elst contains 250 drawn beads of which seventy-seven are metal foil beads with a double layer of glass and 173 are beads with a single layer of glass. There are five Near Eastern wound beads, all of which are reticella beads. Elst has twenty-nine folded beads, ten of these are monochrome and nineteen are polychrome beads. There are eighty-one perforated beads, forty-nine of these are global or heart shaped, five are polymeric and twenty-seven are drop shaped beads. The assemblage of Elst contains twenty-seven mosaic beads. There are sixteen global, biconical or barrel shaped beads, three of them have no colored borders and thirteen have red edges. Further, six hexagonal prismatic shaped mosaic beads with red edges are present. Additionally, there are four cylindrical mosaic bead and one irregularly shaped mosaic bead. Besides the glass beads, the bead assemblage contains one meerscham bead (table 5.29). Table 5.29 shows that the most common type of bead is A3.1-05, a drawn blue strangled bead (figure 5.25). This bead occurs in four graves and has a total of 118. The second most common type is A4.2-01, a silver foil bead (figure 5.25). The third most common type is D1.1-02, a green perforated round or heart shaped bead (figure 5.25). Noteworthy is the bead assigned to be A4.2-03, which is a silver foil bead of unknown shape. This bead type does not appear in Pion. Table 5.29 shows that the attested Near Eastern beads are mainly assigned to date from late fifth to end of sixth cen, a lot from the second half of the sixth century (Pion P2). These beads, however, still occur in graves from the seventh century, like grave 193 and grave 81. Noteworthy are grave 112 and 216. Grave 193 has 171 beads of which ninety-eight are from the Near East. Grave 112 and 193 date to the late sixth or late sixth to early seventh century, however, they contain Near Eastern beads from the late fifth century. These graves were possibly wrongly dated in the publication, or the beads had circulated for a long time before being deposited in these graves (Langbroek, personal communication). The graves from Elst can be divided in three chronologic categories. The percentage of Near Eastern beads is 16,72% of the total bead assemblage from before the seventh century. This relates to 387 beads (table 5.26 and figure 5.26), which is higher than the 8,46% (130 beads) of the transitional period (table 5.26 and figure 5.26) and the 3,24% (six beads) in the period of the seventh century and later (table 5.27 and figure 5.27).

Table 5.28: The Near Eastern beads of Elst.

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	PAGE IN PUBLICATION
81	610/620-710	P2-P3	120	4	D1.1-02 (2), D1.6-01 (1), C2.1-01b (1)	164
82	580/590-710	P2-P3	33	6	D1.1-03 (1), C1.4-02 (4), C2.1-01b (1)	165
87	510/525-580/590	P2	80	18	A4.2-01 (9), D1.1-02? (1), A3.1-07 (4), A3.1-04b (2), A3.4-08 (1), A3.1-01b (1)	172-173
88	565-580/590	P2-P3	95	18	C1.4-02(?) (4), C2.1-03a (6), A3.1-01b (2), E1.2-03 (2), C2.1-01? (1), C3.1-01 (1), E3.? (1), B10.1-02a (1)	174-177
92	565-580/590	P2	13	3	C1.4-02 (2), E2.1-02 (1)	183
112	565-580/590	P1	35	2	D1.5-01 (2)	190-193
118	540/550-580/590	P1	38	9	A3.4-01a (2), A4.2-01 (2), A4.2-03? (2), E2.1-? (1), A4.1-02 (1), A3.1-05 (1)	197
127	565-580/590	P2	124	31	A4.2-01 (4), A3.1-07 (11), C2.2-01 (2), A3.4-01a (1), E1.2-03 (2), E1.2-? (1), D1.1-03 (2), E1.1-02 (1), F4.1 (1), D1.1-02 (4), C2.1-03a (2)	198-200
155	510/524-565	P2	27	6	A4.2-01 (3), E2.1-02 (1), B10.1-02b (1), E4.2 (1)	218
159	580/590-610/620	P1-P3	19	1	A3.4-01a (1)	220
161	510/525-610/620	P2	84	37	A3.1-07 (9), E1.1-02 (1), A4.2-01 (14), E2.1-02 (2), B10.1-02a (1), E1.2-02 (1), D1.1-03 (1), D1.6-01 (1), D1.1-02 (4), A3.1-02b (2), A3.4-06 (1)	223
162	510/525-580/590	P2	43	21	D1.6-01 (17), D1.1-02 (1), A4.2-01 (2), A3.1-07 (1)	225
175	510/525-580/590	P1	201	66	A4.2-01 (19), A1.2-06 (2), A4.1-01 (6), A3.4-01a (9), A3.1-05 (28), A4.3-01a (2)	237
193	610/620-670/680	P3	14	2	C2.2-02a (1), D1.1-03 (1)	252
201	450-510/525	P1	7	1	D1.5-01 (1)	254
208	565-640/650	P1-P2	37	15	E3.2-? (1), D1.1-03 (3), D1.5-01 (2), A4.2-01 (3), A3.5-01 (1), E1.2-03 (2), D1.6-01 (2), A3.1-05 (1)	258
211	540/550-580/590	P2-P3	9	3	C2.2-02? (1), D1.1-02? (1), E1.2-02 (1)	263
214	565-640/650	P4	10	1	D1.1-03 (1)	264
216	565-610/620	P1	171	98	A3.1-05 (88), A4.1-01 (10)	268
234	450-700	P2	11	7	D1.1-02 (6), A3.1-04b (1)	274
235	450-700	P2	4	2	D1.1-02? (1), A3.4-01a (1)	274
238	540/550-580/590	P2-P3	127	20	D1.1-02 (8), D1.1-03 (6), E1.2-? (1), E1.2-03 (1), A2? (1), E3.1.1 (1), E2.1-02 (1), E3.? (1)	276
242	450-600	P3-P4	4	1	A2.1-02 (1)	284
249	540/550-565	P3	224	21	D1.1-02? (5), C2.2-02a (1), B10.1-02b (1), E1.2-03 (1), B10.1-02? (1), E1.2-02 (1), D1.6-01 (6), C2.2-01 (2), A3.4-01a (1), D1.1-03 (1), E1.1-02 (1)	290
<b>TOTAL</b>				<b>393</b>		

Table 5.29: Types of Near Eastern beads of Elst (based on table 5.28).

BEAD TYPE	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE	REMARKS
A1.2-06	P1	175	2	2	
A2.?	P?	238	1	1	
A2.1-02	P2	242	1	1	
A3.1-01B	P2	87, 88	1-2	3	
A3.1-02B	P?	161	2	2	
A3.1-04B	P2	87, 234	1-2	3	
A3.1-05	P1a	118, 175, 208, 216	1-88	118	
A3.1-07	P2	87, 127, 161, 162	1-11	25	
A3.4-01A	P1-P3	118, 127, 159, 175, 249, 235	1-9	15	blue tubulair
A3.4-06	P2	161	1	1	
A3.4-08	P1-P2	87	1	1	
A3.5-01	P1	208	1	1	
A4.1-01	P1a	175, 216	6-10	16	Gold foil
A4.1-02	P1-P3	127	1	1	
A4.2-01	P1-P3	87, 118, 127, 155, 161, 162, 175, 208	2-19	56	Silver foil
A4.2-03?	P?	118	2	2	
A4.3-01A	P1	175	2	2	
B10.1-02?	P2	249	1	1	biconical
B10.1-02A	P2	88, 161	1	2	
B10.1-02B	P2	155, 249	1	2	
C1.4-02	P2	82, 88, 92	2-4	10	
C2.1-01?	P2?	88	1	1	
C2.1-01B	P2	81, 82	1	2	
C2.1-03A	P2	88, 127	2-6	8	
C2.2-01	P2	127, 249	2	4	
C2.2-02?	P2	211	1	1	
C2.2-02A	P2	193, 249	1	2	
C3.1-01	P2	88	1	1	
D1.1-02	P1-3	81, 87, 127, 161, 162, 211?, 234?, 235? 238, 249?	1-8	33	
D1.1-03	P1-P3	82, 127, 161, 193, 208, 214, 238, 249	1-6	16	
D1.5-01	P1	112, 201, 208	1-2	5	
D1.6-01	P?	81, 161, 162, 208, 249	1-17	27	
E1.1-02	P2	127, 161, 249	1	3	
E1.2-?	P2	127, 238	1	2	
E1.2-02	P2	161, 211, 249	1	3	
E1.2-03	P2	88, 127, 208, 238, 249	1-2	8	
E2.1-?	P2	118	1	1	
E2.1-02	P2	92, 155, 161, 238	1-2	5	
E3.?	P2?	88, 238	1	2	
E3.1-1	P2	238	1	1	
E3.2-?	P2	208	1	1	
E4.2	P2	155	1	1	
F4.1	P1-P5	127	1	1	meerscham
<b>TOTAL</b>				<b>393</b>	



Figure 5.25: All recognized beads with a Near-Eastern origin of the cemetery of Elst (based on table 5.29, pictures after Langbroek; Vrielynck *et al.* 2018; Verwers and Van Tent 2015, 219).

Table 5.30: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of Elst (based on Elst table 3.13 in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	74,82%	1150
NEAR EASTERN BEADS – BEFORE SEVENTH CENTURY	16,72%	257
NEAR EASTERN BEADS - TRANSITION PERIOD	8,46%	130
<b>TOTAL NUMBER OF BEADS</b>	<b>100%</b>	<b>1537</b>



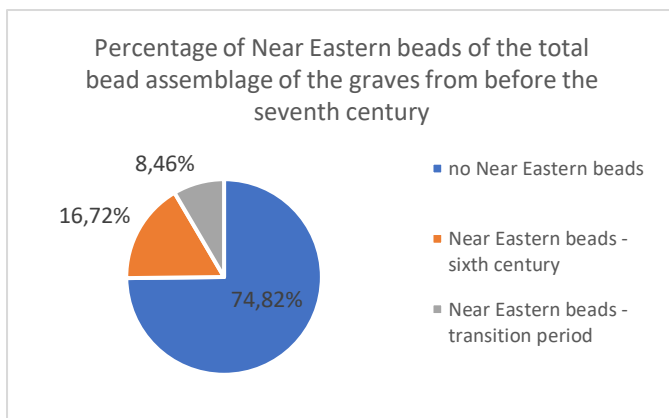


Figure 5.26: Percentage of Near Eastern beads in the graves from before the seventh century (after table 5.30).

Table 5.31: Near Eastern and non-Near Eastern beads attested in graves from seventh century and later of Elst (based on Elst table 3.13 in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	96,76%	179
NEAR EASTERN BEADS	3,24%	6
TOTAL NUMBER OF BEADS	100%	185

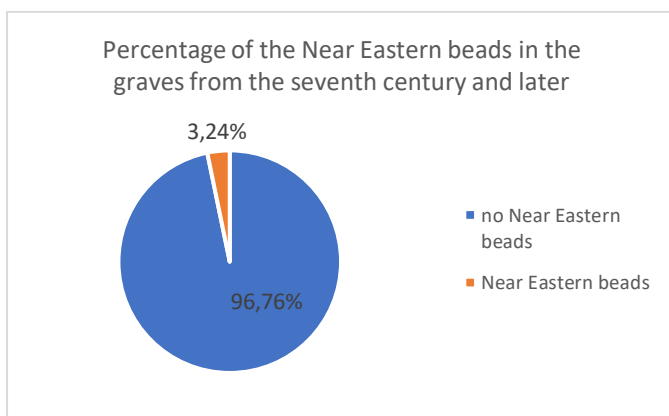


Figure 5.27: Percentage of Near Eastern beads in the graves from the seventh century and later (after table 5.31).

### 5.3.3 Beads from the Near East in East Rhine: an overview

The period of use differs for every selected cemetery of the East Rhine region. The cemeteries contain a similar percentage of Near Eastern beads (table 5.32) despite the differences in the number of graves and beads. Of the studied 684 graves, 144 graves contained beads. The total bead assemblage for the East Rhine region consists of 4040 studied beads (table 5.32; based on individual site tables 3.11, 3.12, 3.13 and 3.14 in the appendix; Heeren and Hazenberg 2010, 17, 20; Langbroek forthcoming; Verwers and van Tent 2015, 5, 87). There was a slight difference in the documented number of beads and the studied number of beads due to counting mistakes or missing beads. A total number of 869 Near Eastern beads has been recognized, this relates to 21,51% of all the beads (table 5.32). While Wijchen has the most graves and the highest number of graves with beads it has the lowest number of beads and the lowest number of Near Eastern beads. The Cemetery Apeldoorn- 't Loo was not taken into account, as no Near Eastern Beads were found there. The table 5.33 shows the percentages of Near Eastern beads for every cemetery in relation to the complete number of beads for the East Rhine region. The Near Eastern beads of Lent are 31,76%, those of Wijchen are 23,01% and those of Elst are 45,22% of the total amount of Near Eastern beads in the subregion. Hence, the cemetery of Elst has relatively the most Near Eastern beads. These Near Eastern beads make up almost 10% of the total bead assemblage of the East Rhine region. It should be considered that the cemetery of Elst also has the largest bead assemblage.

#### **Chronological distribution of Near Eastern beads**

The graves of all the four selected cemeteries can be divided in three chronologic categories. The graves from before the seventh century, the transition period and the ones from the seventh century and later. It should be taken into account that the cemetery of Lent is completely dated to the sixth century and the cemetery of 't Loo completely to the seventh century (as far as excavated). Comparing the time periods, it shows that the percentage of Near Eastern beads from the total bead assemblage from before the seventh century (17,75%, which is 815 beads) is higher in this period than in the transitional period or the period of the seventh century and later (table 5.34, table 5.35, figure 5.28 and figure 5.29). The percentage of Near Eastern beads is 5% (176 beads) in the transitional period (table 5.34 and figure 5.28) and 12,27% (fifty-four beads) in the period of the seventh century and later (table 5.35 and figure 5.29). Additionally, these tables display a significant difference between the number of beads from before the seventh century, which is 3600 beads (table 5.34), and the number of beads from the seventh century and later, which is only 440 beads (table 5.35). The results show a decline in beads deposited in graves from the sixth century onwards.

Table 5.32: Overview table of all sites of East Rhine.

SITE	TOTAL NUMBER OF GRAVES	NUMBER OF GRAVES WITH BEADS	% GRAVES WITH BEADS OF TOTAL NUMBER OF GRAVES	NUMBER OF BEADS ORIGINALLY DOCUMENTED	NUMBER OF MEROVINGIAN BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	USE PERIOD OF CEMETERY	PION PERIOD BASED ON BEADS	% NE BEADS OF TOTAL NUMBER OF STUDIED BEADS
LENT – LENTSEVELD	79	28	35,44%	1204	1224	276	sixth century	P1-P3	22,55%
WIJCHEN – CENTRUM	345	68	19,71%	964	1016	200	300-650	Roman/P0-P4	19,69%
ELST - 'T WOOD	260	46	17,69%	1778	1722	393	late fifth till eight century	P1-P5 and later	22,82%
T LOO	?	2	?	78	78	0	seventh century	P3-P5	0%
<b>TOTAL</b>	<b>684</b>	<b>144</b>	<b>21,05%</b>	<b>4024</b>	<b>4040</b>	<b>869</b>			<b>21,51%</b>

Table 5.33: Percentage of the Near Eastern beads for every site from the total bead assemblage and the total Near Eastern bead assemblage (based on table 5.19).

SITE	NUMBER OF MEROVINGIAN GLASS BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	% OF NEAR EASTERN BEADS OF THE TOTAL NUMBER OF BEADS IN THE AREA (4040)	% OF NEAR EASTERN BEADS OF THE TOTAL AMOUNT OF NEAR EASTERN BEADS IN THE AREA (869)
LENT - LENTSEVELD (6TH CEN.)	1224	276	6,83%	31,76%
WIJCHEN - CENTRUM (4TH TILL MID 7TH CEN.)	1016	200	4,95%	23,01%
ELST - 'T WOOD (LATE 5TH TILL 8TH CEN.)	1722	393	9,72%	45,22%
T LOO (7TH CEN.)	78	0	0%	0%
<b>TOTAL</b>	<b>4040</b>	<b>869</b>	<b>21,51%</b>	<b>100%</b>

Table 5.34: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of the East Rhine region (based on complete site tables 3.11 to 3.14 of East Rhine in the appendix).

CATEGORY	LENT	WIJCHEN	ELST	T LOO	ABSOLUTE NUMBERS	PERCENTAGE
NO NEAR EASTERN BEADS	948	687	1150	0	2785	77,36%
NEAR EASTERN BEADS – BEFORE SEVENTH CENTURY	276	106	257	0	639	17,75%
NEAR EASTERN BEADS - TRANSITION PERIOD	0	46	130	0	176	5%
<b>TOTAL NUMBER OF BEADS</b>	<b>1224</b>	<b>839</b>	<b>1537</b>	<b>0</b>	<b>3600</b>	<b>100%</b>

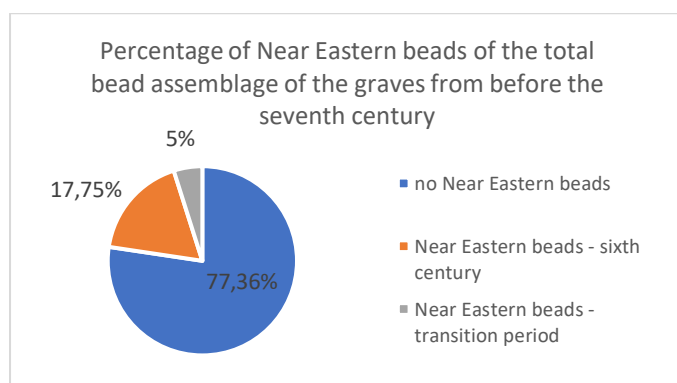


Figure 5.28: Percentage of Near Eastern beads in the graves from before the seventh century (after table 5.34).

Table 5.35: Near Eastern and non-Near Eastern beads attested in graves from seventh century and later of the East Rhine region (based on complete site tables 3.11 to 3.14 of East Rhine in the appendix).

CATEGORY	LENT	WIJCHEN	ELST	T LOO	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	0	129	179	78	87,73%	386
NEAR EASTERN BEADS	0	48	6	0	12,27%	54
TOTAL NUMBER OF BEADS	0	177	185	78	100%	440

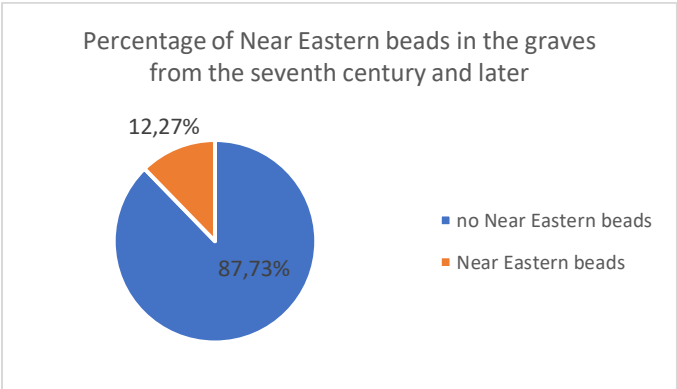


Figure 5.29: Percentage of Near Eastern beads in the graves from the seventh century and later (after table 5.35).

#### 5.3.4 Types of Near Eastern beads attested in the East Rhine subregion

The table displaying the attested bead types is larger than one page and therefore moved to the appendix. Table 3.15 of East Rhine in the appendix shows an overview of the ninety-nine different types of Near Eastern beads excavated in the East Rhine subregion. All the production techniques that originate or relate to the Near East are present in the studied bead assemblage. Like the results of Noord-Brabant, the drawn beads form the main category by making up for 69,51% of the total bead assemblage. The second largest category are the perforated beads, with 14,27% of the total assemblage. Third are the mosaic beads, which make up 7,59% of the total assemblage. Followed by the category of folded beads, which consist of 6,44%, and the two smallest categories of wound beads, 1,15%, and the non-glass beads, 1,04% (table 3.36). The most frequent type of bead is A4.2-01, a drawn segmented bead with silverfoil inlay. This bead is the most common type in the bead assemblages of Lent and Wijchen, in Elst it is the second most common type. There are 158 segmented silverfoil beads recognized. The second most frequent bead type is A3.1-05, which is especially present in a high number in Elst. This bead is not present in Lent, and Wijchen has only one bead. The third most frequent bead type is A3.1-07, a drawn strangled red bead. There are fifty-eight recorded beads for this type, and it is quite common in Lent and Elst but not in Wijchen (table 3.15 in the appendix). The bead assemblage of grave 40 from Lent contains the most types of Near Eastern beads which is nineteen types (table 5.21). The grave with the second most diverse types is also from the cemetery of Lent. This is grave 13 with fourteen types of Near Eastern beads (table 5.21). The third place is shared by three graves with eleven types from the cemetery of Elst, grave 161, 127 and 249 (table 5.28). While these graves show the most variation of bead types, they do not have the highest absolute number of Near Eastern beads. The grave that contains the most Near Eastern beads is grave 216 from Elst with ninety-eight beads (table 5.28). The grave that contains the second highest number of Near Eastern beads is grave 40 from Lent with seventy beads (table 5.21). The grave that contains the third highest number of Near Eastern beads is grave 175 from Elst with sixty-six Near Eastern beads (table 5.28). According to Pion (2014) and Vrielynck *et al.* (2018) the attested Near Eastern beads generally date to the late fifth century to the end of the sixth century. The amethyst and meerschaum beads form an exception. Nevertheless, these bead types have also been found in seventh century graves. Hence, the bead types could not be chronologically divided into a category from before the seventh century and a category from the seventh century and later. The bead types that are attested in the seventh century graves of Wijchen and Elst include drawn, perforated, folded beads and one mosaic bead (table 5.24 and table 5.28). There are ten types of beads that are present in the cemeteries of Lent, Wijchen and Elst (figure 5.30). Compared to the total number of ninety-nine attested Near Eastern bead types this is not exceedingly high. These ten types are: A3.1-07, A3.4-01a, A4.1-01, A4.2-01, A4.3-01a, C1.4-02, C3.1-1, D1.1-02, D1.1-03 and the meerschaum bead F4.1. Noteworthy is that while every cemetery with Near Eastern beads contains mosaic beads, they are quite different in shape and decoration. Besides the ten types shared by the three cemeteries of Lent, Wijchen and Elst, there are some bead types that were present in only two of these cemeteries. The cemeteries of Lent and Elst share the most bead types, namely twenty-two. These include the reticella and mosaic beads of figure 5.36. Wijchen seem to contain slightly less comparable bead types but still shares ten types with Elst and fifteen types with Lent, including the rock crystal beads. An overview figure was created based on which Near Eastern bead types occurred in at least two cemeteries (figure 5.31). The overview figure summarizes and creates an overview of the common Near Eastern beads for this area. The beads are divided into periods based on the typonology of Pion (2014) and Vrielynck *et al.* (2018).

Table 5.36: The percentage and number of the types of Near Eastern beads in the total assemblage of the East Rhine region (based on table 3.15 in the appendix).

BEAD TYPE	NUMBER	%
<b>DRAWN</b>	604	69,51%
<b>WOUND</b>	10	1,15%
<b>FOLDED</b>	56	6,44%
<b>PERFORATED</b>	124	14,27%
<b>MOSAIC</b>	66	7,59%
<b>OTHER</b>	9	1,04%
<b>TOTAL</b>	<b>869</b>	<b>100%</b>



Figure 5.30: Shared bead types with Near Eastern Origin that occur in the cemeteries of Lent-Lentseveld, Wijchen-Centrum and Elst- 't Woud (based on table 3.15 in the appendix, after pictures after Langbroek and Dekker).

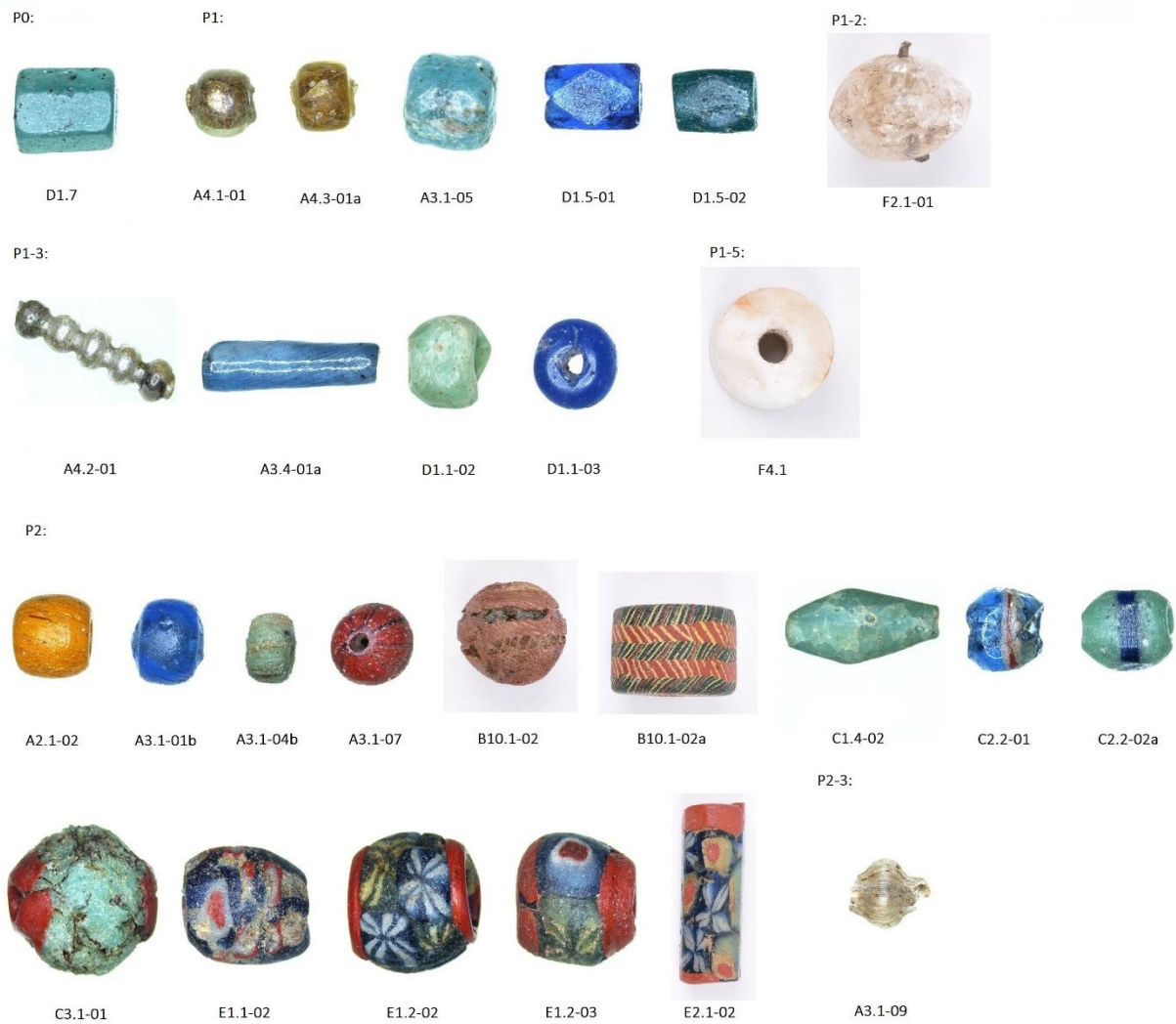


Figure 5.31: Overview common types of Near Eastern beads in the East Rhine region, divided by period (based on table 3.15 in the appendix, after pictures by Langbroek and Dekker).

### 5.3.5 Conclusion

The East Rhine region provides a clear insight in the typochronology and characteristics of Near Eastern beads in the Merovingian funerary context. Of the four selected sites for this region there are three which contained Near Eastern beads. These sites are Lent-Lentseveld, Wijchen-Centrum and Elst- 't Woud. The main categories of production techniques are the drawn, perforated and mosaic beads. The most common bead for this region is type A4.2-01, this is a drawn segmented silverfoil bead. Noteworthy is that every cemetery contained a meerscham bead (except 't Loo). There is not a type of mosaic bead that occurred in every cemetery. However, four mosaic and one reticella bead types occurred both in Lent and Elst. Overall, the cemetery of Wijchen seems to bear less similarities with Elst or Lent, while the latter two share the most similarities. It should be noted that the cemetery of Wijchen was not completely excavated and that the number of graves from the mid-sixth century is limited. Moreover, several graves were disturbed and/or reopened. The cemeteries of Lent, Wijchen and Elst are relatively large cemeteries with a long period of use. The cemetery of Lent is compared to the others the smallest cemetery. Nevertheless, Lent contains more Near Eastern beads than Wijchen and has the highest variety of Near Eastern bead types. Wijchen, while being the oldest and largest cemetery, has relatively the least Near Eastern beads. Overall, the show that the number of Near Eastern beads is higher during the period before the seventh century than during the period of the seventh century and later. Thus, before the seventh century, beads and especially Near Eastern beads were more common in graves, compared to the seventh century and later.



## 5.4 Results of Limburg

### 5.4.1 Introduction

The sub-area of Limburg will be the third and last area of which the results are presented. The selected sites are Sittard-Kemperkoul, Posterholt-Achterste Voorst, Maastricht-Vrijthof, Maastricht-Pandhof, Echt, Obbicht-Oude Molen and, Stein-Groote Bongerd. The beads of the selected cemeteries have not been examined to determine their bead type based on Pion (2014). For this study, the beads were personally determined as clearly as possible from the provided pictures in the site publications. The bead assemblage possibly contains beads made in India since the difference between small drawn beads from the Near East and India is not visible on pictures but only with microscopic analysis. These beads are documented separately. A total of 3821 beads have been examined and 1230 Near Eastern beads are recognized. Only the cemetery of Echt contained no Near Eastern beads and is therefore not discussed. For the complete tables and pictures of the bead strings please see the tables 3.16 to 3.25 and figures 3.67 to 3.127 of Limburg in the appendix. Maastricht Vrijthof and Maastricht Pandhof will be treated as two different sites. Given that they are separately published and examined. Moreover, their number of beads is remarkably high and presenting the results separately will make the results more accessible.

## 5.4.2 Limburg cemeteries

### 5.4.2.1 *Sittard-Kemperkoul*

The cemetery of Sittard-Kemperkoul dates from c. 550 till 700 AD and consists of eighty-eight graves (figure 3.67 in the appendix, Kars *et al.* 2016, 19, 50, 251). The site was excavated in two campaigns in 1982, not the complete cemetery could be excavated due to modern constructions (Kars *et al.* 2016, 26,28). The majority of the Merovingian cemeteries in south and central Limburg are situated nearby the Meuse or the Ruhr River. An exception is the cemetery of Sittard-Kemperkoul, which is located 10 km from the Meuse and 17 km from the Ruhr (Kars *et al.* 2016, 12). There are twenty graves that contain a total of 875 beads available for study. Noteworthy is that 726 beads are from grave 11, this is an extremely high number of beads in a single grave. After examination, forty-seven Near Eastern beads were recognized within the bead assemblages of four graves (table 5.37, based on Kars *et al.* 2016, 97-103, 323-328, 333-334, 340-341, 361). Grave 11 contains the most Near Eastern beads, namely thirty-nine beads (table 5.37). Since the beads have not been determined with the typochronology of Pion, no bead types can be given. Instead, the beads have been divided in categories according to material and production technique. The Near Eastern beads of Sittard consist of forty-six drawn beads (figure 5.32, figure 5.33, table 5.38) and one amethyst bead (figure 5.33, table 5.38). The drawn beads seem similar in appearance. Amethyst beads occur in graves from the sixth and seventh century, with a focus on the seventh century (Willemsen 2014, 150). The graves can be divided in two chronologic categories, the graves from transition period and the ones from the seventh century and later. Comparing the two time periods, it shows that the percentage of Near Eastern beads from the total bead assemblage in the transitional period is 5,05% (table 5.39 and figure 5.34). This relates to forty-one Near Easter beads. Interestingly, the percentage of Near Eastern beads is 9,52% in the bead assemblage from the seventh century and later (table 5.40 and figure 5.35). This only concerns six beads. This difference is caused by the high number of beads in the transitional period, 812 beads, in relation to the sixty-three beads from the seventh century and later. There are seven beads that could not be dated, these do not include Near Eastern beads.

Table 5.37: The Near Eastern beads of Sittard-Kemperkoul.

GRAVE NR	DATE GRAVE	DATE BEAD (PION)	NUMBER OF BEADS	NUMBER OF BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
11	565-640/50	P1-P3	726	726	39	38x drawn translucent green. 1x drawn translucent.	4 strings: 175 + 139 + 181 + 231 beads	97-100, 323-328
16	565-620	P4	22	8	1	amethyst		101, 333-334
44	565-640/50	P1-P3	29	8	1	green opaque drawn		102, 361
25	640-680	P1-P3	7	7	6	translucent drawn, strangled bead, 5x blue drawn 2 are double		103, 340-341
<b>Total</b>					<b>47</b>			

Table 5.38: Types of Near Eastern beads of Sittard-Kemperkoul (based on table 5.37).

BEAD TYPE (PION)	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE
A - DRAWN	P1-P3	11/25/44	39/6/1	46
F - AMETHYST	P4	16	1	1
<b>TOTAL</b>				<b>47</b>



Figure 5.32: Bead string 3 from grave 11, the blue arrows indicate the drawn Near Eastern beads (after Kars *et al.* 2016, 326).



Figure 5.33: The Near Eastern beads from grave 16 and 44, the arrows indicate a drawn and an amethyst bead (after Kars *et al.* 2016, 334, 360).

Table 5.39: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of Sittard (based on Sittard table 3.16 in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	94,95%	771
NEAR EASTERN BEADS - TRANSITION PERIOD	5,05%	41
<b>TOTAL NUMBER OF BEADS</b>	<b>100%</b>	<b>812</b>

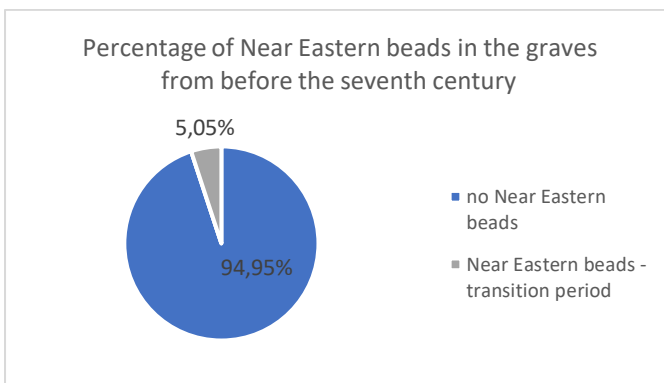


Figure 5.34: Percentage of Near Eastern beads in the graves from before the seventh century (after table 5.39).

Table 5.40: Near Eastern and non-Near Eastern beads attested in graves from seventh century and later of Sittard (based on Sittard table 3.16 in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	90,48%	57
NEAR EASTERN BEADS	9,52%	6
<b>TOTAL NUMBER OF BEADS</b>	<b>100%</b>	<b>63</b>

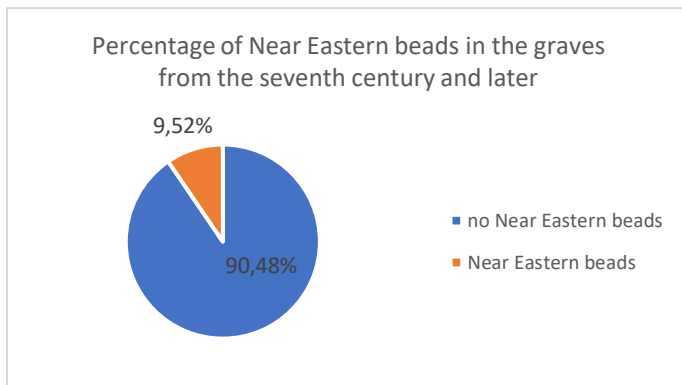


Figure 5.35: Percentage of Near Eastern beads in the graves from the seventh century and later (after table 5.40).

#### 5.4.2.2 *Posterholt-Achterste Voorst*

The cemetery of Posterholt dates to c. 580-750 AD and consists of ninety-two graves (figure 3.74 in the appendix). Of these graves, twenty-seven contain a total of 183 beads available for study (De Haas and Theuws 2013, 56, 151, 162, 165). The site was excavated in 1983 and 1984, but not completely. The complete size of the cemetery is unknown but it assumably consisted of 250-300 burials (De Haas and Theuws 2013, 24, 162). The majority of Posterholt's graves did not contain finds, partly because some graves were reopened but other undisturbed graves did not contain many finds either. Therefore, only twenty-seven of the Merovingian graves could be dated (De Haas and Theuws 2013, 149). Four graves together have five beads of Near Eastern origin (table 5.41; based on De Haas and Theuws 2013, 199-204, 213-214, 238, 263-266). The four graves in table 5.41 are dated extremely broad or could not be dated at all. They all contain one or two Near Eastern bead(s). The five Near Eastern beads include two mosaic bead fragments, one very small drawn bead that looks like an Indian bead, but this can't be assumed, one blue drawn tubular bead and one amethyst bead (table 5.42, figure 5.36). The three Near Eastern beads of Posterholt are found in graves dated to the transition period. Within the graves dated to the seventh century and later are no Near Eastern beads. The bead assemblage of this period consist of thirty-nine beads. They are not discussed here. The three Near Eastern beads relate to 2,54% of the total bead assemblage during the period before the seventh century (table 5.43 and figure 5.37). There are twenty-nine beads that could not be dated, these include two Near Eastern beads.

Table 5.41: The Near Eastern beads of Posterholt.

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
22	580-650	P2	20	20	2	2x mosaic fragments		199-204
31	-	P1-P3	1	1	1	tiny green drawn bead	India?	213-214
59	-	P1-P3	3	3	1	blue drawn tubular bead	said to be opaque	238
85	580-750	P4	36	36	1	amethyst		263-266
<b>TOTAL</b>					<b>5</b>			

Table 5.42: Types of Near Eastern beads of Posterholt (based on table 5.41).

BEAD TYPE (PION)	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE
E - MOSAIC FRAGMENTS	P2	22	2	2
A - TINY GREEN DRAWN	P1-P3	31	1	1
A - BLUE DRAWN TUBULAR BEAD	P1-P3	59	1	1
F - AMETHYST	P4	85	1	1
<b>TOTAL</b>			<b>5</b>	<b>5</b>

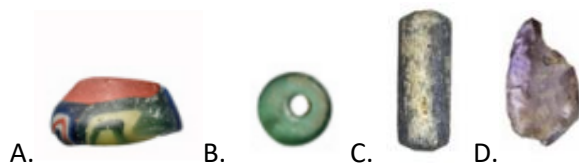


Figure 5.36: The Near Eastern beads of Posterholt-Achterste Voorst; A. the mosaic fragment of grave 22, B. tiny green drawn bead from grave 31, C. drawn tubular bead from grave 59, D. amethyst bead from grave 85 (pictures after De Haas and Theuws 2013, 199, 214, 238, 265).

Table 5.43: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of Posterholt (based on the complete sit table 3.17 of Posterholt in appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	97,45%	115
NEAR EASTERN BEADS - TRANSITION PERIOD	2,54%	3
<b>TOTAL NUMBER OF BEADS</b>	<b>100%</b>	<b>118</b>

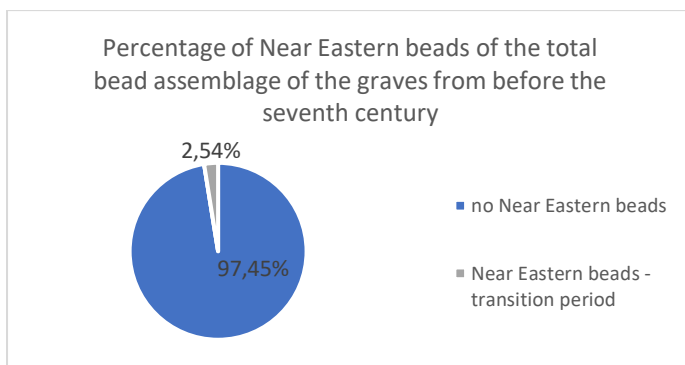


Figure 5.37: Percentage of Near Eastern beads in the graves from before the seventh century (after table 5.44).

#### 5.4.2.3 *Maastricht-Vrijthof*

The cemetery of Vrijthof dates from c. 510-680 AD and consists of 341 graves (figure 3.84 in the appendix; Theuws and Kars 2017, 186). The cemetery was excavated in 1969-1970. It was not completely excavated, and a part was destroyed by ancient and modern causes (Theuws and Kars 2017, 204, 328). The cemetery is part of the larger religious center. The archaeological excavations in and around this center is referred to as the Sint Servatius complex, including the basilica, a hospital, the cemetery of Pandhof and the surrounding settlement of Maastricht (figure 3.84 in the appendix; Theuws and Kars 2017, 6). The cemetery of Vrijthof has thirty-seven graves that contain beads. A total number of 1039 beads is available for study (determined from pictures in publication of Theuws and Kars 2017) resulting in 446 recognized Near Eastern beads (based on Theuws and Kars 2017, 419, 422, 430-431, 436-438, 445-446, 451-453, 457-459, 463-466, 481-482, 486-487, 490-492, 507-508, 511, 514-515, 525, 534, 536-538, 558, 560, 563-564 and 570). On average most burials (excluding the context less finds) contain multiple beads. There are seven graves that contain multiple bead strings. The highest number of eighty-three Near Eastern beads was found in grave 197 (table 5.44). The typological variation of the beads in this cemetery can only be superficially described since they are not determined according to the typochronology of Pion. For most beads, a well-estimated assumption of the production technique can be made (table 5.45). The number of drawn beads is estimated at a total of 302 (figure 5.38; 5.39; 5.40). This includes approximately fifty-five segmented metal foil beads. The bead assemblage contains two reticella beads (figure 5.40) and seventy-one estimated perforated beads (figure 5.39). Most of the perforated beads are from grave 64 (table 5.45), which contains fifty-two perforated beads of two types (D1.1-2 and D1.1-03). The bead assemblage contains twenty-four folded beads (figure 5.40), of which twenty are not categorized, two are multicolored and two are hexagonal of shape. Additionally, eleven mosaic beads are recognized (figure 5.41). Besides the glass beads the cemetery contains one meerscham bead (figure 5.41), a total of twenty-eight amethyst (figure 5.38) and two rock crystal beads. Table 5.45 shows that the largest category of bead type consists of drawn beads. They occur in many of the graves and in the highest numbers. Based on this study, the most occurring drawn beads are the green or green-blue colored beads and the silverfoil beads. The perforated beads are the second largest category, followed by the non-glass beads (table 5.45). The high number of amethyst beads is remarkable, since they are presumed to be rare in Merovingian contexts during the sixth century (Willemsen 2014, 150). There are a few beads of unknown or uncertain production technique. The graves of the cemetery of Vrijthof can be divided in three periods. The percentage of Near Eastern beads is 13,19% of the complete bead assemblage for the period before the seventh century, which relates to 119 beads (table 5.46 and figure 5.42). The percentage is the highest, 31,93%, in the transitional period. This relates to 288 beads, thus the period before the seventh century contains a total of 407 Near Eastern beads (table 5.46 and figure 5.42). This is significantly high in comparison with the period of the seventh century and later. This period contains 36 beads from grave 166 and 313 which makes up for 40,91% of the total bead assemblage (table 5.47 and figure 5.43). These two graves, together with grave 95, date to the late sixth and seventh century. They contain multiple beads assigned to the sixth century by Pion (2014). These graves were possibly wrongly dated in the publication, or the beads circulated for a long time before being deposited (Langbroek, personal communication). There are forty-nine beads that could not be dated, including three Near Eastern beads. The major difference in numbers of Near Eastern beads can be explained by the fact that not the complete cemetery was excavated and that several graves were disturbed (Theuws and Kars 2017, 204, 328).



Table 5.44: The Near Eastern beads of Maastricht-Vrijthof.

FIND NR	GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
1673	12	510-650	P1-P3	30	29	all drawn 12 green, 17 red		419
1681	17	510-590	P2	3	3	3x folded		422
1587	48	565-650	P1-P4	39	36	metal foil bead 1x, 24x green drawn, 9x amethyst, 2x large white	Two strings of which one: 9x amethyst	430-431
956	64	460-525	P1-P3	52	52	D1.1-2 (20), D1.1-3 (32)		436
1149	68	510-610	P1-P3	34	19	7x silverfoil, 2x mosaic, 10 x perforated		437-438
1418	85	510-650	P1-P4	16	8	2x amethyst, 4x drawn green, 1x large green, 1x white		445-446
1478, 1482, 1484	95	580-680	P1-P3	168	44	string 1: meerschaum and 5x mosaic. String 2: 38 green cylindric beads String 3: none	3 strings	451-453
1434, 1495	100	565-680	P1-P3	50	7	string 1: none. String 2: 7 drawn green	2 strings	457-459
1624	110	565-650	P1-P4	58	19	2x amethyst, 3x green perforated, 1x red perforated, 1x yellow perforated, 1x white cylindrical, 2x tubes, 1x really tiny green, 2x segmented strangled drawn green-blue, 1x red drawn strangled, 5x translucent green		463-466
1539	166	610-680	P1-P3	69	18	4x drawn, 2x decorated folded, 7x green folded and 5x blue folded		481-482
1516?	178	510-680	P1-P3	17	2	silverfoil beads	2 missing	486-487
1636, 1637	187	510-590	P1-P3	118	83	41x drawn and silverfoil, 2x blue tublar, 4x green folded, 1x mosaic, 1x reticella? 9x tiny light blue, 16x red drawn, 9x tiny dark blue	2 strings	490-492
1748	235	460-565	P1-P3	15	7	2x hexagonal green, 3x drawn (1 white, 2 green), 2x white perforated		507-508
1752	247	565-620	P1-P3	25	5	4x silverfoil? Drawn beads, 1x red drawn		511
1831	258	510-620	P1-P3	70	36	35 drawn green, 1x reticella		514-515
1819	285	565-580	P4	12	1	amethyst bead		525
1737	308	565-650	P1-2	1	1	Rock crystal		534
1019	313	610-725	P1-P3	19	18	18x green drawn	2 strings	536
1172, 1173	314	510-590	P1-P3	18	6	3x mosaic, 3x green perforated	2 strings	536-537
1151	315	565-650	P1-P4	50	49	14x amethyst, 35 green beads,	2 strings	537-538
1827	finds without context		P1-P3	30	1	1x drawn blue tube	1 string and 2 single beads	558,560,563-564
16	finds from the spoil heaps		P1-P2	11	2	1x rock crystal, 1x green-blue folded bead		570
<b>TOTAL</b>					<b>446</b>			

Table 5.45: Types of Near Eastern beads of Maastricht Vrijthof (based on table 5.44).

