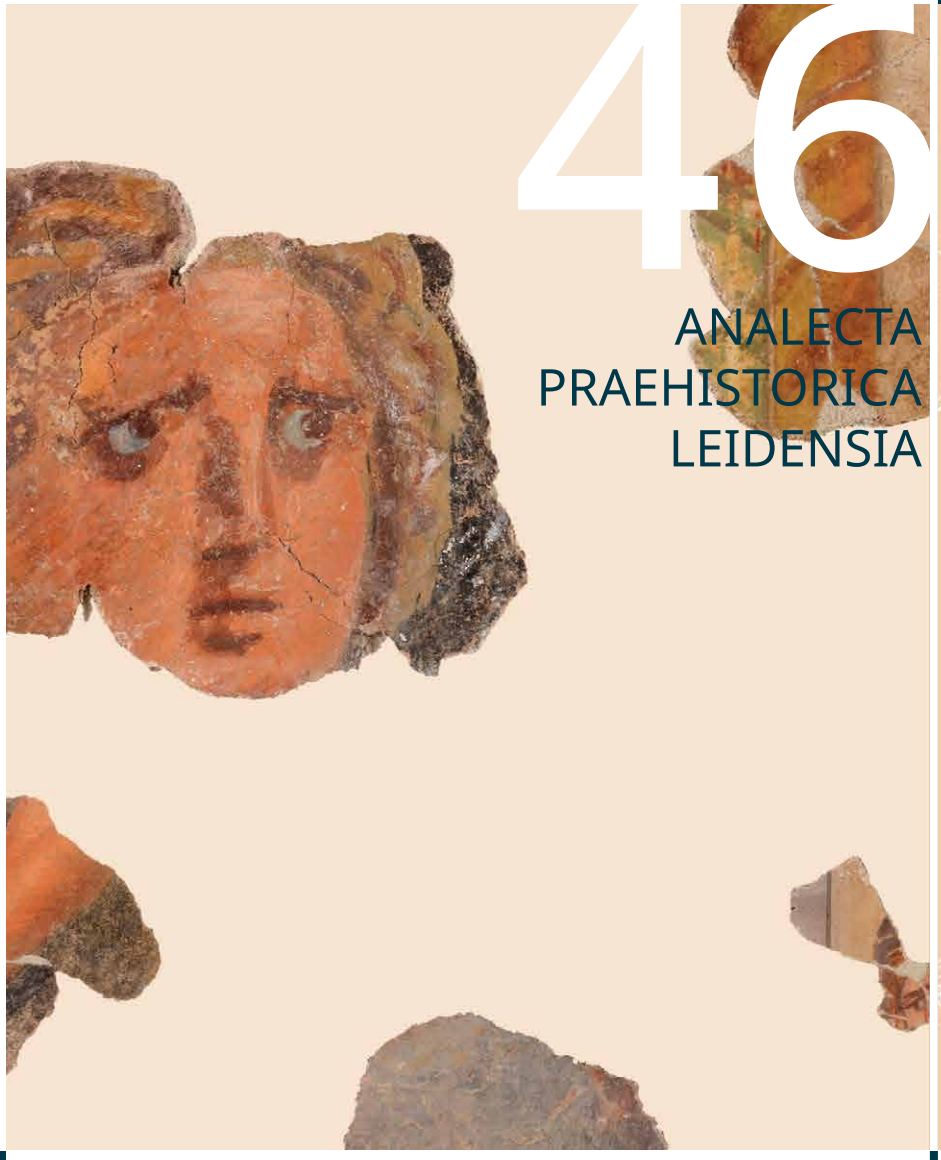
THE ROMAN VILLA AT MAASBRACHT



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ANALECTA PRAEHISTORICA LEIDENSIA

edited by
W.K. VOS, C.C. BAKELS AND T.A. GOOSSENS

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THE ROMAN VILLA AT MAASBRACHT

THE ARCHAEOLOGY AND HISTORY OF A ROMAN SETTLEMENT
ON THE BANKS OF THE RIVER MEUSE
(PROVINCE OF LIMBURG, THE NETHERLANDS)

IN MEMORY OF WILLEM J.H. WILLEMS

EDITED BY
W.K. VOS, C.C. BAKELS AND T.A. GOOSSENS

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Preface

In the summer of 2013, Willem and Miek invited my wife and me over to Amersfoort for dinner. On entering their living room, my attention was immediately drawn to an aquarelle of what could only be a Roman villa. I knew, of course, of Willem's excavations of the Roman *villae* of Voerendaal and subsequently Maasbracht, which were conducted when he served as so-called "provincial archaeologist" (the person responsible, on behalf of the (then) Rijksdienst voor het Oudheidkundig Bodemonderzoek (ROB), for one of the Dutch provinces) of Limburg.

He often referred to these two villa complexes during his classes on Provincial Roman Archaeology, which I attended as a student in Leiden. He taught this course at the Faculty of Archaeology from 1992 onwards; the year he was appointed as "buitengewoon hoogleraar" (extraordinary Professor) within the section Classical Archaeology on invitation of its then Professor Herman A.A.P. Geertman (1935-2015). For us students, these classes provided a welcome widening of the range of our Mediterranean focus, while we also appreciated their quite informal, almost colloquial nature. It was as if Professor Willems was simply telling us interesting stories about Romans and Batavians. It was only later that I read his work on the "Romanisation" of the Roman Netherlands and understood that he presented us with much more than just interesting stories alone.

After I became a lecturer at the Faculty myself, in 2004, we continued to discuss matters of "Romanisation" occasionally; our discussions became more frequent after Willem joined the Faculty as Dean in 2006. Although the focus of his work had over time shifted to management and issues of Heritage, he had maintained a keen interest in Provincial Roman Archaeology and "Romanisation". As a result, he very much welcomed debates on these matters as, for example, in the *Archaeological Dialogues* volume from 2014 (1); although I am quite sure that some of the directions this discussion took were not quite his cup of tea.

In a way, therefore, one could say that Willem's work in Voerendaal and Maasbracht stayed with him throughout his career; something that became clear to me for the first time when I saw that the aquarelle presenting an artistic impression of the Roman villa of Voerendaal hung at a central place in his living room.

There is no doubt that Willem would have been both very proud of and very happy with this book: the final publication of the Villa at Maasbracht. The excavations generated much publicity at the time because of the find of a large amount of remarkably well-preserved wall-paintings. This publication not only contains an updated interpretation of these second/third century AD paintings, but also, and even more importantly, an elaborate and extensive description and interpretation of their context. Although not all material could be described and analysed (see *infra*), this volume now provides us with a quasi-exhaustive general overview of the Villa at Maasbracht at last.

In many aspects this general overview has to remain sketchy. The fact that no remains in stone had been preserved above ground level – the site was locally known as "steenakker" – continues to hamper our interpretation. And why the Roman paintings were as meticulously stored as they appeared to be, namely, as "stortlagen" in the basement, will probably always remain a mystery – for which we have to be grateful. A detailed analysis of the settlement's traces and structures, however, clearly shows that we deal here with a villa of the "middle category", smaller than Voerendaal but probably containing a *hypocaustum*. Analyses and interpretations of the pottery, the building materials, the animal bones, the glass, the metalwork and, as already mentioned, the paintings allow us to situate the villa in its (third century AD) local and regional context in a general sense.

We have to be grateful to the individual authors, those who were already involved in the 1981/1982 and 1990 excavations as well as those who joined the project later, for providing us with this overview. Research into *villae* in the Roman West has recently been reinvigorated and for good reasons. The Villa at Maasbracht can now incite and play a role in that laudable development.

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1 Introduction

W.K. Vos and W.J.H. Willems

In the Dutch archaeological community, the Villa of Maasbracht has become famous for the beautiful remains of murals that have survived to this day. Almost all of this material was found in the infill of the stone cellar, a veritable time capsule that has been excavated with much patience and care. Unequivocal credit for this goes to an enthusiastic group of amateur archaeologists of the Heemkundevereniging Roerstreek (HVR), amongst whom Ton Lupak and Jo Kempkens. This was also the informal beginning of their company Restaura, a specialist enterprise in restoration and conservation techniques in Haelen, near Roermond.

The immediate reason for the investigation of the villa of Maasbracht at that time was the development of a housing project. It was located at the spot where since the 1960s a Roman stone building was suspected. The first field campaign in 1981 consisted of some four narrow trial trenches excavated by members of the HVR (Willems 1982; Van Dierendonck *et al*. 1987; Willems and Kooistra 1988). These yielded amongst others foundation trenches of walls and floors of mortar and rubble from the Roman period. Evidently, traces of the preceding Iron Age as well as the Early Middles Ages were also found. This was in 1982 cause for the State Service for Archaeological Research (Rijksdienst voor het Oudheidkundig Bodemonderzoek (ROB)) to begin another investigation and to investigate an extensive area in 25 working pits.[1] The most important result was the find of a stone main building of a Roman villa complex. In 1990 an additional campaign was undertaken by the ROB whereby three working pits were documented (Stoepker 1991).

After the excavations, the villa has been left on a shelf in the front as one of the investigations of interest from Roman times with the prospect of one day being further analysed. When the opportunity at last presented itself, due to the Limburgs Museum in Venlo making the financial resources available, the University of Leiden in co-operation with the excavation company Archol bv set to work very energetically. Several other archaeologists were contracted in to make a success of the analysis of the villa.

Compared to the first research results of those days, various changes in the interpretation have occurred. It should be mentioned here that even now not all of the investigations have been processed, for instance not all the murals have yet been investigated and published. In addition, it should be admitted that in the meantime part of the archaeological information has unfortunately been lost. Nonetheless, the result lying in front of you is quite an impressive publication.

The project leader was professor dr Willem J.H. Willems. During the field investigation he also supervised the excavations, and he saw the villa of Maasbracht as one of the important researches that he would like to process and publish before his retirement. There had never been any free time for it because of all the pressures of work, such as for instance the field investigation in Voerendaal.

The wish to publish Maasbracht has been realized with this publication. Unfortunately, however, Willem did not live to see the end result on account of his unexpected and much too early death in December 2014. This of course acted as a damper and was a huge loss, also for the project. Fortunately he was able to supervise the project meetings, and to judge and comment on the manuscript in November/ December 2014. This book is therefore dedicated to Willem.

To our great regret Jo Kempkens also did not live to see this publication. He died in October 2016.

Note

1 Research by W.J.H. Willems and G. van Haaff (ROB), together with students and amateur-archaeologists of the Heemkunde Vereniging Roermond (HVR).

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2 Settlement traces and structures

W.K. Vos

2.1 General research history

The site Maasbracht was excavated on the southern bank of the river Maas a little east of the village bearing that name in the province of Limburg, the Netherlands (fig. 2.1). The traces were situated on an Pleistocene terrace of the river Maas (Willems and Van Haaff 1984, 63-65; Kooistra 1996, 253). The terrace consists of deposits of sand and gravel several meters thick. In the Maas valley Holocene clay deposits were present. The transition of the Pleistocene terrace to the Holocene valley was marked by a scarp. This slope was situated northwest of the Roman villa and formed the natural border of the estate.

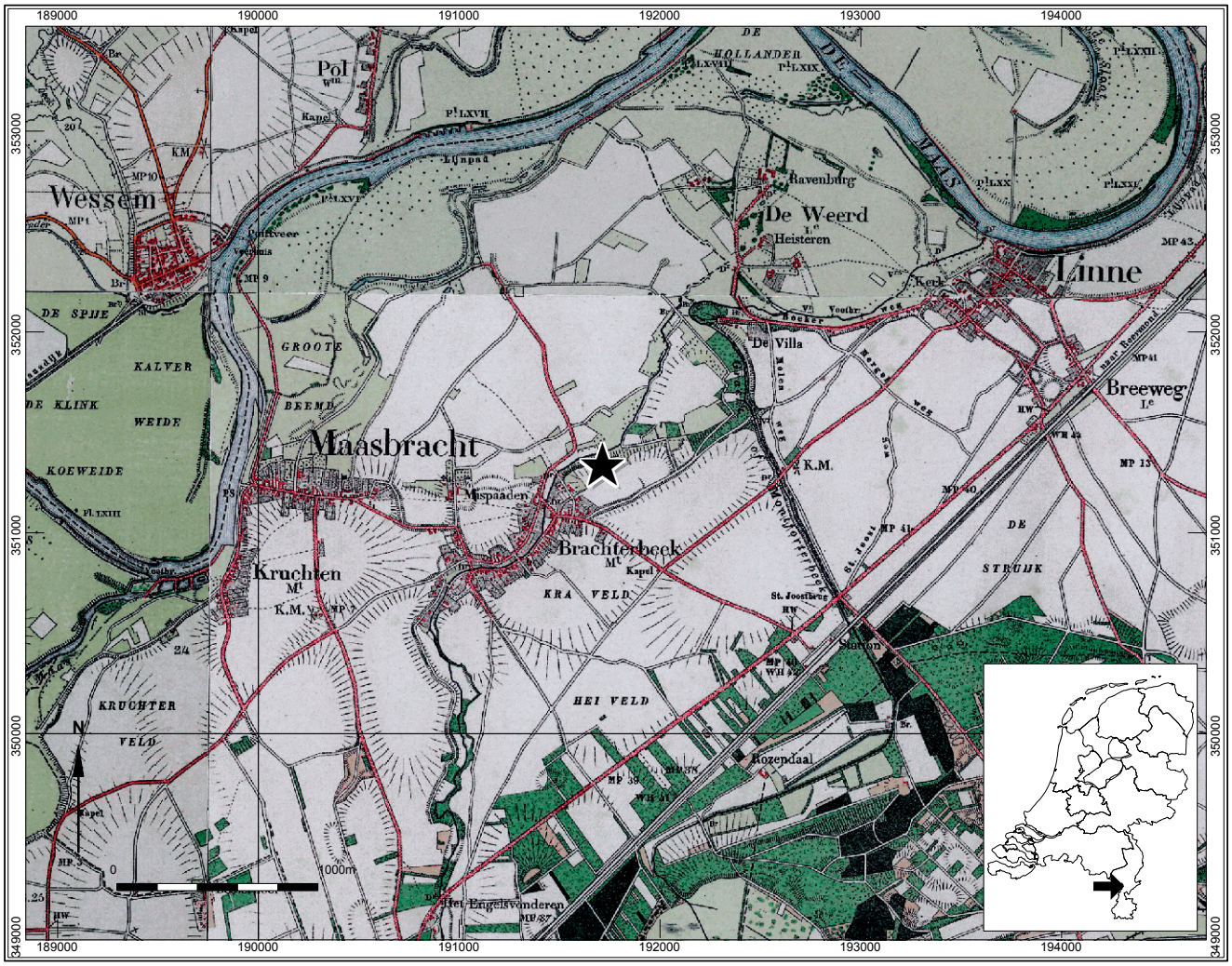

Figure 2.1 The location of the site plotted on the 1925 topographic map

Next to the river Maas other waterways were important in the landscape of Roman Maasbracht, namely the Krombeek and the Vlootbeek. Both small rivers flowed close to the villa, especially the Krombeek. The rivers run from the south, followed the foot of the scarp and finally joined the river Maas. Likely these small rivers followed the course of an old Maas meander. The Krombeek or the Maas itself may have served as a source of water supply tot the inhabitants of the villa. This assumption is stressed by the fact that no wells were discovered during the archaeological research, although they could be present outside the excavation trenches.

The archaeological investigation in Maasbracht has yielded a large and varied number of features and structures during three fieldwork campaigns (fig. 2.2). It concerns hundreds of large and smaller features spread over a terrain of almost one hectare. The traces date to different periods, starting with prehistory and ending with a trench from World War II. The traces mostly date however to the Roman period. It concerns mainly the foundation and post features of a building (partially) built in stone. But remains were also excavated of wooden posts, mortar floors, robber trenches, layers of rubble, ditches, outcropping layers, pits, gravel strips, hearths, a gutter, a lime pit and several indefinable features. Probably dating to Late Roman Times / the Early Middle Ages are, apart from a few finds, also the relatively small structures of dug-in square to rectangular pits that are usually interpreted as sunken hut or *Grubenhaus*. Wells and graves are lacking. An accommodation of a bath complex belonging to the villa is however rather questionable (see below).

Altogether nearly 0.8 hectare was investigated archaeologically. This covers however only a part of the total villa complex which can be presumed to have been much larger, comparable to other villas in the loess area. The real limits of the complex of Maasbracht are thus unknown. For Dutch parallels concerning the size of the agricultural enterprise we therefore have to turn to the investigation of Kerkrade-Holzkuil (Tichelman 2005) and the preliminary published investigations of the villas of Voerendaal-Ten Hove and Bocholtz-Vlengendaal (Braat 1953; Willems 1986; 1987; Kooistra 1996; Goossens 1916; see also Roymans and Habermehl 2011; Habermehl 2011; 2013; Smith 2002; De Groot 2006). From this can be inferred that on either side of the main building were often a series of outbuildings built of stone or a combination of a wood-loam construction on foundation stones. These outbuildings can be lying in a line with each other at the edge of a terrace, as seems to be the case in Vlengendaal. Or, together with the main building, they form a U-shaped layout around an almost open inner yard that can be seen as (walled) garden or courtyard, as has been shown in Voerendaal and Kerkrade.

Analogous to the villas in for instance Belgium, Germany and Northern France, we can also assume that the total layout of the villa was relatively spacious in design, which in extreme cases could run to 12 hectares (Roymans and Habermehl 2011, 85; see also Smith 2002, 144-171). Such a size is definitely out of the question for Maasbracht, as Maasbracht can be placed in the middle category of villas. Apart from the main building and all kinds of outbuildings, the presence of a possible separate bathhouse may also be assumed, together with a pool, a courtyard or garden and an enclosure.

The investigation in Maasbracht was physically restricted because of the possibilities of the terrain. Thus, apart from a few fragmented parts of presumably buildings on possibly the eastern and western side, mainly features were excavated and recognised of the main building. Amongst others, this has as consequence that it is extremely difficult to discover and further analyse the original dimensions of the complex, the presence of ancillary buildings, and aspects of the economic management of the villa (Willems and Van Haaff 1984, 65).

The history of the villa, or rather of the main building, seems at first sight relatively simple (Van Dierendonck *et al.* 1987; Willems and Van Haaff 1984), but on further consideration it has a rather complex, sometimes difficult to unravel chronological sequence. That is mainly caused by the building technique with gravel foundations in which only few – datable – find material has ended up. And a sharp distinction into building phases is therefore often difficult to determine. And this is why for dating we have to rely on relative datings based on cross-cuts of features and structures, by analysing sparsely present find material and in particular by positing a reasoned succession of the building sequence of the complex.

This chapter is composed as follows: in the continuation of this section we will first go into the manner of processing and description of the features. Next in section 2.2.1 follows the general description of individual feature groups, such as walls, foundations, floors, cellar, hearths, entrances to the complex, and the rooms. For easy reference of the descriptions, numbers have been allocated to the different rooms of the stone construction (fig. 2.3). Thus it will be easy to determine which space is referred to in the description of the types of features in the building parts. The arrangement of the numbers was done relatively random. The numbers or codes sometimes consist of a combination of a letter for a building phase and a number for an individual room. In section 2.2.1 we will also – as far as possible – go into the functional arrangement of the rooms. Prior to the stone complex there was possibly a wooden predecessor, the traces of which are discussed in section 2.2.2. Also from prehistoric and post-Roman times are some features present, which have also been presented in that section. And finally in section 2.3 the different building phases and supposed

Figure 2.2 Overview of work trenches, including an All Traces Map

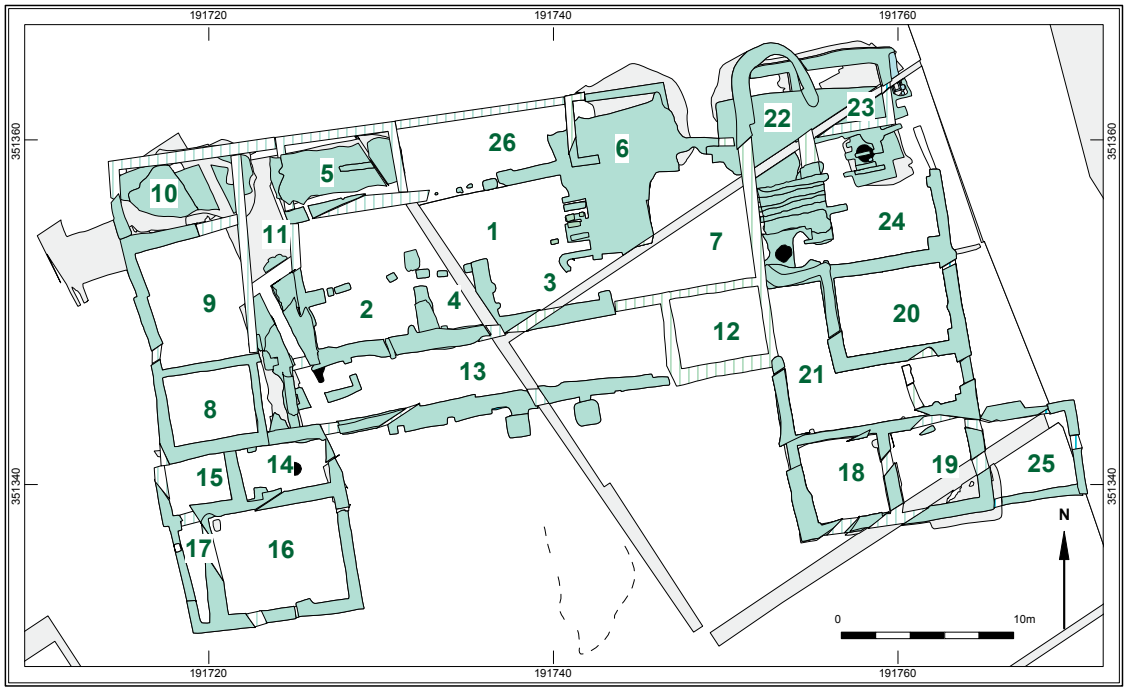

Figure 2.3 Numbering of the rooms in the stone construction; the four black spots represent fireplaces

building sequence of the stone building is reviewed. The final assigning of the villa building remains to different building phases is not dealt with here but in the synthesis provided in chapter 9. There are also allocated the dating and phasing of the building phases on the basis of different find categories, and in addition are described the falling into disuse and demolition and decline of the villa.

2.2 Analysis of the features

With the analysis of the features, the procedure was as follows. Of the trial trenches of 1981 and both excavation campaigns of the Rijksdienst there are more than 60 analogue paper and mm-foil archaeological plans present. Usually the archaeological plans were drawn at a scale of 1:50, while the detailed drawings and profiles were made at a scale of 1:20. Next scans were made of most archaeological plans, and subsequently these scans of the excavation campaigns of 1982 and 1990 were digitised and vectorised by Archol and made available in the GIS program MapInfo. The profiles, trial trenches from the preliminary investigation and the archaeological plans of the cellar have not been made available digitally.

With the description and interpretation of the features, use was made of daily reports and other later added notes of the excavators. Sometimes however this documentation was rather scanty and partially handed down. Other documentation concerning lists, overviews, determinations and correspondence which was made available by the province of Limburg was examined and any useful information was used in the analysis and interpretation. Besides, a series of field photographs have been studied of both the official investigation and the pictures that the amateur archaeologists took and made available for the archaeological analysis. Naturally, contact was made with these amateur archaeologists, members of the Heemkundevereniging Roerstreek (HVR), and information was exchanged about the investigation. Contact was also made with a few of the field team members of those days of the Rijksdienst.

As sometimes three or four different artificial layers had been laid out in some working pits, a choice had to be made when determining the dimensions of the eventual features and the most ideal boundaries were assumed. Inherent here is that therefore at a detailed level undoubtedly information can be lacking but in general all the important features have ended up on the overview drawings.

In view of the available term for the analysis in terms of time and money, not all features could be studied in detail. The project group opted for limiting the investigation to the broad outlines of the history of the villa. The focus was on the phase preceding the building of the villa, the habitation phases of the villa itself, and the period after the complex had been abandoned by the Romans and the evident activities on the terrain in the Early Middle Ages.

2.2.1 Features of the villa

2.2.1.1 Foundations and walls

In Maasbracht at the time of the excavation, nearly all original walls of the villa were no longer present. The most important cause was that the stones were hacked out and re-used after the Roman period.[1] Apart from the hacked traces which have affected the findspot, also the (sub)recent activities of a plough can be blamed for the condition of the findspot. After all, the Roman features were not very deep, at most half a metre below ground level, and hence the archaeological heritage was extremely vulnerable to soil interferences of an agricultural nature. Ploughing activities over the centuries thus hit and disturbed many of the original Roman masonry remains which ended up spread out at the surface. This rubble layer of gravel, roof tiles, mortar and rubble is present all over the site and has a thickness of minimally 20-40 cm (fig. 2.4). Not surprising that the findspot has the popularly meaningful toponym of ‘Steenakker’ (Stone Field).

Despite the fact that many of the original walls were lacking, the position of the Roman walls could often be shown based on the surviving foundation trenches. What the above-ground wall constructions would have looked like is not certain. Clearly there must have been a stone construction but to what extent stone was used is not certain. The question is whether we are dealing here with a structure entirely erected from stone or that only a 1 to 1.5 m high plinth in natural stone was constructed and that in reality there is here a so-called stone-plinth construction.

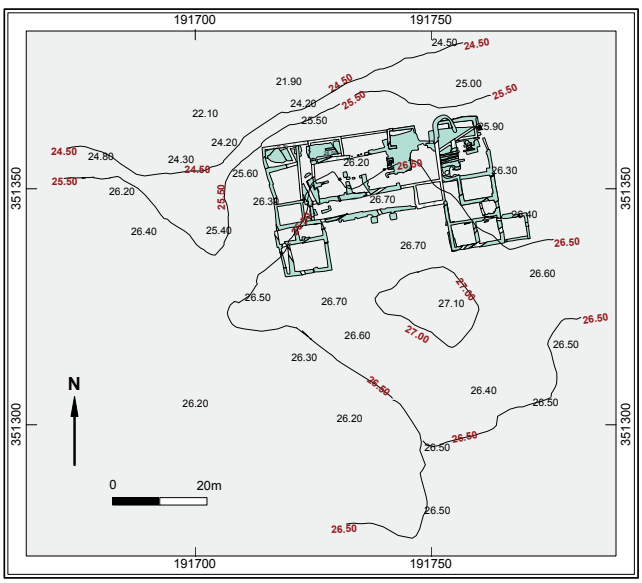

Figure 2.4 NAP elevations of the bottom of the rubble layer

In the discussion on foundations of stone or a stone-plinth construction, not only the building technique plays a role but also and in particular the use of materials. The building technique can be described as follows. First regular ditches or trenches are dug which are subsequently infilled with gravel, rubble, stone or a combination of these, sometimes set in mortar. Thus a solid and wide foundation is created on to which a wall can be placed that could bear a heavy load. The wall itself has often been removed and the stones re-used, probably in post-Roman times. It is therefore not certain whether the wall was partially or entirely erected of stone, but it is likely that in Maasbracht we are dealing with a stone plinth. Had there been walls completely made of stone, then the quantity of stone found on the site during the excavation should have been many times larger (cf. Lenz 1999, 84).[2]

On top of that stone plinth could have been timber framing, consisting of wooden beams and wattle, coated with loam. Such a construction method would also have been cheaper than a wall completely made of stone but once plastered and painted could have the same aura and effect as a stone wall.[3] Walls entirely and only consisting of timber framing are probably less likely. After all, the stone plinth also served to reduce splash and rainwater damage to the timber frame.

Apart from timber framing, another above-ground construction method is conceivable, namely the application of loam walls. Several techniques are known in the literature with names such as *Stampflehm, pisé de terre*, cob or rammed earth (see Rook 2013, 46-49). In some construction techniques the loam is tamped or rammed down into a mould or framing to build walls on. Loam blocks or mud bricks are formed by hand, dried and then stacked. They thus form a solid wall that could be coated or plastered with loam or lime stucco and then completed with paintwork. Not much would have been left of this kind of loam walls once the villa fell into disuse, except when the loam survived in a burnt condition. Natural influences such as rainwater would have made the loam disappear. What remained after the stone construction had been abandoned would at most have been stone plinths and the foundation material of the walls, whereby the stone plinths could also have disappeared through re-use.

The foundation material of the walls that was left, consisted in Maasbracht usually of rather coarse Meuse gravel but sometimes also of a mix with rubble materials, remains of plaster or rough pieces of natural stone. It is likely that the gravel was quarried in the immediate surroundings.[4] The foundation trenches have a width varying between 50 and 80 cm and in general were dug relative shallow. That is to say that in most cases the gravel still had a thickness of about 40 to 60 cm. The bottom of the gravel foundations – and thus of the foundation trenches – is not the same everywhere (fig. 2.5). In the central part of the main building (rooms 1 to 7) the bottom of the gravel was on average 26.30 m above NAP (Amsterdam ordnance datum). This was also the case in the elongated room 13, but near the entrance to the building at the south side the foundation material was quite high at *c*. 26.60 m above NAP.

The western and eastern wings of the building also yielded different foundation depths, and the north side has clearly deeper foundations than the south side. On the north side or rear of the building the average bottom of the gravel was in the foundation trenches at *c*. 25.65 m above NAP, while on the front or south side of the villa the foundations were no deeper than about 26.20 m above NAP.

The difference in the foundation depth can be explained by taking the natural landscape into consideration (cf. Tichelman 2005, 58-60). The Romans followed the natural relief of the terrain. They apparently felt obliged to dig a deeper foundation along the northern, steep side of the Pleistocene terrace than on the terrace itself that was relatively high

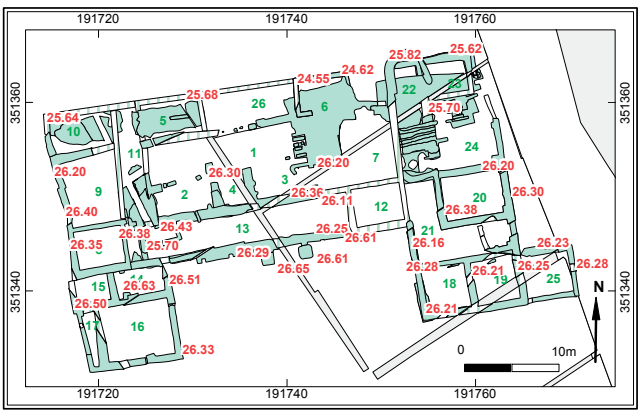

Figure 2.5 NAP elevations of the bottom of the gravel in the foundations

Figure 2.6 Photo from the steep side of the terrace in the direction of the Meuse valley

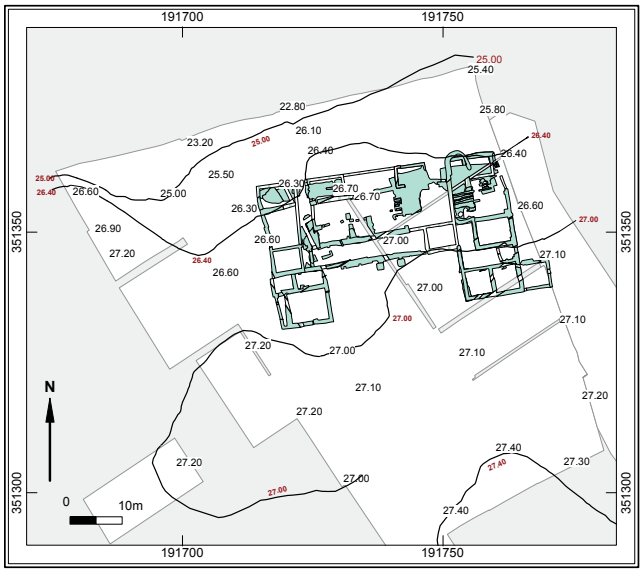

Figure 2.7 Reconstructed NAP elevations of the ground level at the time of the archaeological investigation, based on the vertical sections

(fig. 2.6). The NAP elevations recorded during the excavation of the terrain in Maasbracht confirm the picture of a higher part of the terrain (fig. 2.7).

The depths of the gravel foundations raise the question of how much has really disappeared of the original foundation remains. It would also be nice to know at which level the walls were placed originally and how deep into the ground – or on the contrary at ground level – the walls were. Some people[5] assume that *c*. 60 to 70 cm of the wall construction was buried, while others contend that the wall was sometimes placed almost at ground level and that there therefore need not have been a really deep foundation.

If we assume that living floor was in principle everywhere on the same level and that the walls were therefore founded everywhere equally deep, we could perhaps read something else from these differences in foundation depths. There was clearly a difference in height of *c*. 50 cm between the front (read southern) and rear (read northern) part of the main building (fig. 2.5). The depth of the foundations need not necessarily say something about the above-ground wall construction. It is not certain whether the differences in the depth of the gravel foundations are also manifested in the building itself; in other words it would mean that there could have been such a difference in the occupation level or living floor of those days. This will be discussed in the next section.

And finally there is a last option conceivable to explain the differences in foundation depths, namely that perhaps the construction depths of foundations have to do with the differences in building phases. The thought behind this is that the youngest gravel foundation would be relatively higher than an earlier phase, in particular when we assume that in those days the same foundation trenches were used again and again. The differences in periods would manifest themselves in the presence of several layers of gravel in a foundation feature whereby the 'cleaner' gravel could represent a later extension phase. Unfortunately such a thing is difficult to demonstrate because of the almost total lack of cross-sections of the foundations and the lacking of a distinction in the foundation material.

Remarkable is also that not every supposed foundation trench actually yielded gravel. Apparently it was not always necessary to have gravel as base for wall constructions. One aspect that may have to do with this concerns the wall construction itself because not much has survived really of the stone plinth of the walls. Only at a few places have wall constructions actually been found *in situ*. These provide important information on the problems sketched out above. The western wall in room 13 had, apart from a cellar that will be discussed later, one of the few pieces of wall construction in Maasbracht that have been found *in situ* and has been reasonably well preserved to a certain extent (figs. 2.8, 2.9 and 2.16). These wall remains have a length of *c*. 2 m and a width of nearly 0.3 m. They consisted of neat masonry with regularly placed sandstones. Plastering was found on the wall but paintings were lacking. Between the stones was infilling of mortar, stone and some (broken) roof tiles. And the northern bottom of the wall was an extra wide projection of mortar which gave the wall a wider base. By means of this mortar layer, the wall was placed straight onto the gravel foundation. That gravel had a thickness of only 20 cm (base at 25.70 m above NAP).

When we assume that the placing of this wall can be seen as typical of other wall parts that have disappeared then we can infer that also other stone walls were placed directly on

Figure 2.8 Remains of walls and floors between rooms 11 and 13

the gravel, even if we do no longer have any indications for that. There are few examples of a footing course (Dutch: *vleilaag*) of for instance a sorted stone layer which could have been placed between the gravel and the actual above-ground wall. That is the case with a number of foundations, for instance in Kerkrade (Tichelman 2005, 54, 60-61) and Lemiers (Braat 1934, 18-28).