BEAD TYPE (PION)	DATE BEADS (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE(S)	TOTAL NUMBER OF THIS BEADS TYPE	REMARKS
A - REALLY TINY GREEN	P1-P3?	110	1	1	India?
? - LARGE WHITE	?	48/85	2/1	3	
A - DRAWN	P1-P3	Finds without context/12/68/100/ 258/85/235/313/48/315/110/95/166/ 178/187/247	1/29/7/7/35/5/3/1 8/25/35/10/38/4/ 2/77/5	301	
B - RETICELLA	P2	258/187	1,1	2	
C - FOLDED	P2	166/finds without context/17/187/235	14,1,3,4,2	24	
D - PERFORATED	P1-P3	110/314/68/235/64	6,3,10,2,52	73	
E - MOSAIC	P2	68/95/187/314	2,5,1,3	11	
F - AMETHYST BEAD	P4	285/48/85/110/315	1,9,2,2,14	28	
F - ROCK-CRYSTAL	P1-P2	308/ stray find	1,1	2	
F - MEERSCHAUM	P1-P5	95	1	1	
<b>TOTAL</b>				<b>446</b>	



Figure 5.38: The Near Eastern beads from grave 48. String 1: light blue: several types of drawn beads. String 2: amethyst beads (pictures after Theuws and Kars 2017, 431).



Figure 5.39: The Near Eastern beads of grave 110. Light blue: several types of drawn beads, green: perforated beads and purple: amethyst beads (picture after Theuvs and Kars 2017, 465).



Figure 5.40: The Near Eastern beads of the two strings of grave 187. Light blue: several shapes and colors of drawn beads and segmented metal foil beads, yellow: a mosaic bead, orange: a reticella and dark blue: folded beads (picture after Theuvs and Kars 2017, 491).



Figure 5.41: The Near Eastern beads from string 1 from grave 95, including from left to right: a mosaic bead, a meerschaum bead, three mosaic beads, and another mosaic bead (picture after Theuvs and Kars 2017, 452).

Table 5.46: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of Maastricht-Vrijthof (based on table 3.18 of Maastricht-Vrijthof in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	54,87%	495
NEAR EASTERN BEADS - BEFORE SEVENTH CEN	13,19%	119
NEAR EASTERN BEADS - TRANSITION PERIOD	31,93%	288
<b>TOTAL NUMBER OF BEADS</b>	<b>100%</b>	<b>902</b>

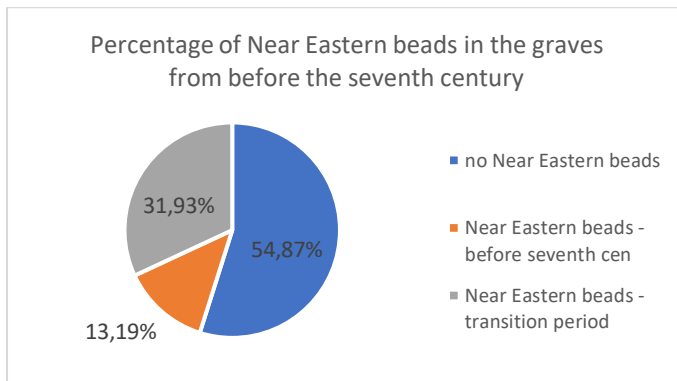


Figure 5.42: Percentage of Near Eastern beads in the graves from before the seventh century (after table 5.46).

Table 5.47: Near Eastern and non-Near Eastern beads attested in graves from seventh century and later of Maastricht-Vrijthof (based on table 3.18 of Maastricht-Vrijthof in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	59,09%	52
NEAR EASTERN BEADS	40,91%	36
<b>TOTAL NUMBER OF BEADS</b>	<b>100%</b>	<b>88</b>

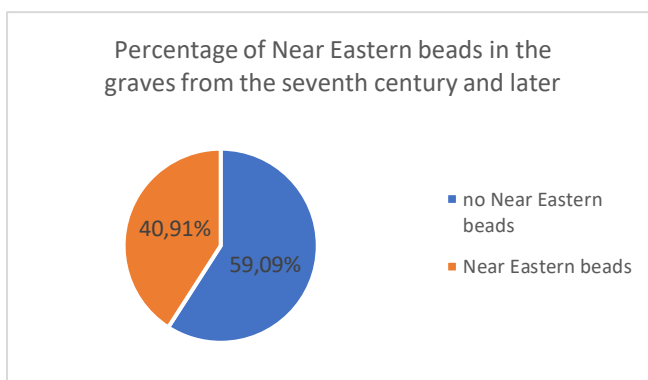


Figure 5.43: Percentage of Near Eastern beads in the graves from the seventh century and later (after table 5.47).

The cemetery Maastricht-Pandhof dates from the fourth till the end of the seventh century AD and the total amount of graves is unknown but could be around a thousand graves (Theuws and Kars 2017, 6). This cemetery is situated inside the Sint Servatius Basilica and was excavated in 1953-1954 (figure 3.19 in the appendix; Kars 2011, 8). The cemetery has a Roman phase, and it is assumed that they predate the stone building. This suggests that the burials excavated outside the basilica and inside once belonged to the same cemetery, this does not include the cemetery of Vrijthof (Kars 2011, 8). There were twenty-four graves with beads available for this study. The studied bead assemblage consists of 1393 beads of which 758 are of Near Eastern origin (table 5.48; based on Kars 2011, 156, 347-349, 352-354, 356-357, 362-364, 366). Of the twenty-four graves only three contain less than ten Near Eastern beads, the number of Near Eastern beads in the complete cemetery is high. The grave with the most Near Eastern beads is 10074 with 136 beads. Second is grave 10923, all the 123 beads of this grave originate from the Near East. Third is grave 10828 with 111 beads (table 5.48). There is a high number of single beads found in this cemetery, these are documented in the separate table 5.49 (based on Kars 2011, 156, 348). These beads do not have a dated grave; however, an estimated date can be assigned to the beads based on the typochronology of Pion. The Near Eastern bead assemblage contains an estimated number of 414 drawn beads (figure 5.44 and figure 5.45). This includes forty-nine metal foil beads and fifty-eight possible metal foil beads. There are thirteen beads categorized as possibly drawn beads. The cemetery contains one reticella bead (figure 5.45) and fourteen folded beads of which two are multicolored (figure 5.45). Recognizing the difference between folded and perforated beads from a picture was found to be difficult. There are 125 perforated beads (figure 5.43) and sixteen mosaic beads. Grave 10118 contains twelve of the mosaic beads (figure 5.46). The non-glass beads consist of twenty-seven amethyst and four rock crystal beads (figure 5.45 and figure 5.47; table 5.50). Like the bead assemblage of Vrijthof, the category of drawn beads is the largest bead category based on production techniques (table 5.50). The second largest category is the perforated beads and third the non-glass beads which consist of twenty-seven amethyst and four rock crystal beads (table 5.50). The high number of amethyst beads is comparable with the site of Vrijthof. The graves can be divided in two chronologic categories before the seventh century. There are no graves and beads dated completely to the seventh century or later. The percentage of Near Eastern beads is 25,10% of the total bead assemblage for the period before the seventh century, which relates to 340 Near Eastern beads (table 5.51, figure 5.48). The percentage of Near Eastern beads is the highest, 29,10%, during the transitional period, which relates to 395 Near Eastern beads (table 5.51, figure 5.48). There are thirty-seven single beads that could not be dated are therefore excluded from the table and graph. These include twenty-three Near Eastern beads. The graves are broadly dated and besides the amethyst beads all attested Near Eastern beads date to the sixth century. The dates of the beads and the graves seem compatible. A slight exaptation is grave 10118, the mosaic beads of this grave appear very weathered, and they could be considered chronically 'out of place' (table 5.48). These mosaic beads could be heirloom beads.

In table 5.48 the labels 'number of beads' and 'number of beads available for research are replaced with 'number of beads according to document' and 'number of beads counted on picture.' These labels fit the cemetery and research materials better.

Table 5.48: The Near Eastern beads of Maastricht-Pandhof.

PICTURE NR	GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS ACCORDING TO DOCUMENT	NUMBER OF BEADS COUNTED ON PICTURE	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLIC ACTION	PICTURE IN PUBLIC ACTION
93	10068	460-680	P1-P3	62	63	34	32x black 2x green faceted	(Misses a blue trans bead)	347	figure 47
418	11321	460-590	P1-P3	149	163	73	58 x drawn maybe metal-foil, 1x red drawn tube, 64x blue drawn translucent	(thesis counts 44 white beads)	349	figure 49
418	11321	400-590	P1-P3	82	99	35	2x blue tubes drawn, 1x red tube drawn, 13x blue drawn? 19x metal foil	Description in text mismatch the picture	356	figure 58
27	10074	580-680	P1-P4	173	176	136	2x amethyst, 134x tiny green ones		352	figure 52
240	10828	400-620	P1-P3	125	126	111	1x silverfoil, 36x translucent perforated, 30x green perforated, 3x perforated dark blue, 20x white and 20x green and 1x dark blue drawn	(I count 30 green trans not 29) pic is too blurry to determine the tiny beads	352-353	figure 53
466	11342	460-590	P1-P3	77	77	71	36 drawn green, 1x white drawn, 27 x drawn yellow trans, 7x dark blue drawn		353	figure 53
182	10923	460-525	P1-P3	123	123	123	45 x drawn green, 38x green perforated, 40x drawn blue		353	figure 54
42	10118	565-650	P2	45	45	12	12x mosaic	2 strings	354	figure 55
321	10227	400-590	P1-P3	59	59	13	2x rock crystal, 3x green drawn, 6x green perforated 2x blue perforated	no mosaic bead, 3x unknown beads	357	figure 58
562	10365	400-590	P1-P3	46	46	15	10x drawn red, 1x rock crystal, 1x blue drop 1x silverfoil, 1x green folded tubular, 1x reticella	2x reticella don't seem Near Eastern	357	figure 59
303	10220	460-650	P1-P3	18	18	2	2x green perforated	1 unknown	362	figure 64
581	10407	510-650	P1-P3	57	57	12	4x mosaic, 4x green, 1x perforated red/orange, 1x green perforated, 2x blue perforated	fragments include mosaic	362	figure 65
48	10061	565-650	P1-P2	29	29	1	1x rock-Crystal		363-364	figure 66
172	10856	565-650	P1-P4	12	12	10	6x amethyst, 4x green drawn		364	figure 67
60	10042	510-650	P4	14	14	13	13x amethyst		364	figure 67
333	10252	460-590	P1-P4	15	7	9	3x green drawn 1x goldfoil, 5x amethyst	8 lost: 5x amethyst, 3x blue	364	figure 67
128	10799	460-620	P1-P3	67	70	64	27 x goldfoil, 4x drawn brown drop segmented, 7x drawn tubes blue, 8x folded blue tubes, 4x folded blue prism 1x drawn brown, 5x white drawn semi-segmented, 3x green perforated, 5x drawn white	3 not counted are green circle in pic	366	figure 69
<b>TOTAL</b>						<b>735</b>				

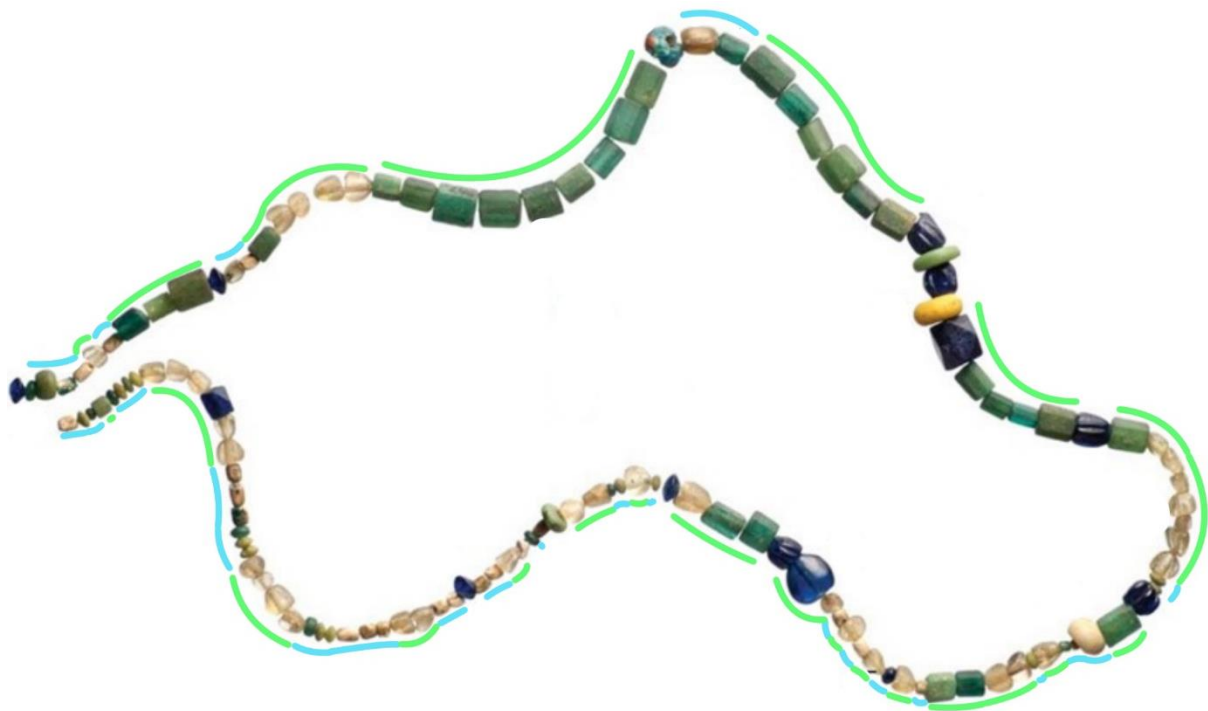
Table 5.49: The Near Eastern beads within the single beads category of Maastricht-Pandhof.

PICTURE NR	GRAVE NR	DATE BEADS (PION)	NUMBER OF BEADS COUNTED ON PICTURE	AMOUNT OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION	PICTURE IN PUBLICATION
23	10102	P1-P3	5	2	2x perforated red		156	figure 70
59	10100	P1-P3	3	1	1x blue		156	figure 70
142	10796	P1-P3	3?	1	1x drawn green	piece of bone?	156	figure 70
252	10986	P1-P3	15 fragments	10	10x green drawn, include green drawn fragments		156	figure 70
428	19999	P4	6	1	1x amethyst, 1x black decorated	Black Roman bead?	348	figure 70
447	10636	P1-P3	1	1	perforated green		348	figure 70
453	10162	P2	1	1	folded green-red		348	figure 70
490	10554	P1-P3	4	2	2x drawn blue		348	figure 71
493	10641	P1-P3	many fragments	4	1x green folded/perforated, 2x blue perforated, 1x red perforated	blurry pic	348	figure 71
<b>TOTAL</b>				<b>23</b>				

Table 5.50: Types of Near Eastern beads of Maastricht-Pandhof (based on tables 5.48 and 5.49).

BEAD TYPE (PION)	DATE BEADS (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE
? – GREEN FACETED	P1-P3?	10068	2	2
A - DRAWN	P1-P3	10074/10365/10554/10252/10856/ 10986/10407/10227/11342/ 10796/10799/10068/10828/ 10923/11321	134/12/2/4/4/ 10/4/3/71/ 1/49/32/42/ 85/95	548
A?	P1-P3	11321	13	13
B - RECITELLA	P2	10365	1	1
C - FOLDED	P2	10799/10365/10162	12/1/1	14
C/D - FOLDED/ PERFORATED	P1-P3?	10641	1	1
D - PERFORATED	P1-P3	10407/10641/10220/10923/ 10799/10828/10636/10102/ 10227/10365/10100	4/3/2/38/ 3/69/1/2/ 8/1/1	132
E - MOSAIC	P2	10407/10118	4/12	16
F - AMETHYST	P4	19999/10252/10856/10042/ 10074	1/5/6/13/2	27
F - ROCK CRYSTAL	P1-P2	10365/10227/10061	1/2/1	4
<b>TOTAL</b>				<b>758</b>





240-11,12,13,14,15,16,17,18,19,20,21,22,23,24,25

Figure 5.44: The Near Eastern beads from grave 10828. Light blue: drawn beads, green: perforated beads of distinct types (after figure 53 in Kars 2011, 488).



562-5,6,7,8,9,10,11,12,13,14,15,16,17

Figure 5.45: The Near Eastern beads of grave 10365. Light blue: drawn beads, green: perforated bead, dark blue: folded bead, orange: reticella, grey: rock crystal bead (after figure 59 in Kars 2011, 494).



Figure 5.46: The Near Eastern beads from grave 10118. Light blue: mosaic beads (after figure 55 in Kars 2011, 490).



Figure 5.47: The Near Eastern beads from grave 10856. Light blue: drawn beads, purple: amethyst beads (after figure 67 in Kars 2011, 502).

Table 5.51: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of Maastricht Pandhof (based on table 3.19 and 3.20 of Maastricht-Pandhof in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	45,80%	621
NEAR EASTERN BEADS - BEFORE SEVENTH CEN	25,10%	340
NEAR EASTERN BEADS - TRANSITION PERIOD	29,10%	395
<b>TOTAL NUMBER OF BEADS</b>	<b>100%</b>	<b>1356</b>

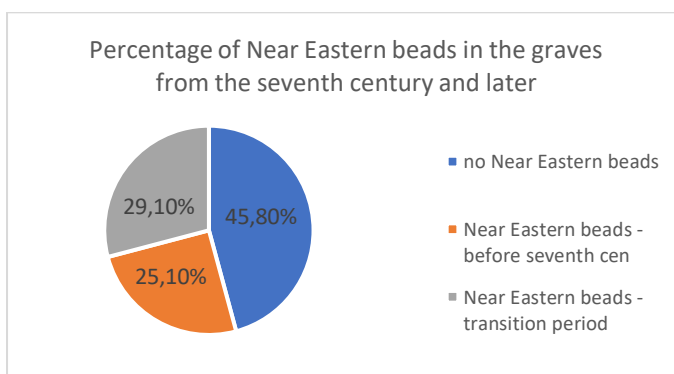


Figure 5.48: Percentage of Near Eastern beads in the graves from before the seventh century (after table 5.51).

#### 5.4.2.5 *Obbicht-Oude Molen*

The cemetery of Obbicht is dated from c. 510 till 670 AD and consists of sixty-eight graves. There are nine graves that contained beads (Kars *et al.* 2016, 22, 241, 263). The cemetery was excavated in 1932 and 1936, (Kars *et al.* 2016, 34). A reconstruction of the cemetery was made (figure 3.122 in the appendix). However, it is not completely accurate as the oldest phase of the cemetery is believed to be destroyed together with some graves (Kars *et al.* 2016, 40-41). Of the total number of 176 studied beads, twenty-three beads of Near Eastern origin were recognized (table 5.52; based on Kars *et al.* 2016, 148, 151-153, 397-398, 403-404, 422-424). These beads are spread over the content of three graves. Grave 19 contains the lowest number of three Near Eastern beads. The highest number, which is fourteen, was documented for grave 336 (table 5.52). Every one of the twenty-three Near Eastern beads are drawn (table 5.53 and figure 5.49). The color of the beads varies from green to green-blue to light blue (figure 5.49). All the graves can be assigned to the transitional period. The Near Eastern beads make up for 13,45% of the total bead assemblage (table 5.54 and figure 5.50). There are no graves and beads dated to the seventh century or later. There is one bead that could not be dated, this was not a Near Eastern bead.

Table 5.52: The Near Eastern beads of Obbicht.

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS AVAILABLE FOR STUDY	AMOUNT OF NEAR EASTERN BEADS	BEAD TYPES	PAGE IN PUBLICATION
8	565-620	P1-P3	32	6	4x blue drawn, 2x white drawn	151, 397-398
19	565-650	P1	23	3	3x yellow drawn	152, 403-404
36	565-650	P1-P3	32	14	8x blue drawn, 6x green drawn	148, 153, 422-424
<b>TOTAL</b>				<b>23</b>		

Table 5.53: Types of Near Eastern beads of Obbicht (based on table 5.52).

BEAD TYPE (PION)	DATE BEADS (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE
A - DRAWN	P1-P3	8,19,36	6,3,14	23
<b>TOTAL</b>				<b>23</b>



Figure 5.49: Types of drawn Near Eastern beads of grave 36 from Obbicht (picture after Kars *et al.* 2016, 422).

Table 5.54: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of Obbicht (based on table 3.22 of Obbicht in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	86,55%	148
NEAR EASTERN BEADS - TRANSITION PERIOD	13,45%	23
<b>TOTAL NUMBER OF BEADS</b>	<b>100%</b>	<b>171</b>

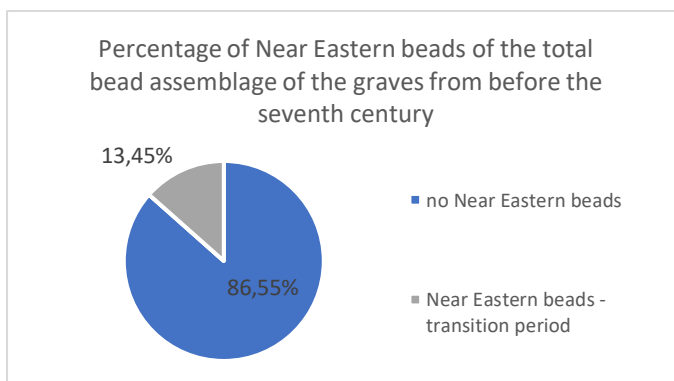


Figure 5.50: Percentage of Near Eastern beads in the graves from before the seventh century (after table 5.54).

#### 5.4.2.6 Stein-Groote Bongerd

This cemetery dates from c. 510-680 AD and consists of seventy-two graves (figure 3.125 in the appendix). Only eight of them hold beads (Kars *et al.* 2016, 231, 246, 271). The exact excavation date is unknown but has to be short before 1940 (Kars *et al.* 2016, 43). Similar to the cemetery of Obbicht, the cemetery of Stein was heavily disturbed and originally could have consisted of 100 to 110 graves (Kars *et al.* 2016, 271). The cemeteries of Sittard, Obbicht and Stein were located within a radius of ten kilometre of each other. This indicates that modest burial communities (local groups of families) existed contemporary in each other's proximity (Kars *et al.* 2016, 281). Of the total number of ninety-six studied beads there are two Near Eastern beads recognized (table 5.55; based on Kars *et al.* 2016, 203, 477-478). The found beads both come from grave 51 and are similar green drawn beads with cold cut edges (table 5.55 and 5.56 and figure 5.51). The graves can be divided in three chronologic categories. A total of fifty-two beads have been found in graves from before the seventh century, of which two to the transition period. These are the two Near Eastern beads; they make up 3,85% of the total bead assemblage before the seventh century (table 5.57 and figure 5.52). The bead assemblage from graves dated to the seventh century or later consists of forty-one beads. There are three beads that could not be dated, these do not include any Near Eastern beads.

Table 5.55: The Near Eastern beads of Stein.

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	PAGE IN PUBLICATION
51	565-620	P1-P2	16	11	2	2x green drawn	203, 477-478
<b>TOTAL</b>					<b>2</b>		

Table 5.56: Type of Near Eastern beads of Stein (based on table 5.55).

BEAD TYPE (PION)	DATE BEADS (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE
A - GREEN DRAWN BEADS	P1-P2	51	2	2
<b>TOTAL</b>			<b>2</b>	<b>2</b>



Figure 5.51: The type of drawn Near Eastern beads of grave 51 from Stein-Groote (picture after Kars *et al.* 2016, 477).

Table 5.57: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of Stein (based on table 3.125 of Stein in the appendix).

CATEGORY	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	96,15%	50
NEAR EASTERN BEADS - TRANSITION PERIOD	3,85%	2
<b>TOTAL NUMBER OF BEADS</b>	<b>100%</b>	<b>52</b>

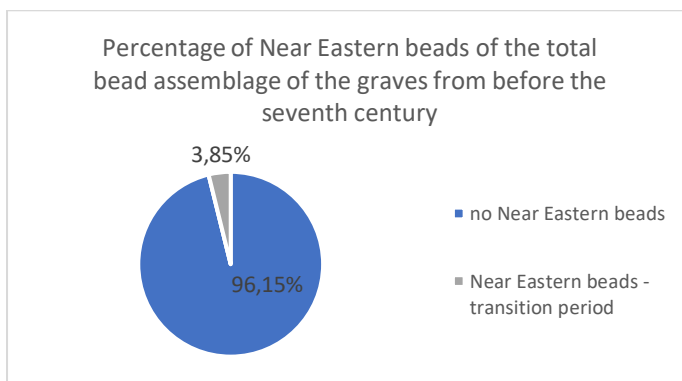


Figure 5.52: Percentage of Near Eastern beads in the graves from before the seventh century (after table 5.57).

### 5.4.3 Beads from the Near East in Limburg: an overview

The cemeteries of Limburg differ in their period of use. Of the studied 661 graves, 127 graves contained beads. The total bead assemblage for Limburg consists of 3.828 studied beads (table 5.58). There was a slight difference in the documented number of beads and the studied number of beads due to counting mistakes or missing beads. A total number of 1.281 Near Eastern beads has been recognized, this relates to 33,46% of all the beads (table 5.58; based on individual site tables 3.16, 3.17, 3.18, 3.19, 3.20, 3.21, 3.22 and 3.23 in the appendix). The cemeteries of Maastricht really stand out in the number of Near Eastern beads as well as the number of graves. They are exceptionally large cemeteries. The percentage of Near Eastern beads for the other sites are significantly lower (table 5.58). The site of Obbicht has the highest percentage, 13,07%, of Near Eastern beads after Maastricht. This relates to twenty-three beads of Near Eastern origin. However, the site with the largest bead assemblage and most Near Eastern beads after Maastricht is Sittard with forty-seven beads, while this is 5,37% of Sittard's bead assemblage (table 5.58). This relates to 3,67% of the Near Eastern beads of the complete subregion of Limburg (table 5.59). Table 5.59 shows the percentages for every cemetery in relation to the complete bead assemblage of Limburg. It shows that the Near Eastern beads of Maastricht-Pandhof make up for 59,17% of the Near Eastern beads for the complete subregion. Maastricht-Vrijthof and -Pandhof together contain 93,98% of the Near Eastern beads.

#### **Chronological distribution of Near Eastern beads**

The graves of all the seven selected cemeteries can be divided in three chronologic categories. The graves from before the seventh century, the transition period and the ones from the seventh century and later. It should be taken into account that all graves of Maastricht-Pandhof are categorized to the transitional period or before the seventh century. The highest percentage of Near Eastern beads is that from the total assemblage of the transitional period. This is 22,05% and relates to 752 Near Eastern beads (table 5.60 and figure 5.53). The Near Eastern beads make up 13,46% of the beads from the period before the seventh century, which relates to 459 Near Eastern beads (table 5.60 and figure 5.53). Together with the beads from the transitional period there are 1211 Near Eastern beads recognized in the graves from before the seventh century (table 5.60). The percentage of Near Eastern beads is 14,05% (forty-two beads) in the period of the seventh century and later (table 5.61 and figure 5.54). There are 119 beads that could not be dated, including twenty-eight Near Eastern beads. These beads are excluded from the tables and graphs. Additionally, these tables display a significant difference between the number of beads from before the seventh century and the transitional period, which is 3411 beads (table 5.60), and the number of beads from the seventh century and later, which is only 299 beads (table 5.61). The decline in Near Eastern beads and beads in general that has been attested for the previous two subregions is also evident in the results of the Limburg subregion.

Table 5.58: Overview table of all sites of Limburg.

SITE	TOTAL NUMBER OF GRAVES	NUMBER OF GRAVES WITH BEADS	% GRAVES WITH BEADS OF TOTAL NUMBER OF GRAVES	NUMBER OF BEADS ORIGINALLY DOCUMENTED	NUMBER OF MEROVIGIAN BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	USAGE PERIOD OF CEMETERY	% NE BEADS OF TOTAL NUMBER OF STUDIED BEADS
SITTARD-KEMPERKOUL	88	20	22,72%	926	875	47	c. 550-700	5,37%
POSTERHOLT-ACHTERSTE VOORST	92	27	29,35%	186	183	5	c. 580-750 AD	2,73%
MAASTRICHT VRIJTHOF	341	37	10,85%	1039	1039	446	c. 510-680	42,93%
MAASTRICHT PANDHOF	1000+	24	??	1393	1393	758	fourth century till end seventh	54,42%
ECHT	??	2	??	67	67	0	First part seventh century	0,00%
OBBICT-OUDE MOLEN	68	9	13,24%	260	176	23	c. 510-670	13,07%
STEIN-GROOTE BONGERD	72	8	11,11%	118	96	2	c. 510-680	2,08%
<b>TOTAL</b>	<b>At least 661</b>	<b>127</b>	<b>19,21%</b>	<b>3989</b>	<b>3829</b>	<b>1281</b>		<b>33,46%</b>

Table 5.59: Percentage of the Near Eastern beads for every site from the total bead assemblage and the total Near Eastern bead assemblage (based on table 5.58).

SITE	NUMBER OF MEROVIGIAN GLASS BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	% OF NEAR EASTERN BEADS OF THE TOTAL NUMBER OF BEADS IN THE AREA (3829)	% OF NEAR EASTERN BEADS OF THE TOTAL AMOUNT OF NEAR EASTERN BEADS IN THE AREA (1281)
SITTARD-KEMPERKOUL	875	47	1,23%	3,67%
POSTERHOLT-ACHTERSTE VOORST	183	5	0,13%	0,39%
MAASTRICHT-VRIJTHOF	1039	446	11,65%	34,81%
MAASTRICHT-PANDHOF	1393	758	19,80%	59,17%
ECHT	67	0	0%	0%
OBBICT-OUDE MOLEN	176	23	0,60%	1,80%
STEIN-GROOTE BONGERD	96	2	0,05%	0,16%
<b>TOTAL</b>	<b>3829</b>	<b>1281</b>	<b>33,46%</b>	<b>100%</b>



Table 5.60: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of Limburg (based on tables 3.16 to 3.25 of Limburg in the appendix).

CATEGORY	SITTARD	POSTERHOLT	MAASTRICHT VRIJTHOF	MAASTRICHT PANDHOF	ECHT	OBBICHT	STEIN	PERCENT AGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	771	115	495	621	0	148	50	64,50%	2200
NEAR EASTERN BEADS - BEFORE SEVENTH CEN	0	0	119	340	0	0	0	13,46%	459
NEAR EASTERN BEADS - TRANSITION PERIOD	41	3	288	395	0	23	2	22,05%	752
<b>TOTAL NUMBER OF BEADS</b>	<b>812</b>	<b>118</b>	<b>902</b>	<b>1356</b>	<b>0</b>	<b>171</b>	<b>52</b>	<b>100%</b>	<b>3411</b>

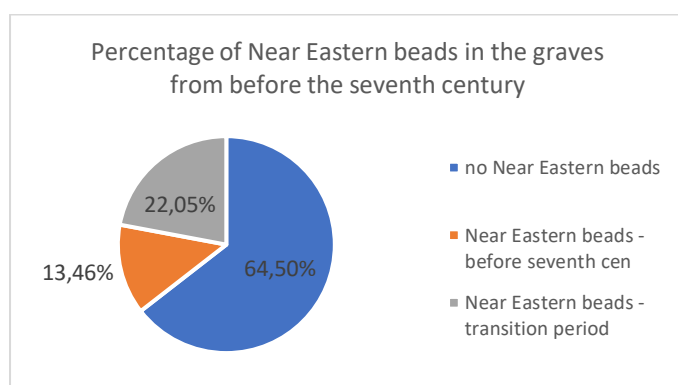


Figure 5.53: Percentage of Near Eastern beads in the graves from before the seventh century (after table 5.60).

Table 5.61: Near Eastern and non-Near Eastern beads attested in graves from seventh century and later of the East Rhine region (based on tables 3.16 to 3.25 of Limburg in the appendix).

CATEGORY	SITTARD	POSTERHOLT	MAASTRICHT VRIJTHOF	MAASTRICHT PANDHOF	ECHT	OBBICHT	STEIN	PERCENTAGE	ABSOLUTE NUMBERS
NO NEAR EASTERN BEADS	57	36	52	0	67	4	41	85,95%	257
NEAR EASTERN BEADS	6	0	36	0	0	0	0	14,05%	42
<b>TOTAL NUMBER OF BEADS</b>	<b>63</b>	<b>36</b>	<b>88</b>	<b>0</b>	<b>67</b>	<b>4</b>	<b>41</b>	<b>100%</b>	<b>299</b>

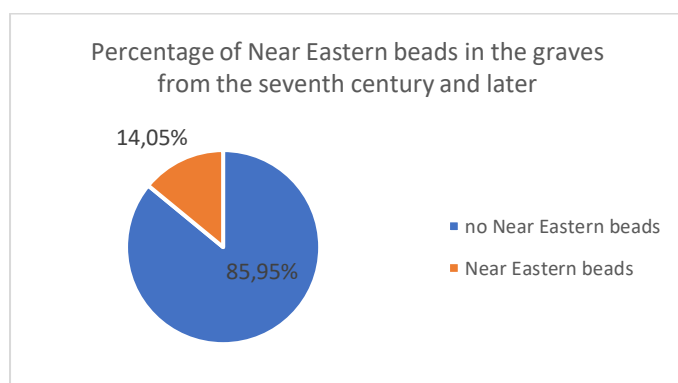


Figure 5.54: Percentage of Near Eastern beads in the graves from the seventh century and later (after table 5.61).

#### 5.4.4 Types of Near Eastern beads attested in Limburg

Table 5.62 shows an overview of the distinct types of Near Eastern beads found in the Limburg subregion. All the production techniques that originate or relate to the Near East are present in the studied bead assemblage. Table 5.63 contains a category labelled 'uncertain', this category consists of beads that could not be assigned to a production technique with certainty. This category includes the 136 tiny green beads as well, these beads are drawn but their origin is uncertain. The beads possibly originate from India but could also be from the Near East. These categories of beads are left out of further analysis. Like the results of Noord-Brabant and East Rhine, the drawn beads form the main category with 61,20% of the Near Eastern beads (table 5.63). The second largest category are the perforated beads, this is 16%. Third are the non-glass beads which make up 4,92% of the Near Eastern beads. After the non-glass beads follows the category of folded beads consisting of 2,97% of the total bead assemblage. The two smallest categories are mosaic beads, with 2,26% and wound beads with 0,23% of the total bead assemblage (table 5.63). The most frequent type of bead cannot be determined more specific than that it is a drawn bead. The translucent green drawn beads are very frequent, as are the segmented metal foil beads (table 5.62). The bead assemblage of grave 110 from Maastricht-Vrijthof contains the most types of Near Eastern beads, which is ten types (table 5.62). The grave with the second most bead types is grave 10799 from Maastricht-Pandhof, which contains nine types (table 5.48). Third is the grave 187 from Maastricht-Vrijthof with eight types of Near Eastern beads (table 5.44). The grave that contains the most Near Eastern beads is grave 10074 from Maastricht-Pandhof with 136 beads (table 5.48). The graves with the second and third highest numbers of Near Eastern beads are also from Maastricht-Pandhof. Second is grave 10923 with 123 beads and third is grave 10828 with 111 beads (table 5.48). The graves with the most bead types and the graves with the highest number of Near Eastern beads are different. There is no type of bead that occurred in all six sites (to the extent that could be determined from the published photographs). Nevertheless, all sites contained drawn beads. There are some bead types shared by four sites, the general category of drawn beads, drawn beads with cold cut and amethyst beads. The number of amethyst beads for Limburg is fifty-seven beads, this is very high in comparison to other region in this study. An overview figure is created to summarize the common Near Eastern beads for this area (figure 5.55). The beads are divided into periods based on the typochronology of Pion 2014 and Vrielynck *et al.* 2018. It should be noted that this figure is an estimation.

Table 5.62: The types of attested Near Eastern beads in the study assemblage of Limburg (based on all site tables of Limburg in the appendix).

BEAD TYPE (PION)	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE	SITE
REALLY TINY GREEN	P1-P3?	110/31	1/1	2	M.Vrijthof/Posterholt
?	?	10068/48,85	2/2,1	5	M.Pandhof/M.Vrijthof
A - DRAWN	P1-P3	11,25,44/59/Finds without context, 12,100,258,85,235,313,48, 315,110,95,166,187,247/ 10074, 10365,10554,10252,10856,10986, 10407,10227,11342,10796, 10799,10068,10828, 10923,11321/8,19,36/51	39,6,1/1/1,29,7,35,5,3,18,2, 4,35,10,38,4, 36,1/134,11,2,3,4,10,4,3,71,1,22,32,41,8, 5,76/6,3,14/2	817	Sittard/Posterholt/ M.Vrijthof/M.Pandhof/ Obbicht/Stein
A - METAL FOIL	P1-P3	48,68,178,187/11321,10252,10799, 10828,10365	1,7,2,41/19,1, 27,1,1	100	M.Vrijthof/M.Pandhof
A?	P1-P3	11321/247	13/4	17	M.Pandhof/M.Vrijthof
B - RECITELLA	P2	258,187/10365	1,1/1	3	M.Vrijthof/M.Pandhof
C - FOLDED	P2	166,finds without context,17,187,235/ 10799,10365,10162	14,1,3,4,2/ 12,1,1	38	M.Vrijthof/M.Pandhof
C/D - FOLDED/ PERFORATED	P1-P3?	10641	1	1	M.Pandhof
D - PERFORATED	P1-P3	110,314,68,235,64/10407,10641,10220, 10923,10799,10828,10636,10102, 10227,10365,10100	6,3,10,2,52/ 4,3,2,38,3,69, 1,2,8,1,1	205	M.Vrijthof/M.Pandhof
E - MOSAIC	P2	68,95,187,314/10407,10118/22	2,5,1,3/4,12/ 2	29	M.Vrijthof/M.Pandhof/ Posterholt
F - AMETHYST	P4	16/85/285,48,85,110,315/ 19999,10252,10856,10042,10074	1/1/1,9,2,2,1 4/1,5,6,13,2	57	Sittard/Posterholt/ M.Vrijthof/M.Pandhof
F - ROCK CRYSTAL	P1-P2	308, stray find/10365,10227,10061	1,1/1,2,1	6	M.Vrijthof/M.Pandhof
F - MEERSCHAUM	P1-P5	95	1	1	M.Vrijthof
<b>TOTAL</b>				<b>1281</b>	

Table 5.63: The percentage and number of the types of Near Eastern beads in the total assemblage of Limburg (based on table 5.62).

BEAD TYPE	NUMBER	%
UNCERTAIN	7	0,55%
DRAWN	918	71,66%
WOUND	3	0,23%
FOLDED	38	2,97%
PERFORATED	205	16,00%
MOSAIC	29	2,26%
OTHER	63	4,92%
<b>TOTAL</b>	<b>1281</b>	<b>100%</b>



Figure 5.55: Overview of the estimated common types of Near Eastern beads within the bead assemblage of Limburg (pictures after Vrielynck *et al.* 2018).

#### 5.4.5 Conclusion

The results of the study on the bead assemblage from Merovingian graves from Limburg has shown some interesting results. Seven cemeteries have been selected and six of them contain Near Eastern beads. Only the cemetery of Echt does not. The cemeteries of Maastricht really stand out in the number of Near Eastern beads as well as the number of graves. They overshadow the other cemeteries in the results. Together the sites of Maastricht contain 93,98% of the Near Eastern beads. However, the Near Eastern beads attested in Maastricht seem typological not very different from the Near Eastern beads of the other cemeteries. Overall, comparing all the sites of Limburg the results show that the number of Near Eastern beads is higher during the period before the seventh century and lower in the period of the seventh century and later. The percentage of Near Eastern beads of the total beads assemblage is the highest in the transitional period. Thus, before the seventh century, beads and especially Near Eastern beads were more common than from the seventh century onwards.

## 5.5 Results of the complete research area

### 5.5.1 Introduction

In the final paragraph of this chapter the results of the complete research area will be presented. The next paragraph will show the summarized results of the subareas discussed in more detail before. The complete number of cemeteries and the graves which contained Near Eastern beads is displayed. In addition the number of Near Eastern beads before the seventh century and during the seventh century and later are compared. The second paragraph concerns the types of beads and the frequency of the Near Eastern beads for all the sites of complete research area. At the end of this paragraph the most common bead types are displayed with the use of pictures. The subsection is not completed with a conclusion. Instead there is a conclusion for the entire chapter based on this paragraph.

## 5.5.2 Complete research area total number overview

The period of usage differs for many of the selected sites, the overall research material dates from the fourth till the eighth century. The number of graves and the quantity of beads can be significantly different for every site. Of the studied twenty sites, thirteen contained Near Eastern beads (figure 5.56). These sites had a total of 1751 graves and in 384 of the graves were beads attested. There are 139 graves with Near Eastern beads, which relates to 7,94% of the graves. Overall, a total number of 10.193 beads have been examined and 2414 beads of Near Eastern origin are recognized (table 5.64). The cemeteries contain a different percentage of Near Eastern beads varying from 11,36% for Noord-Brabant to 21,51% for the East Rhine region and 32,19% for Limburg (table 5.64). The absolute number of Near Eastern beads varies even more (table 5.64).

### **Chronological distribution of Near Eastern beads**

The graves of all the selected cemeteries can be divided in three chronologic categories. The graves from before the seventh century, the transition period and the ones from the seventh century and later. It should be taken into account that some sites exist of graves that are only dated to a single chronological category. Comparing the numbers of beads in every time period, a very obvious distinction between the number of Near Eastern beads from the graves before the seventh century and the graves of the seventh century and later emerges. The Near Eastern beads make up 27,32% of the total bead assemblage of the graves from before the seventh century. This relates to a total of 2276 Near Eastern beads (table 5.65 and figure 5.57). From the bead assemblage of the transitional period 11,34% are Near Eastern beads, which relates to 945 beads (table 5.65 and figure 5.57). The Near Eastern beads in the graves from the seventh century and later make up 6,85% (107 beads) of the total bead assemblage of this period (table 5.66 and figure 5.58). The difference between the graves from the transitional period and the graves from before the seventh century is smaller. This is due to the high number of graves from Limburg that were assigned to the transitional period. The total number of Near Eastern beads during the sixth century and earlier is higher (1331 beads) than those of the transitional period (945 beads) (table 5.65). There are 305 beads that could not be dated, including thirty-one Near Eastern beads (table 5.67). These beads are excluded from the chronologically divided tables and graphs. Additionally, the tables display a significant difference between the complete number of beads from before the seventh century and the transitional period, which is 8329 beads (table 5.65), and the number of beads from the seventh century and later, which is only 1561 beads (table 5.66).

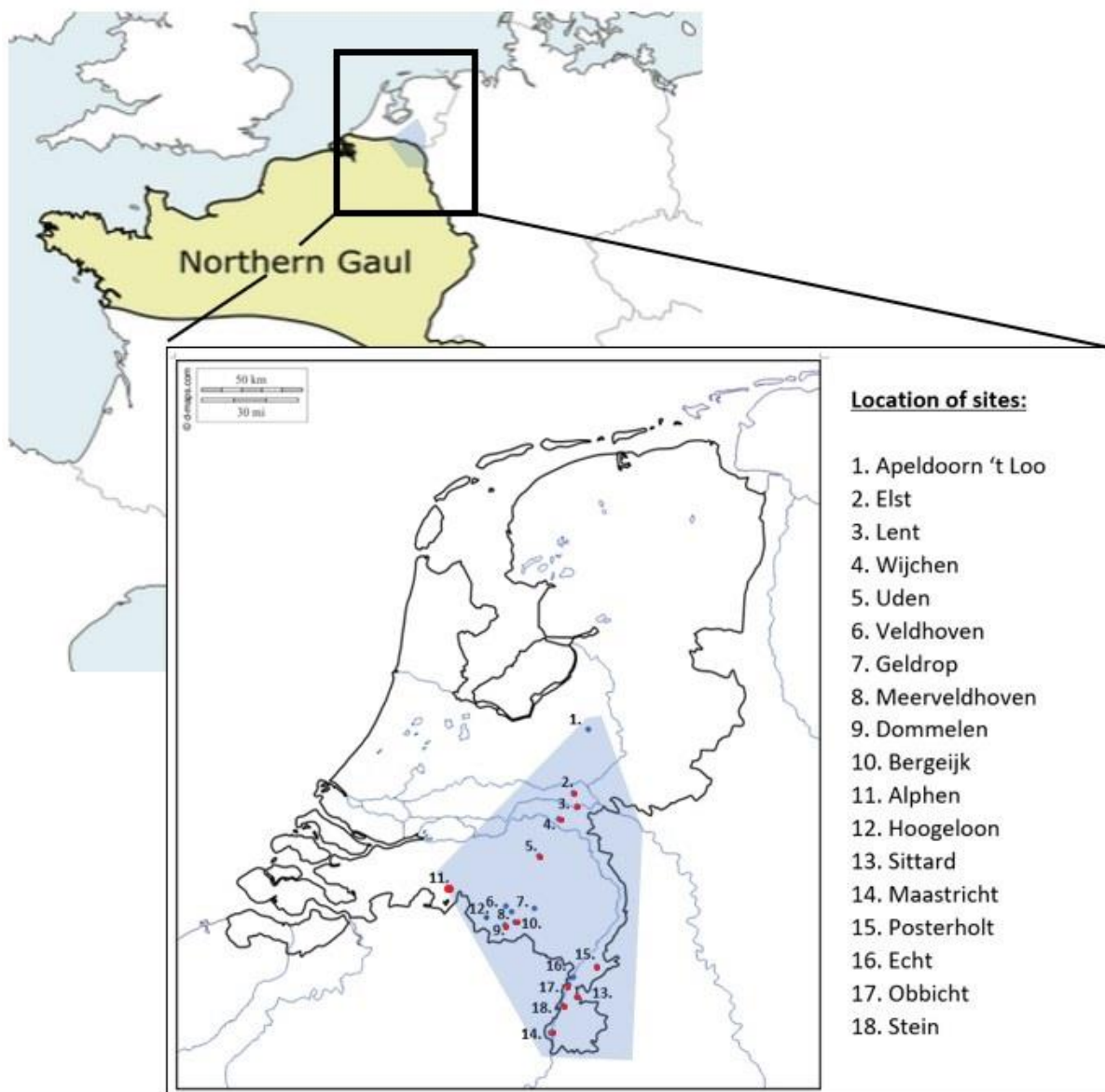


Figure 5.56: Map of the research area with the sites containing Near Eastern beads highlighted in red (created by Arends 2022).



Table 5.64: Overview table of all sites of the research area (based on table 5.16, table 5.32 and table 5.59).

AREA	SELECTED NUMBER OF SITES	SITES WITH NE BEADS	TOTAL NUMBER OF GRAVES	NUMBER OF GRAVES WITH BEADS	GRAVES WITH NE BEADS	NUMBER OF BEADS ORIGINALLY FOUND	NUMBER OF MEROVIGIAN GLASS BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	USEAGE PERIOD	% NE BEADS OF TOTAL NUMBER OF BEADS
NOORD-BRABANT	9	4	406	113	16	2.486	2.324	264	sixth till early eighth century	11,36%
EAST RHINE	4	3	684	144	73	4.024	4.040	869	fourth till eighth century	21,51%
LIMBURG	7	6	661	127	50	3.989	3.829	1.281	fourth till eighth century	32,19%
<b>TOTAL</b>	<b>20</b>	<b>13</b>	<b>1.751</b>	<b>384</b>	<b>139</b>	<b>10.499</b>	<b>10.193</b>	<b>2.414</b>		<b>23,68%</b>

Table 5.65: Near Eastern and non-Near Eastern beads attested in graves from before the seventh century of the complete research area (based on table 5.17, table 5.34 and table 5.60).

CATEGORY	NOORD-BRABANT	% OF TOTAL NUMBER OF BEADS	EAST RHINE	% OF TOTAL NUMBER OF BEADS	LIMBURG	% OF TOTAL NUMBER OF BEADS	ABSOLUTE NUMBERS	% OF TOTAL NUMBER OF BEADS
NO NEAR EASTERN BEADS	1068	81,03 %	2785	77,36%	2200	64,50%	6053	72,67%
NEAR EASTERN BEADS - BEFORE SEVENTH CEN	233	17,67%	639	17,75%	459	13,46%	1331	15,98%
NEAR EASTERN BEADS - TRANSITION PERIOD	17	1,29%	176	4,89%	752	22,05%	945	11,34%
<b>TOTAL NUMBER OF BEADS</b>	<b>1318</b>	<b>100%</b>	<b>3600</b>	<b>100%</b>	<b>3411</b>	<b>100%</b>	<b>8329</b>	<b>100%</b>

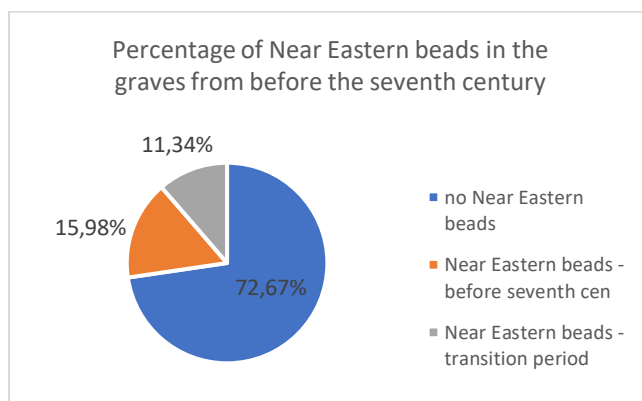


Figure 5.57: Percentage of Near Eastern beads in the graves from before the seventh century (after table 5.65).

Table 5.66: Near Eastern and non-Near Eastern beads attested in graves from seventh century and later of the complete research area (based on table 5.18, table 5.35 and table 5.61).

CATEGORY	NOORD-BRABANT	% OF TOTAL NUMBER OF BEADS	EAST RHINE	% OF TOTAL NUMBER OF BEADS	LIMBURG	% OF TOTAL NUMBER OF BEADS	ABSOLUTE NUMBERS	% OF TOTAL NUMBER OF BEADS
NO NEAR EASTERN BEADS	811	98,66%	386	87,73%	257	85,95%	1545	93,15%
NEAR EASTERN BEADS	11	1,34%	54	12,27%	42	14,05%	107	6,85%
TOTAL NUMBER OF BEADS	822	100%	440	100%	299	100%	1561	100%

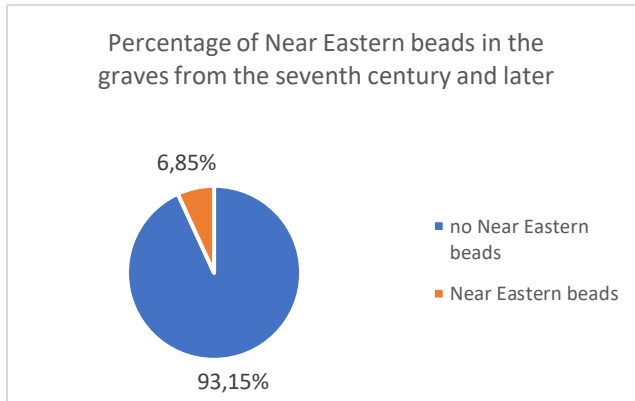


Figure 5.58: Percentage of Near Eastern beads in the graves from the seventh century and later (after table 5.66).

Table 5.67: The beads without dated context from the complete research area.

CATEGORY	NOORD-BRABANT	EAST RHINE	LIMBURG	ABSOLUTE NUMBERS
NOT DATED	186	0	119	305
NEAR EASTERN BEADS	3	0	28	31

### 5.5.3 Complete research area types of Near Eastern beads

#### 5.5.3.1 *Frequency of Near Eastern bead types*

Since the frequency and quantity of the bead types attested in the study assemblage is extremely high, the Pion bead types in the overview table 4.1 in the appendix are categorized on a basic level (based on the more specific overview table 5.19 of Noord-Brabant, table 3.15 of East Rhine in the appendix, and table 5.62 of Limburg). Table 4.1 in the appendix and figure 5.59 show an overview of the attested types of Near Eastern beads. All the production techniques that originate or relate to the Near East are present in the studied bead assemblage. The category of beads that could not be assigned to a production technique with certainty or which Near Eastern origin is uncertain are left out of the comparison. This category includes the two tiny green beads, these beads are drawn but documented separately because they possibly originate from India. The drawn beads are the most frequent occurring bead type (1764 beads) that makes up 73,07% of the Near Eastern beads (table 5.68). They have been attested for all thirteen cemeteries with Near Eastern beads (table 4.1 in the appendix). Within this category the segmented monochrome beads and the metal foil beads are in the majority. The second largest category are the perforated beads (334 beads). They make up 13,84% of the Near Eastern beads. The third largest category consists of the folded beads (105 beads), which makes up for 4,35% of the assemblage. The category of mosaic beads is almost as numerous as the folded beads, and with 101 beads they make up 4,18% of the Near Eastern bead assemblage. The category of non-glass beads consists of eighty-eight beads, including fifty-eight amethyst, ten rock crystal, five meerscham and six shell disc beads among others. This category makes up 3,65% of the total Near Eastern bead assemblage. The smallest category consists of fifteen wound beads, which makes up a mere 0,62% of the assemblage (table 5.68). There are only two types of wound beads with an origin in the Near East: reticella and confetti beads (table 4.1 in the appendix).

#### 5.5.3.2 *Distribution pattern of Near Eastern beads in the research area*

While the reticella beads are rare, they have been recognized in six cemeteries: Alphen, Lent, Wijchen, Elst, Maastricht-Pandhof and Maastricht-Vrijthof. Therefore, it is one of the bead types attested in most cemeteries. Another type of Near Eastern bead that occur in the same six cemeteries are the metal foil beads. These sites are mainly situated in the eastern river area of the Netherlands. Six cemeteries contained several types of folded beads, which are Maastricht-Vrijthof, Maastricht-Pandhof, Lent, Wijchen, Elst and Uden. Most of the attested folded beads are polychrome, these are the most recognizable type of folded beads. Folded beads mainly have been found in the East Rhine region of the Rhine River area, though some appear in Limburg and in Noord-Brabant as well. Perforated beads have been recognized in eight cemeteries. The vast majority are D1 type beads, which are attested in Maastricht-Vrijthof, Maastricht-Pandhof, Lent, Wijchen, Elst, Dommelen and Uden. There are two D2 type beads attested for Alphen. Perforated beads have been found all over the research area.

In eight cemeteries mosaic beads have been recognized, which are the cemeteries of Maastricht-Vrijthof, Maastricht-Pandhof, Posterholt, Lent, Elst, Dommelen, Alphen and Wijchen. Mosaic beads have been found all over the research area. Beads fabricated from amethyst have been found in five cemeteries: Sittard, Posterholt, Maastricht-Vrijthof, Maastricht-Pandhof and Wijchen. They are mostly found in Limburg, especially at the sites of Maastricht. Beads fabricated from rock crystal have been attested in five cemeteries, in Alphen, Lent, Wijchen, Maastricht-Vrijthof, and in Maastricht-Pandhof. Besides Alphen, these sites are situated in the vicinity of major rivers (the Rhine and the Meuse). Five beads made of meerschaum have been found in the cemeteries of Uden, Lent, Wijchen, Elst and Maastricht Vrijthof. These sites are also mainly situated in the river areas, mostly along the Rhine. Beads made from marble only occurred in the cemetery of Lent and red gemstones only in Alphen. Shells disc beads have only been recognized in the cemetery of Bergeijk. The bead assemblage of grave 40 from Lent contains the most types of Near Eastern beads which is nineteen types (table 5.21). The grave with the second most types is also from the cemetery of Lent. This is grave 13 with fourteen types of Near Eastern beads (table 5.21). The third place is shared by three graves with eleven types, these are grave 161, 127 and 249 from the cemetery of Elst (table 5.28). The graves of Maastricht could not be included in this comparison, because the Near Eastern bead types are not determined on the level of specific types but on production technique. Based on table 3.26 in the appendix, it can be assumed that the most common type of bead in the research area is a drawn bead type. It could be a subcategory of the A3.1 or the metal foil beads. The grave that contains the most Near Eastern beads is grave 22-27 of Alphen with 175 beads (table 5.2). The graves with the second and third highest numbers of Near Eastern beads are from Maastricht-Pandhof, these are grave 10074 with 136 beads and grave 10923 with 123 beads (table 5.48).

### 5.5.3.3 *The decline process of Near Eastern bead types*

The table below (table 5.69, based on individual sites tables 5.1, 5.2, 5.3, 5.6, 5.7, 5.10, 5.11, 5.13 and 5.14 of Noord-Brabant, 5.21, 5.22, 5.24, 5.25, 5.28 and 5.28 of East Rhine, 5.37, 5.38, 5.41, 5.42, 5.44, 5.45, 5.48, 5.49, 5.52, 5.53, 5.55 and 5.56 of Limburg and typo-chronology tables 4.2 to 4.10 in the appendix) shows an overview of the main categories of Near Eastern bead types found in the entire research area divided in three chronological periods. For the specific numbers of beads for every site please the tables 4.2 to 4.10 of typo-chronology in the appendix. It becomes evident that most types of Near Eastern beads occur in every chronological period, though in different numbers. The bead variation before the seventh century is higher compared to the data from during the seventh century and later (table 5.69). The Near Eastern beads from graves that could not be dated are left out of the following analysis. However, these beads are documented, and it concerns thirty-one of the 2414 Near Eastern beads (table 5.70, based on individual sites tables 5.1, 5.2, 5.3, 5.6, 5.7, 5.10, 5.11, 5.13 and 5.14 of Noord-Brabant, 5.21, 5.22, 5.24, 5.25, 5.28 and 5.28 of East Rhine, 5.37, 5.38, 5.41, 5.42, 5.44, 5.45, 5.48, 5.49, 5.52, 5.53, 5.55 and 5.56 of Limburg and typo-chronology tables 4.2 to 4.10 in the appendix). The first bead category 'uncertain' consists of the seven beads of which the production technique and/or origin is uncertain. They all occur during the transitional period. The drawn beads dominate the bead assemblage of every period, even though their numbers decline fast after the sixth century. The wound beads are mainly attested in the graves from the sixth century. This category consists of two confetti beads and thirteen reticella beads. The folded beads occur in the grave assemblage of every period. Their decline appears very gradual.

Perforated beads occur regular and in high numbers in the bead assemblage before the seventh century. However, this is followed by an almost complete disappearance in the seventh century. The mosaic beads primarily occur in the graves from the sixth century and before. In the transitional period their numbers have decreased with more than 50% and during the seventh century and later the mosaic beads have almost disappeared. The beads made of (semi) gemstones differ in their distribution in the bead assemblage and are assigned in four categories. Rock crystal beads seem to occur more during the sixth century and earlier. Some have been attested in graves from the transitional period, but none occur in graves from the seventh century or later. Beads manufactured from amethyst seem to be a phenomenon of the transitional period. These beads can be strongly linked to the sites of Maastricht. Compared to this period, only six have been found in graves from the sixth century and earlier. No amethyst beads have been attested in graves dating to the seventh century or later. Meerscham beads occur in the sixth century graves of Lent, Elst, Wijchen, Uden and in a grave from the transitional period in Maastricht Vrijthof. The final category 'other' includes the six red gemstone beads from Alphen, two marble beads and one unknown bead from Lent for the sixth century. The six beads from the seventh century and later are the shell disc beads from Bergeijk. In conclusion, some beads seem to disappear from the bead assemblage more rapid than others. The drawn beads decline relatively fast but still remain very represented in the bead assemblage. The wound and mosaic beads could be compared to the drawn beads in terms of their pattern of decline, with a clear height in the sixth century and a rapid decline afterwards. The folded and perforated beads on the other hand seem to decline very abrupt in the seventh century, but their occurrence in the period before the seventh century seems stable.

Table 5.68: The percentage and number of the types of Near Eastern beads in the total assemblage of the research area (based on the overview table 4.1 of the complete research area in the appendix).

BEAD TYPE	NUMBER	%
UNCERTAIN	7	0,29%
DRAWN	1764	73,07%
WOUND	15	0,62%
FOLDED	105	4,35%
PERFORATED	334	13,84%
MOSAIC	101	4,18%
OTHER	88	3,65%
<b>TOTAL</b>	<b>2414</b>	<b>100%</b>

Table 5.69: Categories of bead types attested in the three chronological periods based on the complete research area.

CHRONOLOGICAL PERIOD	UNCERTAIN	DRAWN	WOUND	FOLDED	PERFORATED	MOSAIC	ROCK CRYSTAL	AMETHYST	MEER-SCHAUM	OTHER	TOTAL NUMBER OF BEADS
SIXTH CENTURY AND EARLIER	0	1010	12	53	158	72	7	6	4	9	1331
TRANSITIONAL PERIOD	6	660	3	33	163	26	2	51	0	1	945
SEVENTH CENTURY AND LATER	0	77	0	16	5	3	0	0	0	6	107
<b>TOTAL NUMBER OF BEADS</b>	<b>6</b>	<b>1747</b>	<b>15</b>	<b>102</b>	<b>326</b>	<b>101</b>	<b>9</b>	<b>57</b>	<b>4</b>	<b>16</b>	<b>2383</b>

Table 5.70: The not dated Near Eastern bead types and the complete total of Near Eastern beads including the dated and not dated beads.

CHRONOLOGICAL PERIOD	UNCERTAIN	DRAWN	WOUND	FOLDED	PERFORATED	MOSAIC	ROCK CRYSTAL	AMETHYST	MEER-SCHAUM	OTHER	TOTAL NUMBER OF BEADS
NOT DATED	1	17	0	3	8	0	1	1	0	0	31
COMPLETE TOTAL NUMBER OF BEADS	7	1764	15	105	334	101	10	58	4	16	2414



Figure 5.59: Overview of the common types of Near Eastern beads in the research area, divided in periods (pictures after Vrielynck *et al.* 2018; Theuvs and Haperen 2012, 192; Verhoeven and Jansen 2019, 209).

## 5.6 Conclusion

In this final paragraph a conclusion of all the results presented in this chapter will be given. This conclusion summarizes the paragraphs and answers the research subquestions:

- 1) *How many beads of Near Eastern origin are present in cemeteries within the research area?*
- 2) *Do the defined Near Eastern beads show a change or continuity in their number and types through the Merovingian period?*
- 3) *What is the distribution of Near Eastern beads in different cemeteries across the research area?*
- 4) *Are there any additional relationships between the Near Eastern beads visible in the accumulated data?*

For this study twenty sites have been selected of which thirteen contained beads produced in the Near East. Overall, a total number of 10.193 beads have been examined and 2.414 beads of Near Eastern origin are recognized. This relates to 23,68% of the total studied bead assemblage. On a subregional scale this concerns 264 recognized Near Eastern beads in the subregion of Noord-Brabant. The cemeteries of the East Rhine region contain 869 Near Eastern beads, and those of Limburg contain a striking total of number of 1281 Near Eastern beads. Most Near Eastern beads are recognized in the bead assemblage of sites in vicinity of major rivers. The factual data displayed a clear correlation between the chronological division of the graves and the attested number of Near Eastern beads. The correlation is not limited to the Near Eastern beads but is also evident in the total bead assemblage of the research area. A decline of (Near Eastern) beads during the seventh century is demonstrated. The occurrence of Near Eastern beads seems to be a sixth century phenomenon. The drawn, mosaic and wound beads seems to have a peak occurrence in the sixth century and start to disappear in the transitional period. The folded and perforated beads occur in similar numbers in the period before the seventh century and start to decline in the seventh century. An additional pattern that has been attested in the Near Eastern bead assemblage is the relative high occurrence of monochrome beads, especially in various shades of green and blue.

## 6 Discussion

### 6.1 Introduction

The focus of the discussion chapter will be on the main research question of this thesis study. The question is formulated as followed: *What can Near Eastern Beads recovered from Dutch Merovingian cemeteries convey on early medieval international connections?* The discussion will build further upon the answers given to the subquestions in the conclusion of the previous chapter 'Results.' Near Eastern beads appear all over the research area, however not in every cemetery and not in the same numbers. They appear to be a sixth century phenomena. This can be supported by the complete site tables in the appendix. The graves and cemeteries excluded from the previous result chapter mainly date to the seventh century. In this chapter theories to explain the chronological division, the occurrence and disappearance of Near Eastern beads will be discussed in association with international exchange networks. The first paragraph will discuss the general observations on the Near Eastern beads. The first section of this paragraph will be about the observed production techniques and their distribution in the research area. The second section will discuss an additional pattern that was observed in the Near Eastern beads: their color pattern. The next paragraph will discuss the availability and practicalities of Near Eastern bead supply during the sixth century. The third paragraph will discuss comparable topics for the seventh century. Additionally, this paragraph will address the decline of Near Eastern beads. The chapter will be completed with a conclusion.



## 6.2 The Near Eastern bead assemblage

### 6.2.1 Techniques

The results have revealed a collection of the most common Near Eastern beads for the region of the south-eastern Netherlands (paragraph 5.5.3, figure 5.58). Drawn beads are very widespread and occur in the highest numbers compared to the other categories. Notable is that some of the most attested bead types do not necessarily occur in the highest numbers. For instance, mosaic beads and perforated beads both appear in eight cemeteries, however, this concerns 101 mosaic beads and 334 perforated beads (table 5.69). Further evaluation of the distribution patterns seems to suggest that some bead types are more widespread in the research area than others. This can be illustrated with the distribution pattern of the reticella and folded beads. Reticella beads occur in graves throughout the research area, but it seems typical that only one or two beads are present per cemetery. While folded beads occur in higher numbers, they are predominantly found in the East Rhine subregion. This would suggest that certain beads were preferable or more widely available than others (paragraph 5.5.3). The degree of availability could be explained by the production technique. A lot of beads could be produced at once from a drawn tube of glass and high numbers of beads could enter circulation. Mosaic beads and reticella are more labor intensive compared to the drawn beads, therefore they are less available (Pion 2014a, 40-42, 47, 72, 75). This theory could also be applied for perforated and folded beads, as their production process is not very labor intensive, but they must be made individually (Pion 2014a, 68, 72-73).

### 6.2.2 Colors

After examining the Near Eastern beads, a clear color-pattern was recognized. Apart from mosaic, reticella and some folded beads all the Near Eastern beads are monochrome in color. The most occurring colors are various shades of green and blue. Additionally, red, yellow, black, orange, and white are common colors. The polychrome beads are also incorporated in this color scheme. While the colors green and blue are the most common for Near Eastern beads, they are almost never the dominating color in a bead string. In general, red seems more dominant (own evaluation based on pictures 3.2 to 3.126 in the appendix). The cemeteries of Maastricht contain bead strings consisting of a majority of Near Eastern beads. It is only in these bead strings that the colors blue and green seem more dominant (Kars 2011, 480-502; own evaluation based on pictures 3.2 to 3.126 in the appendix). Pion mentioned in his work of 2014 (135-138) and 2020 (833) that the monochrome and metal foil glass beads of the sixth century could be associated with (semi) precious gemstones and minerals. These are the beads that originate from the Near East. Could there be hidden symbolism or was color just a matter of available colorants? Since the color pattern seems reoccurring in Near Eastern beads it might be worthwhile to examine in future research.

## 6.3 The sixth century

### 6.3.1 Availability of Near Eastern beads during the sixth century

#### **Location**

The omnipresence of Near Eastern beads suggests that the exchange networks in which these circulated were accessible throughout the research area during the sixth century. However, the numbers of Near Eastern beads differ for each subregion. Assumably, cemeteries with a high number of graves consequently implies a high number of Near Eastern beads. After comparing the data this does not seem to be accurate. The location and age of a cemetery seem to have a more positive influence on the number of Near Eastern beads (table 5.16, table 5.32, table 5.59). The area of Nijmegen and Maastricht have historical connections to the Roman Empire as river-based trade hubs. The cemeteries of Lent, Wijchen and Elst are situated near Nijmegen. This could be the reason the bead assemblages of Lent and Elst both consist for approximately 22% of Near Eastern beads (table 5.32). The percentage of Near Eastern beads in Wijchen is 20% (table 5.32). However, this cemetery is partly disturbed and is not completely excavated (Heeren and Hazenberg 2010; 166, 169). The actual percentage of Near Eastern beads is therefore expected to be higher. In comparison to other cemeteries in Limburg, those from Maastricht contain more Near Eastern beads (table 5.59). Maastricht had a profitable location at a conjunction of the river Meuse and a Roman road, moreover, a Roman bridge was still present and the Sint Servatius complex in Maastricht made the city an important religious center during the early medieval period (Theuws 2020, 887-888; Theuws and Kars 2017, 16, 366). The location of the site in proximity to larger centers (Nijmegen and Maastricht) and rivers thus positively influence the number of Near Eastern beads. This suggests that Near Eastern beads were included in a river-based network.

#### **Exchange network developments**

Frans Theuws (2020, 897, 906) has recently suggested that elite control was extremely limited in the research area of the south-east Netherlands during the sixth century. According to Theuws, the rural population played an active role in exchange and was able to obtain 'luxury objects,' such as jewelry, but also brooches, belt buckles and other elaborately detailed objects. The presence of Near Eastern beads in many sixth century graves supports this theory. Furthermore, the availability of Near Eastern beads near former Roman economic centers suggests that former Roman networks were still active during the early medieval period. The former Roman road-based transfer system, however, seems to have changed during the Merovingian period to a river-based system (Theuws 2020, 889). Consequently, more early medieval artefacts and settlement remains should be expected around river areas. This is confirmed by archaeological research and excavations (figure 6.1; Langbroek forthcoming). Most sixth century burial grounds are situated along a major river. After the fall of the Roman Empire their institutional and military systems disappeared and the population numbers declined. The remaining people lived among the rivers (Theuws 2020, 889-890). Only during the seventh century, when the population started to increase, people moved more inwards to the countryside of the Netherlands. Around this period, farms and burial sites started to appear in Noord-Brabant (Theuws and Van Haperen 2012, 10, 16; Theuws 2008, 206-208). These burials also contain Near Eastern beads, but their numbers are lower regarding the bead assemblages of the East Rhine and Limburg subregions. This lower number also supports the suggestion that the location in

proximity to the river-based network is strongly related to the number of Near Eastern beads. However, this assumption does not apply for the cemetery of Alphen-Chaam Molenstraat. This cemetery contains burials from the late fifth century, Alphen is the oldest site in the Noord-Brabant subregion and is the furthest situated from the river areas. Nevertheless, this cemetery contains more than 200 Near Eastern beads while the other sites of Noord-Brabant do not contain more than 15 (table 5.16). Since this is the only exception, the previous assumption should not be discarded. However, the assumption might need some adjustments. The results of Alphen show a decline of Near Eastern beads after the sixth century. This decline is attested in sites throughout the entire research area. Therefore, a different assumption can be made, one that might indicate a development towards the end of the sixth century which had a major influence over the number of Near Eastern beads in the entire research area regardless of the location. The lower numbers of Near Eastern beads in seventh century graves in Noord-Brabant could be the combined result of this development and the location of the site.

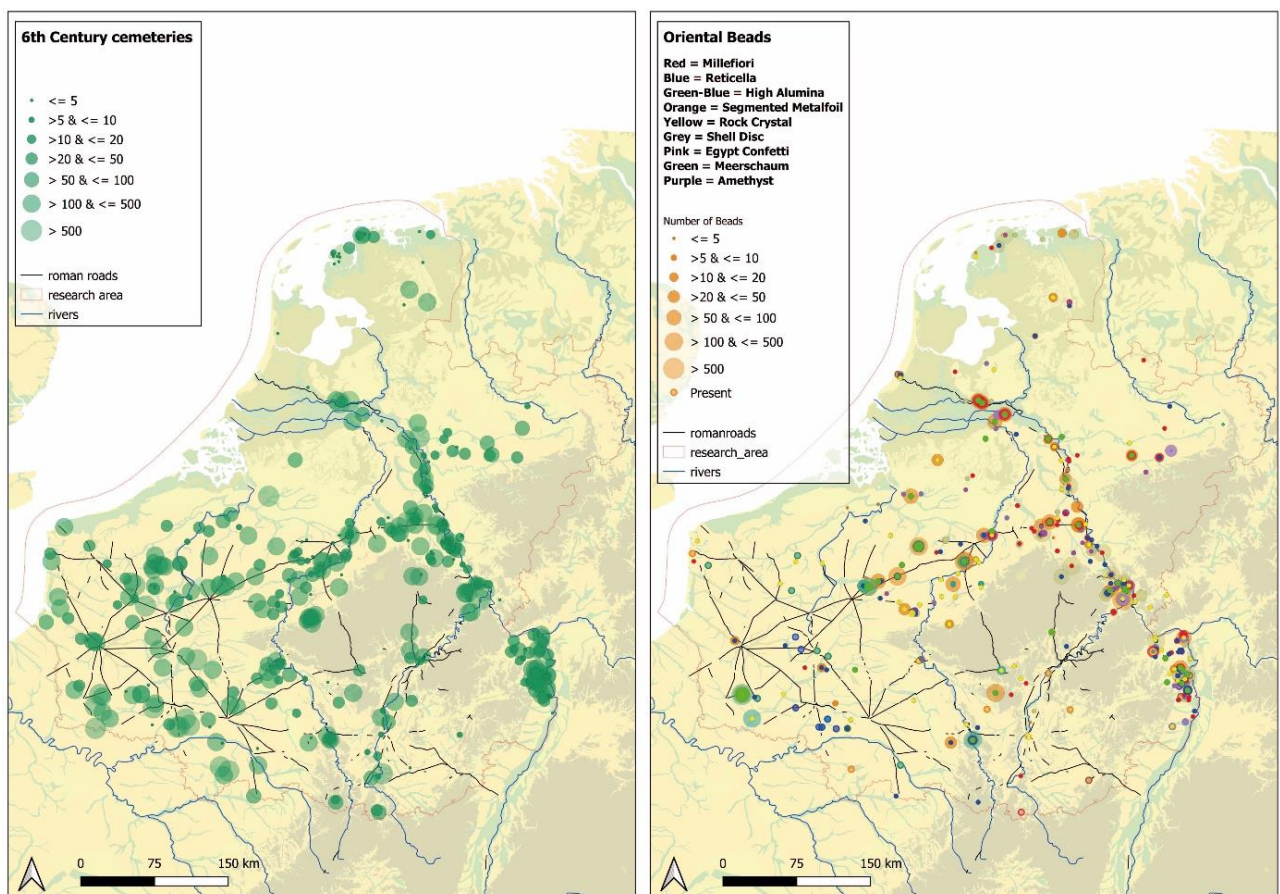


Figure 6.1: Distribution of cemeteries dating to the sixth century in northern Gaul vs find locations of beads with an origin in the eastern Mediterranean or beyond in northern Gaul ([www.earlymedievaireurope.org](http://www.earlymedievaireurope.org) Online Database ERC Rural Riches).

### 6.3.2 Practicalities of bead supply

The attested Near Eastern beads of this study are comparable with beads found in Merovingian graves in Belgium, France, Germany, and England (Langbroek 2021, 278; Pion 2014a, 13-14). As an example, figure 6.2 shows several sites in and beyond Europe where metal foil beads have been recognized. This suggests the existence of an exchange network that the population of a vast geographical area had access to for at least a century. The high quantity and diversity of beads from Near Eastern origin in the graves indicates that there was a continuous demand and supply of beads from the Near East during the sixth century. This supports the observations of Theuws on the demand on the rural population in Merovingian Northern Gaul (2020, 897). How continues the Near Eastern beads entered the material circulation of Northern Gaul, and in which quantities, remains speculative. Beads entered the research area as a part of a larger flow of various goods from the Mediterranean. These objects were transferred through intermediaries in central places, not through direct connections. They travelled through overlapping regional exchange networks (Theuws 2020, 907; Drauschke 2008, 415), for instance, in the border area of the Alps or along one of Europe's major inland rivers. These rivers connect the Merovingian world to Mediterranean maritime networks (Volkman and Theune 2001, 538-40; Pion *et al.* 2020, 849-50; Auzina *et al.* 2015, 178-179, 182-183). Before the end of the fifth century the areas of Northern Gaul to Egypt were all included in the Roman Empire and internally connected by the empires network of resources. Egypt and the Levant were major suppliers of wheat, among other natural resources including raw glass (Lailou and Morrisson 2007, 30; Pion 2020, 826). The exchange connections with these areas were thus frequent and crucial for the empire. At the end of the fifth century the Roman Empire was divided in a western and an eastern part, which came to be known as the Byzantine Empire. Note that the empire referred to itself as Roman, as did the western part, and that modern historians created the term Byzantine Empire or Byzantium. The Byzantine Empire was at its maximal extent during the sixth century under the rule of Justinian I (reign: 527-565) and Theodora (Burbank and Cooper 2010, 62-63). The empire included almost the entire Mediterranean coast and had a central position in the network between Gaul and the Near East (figure 6.3). The Byzantine trade network included imperial organized and private trade routes. The two main maritime routes linked Egypt to Constantinople and Constantinople to Italy. Several stops were made along the way to exchange goods. Evidence for private trade routes that bypass Constantinople link Africa, the Levant, the Aegean, the Crimea and the Danube, Italy, southern Gaul, and England (Lailou and Morrisson 2007, 35). It was likely that Near Eastern beads entered Europe through the same routes (Pion *et al.* 2016, 58). However, towards the end of the sixth century, a combination of events caused the empires economy to weaken (Lailou and Morrisson 2007, 24). According to Drauschke (2008, 415) the number of objects from the eastern Mediterranean in north-western Europe declined during the seventh century. This will be discussed in more detail in the following paragraph.

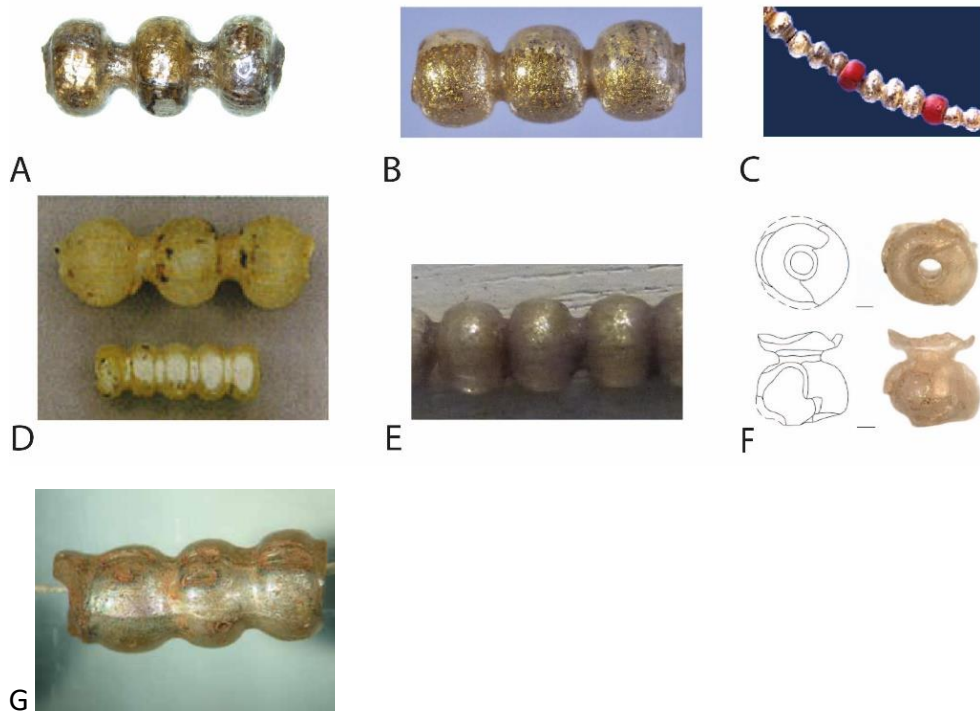


Figure 6.2: Examples of segmented metal foil beads from archaeological sites dating to the sixth century. A: Lent-Lentseveld, the Netherlands (picture by Langbroek); B: Viesville, Belgium (picture after Pion 2014); C: Cutry, France (picture by Legoux); D: Sarre, England (picture after Brugmann 2004); E: Egypt (Petrie Museum) (picture by Vrielynck); F: Utsukushi, Japan (picture after Szmoniewski 2020); G: Albania (picture after Grieff 2008).



Figure 6.3: Extent of the Byzantine Empire around 554 AD (after map 3.1 in Burbank and Cooper 2010, 63).

## 6.4 The seventh century

### 6.4.1 The Near Eastern bead assemblage

The few Near Eastern beads that have been recognized in seventh century graves include no new types from the Near East. Some Near Eastern beads remained in circulation after the sixth century before they were deposited in the graves. Examples from this research are the four Near Eastern beads recognized at the cemetery of Dommelen. These beads are 150 years too old for the graves they were deposited in (paragraph 5.2.2.3). Such chronically misplaced beads are called heirloom beads (Mannion 2015, 92-93; Langbroek forthcoming; Volkmann and Theune 2001, 543-544). Furthermore, during the Merovingian period, it is a known concept that graves were occasionally reopened to remove the beads, so that they could be worn again (Aspöck 2011, 299-300; Van Haperen 2017, 149; Langbroek 2016, 81-82). Another interesting phenomenon are a few local wound imitations of Near Eastern beads (reticella beads (type B10), confetti beads and Roman melon beads (type B1.5)) that were produced before, but also during the seventh century (Vrielynck *et al.* 2018, 9, 15-16; Langbroek personal communication). The most evident examples for the seventh century are confetti beads and melon beads made from glass (type B1.5-07) (Vrielynck *et al.* 2018, 9; Teunissen van Manen 2021, 13, 18). The seventh century confetti beads do not occur in the typo-chronology of Pion, but they are attested in several seventh century cemeteries, including the cemetery of Dommelen, Bergeijk and 't Loo (see 3.3.3.1 on confetti beads). This could indicate a value given to older (Roman) beads and beads with distant origins. The heirloom beads seem to suggest similar values given to Near Eastern beads even in the seventh century. The new bead types that emerge in seventh century graves were all wound and thus fabricated on a regional scale in Europe (Pion *et al.* 2020, 833). Some examples are the types B1.2, B1.3, B1.4, B1.6-02, B1.7, B6.2, B11.02, B11.06 and B11.07 in Vrielynck *et al.* (2018, 7-17). Thus, it can be assumed that there was no new influx of beads from the Near East. The reason for this disappearance of Near Eastern beads is unknown. Pion *et al.* (2020, 833) identifies it as a change of fashion in Western Europe. In addition to the change in bead origins, they also address the shift in preference from monochrome to polychrome beads. The term 'fashion' is a modern term. Since this discussion is about a consistent pattern within a certain time and place, I prefer to refer to this as 'bead types'. The change in bead types from the sixth to the seventh century seems not as complete as Pion *et al.* assume it to be. Examples of new non-glass Near Eastern bead types, amethyst beads (Drauschke 2010, 58) and shell disc beads (Theuws and Van Haperen 2012; 84), were interred in graves from the transitional period and the seventh century. Unless these beads did not originate from the Near East (which is not verified for the seventh century amethyst beads (Drauschke 2010, 57-58)), the connections with the Near East did not disappear entirely. An additional observation on garnets can be related to the change in exchange networks of Near Eastern beads. Chemical analysis has shown that the garnets in Merovingian artefacts originated from India and Sri Lanka in the sixth century. After the sixth century, garnets were imported from Bohemia and Portugal instead (Pion *et al.* 2020, 847-848). These developments support the suggestion that exchange networks with the eastern Mediterranean and southern Asia, through which the Near Eastern beads were transferred, declined during the seventh century. If this decline was initiated by developments in western Europe or the Near East remains open for discussion.

#### 6.4.2 Developments in Northern Gaul during the seventh century

The deposition of beads in burials continues during the late Merovingian period when the Near Eastern beads had disappeared from the assemblage. According to the results of this study, the deposition of beads appears to continue in Noord-Brabant longer than in the East Rhine region and Limburg (table 5.66 and table 5.67). Nevertheless, during the second half of the seventh century, the number of beads in graves throughout Northern Gaul was low and consisted of wound glass and amber beads from European production (Pion *et al.* 2020, 833; Pion 2014a, 140-143; individual site tables 3.1 to 3.25 and pictures 3.2 to 3.126 in the appendix). This section will discuss the developments in seventh century Northern Gaul that could have influenced the decline of Near Eastern beads. One of the developments that caused major social transformations is the spread of Christianity in north-western Europe as more Christian cult places started to appear during the seventh century (Theuws 2020, 887). This led to a shift in burial practices and socio-economic structures. Life stage rituals and events that were once a family practice, became increasingly associated with the church. The deceased were given less objects and they were buried inside and/or near churches from the Carolingian period (750-950 AD) onwards (Theuws and Van Haperen 2012, 163-164; Knippenberg and Theuws 2019, 10). Christianity was strongly connected with the elite and politics (including the Carolingians, clergy, royalty, and powerful families). Therefore, as Christianity spread, the influence spheres of the elite increased during the mid-seventh century. A more organized control of the rural population through properties developed (Theuws 2020, 899; Theuws and Van Haperen 2012, 164, Hodges 2012, 122). Exchange networks would have become more controlled and locally orientated. Perhaps the rising elite started to claim the products that originated from the Near East. Near Eastern beads could have become associated with the elite and therefore more exclusive (Hodges 2012, 127), as amethyst and the color purple can be associated with the Byzantine elite (Drauschke 2010, 55,58; Willemsen 2014, 150). The decline of Near Eastern beads in seventh century graves could be the result of limited access of the rural population to the exchange networks with international products. However, these suggestions cannot be supported by this research. No amethyst beads have been attested in the graves after the transitional period and Near Eastern glass beads disappear completely during the seventh century. The widespread distribution of Near Eastern beads in the sixth century makes it unlikely that they were 'expensive' in monetary or material terms. Moreover, there is no archaeological evidence for active elite presence in the research area before the eighth century to associate these 'luxurious objects' with in the first place (Tys 2020, 770-771; Theuws 2020, 887). Another potential explanation for the decline in Near Eastern beads is based on the increase of bead production in Northern Gaul during the seventh century (Matthes *et al.* 2004, 147; Dijkstra *et al.* 2010, 175-199; Sablerolles *et al.* 1997, 293-313; Pion 2014a, 180-181). More direct contact with the craftspeople became possible, and access to beads became easier. It might be logical to assume that locally produced beads would start to dominate in exchange networks. However, not only Near Eastern beads disappear but the deposition of beads in graves overall declines during the seventh century. Overall, a change in burial practices seems the most plausible explanation for this decline. The earlier disappearance of Near Eastern beads could be the result of an increasing local and regional socio-economical focus or a restricted availability of Near Eastern beads.

### 6.4.3 Developments in the Near East during the seventh century

In this paragraph the developments in the Near East that could be related to a change in international exchange networks will be discussed. An interregional and long-distance network already existed before the seventh century (Tys 2020, 771). As stated in 6.3.2 the Byzantine Empire relied on the previous Roman network and had a key position in the exchange between the Near East and north-western Europe. The Byzantine Empire decreased in size and influence during the seventh century. Demographic losses caused by the plague reduced economic activities and the imperial finances (Lailou and Morrisson 2007, 24; Burbank and Cooper 2010, 68). Moreover, the war between the Byzantine Empire and Sasanian Empire of 602–628 AD exhausted the resources of both empires. This possibly resulted in a break in exchange connections between the Near East and the Byzantine Empire around the year 600 AD, causing the disappearance of imports from the Eastern Mediterranean in Europe (Drauschke 2010, 58). The unstable political conditions in the Mediterranean gave opportunity to the Arab Muslim caliphate to grow. In the mid-seventh century, the regions of Egypt, the Balkans, the Bulgarians, and Syria-Palestine cease to be part of the Byzantine Empire after the conquest of the Rashidun Caliphate. The deurbanization of Byzantium was followed by the decline of trade and production (Burbank and Cooper 2010, 69; Lailou and Morrisson 2007, 24). There is no concrete evidence for the import of glass beads from the Near East to the Merovingian world during the seventh century, with a few non-glass Near Eastern bead types as exception. The regions of Egypt and the Levantine coast are considered the main production areas of the attested Near Eastern beads in this research (Pion *et al.* 2020, 833). After these areas were no longer under Byzantine rule their connections with Europe seem to decline. Evaluation of the events in the Near East during the seventh century suggest that exchange networks were focussed on the region of the western Indian ocean and excluded frequent contact with north-western Europe. This chronologically corresponds with the decline of Near Eastern beads in the research area.



## 6.5 Conclusion

The bead assemblage of the south-eastern Netherlands indicates a peak occurrence of Near Eastern beads in the sixth century, and a decline during the seventh century. In this chapter, the conditions and events that could influence exchange networks were discussed to get an insight in the possible reasons of this decline. An interregional and long-distance network already existed during the early medieval period, while active elite control in the research area was presumably limited. In the sixth century, the rural population of Northern Gaul was connected with a river-based exchange network. Towards the seventh century, the influence of Christianity increased, and life-stage rituals became more associated with the church instead of families. This includes a change in burial practices. As population numbers increased during the late sixth and seventh centuries, local craft production, including the production of beads, developed. These developments were combined with the expansion of structured elite control over the rural dwellers and the local exchange connections. Beads from Europe could have become more accessible than those from the Near East. The Near Eastern beads were transferred over a large distance by fluvial and maritime connections. The major European rivers were a crucial element in this network. In the Mediterranean, the Byzantine Empire was a powerful force during the sixth century and assumably played a leading role in exchange between the Near East and western Europe. Therefore, when the position of the Byzantine Empire weakened, its exchange networks decreased as well. After Egypt and the Levantine coast were no longer under Byzantine rule their connections with Europe would decline. These areas are considered the main production region of the attested Near Eastern beads in the research area. This results in a lesser availability of Near Eastern beads in Europe, and consequently, numbers of Near Eastern bead decline in the south-eastern Netherlands. Overall, a combination of local and international developments from the late sixth and seventh century onwards reduced the transfer of Near Eastern beads from the Near East to Merovingian Gaul. The exchange networks of Northern Gaul started to focus on a more local and regional scale as a more Christian society developed.

## 7 Conclusion

Beads are an ancient and widespread characteristic of human history. They can hold multiple connotations besides their decorative function. One string of beads contains a diversity of materials, production techniques, shapes, origins, generations and most likely, values and meanings. Beads can be associated with communal and individual principles. They are a regular occurrence in Merovingian (400-750 AD) cemeteries and their numbers are up into hundreds of thousands. Therefore, these beads can give us a lot of information about the social and economic aspects of the Merovingian population. This research presents the exact numbers and distribution patterns of beads produced in the Near East attested in Dutch graves dating to the Merovingian period. Based on the results, the exchange connections between the research area and the Near East are discussed to answer the question: *What can Near Eastern Beads recovered from Dutch Merovingian cemeteries convey on early medieval international connections.* The following subquestions will provide the information necessary to answer the main research question: *1. How many beads of Near Eastern origin are present in cemeteries within the research area? 2. Do the defined Near Eastern beads show a change or continuity in their number and types through the Merovingian period? 3. What is the distribution of Near Eastern beads in different cemeteries across the research area? 4. Are there any additional relationships between the Near Eastern beads visible in the accumulated data?* Specific production techniques or raw materials can be traced back to a place of origin, which makes it possible to reconstruct connections within and between regions. This study incorporates twenty selected sites from the south-eastern region of the Netherlands, subdivided in the regions of Noord-Brabant, East Rhine, and Limburg. Near Eastern beads were determined by the characteristic features that can be assigned to different production techniques. For this study, the following beads are interpreted to be from Near Eastern origin: drawn, folded and perforated beads, confetti beads, reticella beads, millefiori/mosaic beads and beads made from amethyst, rock crystal, marble, shell, and meerschaum. The study material consisted of pictures from excavation publications and the database with determined beads of Langbroek. The determination of Near Eastern beads from pictures was challenging, nevertheless all selected sites could be examined, and the collected data was sufficient to answer the research questions. In this research 2.414 beads of Near Eastern origin are recognized, which relates to 23,68% of the total studied bead assemblage. The Near Eastern bead assemblage predominantly consists of small drawn glass beads. The second largest categories are the folded and perforated beads. The factual data displayed a clear correlation between the chronological division of the graves and the attested number of Near Eastern beads. The bead assemblage of the south-eastern Netherlands indicates a peak occurrence of Near Eastern beads in the sixth century, and a decline during the seventh century. An additional pattern that has been attested in the Near Eastern bead assemblage is the relative high occurrence of monochrome beads, especially in various shades of green and blue. One of the main focusses of this research was to study the distribution patterns of the bead types. The results indicate that these patterns slightly differ per bead type. Drawn and perforated beads occur throughout the entire research area, as well as mosaic beads, although these beads occur in lower numbers. The most reticella and rock crystal beads have been found in the eastern river area of the Netherlands. The folded and meerschaum beads occur in higher numbers in the East Rhine area. Amethyst beads are concentrated around the sites of Limburg, particularly Maastricht. The drawn, mosaic and wound beads seems to have a peak occurrence in the sixth century and start to disappear in the transitional period. The folded and perforated beads occur in similar numbers in the transitional period and before. Their numbers started to decline during the seventh century. On a subregional scale the cemeteries of Noord-Brabant contain 264 recognized Near Eastern beads. The cemeteries of the East Rhine region contain 869 Near Eastern beads, and those of Limburg contain a striking total of number of 1281. Most of the seventh century sites are situated in Noord-Brabant, the other two are Echt and Apeldoorn- 't Loo. Besides Echt, they are all situated inland. The sixth century settlements and cemeteries are in close

proximity to a major river. Along the rivers, the amount and typological diversity of Near Eastern beads are higher at sites in vicinity of former Roman hubs, in the research area these are Nijmegen and Maastricht. These centers are apparently still well connected to exchange networks during the early medieval period. Explanations for the decline of Near Eastern beads in the Merovingian beads assemblage can be a consequence of socio-economic developments in Northern Gaul. After a period of less active elite control of the rural population, the increasing influence of Christianity during the seventh century transformed daily life. Life-stage rituals, including burial practices, became linked to the church instead of families and more structural elite control of the rural population and exchange networks emerged. As population numbers increased during the seventh century, local bead production amplified. These developments combined could cause local beads to become more accessible than Near Eastern beads. The Near Eastern beads were transferred over a large distance mainly by fluvial and maritime connections. In the Mediterranean, the Byzantine Empire was a powerful force during the sixth century and assumably played a leading role in exchange between the Near East and western Europe. During the seventh century the economy and trade of the empire declined as it was weakened by the war with the Sasanian Empire and the Rashidun caliphate. After eastern Mediterranean regions were no longer under Byzantine rule, their connections with Europe would decline. These areas are considered the main production region of the attested Near Eastern beads in the research area. As Near Eastern beads became less available in Europe, the numbers of Near Eastern beads declined in the cemeteries of south-eastern Netherlands as well.