On the mentioned piece of wall in room 13, also a masonry joint is visible from which can be inferred that the stone wall was built against an earlier building phase, the stones of which are perpendicular to the wall of room 13. Remarkably, that older wall from the earlier building phase was placed 'cold' onto the firm soil (bottom at 25.80 m above NAP). There is no trace whatsoever of a dug-in foundation, let

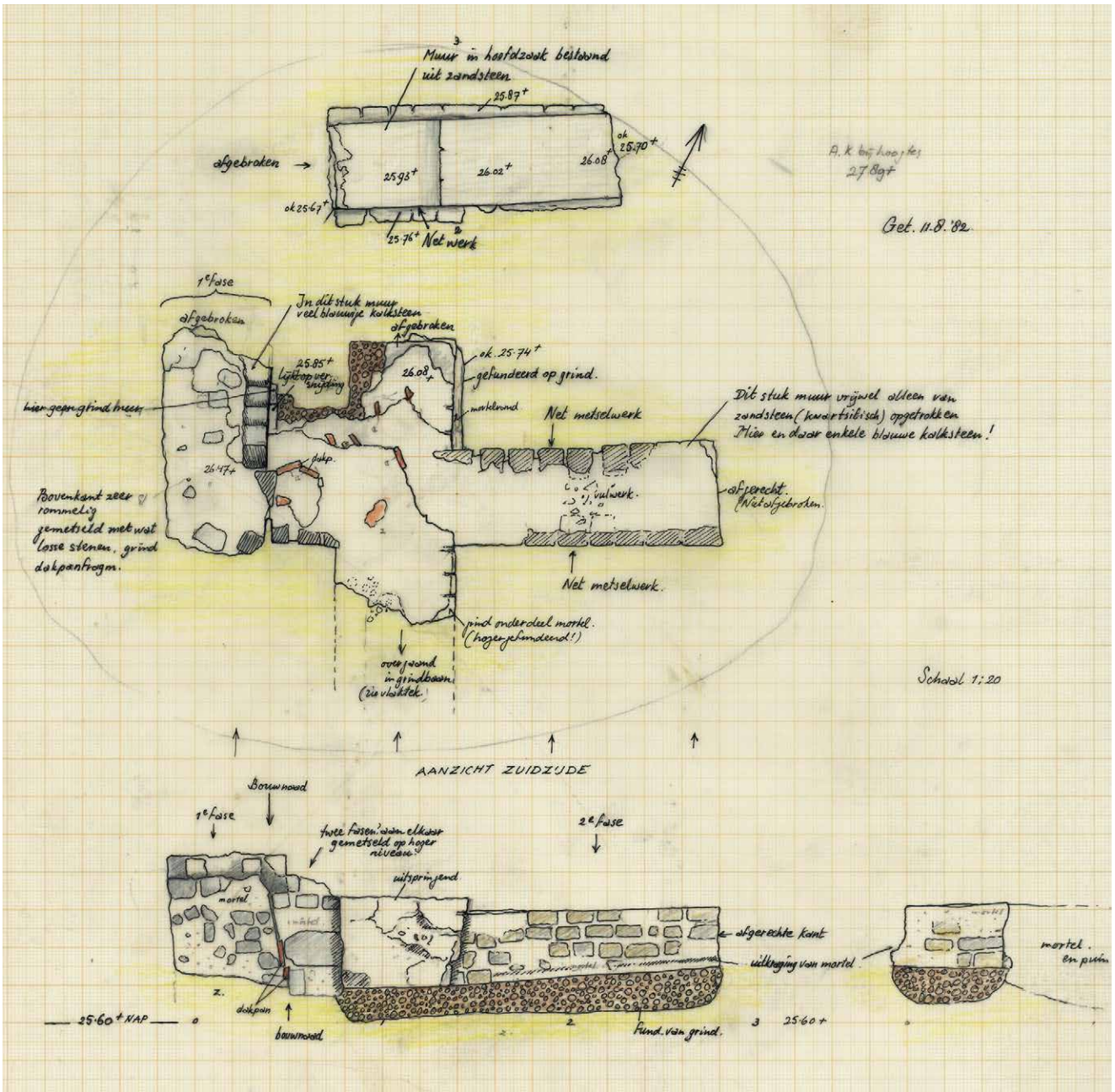

Figure 2.9 Cross section and surface drawing of the wall on the boundary between rooms 11 and 13

alone one filled with gravel (fig. 2.9). From this we can deduce that in early building phases, walls without gravel foundations – sometimes – sufficed. Together with the earlier mentioned constructions of *Stampflehm* it forms a difficult problem for archaeologists to discover non-founded, 'disappeared' walls and to reconstruct the exact building history of the villa. There is a suspicion that not only construction-technical differences play a role here but also that the occurrence of gravel was a question of dating. The earliest dated wall remains of the villa were not founded with gravel, whereas the later dated wall construction did have a gravel base.

Also, apart from gravel as foundation material, coarse pieces of natural stone also occur quite regularly. These boulders are always grouped together and have been found on the gravel layers. However, they have hardly ever anything to do with the wall construction above them as in almost all cases there is a relationship with the remains of floors above them (see next section). There are however exceptions and in those spots the boulders on gravel layers do have something to do with the walls. We refer here for instance to the northern and southern walls of room 13. There the gravel manifested itself at 26.65 m above NAP, but at a depth of 26.25 m above NAP a new foundation layer appeared with a length of 4.5 m (fig. 2.10). We are probably dealing here with two successive building phases, although that cannot really be proven as no cross-sections were made. The oldest phase consisted of gravel, after which in the second building phase stone and 'clean' gravel was dumped as filling on the old foundation (cf. Tichelman 2005, 54). The gravel was not really clean but mixed with all kinds of small pieces mixed building rubble. In the new building phase, the traces of the old foundation trench were thus utilised to build at almost the same spot a new wall (see further section 2.3.3).

A last phenomenon that should be discussed here concerns the many angular projections that are attached to the linear foundation trenches. Sometimes we are dealing with relatively small square or rectangular pockets filled with gravel measuring 25 × 25 cm, for instance in rooms 14 and 16. But another time there were fairly large jutting-out parts of more than 50 × 50 cm, such as in the southeastern corners of rooms 20 and 24. That these jutting-out parts have known an architectural function goes without saying but which one exactly is often unclear. In a general sense they probably are buttress-like constructions of pillars, columns or pilasters that could have taken over part of the load-bearing function of the wall and thus creating the possibility of more openness in the architecture at other places. That such architectural elements were used in Maasbracht has been shown by separate finds of column drums and other architectural elements.

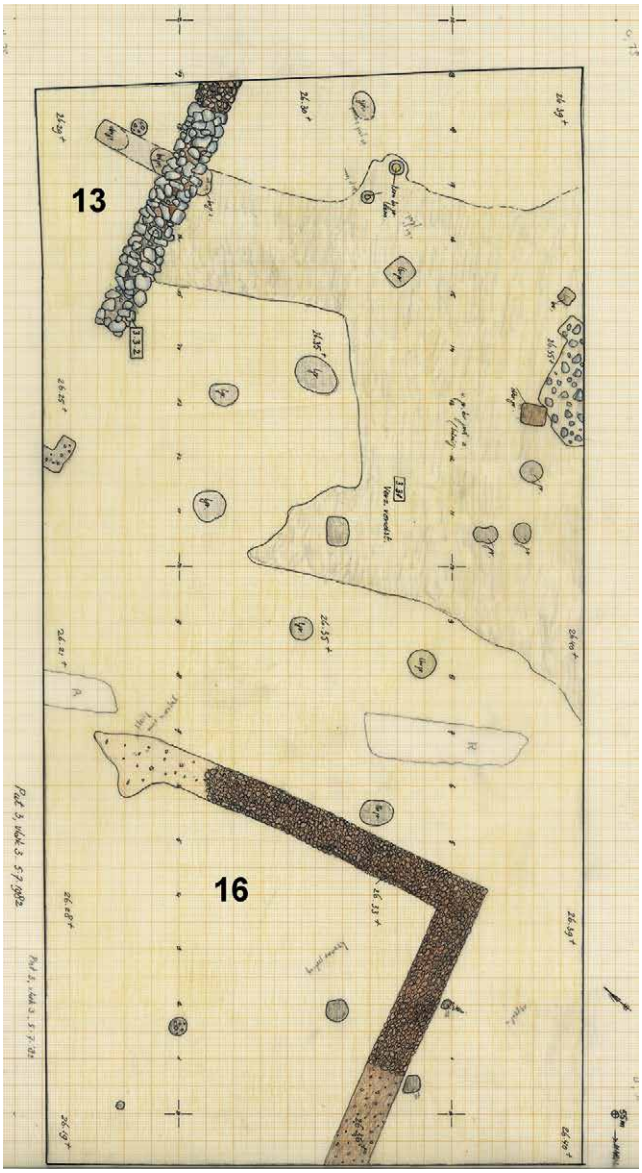

Figure 2.10 Field drawing of wall foundation with pieces of natural stone in the southern wall of room 13, which reappeared from under a filling of 'clean' gravel

On the other hand it is conceivable that in the case of cut off gravel traces higher up there were also already cut-off walls. That could have happened on purpose, especially if passages or door openings were involved. Something similar very much seems to have been the case between rooms 3 and 7 (see also below).

2.2.1.2 Floors and ground levels

Relatively little has been recovered of floors in the main building during the excavation. Probably most rooms had

a simple packed-down loam floor, of which little has remained. Apart from the loam floors, in a small dozen of places demonstrable remains have been found *in situ* of floors made of mortar. The floor remains (*opus caementicium*) were in rooms 5, 10, 11, 19, 23 and possibly 22/24. It is noticeable that these floors are traceable in particular in the northern half of the villa, whereas in the southern part only one room (19) was recovered with a mortar floor. The floors were hardly ever completely intact in each room but sometimes large contiguous parts could still be documented (11, 19, and 24). The mortar floors consisted every time of a 10-30 cm thick layer of cement mortar that had been smoothed and had formed a solid surface. In addition the floors were always resting on a foundation of gravel and natural stone boulders that again were set in mortar (cf. Vitruvius *De Architectura* VII.1.3-7). The other floor parts of the rooms mentioned above were either hacked away or otherwise disturbed by post-Roman soil development.

An important question for the reconstruction of the villa and its occupation history concerns the height of the original Roman living floor level. On the basis of the retrieved foundations and the occasional wall remains, this can be determined a little by means of the NAP heights. Also the position of the floors, and in particular the thickness of the mortar and rubble layers, provide important information about the development of the then living floor.

When we assume that the floor levels found have been the surfaces of actual ground levels, and there has not been a distinction between so-called sub-floors and upper floors (*suspensura*), as in the *hypocaustum* system (see below), then the ground level in the villa can be determined by means of the NAP heights (fig. 2.11). What is noticeable is the difference in height of the floors on the northern and southern sides of the villa. For the rooms in the rear part of the villa, the northern half, the level can be determined at

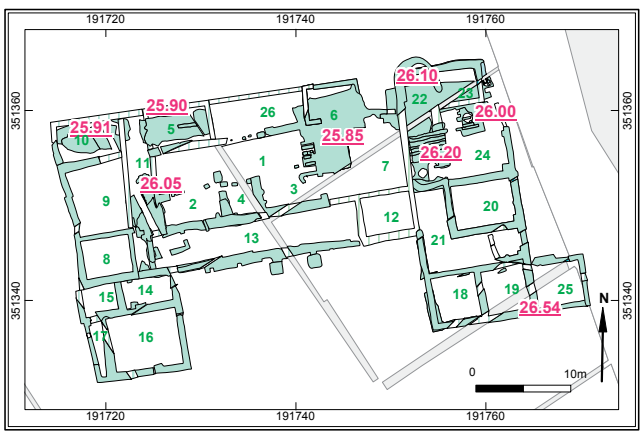

Figure 2.11 NAP elevations of the bases of the observed floors

between 25.90 and 26.25 m, whereas that on the southern side in room 19, would have been maximally 60 cm higher at 26.54 m. The mortar remains of the floor in the latter room 19 were almost entirely found within the foundation trenches of the room (fig. 2.12). The surface of the room measures about 20 m^2. It is the only room with a demonstrable mortar floor that was at the front (south side) of the building. We cannot determine with certainty whether there has been a difference in levels everywhere between floors of the northern and southern half of the villa. Such a difference in floor level does not necessarily say something about a difference in ground level as the Romans could have 'played with' raised or indeed with lowered floors in the villa.

It is also possible that the floor levels found had not always been ground levels but had sometimes been part of the *hypocaustum* system. Find material of such a system, such as fragments of *tubuli* and *bessali*, have been found amongst others in rooms 10 and 11, as can be seen from remarks written on the field drawings (see further chapter 4.2.3). It is conceivable that in the northern half of the villa only sub-floors were retrieved and all suspended floors have disappeared in the course of time due to post-Roman soil development. The differences in floor heights (*c*. 50-60 cm) that were established during the excavations between the northern and southern halves of the villa, could have to do with the difference in height between the sub-floor and suspended floor, which were usually two feet apart (Vitruvius *De Architectura* V.10.1-2). The height of the mortar floor in room 19 remains a problem because if this concerns also a sub-floor, then the *suspensura* was also higher here. Perhaps this room had its own *hypocaustum* or the room was heated in another way, for instance with a hearth (cf. Smith 2002, 23-29).

And finally, the floor level in room 6 is remarkable with a height of 25.85 m (see fig. 2.11). The cellar was located here (see hereafter). However, this height is not the level of the cellar floor which was *c*. 1.5 m lower. It concerns here a level that can be recognised on the third excavation level as a covered-over layer with many stones. This paved stone layer can be interpreted as probable levelling of a floor level lying above it after the cellar fell into disuse. On the excavation levels 1 and 2 located above it (*c*. 26.10 m above NAP) much stone, mortar, rubble and roof tiles were found, comparable to the rubble found in the eastern rooms.

2.2.1.3 Traces of a bathhouse

Another remarkable, intact piece of mortar work was found in the western part of room 24 (figs. 2.13 and 2.14). It had a thickness of 10-20 cm, and measured about 3.5 × 2.5 m. The mortar consisted of alternating bands of white mortar and grey-brown gravel-containing loam. Evidently between

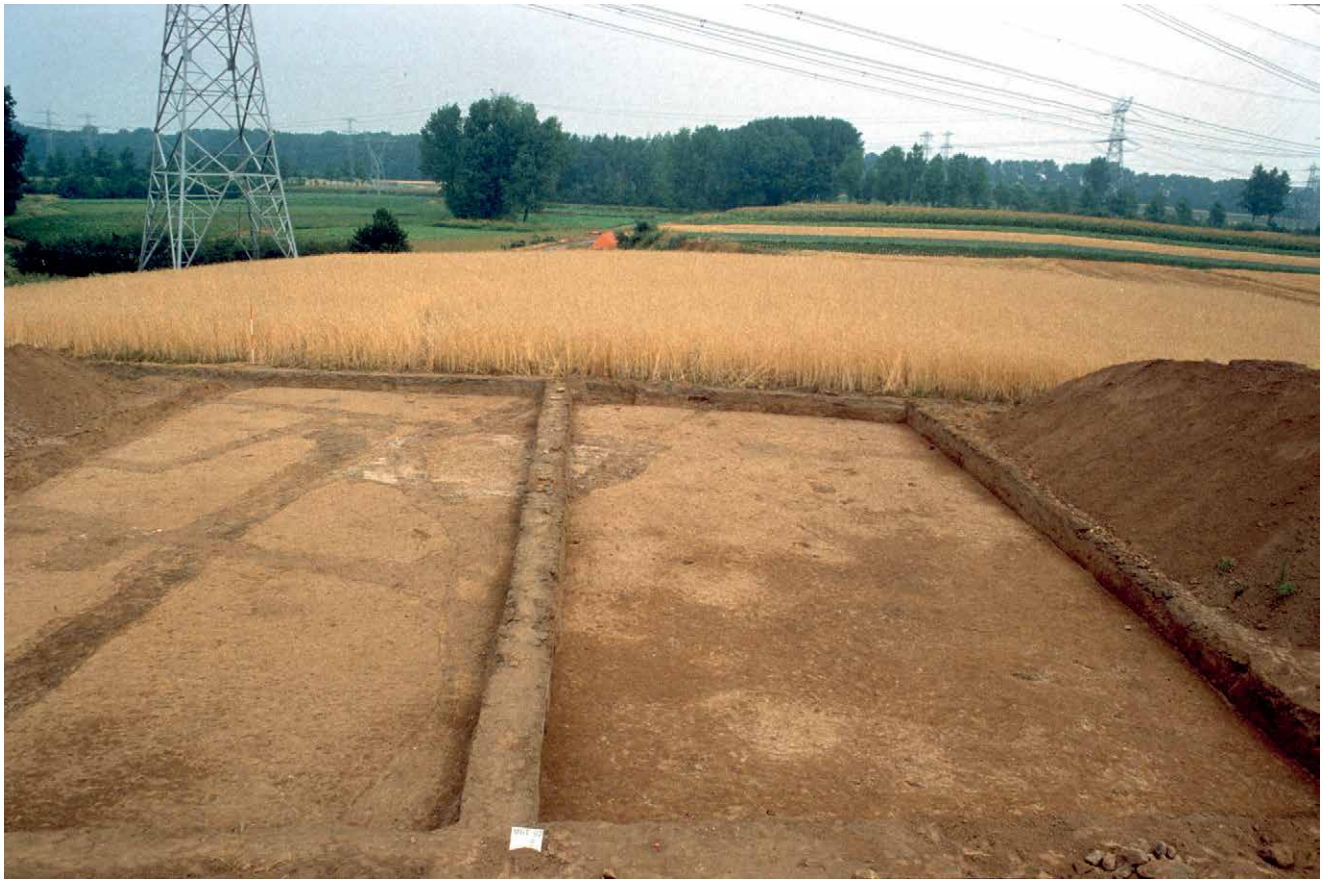

Figure 2.12 View from the west of the south-eastern corner of the villa, with the mortar floor of room 19 visible in white in the background

the bands there is beautifully painted plaster work. Underneath was a foundation of boulders, at least, that is what has been recorded on the field drawing, unfortunately the real drawings and any photos are lacking. We can infer from this that it concerns a rather sizeable foundation. It is not certain whether we are dealing here with an originally founded floor remnant, or that it is a fallen over, plastered and painted wall, or perhaps a ceiling?

On the eastern side the mortar seems to overlie the remnants of a foundation trench, but it is also conceivable that is was contemporary. Just south of the mortar traces is a feature with a concentrated quantity of roof tiles, burnt loam and charcoal. This has probably been a hearth or fireplace. A few metres east in room 24 was a second trace of a gravel foundation (*c*. 3 × 3 m), also with a concentrated, oval-shaped trace of burnt sand and a couple of elongated narrow charcoal material. Just north from here at the easternmost edge of room 23 has a (waste) drain been excavated (fig. 2.15). In de room next to it, in room 22, another sizeable foundation of 50 × 75 cm was found.

In view of the presence of two potential fireplaces together with a special flooring and the proximity of a gutter in a relatively large space, it is possible to believe a function as kitchen, as the excavators of those days supposed. However, it is also conceivable and more probable that we are dealing here with a built-in bathhouse (see also chapter 4.3). This bath complex (11 × 8 m) probably consisted of the rooms 22, 23 and 24. It is therefore interesting to see whether we can possibly find out the functional use of the different spaces, in accordance with the usual layout of bathhouses. The principle of Roman baths is based on the alternation of cold and hot baths in different spaces. Apart from the rooms for cold water (*frigidarium*) and tepid/hot water (*tepidarium*/*caldarium*) with different splash baths, there could have been a separate dressing room (*apodyterium*) present. In any case there would have been a heating room (*praefurnium*), from where both the floors and the walls were heated with hot air. From this *praefurnium* a boiler could also have been heated so that hot and cold water could be used which were supplied via water pipes.

Figure 2.13 Shot from the east with a view of the mortar remains in room 24

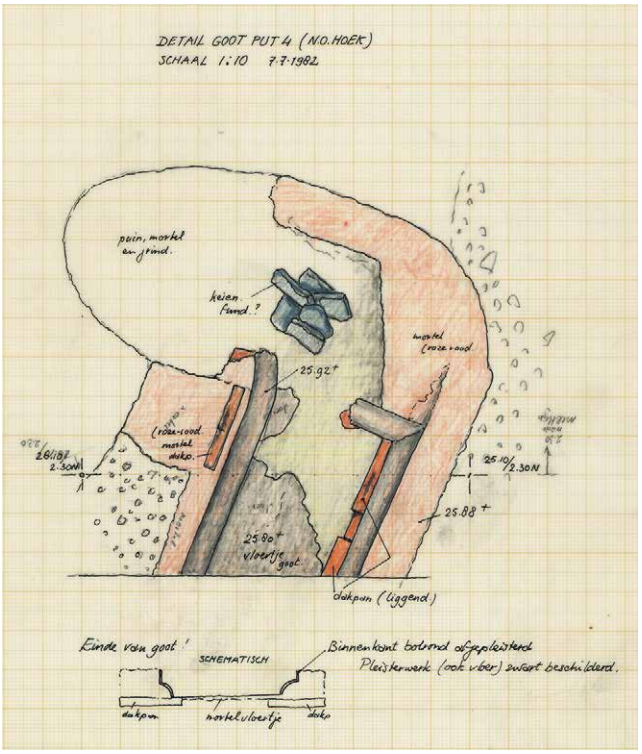

Figure 2.15 Remains of the (waste) drain in the north-eastern part of the villa

Figure 2.14 The mortar remains at close view and the cross-cut of the foundation of a wall; view from the north

In Roman villas, the baths could have been located in house, as is the case in the Netherlands in for instance Hoogeloon (Slofstra 1982), Mook, Vaasrade (Braat 1934) and Vlengendaal (Goossens 1916). But baths could also have been added to the core building or as separate building, as evidenced by examples from Kerkrade (Tichelman 2005), Voerendaal (Braat 1953; Willems 1986), Lemiers (Braat 1934) and Valkenburg-Ravensbos (Goossens *et al*. 1908; Remouchamps 1925; see also Derks 2011).

To determine with certainty whether Maasbracht also had an in-house bathhouse, we should first say something about the presence or absence of *hypocausta*, the hot-air heating system. In many publications on villas, the term *hypocaustum* is easily used and is associated with the presence of stone floors. Whether there really was a floor and wall heating system in some rooms in Maasbracht, as we know it from for instance the large villa of Mook-Plasmolen or other villas in the Limburg loess area, remains to be seen. A number of arguments for and against are summed up below.

Firstly, a considerable quantity of material was found on the terrain that points to the characteristic *pilae* of square or round brick tiles (*bessali*). However, almost nowhere were the pillars demonstrably found *in situ*, with the exception of a few notes on the field drawings as in room 11. Secondly, in the absence of material on the spot itself, nowhere are there imprints of load-bearing floor columns (*pilae*) present, as we know from for instance Kerkrade (Tichelman 2005, 78, ill. 5.2.29) or Smeermaas (Pauwels and Creemers 2006, 65, fig. 17). Thirdly, grime or soot on the floors is mainly lacking which could be expected with an underground heating system, certainly near the heating place(s?). Nevertheless we should say also that when the floors are not intact, grime and soot need not necessarily be expected everywhere.

In addition, also of great importance in determining *hypocausta* is the following. If the now recognized mortar floors did belong to the hot-air heating system, this would mean that the floors would in fact all have been sub-floors (*areae*). Then above them there must have been a so-called *suspensura* at about two feet – so *c*. 50-60 cm –, resting upon the *pilae*. That would mean that all upper floors would have disappeared in the course of time, for instance because the villa was used as quarry after Roman times or due to other development of the soil. This is difficult to prove, but it is also suggested with other villas, for instance in Mook (Braat 1934, 4). It is however the case in Maasbracht that almost all the 'loose' *hypocaustum* material is lacking. And we may add that perhaps more stone material should have been present in the recent top layer of the terrain, and that does not seem the case. There is nevertheless a considerable quantity of material present in the form of colluvium at the foot of the slope. This has not been investigated properly everywhere. What we can conclude from one of the profiles is that a layer of between 40 and 150 cm of coarse rubble material from Roman times has moved or slipped down the slope. It is by the way unclear when exactly this happened. In view of the large number of roof tile fragments and other demolition rubble, together with the lack of slaughter and other characteristic settlement waste, a post-Roman time is the most probable.

Based on the above arguments, it is likely that we are dealing with a *hypocaustum* in the northeastern rooms 22, 23 and 24 of the villa. The combination of relatively thick, intact floors concentrated in a specific zone, the presence of one or more fires spots / firing places (*praefurnium*?) and a gutter on the eastern side of the villa underpin this assumption.

If this is taken as true and a search is made for the precise functional division of the rooms of the potential bathhouse, it proves to be a considerable challenge, the more so as almost all the construction material has disappeared. It is not inconceivable that in view of the position of the fire spot / firing places, this *praefurnium* would have been located in the farthest southwestern corner of room 24. But this is not certain, also because the *praefurnium* often had its own relatively small, walled space with a firing tunnel, for which it is difficult to make a reasonable case in Maasbracht.[6]

Adjoining, in room 22, there could possibly have been a *caldarium*, part of which would have been the earlier described foundation (or toppled-over wall?) of 3.5 × 2.5 m in room 24. Possibly this sizeable foundation could have been the spot for a hot-water boiler, which could have been placed on a slightly higher level, but we herewith would lapse into speculation. Perhaps this room ran into room 22 and concerns functionally one and the same hot-water space. An indication of this is the drawn semi-circular, hacked-out wall of room 22, which likely are the remains of a semi-circular *exedra*. In such absidial rooms there would normally be a splash bath or basin/reservoir. A semi-circular recess or absis does however regularly appear in the *frigidarium* (cf. Tichelman 2005, 83 for Kerkrade) which functioned as splash bath. But an absidial shape can also be found in the *caldarium* (cf. Braat 1934: Lemiers: Mook; Braat 1953: Voerendaal; Goossens 1916: Vlengendaal) and could have served as reservoir. The remaining part of room 24 could then have been used as *apodyterium*/*frigidarium*, while in the not yet described room 23 there was possibly a *tepidarium*.

And finally, in the farthest northeast corner of the villa there was the conspicuous trace of a gutter. The remains of it were found just on the outside or edge of room 23 and concern the partly intact parts of a drain or sewer (fig. 2.15). The gutter was made of horizontally lying roof tiles on which a daubed mortar floor was lying on a foundation of gravel, rubble and mortar. The transition from the floor to the raised, pink-coloured mortar edges of the gutter was convex,

plastered and smoothly daubed on the inside. Remarkable was the fact that both the edges and the floor of the gutter were black, probably due to deposits. The fall of the gutter has remained unknown as too few height measurements were taken on the spot. We can assume that the gutter flowed down to the north, that is in the direction of the steep edge. The length and width of the gutter measured about 2.25 × 0.60 m. Functionally the gutter can be ascribed to the in-house bathhouse and will not only have been used for the usual drainage of the bathhouse water but could at the same time have served as latrine.

However, whether there was there (also) a latrine is not certain, the more so as on the transition from trench 4 to trench 5, was a deep pit in the southern half of room 22 which can be interpreted as latrine. At a deeper level, the feature consisted of a square, timber-faced box inside of which a 60 cm thick layer of phosphate-rich soil (faeces?) was found. The bottom of the latrine was at 24.55 m above NAP, so well under 150 cm under the supposed occupation level or living floor. In the highest infills mainly a lot of coarse rubble, mortar and floor or muddy brown soil was found from which can be inferred that the latrine would have become closed up. On all four corners just outside the actual hole in the ground were post holes found which probably played a role in an above-ground well head (cf. Heirbaut 2010). The connection of the privy to the drainage system has remained undetermined. Also the date has remained unknown and hence the possible simultaneousness of the bath rooms. We also do not know from where the bath complex got its water, as no gutter or ditches have been recognized which could have had this function.

2.2.1.4 Porticus, corridors, entrances and door connections

Room 13 is the place where there was an arcade or *porticus*, analogous to reconstructions of many other villas. This room has a length of over 21 m and a width of about 3 to 3.5 m. The northern foundation of the room would have supported a partitioning wall between the core construction (1, 2, 3, and 4) and room 13. On the southern side of the room, columns probably adorned the façade of the villa. Thus an open gallery or vestibule was created with perhaps a parapet or balustrade with pillars as has been suggested in many three-dimensional reconstructions of villas (Tichelman 2005, 90-92; cf. also Braat 1934, 53; De Leeuw 1989; Birkenhagen 2011, fig. 6).

On the western side of room 13 was the earlier described wall behind which another small room of *c*. 1.50 × 4 m can be reconstructed. It is not clear whether this room can be added to the porticus (13) or that there was a separate room here. There probably was a passage to room 11 that can be interpreted as corridor or gallery. It is conceivable that this elongated room of *c*. 2.5 by over 10 m was in fact made into a continuation of the porticus.

Room 12 has been reconstructed on the eastern side of the porticus and measures about 4 × 5 m. Not a single foundation has been retrieved of this room. The location is only based on the symmetry of the entire structure, whereby room 12 was the counterpart of the room with number 8. It is however possible that the porticus has been even longer and continued a few metres in an easterly direction.

For the use of the materials of the pillars, we can think of wooden supports or columns that were partly executed in stone. Little has remained of both materials, but we can assume that it concerned here (partly) stone column drums. Several building fragments of these were in fact found on the excavation terrain. The foundations of these pillars in the shape of staddle stones and foundation stones have not been found separately but they were incorporated in their entirety in the foundation. Hence it is not possible to make a reconstruction of the distance between the supposed pillars. It is clear though that through the use of boulders in this part of the *c*. 1 m wide foundation, there must have been in that spot a sizeable, solid construction (see figs. 2.10 and 2.16). Several projections of the foundations were recorded on the field drawings which could have to do with buttresses or possibly half pillars on that spot. And that would point to a monumental façade of the building.

That is reinforced by an impressive foundation for an exactly centrally located entrance to the building (fig. 2.17). The foundations had apart from mortar and soil also

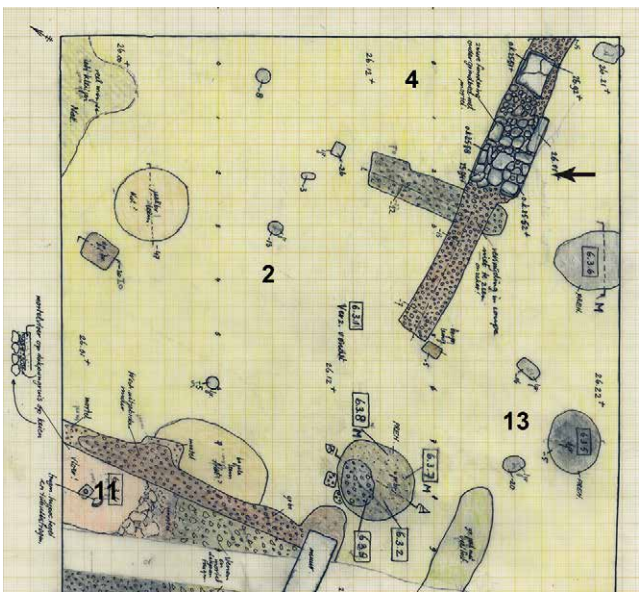

Figure 2.16 Western foundation stones, indicated by an arrow, of the older entrance to the villa at the transition of rooms 4 and 13

fragments of *hypocaustum* tiles and plasterwork. It is likely that we are dealing here with secondarily used rubble that was once used primarily as building material. The two square foundations project *c*. 30 cm from the wall and both measure nearly 1.5 × 1.5 m. The heart-to-heart distance between these risalits is 4 m. This compares well with the entrance section of other villa complexes such as Kerkrade-Holzkuil and Bocholtz-Vlengendaal. It is possible to imagine that there would have been here an impressive entrance to the building, possibly with (three-quarters?) pillars and capitals that perhaps would have supported a triangular fronton.

As with many other villas, other entrances and passageways are difficult to demonstrate as the level at which door connections should be visible has not survived (cf. Smith 2002, 14). However, on the basis of the gravel foundations which have been abruptly interrupted in some places or where in fact projections have been found, it is possible to assume openings in the wall constructions. Examples of these are for instance the transition from room 20 to room 24 in the southwestern corner, that from 13 to 2 in the northwestern corner, that from 3 to 7 in the east, and that from 13 to 7 in the southwestern corner. Possibly also in the farthest northeastern corner of room 24 can an opening (side entrance) be assumed as the foundation there shows a straight and abrupt interruption.

There are no convincing proofs of more door openings, except one, namely that of another entrance in the sidewall of room 13 on an axis with room 4. The exact layout and building history will be discussed in one of the following sections but we can say here that there are still remains visible of the entrance of that time just west of the monumental entrance section (figs. 2.10, 2.17). A concentration of boulders was found there over a distance of about 4.5 m. This is the former entrance of the earlier building phase that was closed up later to be able to make a new foundation for the extension of the porticus in the last building phase. From this follows that the central width axis of the villa was moved close on five metres to the east in the extension of the complex.

When we continue this line of argument, there is another comment to make. It is noticeable that the foundations of the supposed entrance do not project but were integrated in the course of the wall as in some other villas (cf. Bocholtz-Vlengendaal: Van Es 1981, 146, fig.104; Kerkrade: Tichelman 2005, 70, ill. 5.2.21). It could be argued now that apparently there was not necessarily a projecting monumental staircase that was ascended in the direction of the porticus, and that could say something about the relation between the height of the ground level and the living floor within the porticus.