This thesis research has attested that based on detailed examination of Merovingian beads and production techniques an insight in exchange connections with the Near East can be detected. The results indicate a river-based exchange network in which the rural population is active, with a higher percentage of Near Eastern beads around river-based centers as Maastricht and Nijmegen. The types of Near Eastern beads are numerous with a clear main category of drawn glass beads. Chronological classification has indicated a decline of Near Eastern beads in grave contexts during the seventh century. The reasons for this decline remain speculative, however a combination of local and international developments from the late sixth and seventh century onwards reduced the transfer of beads from the Near East to Merovingian Gaul. The results of this research can serve as a steppingstone to examine Near Eastern beads through other areas in the Netherlands and the wider region of Northern Gaul. The bead assemblage of the sites of Limburg needs personal determination so that a more comprehensive analysis can be possible. Further research on the appearance and disappearance of certain Near Eastern bead types is recommended.

## Abstract

The general focus of this thesis is the international exchange during the early Medieval period, with an emphasis on the relation between the Near East (eastern Mediterranean, Egypt, Levant and Mesopotamia) and the south-eastern Netherlands. Since historical sources are scarce the study relies on archaeological material. The bead assemblages of twenty sites are examined to provide an insight in the actual numbers and percentages of Near Eastern beads in the research area. These beads are recognized based on their production technique and raw material, which can be traced back to workshops/geographical sources in the Near East. The distribution patterns of these beads reflect the availability of Near Eastern beads, and thus the changes and continuity in exchange networks in which these beads circulated. The Near Eastern beads are evident throughout the complete research area, though they occur not in every site and their numbers differ significantly. The results of this study show a higher occurrence of Near Eastern beads before the seventh century, followed by a decline during the seventh century. The distribution patterns display a higher number of Near Eastern beads at the cemeteries near major rivers, especially in the vicinity of Nijmegen and Maastricht. The mainly seventh century sites of Noord-Brabant contain less Near Eastern beads. These observations suggest a change in the exchange network around the end of the sixth century. The cause of this remains subject of discussion. The increasing control on the rural population by the church, rising powerful families and a change in ideology associated with burial practices, are possible factors that decreased the accessibility of the Merovingian population to Near Eastern beads on a local scale. On an international scale the regression of the Byzantine Empire, which held a primary position in the exchange network between north-western Europe and the Near East, combined with the power struggles around the Mediterranean Basin could very well have influenced the exchange connections with Europe. At the end of the seventh century, the Near Eastern beads have disappeared from the Dutch Merovingian grave context.

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Figure 4.1, 4.2 and 4.4 in methodology chapter 4 were created with the use of Microsoft edge.

The Map of Northern Gaul in edited figure 1.1 was derived from:

[www.collectingancientcoins.co.uk/getting-started-with-celtic-coins-the-celts-from-northern-gaul/](http://www.collectingancientcoins.co.uk/getting-started-with-celtic-coins-the-celts-from-northern-gaul/)

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# Appendices

The appendix consists of four subsections where supportive information on the thesis research is provided. The first section will visually present the production techniques used during the Merovingian period to manufacture glass beads. The second section provides an overview of typochronology of the Near Eastern beads according to Pion 2014. The third section presents the complete study material of this thesis. At the start of this section the means of documentation are explained (in accordance with the methodology chapter 4). This entails the documentation tables for every site, including the beads without a Near Eastern origin. For most of the sites the pictures of the studied beads are included. However this could not be provided for every site or every grave. The excluded graves are indicated for every site further in the appendix. The fourth section consists of the overview table of the attested Near Eastern beads in the complete research area and the typochronology tables. These tables display the numbers of beads attested for every production technique in the studied sites, divided in three chronological periods.

## 1. Production techniques

In this section additional information on the production techniques is provided. The steps of the techniques for the manufacture of glass beads are visually displayed. For a textual explanation of the production technique see chapter 4 'Near Eastern beads in Merovingian context' paragraph 4.3 on the production techniques of early medieval beads in the main text.

### 1.1 Drawn beads – Pion type A



Figure 1.1: Drawn glass created by using the Lada-method (picture by Lankton, after figure 18 in Pion 2014a, 38).

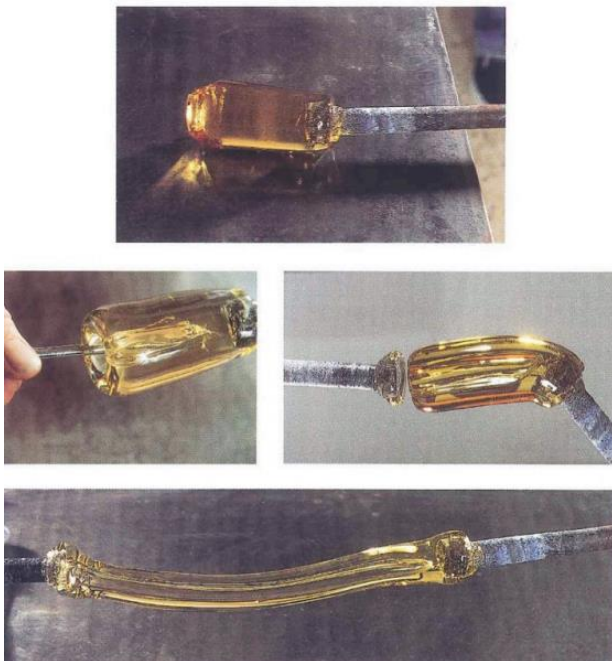


Figure 1.2: Drawn glass created by trapping a bubble of air and pulling the glass with a metal rod (picture after figure 11 in Spear 2001, 46).

1.2 Wound beads – Pion type B

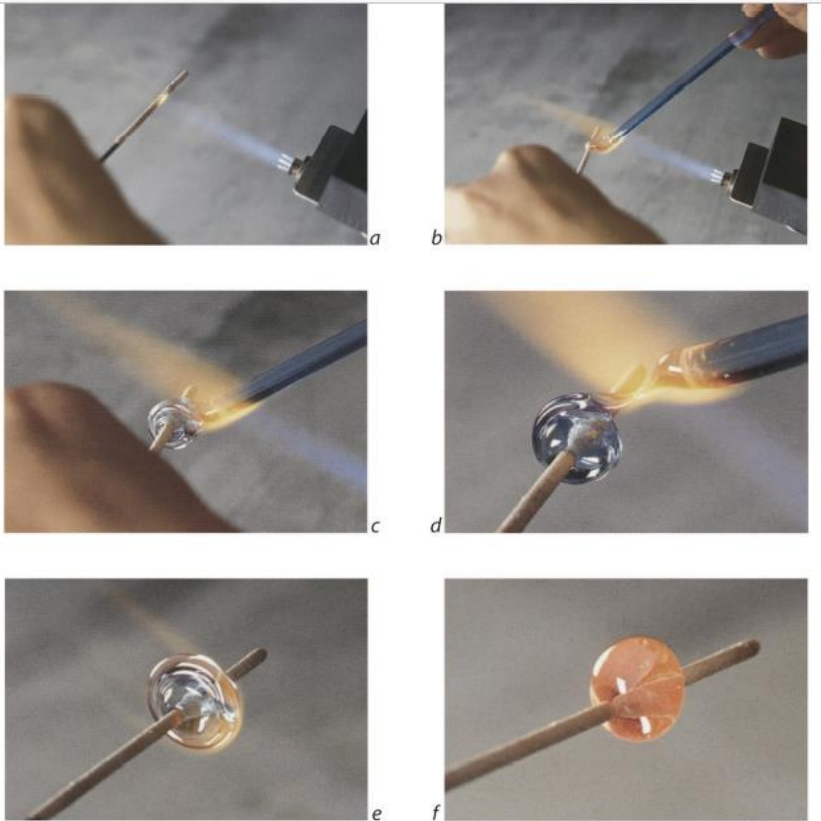
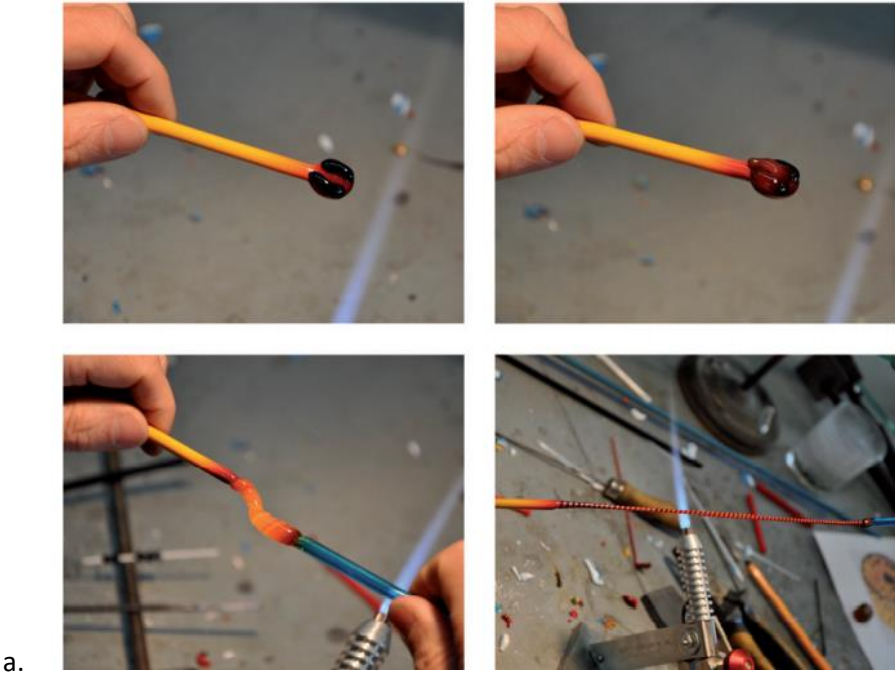
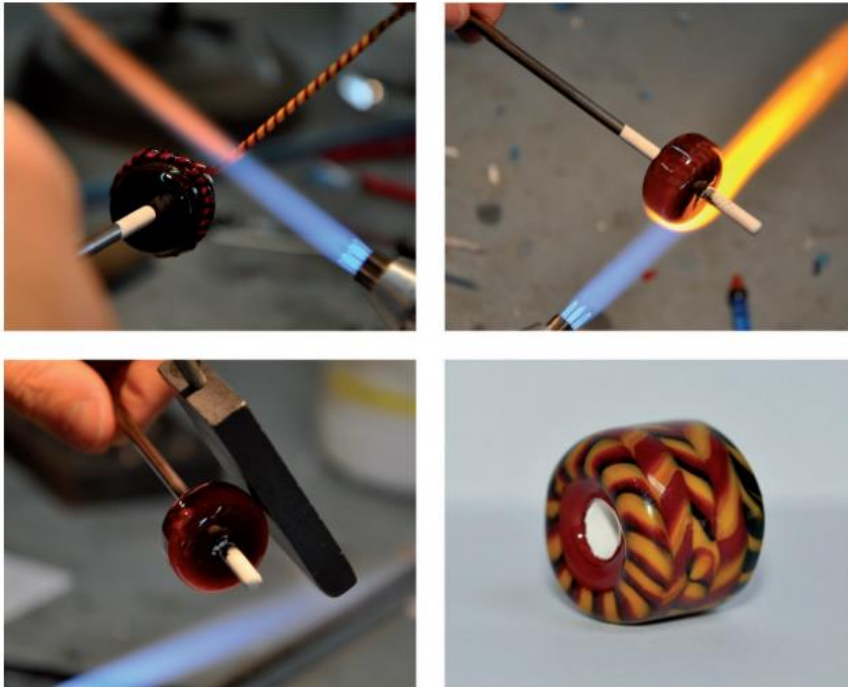


Figure 1.3: General production technique of wound glass beads (picture after Adams 2008, 39-44).







b.

Figure 1.4: a. the making of three colored rods (picture by Guegan, after figure 65 in Pion 2014a, 70), b. the making bead of a reticella bead (picture by Guegan, after figure 66 in Pion 2014a, 71).

### 1.3 Folded beads – Pion type C

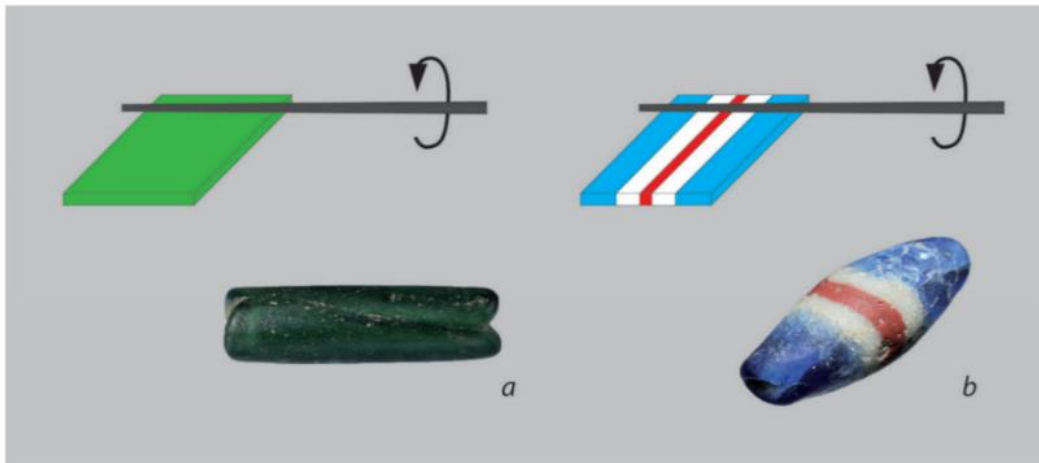


Figure 1.5: Hypothetical production technique of folded beads (after figure 68 in Pion 2014a, 74).

#### 1.4 Perforated beads – Pion type D

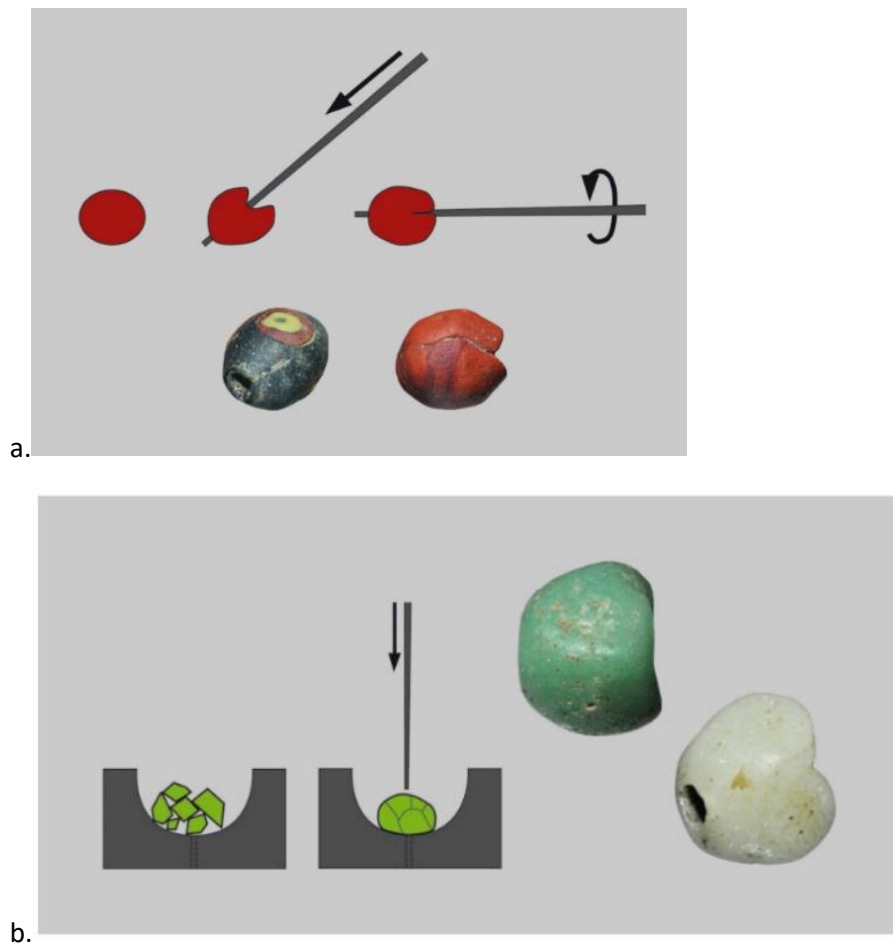


Figure 1.6: Hypothetical production technique of perforated beads. a. the perforation of a glass marble to create a rounded bead (after figure 69 in Pion 2014a, 74), b. the perforation of a recycled mass of glass to create a bead (after figure 70 in Pion 2014a, 74).

1.5 Mosaic beads – Pion type E

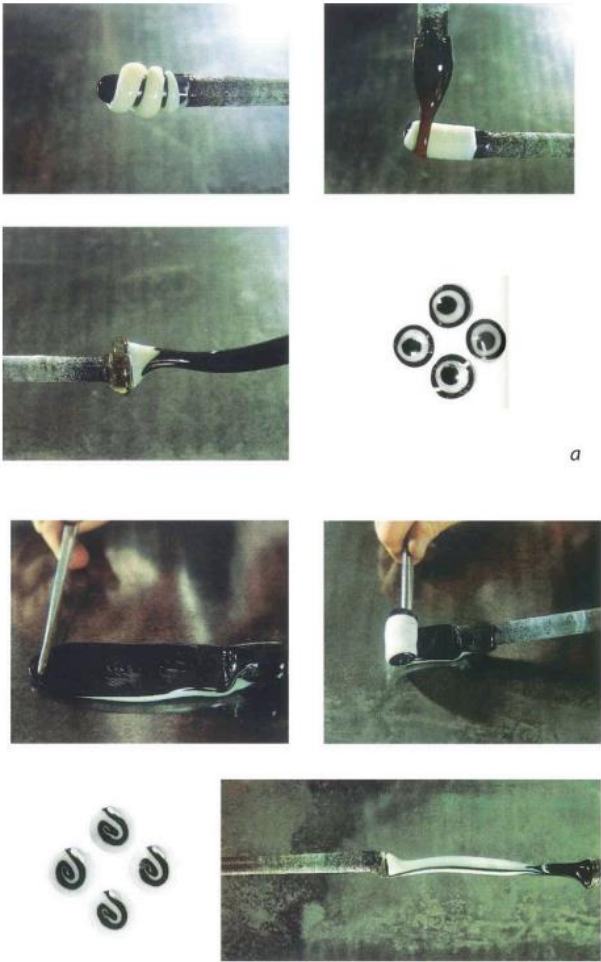


Figure 1.7: The manufacturing of the glass mosaic elements (after Spear 2001, figure 72 in Pion 2014a, 76).

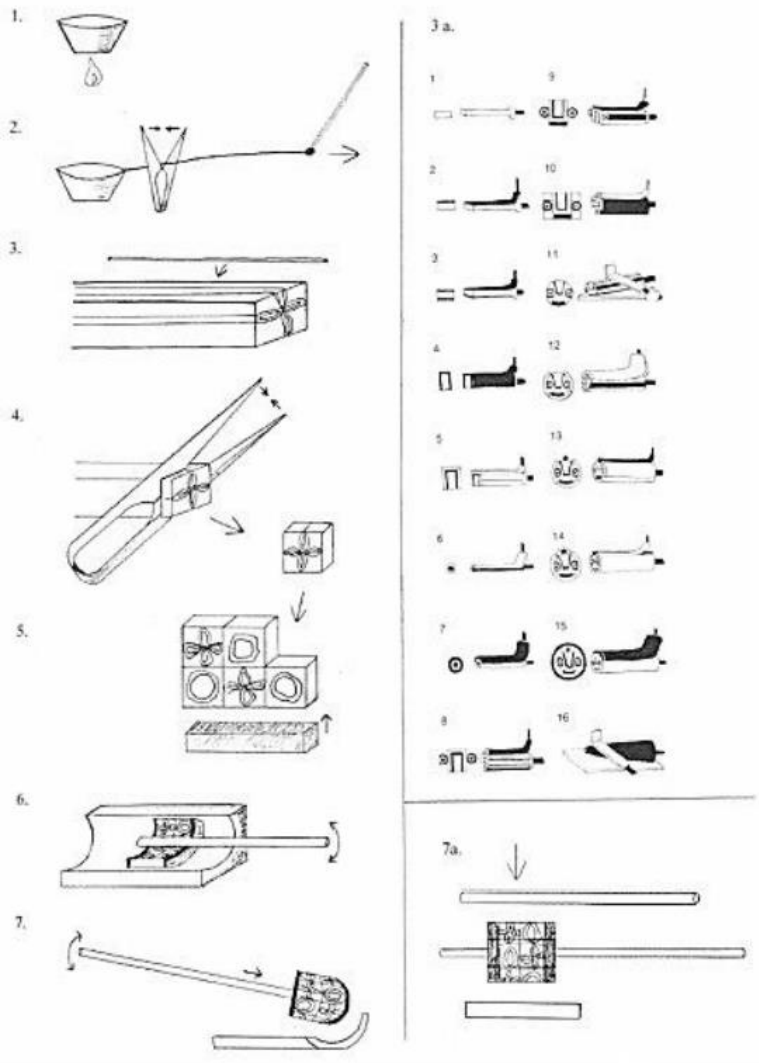






Figure 1.8: The production process of mosaic beads (after figure 16 in Volkmann and Theune 2001, 226).





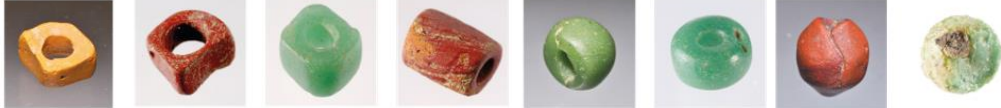




## 2. Typochronology of Merovingian beads from the Near East



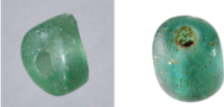


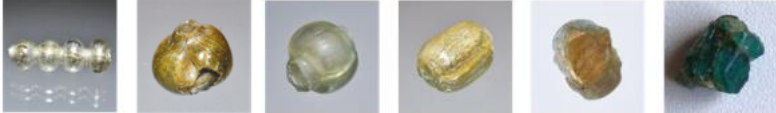




Table 2.1 provides an overview of the bead types assumed to be of Near Eastern origin. The beads are divided in chronological periods based on the typochronology of Pion (2014b and 2014a, 135-141). This table will form the basis for categorizing the studied beads in chronological categories. For additional information please see paragraph 4.4 chronology of ‘Merovingian beads.’

Table 2.1: Overview of the Near Eastern beads as indicated in the typochronology of Pion 2014 (pictures after Vrielynck *et al.* 2018).

Group P1	
<i>Drawn beads</i>	
A4.1, A4.2, A4.3 (Metal-foil beads)	 A4.1-01    A4.1-02    A4.2-01    A4.2-02    A4.3-01a    A4.3-01b    A4.3-02    A4.3-03a    A4.3-03b
A1.2-01/02/03/04 & 06 (cold cut beads)	 A1.2-01    A1.2-02    A1.2-03    A1.2-04    A1.2-06
A3.1-1a/2/3/4a/5/6/9, A3.2-4/5, A3.3-1, A3.4-1a/2/3/4/5/7/8, A3.5	 A3.1-01a    A3.1-02a    A3.1-02b    A3.1-03a    A3.1-03b    A3.1-04a    A3.1-05    A3.1-06 A3.2-04    A3.2-05    A3.1-09    A3.3-01    A3.4-01a    A3.4-02    A3.4-03    A3.4-04    A3.4-05 A3.4-07    A3.4-08    A3.5-01    A3.5-02    A3.5-03
A3.3-2 (Blue tubular translucent)	 A3.3-02
<i>Wound beads</i>	
B6.1-1c/d (confetti beads)	 B6.1-1c    B6.1-1d
<i>Folded beads</i>	
C3.3-1 (green with blue edges)	 C3.3-1

<i>Perforated beads</i>	
D1.1 (heart shaped)	 D1.1-1    D1.1-2    D1.1-3    D1.1-4    D1.1-5    D1.1-6
D1.5 (prismatic)	 D1.5-1    D1.5-2    D1.5-3
<i>Other material</i>	
F2.1 Rock Crystal	 F2.1-01    F2.1-02    F2.1-03
<b>Group P2</b>	
<i>Drawn beads</i>	
A2.1, A1.3	 A2.1-01    A2.1-02    A2.1-03    A2.1-04    A1.3-01    A1.3-02    A1.3-03    A1.3-04
A3.1-1b/3b/4b/7/9/10/11, A3.2-2/4, A3.4-1a/6/8/9	 A3.1-01b    A3.1-03b    A3.1-04b    A3.1-07    A3.1-09    A3.1-10    A3.1-11    A3.2-02    A3.2-04 A3.4-01a    A3.4-06    A3.4-08    A3.4-09
A4.2-1, A4.4-2	 A4.2-01    A4.4-02
<i>Wound beads</i>	
B10.1-1/2 (reticella)	 B10.1-01a    B10.1-01b    B10.1-02a    B10.1-02b    B10.1-02c
<i>Folded beads</i>	
C1.1, C1.2, C1.3-1, C1.4-1/2	 C1.1-1    C1.1-2    C1.1-3    C1.1-4    C1.2-1    C1.2-2    C1.3-1    C1.4-1    C1.4-2
C2.1, C2.2	 C2.1-1a    C2.1-1b    C2.1-1c    C2.1-1d    C2.1-1e    C2.1-1f    C2.1-1g

	<p>Recently known as: C2.1-01a, C2.1-01b, C2.1-02a, C2.1-01b, unknown, C2.1-03a, C2.1-03b (Vrielynck <i>et al.</i> 2018)</p>  <p>C2.1-2a    C2.1-2b    C2.1-2d    C2.1-2c</p> <p>Recently known as: C2.2-01, C2.2-02a, C2.2-02b, C2.2-03 (Vrielynck <i>et al.</i> 2018)</p>
C3.1, C3.2	 <p>C3.1-1    C3.1-2    C3.2-1    C3.2-2</p>
C4.2	 <p>C4.2-1    C4.2-2</p>
<i>Perforated beads</i>	
D1.1 (heart shaped)	 <p>D1.1-1    D1.1-2    D1.1-3    D1.1-4    D1.1-5    D1.1-6</p>
D1.2, D1.3, D1.4	 <p>D1.2-1    D1.2-2    D1.2-3    D1.2-4    D1.3-1    D1.3-2    D1.4-1    D1.4-2</p>
D2.1, D2.2	 <p>D2.1-1a    D2.1-1b    D2.1-1c    D2.1-2    D2.2-1    D2.2-2    D2.2-3</p>
<i>Mosaic beads</i>	
E1.1, E1.2, E1.3, E1.4	 <p>E1.1-1    E1.1-2    E1.1-3    E1.2-1    E1.2-2    E1.2-3    E1.2-4    E1.2-5</p> <p>E1.3-1    E1.3-2    E1.4</p>
E2.1, E2.2	 <p>E2.1-1    E2.1-2    E2.1-3    E2.2-1    E2.2-02</p>
E3.1, E3.2, E3.3	 <p>E3.1    E3.2    E3.3</p>

E4.1 and E4.2						
	E4.1	E4.2				
<i>Other material</i>						
F2.1-1						
	F2.1-01					
<b>Group P3</b>						
<i>Drawn beads</i>						
A1.2-5/7						
	A1.2-05	A1.2-07				
A3.1-8/9/12, A3.2-6						
	A3.1-08	A3.1-09	A3.1-12	A3.2-06		
A3.4-1						
	A3.4-01a	A3.4-01b				
A4.2-1, A4.3-1b, A4.4						
	A4.2-01	A4.3-01b	A4.4-01	A4.4-02	A4.4-03	A4.4-04
<i>Perforated beads</i>						
D1.1						
	D1.1-1	D1.1-2	D1.1-3	D1.1-4	D1.1-5	D1.1-6
<i>Meerschaum:</i> P1-5						
	F4.1	P5	shell disk bead.			
<i>Amethyst:</i> P4						
	F2.2	P0	D1.7			



### 3. Complete documentation tables of the studied sites

#### 3.1 Introduction

In this section the complete documentation tables for every individual site will be presented. For every site, an excel sheet was created with all the graves that contain beads. This includes the beads of all origins besides the Near East, which were excluded from the tables in the result chapter 5 of the main text. This table is organized by grave-numbers and sometimes also find-numbers or picture-numbers, depending on the documentation preference in the cemetery's publication. First, for every grave the number of found beads and the date of the grave is documented (according to the publication). Based on this date, the grave was chronologically categorized. This is documented in the table by color-codes: blue represents the graves dated to the sixth century and earlier, orange represents the transitional period and green represents the graves from the seventh century and later. The date of the beads according to Pion (2014) was also included. In some cases, the number of beads given in publications does not match the number of beads that was counted by me. In several other cases beads were missing and were consequently not depicted in the accessed publications. When this happened an additional category 'Number of beads available for study' was created. After the number of beads was established, the number of Near Eastern beads and their types are determined. A concise description of the production technique of the bead or, if possible, the determined bead type according to Vrielynck *et al.* (2018). Remarks and pictures were occasionally added. The references to the publications or other source material are included for every grave. This is in accordance with 4.3.1 documentation of the individual site table. Besides this table, an excavation map of the site and pictures of the studied beads will be provided. Note that not all Near Eastern beads were determined based on pictures but on determination tables created by Langbroek. Consequently, not all sites/graves will include pictures. The Near Eastern beads are indicated in the pictures of Noord-Brabant and Limburg with blue arrows.

3.2 Noord-Brabant

3.2.1 Hoogeloon-Broekeneind

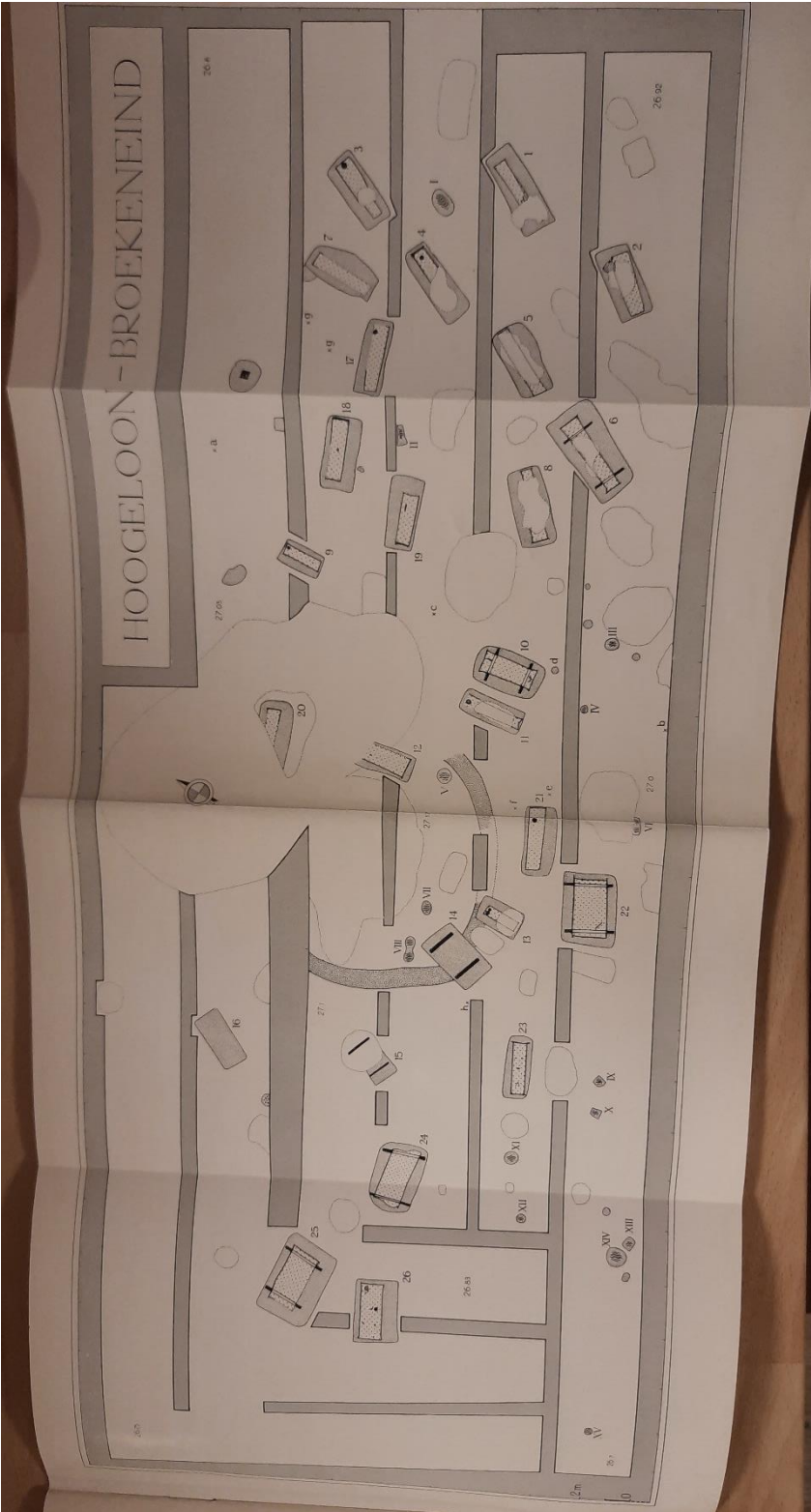


Figure 3.1: Excavation map of Hoogeloon-Broekeneind (Glasbergen 1955, additional figure).

Table 3.1: the graves that included beads from the cemetery of Hoogeloon (based on Glasbergen 1955).

FIND NR	GRAVE NR	DATE GRAVES	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	PAGE IN PUBLICATION
?	9	Sixth and seventh century	roman	1	0	Melon bead	22-23
1949/XI 36A	23	Sixth and seventh century	?	64	0		28
1949/XI 33C	26	Sixth and seventh century	?	85	0		29-30
1949/XI 13	single beads	Sixth and seventh century	?	1	0	Green with red circles around the perforation, could be folded bead but uncertain	31
<b>TOTAL</b>				<b>151</b>	<b>0</b>		



Figure 3.2: a. the beads of grave 23 and 26 (tekenaar van der Kamp in Glasbergen 1955, 2), b. single bead find (tekenaar Kuitert in Glasbergen 1955, 31).

*Additional note: Pictures of the beads from grave 9 are not available.*

### 3.2.2 Alphen-Chaam Molenstraat



Figure 3.3: The excavation map of Alphen-Chaam Molenstraat showing the archaeological features, comparing the 1950 and 2015 excavations (Verhoeven and Jansen 2019, 169).

Table 3.2: The graves that included beads from the cemetery of Alphen-Chaam Molenstraat (Based on Verwers 1977).

FIND NR	GRAVE NR	DATE GRAVE	TIMEPERIOD	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
12515.5	grave 22	sixth century	p3, ca. 600	4	0	gewonden	examined at Noord-Brabants Museum	173, 180
12515.02	Grave 13	transition sixth to seventh century	p3, ca. 600	7	0	gewonden, Spinkraal	examined at Noord-Brabants Museum	173, 180
12515.04	grave 24	transition sixth to seventh century	p2 for 3 NE beads, others are P3	17	3	recitella (Pion: B10.1-01b), 2x perforated and inlay (pion: D2.1-2)	examined at Noord-Brabants Museum	173, 180
12515.5	grave 4	sixth century	P2	7	3	E2.1-01, E2.1-02, E2.2-02	examined at Noord-Brabants Museum	173, 180
12515.03	grave 3	mid seventh century	P2	22	1	drawn red-brown bead Pion: A3.3-06	One huge amber bead, 2 coins. Examined at Noord-Brabants Museum	173, 180,182
12515.07	?	?	P3-P4	101	1	blue-green drawn bead (pion: A1.2-07)	examined at Noord-Brabants Museum	?
UNKNOWN	9	mid seventh century	?	53	?	1 (trans), 43 (op) of which 1 segmented, 9x amber		173, 180, 182
UNKNOWN	14	end sixth century	?	10	?	1 (trans), 17 (op), 2x amber		173, 180,182
UNKNOWN	15	transition sixth to seventh century	?	5	?	5 (op) of which 3 segmented		173, 180
UNKNOWN	16	sixth century	?	8	?	8 (opaque)		173, 180
UNKNOWN	21	sixth century	?	42	0			173, 180
UNKNOWN	25	second half seventh century	?	17	?	17 (op) of which four segmented		173, 180
UNKNOWN	26	?	?	14	?	4 (trans), 10 (op) of which 3x segmented		180
UNKNOWN	31	?	?	2	?	2 red-brown opaque, one was segmented, wavy lines		180
UNKNOWN	stray finds	?	?	13	?	5 large red-brown opaque, 18		182
UNKNOWN	other	?	?	??	??	grave 1. no beads were recorded, but string is present in museum. Five other beads, grave unknown. Roes: one glass bead in grave 30, the fielddrawing showed more. some glass beads, now absent, was recorded under graves 35-7 and 43. Two amber beads possibly in grave 20.		182
<b>TOTAL</b>				<b>322</b>	<b>8</b>			

Table 3.3: The graves that included beads from the cemetery of Alphen-Chaam Molenstraat (based on Nederstigt 2019).

FIND NR	GRAVENR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
UNKNOWN	Grave 3	?	p1-5	1	0			203
UNKNOWN	Grave 4	510-590	P2	7	1	1x E1.2-03 (millefiori), 1x heavy damaged blue bead		108, 204
UNKNOWN	Grave 7	460-620	5e early sixth cen	1	0	melonbead		106, 205
UNKNOWN	Grave 14	460-490	460-560	225	51	6x red gemstone (F2), 2x rock crystal (F2.1), 1x A4.2-01 (silverfoil), 21x A3.1-01, 18x A3.1-04, 2x A3.1-03 and 1x A4.4-01 (drawn strangled, blue, and turquoise and white and gold)	cannot find 6 amethyst beads, only four	109, 209-210
UNKNOWN	Grave 16	475-510	P3	7	1	A4.4-01		110, 212
UNKNOWN	Grave 19	?	P2	1	1	A4.2-01		106, missing?
UNKNOWN	Grave 20	510-565	P1-5	7	0			111, 215
UNKNOWN	Grave 22-27	475-510	late fifth early sixth	198	175	4x A3.4-04 or A4.1-02, 9x A3.4-01, 12x A4.2-01, others are A3.1-04		Missing : 114, (grave 22) 205 (grave 22-23-27), 217 (grave 27)
UNKNOWN	Grave 23	?	P1-2	2	1	A3.1-04		110, 114 missing?
UNKNOWN	Grave 24	565-640	?	8	0			111, 218
<b>TOTAL</b>				<b>457</b>	<b>230</b>			<b>102</b>

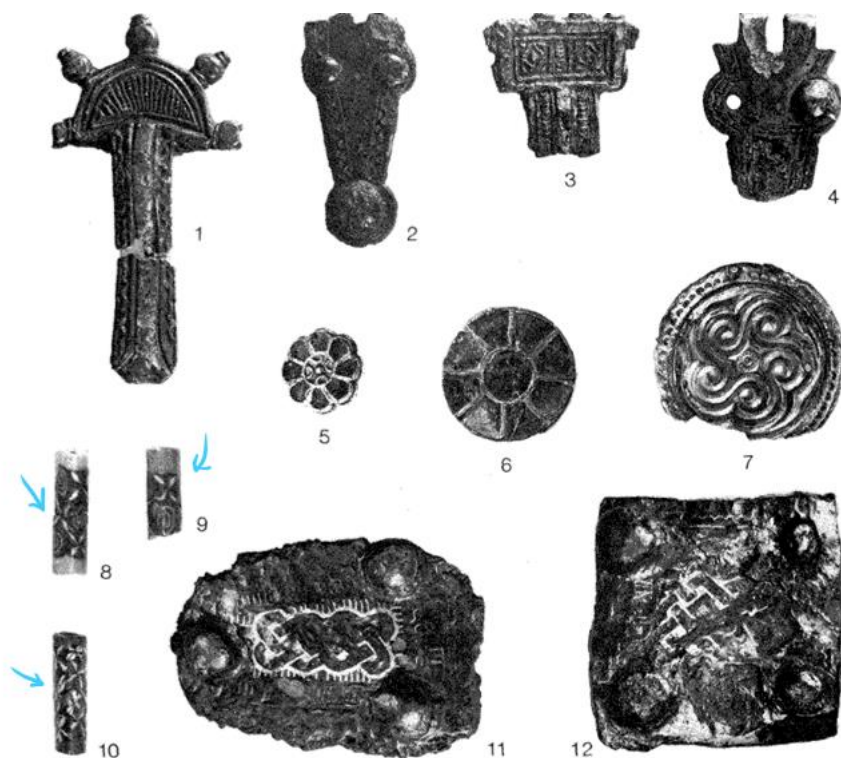


Figure 3.4: The findings of grave 2, 4, 11-2, including the three mosaic beads (8-10) of grave 4 (figure 8 in Verwers 1977, 181).



Figure 3.5: A. the bead of grave3 (V55), B. the beads of grave 4 (V26 t/m V31 and V38), C. the bead of grave 7 (V86) (figure 9.6, 9.7 and 9.5 in Verhoeven and Jansen 2019, 106, 108).



Figure 3.6: The beads of grave 14 (M19, V121, V123 t/m 126, V128 t/m 136, V145, V147, V152 t/m 157, V161, V166 and V167) (figure 9.8 and 9.9 in Verhoeven and Jansen 2019, 109).

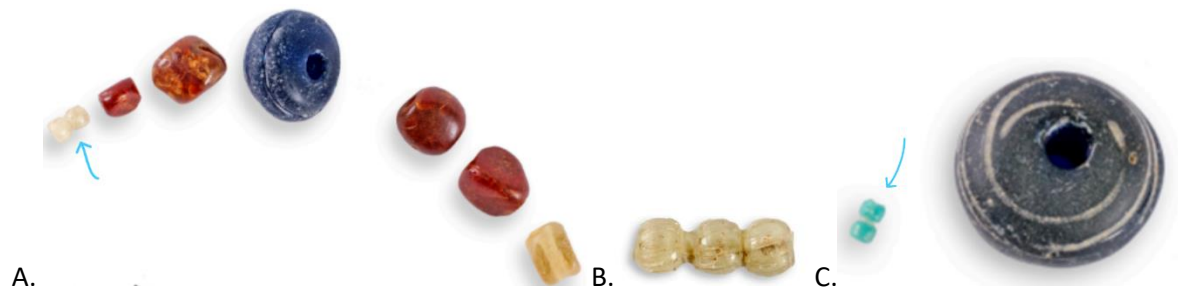


Figure 3.7: A. the beads from grave 16 (V36, V37, V48, V50, V56, V57, B. the bead of grave 19 (V160), C. the bead of grave 23 (V71 and V80) (figure 9.10, 9.4 and 9.11 in Verhoeven and Jansen 2019, 106, 110).



Figure 3.8: A. the beads from grave 20 (V39, V43 t/m V47 and V49), B. the beads of grave 24 (V112 t/m V119) (figure 9.12 and 9.13 in Verhoeven and Jansen 2019, 111)





Figure 3.9: The beads of grave 22-23-27 (V82, V84, V85 and V92 t/m V96) (figure 9.16 in Verhoeven and Jansen 2019, 115).