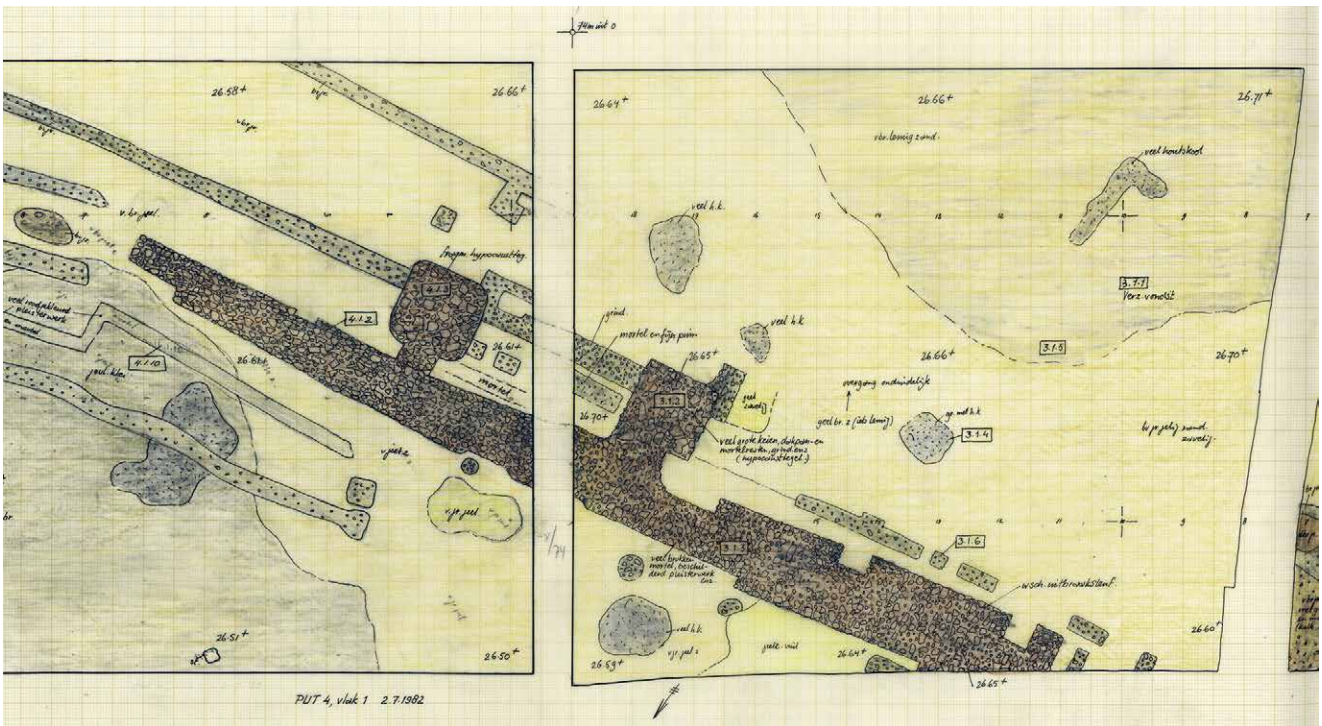

Figure 2.17 Impressive foundations of the entrance to the villa

Other elongated rooms can be interpreted as corridor. This applies in any case to rooms 11 and 21, but possibly also to room 7. Corridor 11 (12 × 2.30 m) had a mortar floor, whereas corridor 21 had a floor laid out in a straight angle around room 20. Corridor or room 7 could have been a transition space of the core construction (1, 2, 3, 4) to the cellar (6), which was also constructed in a straight angle, but too few traces remain of this room to be certain. There does seem to be a door opening with a width of *c*. 1.80 m present at the transition from room 3 to 7, where projections of gravel foundations are present on either side.

And finally, hypothetical is the presence of a room or corridor (26) between rooms 5 and 6. Although in earlier reconstructions of Maasbracht the walls of this were invariably recorded, nothing has in fact been found: no break-out trench, no rubble and not a single trace of a foundation or foundation trench. The sole reason behind the suggestion of a room or corridor there is the regularly occurring room in that spot in other Roman villas. Such a corridor is then seen as counterpart of the porticus at the front. The space does not function as an opened-up gallery but as a closed corridor possibly with windows for a view. In the case of Maasbracht, this is an overriding, additional argument as a view could be had of the Meuse valley from this potential room. Function-wise little tangible can be said about it. Braat (1934, 30) gave this space in the villa of Vaasrade the function of a cow shed (cf. Vitruvius *De Architectura* VI.6.2; Columella *De re rustica* 1.6.8), but whether this was also the case in Maasbracht should be severely doubted. Smith (2002, 41-42, 45, 82-83) anyway doubts the function of housing livestock in this kind of villa, but does point to the possibility of a room in which activities took place for the purpose of agrarian production that had to be done indoors.

2.2.1.5 Corner pavilions and other rooms

On the western and eastern side in relation to the front of the façade project outward two sizeable building blocks in a southerly direction. Such building elements of projecting corner pavilions (German: *Eckrisalit;* Swoboda 1918; Oelmann 1921; 1928) are characteristic of many villas, both in the Limburg and adjoining loess areas and in the German, Swiss, French and English Roman provinces (cf. Jones and Mattingly 2007, 240-250; Heimberg 2002/3; Smith 2002). Together with the porticus and the core construction lying behind it, they form the basis of villa architecture. The reconstruction of this type of villa is usually represented as a tall core construction topped by a saddle roof on the short ends and in the long side a row of windows to let daylight in. The porticus was located in front of it as an open gallery with on either side projecting, robust corner pavilions that tower above the porticus and would have had minimally one more storey.

The Maasbracht corner towers have an almost square ground plan measuring 10 × 10 m. Based on the gravel foundations found, the towers were divided at floor level into a number of rooms. Corner pavilion west consists of four rooms (14, 15, 16, 17), of which 16 covers nearly the entire front or south side. The most westerly room 17 was rather small and elongated and would, in view of the very small quantity of gravel in the foundation, have supported a light wall. The measurements of 5.80 × (maximally) 1.40 m in a narrow space would assume a staircase to a higher floor in the corner tower. It is unclear from which room the staircase could be approached on the ground floor. Of the two rooms in the back (14, 15) room 15 had the smallest surface of about 3 × 3.5 m. The function of both these rooms has remained unclear. This applies in fact also to the large room 16.

Corner pavilion east consists of two almost equally large rooms (18, 19) of *c*. 4.5 × 4.5 m at the front of the villa, whereas at the back of the tower ran part of corridor 21. The only room with a true stone floor is room 19 (fig. 2.12). The symmetrical counterpart in the western pavilion (room 16) has not yielded stone floor remains. In room 19 a foundation of rubble and mortar and a floor remnant lying on top of it did emerge. In that sense it could have been an important room and it would fit if this was possibly the dining room of the master of the villa, which can be denoted with the Latin name of *triclinium*.

Naturally we only know something about the rooms on the ground floor and almost nothing sensible can be said about the rooms of the supposed storeys. Only on the basis of the foundation trenches can we assume that walls with a considerable weight would have rested on them, so possibly of one or more higher floors.

All other not yet discussed rooms are difficult to interpret functionally. Of the rooms of which mortar floors were found in the back part of the villa (5, 10, 22, 23), we may assume in theory that they concerned studies, bedrooms and one or more living rooms of the occupants. However, as this villa is not necessarily ranged among the luxury type of *villa urbana* (cf. Roymans and Habermehl 2011, 85-87; see also Columella *De re rustica* 1.6.1), and we could possibly be dealing here with an operational farm, we should not exclude the stabling of cattle in one or more rooms. This can however nowhere be demonstrated and remains a guess, also because we know nigh on nothing about the other buildings of the villa complex and thus the precise economic basis for existence has remained unknown. Apart from the stabling of cattle, we can expect more general business-like, equipped rooms involved for instance with food preparation. We can think of both own, domestic use and also economic production for the market. However, once again we do not know what the economic basis was of the villa in Maasbracht.

Based on the general layout of a villa, we can interpret the core room. This is often characterized as hall, open kitchen or reception area of the master of the house. It concerns rooms 1, 2, 3 and 4 together. It is not entirely certain whether there was originally one large room of *c*. 7.5 × 17 m. What are noticeable in the interior are the remains of several foundations of dividing walls between the individual rooms. The simultaneousness of the foundations – and with them the rising wall constructions – cannot be demonstrated. In the northeastern corner of room 3, against the inner wall of room 6, a number of remarkable features were recognized of six rather short east-west orientated strips of about 0.40 × 1.30 m (see fig. 2.3). It concerns here probably the remains of a staircase to a floor or room above the cellar and cellar stairs. It is conceivable that the staircase was originally wedged between two walls; the eastern wall of room 6 and a no longer surviving unfounded inner wall on the western side of the traces of the stairs.

Together with the in-house bathhouse, the eastern side of the villa can also be interpreted as the residential part of the building. Here was the only room at the front (19) with a mortar floor, and we are possibly dealing here with an important room. In advance of the chapter on wall paintings we can mention that figure paintings were found in this eastern part, which endorse the assumption of an important residence.

The discussion about several 'apartments' and households, and the exact distinction in habitation parts for the master of the villa and those of his servants or slaves (cf. Smith 2002; see also Roymans and Zandstra 2011), is only touched on to get a better idea about the occupants of those days. But as nothing concrete can be said about this, further details will be omitted.

And finally, at the farthest east side of the villa against the eastern corner pavilion is a corner risalit present. In first instance this room of about 4.5 × 5 m was thought to be a corridor to a possible bath building. But additional excavation pits on that spot from the 1990s (Stoepker 1991) have shown that we are dealing with a closed-off rectangular room, without a connection in the direction of the bath complex supposed at that time. That is located as described earlier with very high odds in the northeastern corner of the villa, level with rooms 22, 23 and 24.

2.2.1.6 Cellar

One of the most intriguing rooms of the villa of Maasbracht is room no. 6 that has served as storage cellar. The cellar was excavated by the amateur archaeologists of the HVR in 13 contiguous levels in four different quadrants: A, B, C and D. Of this room the walls, floor and entrance have to a certain extent been preserved reasonably well (fig. 2.18). Also the different dump layers that have ended up in the cellar after falling into disuse have yielded well-preserved material. In particular the finds of excellently preserved fragments of painted plasterwork appeal to the imagination.

The cellar space itself has a rectangular ground plan with measurements that covered inside a surface of 3.60 × 5.75 m. The wall construction has been preserved in maximally six layers to a maximum height of 25.20 m above NAP. The wall consisted of rectangular to square stones of 8 × 10 cm set in mortar. The width of the wall measured *c*. 50 cm. On photos (fig. 2.25) in the southwest corner a projecting row of stones is visible on the inside of the preserved wall, so that the foundation looks slightly wider than the actual wall. This was not recorded on the level or profile drawings but is proving to be meaningful for the reconstruction of the cellar room (see below).

The walls themselves have mainly been preserved in the southwestern corner of the cellar and on the northeastern side to a certain extent. In addition some smaller fragments were found of the south and east walls and parts of the wall near the stairs (see figs. 2.19 and 2.21). In all other places the wall construction has been demolished, most probably already in Roman times (see below). Hence information about the wall construction and the foundations has largely been lost and can only be partly recovered based on a number of profiles. For instance, it has been possible to ascertain that the base of the cellar walls was at about 24.62 m above NAP. Based on the drawn north profile (fig. 2.19) of the cellar, we can establish that the walls had been founded on a minimally 6 cm thick mortar layer. No gravel was recorded in the profiles. There are though a number of round brown coloured traces visible in the north profile but it is not clear whether these are stones or pieces of loam. The base of this probable, with stones founded layer was at 24.50 m, while the first stone layer was at 24.62 m above NAP.

The cellar was probably built from the inside, that is the walls were not dug in first but the walls were built from the dug-in cellar pit against the natural ground. The exact height of the cellar has not survived but it is likely that the storage space was man-sized. The deepest excavation level at floor level was at 24.40 m above NAP, while the presumed ceiling of the cellar was at minimally 25.85 m. That makes it possible to reconstruct a height of about 1.50 m. We can assume that we are dealing here with a so-called stair cellar, whereby part of the cellar was dug in and part rose above the then floor level. The original wooden floor above the cellar – so the ceiling of the cellar – was then probably even higher than 25.85 m, also to be able to realise a decent headroom. This obvious logic was also established and recorded in the cellar of the villa of Kerkrade-Holzkuil (Tichelman 2005, 65-67).

Figure 2.18 Field photo of the cellar with a view of the quadrants, excavated by the HVR.

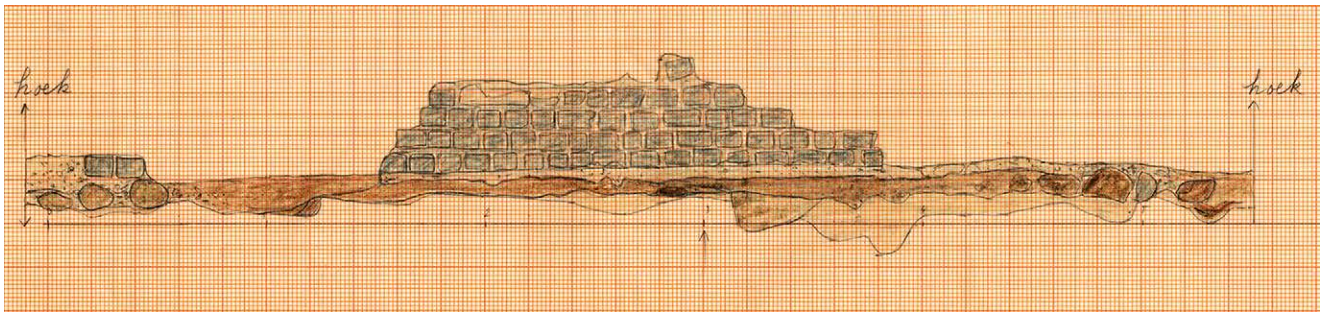

Figure 2.19 North profile of the cellar

Notches in the walls for wooden floor or ceiling beams were not found, in contrast to Kerkrade-Holzkuil. There are notches of 20 × 20 cm though in the outside of both the north and south wall of the cellar (fig. 2.20). Probably vertically placed wooden beams had been placed in them and it is likely that in some way these beams had to do with the cellar construction or the adjacent rooms; their precise function has however remained unknown. Less probable but not entirely to be excluded is that the beams had been used as a kind of masonry profiles. However it seems that for this the notches are too irregular in number, position and form in relation to the cellar walls.

The cellar could be reached from the south side via fixed wooden stairs (fig. 2.20). A few fragments of beams and planks of the stairs have survived and a fragment of about 1 m of the stone wall on the east side has been preserved. The whole stairs including the walls had a width of 1.50 m. The walls had a thickness of about 40 cm thus leaving a width of *c*. 75 cm for the steps. These wooden steps of the stairs seem rather deep (minimally 30 cm) and were placed directly onto the underlying sand. The distance in height between the steps could roughly be determined at 12.5 cm as traces in the ground of this staircase could be followed from the highest to the lowest excavation level. The difference in height was minimally 125 cm, with the highest excavation level (4) at 25.65 m above NAP and the lowest (13) at 24.40 m. Now also the rough length of the stairs could be determined, which from the occupation level to the bottom of the cellar measured about 3 m.

The wooden stair remains were affected by fire and that raises questions about the history of the cellar and its demise. The two lowest steps left behind burnt planks, but burnt wood was also found at the top of the stairs, as well as in the profiles. The underlying sand was coloured purple. Apparently the fire had an influence here as well, which would point to a fire in the cellar. This is endorsed by find material found in the cellar which was sometimes also partly affected by fire. At lower excavation levels for instance were many layers of charcoal found and some pieces of plaster work that had been dumped in the cellar also show traces of burning. In addition a considerable quantity of burnt loam has been found and several separate charred planks have been recovered from the infills of the cellar.

That brings us to the waste layers present in the cellar space which leads us to the conclusion that the storage space was filled up. This fill consists of rubble that consists of roof tiles, loam, mortar and plaster work. From both the levels and the profiles (fig. 2.21) we can see that this consists of at least two layers. The lowest one seems to have been dumped into the cellar from the stairs and among it are mainly burnt material, charred planks, loamy sand, mortar, stucco and roof tile material with a few almost complete specimens. This red brown coloured dump became visible from level 7 onwards (25.20 m above NAP), but was clearly identifiable in levels 9 and 10 (24.75 m above NAP), and viewed from the stairs, the rubble was spread out in the cellar like a fan.

It is unclear from where exactly this material came but it cannot have been from very far away. It is quite conceivable that the remains originate from the room that was originally above the cellar. If this is true, then we can infer that this room was covered with a tiled roof, that the walls were plastered and that the found charred planks perhaps could have been from the ceiling of the cellar. However, in view of the rather small quantity of rubble and the charred wood that

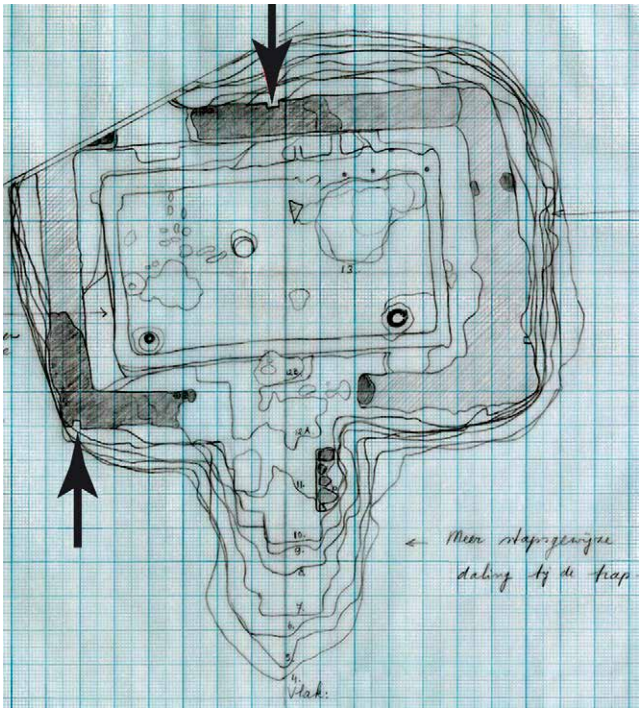

Figure 2.20 Composite traces of the stairs, seen over 10 excavation levels; arrows indicate the position of the notches left by beams

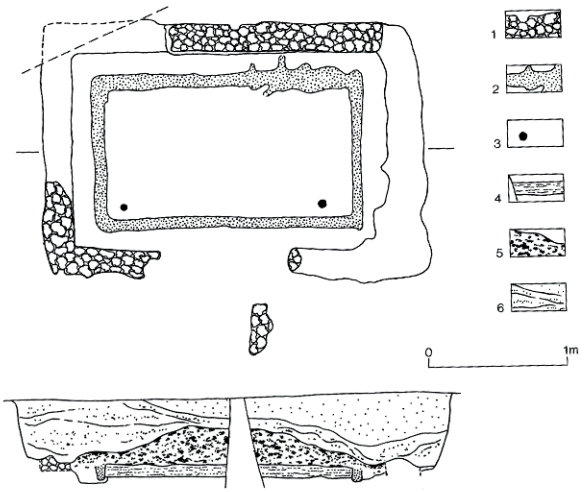

Figure 2.21 Simplified drawing of the cellar and schematic representation of composite profile of the cross-section of the cellar with two different infill layers. 1. Wall construction, 2. Wooden 'reservoir', 3. Sweep pots, 4. Layers of the so-called 'layered cake' (lapis legit), 5. Filling A: burnt traces of carbonized wood, brick tiles, etc., 6. Filling B: stucco, painted plaster, mortar, loam and rubble

could have been expected with the collapse of a burning room lying above it, probably something else was at stake.[7] The idea of a fire somewhere else in the villa – and/or in the cellar itself – and the subsequent filling up of the cellar space is an attractive alternative. The found plasterwork with loam on the back seems to support this. This material has been recovered both burnt and unburnt whereby the fitting pieces originated from different levels, and hence from different excavation levels. From this we can infer that the partly burnt loam *terre pisé* walls were perhaps already dislocated and demolished prior to the probable still smouldering remains of it were dumped in the cellar.

At a higher level the fill of the cellar manifested itself more as a parcel of mortar and stucco mixed with burnt loam, while at the very highest level (level 3, 25.85 m above NAP) the cellar seems to have been covered up with a footing course of boulders and stones; as if it was consciously covered up and levelled. From these fills we can see that the cellar was closed up in two phases; first with all kinds of burnt material including mortar, stucco, burnt wood and especially burnt loam and roof tiles. This set seems to be concentrated between the original wall construction of the cellar, as far as still present. Later in a second phase, the cellar was filled up with stucco, mortar and loam, and in the end paved with stones and 'smoothed down'. It is difficult to say how much time elapsed between the two phases but it cannot have been very long as the dates of the find material from both sets do not differ much.

Below these two infill layers was excavation level 11. There the finds were different in character and were not dump finds. The variation in the material is very diverse from level 11 on (and deeper). Moreover, the material was not found concentrated but in different specific places on the cellar floor, both in the centre and in the corners, which creates the impression that the finds are *in situ* and can be ascribed to the last phase of use of the cellar (fig. 2.22). It concerns many different pieces of pottery among which a *dolium*, a jug, metallic lustre beakers of painted ware, but also bones of a pig, a kestrel, fish remains, a bone needle,

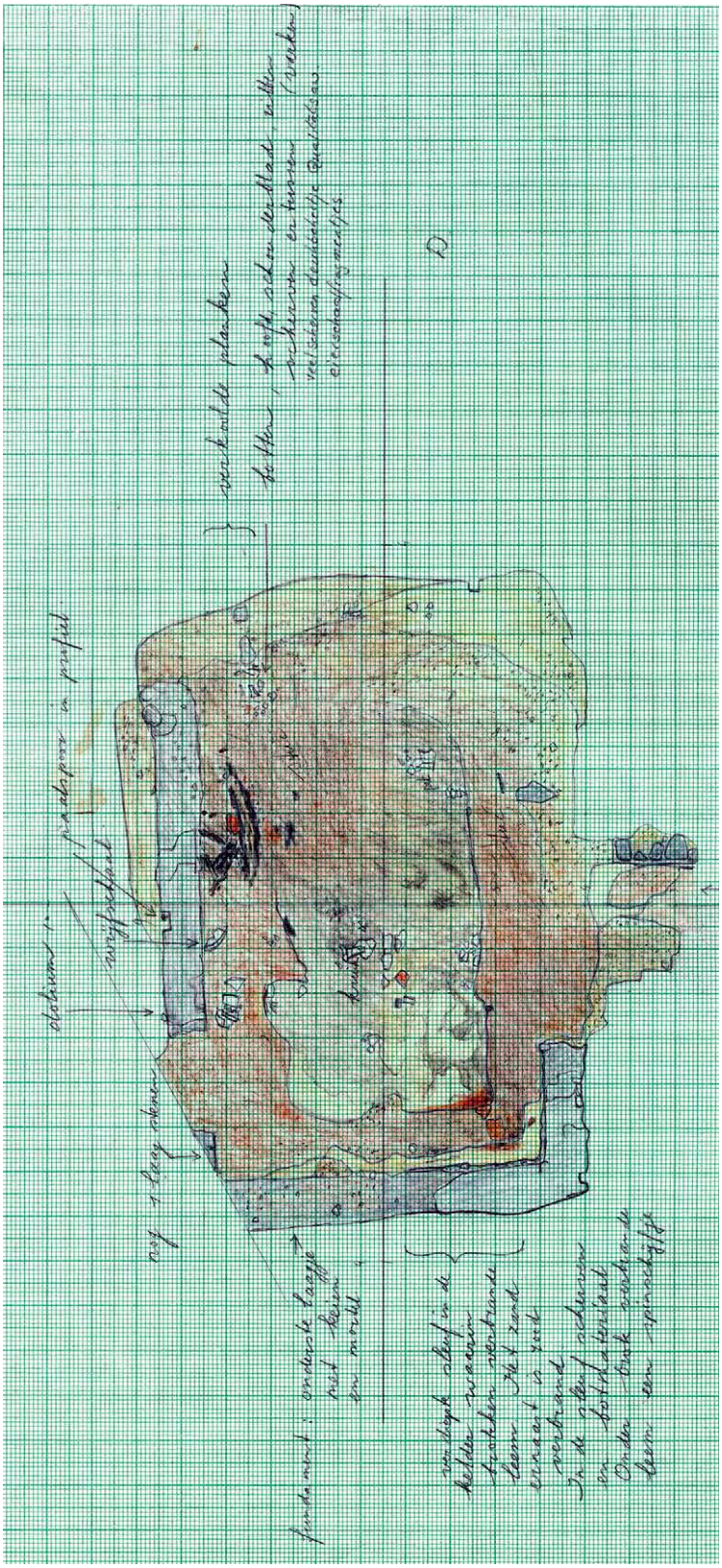

Figure 2.22 Drawing of layer 11 of the cellar with specific *in situ* finds, such as a mortar, *dolium*, jar, bones and fragments of eggshell

metal knives, a fibula, a spindle, a gaming piece and even fragments of egg shells.

Summarizing, the demise of the cellar, and probably also other parts of the villa had to do with fire. At the same time we have to state that the infilling of the cellar took place after almost all the stone masonry of the cellar had been removed! The dump was after all on top of the demolition trenches and the paltry remains of the walls. Whether at the same time also the definitive demolition of the villa had been started is a question that will be discussed later in the synthesis (section 2.3).

An oddity in the cellar not yet discussed was located in the deepest level of the storage space. There two dug-in earthenware pots were found in the bottom of the cellar floor in the southwestern and southeastern corner of the cellar floor (see also chapter 3.1 and 3.2.3). The pots are a coarse-walled storage jar type Oelmann 87 (fig. 2.23) and a jar of the type Oelmann 96 (fig. 2.24). They were interpreted by the excavators as so-called 'sweep pots', a practice known from medieval and more recent contexts, for instance in Bergen op Zoom (Vermunt 2009, 14-15), whereby the dirt in the cellar was centrally collected in a so-called 'ash pot' to be emptied later. Such ash or sweep pots were dug into the floor with the rim of the pot at the same level as the floor. Sometimes an ash pot tile was lying over it.

Also in Maasbracht was a tile (a piece of roof tile) placed over the jar and therefore in the archaeological investigation the pot was found not to be filled with soil. This on the other hand was the case with the storage jar in the southeastern corner of the cellar. It remains a question though whether the Maasbracht pots were therefore sweep pots. From the diameter of the mouth of the jar, it is after all almost impossible to empty the thing without excavating the pot. On the other hand, there was perhaps a purposely made hole in the body of the jar. Is it conceivable that this was done to let collected liquid material, that for instance was spilled in the cellar, drain away under floor level?

Almost immediately next to the coarse-walled cooking or storage pot (rim at 24.46 m above NAP) that was re-used in the floor, a lid was found of the type Oelmann 120a, but it is not certain that that lid had actually been on the pot. Be it as it may, this storage pot was in fact filled with soil. It is therefore interesting to look at the contents of the pots, as it is to be expected to find swept together material that was used in the cellar or was stored (see chapter 6.6.5).

At the same time another alternative possibility presents itself, again inspired by a medieval parallel (Esser and Van Dijk 2001, 412-413; Jacobs 2001, 186), for the placing of the pots, namely that they were used as mousetraps. The principle behind this is to fill the pots half-way with water after which a mouse having dropped into it, and possibly other vermin, would drown. Also here research of the contents of the pot could give some explanation (see chapter 6).

In addition to these two dug-in pots there are indirect indications of more dug-in pottery in the bottom of the cellar. During sectioning of some pits that went beyond floor level, also some tapered features were found in addition to pottery finds. These were considered to be traces of spits by the excavators. However, analogous to research in cellars in Roman Nijmegen it is conceivable that we are dealing here with traces of vertical dug-ins, for instance for placing amphorae and storage pots (pers. comm. R. Hoek (Bureau Archeologie gemeente Nijmegen; cf. Van Enckevort and Heirbaut 2010, 126; Pauwels and Creemers 2006, 59). The idea behind this is that by partly digging the storage containers into the ground, they would get greater stability and were less likely to topple over.

Figure 2.23 The dug-in storage jar in the cellar floor

And finally, there is in the bottom of the cellar another partly still not understood feature with a remarkable fill (figs. 2.21 and 2.25). The feature can best be described as a rectangle dug into the cellar floor with inside measurements of *c*. 2.40 × 4.50 m that was shored up with a wooden edge on the outside. The edge of this wooden tank or reservoir had a width of 15-25 cm and was still maximally 20 cm deep (24.35 m above NAP). Only in the profile was a remainder of the plank still visible on the inside of the dig-in, while at level the remainder of the feature, probably a wooden beam, seems to be burnt purple red, and strangely, is filled with remainders of mortar and rubble. The top of the tank cannot be followed all the way due to the earlier described dump layers in the cellar, but it is clear that a) the construction goes deeper than the bottom of the foundation of the stone wall, and b) there is a strip of untouched soil between the wall and the tank with a width of minimally 20-30 cm. By the way, the dug-in sweep pots described earlier were inside the contours of the wooden edge.

First and foremost, it remains to be seen whether the wooden, dug-in construction existed at the same time as the stone wall of the cellar. And for that we will have to answer the question for what purpose this dug-in part clad with wooden planks served. The precise answer remains unclear. A suggestion brought up (pers. comm. H. van Enckevort (Bureau Archeologie gemeente Nijmegen)) is that the wooden edge was in fact the bottom of a wooden beam that supported a vertical framework on which wooden planks of 20-30 cm would have been lying oriented towards the stone wall.

Another suggestion (Kooistra 1996, 256) is that the features are in fact the remainders of a wooden predecessor of the stone cellar.[8] It cannot be totally excluded and is an attractive idea but on the other hand difficult to prove. The observed construction on the photos, the field drawings as well as the profile drawings and the related dump and burn layers do not really point in this direction. However, if we follow this assumption, then the remainders of the wooden tank could have been the horizontal beams of the original wooden storage space. At a later time the cellar would have been enlarged and a stone wall was built. The earlier mentioned dug-in pots would then have to date to

Figure 2.24 The dug-in jar in the cellar floor

this first phase as the edges of the pots were found at the deepest excavation level (24.46 m above NAP). The first level that should be associated with the cellar floor of the stone phase would then have been considerably higher on level 11 (24.60 m above NAP).

A second question concerns the function of the tank in the cellar. If this can be answered then this would also give indications of the purpose of the cellar. The function can perhaps be inferred from the fills found above the tank (figs. 2.25 and 2.26). These sandy-loamy fills consisted of alternating dark and light layers of soil, the composition of which has unfortunately remained unknown. Charcoal was found between and in the layers but it would go too far to say that this is a charcoal layer. It is unlikely that these 'layered cake-like' soil silt deposit layers would have been original floor levels. It is tempting to see the dark layers as use phases of a dirty work floor that was finally raised to a thickness of over 30 cm. However, these so-called floor raisings were in fact relatively horizontal but are not very loam-rich or were tamped down hard. They consist of coarse sand and that is strange for a work floor, especially as no real traces of setting foot on have been recognized. So very probably we are not dealing with different floor levels in the 'layered cake'. It is remarkable though that this 'layered cake' does not extend beyond the wooden tank and hence it is certain that there is a relation between the 'tank' and the 'layered cake'.

At that time the excavators supposed a grid-like floor construction as floor (Van Dierendonck *et al*. 1987, 62), but it is not quite clear how they imagined that. It seems impossible to make a loose, wooden suspended floor spanning a space of *c*. 2.5 × 4.5 m without strutting. The planking would have to be supported with at least a number of supporting beams, for instance in the middle of the 'tank' to prevent sagging (cf. Kooistra 1996, 255-256).

The potential planking floor would have been supported at the sides by a row of projecting stones that are visible in the western wall. There is a row of jutting stones at the same level as the top of the 'layered cake' floor levels. Also in the surviving part of the south wall can such a wall be

Figure 2.25 View of the 'layered cake' deposit and the southwestern part of the wooden edge of the frame in the cellar floor within the stone construction. In addition, one of the dug-in pots can be recognised by the dark hole

Figure 2.26 Detail of the 'layered cake' of alternating dark and light layers of soil

recognized, be it less clearly. It is quite conceivable that a wooden floor rested on these stones, be it rather higgledy-piggledy. This supposition is confirmed by the presence of black soil layers found against and near the row of stones. They possibly had something to do with both the floor construction and the 'layered cake' layers.

That does not alter the fact that a span of 2.5 by 4.5 m should be bridged. Theoretically it is possible that the edges of the tank supported the bottom of the planking floor, and when you accept that then all of a sudden a planking floor construction becomes technically more feasible. However, unsolved remains the question why with the construction of the cellar this high floor construction was chosen. After all, the difference in height between the planking floor and the deepest level at which the pots were dug in measured at least 25 cm. Would this perhaps have anything to do with the kind of storage in the cellar? Should a certain climate in the cellar have been realized? And what was the function of the deeply dug-in pots? It seems that the tank was built so deep on purpose and it closes off the innermost part of the cellar from the rest of the underground space. Only there did the silted up layers end up. Were the layers created by cleaning the dirt of the planking floor lying above it with water, which could then sink down with the dirt to 'sediment' there? But how did the relatively clean, light-coloured soil between the black layers end up there? Unfortunately no satisfying answer can be given to all these questions.

Summarizing we can conclude the following about the phasing in the cellar and its possible function. Find material has been recovered from all levels and excavation levels which date to the second / third century. The dug-in ash pots could perhaps be dated slightly earlier, possibly from the middle of the second century. It more likely is a later, and not necessarily significantly earlier period. The pots were dug in at the deepest cellar level but were subsequently covered by the 'layered cake' layers. Functionally speaking, they have been used for a short time only. In addition, no distinction in the dump layers or fills can be demonstrably associated with a certain building phase. The earlier described fills represent on the one hand a clear set with much burnt material and on the other a covering layer with more mortar, rubble and plaster-work. The chronological uniformity within the find spectrum of the deepest excavation levels and the ones above them do not support the hypothesis of a separate wood-building phase and a stone-building phase. In short, probably both the wooden 'tank construction' and the stone wall belong to one and the same building phase. However, a number of issues have not yet been clarified and answers must await future research. The meaning cannot be further explained and argued on the dug-in pots, the interpretation of the 'layered cake' layers as probable floor levels, nor on the supposed planking floor above it and the precise relation between the wooden tank (a reservoir or grid?) and the stone walls.

2.2.1.7 Remarkable other Roman features of the villa

In the villa, a number of remarkable features have been found that are described here separately. First of all, it concerns a number of places where hearths have probably been excavated in different rooms of the villa (see fig. 2.3). The presence or otherwise of heated rooms in the villa touches upon the earlier discussion about a *hypocaustum*. Also the difference between the earlier described mortar floors compared to other probable loam floors, raises the question about the why of this difference in floor finish and whether there is a relation to the characteristic Roman hot-air heating system. Whether there was a *hypocaustum* system in Maasbracht remains doubtful, in particular because no building material associated with it has been found in large numbers *in situ*.

This does not however mean that no heated rooms were present in the villa. After all, at a number of places in the villa were potential hearths identified. At the most plausible spot (cf. Smith 2002, 23-29), in the large room 1 (2, 3, 4) behind the porticus, unfortunately no hearth has been traced. At other places in the villa of Maasbracht, the hearths manifested themselves as concentrated burns with burnt loam, brick and much charcoal. It concerns in the first place a location in the northwestern corner of room 13 against the corner with rooms 2 and 11. The place of the charred patch, in the 'open' porticus, seems at first sight a-typical but possibly the hearth was screened by a dividing wall, the foundation trench of which is still partly visible (cf. Braat 1953, 54; Smith 2002, 29).

The second recognized charred patch was located remarkable enough just outside the walls of the stone

construction on the corner of rooms 21 and 25. The feature of *c*. 2 × 2.5 m contained much charcoal, mortar and roof tiles. It could have been an outside firing place (*praefurnium*?) that was perhaps used to heat room 19 with the stone floor by means of a *hypocaustum*. This is however not certain, nor is the presence of a *hypocaustum* in room 19, or the question whether this charred patch did belong to the Roman occupation phase of the villa, as it can also date to the Early Middle Ages, as apparently a coin from the Merovingian period was excavated in the feature (find number 10-1-2).

A last potential hearth is located in room 14 where burn traces have also been found. Remarkable is that the mentioned here hearths do not necessarily correspond with the position of mortar floors. From that we can conclude that a stone floor did not necessarily always display a hearth, and at the same time was also not a prerequisite for getting a room heated. However, whether all hearths were traced in the villa is not certain. Most hearths would have been at occupation level and this level was not recovered intact everywhere in the villa, and thus the chance of finding *in situ* hearth places is lost (cf. Smith 2002, 14). Moreover, we should bear in mind the presence of fire plates or basins on the spot which did not leave any traces in the soil archive.

From the occurrence of hearths *in situ* can be inferred that the villa was covered. As Tichelman writes in his analysis of the Holzkuil in Kerkrade, the discussion among archaeologists about roofing of villas has by now ceased (Tichelman 2005, 95-96; see also Braat 1934, 32-37). Apart from the occurrence of hearths and stone floors, the finds of window pane endorse indirectly that closed off rooms did exist in Maasbracht.

Another remarkable feature was located just southwest of room 21. The feature, measuring *c*. 1.10 × 1.60 m had at the highest excavation level still a normal gravel fill and therefore seemed at first sight to be a projecting piece of foundation. However, at a deeper level (26.37 to 26.14 m above NAP), it proved to be a rectangular pit, wood framed, with remains of lime mortar. At the lowermost level, the floor and some raising timber of remains of several calcified planks were still present (fig. 2.27). We are probably dealing here with a functional lime storage in a lime pit or lime tank

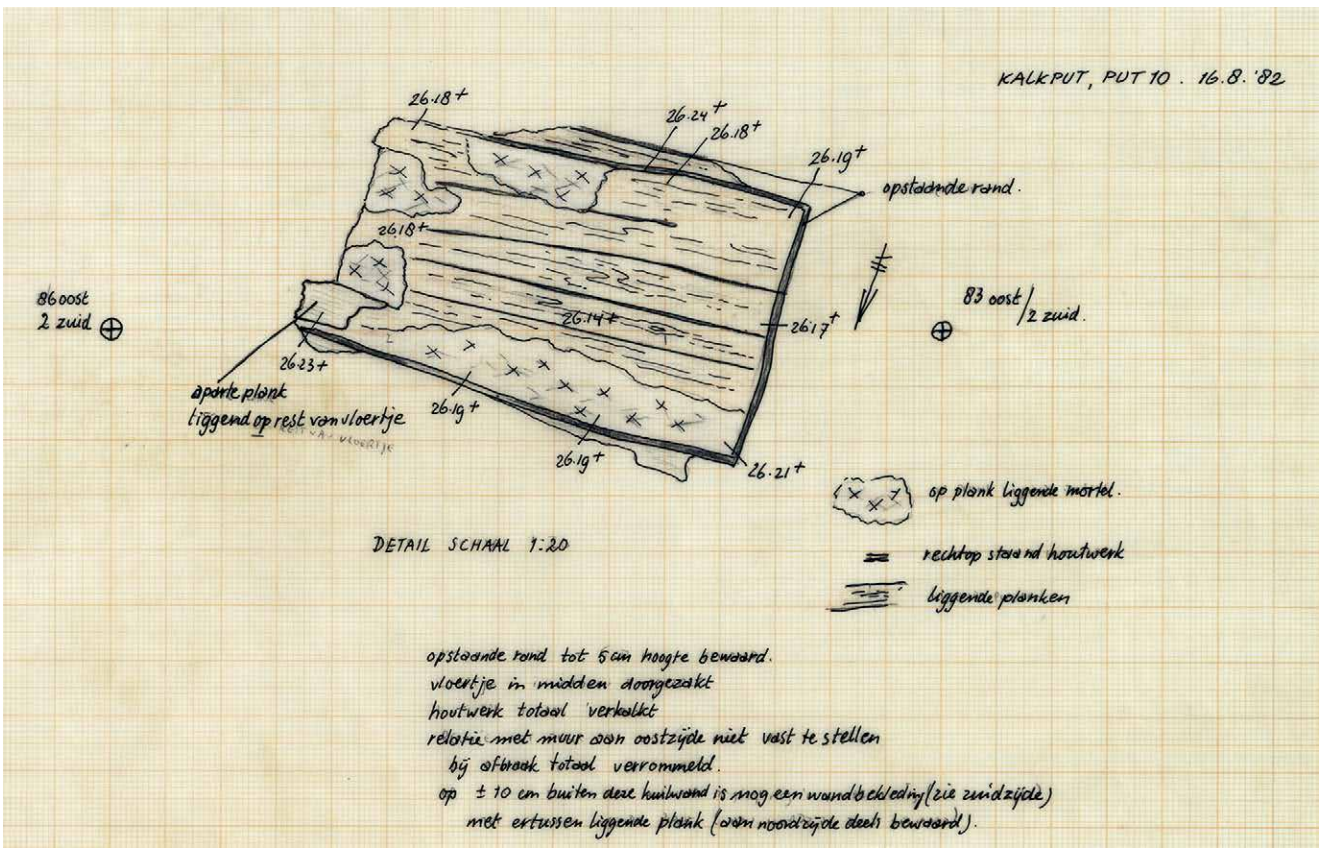

Figure 2.27 Level drawing of the lowest level of a lime pit

for working with mortar and for the plasterwork of the villa (cf. Pauwels and Creemers 2006, 71-72). The lime pit was located in the east, against the outside wall of room 21. A relationship between the wall or its gravel foundation and the lime pit could not be determined due to the hacked-out traces of the wall at a higher level.

A second feature with a sizeable quantity of lime was only recorded in a profile. The feature was located just northwest of room 10, outside the villa. The feature had a depth of *c*. 30 cm to 25.70 m above NAP and a defined size of 250 cm. The fill of the pit consisted of mortar lumps with gravel and fine roof tile rubble. This feature had perhaps also something to do with lime production or storage at the spot.

In addition, traces have been recognized of a narrow, marked road. The remains do in fact exist of not more than a zone of 4 × 4 m with concentrated gravel on a natural base of yellowish, sandy loam. The gravel bed found can be interpreted as paving and is located at 26.20 m above NAP. It is a continuation of the earlier described monumental entrance of the stone main building, at about 5 m from it. The orientation of the gravel strip is practically north-south. The drawn traces of the small road end rather abruptly on the field drawing and also in the profile can the gravel bed unfortunately not be distinguished clearly from the other soil layers.

The road very probably continued slightly further in a southerly direction. That has been concluded from the fact that as a continuation of the gravel strip, at about 12 m from the abrupt end of the traces in the level, a number of post holes were found that probably represent part of an enclosure of the villa terrain.

It concerns specifically six post holes with an average dimension of 50-70 cm and a distance between them of about 2 m. The row lies perpendicular to the supposed road trajectory, and the outermost traces consist of slightly smaller, doubly placed post holes, thus lying in a row of four. The post holes can perhaps be interpreted as a gate or gateway that provided entry to the villa complex. The distance between the gateway and the entrance of the villa measured about 25 m. A further course of the enclosure could not be determined with certainty, perhaps also because the traces had been dug in shallowly and were therefore not found during the investigation.

And finally, a number of remarkable pits and stone concentrations are worth mentioning. It concerns for instance pits in which remarkable find material was found, like those in a huge pit, more than 1 m deep and measuring 3.30 × 2 m. In that pit were, apart from a sizeable quantity of pottery and roof tile fragments, also all kinds of building fragments, such as half a column, pieces of a base and a capital. The architectural elements undoubtedly derive from the villa, but they were hauled about as the main building lies nearly 30 m north of the pit. The infill of the pit, as is shown in the profile, does not come from the 20 cm thick layer of soil but from a jumbled-up layer with gravel, roof tile rubble and charcoal. The layer with a thickness of 60-70 cm is a covering set, and will have been created after the Roman period when the villa remains were levelled. Probably only the deepest features survived reasonably well. The time when this happened can perhaps be ascertained by analysing the pottery of the pit.

Another feature concerns a kind of floor or waste dump of combined natural stone boulders and brick material in excavation pit 2 on the southwestern side of the excavation. Underneath it were a building fragment of sandstone and stamped roof tiles. Between and near the feature were also a metal fragment of a lock and a part of an iron knife. The shape of the feature is amorphous rectangular and covers an area of *c*. 7 × 4 m. The NAP height is at *c*. 26.55 m. The meaning of this feature is unclear; it could be a waste dump of material or perhaps a foundation, but of what has remained obscure.

Other amorphous and quite large features with many roof tiles, rubble and gravel are situated on the southeastern side of the villa, in an elongated trench in an easterly direction. The function of these features is unclear. Perhaps they are later dump areas of building material and rubble of the villa when it was no longer used.

The last feature described here comes from the excavation campaign in 1990 and lies directly next to the furthest southeast corner of the villa near room 25. It concerns a round pit with a diameter of 1.25 m. The cross-section shows a remarkable shape of this pit. The quite vertical, near the bottom distinctly widened, profile runs to more than 1.20 m with at the bottom a brown humus fill and in the top a more sandy fill with charcoal, burnt loam and sherds.

The precise function of the pit is unknown but perhaps we are dealing here with a silo-like pit in which for instance grain or sowing seeds were stored. In principle the stored goods could be kept airtight by closing off the pit with rush wickerwork and loam. Moreover the humidity and temperature should be kept constant and low to prevent the stock from becoming mouldy. After use the pit can have been disinfected for re-use by burning the silo clean (cf. Van Wijngaarden-Bakker and Brinkkemper 2005). Both charcoal and burnt loam were found in the pit in Maasbracht. In theory, left behind grain could have become charred then. But as this was not found in Maasbracht, it is difficult to determine the function of the pit.

2.2.2 Other features

2.2.2.1 Prehistory

From the prehistoric Iron Age date a small number of features that have been found dispersed over the terrain (fig. 2.28).

Figure 2.28 Traces from prehistory (in green) and traces of a possible wooden predecessor of the villa; A: the pit with the 'warrior' grave

It concerns in all cases pits or post holes that were already recorded as such on the drawing during the fieldwork. A relatively large number of these features was lying within the later contour of the porticus (room 13) on the southwestern side.

In general the pits had a greyish coloured fill and sometimes yielded finds. At first sight no recognizable configurations or structures were recognized among them. It should however not be excluded that based on the separate (post) traces without datable find material still some structures are hidden and that it is question of time to analyse these further. In the framework of this research no exhaustive attempt to do so was made as the focus of the research was in the analysis of features from the Roman period.

It is remarkable though that at the foot of the Pleistocene terrace slope, at a depth of maximally 5 m in relation to the plateau on which the villa was lying, a 25 cm thick layer was found. This is clearly visible in the profiles of excavation pit 7 and cross-section made through the entire terrace. A dark grey coloured, charcoal-rich find layer slopes down obliquely from the foot of the slope (22.50 m) to the deepest level observed (21.10 m above NAP). The layer was covered with a more than 40 cm thick, relatively horizontal rubble layer with some gravel, a small amount roof tile rubble and some mortar from Roman times. No features were found at the foot of the slope, but the finds, amongst others of pottery sherds and a fragment of a La Tène bracelet, indicate a Late Iron Age origin of the layer.

And finally, an unusual feature was found at the edge of the plateau, more than ten metres north of the villa. The feature concerns probably a pit with a recorded size of *c*. 5 × 3.5 m, and an apparent depth of 120 cm. However, the pit was not documented further, and only the large number of finds was collected (find number 20-5-4). Later on it appeared that, in view of the finds of a shield knob, spearhead and belt chain, a grave of an Iron Age 'warrior' had been present (see chapter 8). Most likely, the burial was not *in situ* but had slid down the slope or was moved away when levelling the terrace. As among the finds also Roman material was present, this could have occurred in or after the Roman period.

2.2.2.2 Wood construction: predecessor of the villa?

The investigation into the stone construction of the villa in Maasbracht yielded a ground plan of a number of stone constructions which succeeded each other in time. However, when you take a look at the excavation plan of Maasbracht, you will see many more features which had nothing to do with that stone construction. It remains to be seen to which period these features should be ascribed. This cannot be decided in advance as for that we are almost totally dependent on the presence and dating of the finds from the features.

In addition to a prehistoric and probable Late Roman / Early Medieval component in the find spectrum, a group of features remains that does date to the Roman times but does not necessarily belong to the stone construction phase (fig. 2.28). It is to be expected that, analogous to other villas both here and abroad, part of these features can have belonged to a wooden predecessor of the stone construction phases. Hoogeloon (Slofstra 1982), Kerkrade (Tichelman 2005), but also Rijswijk (Bloemers 1978) are examples of such a development (cf. Pauwels and Creemers 2006, 87-93; Smith 2002, 250; Habermehl 2011; 2013). In these cases it involves every time a relatively small building with a farm-like ground plan or a building of which the plan consisted of separate post holes with possibly a porticus in front of it. Such a ground plan has not been recognized in Maasbracht.

Besides the transformation from a private byre house as potential predecessor into a stone main building, the complete layout of a site can have gone through a development from wood to stone, such as Druten-Klepperhei and Kerkrade-Kaalheide (Hulst 1978; Maas 2007; Brunsting 1950; cf. also Cuyt 1983). The features in Maasbracht consist mainly of pits and post holes and can be found both inside and outside the contours of the stone main building. Part of the original features has probably been dug up and has disappeared with the construction of the stone main building. It is therefore not easy to reconstruct a meaningful configuration from the features and to present a convincing ground plan of one or more wooden buildings. Yet it cannot be excluded that the stone villa in Maasbracht had an Early Roman wooden predecessor in the shape of a byre house.

What is further especially noticeable is a number of rows of features outside the contour of the stone construction, in which parallel, sometimes perpendicular to each other patterns can be recognized. At the time, Hiddink (2005, 5-8, fig. 4) already made a first move in that direction. The total area covers a terrain of about 40 by 50 metres. A series of features has more or less the same orientation as the stone foundations of the villa, like the narrow ditches and rows of posts with an east-west orientation. Perpendicular to this, on the eastern side of the excavation terrain, were two parallel rows of post holes found with a distance between them of *c*. 6 m and a length of 30 to 40 m. One of these rows ended in a remarkable semi-circular shaped structure against the steep edge of the terrace. Also on the south side was a row of post holes that possibly linked up on the western side with the circle-shaped structure. The second row of post holes on the southern side concerned possibly the earlier described gate or gateway and the enclosure connected with it.

An interpretation of all these features as wooden construction predecessor of the stone villa is difficult to underpin. Only based on the orientation of the features, which is largely the same as that of the stone construction, a predecessor may be assumed. But an unequivocal, indisputable ground plan of it can unfortunately not be reproduced.

2.2.2.3 Other Roman features in or near Maasbracht

The stone main building is at present the only construction that is reasonably known of the villa of Maasbracht. That more buildings must have belonged to the complex, involved with the exploitation of the villa, is evident in view of the parallels with other villas. Only, it is still largely unclear where these outbuildings can be found in Maasbracht.

There is an assumption that they were in a row along the edge of the Pleistocene terrace. This in contrast to the more U-shaped terrains around which the buildings are arranged, as in Kerkrade, Voerendaal or those abroad (cf. Roymans and Habermehl 2011). This assumption is prompted by amongst others an observation from the 1970s at Steenakkerstraat number 19. At that time a private swimming pool was built there and during those ground operations the features of a gravel foundation appeared. The location lies *c*. 70 m west of the main building (see fig. 2.2, trench X). The two foundations found there were lying perpendicular to each other, and were only documented on the level drawing. The width of the gravel foundation measures about 40 to 50 cm. They can be followed over a distance of 4.5 and 3 metres. The foundations have the same orientation as those of the foundations of the villa and for that reason also they can be ascribed to the villa complex of Maasbracht. The

features thus represent the minimal size of the Roman stone construction.

Also east of the main building are probable Roman traces of a stone construction present, but this observation by amateur archaeologists cannot be retrieved via Archis, the Dutch archaeological databank (see also Hiddink 2005, 8). To summarize, it can be stated that the complex of Maasbracht thus covers a much wider area than just the excavated stone main building.

An important knowledge hiatus seemed to be the location of the bathhouse. It was earlier suggested that that would be present on the terrace on the eastern side of the main building, and that room 25 could be a corridor leading to the supposed bath complex (Van Dierendonck *et al.* 1987, 62). However, more clarity has been obtained since the investigation of 1990, and the room appears not to have been a corridor but was instead a closed-off room. Moreover, the investigation in question has provided clarification regarding the location of the bathhouse that was probably in-house, so in the main building of the villa itself.

And finally there is the publication of the burial field of Linne, located 750 m eastwards that can possibly be linked to the Roman occupation of Maasbracht (Hiddink 2005). Although 750 m seems to be a rather long distance to suggest a direct relationship between settlement and burial field, Hiddink does not exclude this. The more so as a few finds were made in the burial field that can be associated with the social upper class in the micro region. We are in fact not dealing here with very rich graves such as those in Bocholtz or Simpelveld. But a find is referred to of a third century point of a lance in a grave. That is a typical piece of armour that was used for hunting, and that in its turn is an activity with which villa owners entertained themselves. Besides, also a number of Late Roman graves was found. Especially these are often linked with the re-occupation of Roman villa terrains (cf. De Boe 1982; 1985, 1987, Neerharen-Rekem; Braat 1953; Willems 1986; 1987, Voerendaal-Ten Hove; Heidinga and Offenberg 1992, Gennep; see also Jones and Mattingly 2007, 246), and this could also be a link in Maasbracht. However, the presence is not excluded of a yet undiscovered villa near Linne, which would invalidate a really conclusive relationship between Maasbracht and this burial field in Linne.

2.2.2.4 Late Roman or Merovingian features

After the stone construction had fallen into disuse, the villa terrain had not been completely deserted in the subsequent decades, as evidenced by a small number of Late Roman / Early Medieval occupation features of the findspot. An important representative of these is a sizeable pit just southwest of the stone construction in work pit 12. This pit was already cut into during the trial trench investigation by the HVR and was subsequently excavated in its entirety. It concerns an oval-shaped feature of *c.* 5.20 × 3.50 m (fig. 2.29- feature 28A). Size-wise one is inclined to ascribe the pit a function as sunken hut or *Grubenhaus*, but no direct indications have been found for this. Clear post holes in the corners and walls of the pit were not recorded but it cannot be excluded that they were once there. The cross-section of the pit shows that this had a half-round, concave bottom which was filled with interesting find material. From that followed not only the Early Medieval date but also a few exceptional pieces of metal and glass could be ascribed to it.

A number of sunken huts in work pits 14 and 17 can also be ascribed to this occupation phase (fig. 2.29-features 28B, 28C and 28D).[9] These four or six-post types of sunken huts are on the forecourt of the villa, just south of the stone building just outside the assumed enclosure. From this viewpoint alone can a post-villa phase be assumed for these structures. In addition, such sunken storage or workshops are characteristic of Late Roman times and the Early Middle Ages, and regularly occur on deserted villa terrains (cf. also Heidinga and Offenberg 1992; De Boe 1987; Willems 1987). In addition, another number of pits[10] was excavated on the forecourt in trenches 17, 19 and 22. Evident Roman building rubble was found in some of these pits, amongst which a number of remarkable pieces of architecture of brick and natural stone. These pits can only have been filled after the villa fell into disuse and was partly demolished. Hence those features probably also date to the post-Roman period.

No convincing Late Roman or Merovingian house locations have been found (cf. De Boe 1987, 53). Although the excavators have tried to reconstruct a number of very fragmentary boat-shaped ground plans, the reality proved more stubborn. There is hardly any evidence for it, neither in the features, nor in the dating of the find material. Moreover, the location of the wooden construction traces, exactly level with the stone construction, would building technically have been very peculiar as the subsoil was relatively impenetrable due to the presence of the stone of the villa. It is more likely that the Merovingians would have used the remnants of the villa to erect their 'own' building constructions (cf. Jones and Mattingly 2007, 264). It is often assumed that they stripped the stones of their plaster before re-use of the coarse building stone. We do not have concrete evidence of this, apart from the stripped-off residue – the plaster – that was found at the location of the villa. Yet we should not immediately conclude that re-use of Roman material would not have been involved.

2.3 Building history of the villa

2.3.1 Introduction

As said earlier, it seems at first sight that the broad building history of Maasbracht is rather simple to determine.

Figure 2.29 Different features of pits and sunken huts (in green) probably from the late Roman or early medieval period

However, the more precise sequence of the different stone building phases is on the contrary difficult to ascertain as almost all wall constructions have disappeared and only the hacked-out traces or gravel foundations remain. Cross-cuttings and datable find material are scarcely available. Hence, for a phasing we have to rely mainly on a logical, reasoned chronology of the building history of the complex. The reasoning can partly be related to examples of villas of which the building sequence could indeed be relatively well documented.

A defining point of departure can be that what applies to almost all Roman villas is that in time they were altered, enlarged or extended (Smith 2002, 15). This holds not only for the main building but usually for the entire complex. A number of variables play a role in the typological classification of the main buildings. These are amongst others the occurrence of corner risalits and porticus, the shape and division of the hall or core building into one or more compartments, the layout of the wings, the arrangement of the rooms into rows or blocks, and of course the size and

complexity of the villas. In addition, the notions of symmetry, axiality and monumentality are evident, not only for archaeological researchers but also and in particular for the occupants of those days. All three terms point to a fixed regularity, a preconceived plan and building sequence, and to the intended aura of the complex, and the undoubted status accompanying it (cf. Smith 2002, 117) with which the villa owner wanted to position himself in the Roman world. In other words, careful thought went into the building construction and it is up to us to retrieve that train of thought and to read it from the archaeological remains.

2.3.2 Main building A

It is not known what the earliest phase of stone construction in Maasbracht looked like. It is conceivable that that phase, analogous to other villas, can be characterized as a simple hall or core building (fig. 2.30). That core building in Maasbracht consisted of the rooms A1-A4.[11] Together these rooms have internal dimensions of *c*. 7.60 × 17 m. Parts of the foundations have survived as they were used again in later building phases and have thus been preserved.

A further division of the core construction is difficult to specify as the rooms have been adapted over time and the interior was probably altered. The division into four different rooms is therefore an artificial construct. When in fact parallels of such a simple core construction are taken into consideration, it is often found that it concerns one large room with one or two additional rooms, sometimes possibly surrounded by a corridor or porticus (cf. Smith 2002, 104-106). We know examples from Kerkrade (Tichelman 2005), Overasselt (Braat 1934) and to a lesser degree from the rural settlements of Rijswijk-De Bult (Bloemers 1978) and Houten-Burgemeester Wallerweg (Vos 2009, 164-174). Probably also in Maasbracht was a corridor around the core construction which consisted of rooms 11, 5 and possibly also 26 (see below). Hard evidence for this is rather scant and it is in fact only demonstrable by looking at the wall remains that have survived between the transition from room 13 to room 11 (fig. 2.9). After all, there traces were recognized of more than one building phase in the wall construction.

The entrance to the core construction in this probable building phase is unclear. It was possibly symmetrical on the axis of the south wall of room A4, but it is also conceivable that the entrance was at the shorter side of the building, in the eastern wall of A3. And finally, it is also conceivable that main building A did not exist as a separate building phase but that the core construction was erected at the same time as the traces of main building B, and thus there was in fact a building phase A/B. It is not possible to get more certainty about this as cross-cuttings and dates are lacking.

2.3.3 Main building B

In building phase B, the villa really took shape and a sizeable building was erected (fig. 2.30). The surface of this stone construction measured *c*. 17 × 35 m. The differences with main building A are obvious and covered both the sides and the back of the core construction. Most characteristic are the additional corner rooms (B8, B12) at the front and the porticus located between them. Those provided the appearance of the villa, apart from monumentality and aura, also with a certain status.

That monumentality could have been emphasized as well by the erection of corner towers and protruding parts of the façade, the so-called risalits. This is the case with many villas with corner rooms and the porticus between them, but in the case of Maasbracht the risalits cannot really be proven as the porticus was as deep as the rooms. The building line of the front of the villa thus formed one line. It is also unclear whether B8 and B12 may be reconstructed as corner towers, as has been suggested in the reconstruction of for instance Hoogeloon (Slofstra 1982, 107, ill. 24).

Actually, of these corner rooms only the western room B8 has survived, but in view of the symmetry and axiality of the main building we can assume that this room has had a counterpart on the eastern side (B12). An argument to adhere to this symmetry lies amongst others in the location of the entrance in the south wall of the porticus (B13) in relation to the core construction. After all, that is assumed to have been exactly in the centre of main building B. Nothing has been retrieved of the entrance itself. Only the spot where the opening once was has been recognized in the features. This former opening was characterized by a row of stones that was found over a length of 4.5 m at the base of the foundation of the south wall of B13 (fig. 2.10). Those stones were placed there in the subsequent building phase C when it was decided to extend the villa further and to move the central axis of the main building about 5 metres in an easterly direction. The entrance and axiality was also altered in view of the symmetry and the former entrance had to be bricked up to be able to base new wall constructions on it.

Behind the new façade (B8, B13, and B12) of main building B were more new rooms built. North of B12 this is the reconstructed room B7, whereas the counterpart of this space can be found in B9. It is not certain whether room B10 that is located further towards the back was made during building phase B. Taking the symmetry of the main building into account, it is likely to suggest a later building date, but if the room was built, it apparently did not have a counterpart in the eastern half of the villa behind room B7.

In the western half of the building, between the core construction and rooms B8-B10, the corridor (B11), which covered the whole width of the villa, remained of building

Figure 2.30 The building history of the villa. Upper part: building phase A in dark green; building phase B in yellow. Lower part: building phase C in light green

phase A. This corridor can in fact not be demonstrated in the eastern half of the villa (B26) due to the building, demolition or breaking-away of later constructions of the next building phase.

And finally, in the rearmost zone of the villa, in line with B10, another new room was built. B6 is a room directly behind the core construction in the eastern half of the villa. Its western counterpart is A5/B5 of which, apart from the floor, hardly any remnants have survived. Room B6 had almost the same dimensions and comprises the cellar. We think that the cellar was probably used for the first time in this second building phase. The cellar could be reached from B7 via a staircase. Above the cellar and the steps, there will have been another room with a slightly raised wooden floor. This room could probably be reached via B1 where a probable staircase foundation has been found in the northeasternmost corner, against the eastern wall.

There could have been another room (B26) between rooms B5 and B6 but no real traces have been found of this. Again taking the symmetry into account and also compared with many other villas with a gallery at the rear of the villa, it can be assumed that B26 can have been there. An alternative, and not less attractive, thought is that B26 did not exist but that the idea was to create an impressive vista from the core construction in the direction of the valley of the Meuse.

2.3.4 Main building C

The last development phase in the building history of the villa of Maasbracht concerns the immense extension of the complex (fig. 2.30). The surface of the villa was enlarged by nearly 50%, with total dimensions of about 27 × 47 m. The most conspicuous changes are the addition of huge corner risalits, each measuring about 100 m^2. These projected about 10 metres from the core construction. The corner pavilions each consisted of different rooms (C14-C17 and C18, C19, C21) and can be reconstructed as monumental towers with at least one storey, analogous to other villas in the province. How the wall construction of the towers linked up to the already existing main building B cannot readily be deduced from the surviving features. Only at the west wall of C15 can be seen that the foundation has been placed against the outside of room C8. That indicates that the existing construction of phase B was maintained in that part of the villa and that the western pavilion has been added without doing any demolition work. Of the eastern pavilion on the other hand there are only new foundations, and it appears that in order to realise the pavilion quite some demolition work of building phase B was carried out – in particular at the level of B12 and B7.

Also, this eastern pavilion had a projecting room in an easterly direction (C25). In the past a corridor was assumed here in the direction of other, undiscovered parts of the villa. Additional research in 1990 has made it likely though that there were here no new building parts and that C25 can be interpreted as a separate room and not as corridor. Symmetry-wise this room is rather odd, especially as it was at the monumental front of the villa. The function of this room has remained unclear.

A consequence of the additions of all these new building parts is that the central axis of the villa – seen over its width – was slightly more to the east. In order to keep the symmetry of the new building, the entrance was moved to the east for that reason.

Another important addition to main building B occurred in the northeastern corner of the villa. It actually concerned here the completion of the rooms behind the southeastern pavilion (C18, C19, C21). There an in-house bathhouse was made (C22-C24) and that desirable addition of a (larger?)[12] bathhouse could have been the boost to thoroughly renovate the entire main building.

In particular the fact that the bath complex was incorporated into the main building, and remains more or less hidden from view behind the monumental façade of the stone construction, speaks volumes. In fact they could have opted to build the bathhouse separately, as in Lemiers, Neerharen-Rekem or Voerendaal-Ten Hove. Or to build the bathhouse in-house but not to hide it from view as was the case also in Kerkrade-Holzkuil and Houthem-Vogelsang. On the other hand, there are also sufficient villas that incorporate a bath part into the main building in an almost identical way and apparently know how to conceal the building parts behind the façade of the villa. Bocholtz-Vlengendaal and Nuth-Vaesrade are good representatives of this, but in the surrounding countries there are still many examples of this in both small and medium-sized villas (see Smith 2002; Heimberg 2002/2003).

In any case, it points to the residential character of the east wing of the villa, where not only the bathhouse was located but where also at the front in room 19 of the pavilion a luxury room with a stone floor was fitted out. Significant is also that the figurative representations on the plasterwork were mainly coming from this residential part of the villa.

And finally, we may conclude that the cellar fell into disuse during this building phase. Whether this occurred right at the start with the extension into main building C or later with the dismantling of the villa is still unknown. But it is clear that at a certain point the cellar became filled with rubble, loam, mortar, roof tiles and plasterwork. This was formerly regarded as the time at which the villa was abandoned. It is after all often assumed that the villas were used as quarries from that moment onwards and that the separate stones were stripped off their plasterwork so that they could be re-used.

This is certainly a train of thought that should not be underestimated and that is not set aside here, on the contrary. But it is quite remarkable that large parts of the wall were broken away before the cellar was filled up and that it seems that the plasterwork was collected and dumped in the cellar. Subsequently the cellar space of Maasbracht was neatly covered and levelled with a kind of pavement of boulders, mortar and rubble. The thought occurs here that the villa had to be kept 'clean' and that a new floor level or occupation level was intended over a room that was no longer used. This assumption is also supported by the levelled levels being at almost the same height as the surrounding (mortar/stone) floor levels. So it is likely that the surface was re-used after the dismantling.

The cleanly chipping off of the plasterwork and the subsequent orderly filling up of the cellar seems to be a less obvious action once the villa has totally fallen into disuse and only the stones seem to be of use. It raises the question why the remains should then still be tidied up. Is it likely to assume that the last occupants themselves would have put their former habitation place out of order? Or were they not spared a disaster and can the dump layers be linked to the turbulent times that began around the middle of the third century and ended 'classically' around AD 270? If the latter assumption is accepted as true, then it still remains remarkable that the dump layers, including the plasterwork that was chipped off the stones, were so neatly 'tidied away' in the former, deepest room of the villa, and subsequently the ground was topped off and levelled.

An alternative explanation is therefore that the cellar was already abandoned during the Roman occupation of the house. A 'calamity' could have made the then occupants decide to knock down the cellar walls and to fill the space up with material that had become unusable. This could have to do with a fire in the main building, as irrefutable indications have been found in the different dump layers in the cellar that have to do with remains of a blaze or fire, such as: pieces of burnt wood probably of the stairs, burnt loam of walls or perhaps of ceilings, mortar and partly burnt plasterwork. It is clear that a fire raged somewhere in the villa but where exactly we do not know. In view of the fact that the cellar was filled up with rubble of this fire raises the assumption that both the cellar and a nearby other room – perhaps the room located above the cellar – were affected in such a way by the fire that the rooms could no longer be (re-)used and were therefore abandoned.

The assumption that this all occurred already in Roman times and not necessarily later is, in addition to the neatly levelled level as described above, also prompted by the earlier mentioned knocked-down walls and the finds from the dump layers. Among them actually only Middle Roman material was found, dating from the middle of the second century to about the first quarter of the third century.[13] However, the final date cannot be determined with certainty as it is mainly based on the absence of certain types of ceramics instead of the presence of meaningful find material (see also chapter 3.2).

In short, it is quite possible that around the beginning or first quarter of the third century the cellar was put out of order after a fire in the villa, after which the spot of the former cellar was 'as usual' used as above-ground room and the main building of the villa functioned another few decades.

Notes

1 Possibly a part of the stone construction has also ended up in foundations of later churches, such as the national monuments in nearby Linne and Heel, but this is not certain. Compare also other published villas in the Limburg loess area where the stone material was nearly absent (f.i. Tichelman 2005; Braat 1934; 1941; 1953; Goossens 1916).

2 Lenz (1999) assumes also for the Aldenhovener Platte a stone plinth construction, as also there too little stone material has been found, which cannot be explained by 're-use' only.

3 Vitruvius (De Arch II.8.20) points to the cracks in plasterwork that is applied to framework, caused by absorption of moisture from the wood construction.

4 For the origin of these and other material categories, see Gazenbeek, this volume.

5 Thanks to H. van Enckevort, R. Hoek and J. Hendriks (Bureau Archeologie gemeente Nijmegen) who hold this view.

6 De Leeuw (1989) puts forward an interesting proposition in relation to the reconstruction of the villa of Nuth-Vaesrade on the in-house position of the praefurnium with regard to the high heat, the possible fire hazard and the possibilities for discharge.

7 Concerning the substantial number of charred planks, a good comparison is provided by the excavation of one of the cellars in the St. Jozefshof in Nijmegen (Van Enckevort and Heirbaut 2010, 119-126).

8 Compare the construction with horizontal beams and vertical planks of an example from Nijmegen on the St. Jozefshof (Van Enckevort and Heirbaut 2010, 100, fig. 68). What is lacking in Maasbracht however are the uprights that – albeit to a shallow depth – would have been dug into the ground.

9 Trench 14, feature 10; trench 17, feature 4, feature 13.

10 Trench 17, feature 11, 16; trench 19, feature 11/trench 22_feature 2.

11 The numbers or codes consist of a combination of a letter for a building phase and a number for every individual room; see also fig. 2.3.

12 It cannot be excluded that there was a bath facility in the previous building phase on the spot of B7, but this part of the building was

so thoroughly knocked down that this hypothesis can no longer be assessed. This idea was inspired by the use of hypocaustum material elsewhere on the terrain, specifically in foundations. That material should really originate from earlier built (heated) rooms that probably met their end at the transition from building phase B to C, whereby demolition material was used in the foundation.

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13 We should mention here however that apparently one Early Medieval sherd (ceramic material Badorf) was found in excavation level 5.

3 Pottery

E. van den Brink

3.1 Introduction

A large amount of pottery was found during the excavations of the villa in Maasbracht. Due to time constraints not every fragment could be analysed. In total approximately 12,822 fragments were found, 5,718 of which were analysed (table 3.1).[1] The total weight of the analysed fragments is 56396 g. Most of the fragments are wheel-thrown pottery (98.44%), whereas only 1.56% is hand-made pottery. Most of the fragments date to the Roman period (98.27%). Only 0.14% of the fragments could be dated to the Middle Ages, and 0.03% to the later medieval or modern period. Because of a lack of expertise the hand-made pottery could not be dated more specifically. These fragments can date either to the Iron Age, the Roman period or the medieval period.

Different methods of quantification are used simultaneously. The total number (N) of fragments per category is included, as is the minimum number of individuals (MNI).[2] The total weight per category is also added. In addition, the estimated vessel equivalents (EVE's)[3] are calculated, as are the degree of completeness[4] and the degree of breakage[5] (Orton *et al*. 1993, 172). By including all these different methods, future comparison to other pottery complexes will be made easier, as pottery specialists now do not always use the same quantification methods. Caution is advised while comparing these different quantification methods. For example, next to giving a general quantification, the total number of fragments also tells us something about the degree of fragmentation of the vessels. Colour-coated ware is usually more fragmented than *amphorae*. The same is true for the weight of the different categories. E.g. fragments of thick-walled pottery will weigh more than colour-coated wares.