*Additional note: Only grave 4 of the 1950 excavation has a picture of the found beads, all other graves have no pictures.*

### 3.2.3 Bergeijk-Fazantlaan

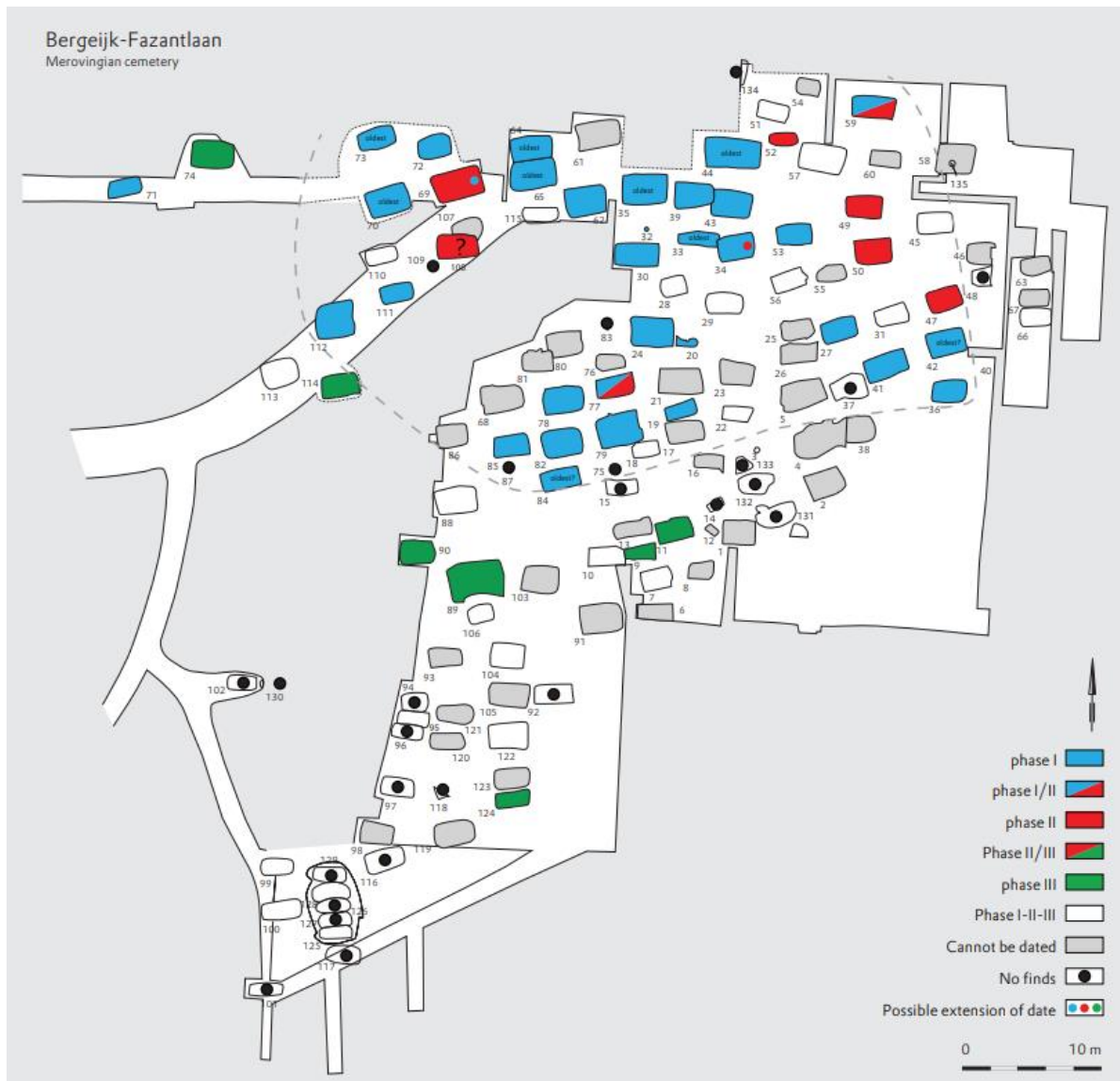


Figure 3.10: The map of the cemetery of Bergeijk-Fazantlaan showing the chronological phases of the graves (Theuvs and Van Haperen 2012, 144).

Table 3.4: The graves that included beads from the cemetery of Bergeijk-Fazantlaan (based on Theuws and Haperen 2012).

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF MEROVIGIAN GLASS BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION	PERSONALLY EXAMINED
7	c. 565-mid-eight century	P4	5	4	0	wound, amber		190-191	
9	670/680-mid-eight century	P5	14	14	6	6 shell, Siegmund: Per2.15(H-I) Pion: F?	shells from the Mediterranean or Near East. mid-seventh century and later (Siegmund)	192	yes
17	not dated	-	5	0	-	-		196	
19	c. 565-640/650	P3-P4	63	63	1	bluegreen bead (pion: A2.1-04)	wound, amber, metal, pottery	197	
21	not dated	-	1	0	-	-	1 bluegreen bead	197-200	
22	c. 565-mid-eight century	P5	4	4	0	wound		201	
23	not dated	-	1	1	0	amber		202-203	
27	c. 565-640/650	P5	8	8	0	wound		209-210	
28	c. 565-mid-eight century	P5	2	2	0	wound		210	
29	c. 565-mid-eight century	P4	1	1	0	wound		211	
30	c. 565-640/650	P1-P5	1	1	0	wound		211-212	
36	c. 565-640/650	P4	4	4	0	wound		218-219	
38	not dated	-	1	1	0	wound		219	
43	c. 565-640/650	P3	4	4	0	wound		224	
45	c. 565-mid-eight century	P5	19	17	0	wound		226-227	yes
47	640/650-670/680	-	17	0	-	-		228-229	
50	640/650-670/680	-	7	0	-	-	amber and glass	231-233	
53	c. 565-640/650	P4	24	20	0	wound, amber		234-237	
56	c. 565-mid-eight century	-	6	0	-	-		238-239	
66	c. 565-mid-eight century	-	20	0	-	-		249-250	
71	c. 565-640/650	-	16	0	-	-		252-253	
74	670/680-mid-eight century	-	2	0	-	-		254-255	
77	c. 565-670/680	P1-P5	1	1	0	amber		255-258	
81	not dated	-	2	0	-	-		262	
82	c. 565-640/650	-	8	0	-	-		262-263	
85	c. 565-640/650	-	28	0	-	-		264-265	
86	not dated	-	2	0	-	-		265	

88	c. 565-mid-eight century	P5	23	23	0	wound, amber	265-266	yes
89	670/680-mid-eight century	P5	24	24	0	wound, amber	266-269	
90	670/680-mid-eight century	-	6	0	-	-	269	
103	not dated	-	3	0	-	-	273	
108	640/650-670/680?	-	3	0	-	-	275	
110	c. 565-mid-eight century	-	4	0	-	-	275	
115	c. 565-mid-eight century	-	2	0	-	-	279	
122	c. 565-mid-eight century	P5	54	54	0	wound	280-281	yes
<b>TOTAL</b>			<b>385</b>	<b>246</b>	<b>7</b>			

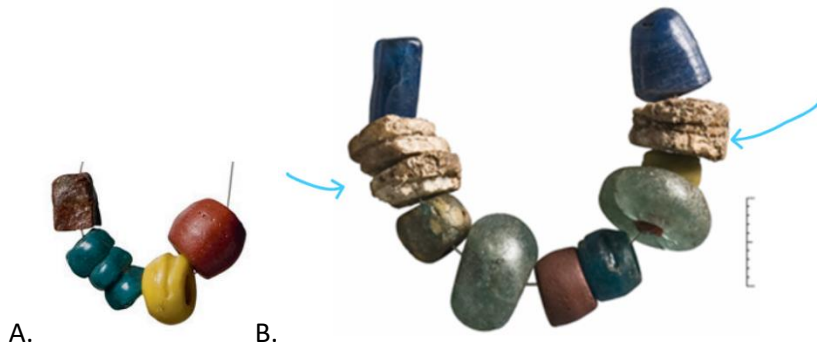


Figure 3.11: A. the beads of grave 7, B. the beads of grave 9 (pictures from Theuws and Haperen 2012, 191, 192).



Figure 3.12: The beads from grave 19 (finds 19.1-3) (pictures from Theuws and Haperen 2012, 197-199).

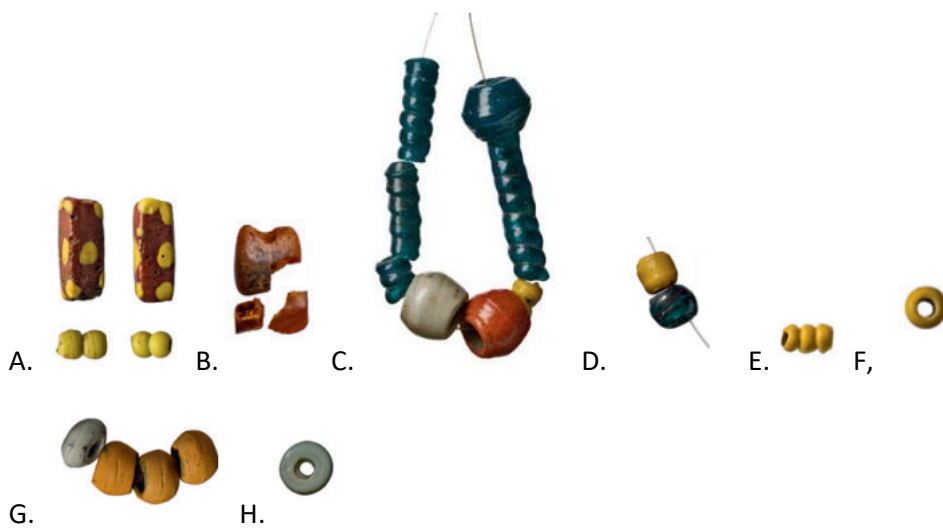


Figure 3.13: A. the beads of grave 22, B. the bead of grave 23, C. the beads of grave 27, D. the beads of grave 28, E. the beads of grave 29, F. the bead of grave 30, G. the beads of grave 36, H. the bead of grave 38 (pictures from Theuws and Haperen 2012, 201-203, 209-12, 218-219)



Figure 3.14: A. the beads of grave 43, B. the beads of grave 45, C. the beads of grave 53, D. the bead of grave 77 (picture from Theuvs and Haperen 2012, 224, 227, 236, 256).



Figure 3.15: A. the beads of grave 88, B. the beads of grave 89, C. the beads of grave 122 (pictures from Theuws and Haperen 2012, 266-267, 281).

*Additional note: Pictures of the beads from graves 17, 21, 47, 50, 56, 66, 71, 74, 81, 82, 85, 86, 90, 103, 110, 115 are not available.*

### 3.2.4 Veldhoven-Huysackers

Table 3.5: The graves that included beads from the cemetery of Veldhoven-Huysackers (based on Langbroek forthcoming).

GRAVENR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	PAGE IN PUBLICATION
SPOOR 9505	?	P5	38	0	wound	Langbroek forthcoming

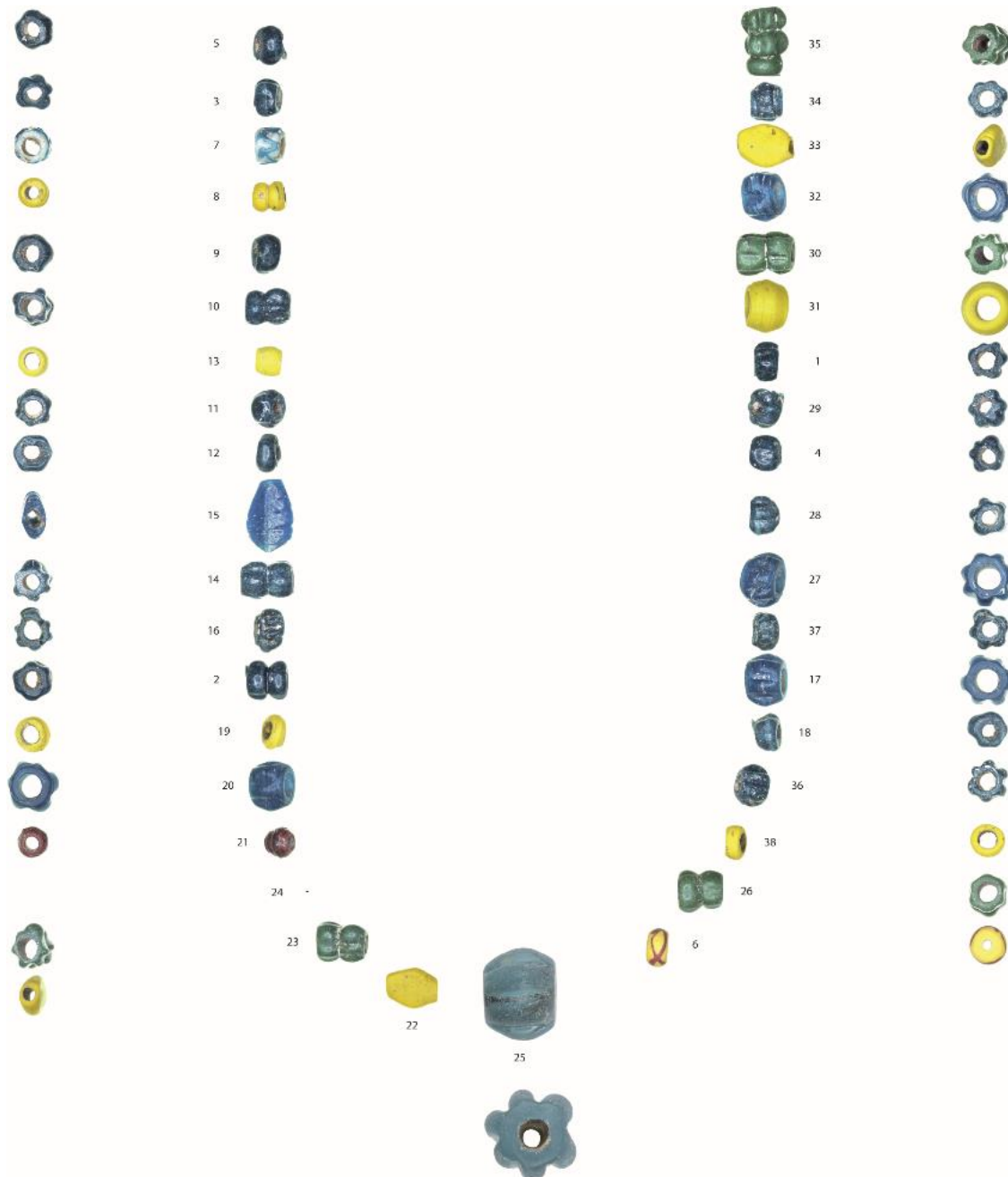


Figure 3.16: Reconstruction bead string Spoor 9505 (pictures by Langbroek and Theuws).



### 3.2.5 Veldhoven-Oeienbosdijk

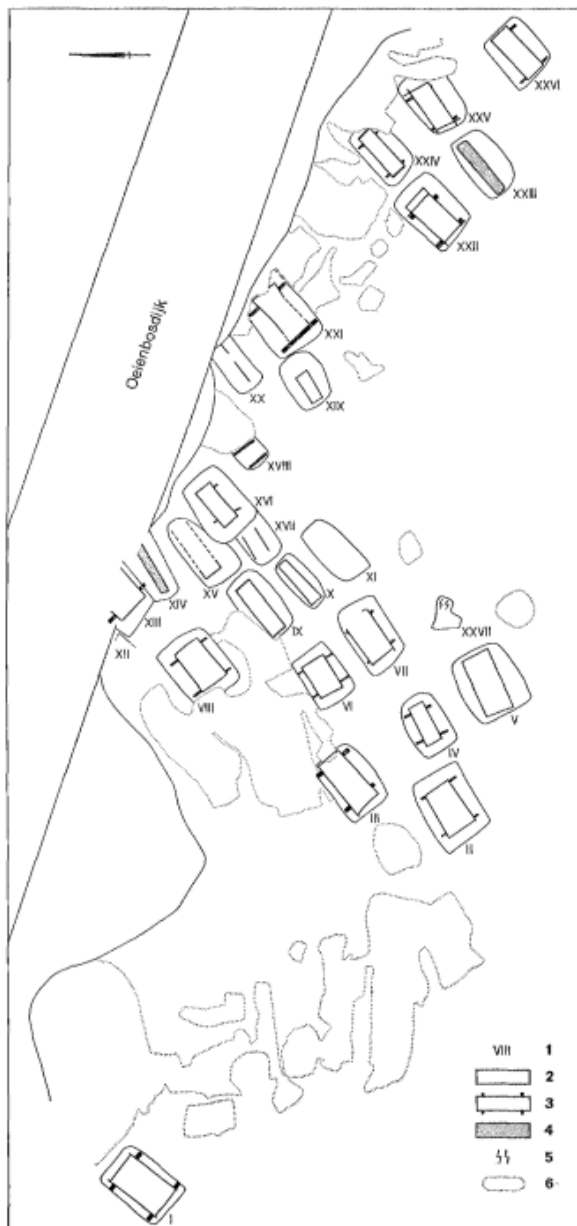


Figure 3.17: The excavation map of Veldhoven-Oeienbosdijk. 1. grave number, 2. coffin, 3. coffin on crossbeams, 4. tree-trunk coffin, 5. cremation grave, 6. recent disturbance (Verwers 1973, 315).

Table 3.6: The graves that included beads from the cemetery of Veldhoven-Oeienbosdijk (based on Verwers 1973).

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
6	seventh century	P4	3	0	wound	seems like all wound beads, could the last be recitella?	323, 331
7	seventh century	P0-P3	1	0	wound		323, 332
10	early seventh?	P3-P5	26	0	wound		324-325, 332
11	seventh century	P3/P4	1	0	wound		325, 332
14	seventh century	P4	7	0	wound		326, 332
16	seventh century	P5	1	0	wound		326-327, 333
20	seventh century	P3	1	0	wound		328, 333
25	seventh century	P3/P5?	1	0	wound		329, 333
27	seventh century	P?	2	0	wound	seems two wounded beads, blue with red dot??	329, 333
<b>TOTAL</b>			43	0			

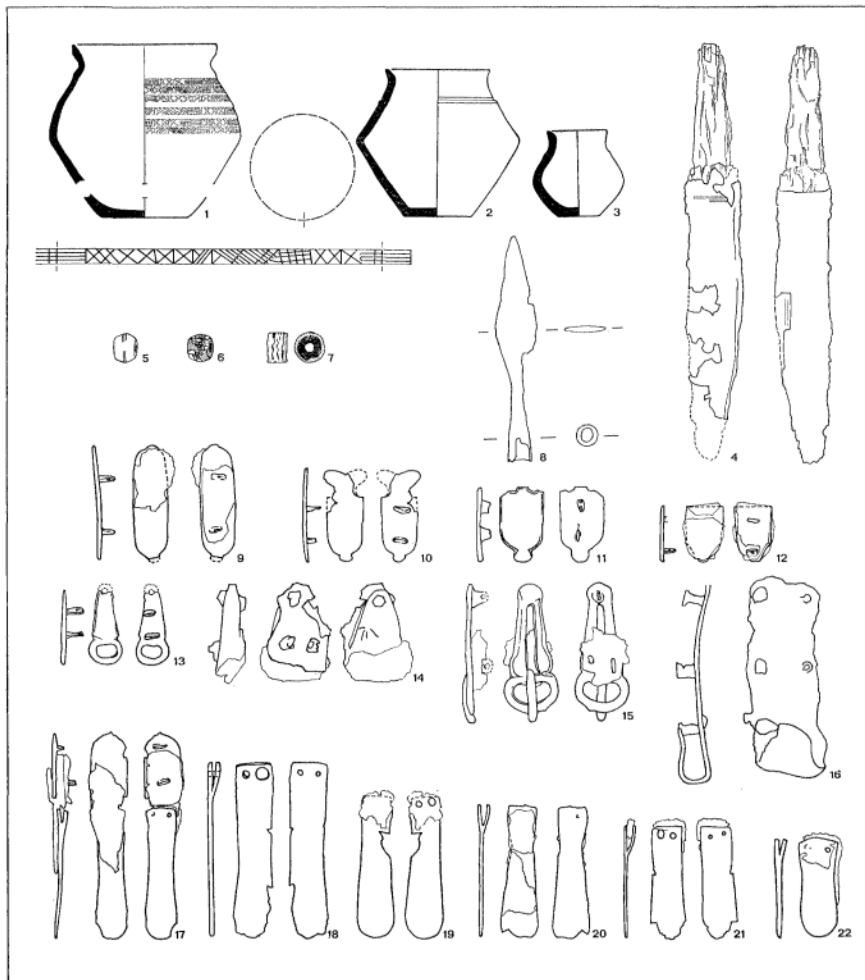


Figure 3.18: The found beads of grave 6 (find no. 5-7) (figure 27 in Verwers 1973, 331).

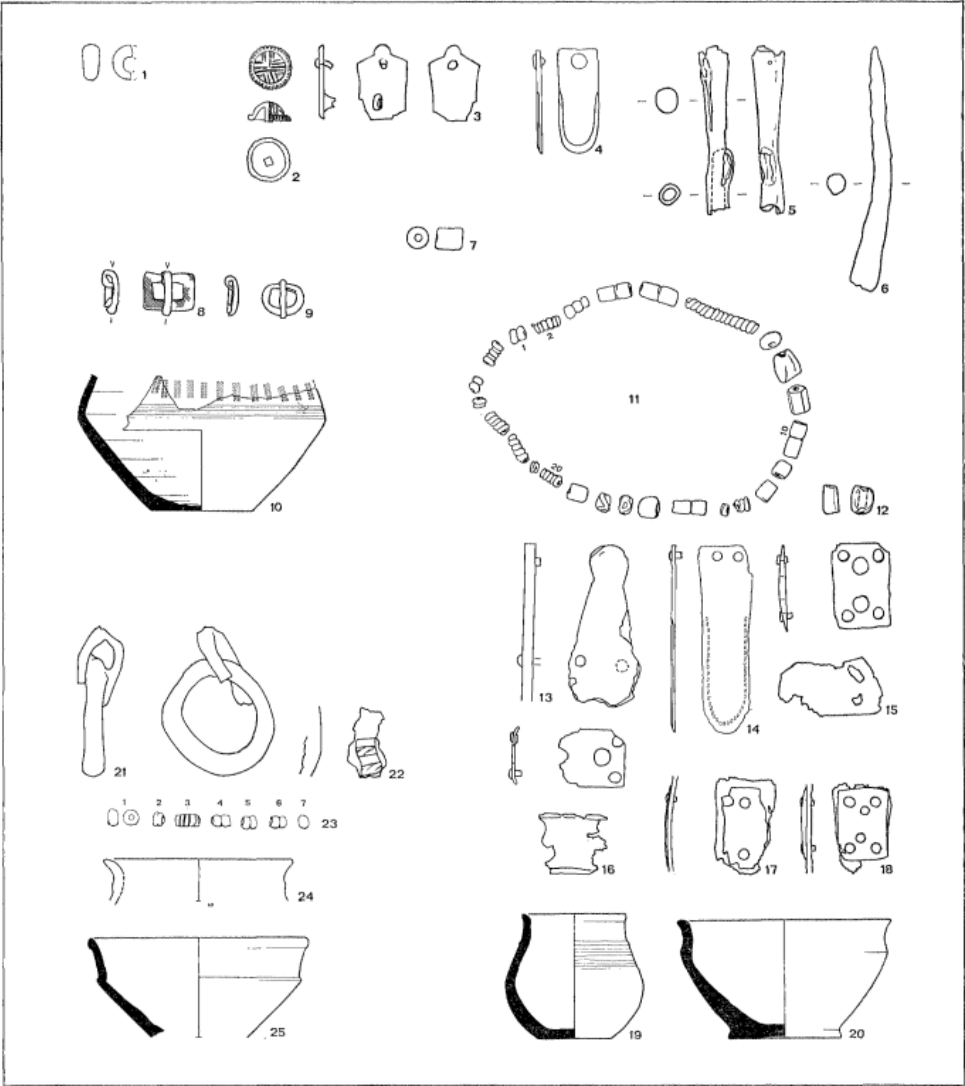


Figure 3.19: The beads found in grave 7 (find no. 1), grave 11 (find no. 7), grave 10 (find no. 11 and 12), grave 24 (find no. 23) (figure 28 in Verwers 1973, 332).

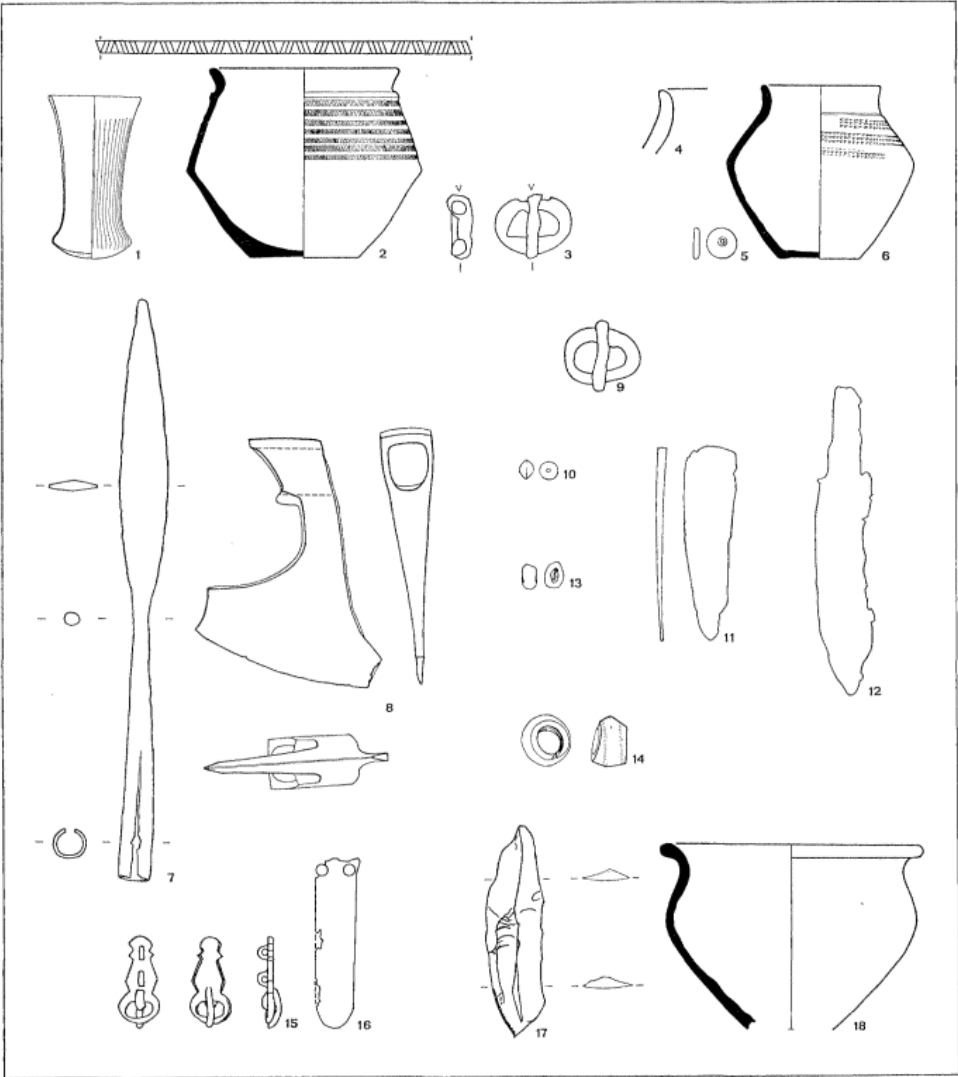


Figure 3.20: The found beads of grave 20 (find no. 10), grave 27 (find no. 13), grave 25 (find no. 14) (figure 29 in Verwers 1973, 333).

### 3.2.6 Dommelen-Kerkackers

Table 3.7: The graves that included beads from the cemetery of Dommelen-Kerkackers (based on Theuws and Haperen 2012, 164; Willemsen 2014, 201; Langbroek ongoing research).

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	AMOUNT OF NEAR EASTERN BEADS	NEAR EASTERN BEAD TYPES	REMARKS	PAGE IN PUBLICATION
4-2	675-700	P5 overall, Pion P2 > this bead	14	1	Pion: E1.2-03/ Koch: 2-3	mosaic bead	Theuws forthcoming; Langbroek determination table
3B-2	675-700	P3-5	62	0	-	all B types, quite some are perforated	Theuws forthcoming; Langbroek determination table
3A-B	675-700	P5	4	0	-	one perforated	Theuws forthcoming; Langbroek determination table
3A-1	675-700	P5	24	0	-		Theuws forthcoming; Langbroek determination table
2	675-700	P5, Pion: P2?/P2/P1-3	50	3	Pion: A3.1-01b/ E1.2-02 (Koch 2-3)/ D1.1-03	one drawn, one mosaic bead, one perforated	Theuws forthcoming; Langbroek determination table
<b>TOTAL</b>			<b>154</b>	<b>4</b>			



Figure 3.21: A. the beads from grave 2, B. the beads of grave 4.2 (pictures by Langbroek, personal communication).

*Additional note: No excavation map and no more pictures of beads are available.*

### 3.2.7 Uden-Schepersweg

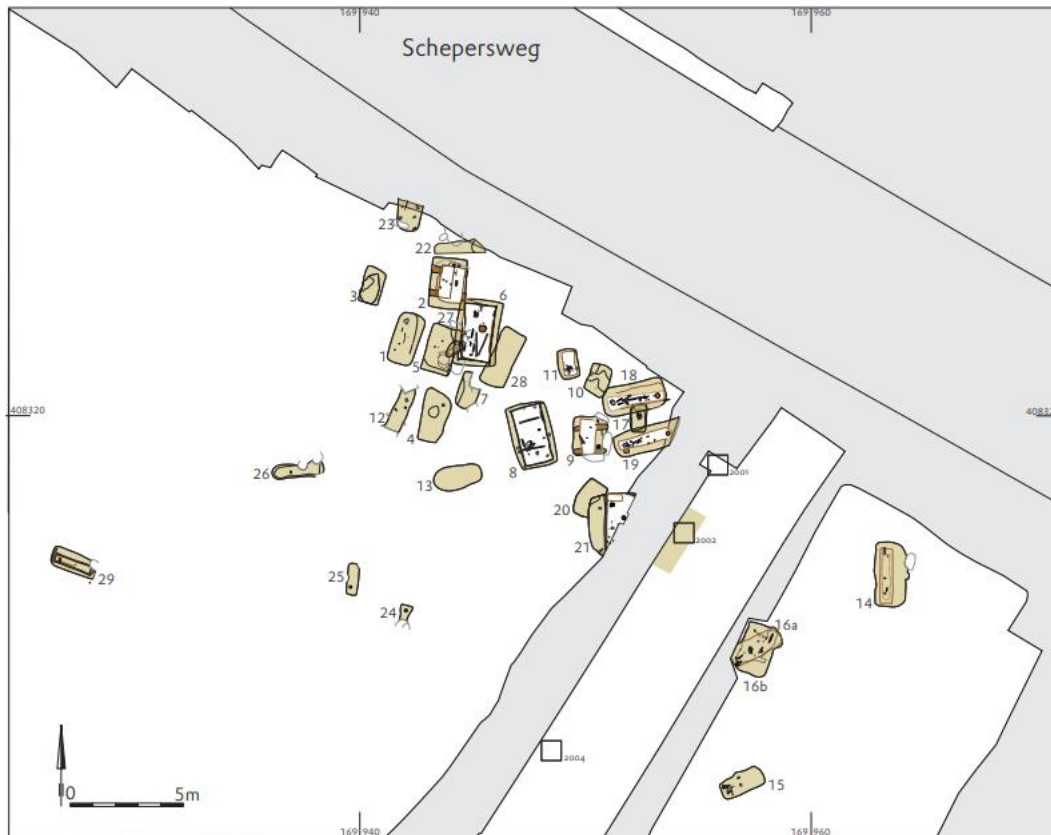


Figure 3.22: The map of the cemetery of Uden-Schepersweg showing the archaeological features (Knippenberg and Theuvs 2019, 42).

Table 3.8: The graves that included beads from the cemetery of Uden-Schepersweg (based on Knippenberg and Theuws 2019; Langbroek 2021; Teunissen van Manen 2021).

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	PICTURE - NUMBER OF BEADS	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION	PICTURE - TITLE	PERSONALLY EXAMINED
11	565-650	P5	84	84	0	-	child grave, date based on beads.	292-296	graf 11 1061_1088_1211-1212_1221_1225_209_2287-2346 1op1 kopie	yes
14	565-700	P5	11	11	0	-		300-303	graf 14-01 1268, 2225-2226, 2228-2233,1254 1op1 kopie	yes
15	565-620	P3	60	70	0	-	some heavenly damaged white beads	304-309	graf 15-02 1250_1277_1285_1296-1297_1503_2211-2224_2238-2266 1op1 kopie	yes
17	not dated	P?	1	5	0	-	burned, this is a cremation grave	320-321	graf 17-04-05 1523, 2210 1op1	2 of them
19	485 – 555	P2	1	1	0	Siegmund Ggh 1.2	large wound 'belt' bead	344	graf 19-07 1564 grote kraal 1op1 bovenzijde kopie	no
19A	550-590	P2	39	41	0	-		337-345	Graf 19-8a 1790 etc kralen nek 1op1 kopie	no
19B	550-590	P2	12	12	2	B10.1-02b, F4.1	recitella bead, also meerscham	345-347	Graf 19-8b 1725 etc kralen arm 1op1 kopie	no
19C	-	P?	-	2 (burned, possible from gr. 17)	0	-	burned, possible from grave 17	347	-	yes
21	640-700	P5	13	13	0	-	missing 2nd bead?	351-356	graf 21-03 1581_1736_2203-2208_2234-2236 1op1 kopie	no
22	not dated	P5	3	6	0	Kombinationsgruppe: E - G; B5.6-1		360-361	graf 22-01-02 1578, 1562 1op1 kopie	yes
23	610-680	P5	1	1	0	-		362-363	graf 23-03 1584 1op1 kopie	yes
29	565-620	P2-P3	42	42	13	D1.1-2, A3.4-01b, D1.1-03? C2.2-02a	many folded beads are broken	373-377	graf 29-01 2047-2083 1op1 kopie	yes
<b>TOTAL</b>			<b>267</b>	<b>288</b>	<b>15</b>					



Figure 3.23: The beads from grave 11 (picture by Hemminga).



Figure 3.24: The beads from grave 14 (picture by Hemminga).





Figure 3.25: The beads from grave 15 (picture by Hemminga).



Figure 3.26: A. the bead of grave 17, B. the bead of grave 19 (pictures by Hemminga).

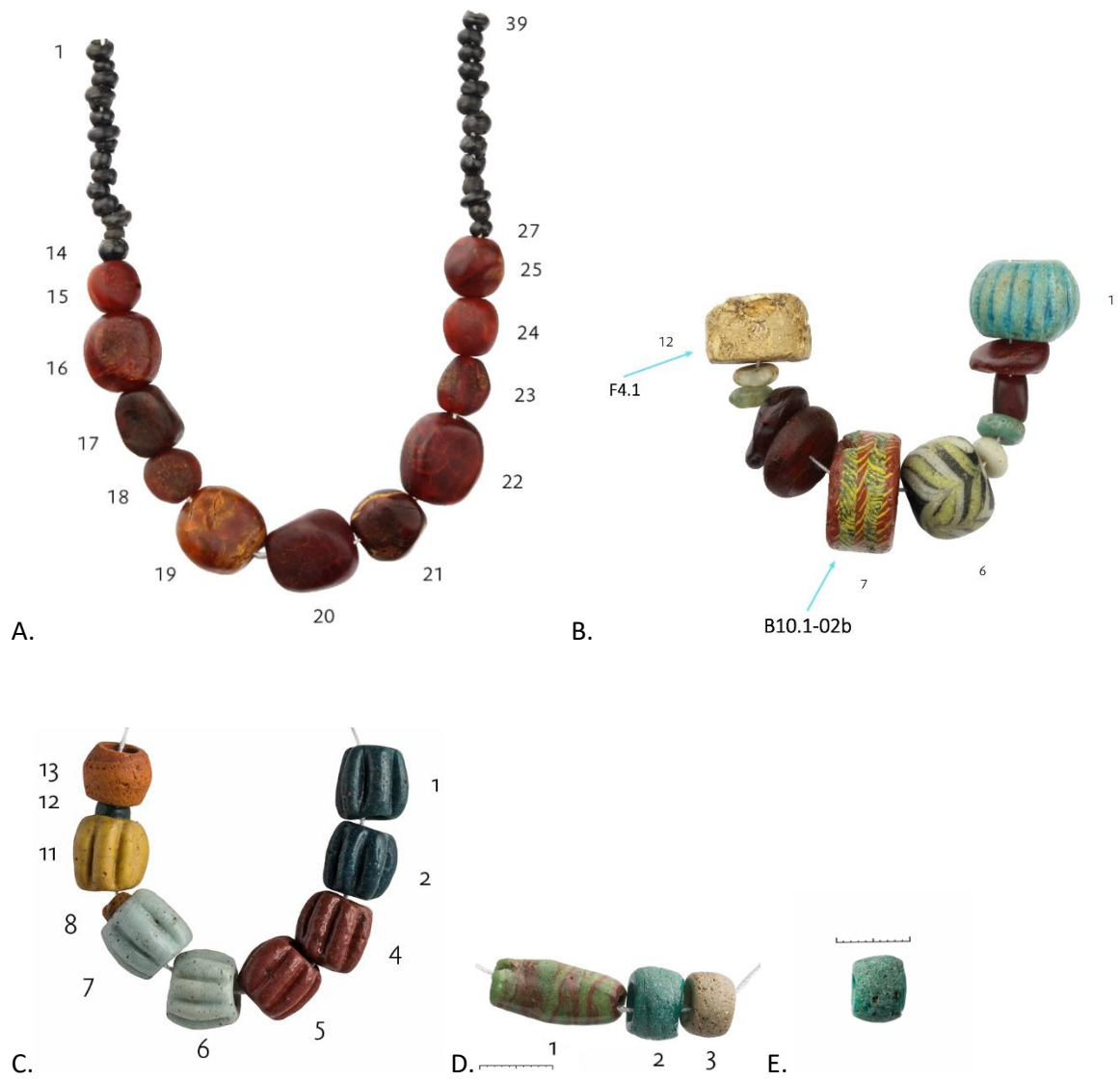


Figure 3.27: A. the beads of grave 19a, B. grave 19b, C. the beads of grave 21, D. the beads of grave 22, E. the bead of grave 23 (pictures by Hemminga).



Figure 3.28: The beads from grave 29 (picture by Hemminga).

### 3.2.8 Geldrop-Zesgehuchten site C

Table 5.9: The graves that included beads from the cemetery of Uden-Zesgehuchten site C (based on Theuws 2010 and Theuws forthcoming).

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	PAGE IN PUBLICATION
3B	late seventh early eight century	P5	27	0	wound & one cut	Theuws 2010, 5; Theuws forthcoming



Figure 3.29: The beads from grave 38 (picture by Langbroek).

### 3.2.9 Meerveldhoven

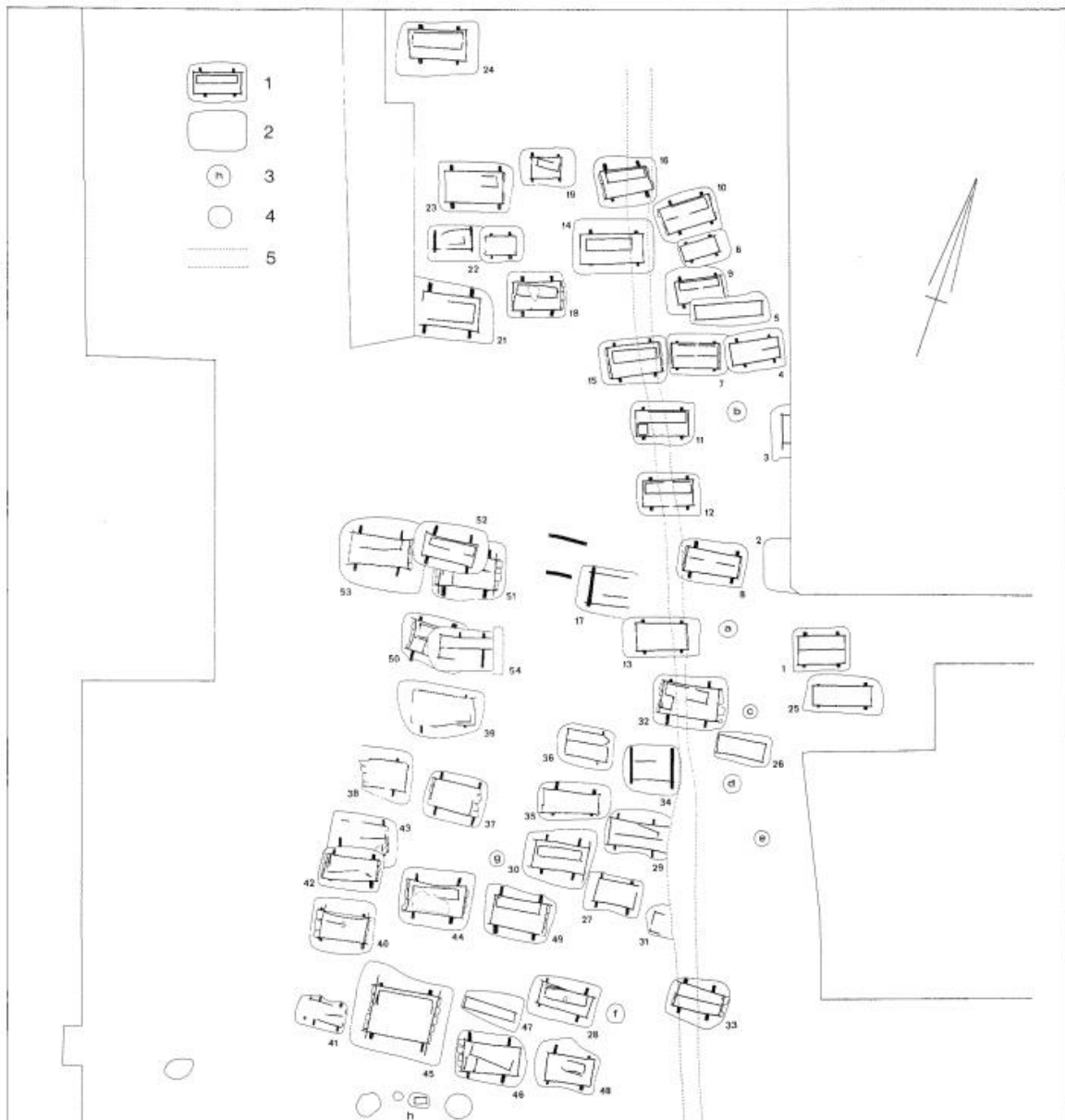


Figure 3.30: The Excavation map of the cemetery of Meerveldhoven. 1. coffin on cross-beams, 2. grave pit, 3. cremation grave, 4. Refuse pit, 5. recent disturbance (Verwers 1978, 253).

Table 3.10: The graves that included beads from the cemetery of Meerveldhoven (Verwers 1978).

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF MEROVIGIAN GLASS BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION	PICTURE
7	seventh century	-	Around 19	0	0	-	remains of a bronze wire	269-270	
10	seventh century	P5	69	67	0	-	remains of a bronze thread preserved	271	11244-36
11	seventh century	-	11	11	0	-		271,273	
13	seventh century	-	2)	0	0	-		273-274	
18	seventh century	P5	37	37	0	-		276,278	11244-18
19	end sixth to begin seventh century	P5	104	104	0	-	child grave, 'spindle whorl'	278	11244-19, 11244-20
21	seventh century	-	at least 9	9	0	-	clay spindle whorl	279	
23	end sixth to begin seventh century	-	2	2	0	-		280	
26	seventh century	-	9	9	0	-		282	
27	seventh century	-	9	9	0	-		282-283	
28	seventh century	P5	45	45	0	-		283-284	11244-06
29	second half seventh century	-	78	78	0	-		284	
30	second half seventh century	-	38	38	0	-		285-286	
32	second half seventh century	-	13	13	0	-		287	
35	second half seventh century	-	34	34	0	-		288	
39	seventh century	-	2	2	0	-		291	
40	seventh century	-	18	18	0	-		291	
42	second half seventh century	-	12	12	0	-		292	
43	end sixth to begin seventh century	-	4	4	0	-		294	
46	end sixth to begin seventh century	P5	34	34	0	-		297	11244-07
47	seventh century	-	19	19	0	-		298	
48	seventh century	-	26	48	0	-		298,300	
50	seventh century	-	27	50	0	-		300-301	
<b>TOTAL</b>			<b>621</b>	<b>598</b>	<b>0</b>				

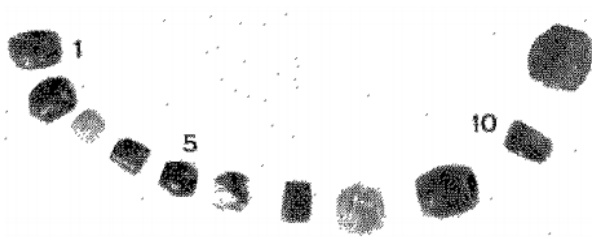


Figure 3.31: The beads from grave 11(Verwers 1978, 272).



A.



B.

Figure 3.32: A. the beads from grave 18 (11244-18), B. the beads from grave 10 (11244-36)



Figure 3.33: the beads from grave 19 (pic: 11244-19, 11244-20)

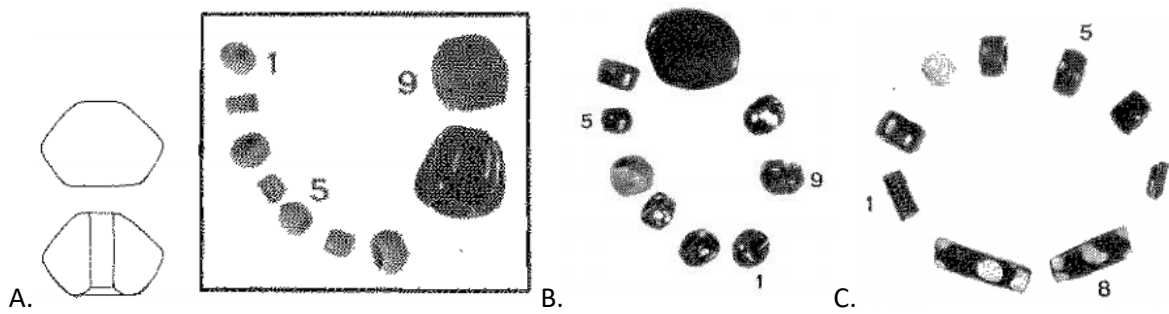


Figure 3.34: A. the beads from grave 21 (Verwers 1978, 281), B. the beads from grave 26 (Verwers 1978, 283), C. the beads from grave 27 (Verwers 1978, 283).



A.



B.

Figure 3.35: A. the beads from grave 28 (11244-06), B. the beads from grave 46 (11244-07).



Figure 3.36: The beads from grave 29 (Verwers 1978, 285).