During the analysis, the pottery is divided into categories (i.e. *terra sigillata*, *terra nigra*, Pompeian red ware, colour-coated pottery, etc.). No specialist fabric analysis was done, because of time constraints and a lack of specialist knowledge. If possible the fabric and its provenance are determined with use of *The national Roman fabric reference collection* (Tomber and Dore 1998), *Roman pottery in the Tongeren reference collection* (Willems 2005) and *La céramique Romaine en Gaule du Nord* (Brulet *et al*. 2010).[6] Also, colour, decoration and other prominent features are recorded. Several typologies are used to define and date the pottery. The most used monographs are Dragendorff 1895, Oelmann 1914, Brunsting 1937, Stuart 1963 and 1977, Vanvinckenroye 1967 and Gose 1950. In addition Hiddink 2010 is used, because he describes the Roman pottery from the south of the Netherlands.

Analysis of pottery can contribute to research on the villa in several ways. The first and most important purpose of this analysis is the dating of the contexts within the villa. The context that is richest in finds was the cellar (N = 5,132, MNI = 454). Special attention is paid to this cellar and its dating. Pottery can also tell us something about the people who lived in the villa and its function. By looking at the different forms and types of pottery and their provenance, we can for example possibly try to answer questions about the use of pottery, certain functions of different contexts and possible trade connections. The description of the pottery from the villa is twofold. Only the analysed fragments will be treated in this chapter. Firstly, all the different categories that are observed in the cellar will be described. The different fabrics and types will be discussed as well. Moreover, an attempt will be made to date different phases within the cellar. Secondly, a choice is made to study more in depth the pottery from excavation trenches 3, 4, 5, 6, 11, 12, 13, 14, 17 and 24, but only those fragments that could be linked to contexts will be treated here. These fragments will be described and dated as well. Because of time and space constraints the decision was made to depict only a few fragments. Most of the types that are observed have been drawn many times before for other publications, so those fragments will not be depicted here. Obviously the two complete pots from the cellar are drawn (Oelmann 87 and Oelmann 96), as were an archaeologically complete *dolium* of the type Stuart 147, and a few of the rarer types that are observed.[7]

3.2 The cellar (5-4-2A to 5-13-2D)

3.2.1 Pottery description

The cellar was excavated in four quadrants (A-D) and in several artificial levels (4-13). In total 5,132 fragments from this context are analysed (MNI = 454). The total weight is 46093 g. 5,131 fragments or 99.98% date to the Roman period (table 3.2). The MNI is 454 and the total weight 46084 g (99.98%).[8] One fragment (0.02%) dates to the medieval period. This fragment weighs 9 g.

	Rim	Wall	Base	Handle	Spout	N	N%	MNI	MNI%	Weight	Weight%
Hand-made pottery	4	85	–	–	–	89	1.56%	4	0.77%	766	1.36%
Roman wheel-thrown pottery	630	4825	141	21	2	5619	98.27%	516	98.85%	55486	98.39%
Medieval wheel-thrown pottery	4	4	–	–	–	8	0.14%	2	0.38%	135	0.24%
Late Medieval or Modern period wheelthrown pottery	–	2	–	–	–	2	0.03%	–	–	9	0.02%
Total	**638**	**4916**	**141**	**21**	**2**	**5718**	**100.00%**	**522**	**100.00%**	**56396**	**100.00%**

Table 3.1 Analysed pottery

Fabric	Rim	Wall	Base	Handle	Spout	N	N%	MNI	MNI%	Weight	Weight%	EVE	EVE%	Completeness	Degree of breakage
Terra Sigillata	36	21	4	–	–	61	1.19%	25	5.51%	695	1.51%	3.93	5.36%	0.16	15.52
Terra Nigra	–	20	1	–	–	21	0.41%	–	–	184	0.40%	–	–	–	–
Pompeian red ware	13	34	–	–	–	47	0.92%	3	0.66%	516	1.12%	2.50	3.41%	0.83	18.80
Colour-coated ware	160	1408	22	–	–	1590	30.99%	137	30.18%	4028	8.74%	19.13	26.11%	0.14	83.12
Black-slipped ware	114	1320	25	–	–	1459	28.44%	98	21.59%	2208	4.79%	11.69	15.96%	0.12	124.81
Smooth ware	37	518	7	13	–	575	11.21%	29	6.39%	6970	15.12%	7.98	10.89%	0.28	72.06
Amphorae	3	16	0	3	–	22	0.43%	1	0.22%	4135	8.97%	0.89	1.21%	0.89	24.72
Dolia	1	113	4	–	–	118	2.30%	1	0.22%	6979	15.14%	0.23	0.31%	0.23	513.04
Mortaria	14	3	–	–	1	18	0.35%	13	2.86%	1353	2.94%	1.62	2.21%	0.12	11.11
Thick-walled pottery	–	22	–	–	–	22	0.43%	–	–	692	1.50%	–	–	–	–
Coarse ware	185	962	50	–	–	1197	23.33%	147	32.38%	18323	39.76%	25.29	34.52%	0.17	47.33
Indeterminable	–	1	–	–	–	1	0.02%	–	–	1	–	–	–	–	–
Total	**563**	**4438**	**113**	**16**	**1**	**5131**	**100.00%**	**454**	**100.00%**	**46084**	**100.00%**	**73.26**	**100.00%**	**0.33**	**101.17**

Table 3.2 The Roman pottery from the cellar

3.2.1.1 Terra sigillata

In total 61 fragments or 25 MNI of *Terra sigillata* (TS) are found in the cellar (table 3.3). This corresponds with 1.19% of the total amount of analysed fragments. The fragments have a total weight of 695 g. This low number of TS in the cellar fits with the idea of this type of pottery being a luxury product. All the fragments from Maasbracht that could be identified as belonging to a certain fabric, originate from Eastern Gaul. Major production centres in this area were for example the Argonne (N = 12, MNI = 8), La Madeleine (N = 2, MNI = 1), and Trier (N = 24, MNI = 7). These fabrics are usually dated from the second century to the third quarter of the third century.

Nine different types are observed. One fragment belongs to a cup Dragendorff 35. This is possibly the oldest fragment from the cellar (from AD 70 onwards) (Webster 1996, 47; Hiddink 2010, 44). Two fragments are identified to be of a dish Dragendorff 18/31. This form dates in the first half of the second century (Webster 1996, 35; Hiddink 2010, 40). Dragendorff 31, 33 and 44 are also observed in the cellar. These forms date from the second half of the second century to the first half of the third century (Webster 1996, 35, 45 and 54; Hiddink 2010, 40, 46 and 48). Fragments belonging to Dragendorff 32, 40 and 45 date from the last quarter of the second century to the first half of the third century (Webster 1996, 45 and 56; Hiddink 2010, 42 and 52). Four fragments belonging to a cup Oelmann 11 date from the last quarter of the second century onwards (Oelmann 1914, 23; Hiddink 2010, 50). None of the fragments from the cellar have a stamp.

3.2.1.2 Terra nigra

Terra nigra (TN) is fired in a reduced atmosphere. Because of this the inside is (dark)grey and the outside usually grey to black. The surface is polished and often has a shine to it. This makes the surface less porous. TN is generally a very hard fabric. Some forms are covered with a black coating. First and early second century products are often very thin-walled. Later second and third century products are thicker and of less good quality. They generally have a grey to brown colour. TN probably originates from the Belgian provinces of Hainault and Namur and northern Gaul (Van Enckevort 2004, 287) and sometimes also from the Rhineland area, 21 fragments or 0.41% of the analysed fragments are identified as TN (table 3.3). The total weight is 184 g. Only wall fragments are observed.

3.2.1.3 Pompeian red ware

The fabric is relatively porous and is usually reddish-brown in colour. It is tempered with volcanic black sand (or green augite) and white and red inclusions are occasionally visible. The fabric is also a little micaceous (Peacock 1977, 149). Only dishes and accompanying lids are made in Pompeian red ware. The dishes are covered with a (dark) red slip on the inside and on the rim. The lids are not slipped. The outer surfaces can be unevenly and coarsely finished. In general, because of the volcanic inclusions, Pompeian red ware probably originates from Campania. There are similarities with amphorae from Pompeii and Herculaneum. This could mean that the dishes and lids were produced in the environs of the Vesuvius (Hiddink 2010, 89). Pompeian red ware dates from the first century BC and can date up to the middle of the third century. In Maasbracht only late fragments were observed (*c*. AD 175-250), 47 fragments (0.92%) or three MNI from the cellar have been analysed (table 3.3). The fragments have a total weight of 516 g. All fragments belong to three different individuals of the dish Oelmann 53a. These dishes can be dated from the last quarter of the second century to the first half of the third century (Oelmann 1914, 54; Hiddink 2010, 98) and probably originate from the Rhineland or Moselle area.

3.2.1.4 Colour-coated ware

Colour-coated ware is provided with a coating by submersion of the vessel in a paint bath, though sometimes vessels are painted with a brush or sponge. Several different fabrics belong to this category. In the Netherlands the different fabrics were named by Brunsting (Brunsting 1937, 70-72). Only those that are observed in Maasbracht will be discussed here.

- Brunsting a: white core with an (red)orange to brown, sometimes yellow coating. Beakers and dishes were produced in this fabric. The beakers generally date to the first century AD and the dishes to the second century, sometimes the early third century. This fabric was produced in the Rhineland area, among others in Cologne, Xanten and Nijmegen.
- Brunsting b: white core with a matt brown to black coating. Different forms were made in this fabric: most importantly beakers, but also dishes and jugs. These vessels date in the second and third centuries. They were produced in the Lower Rhineland area, among others in Cologne.
- Brunsting c: red or orange core with a matt brown to black coating. Generally only beakers are produced in this fabric. They appear from the middle of the second century and largely originate from the Argonne and Trier.
- Other: one fragment fabricated from an orange clay with a red to orange coating is observed in the cellar, 12 fragments are made of an orange clay and have a part black, part (red) brownish coating.

Colour-coated vessels can be decorated with a variety of different motives. In Maasbracht examples with barbotine, indentations, grooves, ridges, rouletting and roughcasting were observed.

Terra sigillata	Form	Type	N	MNI	Weight
Argonne	dish	Dragendorff 32	2	1	32
	cup	Dragendorff 35	1	1	16
	cup	Dragendorff 40	4	4	59
	cup	Oelmann 11	4	1	19
	–	–	1	1	2
La Madeleine	cup	Dragendorff 33	1	1	9
	–	–	1	–	8
Trier	dish	Dragendorff 18/31	2	2	19
	bowl	Dragendorff 31	6	1	29
	dish	Dragendorff 32	1	1	17
	cup	Dragendorff 33	2	1	153
	bowl	Dragendorff 44	2	1	149
	mortarium	Dragendorff 45	1	1	11
	–	–	10	–	70
–	bowl	Dragendorff 31	2	2	31
	dish	Dragendorff 32	2	1	23
	cup	Dragendorff 33	1	1	10
	cup	Dragendorff 40	1	1	4
	bowl	Dragendorff 44	1	1	5
	–	–	16	3	29
Total Terra sigillata			**61**	**25**	**695**
Terra nigra					
	–	–	**21**	–	**184**
Pompeian red ware					
	dish	Oelmann 53	2	2	23
	dish	Oelmann 53a	38	1	443
	–	–	7	–	50
Total Pompeian red ware			**47**	**3**	**516**
Colour-coated ware					
Brunsting a	beaker	Oelmann 30	1	1	5
	jug	Stuart 7	1	1	10
	dish	Stuart 10	6	6	148
	–	–	57	2	282
Brunsting b	beaker	Oelmann 30	60	37	179
	beaker	Oelmann 31	1	1	1
	beaker	Oelmann 32	89	75	537
	beaker	Oelmann 33	2	2	10
	dish	Oelmann 53	1	1	2
	beaker	Stuart 4	1	1	5
	dish	Stuart 13	1	1	5
	beaker	–	6	6	4
	–	–	1299	–	2518
Brunsting c	beaker	Oelmann 32	1	1	2
	–	–	51		273
other	cup	Oelmann 38	12	1	36
	–	–	1	1	11
Total colour-coated ware			**1590**	**137**	**4028**

Table 3.3 *Terra sigillata*, *Terra nigra*, Pompeian red ware and Colour-coated ware fragments from the cellar

In total 1,590 fragments or 137 MNI are analysed (table 3.3). This amounts to 30.99% of the total number of fragments from the cellar. The total weight is 4028 g. The colour-coated ware is very fragmented, which can be seen in the high number of fragments and the relatively low total weight. Ten different types are observed in the cellar. Fragments of a jug Stuart 7 and a dish Stuart 10 are among the oldest colour-coated fragments from the cellar. They can both be dated in the second century (Stuart 1963, 25 and 26-27; Hiddink 2010, 102 and 96). Several fragments of a cup Oelmann 38 date in the second or third century (Oelmann 1914, 44; Haalebos 1990, 145; Hiddink 2010, 100). According to Hiddink this form is quite rare in the south of the Netherlands (Hiddink 2010, 100). A fragment of a beaker Stuart 4 dates between AD 125 and 175 (Stuart 1963, 24; Haalebos 1990, 141-142; Hiddink 2010, 92). The beakers Oelmann 30 and 32 date respectively from the second half of the second century to the end of the third century (Oelmann 1914, 38-39; Brunsting 1937, 76; Hiddink 2010, 94) and from the second half of the second century to AD 270 (Oelmann 1914, 39-40; Brunsting 1937, 78; Haalebos 1990, 142; Hiddink 2010, 94). The dishes Oelmann 53 and Stuart 13 both date from the last quarter of the second century onwards (Stuart 1963, 29; Haalebos 1990, 144-145; Hiddink 2010, 98). Oelmann 53 ceases to be produced around AD 250 (Oelmann 1914, 54; Hiddink 2010, 98). Fragments of beakers Oelmann 31 and 33 are also observed in the cellar. These forms are usually produced in black-slipped ware. However, these fragments are made in Brunsting b. Oelmann 31 dates between AD 200-275 (Oelmann 1914, 39; Hiddink 2010, 106) and Oelmann 33 generally dates in the third century (Oelmann 1914, 40-42; Haalebos 1990, 142; Hiddink 2010, 106). The number of fragments per different fabric and/or provenance is shown in table 3.4. The vast majority of fragments (91.82%) is made in Brunsting b, which complies with the dating of the different types that are observed. Two small fragments are probably gaming pieces or plugs for jugs or amphorae.

3.2.1.5 Black-slipped ware

This category consists mainly of very thin-walled beakers. Several fabrics occur in the cellar:

- Brunsting d: a red or orange clay, sometimes with a grey (inner)core, covered in a black coating. The outside usually has a metallic shine to it. These beakers were produced in Trier between approximately AD 190/200 and 350 (Brulet *et al*. 2010, 344-345). However, in the south of the Netherlands these products are seen as typical of the third century (Hiddink 2009, 157-158; Hendriks 2012, 188). Most of the beakers were decorated with rouletting. From about 255/260 beakers appeared, decorated with white barbotine, although they are rare. These so-called 'motto beakers' are decorated with inscriptions and figurative motifs. They roughly date until the end of the third century (circa AD 270/280) (Brulet *et al*. 2010, 355).
- Grey: a grey core covered in a black or grey coating. The outside usually has a metallic shine to it. Most beakers are decorated with rouletting, some with barbotine in the colour of the slip. These beakers can be dated in the third century AD, although some were made in the fourth century (Brulet *et al*. 2010, 350). They were imported from the Argonne.
- Grey other: in Maasbracht a fabric very similar to the fabric from the Argonne is observed: a white core with a black or grey coating with a metallic shine. This seems to fit the category '*la céramique métallesscente du Nord Gaul*' as described by Vilvorder (Brulet *et al*. 2010, 357-358). No production centre is known for these vessels, but it is possibly a regional variation on the fabric from the Argonne. The products are observed mainly in the region of Tongeren and can also be dated in the third century.
- Other: one fragment has a light orange core and a light orange to brownish coating with a metallic shine.

Fabric	Provenance	N	N%	MNI	MNI%	Weight	Weight%
Brunsting a	Rhineland/Cologne	65	4.09%	10	7.30%	445	11.05%
Brunsting b	Rhineland/Cologne	1460	91.82%	124	90.51%	3261	80.96%
Brunsting c	Argonne/Trier	52	3.27%	1	0.73%	275	6.83%
Other	–	13	0.82%	2	1.46%	47	1.17%
Total		**1590**	**100.00%**	**137**	**100.00%**	**4028**	**100.00%**

Table 3.4 Colour-coated ware from the cellar per fabric and provenance

In total 1,459 fragments of black-slipped ware are found in the cellar (table 3.5). This corresponds with 98 MNI and 28.44% of the total amount of fragments from the cellar. The total weight is 2208 g. The beakers are very fragmented, hence the high number of fragments and the relatively low weight. Three different types are observed. Their dating may vary because of the differences in the fabrics. Oelmann 31 beakers from Trier generally date between AD 175 and 275. However, they are most popular in the third century. The same type of beaker from the Argonne dates between AD 200 and 275 (Oelmann 1914, 39; Brulet *et al*. 2010, 344-345; Hiddink 2010, 106). Oelmann 33 beakers from Trier are usually dated from the third to the first half of the fourth century, but they are also most popular in the third century. The same type is produced in the Argonne in the third century as well and possibly also in the area around Tongeren (Oelmann 1914, 40-42; Haalebos 1990, 142; Brulet *et al*. 2010, 344-345; Hiddink 2010, 106). In addition to these common black-slipped ware types, some fragments of Oelmann 30 beakers were found in the cellar. The fragments from Trier and the Argonne are both most popular in the third century (Brulet *et al*. 2010, 344-345). One fragment is probably a gaming piece or plug for jugs or amphorae.

The number of fragments per different fabric and/or provenance is shown in table 3.6. Most of the fragments are made in the grey fabric which originates from the Argonne (63.67%) and can generally be dated in the third century. The same dating is valid for 28.51% of the fragments that originate from Trier. These vessels flourished in the third century, although they can also date from the second half of the second century to the first half of the fourth century.

3.2.1.6 Smooth ware

Smooth ware is made of a very fine, white, light orange or beige fabric. The surface of this fabric is smoothened with a stone or a spatula made of bone, wood or metal. This was probably done to lessen the permeability. Also, the clay was washed. Because of this the fabric contains (almost) no

Fabric		Form	Type	N	MNI	Weight
Brunsting d	Trier	beaker	Oelmann 30	2	1	10
	Trier	beaker	Oelmann 31	15	10	35
	Trier	beaker	Oelmann 33	27	23	72
	Trier	–	–	371	1	645
grey	Argonne	beaker	Oelmann 31	7	6	11
	Argonne	beaker	Oelmann 33	49	45	111
	Trier	beaker	Oelmann 33	1	1	9
	Argonne	beaker	–	3	3	3
	Argonne	–	–	870	–	1196
grey other	–	beaker	Oelmann 30	1	1	1
	–	beaker	Oelmann 33	8	7	9
	–	–	–	104	–	104
other	–	–	–	1	–	2
Total				**1459**	**98**	**2208**

Table 3.5 Black-slipped ware fragments from the cellar

Fabric		N	N%	MNI	MNI%	Weight	Weight%
Brunsting d	Trier	415	28.44%	35	35.71%	762	34.51%
Grey	Argonne	929	63.67%	54	55.10%	1321	59.83%
	Trier	1	0.07%	1	1.02%	9	0.41%
Grey other	–	107	7.33%	7	7.14%	106	4.80%
other		7	0.48%	1	1.02%	10	0.45%
Total		**1459**	**100.00%**	**98**	**100.00%**	**2208**	**100.00%**

Table 3.6 Black-slipped ware from the cellar per fabric and provenance

impurities. This was done while the vessel was being made on the potter's wheel, therefore horizontal bands are sometimes visible on the outer surface. Several vessel types are made in this fabric: one or two handled jugs, honey jars, lids, *tazza* and special forms like baby bottles and sieves. These kind of vessels are produced in the Rhineland and the Meuse region among others. Some smooth ware products are smoked. Their surface is brown, grey-brownish or almost black, because of shutting off the oxygen supply in the kiln during the firing process. This 'smoking' was done from the late second century onwards and was done mainly in the Meuse area and among others in Tienen (Martens 2012, 285; Hendriks 2012a, 190).

575 fragments (11.21%) or 29 MNI from the cellar are analysed (table 3.7). Their total weight is 6970 g. 11 different types are observed in the cellar. A fragment of a jug Oelmann 61 dates in the second century (Oelmann 1914, 58; Hiddink 2010, 98). One fragment of a jug Stuart 110b dates between AD 130 and 200 (Stuart 1963, 44-45; Hiddink 2010, 124). Fragments of a Stuart 112 jug date from AD 150 onwards (Vanvinckenroye 1967, 39-40; Haalebos 1990, 161). Several fragments of a beaker of the type Oelmann 32 are dated between the second half of the second century and AD 270 (Oelmann 1914, 39-40; Brunsting 1937, 38; Haalebos 1990, 142; Hiddink 2010, 94). The honey jar Stuart 146 was made until the end of the third century, unfortunately with little to no chronological development in the form (Stuart 1963, 63-64; Hiddink 2010, 138).

Two fragments of a rouletted beaker of the type Vanvinckenroye 1967.87 date from the late second century into the third century (Vanvinckenroye 1967, 48; Hiddink 2010, 110). Two fragments of a similar beaker without rouletting. Vanvinckenroye 1967.89, date from the end of the second century to the third century (Vanvinckenroye 1967, 49). Both dishes Vanvinckenroye 1967.90 and 1967.136 date from the last quarter of the second century to the first quarter of the third century (Vanvinckenroye 1967, 48

Fabric	Form	Type	N	MNI	Weight
Oxidised ware Meuse area	beaker	Oelmann 32	2	1	26
	pot	Stuart 146	6	2	359
Oxidised ware Tienen	dish	Vanvinckenroye 1967.90	1	1	24
	–	–	100	–	2435
Smoked ware Tienen	dish	Vanvinckenroye 1967.90	1	1	26
Oxidised ware Meuse area/ Rhineland	beaker	Oelmann 32	1	1	2
	jug	Stuart 110b	1	1	8
	pot	Stuart 146	1	1	33
	dish	Vanvinckenroye 1967.136	1	1	5
	–	–	112	–	1130
Oxidised ware Rhineland	jug	Oelmann 61	1	1	8
	–	–	76	–	614
Oxidised ware	beaker	Oelmann 32	1	1	4
	pot	Stuart 146	2	1	40
	beaker	Vanvinckenroye 1967.87	1	1	2
	beaker	Vanvinckenroye 1967.89	2	1	10
	beaker	Vanvinckenroye 1967.104c	1	1	5
	–	–	187	1	1279
Smoked ware	pot	Stuart 112	2	1	7
	beaker	Vanvinckenroye 1967.87	1	1	2
	dish	Vanvinckenroye 1967.90	10	8	626
	beaker	Vanvinckenroye 1967.104a	1	1	20
	–	–	48	2	233
Other			16	–	72
Total			**575**	**29**	**6970**

Table 3.7 Smooth ware fragments from the cellar

and 61; Hiddink 2010, 112). The beaker Vanvinckenroye 1967.104 appears in two different subtypes in the cellar: subtype a dates in the last quarter of the second century, subtype c from the last quarter of the second century to the first half of the third century (Vanvinckenroye 1967, 53-54; Hiddink 2010, 152). The number of fragments per different fabric and/or provenance is shown in table 3.8.

3.2.1.7 Amphorae

Amphorae are big transport containers for (semi) fluids like wine, fish sauce or olive oil. Unlike other categories of pottery, *amphorae* fragments can be ascribed to a specific form by looking at the fabric and provenance. Certain areas specialised in certain products. For example, wine came from Gaul and olive oil from Baetica, *Amphorae* are relatively rare on sites in the southern Netherlands. Most fragments belong either to Dressel 20 olive oil *amphorae* or Gauloise wine *amphorae* (Hiddink 2010, 187). Sometimes stamps, graffiti or *tituli picti* can tell us something about the content or the capacity of the *amphora*, or about the potter.

In total 22 fragments or one MNI from the cellar were analysed (table 3.9). This is 0.43% of the fragments from the cellar. The total weight is 4135 g. Several fragments belong to an Oelmann 68 produced in Gaul (fig. 3.1f-g). This *amphora* dates from the second half of the second century to the third century (Oelmann 1914, 60; Hiddink 2010, 184). Other fragments could not be identified as belonging to a certain type, but they were probably imported from Gaul and Baetica.

3.2.1.8 Dolia

A *dolium* is a big storage pot with a flat and horizontal rim. They were used for storing products like wine, oil, water and grain. The rim is sometimes covered with a black substance on both the inside and the outside. This could be either tar or bitumen and may have served to attach a (wooden) lid or a cloth to seal off the vessel. The fabric is usually yellow-brown to grey-brown. It is tempered with grog. This tempering sometimes contains reddish particles, which look like crushed Roman roofing tiles or floor tiles or secondary burnt pottery. Some *dolia* are decorated with notches, probably imitating ropes. Unfortunately there is no chronological development visible in *dolia*, so they are not useful for dating contexts (Hiddink 2010, 215).

118 of the fragments (2.30%) from the cellar are identified as *dolia* fabric (MNI = 1) (table 3.9). Their total weight is 6979 g. 22 fragments belong to one Stuart 147 *dolium* imported from Tienen. An archaeological complete profile could be reconstructed (fig. 3.2). This type was produced during the entire Roman period, but mainly from the first to the third century (Stuart 1963, 64-65; Haalebos 1990, 172; Hiddink 2010, 216).

3.2.1.9 Mortaria

Mortaria were probably used to pulverize ingredients for things like sauces. We could compare them to modern mortars and pestles. This use is indicated by little stones or mortar that roughened the inside surface. Other possible uses are to separate chaff from wheat, to knead dough or to make porridge. This use could explain the large numbers of *mortaria* in military contexts: a soldier would have had to prepare his daily portion of grain and/or porridge in his own personal *mortarium* (Vanderhoeven 1989, 14). A possible use for *mortaria* that are not roughened is as a milk bowl (Vanderhoeven 1989). *Mortaria* are sometimes stamped on the rim.

In total 18 fragments (0.35%) from the cellar were identified as belonging to a *mortarium* (MNI = 13) (table 3.9). Their total weight is 1353 g. Three different types were observed in the cellar. Two fragments of a Gose 453 date from the middle of the second century onwards (Gose 1950, 39; Hiddink 2010, 210). Several fragments of a Brunsting 37 date from the middle of the second century to the end of the third century (Brunsting 1937, 111; Vanvinckenroye 1967, 49; Hiddink 2010, 210). Seven fragments of the type Vanvinckenroye 1967.94 date from the last quarter of the second century to the third century (Vanvinckenroye 1967, 50; Hiddink 2010, 212).

3.2.1.10 Coarse ware

Coarse ware is made of clay tempered with sand or fine pebble-sand. Hence, the surface of the vessels is coarse. Sometimes the fabric is rather crumbly and can feel like sandpaper. Coarse ware vessels are made on a potter's wheel. The colour of these vessels can vary from white to beige, yellow to brown, orange to red, and grey. The products are typically used in everyday life. Their function can vary from cooking pot to transport vessel to storage pot. Pots, bowls, beakers, dishes and jugs were all produced in this fabric.

In total 1,197 fragments or 147 MNI of coarse ware were found in the cellar. This is 23.33% of the total number of analysed fragments. The total weight is 18323 g (table 3.10).[9] 21 different types fabricated in coarse ware were observed in the cellar. The lids of type Oelmann 120a and 120b were produced throughout the Roman period (Oelmann 1914, 80; Hiddink 2010, 148), but the fragments from the cellar can be dated to AD 350 because of their fabric The dish Stuart 218 dates from the second century onwards (Stuart 1963, 84-85; Hiddink 2010, 160). The dating of a fragment of a bowl Oelmann 105 is the same (Oelmann 1914, 77; Hiddink 2010, 156) (fig. 3.1b). Hiddink states that this type is rare for the south of the Netherlands. The pot Stuart 201a dates from the first to the third century (Stuart 1963, 71-72; Hiddink 2010, 144). Fragments of the bowl Oelmann 104 date in the second and third century (Oelmann 1914, 76-77;

Fabric	N	N%	MNI	MNI%	Weight	Weight%
Oxidised ware Meuse area	8	1.39%	3	10.34%	385	5.52%
Oxidised ware Tienen	101	17.57%	1	3.45%	2459	35.28%
Oxidised ware Meuse area/ Rhineland	116	20.17%	4	13.79%	1178	16.90%
Oxidised ware Rhineland	77	13.39%	1	3.45%	622	8.92%
Oxidised ware	194	33.74%	6	20.69%	1340	19.23%
Smoked ware Tienen	1	0.17%	1	3.45%	26	0.37%
Smoked ware	62	10.78%	13	44.83%	888	12.74%
Other	16	2.78%	–	0.00%	72	1.03%
Total	**575**	**100.00%**	**29**	**100.00%**	**6970**	**100.00%**

Table 3.8 Smooth ware from the cellar per fabric and provenance

Amphorae				
Fabric	**Type**	**N**	**MNI**	**Weight**
Gaulish	Oelmann 68	3	1	1303
	–	13	–	1267
Spanish	–	1	–	120
Other	–	5	–	1445
Total		**22**	**1**	**4135**
Dolia				
Fabric	**Type**	**N**	**MNI**	**Weight**
Oxidised ware Tienen	Stuart 147	22	1	1896
	–	21	–	1718
Oxidised ware	–	75	–	3365
Total		**118**	**1**	**6979**
Mortaria				
Fabric	**Type**	**N**	**MNI**	**Weight**
Oxidised ware Meuse region	Vanvinckenroye 1967.94	2	2	192
Oxidised ware Meuse region/Rhineland	Brunsting 37	4	4	197
	Gose 453	1	–	46
	Vanvinckenroye 1967.94	4	3	611
	–	4	1	164
Oxidised ware	Gose 453	1	1	67
	Vanvinckenroye 1967.94	1	1	42
	–	1	1	34
Total		**18**	**13**	**1353**
Coarse ware		N	MNI	Weight
Thick-walled oxidised ware	–	**22**	–	**692**

Table 3.9 *Amphorae, Dolia, Mortaria* and Coarse ware fragments from the cellar

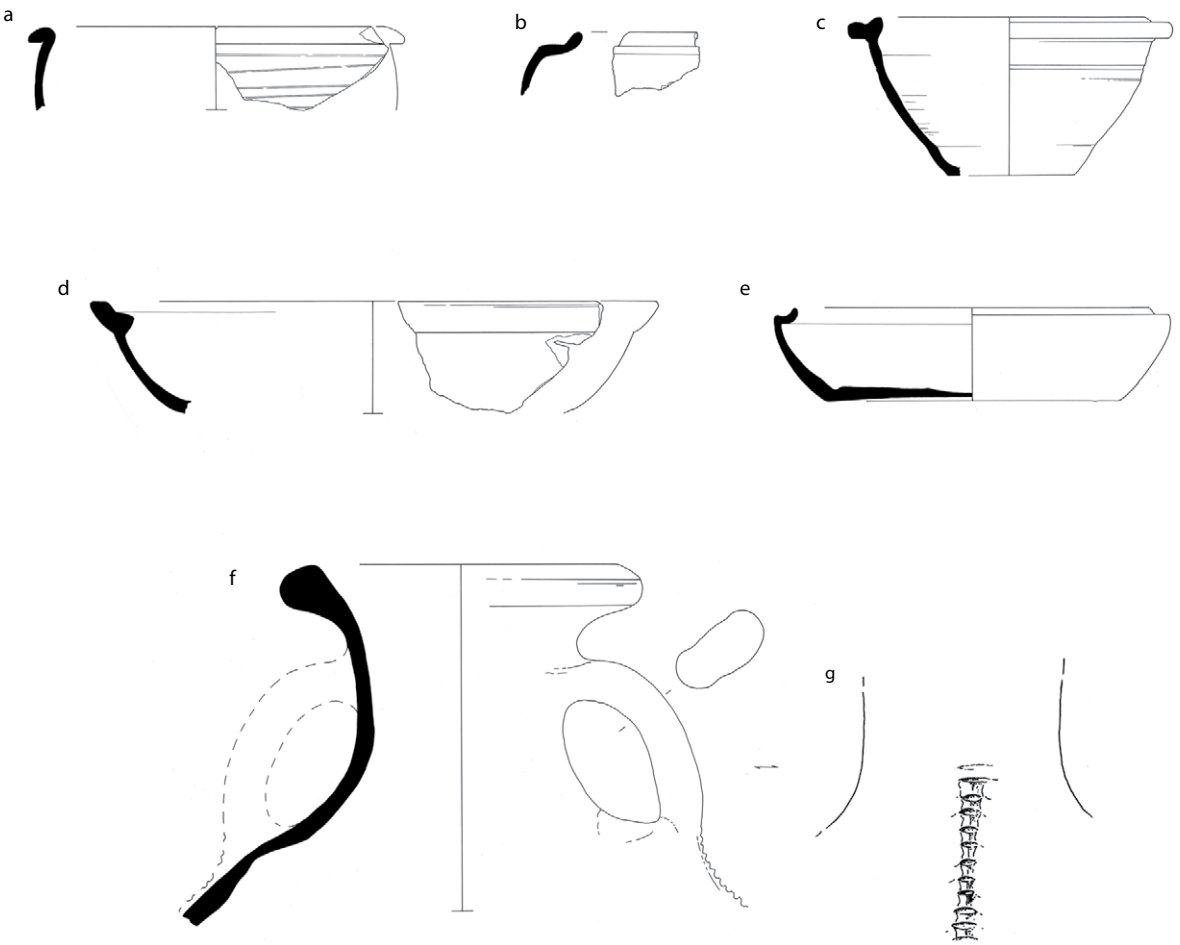

Figure 3.1 Pottery from the cellar: bowl type Tuffreau-Libre VIIa (a), bowl type Oelmann 105 (b), variant on a bowl type Stuart 210 (c), bowl type Oelmann 103 (d), variant on a dish type Stuart 217 (e), *Amphora* type Oelmann 68 (f) and decoration on the handle of the *Amphora* (g); figures a-f scale 1:4, figure g scale 1:2. Drawings R.A.F. Timmermans

Hiddink 2010, 154). This dating is valid for the dish Oelmann 111 (Oelmann 1914, 78; Hiddink 2010, 160) and the bowl Vanvinckenroye 1967.129 (Vanvinckenroye 1967, 59; Hiddink 2010, 160) as well. Several fragments of the pot Oelmann 87 date from the second century to the first half of the third century (Oelmann 1914, 71; Haalebos 1990, 106; Van Enckevort 2004, 309; Hiddink 2010, 146). However, one complete individual is made in smoked ware from the Meuse region, and thus can probably be dated between AD 150 and 250 (fig. 3.3). The rim of pot was collapsed, whereby the pot seemed a little saggy. A fragment of a bowl Tuffreau-Libre VIIa can be dated from the second to the fourth century (Tuffreau-Libre 1980, 49) (fig. 3.1a).