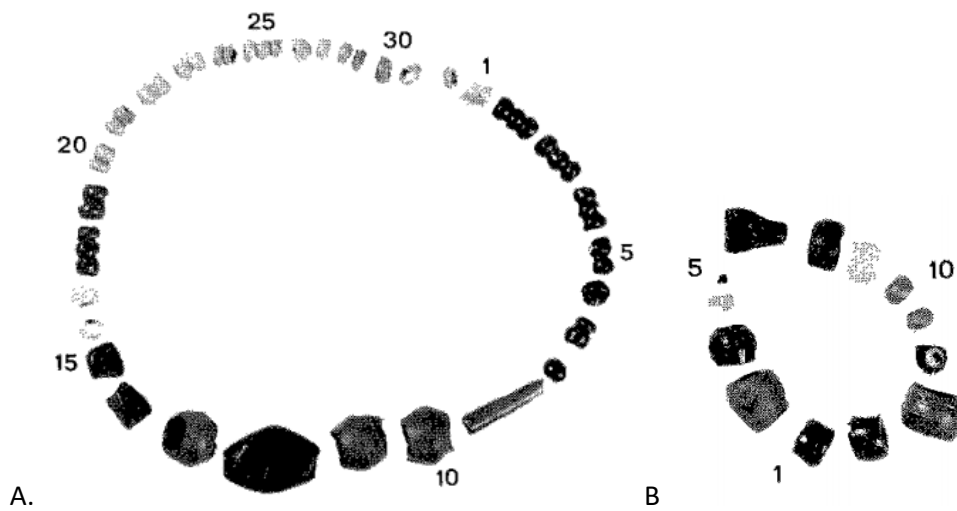


Figure 3.37: A. the beads of grave 30 (Verwers 1978, 287), B. the beads from grave 32(Verwers 1978, 287).

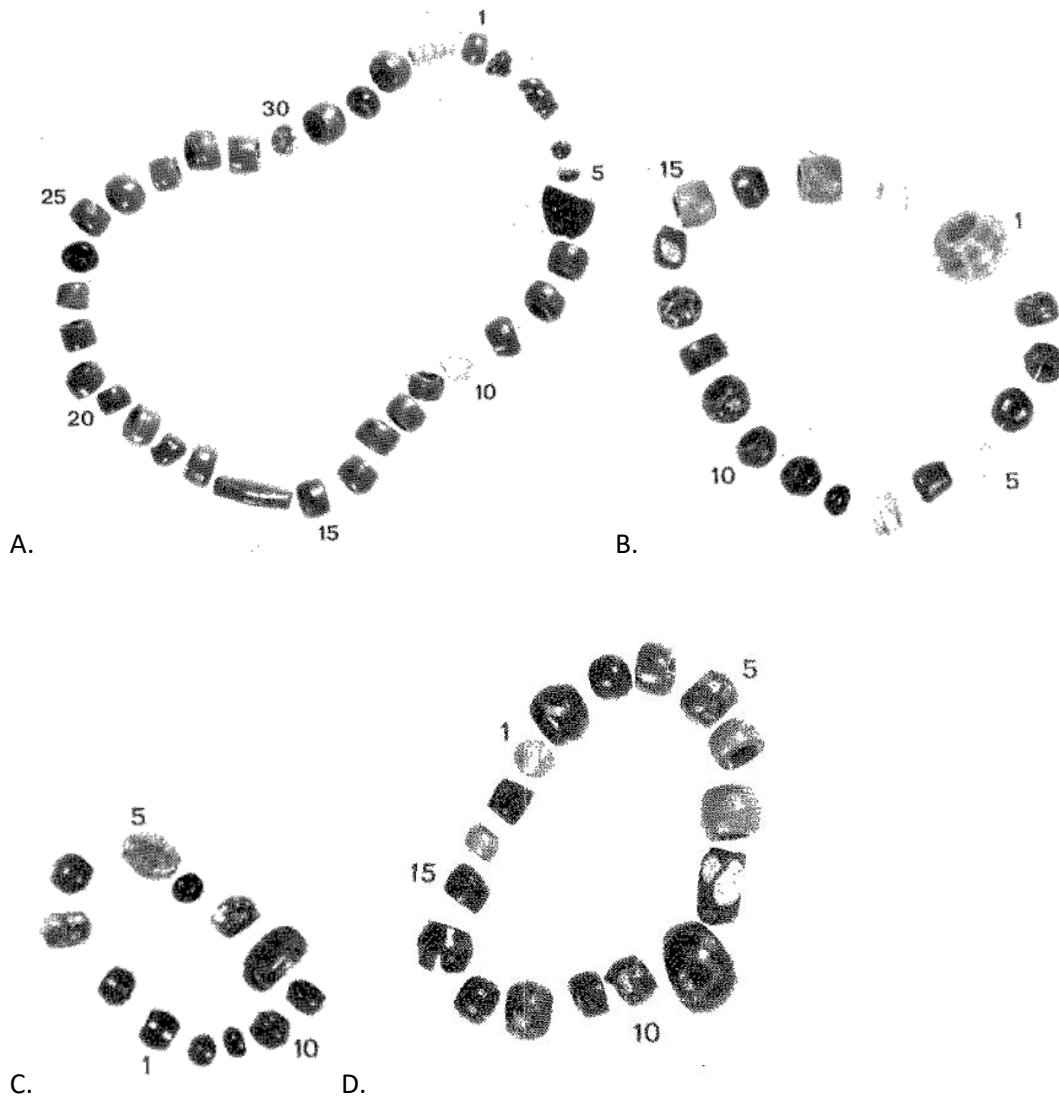


Figure 3.38: A. the beads from grave 35 (Verwers 1978, 290), B. the beads from grave 40 (Verwers 1978, 293), C. the beads from grave 42 (Verwers 1978, 293), D. the beads from grave 47 (Verwers 1978, 299).

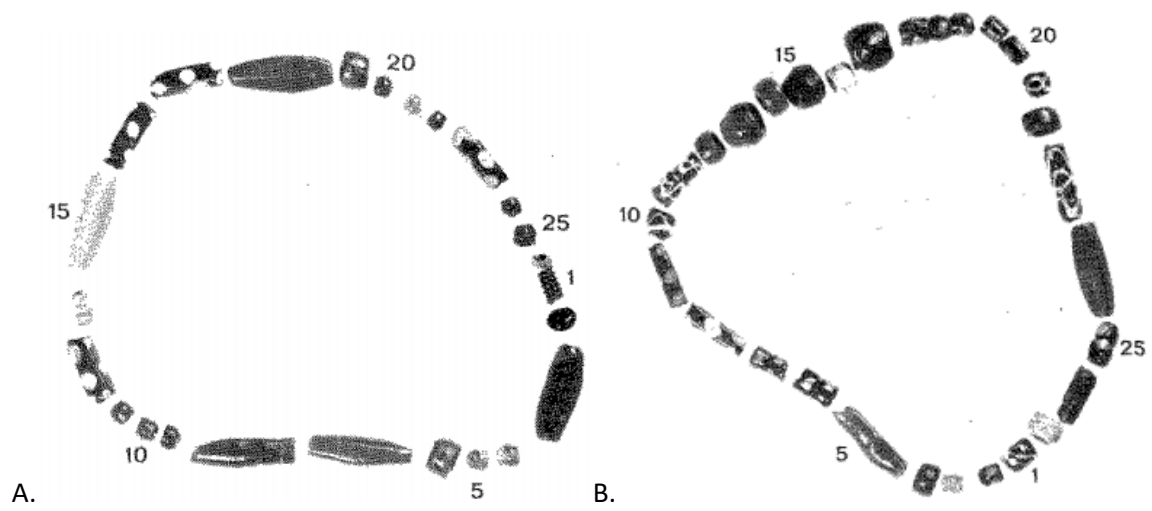


Figure 3.39: A. the beads from grave 48 (Verwers 1978, 299), B. the beads from grave 50 (Verwers 1978, 302).

*Additional note: There are no pictures of the beads from the graves 7, 13, 23, 39, 43 available.*

### 3.3 East Rhine

#### 3.3.1 Lent-Lentseveld

Table 3.11: The graves that included beads from the cemetery of Lent-Lentseveld (based on determination tables of Langbroek, ongoing research).

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS
1	500-600 (650)	P1-P3	10	0	-	
2	500-600 (650)	P1	52	12	A1.2-01 (4) B6.1-01d (2) A4.3-01a (2) A2.1-01 (2), A4.2-01 (2)	55 beads according to numers
5	520-570	P2	72	26	F2.1-01 (1) E1.2-03 (4) E2.1-03 (2) E1.2-? (4) C3.1-01 (2) A2.1-02 (2) C2.2-02a (4) E1.2-02 (3) A2.1-03 (3) D1.2-03? (1)	
9	425-525	P1-P2	25	4	A2.1-04 (2), E2.1-02 (2)	
12	550-650	P1-P5	1	0	-	
13-1	500-600	P1-P2	82	37	E2.1-02 (1), A4.2-01 (19), C1.4-02 (1), D1.1-02 (2), E2.? (1), E1.2-? (1), A2.1-04 (3), E2.2-01 (1), A4.1-01 (2), A3.1-07 (2), D1.2-04? (3), A4.? (1)	
13-2	500-600	P1-P2	22	2	E3.1-? (1), A3.1-04a (1)	
16	500-600	P1	26	3	A1.3-04 (1), A2.1-03 (1), D1.7-01 (1)	
16-2	500-600	P1	1	1	F5? (1)	
20-2	500-600	P1-P2	0	0	-	
20-1	500-600	P1-P2	92	19	A4.1-01 (1), A1.2-01 (7), A3.1-09 (2), A3.4- 01a (2), A1.2-06 (2), E2.1-01 (1), F? (1), E2.1-02 (1), A4? (2)	
21	500-600	P1	12	6	E? (1), E2.1-03 (1), E1.1-01? (2), A3.1-07 (1), E2.? (1)	roman?
23	500-600	P1	32	2	C3.3-01 (2)	also 2 roman drawn beads
26-1	500-600	P2	63	10	A3.1-01b (6), A3.1-07 (2), A 4.2-01 (2)	
26-2	500-600	P2	37	7	A3.6? (6), A4.2-01 (1)	
27	500-600	P2	7	0	-	
28	500-600	P1-P2	110	0	-	
34-1	480-560	P1-P2	99	3	A4.2-01 (3)	
34-2	480-560	P1-P2	5	0	-	
34-3	480-560	P1-P2	1	1	F4.1	
34-4	480-560	P1-P2	1	0	-	
35	530-560	P1-P2	41	5	B10.1-02? (1), C1.4-01 (1), E1.1-01 (2), E1.1-02 (1)	EU?
35-2	530-560		1	0	-	
36	500-600	P1	11	7	D1.1-03 (2), A4.1-01 (1), A3.4-01a (2), A3.5-03 (1), A1.3-01 (1)	
40	500-600	P1-P2	127	70	E2.1-02 (3), A2.1-04 (5), A2.1-01 (1), A3.4- 05 (1), A4.2-01 (9), A3.1-07 (18), D? (2), C? (1), C3.? (2), D1.2-04? (11), D1.2-03? (1), E? (1), D1.5? (3), C3.3-01 (2), A1.2-04 (6), A4.1-01 (1), D1.1-03? (1), E1.1-02 (1), D1.2-? (1)	7 extra counted but are no beads. D? similar but one was said to be from Europe and the other from the near east
41	500-600	P2	27	1	B10.1-02a	
42	500-600	P1-P2	28	4	C1.4-01 (2), C3.3-01 (2)	
43-1	500-600	P2	50	15	A4.2-01 (5), A3.1-04b (6), E1.2-02 (2), A3.1-01b (2)	

43-2	500-600	P2	31	14	A3.4-11 (1), A3.1-07 (4), A4.2-01 (4), A3.1-04b (4), A3.2-01 (1)	
45		P1-P3	5	0	-	
50	500-600	P1-P2	19	2	E2.1-02 (1), A2.1-04 (1)	
50-2	500-600		1	1	F5? (1)	Turkey?
51	500-600	P2-P3	48	1	D1.5-01 (1)	
52		P1-P3	7	0	-	
53	500-600	P2	71	21	A4.2-01 (14), A3.1-07 (1), C1.4-01 (1), C2.2-03 (2), A3.1-04a (2), A3.2-01 (1)	
55	500-600	P2	5	2	C2.2-01 (1), A3.1-07 (1)	
102	500-600	P1-P3	1	0	-	
105	500-600	P1-P3	1	0	-	
<b>TOTAL</b>			<b>1224</b>	<b>276</b>		

Pictures from Langbroek forthcoming in lent publication



Figure 3.40: The beads from grave 2 (picture by Dekker, in Langbroek forthcoming).



Figure 3.41: A. the beads from grave 5, B. the beads from grave 9 (pictures by Dekker, in Langbroek forthcoming).



Figure 3.42: A. the beads from grave 13 chest, B. the beads from grave 13 hip (pictures by Dekker, in Langbroek forthcoming).



Figure 3.43: The beads from grave 16 (pictures by Dekker and Langbroek, in Langbroek forthcoming).



Figure 3.44: A. the beads from grave 20, B. the beads from grave 21 (pictures by Dekker, in Langbroek forthcoming).



Figure 3.45: A. the beads from grave 23, B. the beads from grave 26 neck, C. the beads from grave 26 arm (pictures by Dekker, in Langbroek forthcoming).



Figure 3.46: The beads from grave 34 (pictures by Dekker and Langbroek, in Langbroek forthcoming).



Figure 3.47: The beads from grave 35 (picture by Dekker, in Langbroek forthcoming).





Figure 3.48: The beads from grave 36 (picture by Dekker, in Langbroek forthcoming).



Figure 3.49: The beads from grave 40 (picture by Dekker, in Langbroek forthcoming).



Figure 3.50: a. the beads from grave 41, b. the beads from grave 42 (pictures by Dekker, in Langbroek forthcoming).

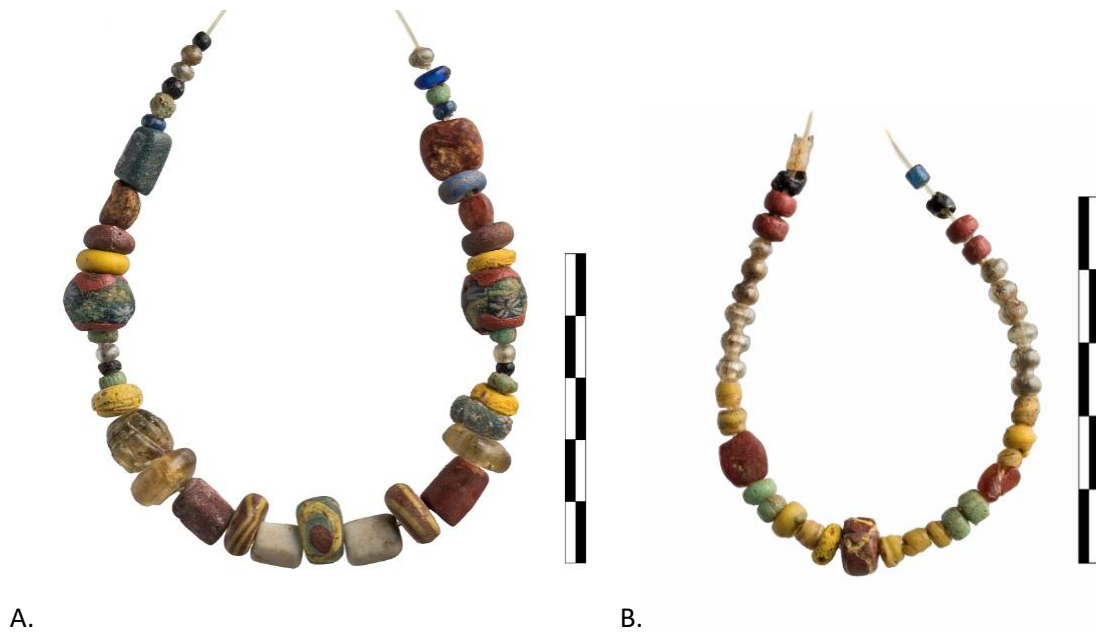


Figure 3.51: A. the beads from grave 43-1, B. the beads from grave 43-2 (pictures by Dekker, in Langbroek forthcoming).



Figure 3.52: The beads from grave 50 (pictures by Dekker and Langbroek, in Langbroek forthcoming).



Figure 3.53: A. the beads from grave 51, B. the beads from grave 53 (pictures by Dekker, in Langbroek forthcoming).



Figure 3.54: The beads from grave 55 (picture by Dekker, in Langbroek forthcoming).

### 3.3.2 Wijchen-Centrum

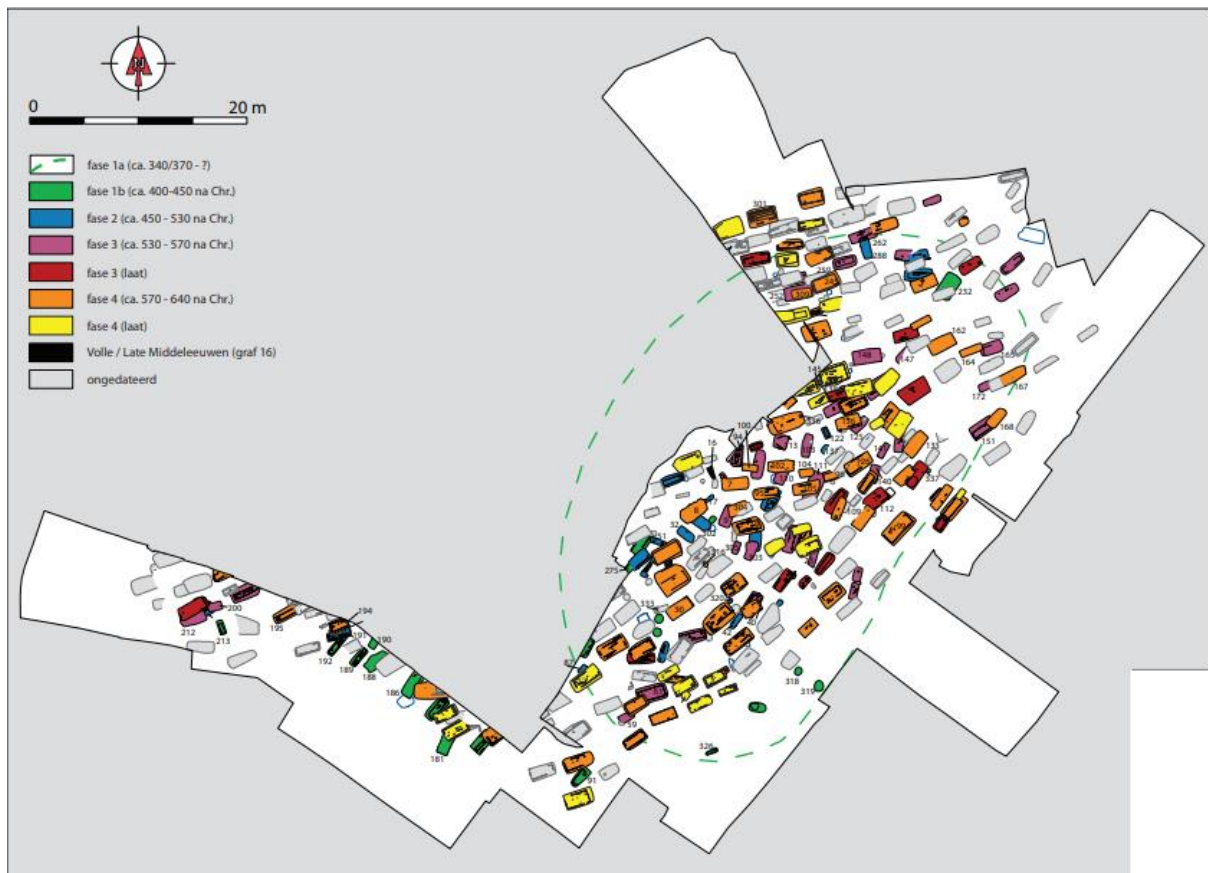


Figure 3.55: The map of the cemetery of Wijchen-Centrum, indicating the chronological phases of the graves (Heeren and Hazenberg 2010, 159).

Table 3.12: The graves that included beads from the cemetery of Wijchen-centrum (based on Heeren and Hazenberg 2010, determination tables of Langbroek, ongoing research).

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
<b>SINGLE BEADS</b>	450-640	P0-P3	44	5	D1.5-02 (1), C3.1-01 (1), D1.7 (2), F2.2 (1)	45 incl. tooth	119-120
2	555-640	P1-P3	1	1	A4.2-01		187-188
4	555-640	P1-P3	2	1	D1.1-02?		188-189
5	570-610	P4	22	0			189-190
8	570-640	P0-P3	1	1	A3.1-09		191
9	530-555	P3	2	0			191-192
10	530-555	P1	1	0			192-193
22	610-640	P3-P5	2	0			199
29	450-530	P1	12	1	A3.4-01a		203
34	570-610	P3-P4	113	4	A1.2-05 (4)		205-206
37	530-640	P3	1	0			207-208
40	570-640	P1	2	0			210
44	530-640	x	1	0			212-213
45	530-640	P3	5	0			213
49	450-570	P3-P4	5	0			215-216
50	450-530	P1	2	1	A4.1-01	3 incl. coin	216
51	450-530	P1-P3	19	6	A4.2-01 (6)	20 incl copper	216-217
52	450-530	P1	39	11	A4.2-01 (6), A3.2-01? (1), A3.2-04 (1), A3.3-05 (1), A3.2-02 (1), A4.4-02 (1)		217-218
55	610-640	P3	6	0			219
58	610-640	P5	11	0			221
59	530-570	P4	2	0			221-222
65	570-610	P2-P3	32	7	A3.1-07 (4), D1.1-02 (1), A4.3-02 (1), C1.4-02 (1)		223-224
67	570-640	P1-P5	1	0			226
75	570-610	P4	1	0			231
81	570-610	P1	1	0			234
87	450-530	P1-P3	2	0			237
92	570-610	P4	13	2	A4.2-01 (2)		240
93	555-570	P1-P3	4	0			240-241
98	570-610	P3	29	10	A1.2-05 (10)		243
99	570-640	P1-P2	1	0			244
102	570-610	P3	2	0			245-246
104	570-610	P3	6	0			246-247
106	530-640	P3-P4	14	6	A3.2-06 (5), A1.2-05 (1)		247-248
107	555-570	P1-P5	1	0			248
108	530-640	P1-P3	2	0			249
127	570-610	P2-P3	40	5	C1.1-? (2), D1.1-02? (3)		259
128	570-640	P3-P5	2	0			259-260
132	530-555	P3	16	1	D1.1-05 (1)		261-262
134	555-640	P3 (some P4)	20	0			262-263
142	450-570	P1	1	1	A4.1-02		267

149	570-640	P4	10	0			271
152	555-640	P2	1	1	B10.1-01b		272-273
154	610-640	P2	1	0			273
156	610-640	P3-P4	150	47	A3.2-05 (46), E1.2-04 (1)		274-275
160	530-555	P1-P3	70	1	F4.1	69 + 1 from grave 160-2	277
161	450-530	P1	5	0			277-278
171	555-570	P3	56	0			282-283
179	610-640	P5	7	1	A3.1-10 (1)		286
194	570-610	P3 (some P4)	11	2	D1.7-01 (1), D1.1-03 (1)	12 but 2 fragments belong to one bead so 11	293-294
199	555-640	P1-P5	1	0			296
211	555-570	P1-P2	2	2	A3.2-04 (1), A3.2-02 (1)		301
219	450-530	P1	83	63	A4.2-01 (51), A3.4-01a (12)	84 incl ring	305
226	530-555	P1-P3	3	0			308
228	530-555	P2	6	2	A4.2-01 (2)		309
230	530-570	P3	16	0			310
235-BUIK	530-555	P1	5	0			312-313
235- BORST	530-555		41	13	A4.3-01a (2), A4.4-02 (2), A3.2-05 (1), A3.4-01a (2), A3.1-03b (1), A4.2-01 (4), A3.1-05 (1)		312-313
239	570-610	P4	14	1	A1.2-05		314-315
249	570-640	P2	1	0			320
253	530-555	P2-P3	23	3	D1.1-03 (1), D1.1-02 (2)		322
258	570-610	P1-P2	5	0			325
266	450-570		15	?			329
285	570-640	P4	1	0			337
304	570-640	P3	3	0			345
317	450-530	P1	5	1	F2.1-01		350
<b>TOTAL</b>			<b>1016</b>	<b>200</b>			



Figure 5.56: The beads from grave 34 (picture from museum het Valkhof, in Heeren and Hazenberg 2010, 117).



Figure 5.57: The beads from grave 52 (picture by Mols, in Heeren and Hazenberg 2010, 114).



Figure 5.58: The beads from grave 65 (picture by Mols, in Heeren and Hazenberg 2010, 118)



Figure 5.59: The beads from grave 156 (picture by unknown, in Heeren and Hazenberg 2010, 119).



Figure 5.60: The beads from grave 219 (picture by Mols, in Heeren and Hazenberg 2010, 115).





Figure 5.61: The beads from grave 230 (left), grave 253 (middle below), and grave 58 (right above) (picture by unknown, in Heeren and Hazenberg 2010, 116).



Figure 3.62: The beads from grave 235 (picture by Mols, in Heeren and Hazenberg 2010, 113).

*Additional note: pictures of the beads from the graves 2-29, 37-51, 55-59, 67-154, 160-211, 226, 228, 239, 249, 266-317 are not available.*

### 3.3.3 Elst- 't Woud

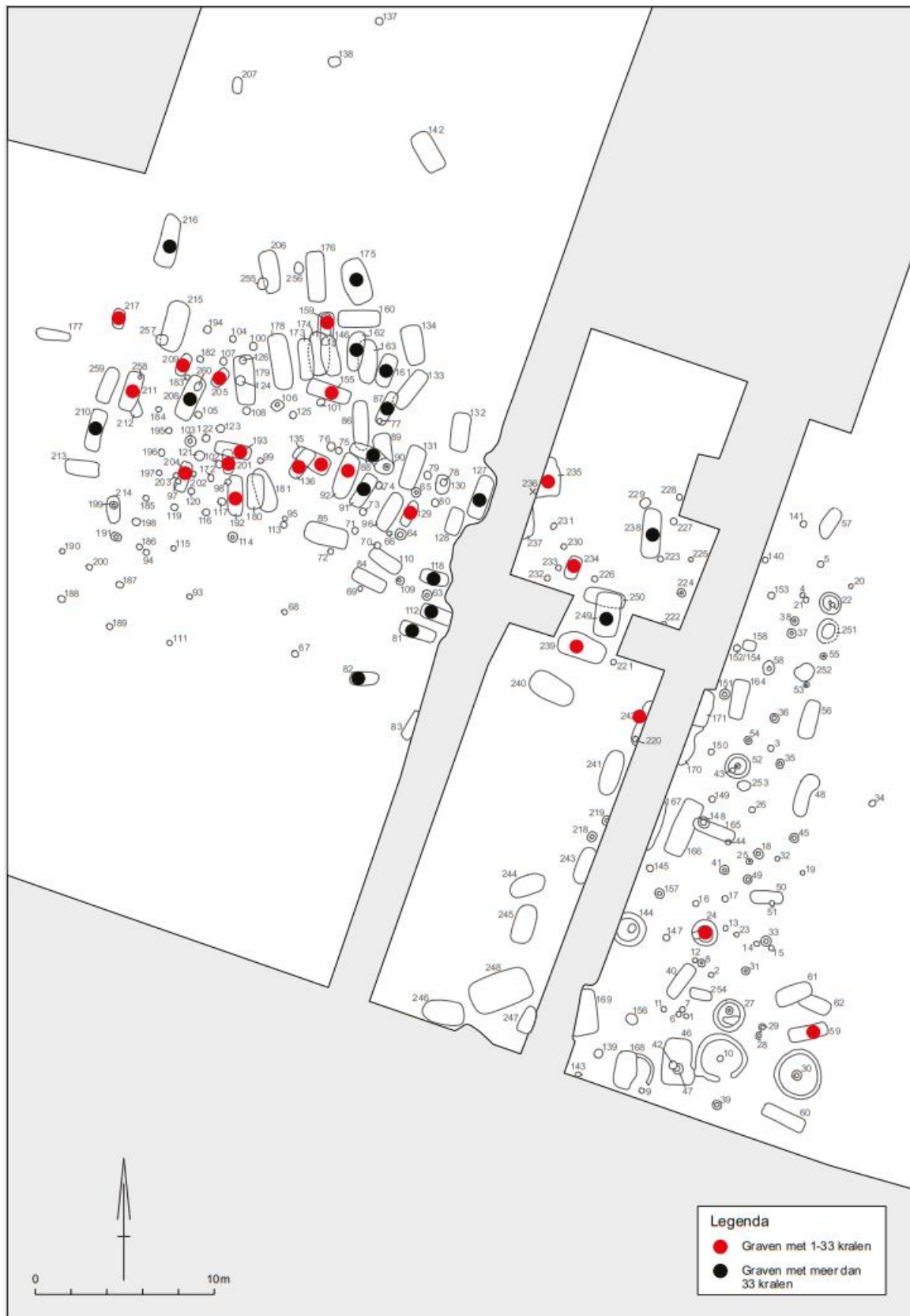


Figure 3.63: The map of the cemetery of Elst-'t Woud showing the graves with 1-33 beads (red dot) and those with more than thirty-three beads (black dot) (Verwers and van Tent 2015, 42).

Table 3.13: The graves that included beads from the cemetery of Elst- 't Woud (based on Verwers and van Tent 2015, determination tables of Langbroek, ongoing research).

GRAVE NR	DATE GRAVES	DATE BEADS (PION)	NUMBER OF BEADS	AMOUNT OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
2	640/650-710	P3	5	0	-		132
8	610/620-710	?	14	0	-		134
13	580/590-640/650	?	1	0	-		136
28	610/620-670/680	?	6	0	-		142
38	610/620-710	P3 (some P5)	17	0	-		146
59	640/650-710	P3-P4	3	0	-		158-159
81	610/620-710	P2-P3	120	4	D1.1-02 (2), D1.6-01 (1), C2.1-01b (1)		164
82	580/590-710	P2-P3	33	6	D1.1-03 (1), C1.4-02 (4), C2.1-01b (1)		165
87	510/525-580/590	P2	80	18	A4.2-01 (9), D1.1-02? (1), A3.1-07 (4), A3.1-04b (2), A3.4-08 (1), A3.1-01b (1)		172-173
88	565-580/590	P2-P3	95	18	C1.4-02(?) (4), C2.1-03a (6), A3.1-01b (2), E1.2-03 (2), C2.1-01? (1), C3.1-01 (1), E3.? (1), B10.1-02a (1)		174-177
91	540/550-580/590	P3-P4	41	0	-		181-182
92	565-580/590	P2	13	3	C1.4-02 (2), E2.1-02 (1)		183
112	565-580/590	P1	35	2	D1.5-01 (2)		190-193
118	540/550-580/590	P1	38	9	A3.4-01a (2), A4.2-01 (2), A4.2-03? (2), E2.1-? (1), A4.1-02 (1), A3.1-05 (1)		197
127	565-580/590	P2	124	31	A4.2-01 (4), A3.1-07 (11), C2.2-01 (2), A3.4-01a (1), E1.2-03 (2), E1.2-? (1), D1.1-03 (2), E1.1-02 (1), F4.1 (1), D1.1-02 (4), C2.1-03a (2)		198-200
129	565-580/590	P3	7	0	-		202
135	510/525-565	P1	3	0	-		208-209
136	510/525-580/590	P2b	1	0	-		209
141	610/620-710	?	5	0	-		211
152	610/620-710	P4	1	0	-		217
155	510/524-565	P2	27	6	A4.2-01 (3), E2.1-02 (1), B10.1-02b (1), E4.2 (1)		218
159	580/590-610/620	P1-P3	19	1	A3.4-01a (1)		220
161	510/525-610/620	P2	84	37	A3.1-07 (9), E1.1-02 (1), A4.2-01 (14), E2.1-02 (2), B10.1-02a (1), E1.2-02 (1), D1.1-03 (1), D1.6-01 (1), D1.1-02 (4), A3.1-02b (2), A3.4-06 (1)		223
162	510/525-580/590	P2	43	21	D1.6-01 (17), D1.1-02 (1), A4.2-01 (2), A3.1-07 (1)		225
175	510/525-580/590	P1	201	66	A4.2-01 (19), A1.2-06 (2), A4.1-01 (6), A3.4-01a (9), A3.1-05 (28), A4.3-01a (2)		237
192	450-700	P4	12	0	-		252
193	610/620-670/680	P3	14	2	C2.2-02a (1), D1.1-03 (1)		252
201	450-510/525	P1	7	1	D1.5-01 (1)		254
204		P2	1	0	-		255
205	400-510/525	P1-P3	8	0	-		256

208	565-640/650	P1-P2	37	15	E3.2-? (1), D1.1-03 (3), D1.5-01 (2), A4.2-01 (3), A3.5-01 (1), E1.2-03 (2), D1.6-01 (2), A3.1-05 (1)	258
209	450-700	P1-P3	7	0	-	258
210	450-700	P4	33	0	-	259
211	540/550-580/590	P2-P3	9	3	C2.2-02? (1), D1.1-02? (1), E1.2-02 (1)	263
214	565-640/650	P4	10	1	D1.1-03 (1)	264
216	565-610/620	P1	171	98	A3.1-05 (88), A4.1-01 (10)	268
217	400-510/525	P0-P3	2	0	-	270
224	565-710	P1-P3	1	0		271
234	450-700	P2	11	7	D1.1-02 (6), A3.1-04b (1)	274
235	450-700	P2	4	2	D1.1-02? (1), A3.4-01a (1)	274
238	540/550-580/590	P2-P3	127	20	D1.1-02 (8), D1.1-03 (6), E1.2-? (1), E1.2-03 (1), A2? (1), E3.1.1 (1), E2.1-02 (1), E3.? (1)	276
239	540/550-565	P1-P3	17	0	-	278
242	before 600	P3-P4	4	1	A2.1-02 (1)	284
243	450-700	P4	7	0	-	284
249	540/550-565	P3	224	21	D1.1-02? (5), C2.2-02a (1), B10.1-02b (1), E1.2-03 (1), B10.1-02? (1), E1.2-02 (1), D1.6-01 (6), C2.2-01 (2), A3.4-01a (1), D1.1-03 (1), E1.1-02 (1)	290
<b>TOTAL</b>			<b>1722</b>	<b>393</b>		

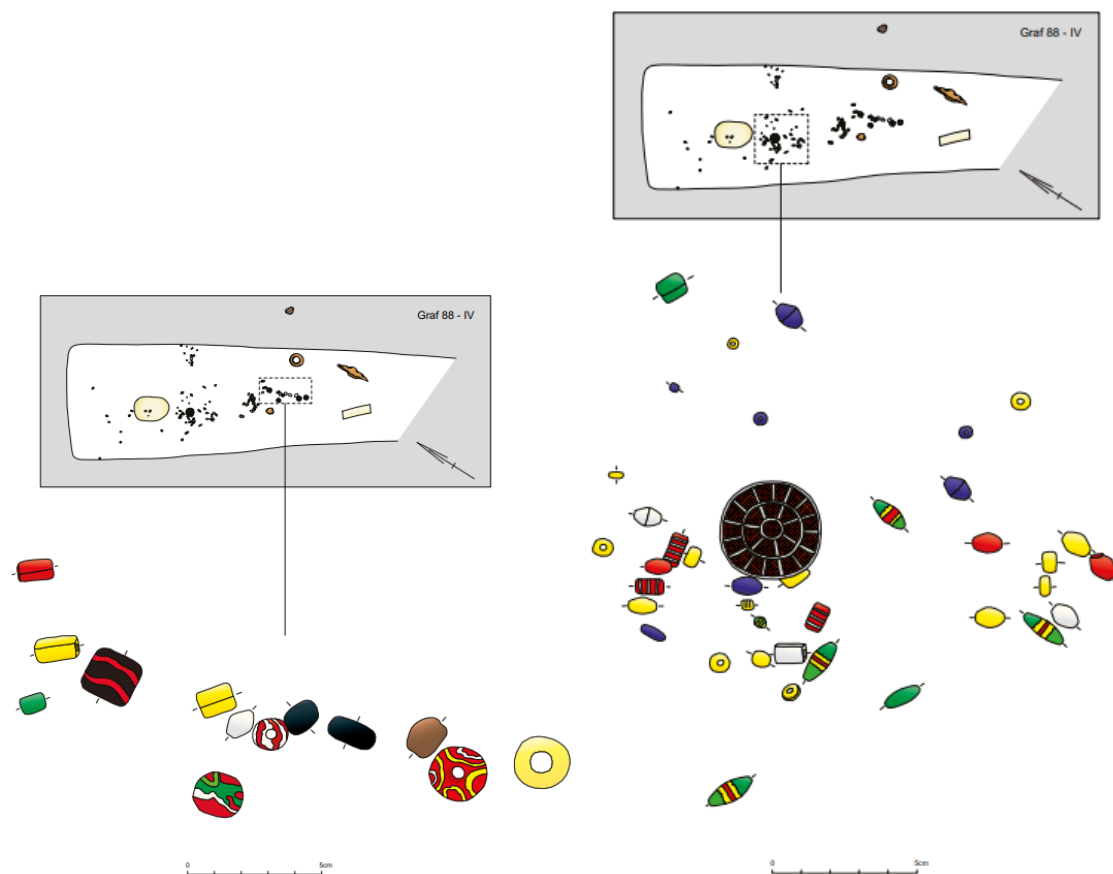


Figure 3.64: The beads from grave 88 (after figure 7 in Verwers and van Tent 2015, 177-178).



30 (1:1)

Figure 3.65: A bead from grave 155 (Verwers and van Tent 2015, 219).

*Additional note: Only grave 88 and grave 155 have available depictions of the found beads, all other graves do not.*

### 3.3.4 Apeldoorn- 't Loo

Table 3.14: The graves that included beads from the cemetery of Apeldoorn- 't Loo (based on determination tables of Langbroek, ongoing research).

GRAVE NR	DATE GRAVES	DATE BEADS (PION)	NUMBER OF BEADS	AMOUNT OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
FEATURE 145/ GRAVE 2	second half seventh century mid seventh century	P4-P5	20	0	-		-
FEATURE 140/ GRAVE 3			58	0	-		-
<b>TOTAL</b>			<b>78</b>	<b>0</b>			

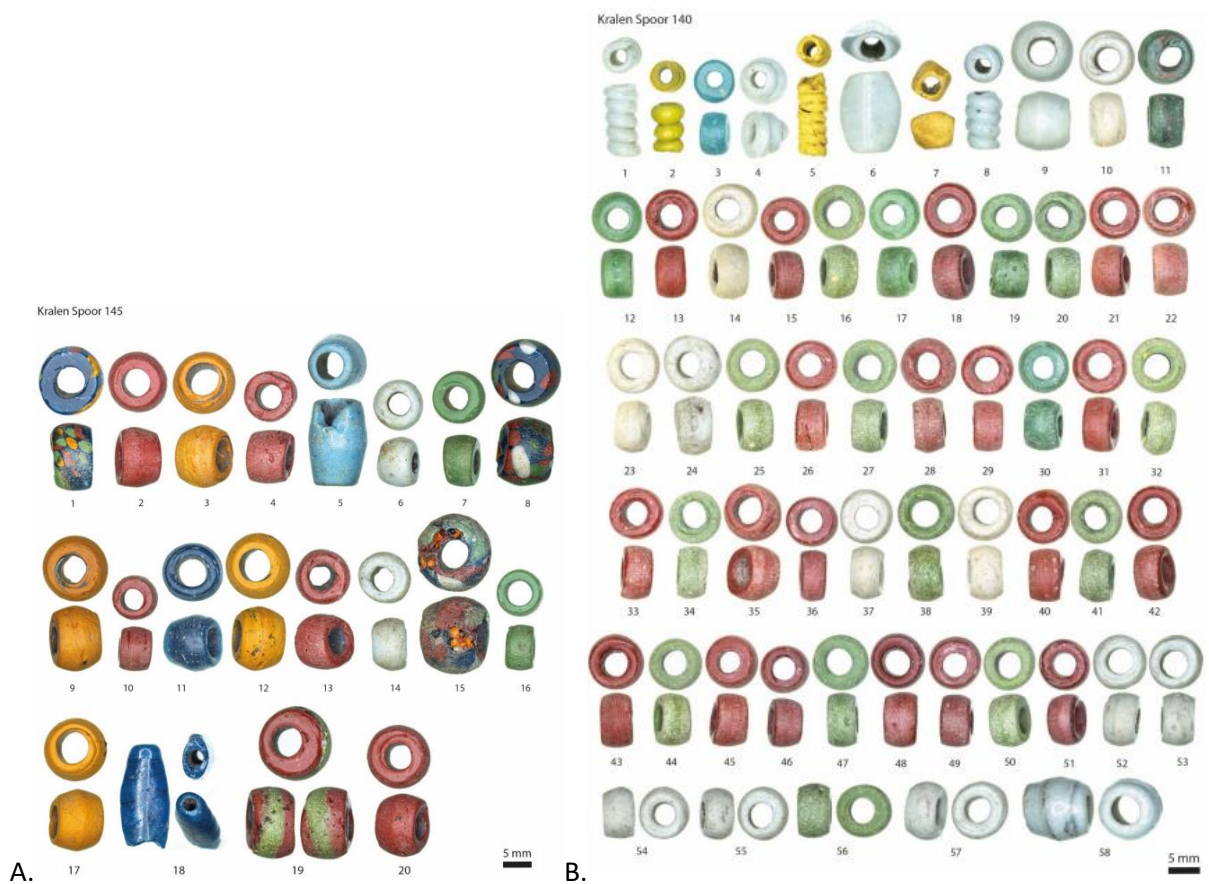


Figure 3.66: A. the beads from feature 145, B. the beads from feature 140 (pictures by Langbroek, after figure 10 and 11 in Langbroek forthcoming).

### 3.3.5 Types of Near Eastern beads attested in the East Rhine subregion

The table displaying the attested bead types is larger than one page and therefore placed in the appendix. Table 3.15 shows an overview of the ninety-nine different types of Near Eastern beads excavated in the East Rhine subregion. For more detailed insights in the data documented in this table please see Results chapter 5 section 5.3.4 'Types of Near Eastern beads attested in the East Rhine subregion.'

Table 3.15: The types of attested Near Eastern beads in the study assemblage of East Rhine (based on tables 3.11, 3.12, 3.13 and 3.14 in the appendix).