Fragments of a dish Stuart 216 date from the second half of the second century and the first quarter of the third century (Stuart 1963, 83-84; Haalebos 1990, 170; Hiddink 2010, 158). 36 fragments of 33 individuals of the type Oelmann 89 date from the second half of the second century to AD 275/300 (Oelmann 1914, 72; Brunsting 1937, 144; Hiddink 2010, 148). A variety of different rims of this type were observed in the cellar. One rim fragment is a variant of the normal Stuart 210 type (fig. 3.1c). This fragment can be dated from the second half of the second century to approximately the second half of the third century (Stuart 1963, 77 and 79; Haalebos 1990, 168 and 169; Hiddink 2010, 154). Fragments of a bowl Oelmann 103 date from the

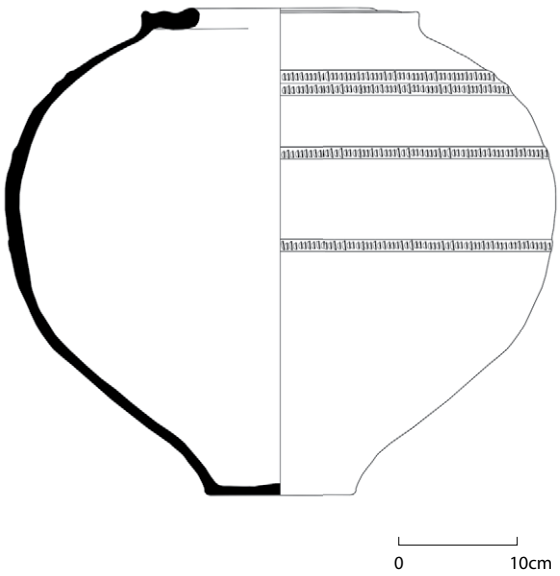

Figure 3.2 *Dolium* (type Stuart 147) from the cellar. Drawing L. Bekkers

middle of the second century onwards (fig. 3.1d). According to Hiddink this form is quite rare in the southern part of the Netherlands (Hiddink 2010, 156). Two fragments of a dish Vanvinckenroye 1967.136 date from the last quarter of the second century to the first quarter of the third century (Vanvinckenroye 1967, 61). Fragments of two subtypes of the beaker Vanvinckenroye 1967.104 (b and c) date from the last quarter of the second century to the first half of the third century (Vanvinckenroye 1967, 53-54; Hiddink 2010, 152). Both the dish Oelmann 112 (Oelmann 1914, 78; Brunsting 1937, 154; Hiddink 2010, 160) and the complete jug Oelmann 96 (Oelmann 1914, 75; Hiddink 2010, 162) (fig. 3.4) date from the last quarter of the second century onwards. On the side the jug is purposely perforated. A dish resembling Stuart 217 can be dated from the last quarter of the second century until the end of the third (Stuart 1963, 83; Haalebos 1990, 170). The fragments are categorised under Stuart 217v, because they resembled this type most.[10] However, the rim is more elongated (fig. 3.1e). One fragment is probably a gaming piece or plug for jugs or amphorae.

For some of the fragments from Maasbracht the provenance could be determined (table 3.10). Several fragments were produced in the Rhineland and Meuse area, some in the Eifel area. Just like the smooth ware, some coarse ware products are smoked. One fragment of a light grey to grey fabric decorated with 'lustrous bands' (*bandes lustrées*), is identified as North Gaul grey ware.

3.2.1.11 Medieval pottery

Only one fragment of medieval pottery has been found in the cellar (9 g). It is a wall fragment of a so-called Badorf pot. This type of pottery can be dated from AD 725 to 900.

Figure 3.3 Complete pot (type Oelmann 87) from the cellar. Photo M. Hemminga, drawing L. Bekkers

Fabric	Form	Type	N	MNI	Weight
Oxidised ware Meuse region	pot	Oelmann 89	6	5	273
	bowl	Oelmann 105	1	1	23
	lid	Oelmann 120a	1	1	8
	beaker	Vanvinckenroye 1967.104b	2	2	14
	–	–	1	–	32
Smoked ware Meuse region	pot	Oelmann 87	1	1	–
	pot	Oelmann 89	2	2	166
Oxidised ware Meuse region/Rhineland	pot	Oelmann 87	1	1	5
	pot	Oelmann 89	3	3	144
	jug	Oelmann 96	1	1	3372
	lid	Oelmann 120a	4	4	73
	lid	Oelmann 120b	1	1	16
	pot	Stuart 201a	2	2	13
	bowl	Stuart 211	4	1	10
	dish	Vanvinckenroye 1967.136	2	1	22
	–	–	16	–	486
Oxidised ware Tienen	–	–	13	–	110
Oxidised ware	pot	Oelmann 89	13	13	696
	lid	Oelmann 120a	33	22	627
	pot	Stuart 201a	1	1	29
	bowl	Stuart 211	2	2	29
	dish	Stuart 216	1	1	7
	dish	Stuart 218	1	1	10
	beaker	Vanvinckenroye 1967.104b	2	2	11
	beaker	Vanvinckenroye 1967.104c	1	1	5
	–	–	383	3	5083
Smoked ware	pot	Oelmann 89	7	6	159
	bowl	Oelmann 103	2	1	79
	bowl	Oelmann 104	1	1	10
	dish	Oelmann 111	14	5	316
	lid	Oelmann 120a	37	26	437
	lid	Oelmann 120b	3	1	48
	pot	Stuart 201a	1	1	16
	pot	Stuart 210v	1	1	79
	dish	Stuart 218	2	2	114
	–	–	245	–	1613
Rhineland/Eifel ware	bowl	Oelmann 104	2	1	58
	dish	Oelmann 112	1	1	26
	dish	Stuart 217v	7	1	295
	dish	Stuart 218	1	1	6
Reduced North Gaulish grey ware	bowl	Tuffreau-Libre VIIa	1	1	45
Reduced ware	pot	Oelmann 87	2	2	20
	pot	Oelmann 89	5	4	76
	bowl	Oelmann 104	2	1	8
	dish	Oelmann 111	1	–	20
	lid	Oelmann 120a	15	10	143
	pot	Stuart 201a	2	2	12
	bowl	Stuart 211	1	1	65
	dish	Stuart 216	1	1	1
	beaker	Vanvinckenroye 1967.104c	1	1	4
	bowl	Vanvinckenroye 1967.129	1	1	81
	–	–	331	3	2810
–	–	–	12	–	518
Total			**1197**	**147**	**18323**

Table 3.10 Coarse ware from the cellar per fabric and provenance

Figure 3.4 Complete jug (type Oelmann 96) from the cellar. Photo M. Hemminga, drawing R.A.F. Timmermans

3.2.1.12 Other (ceramic) finds

Some other (ceramic) finds were found in the cellar: a possible sling shot (5-9-2C) made of a natural river stone, an amber pendant (5-11B-2B), a spindle whorl (5-11-2A) and a small head of a boy (5-6-2D). They are described briefly in this chapter, because they were not recorded elsewhere.

The sling shot and the spindle whorl did not yield additional information. The pendant was small and triangular in shape (13 × 17 mm). The top was pierced and a cross and line were carved into the amber. The head has already been studied by Van Boekel (Van Boekel 1987, 661). It is a bust of a boy of the so-called *risus* type. She describes it as a bald head of a smiling boy with chubby features and a broad nose. The entire back, the breast and the plinth are missing. It is made of a white, smoothened fabric. The figurine could be ascribed to a workshop in Cologne and may be dated to the second half of the second century.[11]

3.2.2 The dating of the cellar

The pottery from the cellar can by and large be dated between AD 175 and 260 (fig. 3.5). When we look at the different types that occur in the cellar, we see that types dating before approximately AD 175 are rare. Only two fragments of a dish Dragendorff 18/31 and one fragment of a beaker Stuart 4 should be dated before AD 175. Moreover, typical types from the first three quarters of the second century are absent. For example the TN bowl Holwerda BW 55 and the colour coated beaker Stuart 2 were not found in the cellar (Hendriks 2012a, 226). Neither was the TS type Dragendorff 27, or any South Gaul TS for that matter. It seems therefore plausible to take AD 175 as a starting date for the first datable phase of the cellar. It is however entirely possible that the cellar was built before this date.

The final date of AD 260 is less certain. The only definite third century types in the cellar are the black-slipped beakers Oelmann 31 and 33 from Trier and the Argonne. However, Hiddink and Hendriks mention that both the bowl Oelmann 105 and the dish Oelmann 112 could date from the middle of the third century, although they can have a starting date of respectively AD 100 and AD 150/175 (Hiddink 2009, 161; Hendriks 2012a, 226). In addition, Heeren states that the dish Oelmann 112 is absent on sites in the south of the Netherlands that can be dated in the first half of the third century. It only appears in Tiel in the second half of the third

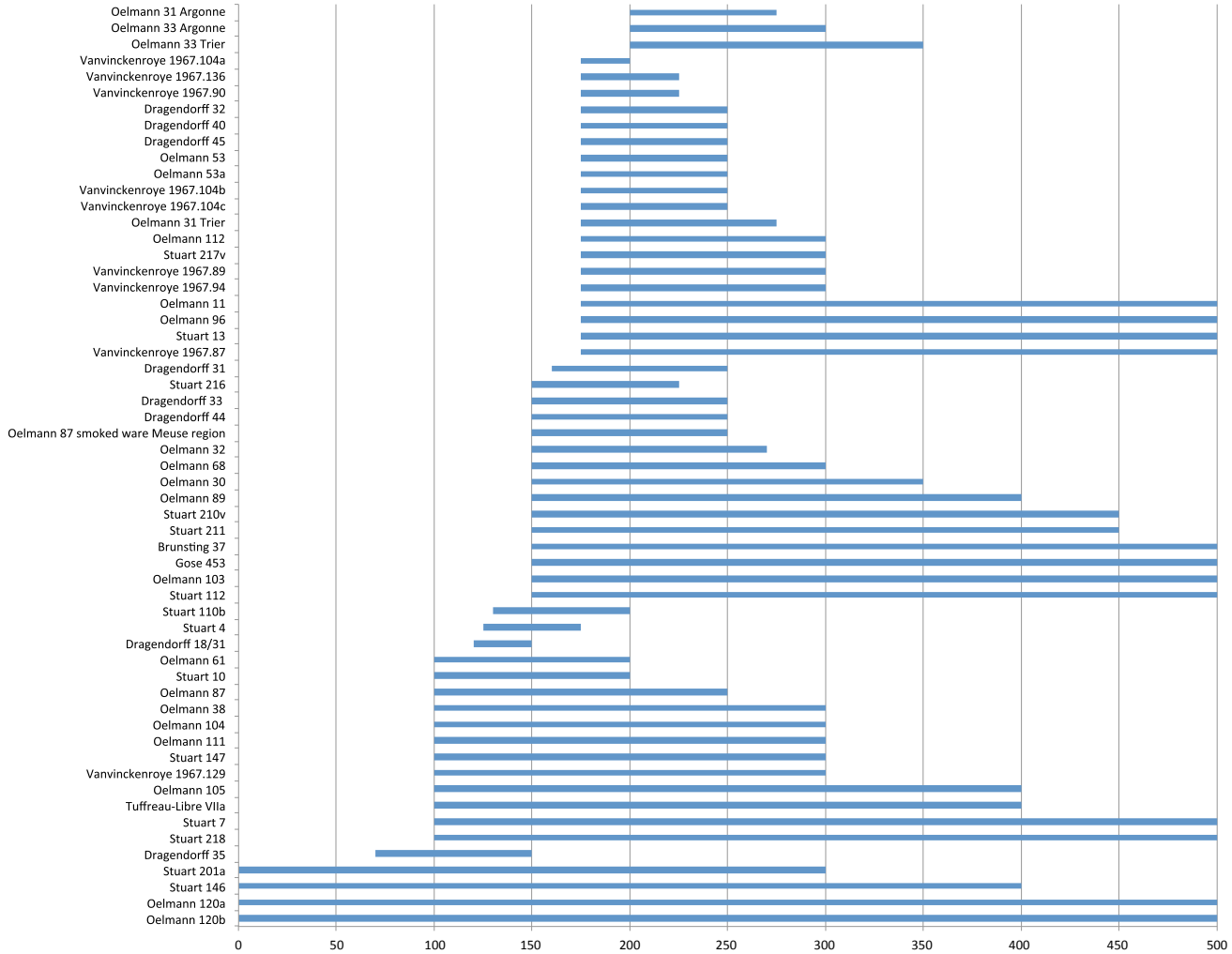

Figure 3.5 Dating of the Roman pottery in the cellar

century (Heeren 2006, 57). The fragments of both types could have appeared during the final phases of the cellar.

The final date of approximately AD 260 is based mainly on the absence of certain types that are typical of the second half of the second century in the south of the Netherlands. The absence of so-called 'motto beakers' (AD 255/260-270/280) is striking. One would expect at least some fragments of a 'motto beaker' among the high numbers of black-slipped ware beakers found in the cellar if this cellar dated after AD 260. Also, the absence of for example the late TN dish Van Enckevort VH 12, which dates around de middle of the third century (Van Enckevort 2004, 99; Hiddink 2010, 82-83; Hendriks 2012a, 226), or other late TN or TS types point towards a final date for the cellar around AD 260.

When we look more in depth at the different levels in the cellar, they can roughly be divided into two different phases on the basis of the pottery: levels 13-11 and levels 10-4 (table 3.11).[12] The oldest phase consists of the levels 13-11. Two sub-phases can be distinguished here, 402 fragments of 44 individuals were found in level 13, 805 fragments of 78 individuals in level 12 and 3137 fragments of 234 individuals in level 11 A-D.

The first phase seems to consist of two complete vessels dug into the floor of the cellar with rubbish surrounding them. The complete vessels likely belong to a period when the cellar was still in use (phase 1A). They probably predate the other fragments found in this phase. The jug Oelmann 96 dates from the last quarter of the second century to the third century, the pot Oelmann 87 in smoked ware from the Meuse area dates between AD 150 and 250. Phase 1A probably

	Date	Level
Phase 1A	AD 175	13-11
Phase 1B	AD 175 - early third century	13-11
Phase 2	early third century - AD 260	10-4

Table 3.11 Phasing of the cellar

dates around AD 175. It is of course conceivable that the cellar was in use before AD 175 and that it was cleared before placing the two complete vessels there. We can assume that people using the cellar would have kept it clean of rubbish. If we presume that the cellar was built before AD 175, phase 1A would be a second phase in the existence of the cellar. This was possibly a rebuilding phase. However, the presumably earlier phase 0 cannot be dated by the means of pottery. Very soon after digging the vessels into the floor, the cellar was slowly filled up with rubbish (phase 1B). Most of the datable fragments have a broad dating range (second to third or fourth centuries). One fragment of a beaker Stuart 4 dates in the second century, it presumably belongs to one of the earlier phases of usage (0 or 1A). The filling up of the cellar probably started at the end of the second century. The presence of 1388 fragments (MNI = 93) of black-slipped ware tells us that the filling up was still going on in the early third century. Phase 1B can thus be dated between approximately AD 175 and the early third century.

The second phase consists of the artificial levels 10-4. It seems that the cellar was at this time filled with a large dump of rubbish. Level 10 consists of 203 fragments of 22 individuals, level 9 of 51 fragments of nine individuals, level 8 of 49 fragments of five individuals. 57 fragments of eight individuals were found in level 7 and 83 fragments of eight individuals in level 6. Level 5 contains 104 fragments of 14 individuals and one fragment of medieval pottery. 240 fragments of 32 individuals are found in level 4. Almost all of the datable fragments have a broad dating range (second to third or fourth century). Two fragments belong to a dish Dragendorff 18/31, which has to be dated before the middle of the second century. They probably belong to phase 1A or perhaps even the earlier phase 0. The presence of 71 fragments (MNI = 5) of black-slipped ware point towards the filling up of the cellar after the beginning of the third century. The fragments of Oelmann 105 and 112 could date shortly after the middle of the third century. Phase 2 thus dates from the early third century to approximately AD 260.

To summarize, the cellar can be divided into several phases. Phase 1A dates around AD 175 and consists of the two complete vessels that were dug into the floor. Phase 1B dates from AD 175 to the early third century and is made up of rubbish surrounding the two complete vessels. Phase 2 dates from the early third century to approximately AD 260 and can be described as a rubbish dump. It is likely that the rubbish was dumped all at once. Finally, there is the possibility of the existence of a phase 0, which would date before AD 175.

3.2.3 Forms and function

The pottery from the cellar can also be classified according to form (table 3.12). A difference can be seen when comparing the percentages of N and MNI. For example, while looking at the numbers (N), 13.24% of the fragments belonged to a *dolium*. But when we look at the minimum number of individuals (MNI), they make up for only 0.23% of the individuals in the cellar. This is because of the differences between pottery categories in their degree of breakage. Colour-coated pottery will break a lot easier than for example an *amphora*. However, it is clear that the majority of the fragments belong to beakers.

In addition the pottery can be classified in categories of functional use:

1. Table ware: beakers, cups, dishes, bowls, honey jars and jugs in TS, TN, Pompeian red ware, colour-coated ware and black-slipped ware.
2. Transport ware: *amphorae* and *dolia*. A secondary use for this type of pottery was storage.
3. Kitchen ware: *mortaria* and pots, lids, dishes, bowls and jugs made in coarse ware. These vessels were used for the preparation, cooking and storage of food.

When we look at the functional use of the pottery from the cellar, the majority of it is table ware (table 3.13). This corresponds with the majority of fragments belonging to beakers. Of course, we cannot know how many vessels made in other materials were used in addition to pottery. For example, wooden or glass vessels, but also silver or bronze vessels. Some of these vessels will have been lost to us because of degradation or re-use of metals.

Form	N	N%	MNI	MNI%
Beaker	336	40.43%	235	53.17%
Amphora	3	0.36%	1	0.23%
Bowl	52	6.26%	26	5.88%
Cup	16	1.93%	8	1.81%
Dish	96	11.55%	38	8.60%
Dolium	110	13.24%	1	0.23%
Jug	16	1.93%	5	1.13%
Lid	108	13.00%	65	14.71%
Mortarium	19	2.29%	14	3.17%
Pot	75	9.03%	49	11.09%
Totals	**831**	**100.00%**	**442**	**100.00%**

Table 3.12 Roman pottery forms observed in the cellar

Category	N	N%	MNI	MNI%
Table ware	479	57.64%	289	65.38%
Transport ware/storage	113	13.60%	2	0.45%
Kitchen ware/storage	239	28.76%	151	34.16%
Totals	**831**	**100.00%**	**442**	**100.00%**

Table 3.13 Functional categories of Roman pottery from the cellar

Lastly, the two complete vessels from the cellar stand out. They were dug into the floor of the cellar and surrounded by rubbish, but the opening of both pots still seemed accessible. They still seemed to be in use, when the cellar was filling up. The excavation team interpreted these pots as a kind of rubbish disposal. In this situation they would have been used as a type of trash can, possibly to sweep ashes or dust or bigger rubbish into. Another possible use for these vessels however, is as a trap for mice or other pests. The pots would have been filled with water, in which the mice or other pests would drown, or with a sticky substance which would have attracted these animals, after which they were no longer able to escape the vessel because of its shape. A small perforation in the Oelmann 96 jug could have been made to stop the water level from getting too high. The excess water would flow away into the sand. Unfortunately no residue was found on the inside bottom of the vessels. It would also be interesting to look at the objects found in these vessels. One would expect for example rubbish in the form of pottery, pollen, seeds and/or residues in these vessels if they were used for rubbish disposal and animal bones of mice or other pests if they were used as mice traps. Only 14 small fragments of pottery have been found inside the complete vessels. They all came from the Oelmann 87 pot. Only two fragments of coarse ware could be assigned to a specific type: one fragment belongs to an Oelmann 111 dish, the other fragment to an Oelmann 120 lid. Lastly, the capacity of both these vessels has been calculated. The jug Oelmann 96 could hold 8.5 liter and the pot Oelmann 87 contained 19 liter[13].

3.2.4 Provenance

As stated in the introduction no specialist fabric analysis was done, due to time constraints and a lack of specialist knowledge. Some fragments could be assigned to a certain area of production. These fragments were recognised with help from Mark Driessen, Joep Hendriks and Marleen Martens, and by use of literature. Information about the provenance of the pottery from the cellar gives us some insight into the trade connections the people from the villa had, although it is not known whether they traded themselves or bought their supplies at a (regional) market.

Several fragments from the Meuse area were found in the cellar. Both smooth and coarse ware vessels have been fabricated there, some of them smoked. The fabric is usually white-cream or pale brown in colour, although they can also be light pink. It is generally difficult to distinguish between the smooth ware from this area and that from the Rhineland. The fabric from the Meuse area has the same smooth feel, but generally contains more inclusions and has a hackly break (Willems 2005, 62). Tienen and Heerlen are important production centres for this area. The vessels from Tienen have a very recognisable pale brown to light yellowish colour and an orange to pink core. The fabric from Tienen contains quartz and red inclusions (Willems 2005, 35).

Products from the Rhineland were also observed in the cellar. Most colour-coated fragments in Brunsting a and b were imported from the Rhineland, among others from Cologne. The clay is very fine and has few inclusions. The white clay is covered with a (red)orange to brown or matt brown to black coating (Tomber and Dore 1998, 57). But vessels in smooth ware and coarse ware were also imported from this area. The smooth ware fabric is white and has a clean break. The surface is very smooth (Willems 2005, 60). The coarse ware is white-cream in colour and has an irregular break (Tomber and Dore 1998, 78).

Also, fragments from the Eifel/Moselle area, or more specifically Trier, were found. Most were black-slipped ware fragments. The fabric is generally orange or red and sometimes has a grey core. The coating is black and has a metallic shine. The fabric is fine and only has small inclusions. According to Tomber limestone is abundant, while black iron-rich grains and silver mica may be common (Tomber and Dore 1998, 60). In addition, TS from Trier is observed. The break is smooth and usually has an orange-brown colour, but it can also be a pale pink-brown colour. The surface is red-brown (Tomber and Dore 1998, 41). Some of the colour-coated ware in Brunsting C also originated from Trier. The fabric is orange to red and the coating is black. The fabric contains small quartz and rock-like inclusions (Brulet *et al*. 2010, 329).

Some fragments originated from Gaul. TS imported from La Madeleine and the Argonne is observed. The fabric from La Madeleine is very fine. The colour is red-brown with a slightly darker slip. The break is smooth (Tomber and Dore 1998, 38). The TS from Argonne is known in a variety of colours, ranging from orange-brown to red-brown. The surfaces are also red-brown. The slip is generally not of a good quality being matt or semi-lustrous, often with pimples and surface imperfections (Tomber and Dore 1998, 34). Other products from the Argonne that were identified are black-slipped ware beakers. These vessels were made of the same clay as the TS. The clay is grey and the coating is grey to black with a metallic shine on the outer surface. The clay contains small quartz, iron and mica particles (Brulet *et al*. 2010, 349). Colour-coated pottery in Brunsting c can also

originate from the Argonne. It is made of an orange to red clay and has a black coating. The fabric is fine and has small quartz and black iron-rich inclusions (Tomber and Dore 1998, 47).

One fragment of North Gaul grey ware is observed in the cellar. This fabric was produced on several production sites throughout northern Gaul. The fabric is generally light to pale grey and the surface is darker grey. The break is hard and irregular, and has a rough feel. The vessels were usually decorated with 'lustrous bands' (*bandes lustrées*). These are bands burnished to a metallic shine (Tomber and Dore 1998, 74).

Lastly, as described earlier, Pompeian red ware dishes generally originated from Campania because of their volcanic inclusions. They are tempered with volcanic black sand (or green augite) and occasionally white and red inclusions are visible. The fabric is also a little micaceous. There are similarities with *amphorae* from Pompeii and Herculaneum. The later fragments from the cellar however, probably originated from the Rhineland or Moselle area.

3.3 Other contexts

As described in the introduction, the choice was made to study more in depth the pottery from excavation trenches 3, 4, 5, 6, 11, 12, 13, 14, 17 and 24. Only those fragments that could be linked to specific contexts were analysed. Just a few fragments found in these trenches have diagnostic value and can be used for dating of the specific contexts. These fragments are shown in table 3.14. Two rim fragments possibly belonging to a black-slipped bowl Symonds 11 (MNI = 1) deserve mentioning. This is a rare type which can be dated in the third century (fig. 3.6) (Vilvorder 1999, 98-99). The fragments resembled closest this type, but they were decorated with rouletting while the type was undecorated in Symonds' typology.

3.4 Conclusion

In total approximately 12,822 fragments were found in the villa from Maasbracht, of which 5,718 fragments were analysed. Most of the pottery was Roman in origin. The context that was richest in finds was the cellar (N = 5,132, MNI = 454) (table 3.2). Two phases were distinguished within the cellar: phases 1 and 2. Phase 1 was subdivided into two phases: 1A and 1B. Phase 1A consisted of two complete pots and was dated around AD 175. Phase 1B

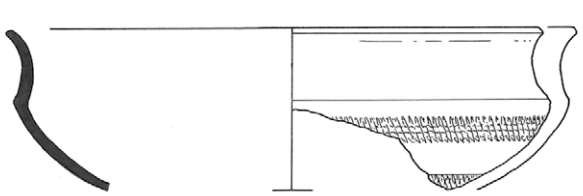

Figure 3.6 Bowl (type Symonds 11) from trench 4, scale 1:2. Drawing L. Bekkers

Fabric	Rim	Wall	Base	Handle	Spout	N	N%	MNI	MNI%	Weight	Weight%	EVE	EVE%	Completeness	Degree of breakage
Terra Sigillata	1	5	–	–	–	6	2.34%	1	3.70%	43	0.90%	0.12	2.45%	0.004	50.00
Terra Nigra	–	1	–	–	–	1	0.39%	–	–	26	0.54%	–	–	–	–
Colour-coated ware	2	20	5	–	–	27	10.55%	2	7.41%	149	3.10%	0.26	5.31%	0.010	103.85
Black-slipped ware	2	4	–	–	–	6	2.34%	1	3.70%	31	0.65%	0.4	8.16%	0.015	15.00
Smooth ware	4	54	–	2	–	60	23.44%	3	11.11%	909	18.93%	1.51	30.82%	0.052	39.74
Amphorae	2	5	–	–	–	7	2.73%	1	3.70%	380	7.91%	1.4	28.57%	0.052	5.00
Dolia	1	4	–	–	–	5	1.95%	1	3.70%	420	8.75%	0	0.00%	0.000	–
Mortaria	4	2	–	–	–	6	2.34%	4	14.81%	915	19.05%	0.4	8.16%	0.015	15.00
Thick-walled pottery	–	2	–	–	–	2	0.78%	–	–	53	1.10%	–	–	–	–
Coarse ware	14	106	9	2	–	131	51.17%	14	51.85%	1824	37.98%	0.81	16.53%	0.030	161.73
Indeterminable	–	5	–	–	–	5	1.95%	–	–	52	1.08%	–	–	–	–
Total	**30**	**208**	**14**	**4**		**256**	**100.00%**	**27**	**100.00%**	**4802**	**100.00%**	**4.9**	**100.00%**	**0.022**	**55.76**

Table 3.14 Types observed in other contexts

consisted of the pottery found in levels 13-11 and was dated between *c*. AD 175 and the early third century. Phase 2 consisted of the pottery from levels 10-4 and dated from the early third century until *c*. AD 260. There is a possibility that the cellar was used before AD 175 (phase 0), and was cleaned before the two complete pots were dug into the floor in phase 1A. This would make phase 1A a rebuilding phase. However, this supposition is not certain.

Most of the fragments from the cellar belonged to the functional category of table ware (mostly beakers). The two complete vessels were possibly in use as a rubbish disposal or as mice trap (see section 2.1.6). Apart from the cellar, the decision was made to study more in depth the pottery from excavation trenches 3, 4, 5, 6, 11, 12, 13, 14, 17 and 24, but only those fragments that could be linked to contexts were described (256 fragments, MNI = 27) (table 3.14). Most of these fragments belonged to the category of kitchenware.

When we compare the Roman fragments from the cellar to those found in other contexts, a few differences can be seen between the appearances of the different fabrics. Firstly, the high numbers of colour-coated pottery and black-slipped ware that were observed in the cellar were not present in the other contexts. Secondly, no Pompeian red ware was observed in any of the other contexts, while it was found in the cellar. Thirdly, the low counts of smooth and coarse ware from the cellar are contrasted by relatively high numbers of both categories found in the other contexts. When we look at these results it seems that the cellar was filled up mostly with table ware products made either in colour-coated ware or black-slipped ware, while the rest of the contexts yielded more kitchen ware products made in smooth or coarse ware. The same can be said for forms: the cellar contained lots of beakers and the other contexts mostly cooking pots and storage jars. Could this mean that the rubbish dump that took place was made up of the contents of a room in which the tableware was stored? And that the kitchenware was stored elsewhere in the villa? But if this was the case, what was the cellar itself used for?

Unfortunately not much can be said about possible trade connections of the people that inhabited the villa. However, when we look at the provenance of the pottery it was mostly imported from the Meuse area, the Rhineland area and the Eifel/Moselle area.

The degree of completeness of the vessels is much higher in the cellar. This means that the (broken) vessels that were dumped into the cellar were less scattered around the villa than the vessels that were found elsewhere in the villa. Also, the degree of breakage in the cellar is much higher than that in the other contexts. This means that the vessels found in the cellar were more fragmented than those found elsewhere in the villa. Lastly, the number of fragments observed in the cellar is almost as high as the total number of fragments found in the rest of the villa combined. This all again points towards the dumping of rubbish from the villa into the cellar at one stage, perhaps after some kind of catastrophe.

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Notes

1 Part of the analysis was done by two students from Leiden University as a part of their curriculum. They studied the fragments from other contexts from trenches 4 and 5. My special thanks to Lotte Bekkers and Arjan Ruiter for helping me.

2 The MNI was based on the presence of rim fragments. Rim fragment(s) have an MNI of 1. Wall, base, handle or spout fragments have an MNI of 0.

3 EVE: a rim is measured as a percentage of the complete rim by use of a rim chart. The rim can then be regarded as representative of the whole vessel and this figure can be used as the EVE. For example, a complete rim is 1 and 25% of a rim is 0.25.

4 Degree of completness = $\frac{\text{EVE}}{\text{Total MNI}}$

5 Degree of breakage = $\frac{\text{Total N}}{\text{EVE}}$

6 I would like to thank Mark Driessen, Joep Hendriks and Marleen Martens for their help with identifying fabrics and provenances. Mark Driessen looked at the fabric of the Terra Sigillata. All fragments from Tienen were identified with help from Marleen Martens, Joep Hendriks also commented on the contents of this chapter.

7 Several drawings were done by the two participating students Lotte Bekkers and Arjan Ruiter. The other drawings were done by RAF Timmermans.

8 One vessel could not be weighed on the available scale, as it weighed more than 5 kg.

9 As stated earlier, one complete vessel could not be weighed on the available scale, because it weighed more than 5 kg.

10 This was done following Höpken 2005, 117 and Tafel 161 40-049.

11 Height: 4.8 cm; Width: 4.1 cm; Depth: 2.6 cm.

12 A list of datable fragments per type per level can be found in the Appendix. Dates of similar types can vary because of differences in fabric.

13 The capacity was calculated by filling the vessels with sand up to approximately 5 cm from the rim.

Appendix

Level	Type	N	MNI	Beginning date	Final date
13	Oelmann 120a	7	7	0	500
13	Oelmann 87	1	1	100	250
13	Oelmann 111	2	1	100	300
13	Dragendorff 33	1	1	150	250
13	Oelmann 32	16	11	150	270
13	Oelmann 89	1	1	150	400
13	Stuart 211	5	2	150	400
13	Gose 453	1		150	
13	Oelmann 30	8	6	150	
13	Vanvinckenroye 1967.136	1	1	175	225
13	Dragendorff 40	1	1	175	250
13	Oelmann 53	1	1	175	250
13	Oelmann 53a	13		175	250
13	Oelmann 96	1	1	175	
13	indeterminable	2	2	200	300
13	Oelmann 33	8	6	200	300
13	Oelmann 33	1	1	200	350
12	Stuart 201a	2	2	0	300
12	Oelmann 120a	17	13	0	500
12	Stuart 10	1	1	100	200
12	Oelmann 87	1	1	100	250
12	Oelmann 111	6	3	100	300
12	Vanvinckenroye 1967.129	1	1	100	300
12	Stuart 218	1	1	100	
12	Dragendorff 31	1	1	150	250
12	Oelmann 87	1	1	150	250
12	Oelmann 32	13	10	150	270
12	Oelmann 89	1	1	150	400
12	Stuart 210v	1	1	150	400
12	Gose 453	1	1	150	
12	Oelmann 30	12	9	150	
12	Vanvinckenroye 1967.90	1	1	175	225
12	Dragendorff 40	1	1	175	250
12	Dragendorff 45	1	1	175	250
12	Oelmann 53a	21		175	250
12	Vanvinckenroye 1967.104b	2	2	175	250
12	Oelmann 31	7	4	175	275
12	Vanvinckenroye 1967.94	1	1	175	300
12	Oelmann 31	4	3	200	275
12	Oelmann 33	6	6	200	300
12	Oelmann 33	9	8	200	350
12	Oelmann 33	1	1	200	400

Level	Type	N	MNI	Beginning date	Final date
12	Oelmann 33	1	1	200	400
11D	Stuart 201a	1	1	0	300
11D	Oelmann 120a	23	14	0	500
11D	Stuart 10	2	2	100	200
11D	Oelmann 104	2	1	100	300
11D	Oelmann 38	12	1	100	300
11D	Stuart 7	1	1	100	
11D	Stuart 4	1	1	125	175
11D	Stuart 216	1	1	150	225
11D	Dragendorff 31	1	1	150	250
11D	Oelmann 32	33	30	150	270
11D	Oelmann 89	2	1	150	400
11D	Oelmann 30	18	13	150	
11D	Stuart 112	2	1	150	
11D	Dragendorff 31	5		160	250
11D	Dragendorff 32	1		175	250
11D	Oelmann 53	1	1	175	250
11D	Oelmann 53a	1		175	250
11D	Vanvinckenroye 1967.104b	1	1	175	250
11D	Oelmann 31	6	4	175	275
11D	Oelmann 11	3		175	
11D	Oelmann 31	2	2	200	275
11D	indeterminable	1	1	200	300
11D	Oelmann 33	12	11	200	300
11C	Oelmann 120a	13	8	0	500
11C	Stuart 10	1	1	100	200
11C	Oelmann 32	7	6	150	270
11C	indeterminable	1	1	150	350
11C	Oelmann 89	1	1	150	400
11C	Dragendorff 31	1	1	160	250
11C	Vanvinckenroye 1967.90	1	1	175	225
11C	Dragendorff 40	1	1	175	250
11C	Oelmann 31	1	1	175	275
11C	Oelmann 11	1	1	175	
11C	Vanvinckenroye 1967.87	1	1	175	
11C	Oelmann 30	1	1	200	300
11C	Oelmann 33	20	18	200	300
11C	Oelmann 33	3	3	200	350
11B	Oelmann 32	1	1	150	270
11B	Oelmann 31	1	1	175	275
11B	Oelmann 33	4	1	200	300
11B	Oelmann 33	3	1	200	350
11A	Stuart 146	1	1	0	400

Level	Type	N	MNI	Beginning date	Final date
11A	Oelmann 120a	4	4	0	500
11A	Stuart 218	1	1	100	
11A	Oelmann 32	5	4	150	270
11A	Oelmann 89	2	2	150	400
11A	Oelmann 30	1		150	
11A	Oelmann 53	1	1	175	250
11A	Oelmann 53a	1		175	250
11A	Oelmann 33	3	3	200	300
11	Stuart 201a	2	2	0	300
11	Stuart 146	7	3	0	400
11	Oelmann 120a	9	6	0	500
11	Oelmann 61	1	1	100	200
11	Oelmann 104	2	1	100	300
11	Oelmann 111	7	1	100	300
11	Tuffreau-Libre VIIa	1	1	100	400
11	Stuart 218	1	1	100	
11	Dragendorff 33	2	1	150	250
11	Dragendorff 44	1	1	150	250
11	Oelmann 32	10	10	150	270
11	Oelmann 30	2	1	150	350
11	Brunsting 37	1	1	150	400
11	Oelmann 89	9	9	150	400
11	Oelmann 30	15	3	150	
11	Vanvinckenroye 1967.90	4	2	175	225
11	Dragendorff 32	3	2	175	250
11	Dragendorff 40	1	1	175	250
11	Oelmann 53a	1		175	250
11	Oelmann 31	1	1	175	275
11	Stuart 217v	7	1	175	300
11	Vanvinckenroye 1967.89	2	1	175	300
11	Vanvinckenroye 1967.94	1	1	175	300
11	Stuart 13	1	1	175	
11	Oelmann 31	1	1	200	275
11	Oelmann 33	1	1	200	300
11	Oelmann 33	7	6	200	300
11	Oelmann 33	6	6	200	350
10	Oelmann 120a	3	2	0	500
10	Oelmann 120b	3	1	0	500
10	Stuart 147	22	1	0	500
10	Dragendorff 33	1	1	150	250
10	Dragendorff 44	1		150	250
10	Oelmann 32	2	1	150	270
10	Oelmann 68	2		150	300

Level	Type	N	MNI	Beginning date	Final date
10	Brunsting 37	1	1	150	400
10	Oelmann 89	7	6	150	400
10	Oelmann 103	2	1	150	
10	Oelmann 30	1	1	150	
10	Vanvinckenroye 1967.90	1	1	175	225
10	Dragendorff 40	1	1	175	250
10	Oelmann 53a	1	1	175	250
10	Vanvinckenroye 1967.104c	1	1	175	250
10	Vanvinckenroye 1967.94	2	1	175	300
10	Oelmann 33	1	1	200	300
9	Oelmann 120a	1	1	0	500
9	Oelmann 120b	1	1	0	500
9	Oelmann 105	1	1	100	
9	Dragendorff 44	1	1	150	250
9	Oelmann 89	1	1	150	400
9	Vanvinckenroye 1967.104a	1	1	175	200
9	Vanvinckenroye 1967.104b	1	1	175	250
9	Vanvinckenroye 1967.94	1	1	175	300
9	Oelmann 33	1	1	200	350
8	Oelmann 120a	5	1	0	500
8	Stuart 110b	1	1	130	200
8	Oelmann 32	1	1	150	270
8	Oelmann 30	1	1	150	
7	Oelmann 120a	2	2	0	500
7	Oelmann 32	1	1	150	270
7	Oelmann 68	1	1	150	300
7	Brunsting 37	2	2	150	400
7	Oelmann 30	1	1	150	
7	Oelmann 33	1	1	200	300
6	Oelmann 120a	2	1	0	500
6	Stuart 10	1	1	100	200
6	Oelmann 87	1	1	100	250
6	Stuart 216	1	1	150	225
6	Oelmann 30	1	1	150	
6	Dragendorff 32	1	1	175	250
6	Vanvinckenroye 1967.104c	1	1	175	250
6	Oelmann 112	1	1	175	
5	Oelmann 120a	2	2	0	500
5	Dragendorff 35	1	1	70	
5	Oelmann 32	3	2	150	270
5	Oelmann 89	2	2	150	400
5	Stuart 211	1	1	150	400
5	Oelmann 30	1	1	150	

Level	Type	N	MNI	Beginning date	Final date
5	Vanvinckenroye 1967.136	2	1	175	225
5	Vanvinckenroye 1967.90	1	1	175	225
5	Vanvinckenroye 1967.104c	1	1	175	250
5	Vanvinckenroye 1967.94	1	1	175	300
4	Oelmann 120a	2	2	0	500
4	Stuart 10	1	1	100	200
4	Oelmann 104	1	1	100	300
4	Stuart 218	1	1	100	
4	Dragendorff 18/31	2	2	120	150
4	Oelmann 32	1	1	150	270
4	Oelmann 32	1	1	150	270
4	Oelmann 89	10	9	150	400
4	Stuart 211	1	1	150	400
4	Oelmann 30	2	2	150	
4	Vanvinckenroye 1967.87	1	1	175	200
4	Vanvinckenroye 1967.90	4	4	175	225
4	Vanvinckenroye 1967.94	1	1	175	300
4	Oelmann 33	2	2	200	300
Total		**634**	**429**		

4 The building material

A.E. Gazenbeek

4.1 Introduction

Reconstructing a building from the debris left behind by succeeding waves of demolishers and later collected by archaeologists, is a tricky business. The former tend to carry off everything that could be of any use to them, the latter tend to collect only those objects that they find interesting. Being archaeologists, one would expect that this would be almost everything, but alas for the enthusiasts of Roman building material, excavators only collect that what they believe is important, which are generally the more gaudy pieces. So the standard collection from an excavation consists of stamped tegulae, larger fragments of ceramic building material, all tubuli fragments, worked stone, if recognized as such, and all the fragments from the odd quern. The building material from the site of the villa of Maasbracht forms no exception to this rule.

The material recovered from the site consists of ceramic building material, stone, mortar and daub (table 4.1). In this report all these will be discussed, with the exception of the mortar fragments with wall painting, which will be discussed in chapter 5. In addition stone mentioned in the excavation plans has been taken into account. All the stone has been described on a basic geological level so that a general indication of provenance is possible. Fabrics of the ceramic building material have only been studied in general terms, as no detailed analysis could be made due to lack of resources.

The given weight of the stone excludes that of 4 pieces, now in de Provincial Depot in Maastricht, which could not be weighed due to their size. One of these pieces is part of a wall in masonry with an estimated weight of around 200 kilograms, which was lifted from the site.

4.2. The ceramic building material

4.2.1 Introduction

In all 471 fragments of building material were recovered from the site. According to some of the excavators, this formed only a small part of the material found during the excavation.[1] After examination the material that was not selected for further study, was dumped on the site. As no accounts seem to have been kept of this selection, it is not known how much ceramic building material was encountered on the site.

This selection during the excavation seems to have resulted in an overrepresentation of tubuli and possibly also of flat tiles. Together these make up more than thirty per cent of the pieces that could be ascribed to a certain form. On most sites this percentage tends to be less than five per cent.[2] At the villa of Kerkrade Holzkuil, where baths were still in situ, the percentage of tubuli was just 16 per cent of the total of ceramic building material (Kars 2005, 259, Table 9.2). As the ratio between the number of fragments of tegulae and imbrices (T/I = 0.39) is within the range that can be expected, it will be clear that the tubuli were collected with somewhat more enthusiasm than fragments of other forms (table 4.2).

4.2.2 Tegulae

Selective collecting has also resulted in a rather lop-sided representation of end-fragments among the tegulae. Nearly

	number	weight (gr.)
ceramic	471	156,407
stone	340	152,256
mortar	62	11,764
daub	63	4,287
total	**936**	**324,714**

Table 4.1 Distribution of finds according to material

	number	weight (gr)	mean weight (gr)
tegulae	117	62,215	531.8
imbrices	46	9,477	206.0
lateres	31	53,032	1,710.7
tubuli	76	20,711	272.5
tubuli/flat tiles	9	2,852	316.9
flat tiles	8	3,302	412.8
indeterminable	184	4,818	26.2
	471	**156,407**	**332.1**

Table 4.2 The ceramic building material

tegula part	number	%	Nijmegen %	Heerlen %	Voorburg %	Ewijk %
intact	5	4.3	0.3	0.8		4.7
flange	17	14.5	32.0	28.3	26.1	30.8
upper or lower end	22	18.8	10.1	4.0	14.9	9.2
upper left corner	4	3.4	3.9	5.7	4.9	5.7
upper right corner	6	5.1	3.2	3.6	5.0	6.0
lower left corner	12	10.3	3.5	3.6	6.7	10.3
lower right corner	9	7.7	3.2	4.5	4.0	7.8
lower corner	2	1.7	0.7			
base	40	34.2	43.0	48.6	38.3	25.6
	117					

Table 4.3 Tegulae parts; as reference the distribution of parts from four other sites is given (data Nijmegen Gazenbeek in prep. b, Heerlen Gazenbeek in prep. a, Voorburg Gazenbeek in print, Voorburg AAC, data from Ewijk collected, not published)

twenty per cent of the collected fragments can be attributed to the upper or lower end of a tegula. On other sites this percentage is much lower, generally 10 per cent or less (table 4.3). Without doubt this is due to the CTEC stamps (see below) on the Maasbracht material, which are nearly all situated just above the lower end of the tegulae. The four corners of a tegulae each have a different shape, so that it is possible to use them to estimate a minimal number of individuals on a site. In the case of Maasbracht the lower left corners are best represented, with twelve fragments plus four corners from the more or less complete tegulae. The 16 tegulae thus calculated would cover about 1.6 m^2 of roofing.[3] The villa has a ground surface of approximately 1075 m^2, which, with a roof pitch of 25 degrees and an equal overlap on all sides, would give a roofing surface of about 1200 m^2. Even when the manner in which the material was collected and the fact that tegulae were also used as building stone (three of the four corners are from complete tegulae used in a drain) have been taken into account, this still gives some idea of the scale on which the site was used as a quarry after it had been abandoned.

The form of the lower corners can also be used for dating tegulae, as Warry has demonstrated (Warry 2006a; 2006b). The lower cutaways developed over time, starting from a labour intensive form which required manually cutting the whole intricate form, to the use of inserts in the mould so that only two cuttings were necessary. Warry identified four cutaway groups that can be dated to AD 40–120, AD 100–180, AD 160–260, and to AD 240–380. One should note however, that Warry's study focuses on Britannia and the results do not necessarily have to apply to other regions in the Roman Empire. Indeed, Clément (Clément 2011, fig 8) illustrates his article on late-republican antefixes from the region around Lyon in Central Gaul with tegulae of which the cutaway forms would fit nicely in Warry's forms C and D (AD 160 to 380).

At Maasbracht, only eight corners of tegulae fragments were sufficiently well preserved to establish a cutaway form. In all, three different forms could be distinguished (fig. 4.1). The cutaway forms 1 and 3 are both formed without the use of inserts in the mould, have a prism-shaped notch, and a cutaway that emerges through the side of the flange. These two forms only differ in the lower external angle of the notch. Forms 1 and 3 correspond to Warry's form B, which was in use between AD 100 and 180. Cutaway form 2 was formed with the use of an insert, which emerges through the top of the flange. The notch is prism-shaped with a rather steep angle. Form 2 fits nicely with Warry's form C, which dates between AD 160 and 260. In table 4.4 the cutaway forms are arranged according to their flange form. Cutaway form 1 only corresponds with flange form 1, as does cutaway form 3 with flange form 3. Cutaway form 2 is found in combination with flange forms 1, 2 and 5, the latter almost

		cutaway form				
		1	2	3	X	total
flange form	1	4	1		1	6
	2		1		9	10
	3			1		1
	4				1	1
	5		1		3	4
	total	4	3	1	14	22

Table 4.4 Flange and cutaway forms. Column X contains the fragments of which only the flange was preserved

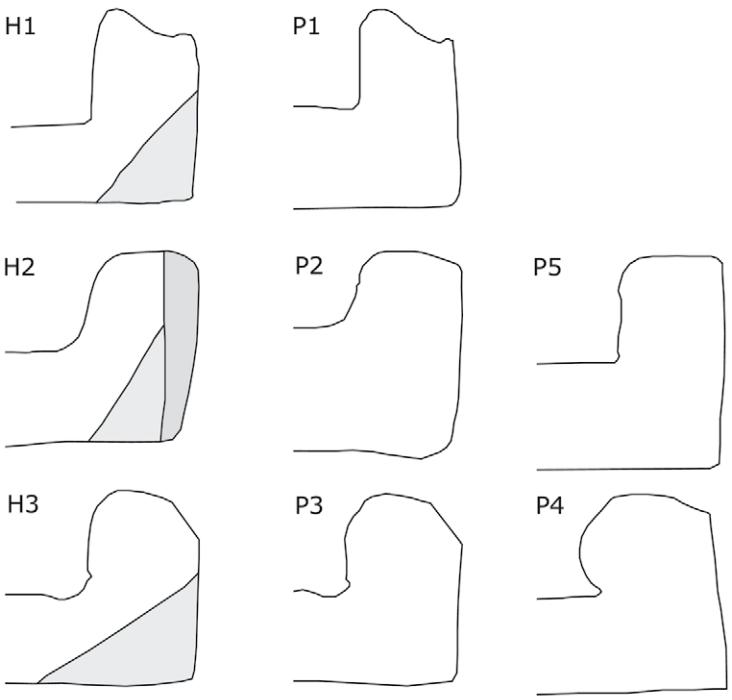

Figure 4.1 Cutaway and flange forms, H and P codes according to the author, scale 1:2.

certainly being a variation of form 2. As the number of flanges and cutaways is small, it is difficult to draw any conclusions, but it does seem that there is a relationship between flange and cutaway forms in the material from Maasbracht. This seems to be borne out by the fact that three of the four fragments with cutaway form 1 also carried a CTEC stamp.[4] No other tegulae fragments with cutaways or flanges had been stamped, so it could be possibly argued that there is a connection between flange form 1 and the unknown producer who stamped his products with CTEC.

One tegula fragment has a nail hole (fig. 4.2), which had been drilled from the upper side of the tile to about the centre, with the remaining part presumably being knocked out by the nail used when the tegula was fastened on the roof. Tegulae with nail holes are rare on Roman sites in the Netherlands. In the course of researching the ceramic building material of 19 sites, 13,500 tegula fragments were studied in detail, revealing 29 nail holes, all formed after firing. Of these 29, 14 came from a single site where a large number of tegulae had been placed upright as the lining of a drain. Uncertain is whether these tegulae were re-used, which would mean that the nail holes could have been made to fasten them on a roof or nail them to a batten to ensure that they stayed in place, or that the tegulae were new when used in the drain. This last possibility would mean that the tegulae were certainly nailed to a batten. Excluding this site, the

Figure 4.2 Tegula fragment with nail hole (photo author)

remaining 18 sites yielded 12,600 fragments of which only 15 had nail holes, or one in every 841 fragments. If we assume that on average a tegula breaks into 20 fragments, this would imply that about one in 40 tegulae had been nailed to the roof.[5]

This is far short of the 1 in 4 that both Brodribb and Warry mention for Britannia (Warry 2006b, 102; Brodribb 1979b, 215). It should be noted that the nail holes in Britannia are nearly all preformed, whilst those in the Netherlands were all formed after firing. This implies that the nailing of the tegulae to the roof was not a regular procedure in this region, otherwise preformed nail holes should be found on an equal scale as in Britannia. Warry notes that up to the end of the second century the military did not nail down their tegulae, whilst civilians did (Warry 2006b, 103). As the reason for nailing down tegulae must be technical and almost certainly related to the pitch of the roof, this would mean that the structure of the roofs must have varied according to the background of the builder. In the Netherlands however, roofs seem to have had a rather low pitch, with no difference between military and civilian buildings. Of the 19 sites mentioned earlier, six are located in the Meuse valley.[6] Among the 1139 fragments recovered from these sites, four, or one in 285, have nail holes, which is considerably more than would be expected. Due to the small numbers involved, one should be careful interpreting this difference, but it does seem that the figures give some indication of regional variations in how roofs were constructed.

4.2.3 Lateres

Lateres are essentially bricks with a wide variation in sizes and therefore in the applications they can be used for. Most common are the square *laterculus bessalis* (*c.* 200 × 200 mm) and *later pedalis* (*c.* 300 × 300 mm). Less common are the rectangular and round versions of these two forms and the larger *later sesquipedalis* (*c.* 440 × 440 mm) and *later bipedalis* (*c.* 600 × 600 mm), the latter two being used for a variety of functions, including flooring. The *laterculus bessalis* is best known for their use as the building blocks of the supporting *pillae* in *hypocaust* systems, though they are only very rarely encountered as such in the Netherlands.

Lateres tend to be found on nearly every Roman site on which building material is present, although not in large numbers. Even on rural sites lateres turn up, generally forming only 1 or 2 per cent of the ceramic building material.[7] As there is absolutely no evidence for the existence of baths or a hypocaust on these sites, the lateres must have been used in another way. One possibility is that lateres where used in ovens and hearths due to their capacity to absorb and dissipate heat without breaking because of heat stress. But the use as such is difficult to establish due to the fact that the Roman ground surface is almost always absent (Gazenbeek *et al.* 2013). Another use is as a structural component in walls, columns or arches. The use as such is well established, striking examples being the collapsed façades of buildings found in several places in north-western Europe. One of these, the south-eastern gable of a building in Meonstoke (southern England) well illustrates the use of lateres, and also of tegulae and imbrices, as a structural component (King and Potter 1986). The collapsed façade belonged to what is almost certainly a villa of a type well known in southern *Britannia* and northern *Gallia,* which was built in the mid third century or later. The upper windows with arched lights were framed by lateres, the lower windows had similar arched lights, but these were flanked by columns made of round lateres, which had been plastered. The wall itself was made of blocks of local flint and chalk. More or less similar façades have been found in Stanwick (Keevill 1990), Carsington (Ling 1992) and Lebach (Miron 1990). With the exception of Lebach, which was built as a wattle-and-daub wall with only the outside facing clad in stone, all these buildings were built entirely of stone, which explains why they have survived. In regions where not stone was used to construct walls but loam or clay, the chances of a wall surviving are non-existent. Even if it topples in the same manner as a wall built of stone, once on the ground it will simply dissolve, leaving only the ceramic or stone elements.

In Maasbracht the walls will almost certainly have been made of loam in an *adobe* or cob technique. There is however no reason why windows and doorways would not have been constructed in a similar manner as described above. This is all the more plausible as no clear indications have been found, inside or outside of the villa, of a hypocaust, which is where one would expect to find lateres. Interesting are the forms found. Of the type *laterculus bessalis* only 10 fragments of the round form were recognized.[8] These had a diameter that varied between 200 and 215 mm and a thickness between 39 and 50 mm. Three fragments of the larger forms *later pedalis* or *later sesquipedalis* were found, but only one of these fragments had an intact side with a length of 290 mm.[9] Another fragment had a side with a length of at least 305 mm.

By far the most interesting however, are the lateres in the form of a bar, of which one complete example and seven fragments were found.[10] The complete specimen measures 360 × 155 × 105 mm and weighs 9512 gr. (fig. 4.3). Only the width or the height of the fragments could be established and these varied between 150 to 160 mm and 100 to 108 mm. *Lateres* of this size are very rare, the only other known examples in the Netherlands are from the province of Zuid-Holland[11] and from the Holdeurn, the military tilery near Nijmegen (Holwerda and Braat 1946, Pl. VIII, 1 and Pl. XXXV). The *lateres* from this last site were discovered *in situ*, as part of the floor of the firing chamber of a large

Figure 4.3 Rectangular later (photo author)

tile kiln, and measured 375 × 150, 410 × 150 and 535 × 140 mm, with no heights given (Holwerda and Braat 1946, 71). A large number of these pieces were stamped EXERCITVS GERMANICVS, which, together with the position of this kiln in the tilery complex, dates them to around AD 180 (Holwerda and Braat 1946, 114).

Lateres, or for that matter any other forms of brick, of which the ratio between volume and surface area is low, are rather difficult to produce due to the problems encountered when drying the newly formed pieces. Because the outside dries faster, an impermeable outer skin evolves which traps the remaining moisture in the interior of the piece. When fired this moisture will expand and destroy the object. This technical problem is the reason why Roman bricks tend to be flat, with a high ratio between volume and surface area. This is because they were developed in a region where due to the climatic conditions the outer surface dries rapidly, making a high ratio necessary to ensure sufficient drying of the interior. In northern regions, with a higher humidity and lower temperatures, drying is slower so that it is possible to develop forms with a lower ratio. But as climatic conditions, drying and the volume-surface area ratio are interlocked, the moisture problem remains, so that these large rectangular lateres would still be difficult to make.

Without doubt these lateres were therefore only produced for very specific reasons and on a very small scale, but until now their use have only been established as a structural element in a kiln of a tilery. No doubt this use is due to the fact that lateres applied in this way are not only able to carry the weight of the products stacked in the kiln, but also that they will not disintegrate easily as a result of repeated heating and cooling. This last factor could possibly give an indication of why these lateres are also found in the ruins of a villa where there is absolutely no evidence for the manufacture of building ceramics. As stated earlier, the capacity of ceramic material to absorb and dissipate heat without breaking, make them ideal for applications in hearths and ovens. This then could also have been the use of these rectangular lateres.[12]

4.2.4 Tubuli and flat tiles

These two forms are dealt with here together, because their use is related in a number of ways. In contrast to the other ceramic building materials, tubuli and flat tiles were solely used in interior applications related to the panelling of walls and heating systems. They therefore both have striation marks formed by either combing or cutting on at least one surface to ensure a sufficient adherence of plaster. Due to their cuboid or elongated rectangular form, tubuli are essentially self-supporting, whereas flat tiles need to be nailed to the wall with T-shaped nails and spacer pins. Flat tiles are also used in vaulting and as elements in a ceiling. It should be noted that tubuli have also been used in vaulting (Rook 2013, 120-121; also Wilson 1992). Closely related to tubuli and flat tiles are the *tegulae hamatae* (half-box tiles) and the *tegulae mamatae*. Both these forms are absent in the material collected from the villa. Tubuli have holes cut in their sides, generally accepted is that the function of these holes is to allow for the horizontal transport of hot air through the system. Why this should be necessary is unclear, and as the holes tend to be small, in the case of Maasbracht only circa 40 mm, the efficiency of this can be doubted, certainly if the positions of the holes vary, as they do. It seems more feasible that the holes play a role in mounting tubuli without using a joint. A lump of mortar in two more or less adjoining holes would ensure a reliable bonding.

In all 76 fragments of tubuli and eight fragments of flat tiles were recovered from the villa. In addition there are nine fragments that could either be a tubulus or a flat tile. There are no complete tubuli in the collection, and only one fragment is sufficiently intact to establish its dimensions (fig. 4.4).[13] This slightly tapering rectangular piece (180/185 × 120/135 mm) has an eccentrically positioned round hole (diameter 50 mm). On the shorter side about 50 mm remains of the adjoining side, of which the outer surface has, in contrast to the main body, been scored with a comb, parallel to the open sides. The original form would possibly have been more or less cuboid, which makes this piece rather an exception in the collection.

The other 74 fragments almost certainly originally formed parts of rectangular tubuli with a height of approximately 220 mm and a depth of between 95 and 130 mm. This could be established using the 24 pieces with holes and no scoring,

Figure 4.4 Tubuli fragment 6-3-4 (photo author)

which originate from the sides of tubuli. The front and back pieces of these tubuli, with no hole but with scouring by comb, seem to be underrepresented in the collection. The width of a tubulus is generally more than twice the depth, but only three of the 44 fragments that could be possible front or back pieces, exceed the minimum of 180 mm required. Two fragments have a more or less complete width of 230 and 240 mm, but no complete height.

It is possible to distinguish a third group of tubuli, which also have a hole in the side, but are much deeper. This group is represented by two fragments, of which one allows a rough reconstruction of the original size. The side of this tubulus would have been about 240 mm high and at least 190 mm wide. These two fragments are 24 and 25 mm thick, whereas the thickness of the other two forms lies between 18 and 22 mm.

Possibly the most interesting piece however is a side-fragment of a tubulus that has an angle of about 45 degrees (fig. 4.5).[14] This type was used in chimney flues where these pass through a wall at an angle. In a hypocaust system one in so many of the flues created by the tubuli aligned in vertical columns along the wall, were extended to convey the hot air and fumes outside and to ensure that there is a sufficient draft in the system. The angle at which this flue passed through the wall was 90 degrees, and was achieved by using two tubuli with one end cut at an angle of 45 degrees (Degbomont 1984, 146). The exit of such a flue through a wall is illustrated on the building represented in the interior of the Simpelveld sarcophagus. The presence of this piece, together with the tubuli fragments, implies that there must have been some sort of heating system in at least one of the rooms of the villa. This could have been in the form of a hypocaust, but a hearth and chimney are more likely, as no traces of an under-floor heating system have been observed.

Figure 4.5 Tubuli fragment from a flue (19-3-2) (photo author)

An example of a room heated by means of a hearth with chimney has been recognized in the ruins of a villa in Puy-en-Velay (Vallat 2013, 220-221). In this case the hearth is situated in a corner adjoining the outer wall of the building, in what is seen as a dining room by the author. However, despite this absence of traces, the idea that one or more rooms in the villa of Maasbracht had a hypocaust in some form should not be completely discarded. Systems using a limited number of under-floor channels leading to vertical alignments of tubuli in walls are known from a number of sites (Degbomont 1984, 118-134). These systems have in common that they take up less space, certainly in the depth, which make them less visible in an archaeological sense.

Of the 16 pieces that have been described as (possible) flat tiles, only two fragments have the notches in the rims that are distinctive for this type of tile.[15] Both have been scored on one side by combing, but differ in thickness from 25 to 32 mm. That fragments without notches have been added to this group and not the tubuli is due to their thickness (24 to 31 mm), the heavy scoring by comb, which is very uncommon on tubuli and the manner in which the underside has been finished. Eight of the fragments carried mortar, generally on the front, but also occasionally on the (broken) edges or underside. In this they differed from the tubuli, of which only two of the 76 fragments carried mortar.

4.2.5 Stamps

In all 21 stamps were collected on the site, of which all but one belonged to a tile-maker who stamped his products with CTEC, the exception being a stamp used by a tile-maker who

stamped his products with AAF (table 4.5 and fig. 4.6) Both producers were active in the Meuse valley, possibly somewhere in the vicinity of Maastricht (De Poorter and Claeys 1989, 13 and 45). The producer using the stamp CTEC seems to have been the more enterprising one, shipping his products down the Meuse to Haelen, Lottum, Cuijk, the military camp at Leiden Roomburg and to the city of *Forum Hadriani*, modern Voorburg. But by far the greater

number	Stamp	on	Description	parallel/identical
11-1-1 a	CTEC	TEG	Rectangular, ?×9 mm, no frame; stamped at an angle of 90° to lower rim. Legible CTE[--]	De Poorter & Claeys 1989, Type C, Pl. XV, 18
11-1-1 b	CTEC	TEG	Rectangular, 28×10 mm, no frame; stamped at an angle of 90° to lower rim.	De Poorter & Claeys 1989, Type C, Pl. XV, 18
11-1-1 c	CTEC	TEG	Rectangular, ?×9 mm, no frame; stamped at an angle of 28° to lower rim. Legible C[--]	De Poorter & Claeys 1989, Type C, Pl. XV
14-3-2 a	CTEC	TUB	rectangular, no frame; stamped on rim	De Poorter & Claeys 1989, Type C, Pl. XV, 17
14-3-2 a	CTEC	TEG	In circle, diameter circa 43 mm; legible: [--]TEC	De Poorter & Claeys 1989, Type B, Pl. XIV, 7?
14-4-2 a	CTEC	TEG	In circle, diameter 50-53 mm; legible: C[--]C	De Poorter & Claeys 1989, Type A, Pl. XIV, 1 or 2;
14-4-2 aa	CTEC	TEG	In circle, diameter 53 mm; legible: C[--]C	De Poorter & Claeys 1989, Type A, Pl. XIV, 1 or 2;
14-4-2 aaa	CTEC	TEG	In circle, diameter 53 mm;	De Poorter & Claeys 1989, Type A, Pl. XIV, 1 or 2;
14-4-2 b	CTEC	TEG	In circle, diameter 53-54 mm; light impression, legible: C[--]C	De Poorter & Claeys 1989, Type A, Pl. XIV, 1 or 2;
14-4-2 c	CTEC	TEG	In circle, diameter 42-44 mm; well formed, clean cut letters. Metal die?	De Poorter & Claeys 1989, Type B, Pl. XIV, 7?
14-4-2 d	CTEC	TEG	Rectangular, 35×11 mm, no frame; stamped at an angle of 25° to lower rim.	De Poorter & Claeys 1989, Type C, Pl. XV, 17
19-2-2 a	CTEC	TEG	Rectangular, 38×14 mm, no frame; stamped at an angle of 27° to lower rim	De Poorter & Claeys 1989, Type C, Pl. XV, 17
2-1-2 a	CTEC	TEG	Rectangular 35×13 mm, no frame; stamped at an angle of 18° to lower rim. Imprint of sandal above stamp	De Poorter & Claeys 1989, Type C, Pl. XV, 17
2-1-2 a	AAF	IND	In circle, diameter 55 mm	De Poorter & Claeys 1989, Pl. I, 5
20-3-3 a	CTEC	TEG	Rectangular, >30×13 mm, no frame; stamped at an angle of 11° to lower rim	De Poorter & Claeys 1989, Type C, Pl. XV, 17
20-5-3 a	CTEC	TEG	In circle, diameter 53 mm; legible: [--]TEC	De Poorter & Claeys 1989, Type A, Pl. XIV, 1 or 2;
5-3-2 a	CTEC	TEG	Rectangular, >30×13 mm, no frame; stamped at an angle of 22° to lower rim	De Poorter & Claeys 1989, Type C, Pl. XV, 17
5-7-D a	CTEC	TEG	Rectangular, ?×11 mm, no frame; stamped at an angle of circa 37° to lower rim. Legible C[---]	De Poorter & Claeys 1989, Type C, Pl. XV, 17
5-9-2 C a	CTEC	TEG	Rectangular, 35×12 mm, no frame; stamped at an angle of 90° to lower rim	De Poorter & Claeys 1989, Type C, Pl. XV, 15 or 16
5-9-2D a	CTEC	TEG	In circle, diameter 53 mm;	De Poorter & Claeys 1989, Type A, Pl. X1V, 1 or 2
C-41 a	CTEC	TEG	Rectangular 30×12 mm, no frame; stamped parallel to lower rim	De Poorter & Claeys 1989, Type C, Pl. XV, 17

Table 4.5 Stamps

Figure 4.6 The stamps (photo author)

part of his production seems to have been used in the valley of the Jeker, to the southwest of Maastricht. Most of the AAF stamps have been found on the western bank of the Meuse around Rekem. On the eastern bank of the river a few were found in Stein and Grevenbicht, to the south of Maasbracht, so this new specimen expands the range downriver.

Among the CTEC stamps three types can be distinguished, which correspond with the typology of De Poorter and Claeys (De Poorter and Claeys 1989, 39). Type B, with the text framed by a circle with a diameter of circa 40-45 mm, is represented twice, while type A, with a larger circle (circa 53 mm), is represented six times. Type C, with a plain text without a framework, is represented by 12 stamps. With the exception of one type C stamp on the rim of a tubulus, all stamps were found on tegulae. Where this could be established, all the stamps had been placed along the lower part of the tegula. The position of a number of the stamps of type C could be determined in more detail. Three were placed at 8 and 17 mm above the edge of the tegula, at an angle of 90º, eight between 11 and 22 mm above the edge,

at an angle of between 11° and 37° to the right, and one was placed parallel to the edge at a distance to it of 15 mm. The repetitive manner in which the tegulae were stamped, gives the impression that at least two different people were at work here, who both had their own way of stamping the product they had just finished. Possibly this was also a method by which they could distinguish their work from that of other tile-makers working on the same site. It is interesting to note that only six signatures were recorded, none however in combination with stamps.

4.2.6 Graffiti, tally-marks, signatures and imprints

Tally-marks, signatures, graffiti and imprints all have a certain relationship to the production process in which ceramic building materials are formed. The first two almost certainly form some part in the administration of the production, although it still is not exactly clear which. The latter two are formed during the production, either intentionally as part of the production, as is the case with graffiti concerned with the administration, or, more often as the result of doodling or as non-intentional imprints formed during production (i.e. finger-marks, tool-imprints) or drying (i.e. imprints of humans and animals). As mentioned above, only six signatures were found during the excavation. In addition one possible tally-mark, two graffiti, and 22 imprints of some sort were encountered.

Among the graffiti that of a possible sundial is the most interesting (find no. 5-11-B; fig. 4.7). With a small stick or some other object with a more or less round head, two concentric and four straight lines have been drawn in the still wet clay of a tegula. The distance between the lower and upper concentric line varies between 80 and 100 mm. The four straight lines radiate from the lower concentric line to the upper, with two drawn exactly between these lines, and one drawn from below the lower concentric line, possibly starting at the centre-point, in the direction of the outer concentric line. The point where these two lines would join is missing. The reverse is the case with the fourth line, of which only the part joining the outer concentric line is present. This line does not exceed this outer circle. Given that these concentric lines originally were part of circles, the part on the fragment is more or less a quarter circle. No indications of numbers are visible. The straight lines partition the space between the two concentric lines in three wedge-formed spaces of unequal size. If this fragment was indeed part of a sundial, the differing sizes of these partitions could imply that the sundial was designed to be placed in a horizontal position.

Figure 4.7 Fragment of a graffito of possible sundial (photo author)

A second graffito was found on an imbrex, and is a gaming board, created by scored lines forming squares (fig. 4.8).[16] The fragment is damaged and well worn, so it is difficult to establish if the scouring was done before or after firing. Game boards frequently turn up on Roman sites, not only on ceramic building materials, but also on objects of stone.[17] They are also quite a common feature on buildings and pavements in towns and cities around the Roman world.

Of a third graffito only one line, which curves slightly to one side, survives (fig. 4.9.[18] This line is about 1.8 mm wide and has been drawn with a straight-edged, sharp tool or object on a *tegula*.

Only one possible tally-mark was found (fig. 4.10).[19] It could be a Roman numeral **I**, cut into the rim of a tubulus, but as the rim is worn and the cut is not very clear, it could also be some kind of imprint due to handling or drying. Tally-marks are rather rare on Roman ceramic building material, or at least much less common than signatures. Just like signatures they are very probably related to the administration of the production, but are made by another person than the tile-maker, or at least in a later part of the process than the signatures.