BEAD TYPE	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEADS TYPE	REMARKS	SITE
A1.2-01	P2	2, 20-1	4, 7	11		Lent
A1.2-04	P0-P1	40	6	6		Lent
A1.2-05	P1-P3	34, 98, 106, 239	4, 10, 1, 1	16		Wijchen
A1.2-06	P1	20-1/175	2/2	4		Lent/ Elst
A1.3-01	P3	36	1	1		Lent
A1.3-04	P?	16	1	1		Lent
A2.?	P?	238	1	1		Elst
A2.1-01	P2	2, 40	2, 1	3		Lent
A2.1-02	P2	5/242	2/1	3		Lent/Elst
A2.1-03	P2	5, 16	3, 1	4		Lent
A2.1-04	P2	9, 13-1, 40, 50	2, 3, 5, 1	11		Lent
A3.1-01B	P2	26-1, 43-1/87, 88	6, 2/1, 2	11		Lent/ Elst
A3.1-02B	P?	161	2	2		Elst
A3.1-03B	P1-P2	235-chest	1	1		Wijchen
A3.1-04A	P1a	13-2, 53	1, 2	3		Lent
A3.1-04B	P2	43-1, 43-2/ 87, 234	6, 4/1,2	13		Lent/ Elst
A3.1-05	P1a	235-chest/ 118, 175, 208, 216	1/1-88	119		Wijchen/ Elst
A3.1-07	P2	13-1, 21, 26-1, 40, 43-2, 53, 55/ 65/ 87, 127, 161, 162	2, 1, 2, 18, 4, 1, 1/ 4/1-11	58		Lent/ Wijchen/ Elst
A3.1-09	P1-P3	20-1/8	2/1	3		Lent/ Wijchen
A3.1-10	P2	179	1	1		Wijchen
A3.2-01	P?	43-2, 53/ 52	1, 1/ 1	3		Lent/ Wijchen
A3.2-02	P2	52, 211	1, 1	2		Wijchen
A3.2-04	P1b-P2	52, 211	1, 1	2		Wijchen
A3.2-05	P1	156, 235-chest	46, 1	47		Wijchen
A3.2-06	P3	106	5	5		Wijchen
A3.3-05	P1	52	1	1		Wijchen
A3.4-01A	P1-P3	20-1, 36/ 29, 211, 235-chest/ 118, 127, 159, 175, 249, 235	2,2/ 1, 12, 2/1-9	34	blue tublar	Lent/ Wijchen/ Elst
A3.4-05	P1	40	1	1		Lent
A3.4-06	P2	161	1	1		Elst
A3.4-08	P1-P2	87	1	1		Elst
A3.4-11	P?	43-2	1	1		Lent
A3.5-01	P1	208	1	1		Elst

<b>A3.5-03</b>	P1	36	1	1		Lent
<b>A3.6?</b>	P?	26-1	6	6		Lent
<b>A4.?</b>	P?	13-1, 20-1	1, 2	3		Lent
<b>A4.1-01</b>	P1a	13-1, 20-1, 36, 40/ 50/ 175, 216	2, 1, 1, 1/ 1/ 6-10	22	goldfoil	Lent/ Wijchen/ Elst
<b>A4.1-02</b>	P1-P3	127, 142	1, 1	2	goldfoil	Elst/Wijchen
<b>A4.2-01</b>	P1-P3	2, 13-1, 26-1, 26-2, 34-1, 40, 43-1, 43-2, 53/ 2, 51, 52, 92, 219, 228, 235-chest/ 87, 118, 127, 155, 161, 162, 175, 208	2, 19, 2, 1, 3, 9, 5, 4, 14/ 1, 6, 6, 2, 51, 2, 4/ 2-19	187	silverfoil	Lent/ Wijchen/ Elst
<b>A4.2-03?</b>	P?	118	2	2		Elst
<b>A4.3-01A</b>	P1	2/ 235-chest/ 175	2/2/2	6		Lent/ Wijchen/ Elst
<b>A4.3-02</b>	P1	65	1	1		Wijchen
<b>A4.4-02</b>	P1-P3	52, 235-chest	1, 2	3		Wijchen
<b>B10.1-01B</b>	P2	152	1	1		Wijchen
<b>B10.1-02</b>	P2	35	1	1		Lent
<b>B10.1-02?</b>	P2, Koch stufe 2-3	249	1	1	biconical	Elst
<b>B10.1-02A</b>	Pion: P2, Koch stufe 2-3	41/ 88, 161	1/1	3		Lent/ Elst
<b>B10.1-02B</b>	P2	155, 249	1	2		Elst
<b>B6.1-01D</b>	P1	2	2	2	Confetti	Lent
<b>C?</b>	P?	40	1	1		Lent
<b>C1.1-?</b>	P2?	127	2	2		Wijchen
<b>C1.4-01</b>	P2	35, 42, 53	1, 2, 1	4		Lent
<b>C1.4-02</b>	P2?	13-1/ 65/ 82, 88, 92	1/1/2-4	12		Lent/ Wijchen/ Elst
<b>C2.1-01?</b>	P2?	88	1	1		Elst
<b>C2.1-01B</b>	Pion: P2, Koch stufe 2-3	81, 82	1	2		Elst
<b>C2.1-03A</b>	Pion: P2, Koch stufe 2-3	88, 127	2-6	8		Elst
<b>C2.2-01</b>	Pion: P2, Koch stufe 2-3	55/ 127, 249	1/2	5		Lent/ Elst
<b>C2.2-02?</b>	Pion: P2?, Koch stufe 2-3	211	1	1		Elst
<b>C2.2-02A</b>	Pion: P2b, Koch stufe 2-3	5/ 193, 249	4/ 1	6		Lent/ Elst
<b>C2.2-03</b>	P2	53	2	2		Lent
<b>C3.?</b>	P?	40	2	2		Lent
<b>C3.1-01</b>	P2	5/ single beads/ 88	2/1/1	4	14 doubtful for Elst	Lent/ Wijchen/ Elst
<b>C3.3-01</b>	P1	23, 40, 42	2, 2, 2	6		Lent
<b>D?</b>	P?	40	2	2		Lent
<b>D1.1-02</b>	P1-P3	13-1/ 4, 65, 127, 253/ 81, 87, 127, 161, 162, 211? 234?, 235? 238, 249?	2/ 1, 1, 3, 2/ 1-8	42		Lent/ Wijchen/ Elst
<b>D1.1-03</b>	P1-P3	36, 40/ 194, 253/ 82, 127, 161, 193, 208, 214, 238, 249	2, 1/ 1, 1/ 1-6	21		Lent/ Wijchen/ Elst
<b>D1.1-05</b>	P1-P3	132	1	1		Wijchen
<b>D1.2-?</b>	P2?	40	1	1		Lent
<b>D1.2-03?</b>	P2?	5, 40	1,1	2		Lent
<b>D1.2-04?</b>	P2?	13-1, 40	3, 11	14		Lent
<b>D1.5?</b>	P?	40	3	3		Lent
<b>D1.5-01</b>	P1	51/ 112, 201, 208	1/ 1-2	6		Lent/ Elst
<b>D1.5-02</b>	P0	single beads	1	1		Wijchen



D1.6-01	P?	81, 161, 162, 208, 249	1-17	27		Elst
D1.7	P0	single beads	2	2		Wijchen
D1.7-01	P0	16/ 194	1/ 1	2		Lent/ Wijchen
E?	P2?	21, 40	1,1	2		Lent
E1.1-01?	P2?	21, 35	2, 2	4		Lent
E1.1-02	Pion: P2, Koch stufe 2-3	35, 40/ 127, 161, 249	1, 1/ 1	5		Lent/ Elst
E1.2-?	Pion: P2, Koch stufe 2-3	5, 13-1/ 127, 238	4,1/ 1	7		Lent/ Elst
E1.2-02	Pion: P2, Koch stufe 2-3	5, 43-1/ 161, 211, 249	3, 2/1	8		Lent/ Elst
E1.2-03	Pion: P2, Koch stufe 2-3	5/ 88, 127, 208, 238, 249	4/ 1-2	12		Lent/ Elst
E1.2-04	P2	156	1	1		Wijchen
E2.?	P2	13-1, 21	1,1	2		Lent
E2.1-?	P2	118	1	1		Elst
E2.1-01	P2	20-1	1	1		Lent
E2.1-02	P2	9, 13-1, 20-1, 40, 50/ 92, 155, 161, 238	2, 1, 1, 3, 1/ 1-2	13		Lent/ Elst
E2.1-03	P2	5	2	2		Lent
E2.1-03?	Roman?	21	1	1		Lent
E2.2-01	P2	13-1	1	1		Lent
E3.?	P2?	88, 238	1	2		Elst
E3.1-?	P2?	13-2	1	1		Lent
E3.1-1	P2	238	1	1		Elst
E3.2-?	Pion: P2, Koch stufe 2-3	208	1	1		Elst
E4.2	P2	155	1	1		Elst
F?	P?	20-1	1	1	?	Lent
F2.1-01	P1-P2	317/ 5	1/1	2	Rock crystal	Wijchen/ Lent
F2.2	P4	single beads	1	1	amethyst	Wijchen
F4.1	P1-P5	34-3/ 160/ 127	1/1/1	3	meerschaum	Lent/ Wijchen/ Elst
F5?	P?	16-2, 50-2	1,1	2	marble	Lent
<b>TOTAL</b>				<b>869</b>		

### 3.4 Limburg

#### 3.4.1 Sittard-Kemperkoul



Figure 3.67: The map of the cemetery of Sittard-Kemperkoul indicating the archaeological features. 1. Inhumation graves; 2. Modern disturbances; 3. Excavated area (Kars *et al.* 2016, 33).

Table 3.16: The graves that included beads from the cemetery of Sittard-Kemperkoul (based on Kars *et al.* 2016).

GRAVE NR	DATE GRAVE	DATE BEADS	NUMBER OF BEADS	NUMBER OF MEROVIGIAN GLASS BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
2	460-710		5	5	0			96, 316
8	640/50-670/80	570-705	1	1	0			97, 321
11	510/20-640/50	565-630	726	726	39	38x drawn cold cut translucent green, 1x drawn strangled translucent.	175 + 139 + 181 + 231 beads	97-100, 323-328
16	565-620	Pion: P4	22	8	1	amethyst		101, 333-334
43	640-680		11	0	0			102, 359-360
44	c. 550-700	565-630	29	8	1	green opaque cold cut drawn	6 missing amber beads	102, 361
20	610-640		1	1	0		no pic	103, 337-338
23	610/620-710	640-750	43	39	0			103, 339
25	640-680		7	7	6	white translucent drawn, strangled bead, 5x blue drawn 2 are dubble	blurry pic	103, 340-341
32	565-650		8	8	0		no pics. Based on description not near east	103, 351-352
45	640-680		1	0	0		lost, amber bead might have come from grave 46	104, 362
46	565-620		8	8	0		grave 45 disturbs grave 46, beads might have moved	104, 362-363
59	640-750		9	9	0			104, 369
60	c. 550-700		8	8	0			104, 370
64	640-750		1	1	0			104, 371
71	580-650		10	10	0		2 lost	104, 373
73	610/620-710	640-750	1	1	0			104, 374
79	610-650		4	4	0	the green translucent one? Too wonkey to be drawn		104-105, 377-378
80	510-650		23	23	0			105, 379-380
88	510-710		1	1	0			105, 388
0	-		7	7	0		stary finds	389
<b>TOTAL</b>			<b>926</b>	<b>875</b>	<b>47</b>			

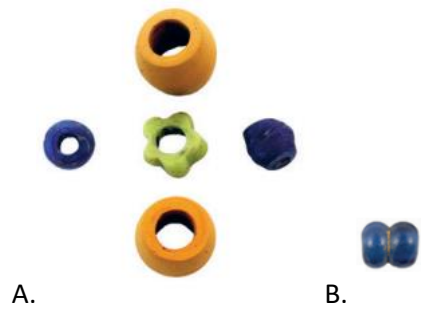


Figure 3.68: A. the beads from grave 2 (Kars *et al.* 2016, 316), B. the bead from grave 8, (Kars *et al.* 2016, 321).



A.



B.

Figure 3.69: a. the beads from grave 11, b. the drawn Near Eastern beads in string 3 are indicated with blue arrows (after figure 4.26 in Kars *et al.* 2016, 98-99, 326).



Figure 3.70: The beads from grave 16-36-44. The Near Eastern beads are indicated with a blue arrow (after Kars *et al.* 2016, 334, 360).

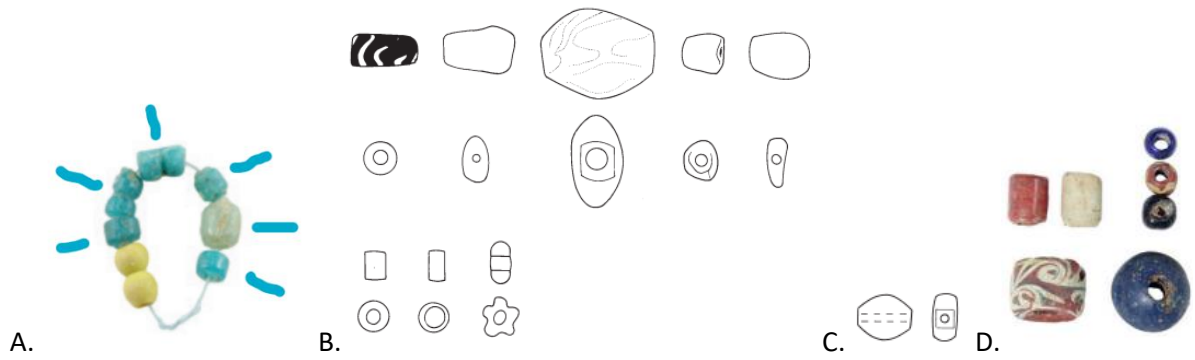


Figure 3.71: A. the beads from grave 25, B. the beads from grave 32, C. the bead from grave 64, D. the beads found without context (after Kars *et al.* 2016, 341, 351, 371, 389).

Fig. 4.28  
The beads from grave 23 (scale 1:1).



Fig. 4.29  
The beads from grave 46 (scale 1:1).



Fig. 4.30  
The beads from grave 59 (scale 1:1).



Fig. 4.31  
The beads from grave 60 (scale 1:1).



Figure 3.72: The beads from grave 23, 46, 59 and 60 (after Kars *et al.* 2016, 102).

Fig. 4.32  
The beads from grave 71 (scale 1:1).



Fig. 4.34  
The beads from grave 80 (scale 1:1).



Fig. 4.33  
The beads from grave 79 (scale 1:1).



Figure 3.73: The beads from grave 71, 79 and 80 (after Kars *et al.* 2016, 103).

### 3.4.2 Posterholt-Achterste Voorst



Figure 3.74: The map of Posterholt-Achterste Voorst showing the chronological phases of the excavated graves (De Haas and Theuvs 2013,149).

Table 3.17: The graves that included beads from the cemetery of Posterholt-Achterste Voorst (based on De Haas and Theuws 2013).

GRAVE NR	DATE BEADS	TIMEPERIOD	NUMBER OF BEADS	NUMBER OF MEROVIGIAN GLASS BEADS AVAILABLE FOR STUDY	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
4		580-710	1	1	0			185
7		580-650	18	18	0			187
8		580-650	6	6	0			188
9		580-650	24	24	0			189-190
22		580-650	20	20	2	2x mosaic fragments		199-204
31		cannot be dated	1	1	1	dit is een kleine groene drawn bead cold cut hot finish	tiny green drawn cold cut hot finish	213-214
46		610-710	13	13	0			223-224
49		cannot be dated	4	4	0			227-228
50		610-680	9	9	0			228-229
52		610-680	2	0	0			230
55		cannot be dated	2	2	0			232
59		cannot be dated	3	3	1	blue drawn tubular bead	said to be opaque	238
62		640-750	2	2	0			240-241
63		cannot be dated	2	2	0			241-242
67		cannot be dated	1	1	0			244
75		cannot be dated	1	1	0			253
76		cannot be dated	10	10	0?	all described as disintegrated yellow opaque glass beads type 30	no pics	253-254
77		610-650	3	3	0			255-256
78		610-710	8	8	0			256-257
80		cannot be dated	2	2				258-259
82		610-650	2	1	0?		missing bead is unknown	259-260
83		580-750	3	3	0			260-261
84		cannot be dated	1	1	0			261-262
85		580-750	36	36	1	amethyst	6 beads no pic > YO30 disintegrated beads	263-266
86		580-650	9	9	0			266-268
87		cannot be dated	2	2	0			268
88		(510-) 565-650	1	1	0			268-270
<b>TOTAL</b>			<b>186</b>	<b>183</b>	<b>5</b>			





Figure 3.75: A. the bead from grave 4, B. the beads from grave 7, C. the beads from grave 8 (pictures after De Haas and Theuws 2013,185, 187, 188).



Figure 3.76: the beads from grave 9 (pictures after De Haas and Theuws 2013,189-190).



Figure 3.77: the beads from grave 22. Beads number 96 and 103 (not depicted) are mosaic bead fragments (pictures after De Haas and Theuws 2013,199).



Figure 3.78: A. the bead from grave 31, B. the beads from grave 46 (pictures after De Haas and Theuws 2013, 213-214, 224).



Figure 3.79: A. the beads from grave 49, B. the beads from grave 50, c. the beads from grave 55 (pictures after De Haas and Theuws 2013, 227, 229, 232).



Figure 3.80: A. the beads from grave 59: bead 6 is a Near Eastern bead, B. the beads from grave 62, C. the beads from grave 63, D. the bead from grave 67, E. the beads from grave 77 (pictures after De Haas and Theuws 2013, 238, 240-241, 244, 255).



Figure 3.81: A. the beads from grave 78, B. the bead from grave 82, C. the beads from grave 83, D. the bead from grave 84 (pictures after De Haas and Theuws 2013, 256, 259, 261-262).



Figure 3.82: The beads from grave 85. Bead 26 is an amethyst bead (picture after De Haas and Theuws 2013, 265).



Figure 3.83: A. the beads from grave 86, B. the beads of grave 87 (pictures after De Haas and Theuws 2013, 267-268).

*Additional note: There are no pictures of the beads from grave 52, 75, 76, and 88 available.*

### 3.4.3 Maastricht-Vrijthof

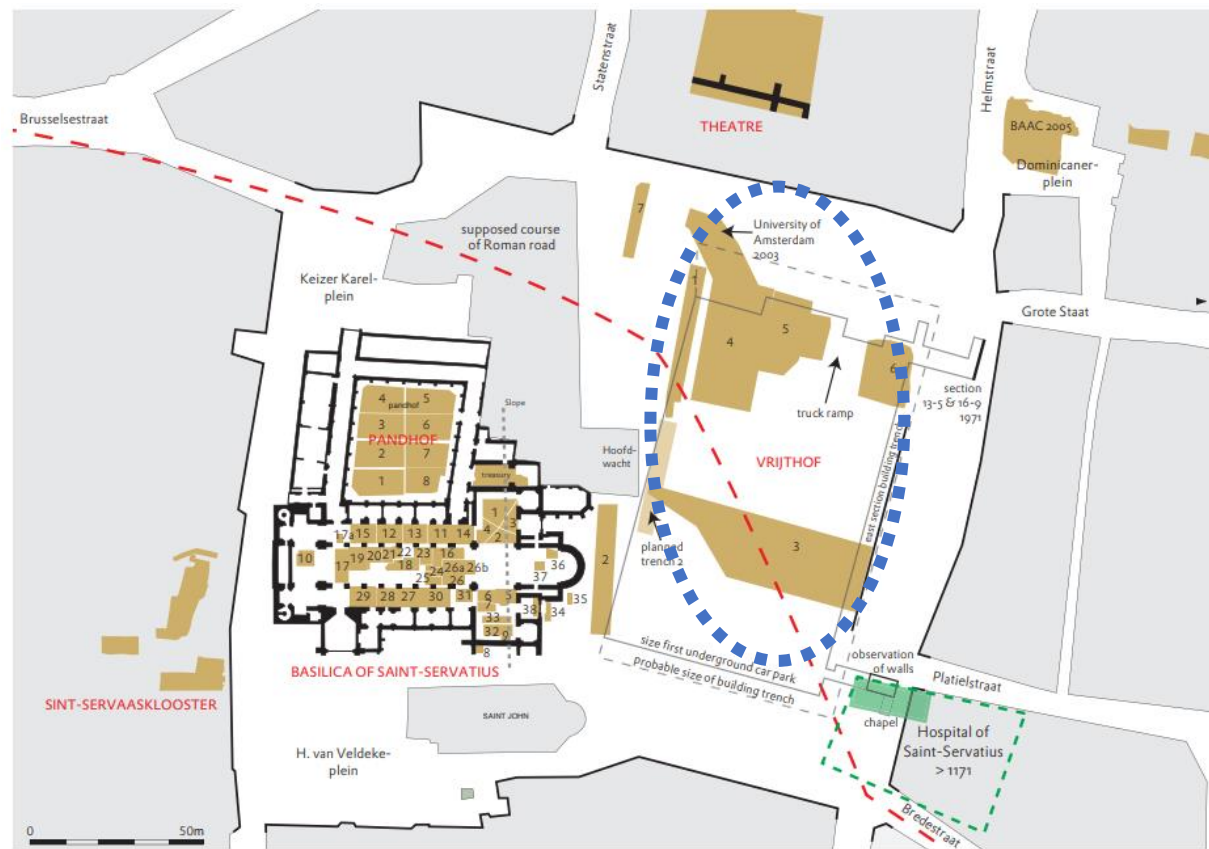


Figure 3.84: The map of the Sint Servatius complex, showing the excavation trenches in brown, the assumed roman road as a red line and the excavated part of the cemetery of Vrijthof is encircled with blue (Theuws and Kars 2017, 68).

Table 3.18: The graves that included beads from the cemetery of Maastricht-Vrijthof (based on Theuws and Kars 2017).

FIND NR	GRAVE NR	DATE GRAVES	NUMBER OF BEADS	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
1673	12	510-650	30	29	all drawn and strangled, 12 green, 17 red		419
1681	17	510-590	3	3	3x folded		422
1587	48	565-650	39	36	metal foil bead 1x, 24x green trans drawn, 9x amethyst, 2x large white	2 strings of which one: 9x amethyst	430-431
956	64	460-525	52	52	D1.1-2 (20), D1.1-3 (32)		436
1149	68	510-610	34	19	7x silverfoil, 2x mosaic, 10 perforated		437-438
1418	85	510-650	16	8	2x amethyst, 4x drawn green translucent, 1x large green, 1x white		445-446
1478, 1482, 1484	95	580-680	168	44	string 1: a bead which is said to be glass think its shell. 5x mosaic. String 2: 38 translucent green cylindrical beads String 3: no near eastern beads	3 strings	451-453
1434, 1495	100	565-680	50	7	string 1: 7 drawn green. String 2: no near eastern beads	2 strings	457-459
1624	110	565-650	58	19	2x amethyst, 3x green perforated, 1x red perforated, 1x yellow perforated, 1x white cylindrical, 2 tubes, 1x really tiny green, 2x segmented strangled drawn green-blue, 1x red drawn strangled, 5x translucent drawn green		463-466
1609	124	510-680	60	0			469-470
1617	152	580-725	12	0			477-478
1633	164	?	1	0			480
1539	166	610-680	69	18	4x drawn, 2x decorated folded, 7x green folded and 5x blue translucent folded		481-482
1516?	178	510-680	17	2	silverfoil beads	2 missing	486-487
1504	179	?	2	?	both pulverized, 1x opaque green and 1x translucent blue		487-488
1636, 1637	187	510-590	118	83	41x translucent drawn and silverfoil, 2x drawn blue tubular, 4x green folded, 1x mosaic, 1x reticella?, 9x drawn tiny light blue, 16x red drawn, 9x drawn tiny dark blue	2 strings	490-492
1489	189	565-610	1	?		missing	493
1741	198	?	1	?		missing	495
8888-208	208	640-725	?	?		missing	498
1759	214	510-680	11	0			500
1765	230	510-590	1	?		missing	505
1748	235	460-565	15	7	2x hexagonal green, 3x drawn (1 white, 2 green), 2x white perforated		507-508
1752	247	565-620	25	5	4x silverfoil? Drawn segmented beads, 1x red drawn		511
1795	250	510-590	1	0			512
1831	258	510-620	70	36	35 drawn green, 1x recitella		514-515
1837	264		1	0	spindle whorl		
8888-270	270	?	1	?		missing	
1792	274	565-620	10	0			519

1807	277	565-680	28	0			520
1812	283	460-650	1	?		missing	523-524
1819	285	565-580	12	1	amethyst bead		525
1796	306	460-565	1	0			533
1737	308	565-650	1	1	Rock crystal		534
1019	313	610-725	19	18	18x green drawn	2 strings	536
1172, 1173	314	510-590	18	6	3x mosaic, 3x green perforated	2 strings	536-537
1151	315	565-650	50	49	14x amethyst, 35 green beads,	2 strings	537-538
766	357	?	1	?	copper alloy?		545-546
70	361	?	1	?	a green bead		546-547
1827	finds without context		30	1	1x drawn blue tube	1 string and 2 single beads	558,560,563- 564
16	finds from the spoil heaps		11	2	1x rock-crystal, 1x blue folded bead, bead G is weird		570
<b>TOTAL</b>			<b>1039</b>	<b>446</b>			

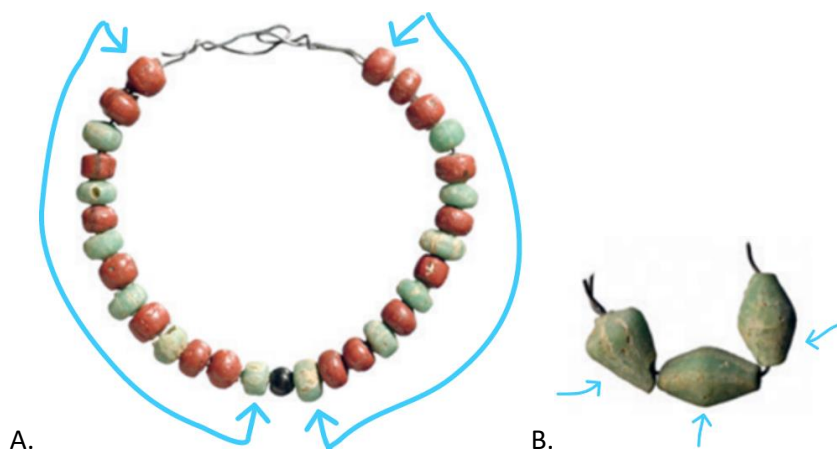


Figure 3.85: A. the beads from grave 12, besides the black bead all are from a Near Eastern origin. B. the beads from grave 17, all are from the Near East (after Theuws and Kars 2017, 419, 423).



Figure 3.86: The beads from grave 48 (after Theuws and Kars 2017, 431).



A.



B.

Figure 3.87: A. the beads from grave 64, B. the beads from grave 68 (after Theuws and Kars 2017, 436, 438).



Figure 3.88: The beads from grave 85, the Near Eastern beads are indicated with blue arrows (after Theuws and Kars 2017, 446).



Figure 3.89: The beads from from grave 95 (after Theuws and Kars 2017, 452-453).



Figure 3.90: The beads from grave 100 (after Theuws and Kars 2017, 457).



Figure 3.91: The beads of grave 110 (after Theuws and Kars 2017, 465).





A.

B.

C.

A

Figure 3.92: A. the beads from grave 124, B. the beads from grave 152, C. the bead from grave 164 (after Theuws and Kars 2017, 469, 477, 480).



A.

B.

Figure 3.93: A. the beads from grave 166, the Near Eastern beads are indicated with blue arrows, B. the beads from grave 178, the Near Eastern beads are indicated with blue arrows (after Theuws and Kars 2017, 481, 487).



Figure 3.94: The beads from grave 187, the Near Eastern beads are indicated with blue arrows (after Theuvs and Kars 2017, 491).

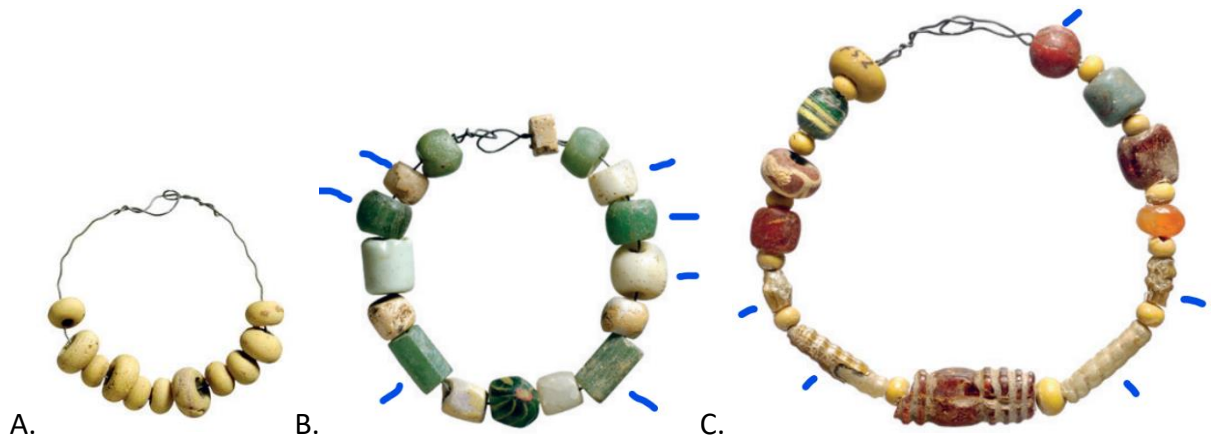


Figure 3.95: A. the beads from grave 214, B. the beads from grave 235, C. the beads from grave 247 (after Theuvs and Kars 2017, 500, 508, 511).



Figure 3.96: The bead from grave 250 (after Theuvs and Kars 2017, 512).



Figure 3.97: The beads from grave 258 (after Theuws and Kars 2017, 514).

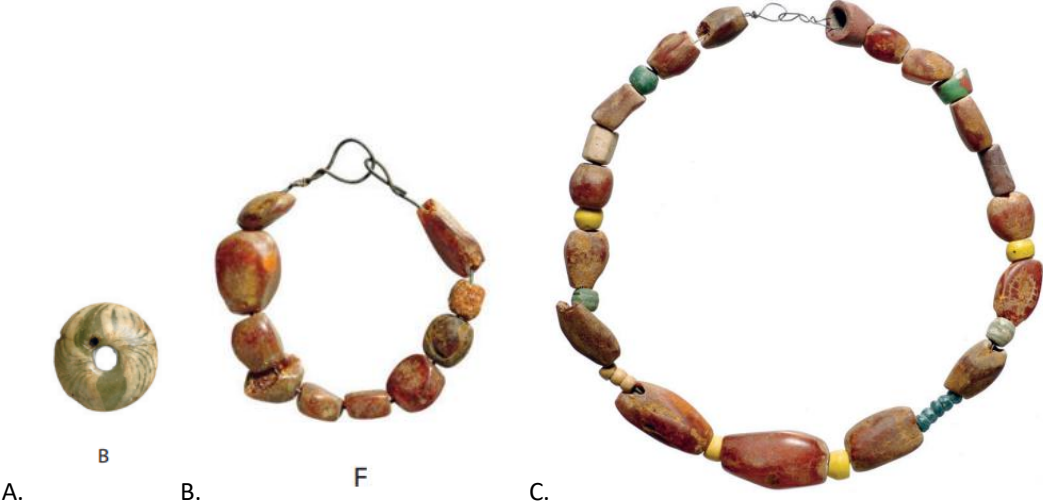


Figure 3.98: A. the bead from grave 264, B. the beads from grave 274, C. the beads from grave 277 (after Theuws and Kars 2017, 517, 519, 520).

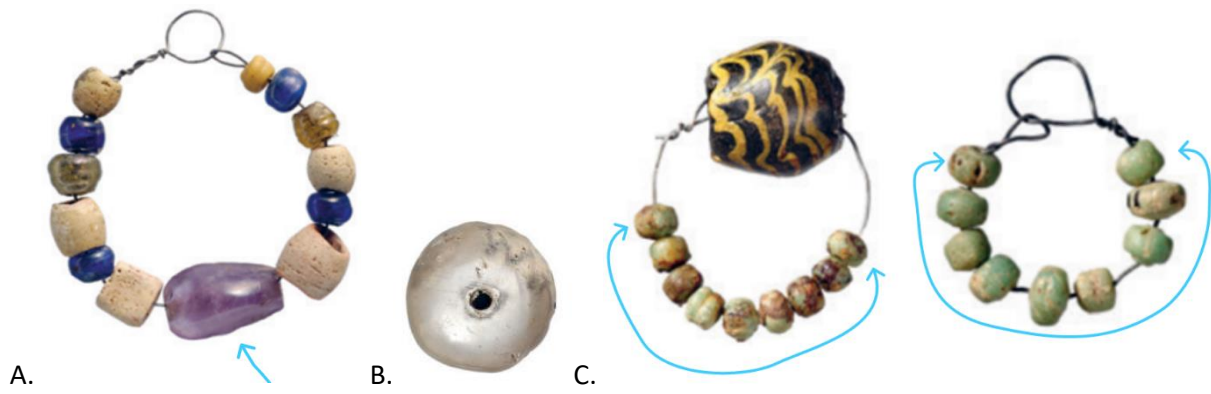


Figure 3.98: A. the beads from grave 285, B. the bead from grave 308, C. the beads from grave 313 (after Theuws and Kars 2017, 525, 534, 536).

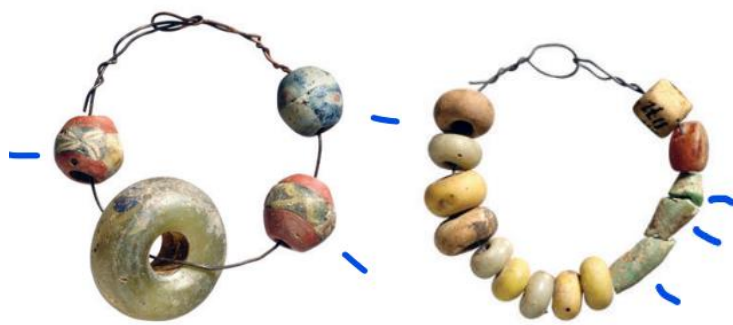


Figure 3.99: The beads from grave 314 (after Theuws and Kars 2017, 537).



Figure 3.100: the beads from grave 315 (after Theuws and Kars 2017, 537).

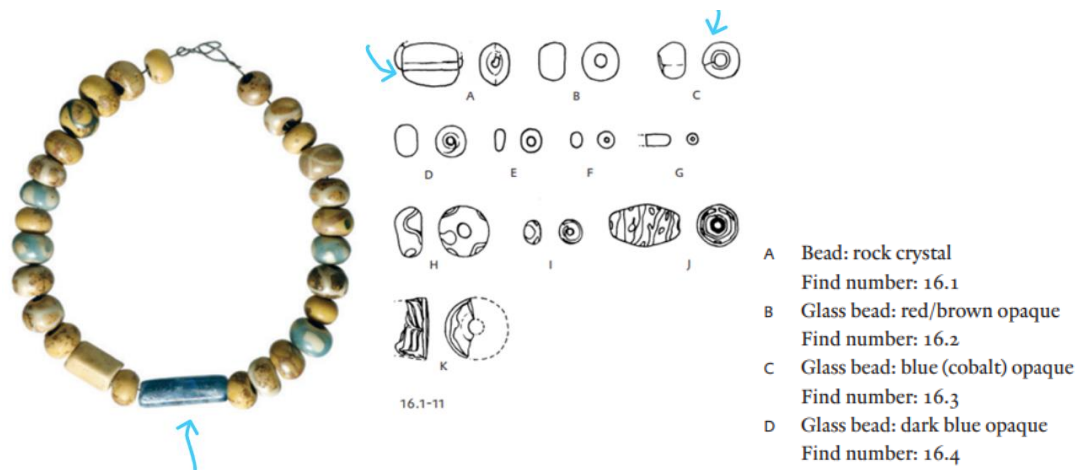


Figure 3.101: The beads found without context, bead A and C are Near Eastern beads (after Theuws and Kars 2017, 563, 570).

*Additional note: There are no pictures available for the beads from grave 179, 189, 198, 208, 230, 270, 283, 306, 357 and 361.*

### 3.4.4 Maastricht-Pandhof

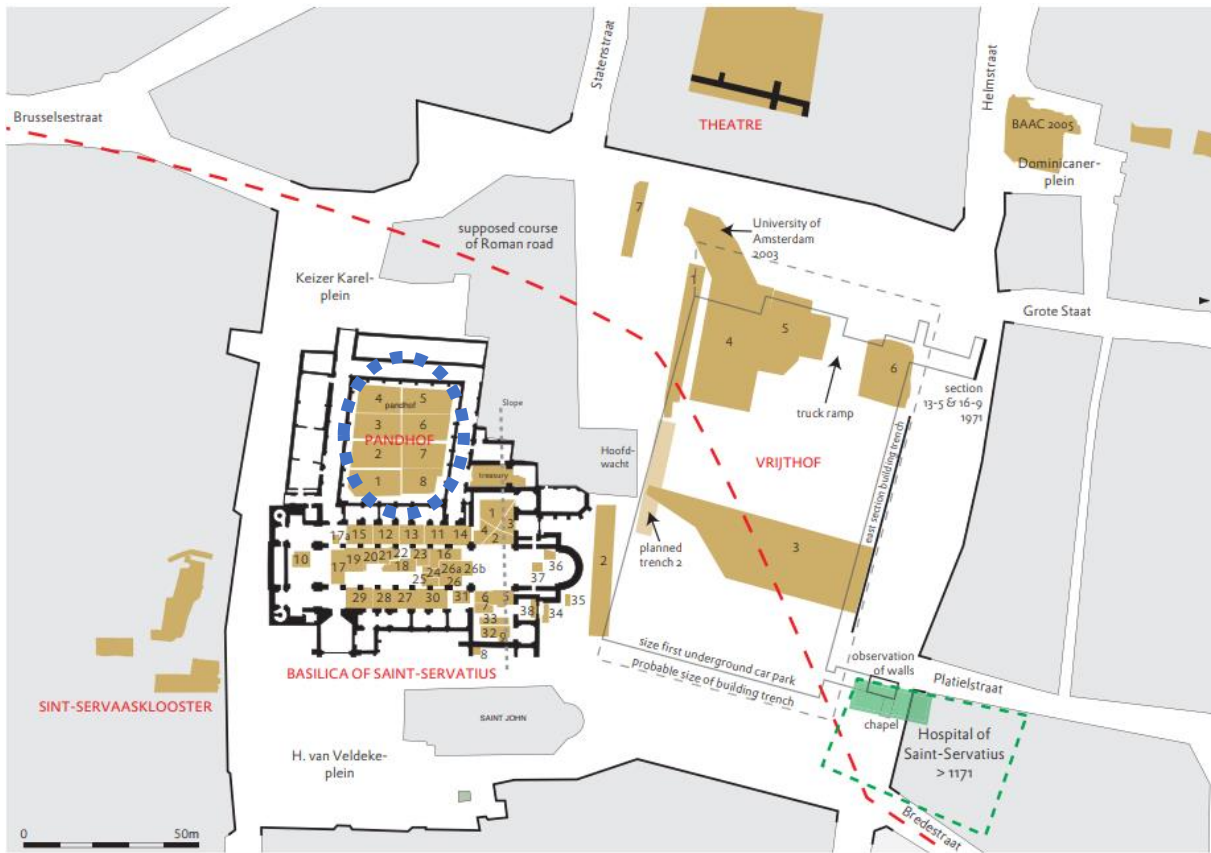


Figure 3.102: The map of the Sint Servatius complex, showing the excavation trenches in brown, the assumed roman road as a red line and the excavated part of the cemetery of Pandhof is encircled with blue (Theuws and Kars 2017, 68).

Table 3.19: The graves that included beads from the cemetery of Maastricht-Pandhof (Kars 2011).

PICTURE	GRAVE NR	DATE GRAVE	NUMBER OF BEADS COUNTED ON PICTURE	NUMBER OF BEADS ACCORDING TO DOCUMENT	NUMBER OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION	PICTURE
93	10068	460-680	63	62	34	32x black trans cold cut, 2x green faceted	(misses a blue trans bead)	347	figure 47
418	11321	460-590	163	149	73	58 x drawn strangled maybe metal-foil, 1x red drawn tube, 64x drawn blue beads	(thesis counts 44 white beads)	349	figure 49
418	11321	400-590	99	82	35	2x blue tubes drawn, 1x red tube drawn, 13x blue trans drawn? 19x metal foil	omschrijving kralen komt niet overeen met nummer foto	356	figure 58
27	10074	580-680	176	173	136	2x amethyst, 134x tiny green ones		352	figure 52
240	10828	400-620	126	125	111	1x silverfoil, 36x translucent perforated, 30x green translucent perforated faceted, 3x perforated dark blue, 20x drawn white and 20x drawn green and 1x dark blue drawn	pic is too blurry to determine the tiny beads at the end	352-353	figure 53
466	11342	460-590	77	77	71	36 drawn green, 1x white drawn, 27 x drawn yellow trans, 7x dark blue drawn		353	figure 53
182	10923	460-525	123	123	123	45 x strangled drawn trans green, 38x green perforated, 40x strangled drawn trans blue	the ufo shaped beads are clearly drawn and strangled here. Does this mean the ones of previous strings are the same?	353	figure 54
42	10118	565-650	45	45	12	12x mosaic	2 strings	354	figure 55
261	10988	510-680	9	9	0	-		354-355	figure 55
365	11252	400-590	53	53	0			355	figure 56
454	10514	400-590	20	20	0	in table an unknown number of blue beads is noted. Not in pic		356	figure 57
73	10122	400-590	10	10	0	-		356	figure 57
321	10227	400-590	59	59	13	2x rock-crystal, 3x green drawn, 6x green perforated 2x blue dropshape perforated	don't see a mosaic bead, 3x unknown beads	357	figure 58
562	10365	400-590	46	46	15	10x drawn red, 1x rock-crystal, 1x blue perforated drop 1x silverfoil, 1x folded green tubular, 1x reticella	2x Reticella dont seem ne	357	figure 59
40	10128	510-680	58	58	0	-	2 strings	361-362	figure 64
60	10042	510-650	14	14	13	13x amethyst		364	figure 67
303	10220	460-650	18	18	2	2x green perforated	1 unknown	362	figure 64

581	10407	510-650	57	57	12	4x millefiori, 4x green opaque weathered, 1x perforated red/orange, 1x Green perforated, 2x blue perforated	fragments include mosaic	362	figure 65
432	10635	580-680	7	5	0	-	possibly broken into more fragments than original five	363	figure 66
254	10985	565-680	15	15	0	-		363	figure 66
48	10061	565-650	29	29	1	1x rock crystal		363-364	figure 66
172	10856	565-650	12	12	10	6x amethyst, 4x green drawn		364	figure 67
333	10252	460-590	7	15	9	3x green drawn, 1x goldfoil, 5x amethyst	8 lost: 5x amethyst, 3x blue	364	figure 67
128	10799	460-620	70	67	64	27 x goldfoil, 4x drawn brown drop segmented, 7x strangled drawn tubes blue, 8x folded blue tubes, 4x folded blue prism 1x drawn strangled brown, 5x white drawn semi-segmented, 3x green perforated, 5x drawn strangled white	3 not counted are green circle in pic	366	figure 69
<b>TOTAL</b>			<b>1356</b>	<b>1323</b>	<b>735</b>				

Table 3.20: The Near Eastern beads within the single beads category of Maastricht Pandhof (based on Kars 2011).

PICTURE NR	GRAVE NR	DATE GRAVE	NUMBER OF BEADS COUNTED ON PICTURE	AMOUNT OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION	PICTURE IN PUBLICATION
23	10102	Unknown	5	2	2x perforated red		156	figure 70
59	10100	Unknown	3	1	1x faceted blue trans		156	figure 70
142	10796	Unknown	3?	1	1x drawn green trans	piece of bone?	156	figure 70
252	10986	Unknown	15 fragments	10	10x green drawn, include green trans drawn fragments		156	figure 70
428	19999	Unknown	6	1	1x amethyst, 1x black decorated	Black roman bead?	348	figure 70
447	10636	Unknown	1	1	perforated green		348	figure 70
453	10162	Unknown	1	1	folded green-red		348	figure 70
490	10554	Unknown	4	2	2x drawn blue		348	figure 71
493	10641	Unknown	many fragments	4	1x green fold/perforated, 2x blue perforated, 1x red perforated	blurry pic	348	figure 71
<b>TOTAL</b>			<b>37</b>	<b>23</b>				





Figure 3.103: The Near Eastern beads from grave 10068 (after figure 47 in Kars 2011, 482).



Figure 3.104: The beads from grave 11321 (after figure 49 and 58 in Kars 2011, 484, 493).



Figure 3.105: The beads from grave 10074 (after figure 52 in Kars 2011, 487).

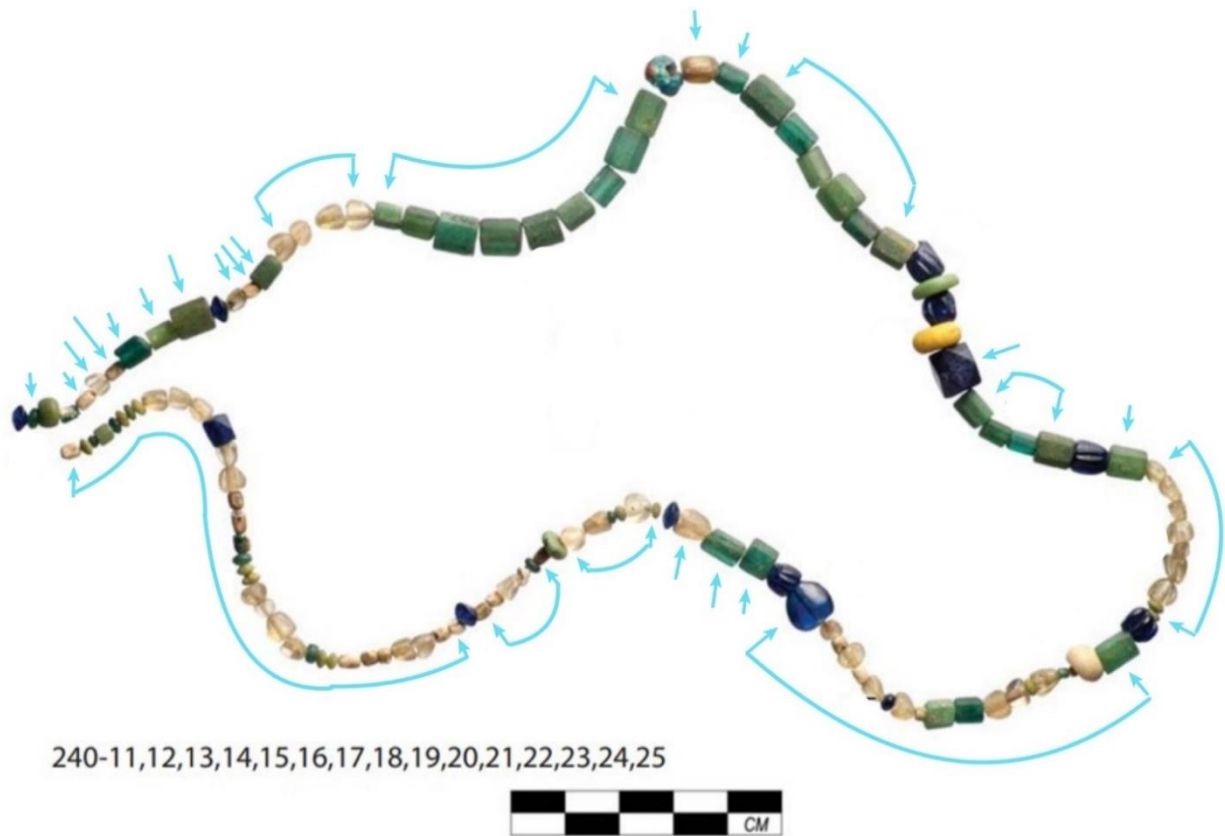


Figure 3.106: The Near Eastern beads from grave 10828 (after figure 53 in Kars 2011, 488).

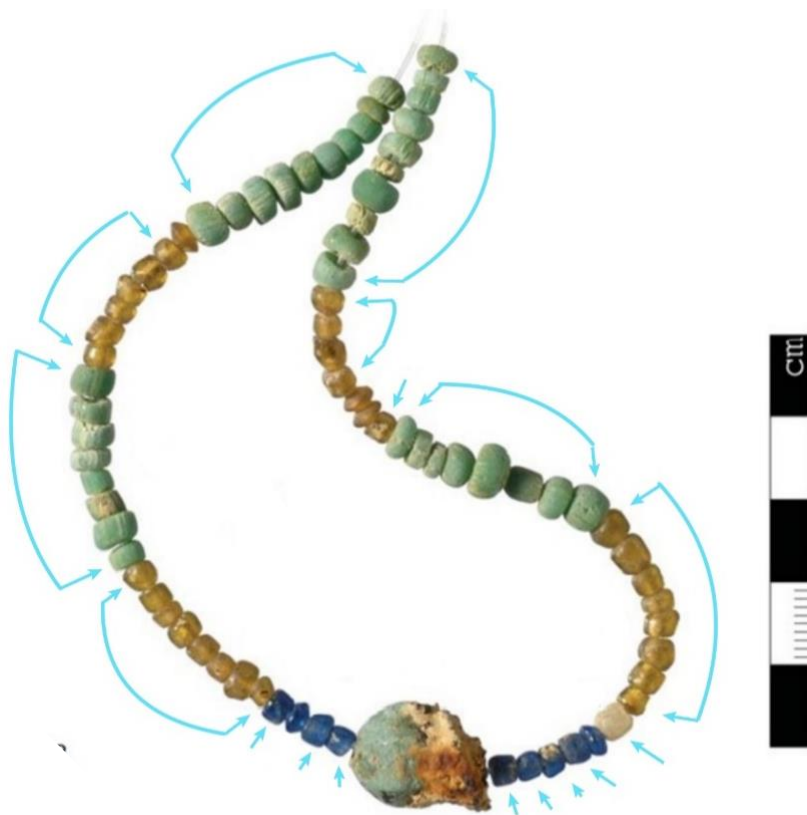


Figure 3.107: The beads from grave 11342 (after figure 53 in Kars 2011, 488).

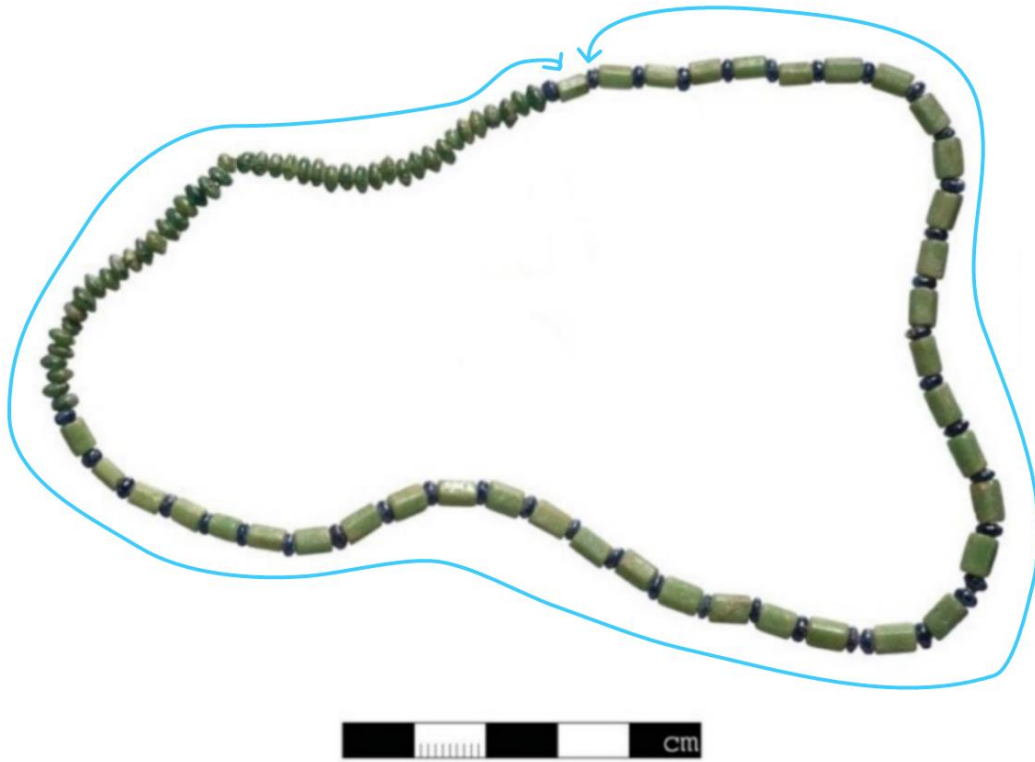


Figure 3.108: The beads from grave 10923 (after figure 54 in Kars 2011, 489).

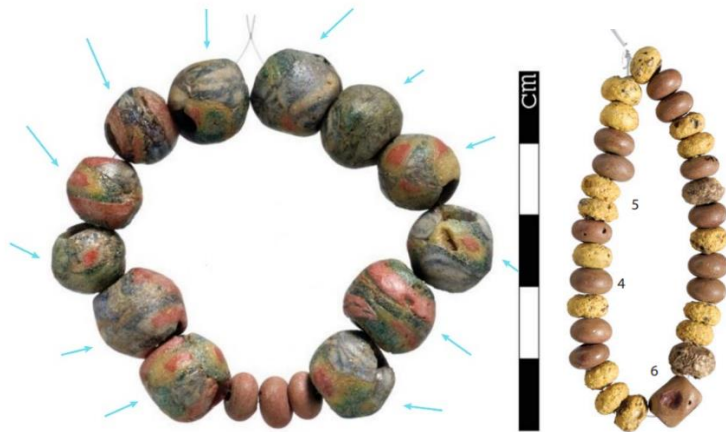


Figure 3.109: The beads from grave 10118 (after figure 55 in Kars 2011, 490).

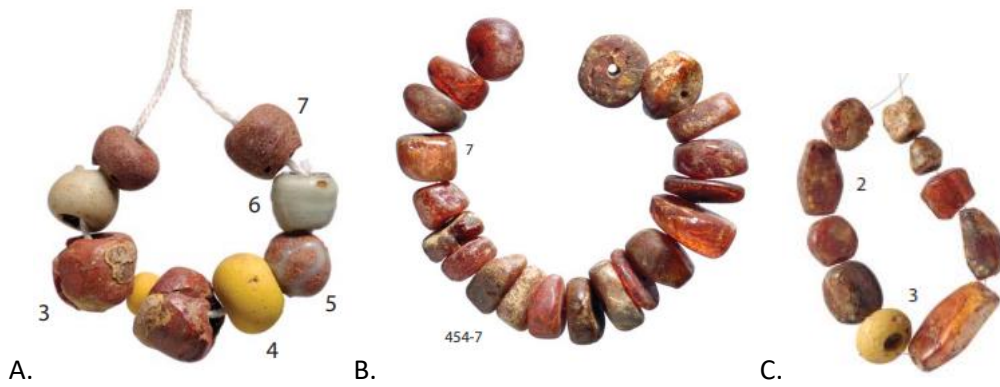


Figure 3.110: A. the beads from grave 10988, B. the beads from grave 10514, C. the beads from grave 10122 (after figure 55, 57 in Kars 2011, 490, 492).



Figure 3.111: The beads from grave 11252 (after figure 56 in Kars 2011, 491).



Figure 3.112: The beads from grave 10227 (figure 58 in Kars 2011, 493).



Figure 3.113: The beads from grave 10365 (figure 59 in Kars 2011, 494).

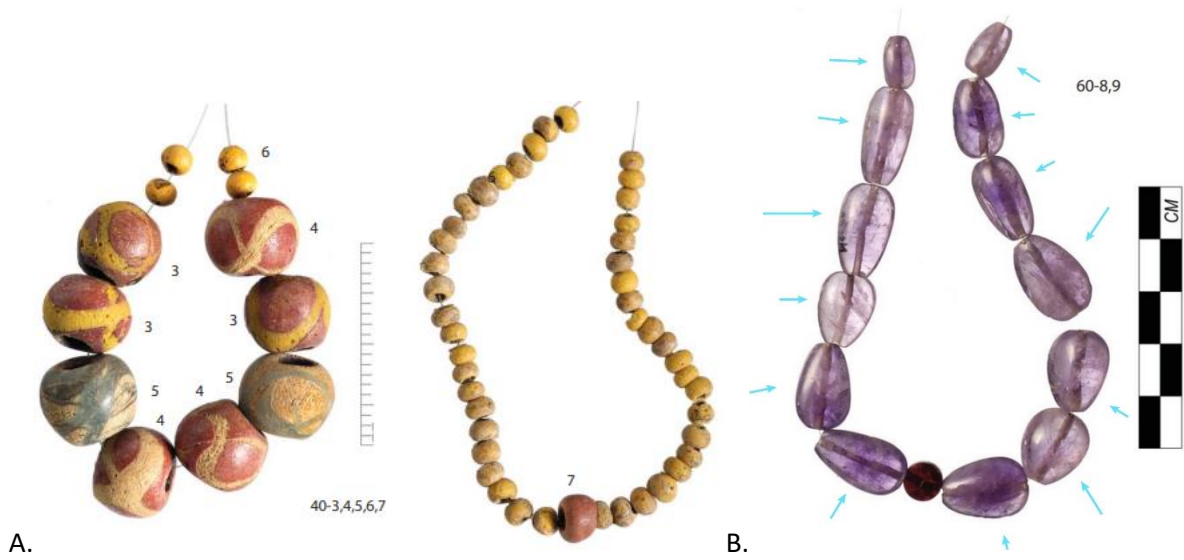


Figure 3.114: A. the beads from grave 10128, B. the beads from grave 10042 (Figure 64 and 67 in Kars 2011, 502).

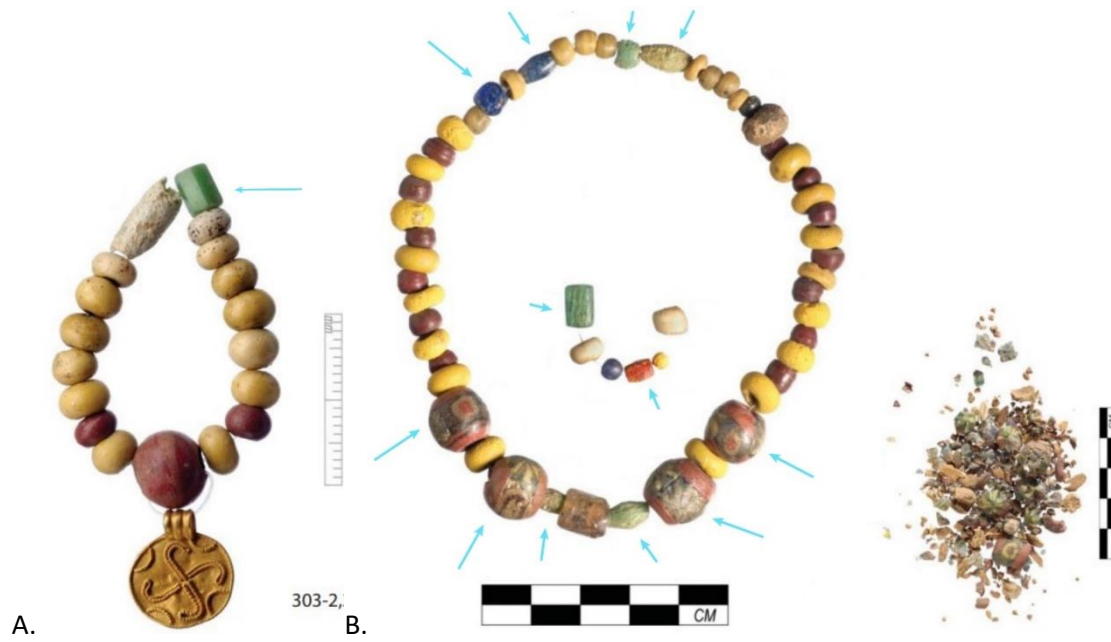


Figure 3.115: A. the beads from grave 10220, B. the beads from grave 10407 (figure 64 and 65 in Kars 2011, 499-500).

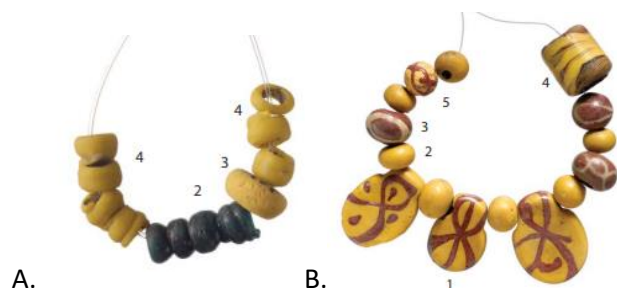


Figure 3.116: A. the beads from grave 10635, B. the beads from grave 10985 (after figure 66 in Kars 2017, 501)

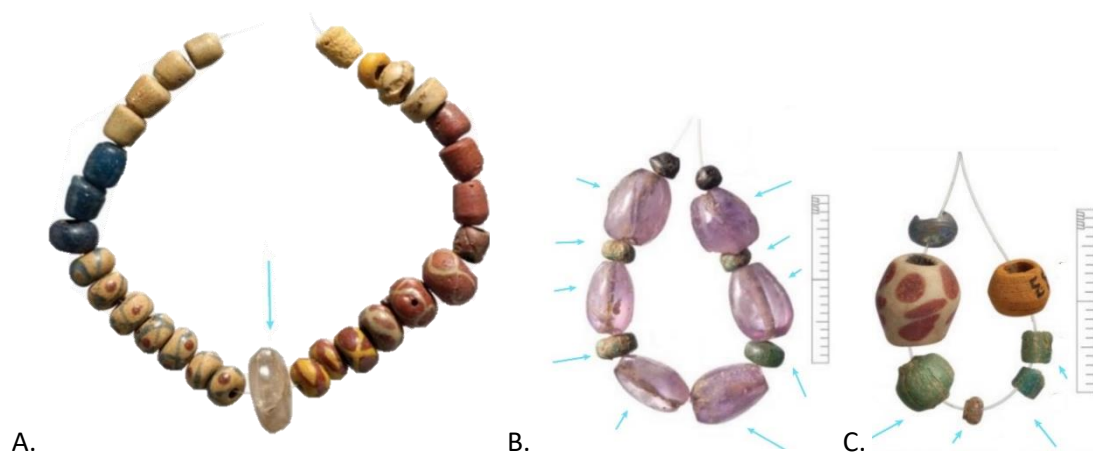


Figure 3.117: A. the beads from grave 10061, B. the beads from grave 10856, C. the beads from grave 10252 (after figure 66 and 67 in Kars 2011, 501-502).



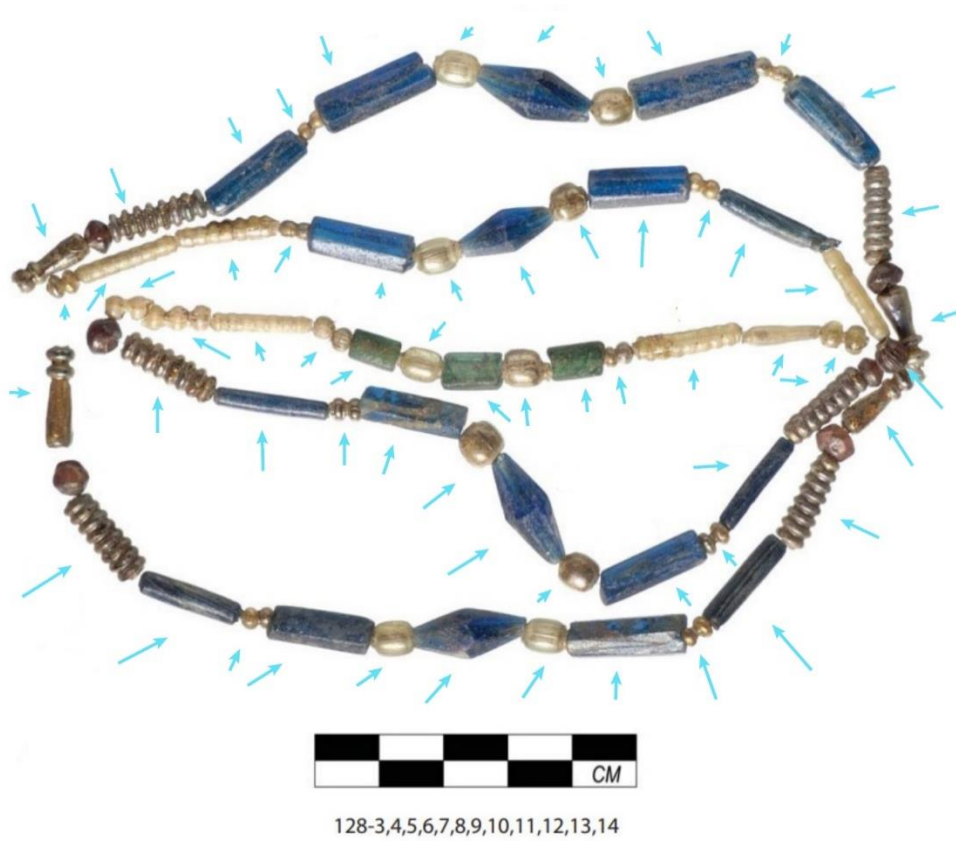
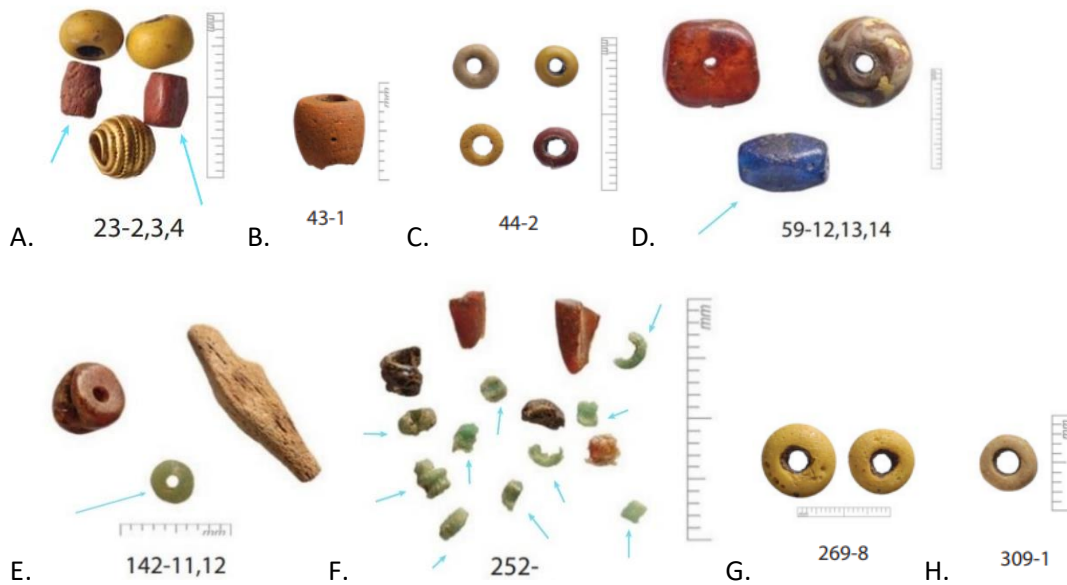


Figure 3.118: The beads from grave 10799 (after figure 69 in Kars 2011, 504).

Single beads



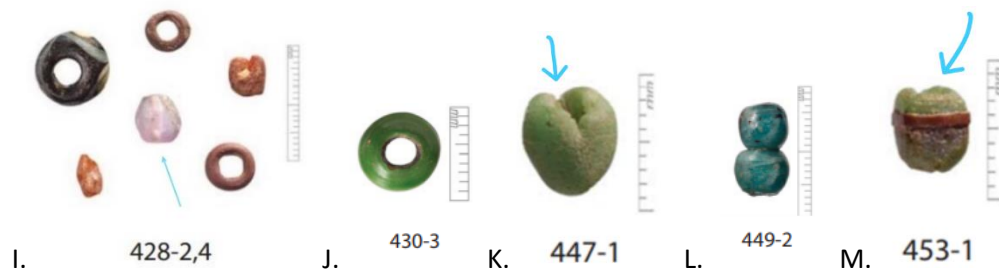


Figure 3.119: The beads from; A. grave 10102, B. grave 10054, C. grave 10131, D. grave 10100, E. grave 10796, F. grave 10986, G. grave 10986, H. grave 19999, I. grave 19999, J. grave 1999, K. grave 10636, L. grave 1999, M. grave 10162 (after figure 70 in Kars 2011, 505).

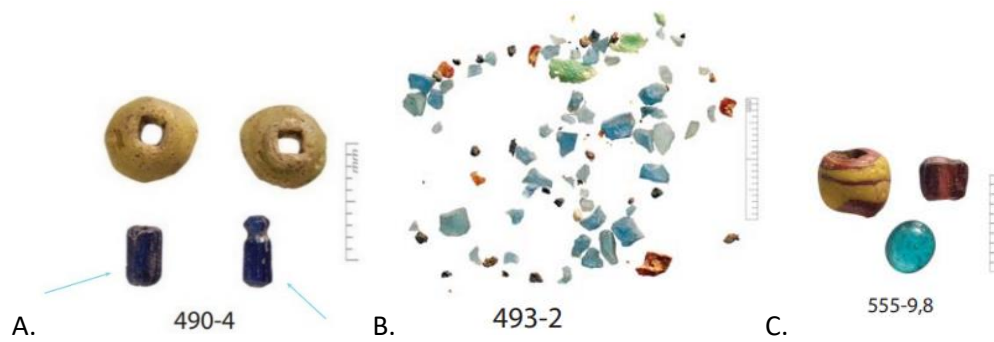


Figure 3.120: A. the beads from grave 10554, B. the fragmented beads from grave 10641, C. the beads from grave 10370 (after figure 71 in Kars 2011, 506).

### 3.4.5 Echt

Table 3.21: The graves that included beads from the cemetery of Echt (Arends 2021, based on Langbroek forthcoming).

GRAVENR	DATE BEADS	DATE GRAVE	NUMBER OF BEADS	MISSING BEADS	AMOUNT OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
1	-	Unknown	64	0	0	-	-	-
2	-	Unknown	3	0	0	-	-	-
<b>TOTAL</b>			<b>67</b>	<b>0</b>	<b>0</b>			

Beads from inhumationgrave/feature 2



Figure 3.121: The beads from Echt (picture by Langbroek).

### 3.4.6 Obbicht-Oude Molen

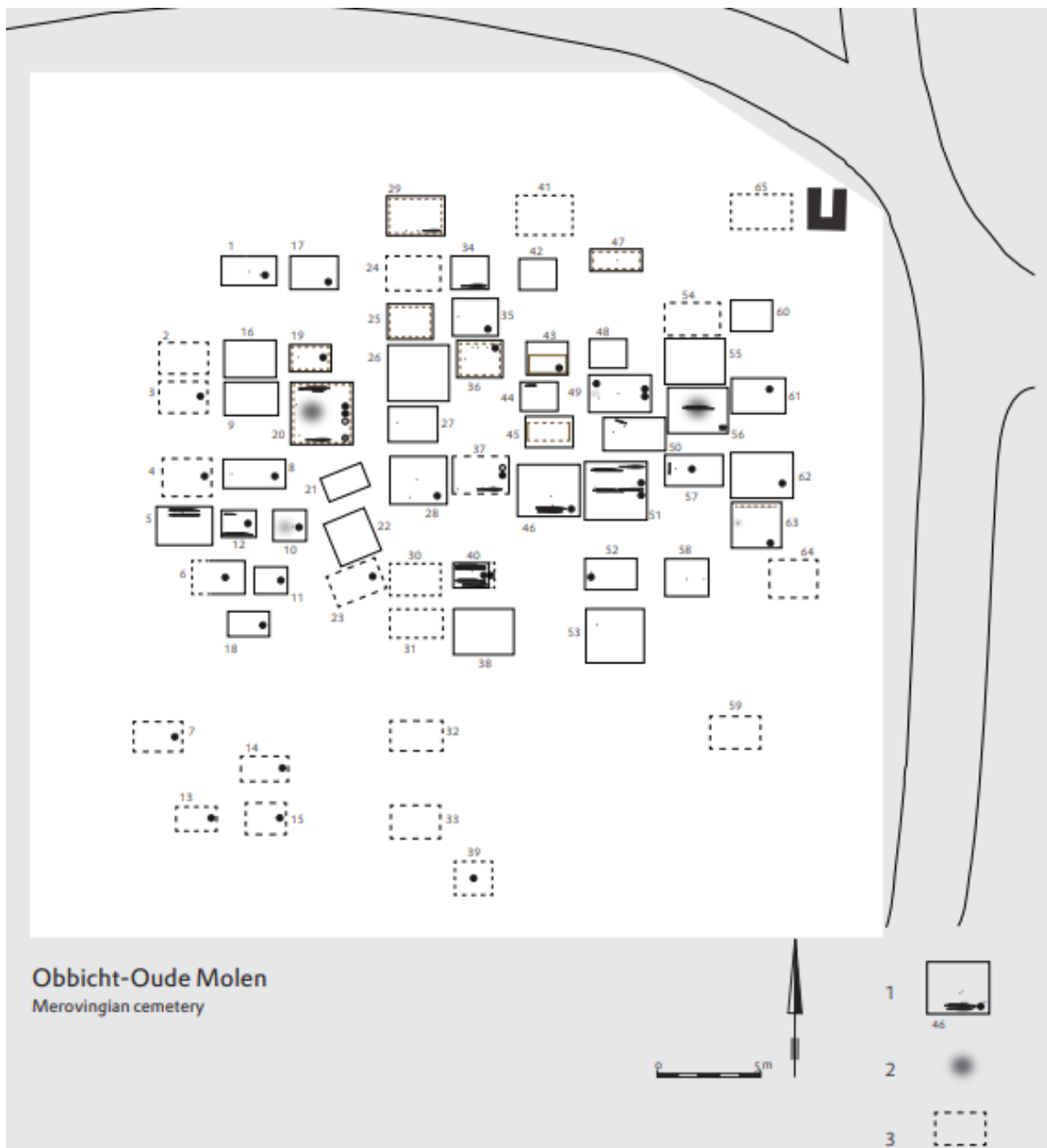


Figure 3.122: The map of Obbicht-Oude Molen indicating the archaeological features. 1. schematic representation of inhumation grave with number, 2. body imprint, 3. disturbed grave (Kars *et al.* 2016, 41).

Table 3.22: The graves that included beads from the cemetery of Obbicht-Oude Molen (based on Kars *et al.* 2016).

GRAVE NR	DATE GRAVE	DATE BEADS (PION)	NUMBER OF BEADS	NUMBER OF MEROVIGIAN GLASS BEADS AVAILABLE FOR STUDY	AMOUNT OF NEAR EASTERN BEADS	BEAD TYPES	REMARKS	PAGE IN PUBLICATION
8	565-620		34	32	6		the last beads on this string. 4x blue cylindrical ones are drawn cold cut of which one is segmented. 2x white drawn	151, 397-398
19	565-650		23	23	3		3x yellow drawn	152, 403-404
27	cannot be dated		2	0	?		one amber the other bead unknown	154, 411
35	565-650	550-650	63	63	0			153, 420
36	565-650	600-700	73	32	14		8x blue drawn (A3.2-06 beads?) One slightly larger green drawn cold cut bead, 5x green trans	148, 153, 422-424
37	cannot be dated		1	1	0			153, 424
49	565-650		40	21	0			153, 436-437
50	cannot be dated		20	0	-		unknown and missing	154, 438
57	610-650		4	4	0			154, 443
<b>TOTAL</b>			<b>260</b>	<b>176</b>	<b>23</b>			



Figure 3.123: The beads from grave 36 (after figure 4.73 in Kars *et al.* 2016, 148).

Fig. 4.74  
The beads from graves 8, 19, 27,  
35, 36, 49 and 57 (scale 1:1).



Figure 3.124: The beads of grave 8, 19, 35, 49 and 57. The Near Eastern beads of grave 8 and 19 are indicated with a blue arrow (after figure 4.74 in Kars *et al.* 2016, 152).

*Additional notes: there are no pictures of the beads of grave 27, 37 and 50 available.*

### 3.4.7 Stein-Groote Bongerd



Figure 3.125: The map of Stein-Groote Bongerd indicating the archaeological features. 1. schematic representation of inhumation grave with number, 2. body imprint, 3. disturbed grave (Kars *et al.* 2016, 49).

Table 3.23: The graves that included beads from the cemetery of Stein-Groote Bongerd (based on Kars *et al.* 2016).

GRAVE NR	DATE GRAVE	NUMBER OF BEADS	NUMBER OF MEROVIGIAN GLASS BEADS AVAILABLE FOR STUDY	AMOUNT OF NEAR EASTERN BEADS	BEAD TYPES	PAGE IN PUBLICATION
11	580-710	1	0	0	-	199, 454
19	cannot be dated	4	0	?	-	199, 457
22	565-650	31	22	0	-	201, 460-462
23	begin seventh century	13	13	0	-	202, 462-463
30	565-620	21	19	0	-	203, 466-467
32	Seventh cen	29	28	0	-	203, 467-468
38	cannot be dated	1	1	0	-	203, 471
51	565-620	16	11	2	2x green cold cut drawn beads	203, 477-478
STRAY FINDS		2	2	0		204, 499
<b>TOTAL</b>		<b>118</b>	<b>96</b>	<b>2</b>		

Fig. 4.113  
The beads from graves 11, 22, 23, 30, 32, 38, 51 and beads without find numbers (scale 1:1).



Figure 3.126: The beads from grave 11, 22, 23, 30, 32, 38, 51 and the stray finds. The Near Eastern beads are indicated with a blue arrow (after figure 4.113 in Kars *et al.* 2016, 202).



## 4. The Near Eastern beads of the complete research area

### 4.1 The overview table of attested Near Eastern beads

This table presents an overview and summary of the attested types of Near Eastern beads in this study. Organized by bead types based on pion (2014), the Limburg sites could not be determinate to a specific type and are categorized very general by A to F. The other sites are documented by A.1 to F4.1. For more detailed determination of the bead types please see tables table 5.19 of Noord-Brabant, table 3.15 of East Rhine in the appendix, and table 5.62 of Limburg. Table 4.1 is further discussed in Results chapter 5 section 5.5.3 'Complete research area types of Near Eastern beads.' The overview table was placed in the appendix because of its enormous size.

Table 4.1: The types of attested Near Eastern beads in the study assemblage of the complete research area.

BEAD TYPE (PION)	TIME PERIOD (PION)	OCCUR IN GRAVE	NUMBER OF BEADS IN GRAVE	TOTAL NUMBER OF THIS BEAD TYPE	REMARKS	SITE
A - TINY GREEN	P1-P3	110/31	1/1	2		M.Vrijthof/M.Pandhof/Posterholt
?	?	10068/48,85	2/2,1	5		M.Pandhof/M.Vrijthof
A?	P1-P3	11,25,44/59/Finds without context, 12,100,258,85,235,313, 48,315,110,95,166,187,247/10074 ,10365,10554,10252,10856,10986 ,10407,10227,11342, 10796,10799,10068,10828, 10923,11321/8,19,36/51	39,6,1/1/1,29,7,35,5 ,3,18,24,35,10,38,4, 36,1/10074,11,2,3,4 ,10,4,3,71, 1,22,32,41, 85,89/6,3,14/2	830		Sittard/Posterholt/ M.Vrijthof/M.Pandhof/ Obbicht/Stein
A1.2	P0-P3	2,20-1,40/ 34,98,106,239/175/?	1,9,6/4,10,1,1/2/1	38		Lent/Wijchen/Elst/Alphen
A1.3	P3	36,16	1,1	2		Lent
A2.?	P?	238	1	1		Elst
A2.1	P2	2,40,5,16,9,13-1,50/242/19	2,6,5,1,2,3,1/1/1	22		Lent/Elst/Bergeijk
A3.1	P1-P3	14,22-27,23/2/26-1,43-1,13-2,53,43-2,14-1,21,40,55,20-1/ 87,88,161,234,188,175,208,216,1 27,161,162/235-chest,65,8,179	41,150,1/1/8,8,1,3,8 ,2,1,18,1,2/2,2,2,2,1 18,25/2,4,1,1	404		Alphen/ Dommelen/Lent/Elst/ Wijchen
A3.2	P1-3	43-2,53/52,211,156,235-chest,106	1,1/3,2,46,1,5	59		Lent/Wijchen
A3.3	P1-2	52/3	1/1	2		Alphen/Wijchen
A3.4	P1-3	22-27/20-1,36,40,43-2/29,211,235-chest/118, 127,159,175,249,235,161,87/29	13/2,2,1,1/1,12,2/1 5,1,1/1	52		Alphen/Lent/Wijchen/Elst/ Uden
A3.5	P1	208/36	1/1	2		Elst/Lent
A3.6?	P?	26-1	6	6		Lent
A 4.?	P1-P3	48,68,178,187/11321/13-1, 20-1	1,7,2,41/19/1,2	73	metal foil	M.Vrijthof/M.Pandhof/Lent
A4.1	P1-3	13-1,20-1,36,46/50,142/175,216,127/1025 2,10799	2,1,1,1/1,1/16,1/1,2 7	52	Goldfoil	Lent/Wijchen/Elst/ M.Pandhof
A4.2	P1-3	2, 13-1, 26-1, 26-2, 34-1, 40, 43-1, 43-2, 53/ 2, 51, 52, 92, 219, 228, 235-chest/ 87, 118, 127, 155, 161, 162, 175, 208/ 14, 16, 19, 22-27/10828/10365/247	2, 19, 2, 1, 3, 9, 5, 4, 14/ 1, 6, 6, 2, 51, 2, 4/ 58/ 1,1,1, 12/1,1/4	210	Silverfoil	Lent/ Wijchen/ Elst/ Alphen/M.Pandhof/ M.Vrijthof
A4.3	P1	2/65, 235-chest/ 175	2/1,2/2	7		Lent/ Wijchen/ Elst
A4.4	P1-3	14/52, 235-chest	1/1,2	4		Alphen/Wijchen

<b>B10.1</b>	P2	35,41/152/249,88,161,155/ 24,10365/258,187/19b	1,1/1/2,1,1,1/1/1/1, 1/1	13	Reticella	Lent/ Wijchen/Elst/ Alphen/M.Pandhof/ M. Vrijthof
<b>B6.1-01D</b>	P1	2	2	2	Confetti	Lent
<b>C?</b>	P2	166, single finds,17, 187,235/10799,10365,10162/40	14,1,3,4,2/12,1,1/1	39		M.Vrijthof/M.Pandhof/ Lent
<b>C/D - FOLD/ PERFORATED</b>	P1-P3?	10641	1	1		M.Pandhof
<b>C1.1-?</b>	P2?	127	2	2		Wijchen
<b>C1.4</b>	P2	35, 42, 53, 13-1/ 65/ 82, 88, 92	1, 2, 1, 1/1/10	16		Lent/ Wijchen/ Elst
<b>C2.1</b>	P2	81,82,88,127	1,1,1,2,6	11		Elst
<b>C2.2</b>	P2	5,53,55/ 127,193, 249,211/29	1,4,2/2,1,3,1/10	24		Lent/ Elst/Uden
<b>C3.?</b>	P?	40	2	2		Lent
<b>C3.1</b>	P2	5/ single beads/88	2/1/1	4		Lent/ Wijchen/ Elst
<b>C3.3</b>	P1	23,40,42	2, 2, 2	6		Lent
<b>D?</b>	P1-P3	110,314,68,235,64/10407,10641, 10220,10923,10799,10828,10636, 10102,10227,10365,10100/40	6,3,10,2,52/4,3,2,38 ,3,69,1,2,8,1,1/2	207		M.Vrijthof/M.Pandhof/Lent
<b>D1.1</b>	P1-3	13-1,36,40/4,65,127,132,194, 253/81,87,127,161,162, 211?, 234?,235?,238,249?,82,127,193, 208,214/2/29	2,2,1/ 1, 1, 3,1, 1, 3/ 1-8,16/2/2	67		Lent/ Wijchen/ Elst/Dommelen/Uden
<b>D1.2</b>	P2	5,13-1,40	1,3,13	17		Lent
<b>D1.5</b>	P0-P1	40,51/ 112, 201, 208/single beads	3,1/1,2,2/1	10		Lent/ Elst/Wijchen
<b>D1.6</b>	P?	81, 161, 162, 208, 249	1-17	27		Elst
<b>D1.7</b>	P0	16/ 194, single beads	1/1,2	4		Lent/ Wijchen
<b>D2.1</b>	P2	24	2	2		Alphen
<b>E?</b>	P2	68,95,187,314/10407,10118/22/2 1, 40	2,5,1,3/4,12/2/1,1	31		M.Vrijthof/M.Pandhof/ Posterholt/Lent
<b>E1.1</b>	P2	21, 35, 40/ 127, 161, 249	2,3, 1/ 1,1,1	9		Lent/ Elst
<b>E1.2</b>	P2	5, 13-1,43-1/ 88, 127, 161,211,208, 238, 249/ 4- 2,2/4/156	11,1,2/1-2,2,1/ 1,1/1/1	31		Lent/ Elst/ Dommelen/Alphen/ Wijchen
<b>E2.?</b>	P2	13-1, 21	1,1	2		Lent
<b>E2.1</b>	P2	4/ 5,21, 9, 13-1, 20-1, 40, 50/ 92, 118, 155, 161, 238	2/2,1, 2, 1, 2, 3, 1/ 1-2,1	20		Alphen/ Lent/ Elst
<b>E2.2</b>	P2	13-1/4	1,1	2		Lent/Alphen
<b>E3?</b>	P2	88, 238	1	2		Elst
<b>E3.1</b>	P2	13-2	1/1	2		Lent/Elst
<b>E3.2</b>	P2	208	1	1		Elst
<b>E4.2</b>	P2	155	1	1		Elst
<b>F?</b>	P?	20-1	1	1	?	Lent
<b>F2</b>	-	14	6	6	red gemstone	Alphen
<b>F2.1</b>	P1-P2	308, stray find/10365,10227, 10061/14/317/ 5	1,1/1,2,1/2/1/1	10	rock crystal	M.Vrijthof/M.Pandhof/Alphe n/Wijchen/ Lent
<b>F2.2</b>	P4	16/85/285,48,85,110,315/19999,1 0252,10856,10042,10074/single beads	1/1/1,9,2,2,14/1,5,6 ,13,2/1	58	amethyst	Sittard/Posterholt/M.Vrijthof /M.Pandhof/Wijchen
<b>F4.1</b>	P1-P5	19b/ 34-3/ 160/ 127/95	1/1/1/1/1	5	meerscha um	Uden/ Lent/ Wijchen/ Elst/M.Vrijthof
<b>F5?</b>	P?	16-2, 50-2	1,1	2	marble	Lent
<b>S: PER2.15(H- I) PION:F?</b>	Bergeijk: P3	9	6	6	Shells	Bergeijk
<b>TOTAL</b>				2414		

## 4.2 The typochronology of the Near Eastern beads

In this last section of the appendix, the frequency tables are presented. They serve as a basis for table 5.69 in the Results chapter. The tables are order according to three chronological periods, the sixth century and earlier, the transitional period and the seventh century and later. Every subdivision has three tables for the subregion of Noord-Brabant, East Rhine, and Limburg. In each table the numbers of beads for every production technique (bead type) are calculated. The tables show the geographical and chronological distribution patterns of Near Eastern beads in the research area. For a more detailed analysis of these patterns please see Results chapter 5, paragraph 5.5.3.3 'The decline process of Near Eastern beads.'

### Graves dated to the sixth century

Table 4.2: Categories of bead types attested in the sixth century in Noord-Brabant (based on table 5.1, 5.2, 5.3, 5.6, 5.7, 5.10, 5.11, 5.13 and 5.14 in the Results chapter).

SITE	?	DRAWN	WOUND	FOLDED	PERFORATED	MOSAIC	ROCK CRYSTAL	AMETHYST	MEER-SCHAUM	OTHER	TOTAL
HOOGELOON BROEKENEINDE (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
ALPHEN-CHAAM - MOLENSTRAAT (END 6TH - BEGIN 7TH CEN.)	0	119	0	0	0	4	2	0	0	6	131
BERGEIJK - FAZANTLAAN (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
VELDHOVEN - HUYSACKERS (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
VELDHOVEN-OEIENBOSDIJK (END 6TH - 7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
DOMMELEN - KERKAKKERS (7TH CEN. AND LATER)	0	0	0	0	0	0	0	0	0	0	0
UDEN - SCHEPERSWEG (END 6TH AND 7TH CEN.)	0	0	1	0	0	0	0	0	1	0	2
GELDROP - ZESGEHUCHTEN SITE C (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
MEERVELDHOVEN (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>119</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>6</b>	<b>233</b>

Table 4.3: Categories of bead types attested in the sixth century in East Rhine (based on table 5.21, 5.22, 5.24, 5.25, 5.28 and 5.28 in the Results chapter).

SITE	?	DRAWN	WOUND	FOLDED	PERFORATED	MOSAIC	ROCK CRYSTAL	AMETHYST	MEER- SCHAUM	OTHER	TOTAL
LENT - LENTSEVELD (6TH CEN.)	0	177	4	23	29	38	1	0	1	3	276
WIJCHEN - CENTRUM (4TH TILL MID 7TH CEN.)	0	100	0	0	4	0	1	0	1	0	106
ELST - 'T WOUDE (LATE 5TH TILL 8TH CEN.)	0	144	5	22	61	24	0	0	1	0	257
T LOO (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>421</b>	<b>9</b>	<b>45</b>	<b>94</b>	<b>62</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>639</b>

Table 4.4: Categories of bead types attested in the sixth century in Limburg (based on table 5.37, 5.38, 5.41, 5.42, 5.44, 5.45, 5.48, 5.49, 5.52, 5.53, 5.55 and 5.56 in the Results chapter).

SITE	?	DRAWN	WOUND	FOLDED	PERFORATED	MOSAIC	ROCK CRYSTAL	AMETHYST	MEER- SCHAUM	OTHER	TOTAL
SITTARD-KEMPERHOUL	0	0	0	0	0	0	0	0	0	0	0
POSTERHOLT-ACHTERSTE VOORST	0	0	0	0	0	0	0	0	0	0	0
MAASTRICHT VRIJTHOF	0	87	1	7	17	6	0	1	0	0	119
MAASTRICHT PANDHOF	0	283	1	1	47	0	3	5	0	0	340
ECHT	0	0	0	0	0	0	0	0	0	0	0
OBBIJCHT	0	0	0	0	0	0	0	0	0	0	0
STEIN-GROOTE BONGERD	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>370</b>	<b>2</b>	<b>8</b>	<b>64</b>	<b>6</b>	<b>3</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>459</b>

Graves dated to the transitional period

Table 4.5: Categories of bead types attested in the transitional period in Noord-Brabant (based on table 5.1, 5.2, 5.3, 5.6, 5.7, 5.10, 5.11, 5.13 and 5.14 in the Results chapter).

SITE	?	DRAWN	WOUND	FOLDED	PERFORATED	MOSAIC	ROCK CRYSTAL	AMETHYST	MEER- SCHAUM	OTHER	TOTAL
HOOGELOON BROEKENEINDE (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
ALPHEN-CHAAM - MOLENSTRAAT (END 6TH - BEGIN 7TH CEN.)	0	0	1	2	0	0	0	0	0	0	3
BERGEIJK - FAZANTLAAN (7TH CEN.)	0	1	0	0	0	0	0	0	0	0	1
VELDHOVEN - HUYSACKERS (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
VELDHOVEN-OEIEBOSDIJK (END 6TH - 7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
DOMMELEN - KERKAKKERS (7TH CEN. AND LATER)	0	0	0	0	0	0	0	0	0	0	0
UDEN - SCHEPERSWEG (END 6TH AND 7TH CEN.)	0	1	0	10	2	0	0	0	0	0	13
GELDROP - ZESGEHUCHTEN SITE C (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
MEERVELDHOVEN (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>12</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>

Table 4.6: Categories of bead types attested in the transitional period in East Rhine (based on table 5.21, 5.22, 5.24, 5.25, 5.28 and 5.28 in the Results chapter).

SITE	?	DRAWN	WOUND	FOLDED	PERFORATED	MOSAIC	ROCK CRYSTAL	AMETHYST	MEER- SCHAUM	OTHER	TOTAL
LENT - LENTSEVELD (6TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
WIJCHEN - CENTRUM (4TH TILL MID 7TH CEN.)	0	30	1	4	10	0	0	1	0	0	46
ELST - 'T WOUDE (LATE 5TH TILL 8TH CEN.)	0	106	0	5	16	3	0	0	0	0	130
T LOO (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>136</b>	<b>1</b>	<b>9</b>	<b>26</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>176</b>

Table 4.7: Categories of bead types attested in the transitional period in Limburg (based on table 5.37, 5.38, 5.41, 5.42, 5.44, 5.45, 5.48, 5.49, 5.52, 5.53, 5.55 and 5.56 in the Results chapter).

SITE	?	DRAWN	WOUND	FOLDED	PERFORATED	MOSAIC	ROCK CRYSTAL	AMETHYST	MEER- SCHAUM	OTHER	TOTAL
SITTARD-KEMPERHOUL	0	40	0	0	0	0	0	1	0	0	41
POSTERHOLT-ACHTERSTE VOORST	0	0	0	0	0	2	0	1	0	0	3
MAASTRICHT VRIJTHOF	4	192	1	0	57	5	1	27	0	1	288
MAASTRICHT PANDHOF	136	131	0	12	78	16	1	21	0	0	395
ECHT	0	0	0	0	0	0	0	0	0	0	0
OBBICT	0	23	0	0	0	0	0	0	0	0	0
STEIN-GROOTE BONGERD	0	2	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>140</b>	<b>388</b>	<b>1</b>	<b>12</b>	<b>135</b>	<b>23</b>	<b>2</b>	<b>50</b>	<b>0</b>	<b>1</b>	<b>752</b>

Graves dated to the seventh century

Table 4.8: Categories of bead types attested in the seventh century in Noord-Brabant (based on table 5.1, 5.2, 5.3, 5.6, 5.7, 5.10, 5.11, 5.13 and 5.14 in the Results chapter).

SITE	?	DRAWN	WOUND	FOLDED	PERFORATED	MOSAIC	ROCK CRYSTAL	AMETHYST	MEER- SCHAUM	OTHER	TOTAL
HOOGELOON BROEKENEINDE (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
ALPHEN-CHAAM - MOLENSTRAAT (END 6TH - BEGIN 7TH CEN.)	0	1	0	0	0	0	0	0	0	0	1
BERGEIJK - FAZANTLAAN (7TH CEN.)	0	0	0	0	0	0	0	0	0	6	6
VELDHOVEN - HUYSACKERS (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
VELDHOVEN-OEIBOSDIJK (END 6TH - 7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
DOMMELEN - KERKAKKERS (7TH CEN. AND LATER)	0	1	0	0	1	2	0	0	0	0	4
UDEN - SCHEPERSWEG (END 6TH AND 7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
GELDROP - ZESGEHUCHTEN SITE C (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
MEERVELDHOVEN (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>11</b>

Table 4.9: Categories of bead types attested in the seventh century in East Rhine (based on table 5.21, 5.22, 5.24, 5.25, 5.28 and 5.28 in the Results chapter).

SITE	?	DRAWN	WOUND	FOLDED	PERFORATED	MOSAIC	ROCK CRYSTAL	AMETHYST	MEER- SCHAUM	OTHER	TOTAL
LENT - LENTSEVELD (6TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
WIJCHEN - CENTRUM (4TH TILL MID 7TH CEN.)	0	47	0	0	0	1	0	0	0	0	48
ELST - 'T WOOD (LATE 5TH TILL 8TH CEN.)	0	0	0	2	4	0	0	0	0	0	6
T LOO (7TH CEN.)	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>47</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>54</b>

Table 4.10: Categories of bead types attested in the seventh century in Limburg (based on table 5.37, 5.38, 5.41, 5.42, 5.44, 5.45, 5.48, 5.49, 5.52, 5.53, 5.55 and 5.56 in the Results chapter).

SITE	?	DRAWN	WOUND	FOLDED	PERFORATED	MOSAIC	ROCK CRYSTAL	AMETHYST	MEER- SCHAUM	OTHER	TOTAL
SITTARD-KEMPERHOUL	0	6	0	0	0	0	0	0	0	0	6
POSTERHOLT-ACHTERSTE VOORST	0	0	0	0	0	0	0	0	0	0	0
MAASTRICHT VRIJTHOF	0	22	0	14	0	0	0	0	0	0	36
MAASTRICHT PANDHOF	0	0	0	0	0	0	0	0	0	0	0
ECHT	0	0	0	0	0	0	0	0	0	0	0
OBBICT	0	0	0	0	0	0	0	0	0	0	0
STEIN-GROOTE BONGERD	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>42</b>



*Handwritten signature or mark in the bottom right corner.*