In all, six signatures were encountered, of which two are complete (table 4.6). All were placed on the lower ends of tegulae. The six signatures belong to five different figures, with only the figure in the form of an arc being represented twice. This is remarkable, as generally figures in the form of an arc are dominant on a site, with only small numbers of other figures being present.[20] Why the signatures encountered at the villa of Maasbracht vary so much is unclear.

It is also interesting to note that, although 19 of the 45 fragments from the lower part of the tegulae bear

Figure 4.8 Graffito of a gaming board on a fragment of an imbrex (photo author)

impressions of stamps, there are no fragments with stamps and signatures. This is certainly in part due to the selective collecting of the material, but one cannot help wondering if there is not a relationship between civilian production and the occurrence of signatures. When the small number of signatures and the variety of figures found on the site are taken into account, it seems as if signing the work done was not as necessary on civilian production sites as it was on military production sites.

A possible explanation could be that this variation in signatures is in some way related to different building phases of the villa in Maasbracht, in which the required building

Figure 4.9 Graffito (photo author)

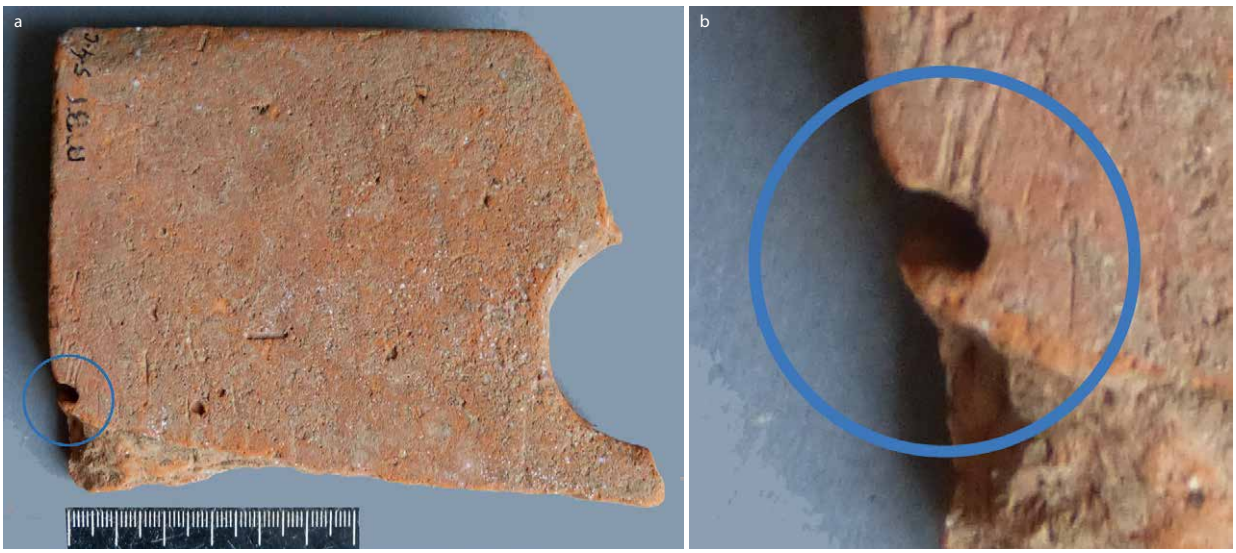

Figure 4.10a Possible tally-mark, indicated by a circle (photo author); b The tally-mark in detail

Number	Complete	Figure	Number of fingers	Description
2-1-1	no	wave	1	part of a wave made with one finger
5-10-2B	no	line	2	parts of two lines made with two fingers
0-0-3	no	arc	2	part of an arc made with two fingers
24-2-8	no	arc	2	part of an arc made with two fingers
7-4-1	yes	loop	3	3/4 of a loop made with three fingers, complete
5-9-D	yes	loop	1	2 loops or drawn in arcs made with one finger, complete, vague impression

Table 4.6 Signatures

materials were obtained from different producers. But this would almost certainly also apply to the sites were arcs are dominant, unless these other sites were all supplied from centralized production sites, which seems unlikely.

4.3. STONE

4.3.1 Introduction

In all 339 fragments of stone were recovered from the site (table 4.7). These formed only a small part of the material

	numbers					weight				
type	**tool**	**building**	**broken**	**natural**	**total**	**tool**	**building**	**broken**	**natural**	**total**
Limestones										
Jurassic		7	3		10		31.973	195		32.168
dolomite			3		3			1.739		1.739
Devonian /Carboniferous		14		4	18		5.223		358	5.581
Cretaceous		1	3	1	5		63	338	495	896
Cretaceous?		1			1		126			126
Middle Eocene (Lutetian)			1		1			199		199
Tufa (Holocene)			11		11			3.359		3.359
unknown		1			1		92			92
Volcanic										
tufa, volcanic		4			4		1.082			1.082
tephrite	62				62	2.007				2.007
Sandstones, *Schieffers* et cetera										
Buntsandstein (Trias)		1			1		2.635			2.635
carboniferous	3	16	15	1	35	2.030	25.177	11.524	857	39.588
Nivelsteiner, tertiary		25	17		42		55.918	2.133		58.051
undifferentiated	27			87	114	1.344			2.145	3.489
slate		4			4		237			237
flint, Cretaceous				10	10				191	191
slag			17		17			816		816
Total	92	74	70	103	339	5.381	122.526	20.303	4.046	152.256

Table 4.7 Stone: nature and use

encountered during the excavation. Almost all of the foundations, including the walls of the cellar, have remained on the site. Only one piece of a wall, including its foundation, was lifted and retained off-site.[21] No material from the foundations was collected, so the finds studied here probably only consists of material recovered from layers or other features.

The documentation of the foundation trenches and wall fragments is scarce where it concerns the nature of the stone and mortar used. The descriptions used by the excavators vary from stones and brick to mortar, but are seldom more explicit. In those cases in which a more specific description is given, these are often very interesting. For example, in the foundation trench of the outer porticus wall, fragments of mortar with wall paintings were used, which implies that this wall belongs to an extension or reconstruction phase (trench 3, level 1, feature 9002). More important however, is that this also implies that in the demolished earlier building or part of a building, certain walls had painting on them. Similar is the occurrence of round lateres in an adjoining foundation trench (trench 3, level 1, feature 9001). Stone is generally described only as gravel or rocks, but sometimes more specific details are given. The general nature in which the stone encountered in the foundation trenches is described can be almost certainly be explained by the type of stone generally used for this type of construction. In this part of the Meuse valley, very coarse gravel from the riverbed is easily available and has therefore been used on a large scale from Roman times onward. But as this material is so common along the Meuse, it is often disregarded when encountered on archaeological sites.

4.3.2 Provenance

The stone encountered on the site has only been identified in general lithological terms, but sufficiently enough to establish a general geological provenance. A more detailed study could possibly enable a more exact provenance of some of the stone, but it would be foolish to think that this would make it possible to pinpoint the exact source. Very few quarries from Roman times have been located as yet, and it would be equally foolish to attribute the stone from Maasbracht to these quarries. In table 4.8 the possible origins are therefore only given in a broad sense, although known quarries are cited.

By far the major part of the material used in the building of the villa of Maasbracht is of local origin, with gravel from channel deposits of the Meuse and loam from the river terrace or floodplain having been used to construct the foundations and walls. For other applications the builders relied mostly on stone obtainable within a range of approximately 50 to 60 kilometres from the site. Where walls were constructed on a plinth of stone, carboniferous sandstone was used. This could have been obtained in the Ardennes, but also as coarse gravel and boulders from secondary deposits in the riverbed of the Meuse will have been used. Tertiary sandstone probably came from deposits in the valley of the Würm, over land about 40 kilometres to the south-east, but could possibly also originate from deposits and erratic boulders in the Kempen region, about 25 kilometres upstream along the Meuse. This sandstone was used for mouldings and other massive items. Buntsandstein could also have been used for these purposes. It possibly originates from the northern rim of the Eifel, about 80 kilometres to the south-east, where quarries dating to Roman times can be found just to the south of Satzvey. Transporting it to Maasbracht will almost certainly have taken place over land, or possibly over the river Rur. Limestone from the Cretaceous seems only to have been used sparsely, although it is easily available in large quantities in the region 30 kilometres upstream from Maasbracht. The lack of use of this material is all the more surprising when one considers the large quantities used from the later Middle Ages to the 19th century.

A possible explanation could be that the Romans were unfamiliar with the fact that this type of stone, known in the region by the geologically incorrect term of *mergel* (marl), could only be used as building stone if it was placed along the same vertical alignment as it had had in it is original geological setting, as otherwise it would shatter under the pressure of the overlying material in the construction. The lime tufa, which comes from exactly the same region as the Cretaceous limestone, seems to have been preferred, as it was used on a larger scale. Its low density and easy working will certainly have played a role in its apparent popularity.

Limestone and dolomite from the Carboniferous and Devonian form the geological background of the Meuse valley upstream from Liège to a point past Dinant and also of the valley of the Sambre from its confluence with the Meuse. Due to this, it is also abundantly present as gravel in the Quaternary sediments of the Meuse downstream from its geological setting. As limestone erodes easily in water, the gravel size diminishes rapidly as the distance to its geological source gets larger. As the material found in Maasbracht is rather small and eroded, it is clear that it has not been quarried, but collected from Quaternary deposits in the floodplain of the Meuse. This has been noticed before on sites along the Dutch coast and the Rhine frontier.[22]

As these rounded stones are not well suited as building material, their only use being as fill in a foundation or in *opus caementitium* for which any kind of gravel would suffice, it seems that these limestones were specifically collected for other reasons. The hard limestones of Carboniferous and Devonian age are well suited for the production of lime, and were used by the Romans for this purpose, a good example being the lime kilns of Iversheim, situated in the Sötenicher

stone	provenance	Transport route (possible)
Jurassic **limestone** (Upper-Jurassic, *Portlandien*)	Lorraine: quarries in Norroy (Panhuysen 1996) Northern France: (Chémery/Verdun, Euville/ Lerouville) Channel coast: (Boulogne-sur-Mer)	Moselle-Rhine-Meuse Meuse Channel – Meuse
Dolomite (upper Devonian, *Hastarien*?) secondary deposits	Valley of the Meuse, between Namur and Marche. As gravel in quaternary deposits of the Meuse	Meuse local, Meuse
Limestone, Devonian to Carboniferous; Secondary deposits	Valleys of the Meuse and Sambre and adjoining regions of Fagne en Famenne. As gravel in quaternary deposits of the Meuse	Meuse local, Meuse
Limestone Cretaceous (and ?); Maastrichtian, Possibly also Tertiary, Danien, Formation of Houthem, limestone of Geulhem	Valley of the Meuse between Maastricht and Meerssen, adjoining regions to the east and west	Meuse and over land
Limestone (Gobertange?) Middle Eocene (Lutetian)	Possibly Brabant, around Tienen and Jodoigne	Meuse and over land
Limestone tufa Holocene	Deposits in valley bottoms of Jeker, Voer and Geul. Exploitation in Roman times in Jeker valley (Panhuysen 1996).	Meuse and over land
tufa, volcanic Quaternary	Eifel, south-eastern part; numerous quarries in Brohtal, Nettetal (Kruft), and around the Laacher See (Von Berg & Wegner 1995).	Rhine-Meuse; over land
Tephrite Quaternary	Eifel, south-eastern part, quarries at Mayen (Von Berg & Wegner 1995).	Rhine-Meuse; over land
Sandstone Tertiary	Most probable: Würm valley around Nivelstein (quarrying in Roman times) Also: Kempisch plateau (Bolderiaan):	over land Meuse
Sandstone Lower Trias (*Buntsandstein*)	Most probable: Rur valley around Nideggen; Quarry at Katzensteinen (Satzvey) (Lohr 1976).	over land
Sandstone Carboniferous and in secondary deposits	Meuse valley between Visé and Liege; Ardennes, valleys of the Wesdre and Ourthe; secondary as boulders and gravel in deposits from Quaternary in Meuse valley	Meuse local
Undifferentiated Quaternary and Holocene	Gravels and boulders from the riverbed and the terraces of the Meuse	Meuse, local and possibly on site
Slate		
– Middle Cambrian, Formation of Jodoigne;	Brabant, around Jodoigne	Over land, Meuse
– Lower and upper Cambrian, Deville group and Revinian	Meuse valley: Fumay, Oignies, Deville and Monthermé. Thiérache	Meuse
– Lower Devonian, Sieginian	Ardennes: Semois valley, Martelange (quarrying) Vielsalm Eifel: Nettetal. Quarries in Mayen (Hunold 2011, 108 – 110). Moselle valley: Trier (quarry, Hunold 2011, 110) Hunsrück Rhine valley: Kaub (Schumacher 1998)	Meuse Rhine-Meuse Moselle-Rhine-Meuse Rhine-Meuse
Flint Cretaceous and secondary deposits	In layers and as inclusion in cretaceous limestone of the Maastrichtian formation, Maastricht and adjoining regions to the east and west. Secondary as gravel in quaternary deposits of the Meuse	Meuse local
Loam	Loam from Pleistocene deposits on the river terrace, possibly also from the Holocene deposits of the floodplain.	On site and local

Table 4.8 Provenance of stone. On-going petrographic research carried out by the University of Gent has shown that slate from Martelange was used in roman fortifications along the Flemish coast (personal comment W. De Clerq)

Kalkmulde (Sölter 1970; Rothenhöfer 2005, 110-115). The lime produced in these kilns was probably transported over the river Erft to the Rhine, and further downstream or upstream along this river, where its use has been attested in Xanten (Rothenhöfer 2005, 111). But production of lime on a large scale, as seen in the Sötenicher Kalkmulde, is perhaps more an exception than a rule. Production will have generally taken place on a much smaller scale, driven by demand, and on site. The lime kilns of Nijmegen and Bonn certainly fit into such a model, as do the kilns belonging to *villae*.[23]

The limestone found in Maasbracht certainly hints at the possibility of local production, as the stones are nearly all burnt in some manner, with at least one coming from the trough used for the slaking of lime. As these stones almost certainly originate from the nearby floodplain of the Meuse, it seems apparent that the burning of lime will have taken place in the near vicinity of the villa. The above-mentioned trough proves that at least the slaking of the burnt lime took place on the building site of the villa.[24] The quantity of lime used in the villa should not be underestimated. All the walls will possibly have had some kind of plastering, and where walls and plinths built of stone were used, these too would have required lime for the mortar. Mortar was also used on the roof to ensure a good closure and adherence of the imbrices on the tegulae. The quantity of limestone used for the construction of the villa is therefore much greater than suggested by that what was found.

The possible sources of the Jurassic limestone, the volcanic tufa and the slate are all located at a greater distance to the site. Transport over water, which is the most economical for bulk products like stone, requires a long voyage down the Moselle and Rhine to a point where branches of the Rhine and Meuse meet, and then upriver along the Meuse,[25] or, if the limestone and slate was obtained from sources in Gallia, a voyage down the Meuse. Apparently the quality of the product justified the higher cost incurred by the longer transport route required to get it to the site. In the case of the Jurassic limestone, this seems to be evident, but in the case of the volcanic tufa and the slate, this seems less so.

Volcanic tufa can easily be substituted by the more local Carboniferous sandstone or limestone tufa also encountered on the site. Indeed, what is known of the walls of the villa, all tends to point to the sole use of Carboniferous sandstone in their construction. The occurrence of volcanic tufa should therefore be explained with a view to a very specific use. More or less the same applies for the slate. As a roofing-material, it can easily be substituted by ceramic tegulae and imbrices, which could be produced locally, presumably at a low cost. But the fact that it was chosen implies that it was either preferred on a technical basis or that cost was not a factor which inhibited its use. The basic question is therefore if the quarrying, manufacturing and shipping of slates is cheaper per square unit of roofing, than the forming, firing and transporting of tegulae and imbrices. Naturally, in this equation the cost of roofing itself should also be taken into account.

4.3.3 Use

As stated above, local products such as loam and gravel were used extensively in the construction of the villa. The loam will have been used either in the form of cob or adobe, so it is only natural that nothing has survived. But that loam was used can be deducted from the wall-painting fragments which still had loam adhering to them, and also from the gravel foundations. As loam is hygroscopic, it is vital to ensure that a wall built of it is isolated from the underlying soil. This can be achieved by placing it on a foundation of coarse gravel, with or without a stone plinth. The capillary structure of the gravel foundation ensures that moisture from the soil cannot creep upwards into the loam of the wall. There is no reason to assume that the gravel foundations were necessary as a structural component to carry the weight of the walls, because the stability of the river terrace is in itself sufficient, as modern building practice demonstrates. The strength of these gravel foundations can therefore be minimal. This is demonstrated by the wall fragment now in de Provincial Depot in Maastricht, of which only the lower 10 to 15 cm consist of large stones from the gravel beds of the Meuse. It should be noted that the top of the floor would have been only about 15 cm above these stones, as a line of mortar curving outwards from the wall at this level clearly shows. This wall fragment was however re-used in the foundation of rooms 22 and 24.

The only walls built of stone that have survived in situ are fragments of all of the walls of the cellar. It is interesting to note that also in Maasbracht the walls preserved best were those of the cellar, as is the case on many other villa sites. If stone was used extensively in the construction of villas, one must wonder why so little of it has survived and why this is concentrated in the cellars. Assuming that villas were systematically demolished to obtain all the useful stones, and in view of the absence of these in the so-called robber-trenches, this must certainly have been the case, it seems surprising that quite often the cellars have survived. This could possibly be explained by their subterranean character making them less visible, but then one must conclude that the cellar walls stood free of the rest of the building as otherwise the demolishers, following the walls above ground level, must surely have come across them. However, as a cellar with no connection to the rest of the building makes no constructional sense, this explanation does not seem to be valid. But if one accepts that in general only the cellars were completely built of stone, it would make sense that these could survive the robbing of the site. In the case of

Maasbracht one should note that the cellar was largely demolished and subsequently, and possibly systematically, filled with rubble, but also that other fragments of masonry survived. This could imply that at least part of the building had a plinth built of stone or possibly even walls.

The worked stone found consists almost entirely of fragments (table 4.9). It is therefore difficult to establish to what architectural setting these fragments originally belonged. Of the twenty fragments, twelve have no more than one worked side, the other eight pieces having at least two. Most frequent are fragments of which the worked side is semi-circular, and are most likely fragments of columns. All these fragments have fine vertical striations, so the columns will have been plastered and possibly painted. This is rather remarkable, as one would expect that when stone was used, this would have been left bare, so that it could be seen. And it is all the more remarkable, when one considers that four of the fragments consist of Jurassic limestone, of which the cost of transport alone must have been considerable. Two possible explanations could be that the aesthetical aspects in a visual sense were not relevant to the builder, but that his choice was based on certain technical aspects of the stone, or that he made use of reworked material from an earlier building located on this or another site. It seems that the former explanation is more valid because if aesthetical aspects were important to the builder, he would have used the reworked material in such a way that the stone would be visible. It should also be taken into account that plastering and subsequently painting stonework was a common feature in the Roman world.

But in a sense, aesthetics did play a role in the choice of the builder. The load-carrying capacity of a column is related to the capacity of the material used to endure pressure before shattering under it. This compressive strength, measured in pressure per square unit (kg/cm^2 or N/mm^2), determines the width a column must have to be able to carry a certain load.

2-1-2	sandstone, Tertiary	column?; fragment 135×160×40 mm, diameter 260 mm, 61°, 1045 gr
2-1-2	sandstone, Tertiary	capital, with moulding, Tuscan order; fragment, 120×90×90 mm, 889 gr.
4-3-2	limestone, Jurassic	column; shaft fragment diameter 400 mm, 36°; 3981 gr.
5-10-2B	sandstone, Tertiary	capital, square abacus, height 78 mm, moulding, Tuscan order; fragment 140×130×100 mm, 1533 gr.
5-4-2A(a)	sandstone, Tertiary	column base; moulding, from a torus; fragment 76×68×50 mm, 230 gr
5-8-2B	sandstone, Tertiary	column?; shaft fragment, diameter 240 mm, 36°
5-2-10	limestone, Jurassic	column; shaft fragment 210×200×120, diameter 500mm, 21°, 5886 gr.
5-2-10	limestone, Jurassic	column; shaft fragment 250×200×170; diameter 460 mm, 60°, 12,547 gr.
5-2-10	Limestone, Jurassic	column; shaft fragment 220×200×125 mm, diameter 240 mm, 97°, 5972 gr.
5-2-10	sandstone, Tertiary	column; shaft fragment 200×95×90 mm, diameter 520 mm, 36°, 1688 gr; mortar on 2 sides
5-4-2A(b)	sandstone, Tertiary	column, moulding from capital of the Tuscan order; fragment 72×68×68 mm, 363 gr.
5-8-2B	tufa, volcanic	ashlar or part of window frame, front angled at 45 degrees, mortar, white with gravel and brick fragments on upper and under sides; fragment, height complete, 190×82×75 mm, 780 gr.
9-1-1	sandstone, Tertiary	ashlar, semi-circular; fragment with complete breadth and height, >110×200×50 mm, radius 240, 122°, 1504 gr
19-3-2(a)	sandstone, Tertiary	ashlar, semi-circular; fragment >260×220×115 mm, diameter 230, 180°, 8415 gr
19-3-2(b)	sandstone, Tertiary	ashlar, semi-circular; fragment >260×240×105 mm, diameter 230, 180°, 7592 gr
19-3-2(c)	sandstone, Tertiary	half-column, semi-circular; fragment with complete breadth, >445×240×140 mm, diameter 260 mm 180°; square dowel hole in base
19-3-2(d)	sandstone, Tertiary	Ashlar, semi-circular; fragment >260×240×100 mm, diameter 240, 144°, 7590 gr
19-3-2(e)	sandstone, Tertiary	base, rectangular with bevelled and profiled foot; complete; shaft 350×285×190 mm, foot 370×280; left hand side rough faced
19-3-2(f)	sandstone, Tertiary	column, square plinth or abacus, with moulding; fragment 440×580×90 mm, diameter at base of moulding 700 mm, 90°. Underside has been roughly worked, not flat
19-3-2(g)	sandstone, Tertiary	column, square plinth or abacus, with moulding; fragment 280×160×88 mm, diameter at foot 430 mm, 75°, 4306 gr.; Underside is rough

Table 4.9 Worked stone: columns and sills

Depending on the type, the compressive strength of Jurassic limestone lies between 113 and 390 N/mm^2, that of tertiary sandstone around 45 N/mm^2. As the aesthetics of a building require that the individual architectural elements fit into the overall aesthetic of the building, the builder must either use material that makes this possible or change his architectural concepts, i.e. downsize the planned building to measurements which would fit within the technical specifications of the materials he has at hand. The use of Jurassic limestone for columns must therefore be seen as a technical necessity to achieve a certain ratio between the desired height and width of the columns and the required carrying capacity.

It is interesting to notice that the width of the columns used in the construction of the villa of Maasbracht must have varied considerably. The four limestone fragments would originally have had a diameter between 240 and 500 mm in width, while the sandstone columns would have measured between 260 and 700 mm. It is also interesting to note that six of the nine elements made of sandstone belong either to the plinth, the *abacus*, the *torus* and/or the *trochilus* of a column, and that two of the elements could well have been part of a half-round ashlar, and not of a column shaft. While it is clear that almost all of the architectural stone has been removed from the site, this overrepresentation of moulded parts raises some questions about their functioning in the building's structure. The most important question is if and how the column fragments could fit together. It is clear that only three of the fragments of limestone column shafts could possibly come from columns of equal dimensions, with the difference in diameter being due to *entasis*. If this is the case, these columns must have reached to a considerable height, so it must be almost certain they will have formed part of the monumental main entry to the building. This then could explain why elements made of sandstone dominate. The main entrance will have been flanked by just two columns, whereas more, but smaller columns will have been used in other parts of the building. No fragments of capitals or bases made of limestone have been found, but six pieces of sandstone are thought to have been part of such elements. All seem to belong to the Tuscan order. Of these only one fragment is certainly from a torus (no. 5-4-2a) and three fragments could have been part of a plinth, although the little moulding still visible suggests that they were probably part of an abacus. The upper side however has been very roughly shaped in the case of number 19-3-2f, leaving an uneven surface on which the placement of other stonework could only be possible if a thick mortar bed was used. This piece is also the largest fragment, covering just 90 degrees of a full circle, or about a quarter of the diameter of a complete column. It is therefore not certain that free standing columns were used, but that half-columns were used instead. Indeed, among the material collected there is a nearly complete half-column of which only one end is missing. It has a diameter of 260 mm and has a square dowel-hole in the one remaining end.

Among the ashlars there are several pieces that are also semi-circular, but are not deep enough to have been able to function as half-columns (fig. 4.11). Also, in the cases where an end has survived, dowel holes are lacking, so that joining two elements is not possible, and a column formed without such joins would be rather hazardous. It seems more likely therefore that these semi-circular ashlars were used as cover stones of a wall, possibly of the low wall of an open porticus. But, a question that is rarely, if ever, put forward in The Netherlands, is whether the porticus was indeed open. No doubt this was so in the Mediterranean world, but was this also the case in the harsher climate of northern Europe? We have no buildings in this part of Europe, which have survived in a sufficient state to prove either the one or the other, so we must at least consider the possibility that the porticus was indeed closed. This does not have to imply that the porticus was a corridor with the only light coming in through small windows. In Augusta Raurica Hufschmied has found evidence of windows being used to close off the porticus. The importance of reconstructing the form of the porticus in Maasbracht lies in the implications this has for explaining the use of the half-round ashlars described above. If the porticus was closed in some way, these ashlars could not originate from there, and some other explanation should be found.

There is a rather interesting fragment of an ashlar of volcanic tufa of which one side has been cut at an angle of about 45 degrees (number 5-8-2B). The height of the piece is

Figure 4.11 Semi-circular ashlar of tertiary sandstone (photo author)

82 mm, the original length and depth cannot be established due to the absence of the sides and back. In light of the fact that tufa was used and the careful cutting of the face, it seems clear that this element was made for a very specific purpose, but what this could have been remains unclear. From the height of the piece one must conclude that it must have been used in the masonry of a wall, and from its form that this will have been as an ashlar in a sill of a window or doorway.

In table 4.10 all the ashlars are listed that were collected during the excavation of the site. The fragment of a wall lifted from (5-4-4) is not included in this table, although the exterior consists of rough-worked ashlars of carboniferous sandstone. Also not included are the fragments of lime tufa as they have no visible traces of working. But it must be clear that this tufa was specifically brought to the site to be used as an ashlar. The range of stone used in the ashlars is wide, and must in some manner reflect on the specific technical properties of each type of stone.

It seems self-evident that the architectural elements made of sandstone and limestone will have been part of the main building of the villa. But there are some points that should be considered before such conclusions can be drawn. The architectural elements made of sandstone were nearly all collected from just two places: a pit (19-3-2) and a nearby concentration of rubble (2-1-2), with the remainder coming mostly from the cellar and room 23. The Jurassic limestone was found almost entirely in room 23, as was by far the largest part of the lime tufa, the remainder mostly being found in the cellar. The other stone imported specifically for building purposes to the site, the volcanic tufa and slate, were nearly all found in the cellar. That the cellar was filled with rubble in the course of the demolition of the main building of the villa is clear, so the appearance of these stones in the fill must not come as a surprise. What is surprising is that architectural stone seems to be concentrated in room 23, with the sole exception of the fragments of tertiary sandstone, which largely come from two places outside the main building. This raises the question whether these sandstone elements did indeed belong to the main building, or did they belong to another structure altogether? If the latter is the case, one possibility could be that there is some kind of relationship between pit 19-3-2 and the concentration 2-1-2, in that the material in the former originally came from the

2-1-2A	sandstone, tertiary	ashlar, 2 fragments, traces of cutting
2-1-2A	sandstone, tertiary	slab, upper and 2 sides worked; corner fragment, 125×80×65 mm, 899 gr.
4-4-3	sandstone, carboniferous	ashlar, 115×110×70mm, 1852 gr; coated with mortar on one side, on other traces, reddish with ground brick and fine gravel
5-4-2B	limestone, Jurassic	ashlar, triangular, sawn 4 of 5 sides 88×82×45 mm, 379 gr; white mortar with fine gravel on two sides
5-4-3	sandstone, carboniferous	ashlar, roughly made to size, two, 1862 and 2256 gr.; traces of mortar on two sides
5-5-2B	sandstone, tertiary	ashlar, fragment; 364 gr
5-7-2B	tufa, volcanic	ashlar, fragment, 223 gr; mortar, white, on two sides
5-8-2B, 5-9-2B	sandstone, tertiary	ashlar? four fragments with worked sides; 105, 212 and 287 gr.
5-10-2-A	tufa, volcanic	ashlar, fragment with worked side; 65×68×27 mm, 78 gr.
9-1-1	sandstone, carboniferous	ashlar, 110×80×134 mm, 1380 gr.
10-2-3	sandstone, carboniferous	ashlar, roughly cut to size, tapering; 130×95×80mm, 1322 gr
13-2/3-2	limestone, Cretaceous	ashlar? Fragment of a corner; 63 gr
14-2-2	sandstone, carboniferous	ashlar; part worked; 235×140×85 mm, 4114 gr
14-2-2	sandstone, carboniferous	ashlar, roughly cut to size; 110×100×150, 2261 gr.
14-3-2	limestone, Jurassic	ashlar, rectangular; 155×160×24-81 mm, 2829 gr.
19-3-2	sandstone, Triassic	ashlar, one side cut rectangular; 175×85×135 mm, 2635 gr.; white mortar on most sides
19-3-2	sandstone, Tertiary	ashlar, fragment, part worked; 280×60-175×130-155 mm, 9040 gr.
19-3-2	sandstone, carboniferous	ashlar; fragment, 280×180×170 mm, 9040 gr
19-3-2	sandstone, carboniferous	ashlar; one side finely worked, others sides roughly cut; 255×80×145 mm, 3850 gr; mortar with coarse sand on most sides

Table 4.10 Worked stone: ashlars

latter, one option being that the concentration had once been a shrine. Being situated in front of the western pavilion and in full view of anybody entering the villa through the main entrance, it can be expected that the materials used will in some way have reflected the status of the owner. This would explain the concentration of sandstone elements in this area of the courtyard of the villa. Shrines and columns placed near the entrance of a villa are not unknown, and are certainly not always recognized as such (Smith 1997, 291; Barat 1999).

The concentration of architectural stonework and of the lime-stone tufa in and around room 23 and the adjoining cellar also raises some questions. The virtual absence of these kinds of stone elsewhere in the building can only mean that it was used in and around room 23, as the material in the cellar has clearly been dumped there. Room 23 has some interesting features, which are more or less absent in the other parts of the building. The foundations of the walls of this room reach to about 25.85 m +NAP, which is extreme when compared with the depth reached in the other rooms, which lies at around 26.30 m +NAP. These heavy foundations indicate that the structure above was different from that of the rest of the building.

A second point of interest is the presence of a drain directly outside the eastern wall of room 23. It should be noted that this drain starts somewhere near the north-eastern corner of room 23, runs parallel to the wall in a southern direction and makes a turn to the east, away from the wall, about halfway between the eastern corners of the room. This implies that in the north-eastern corner of room 23 there must have been something which needed to be drained regularly.

A third point of interest is the construction on the south-eastern corner outside room 23 but adjoining the outside wall. This structure lies within room 24 and consists of a more or less rectangular foundation of gravel placed at an angle to the wall of room 23. The eastern side is not flush with the outside of the eastern wall of room 23, but was placed about 1 metre back from the eastern alignment of room 23. On this foundation four fragments of walls can be distinguished, three running parallel to the wall and one at a right angle to it. On the foundation charcoal is abundant, and sand turned red by exposure to heat surrounds it. Can this be the base of a boiler used for the heating of water for a bath?[26] This construction would make sense if room 23 was a bath, and this idea is not as far-fetched as it seems at first sight. The heavy foundations of the room and the drain certainly point to a bath. The lime tufa found almost exclusively in room 23 can also be connected to building techniques one could expect in a bath. The low density of tufa (1700 – 2400 kg/m^3) makes it very suitable for use in a vault or an arch, as the relative low weight of a construction in lime tufa will result in a lower outward pressure on the underlying wall. That lime tufa was used here, and not volcanic tufa or ceramic *voussoir* tiles, can well be explained by the easy availability of it in this part of the Meuse valley. A fourth point that could indicate the presence of bath are the tubuli found in and around room 23. By far the largest number of tubuli fragments was found outside the building, in pit 19-2/3-2 and in pit 14-2/3-2. However, inside the building tubuli were only found in rooms 1 and 23, and of course in the rubble of the cellar lying between these two rooms. A last argument is the position of this room in the building. Situated in the north-eastern corner, it is on the far side of the building in relation to the prevailing south-westerly wind, ensuring that fumes from the heating of the bath will be carried away from the building. When all these points are taken into account, the case for room 23 being a bath looks strong enough.

If room 23 is a bath, and the hearth in room 24 is indeed the base of a boiler, this then could explain the bar-like lateres found on the site. These would make a perfect frame on which a boiler made of iron and/or bronze could be placed. The quality of ceramic building material to absorb and dissipate heat have already been mentioned earlier, and their form and size make it possible to place them in such a manner that not only the weight of a filled boiler could be carried, but that also sufficient transport of heat between the fire and the metal bottom of the boiler could be achieved.

4.4 Conclusion

The building material collected from the villa of Maasbracht gives some insight into the building and its development. As elsewhere in the Netherlands, the building will have been used as a quarry after its abandonment, so that only a very small part of the original building material will have remained on site. This remaining material however still gives a good insight into what was originally present, as these remains represent the material which was useless or not visible for those plundering the site.

In general, the remaining material consists of useless fragments and the odd more or less intact piece, which for some reason escaped re-use. This is nicely illustrated by the bar-shaped lateres found in the pits just outside the villa itself, where they were used in some way and subsequently buried, thereby escaping detection in later times. As the remaining fragments reflect not only the materials used, but also to which extent these were used, the quantities in which they are recovered give some impression as to how much of each type of material was originally used. It is therefore interesting to note the very limited quantities of worked stone recovered from the site, and its composition and form.

Even accepting that the collecting of material during the excavation was haphazard and certainly biased toward certain

find-categories, it is still remarkable so little Carboniferous sandstone was recovered, or for that matter other stone which could be and was used in Roman walls in this region. This lack of material can only lead to the conclusion that the main building was constructed in adobe or cobb. In this the villa of Maasbracht will have been no exception to other buildings on an more or less equal scale in the region. That the walls were built of loam is neatly illustrated by the fragments of wall-paintings, which still have loam adhering to the back.

The only walls remaining that were constructed in stone, are those of the cellar. In the case of Maasbracht, the cellar had been partly demolished, and subsequently filled in with debris mostly consisting of fragments of wall-painting, with this fill spilling outside and over the (partly) demolished walls. The destruction of the cellar can therefore only have taken place just after the villa was abandoned, or possibly during a last occupation phase in which the building was drastically reconstructed.

Equally interesting is the seeming lack of features that could be related to a hypocaust. A significant part of the ceramic building material however consists of forms which are generally related to a heating system. It therefore seems probable that this material was used in some other way, possibly in the case of the lateres as architectural elements in the façade, or as part of a vault in the case of the tubuli. However, other, less well-known types of heating systems can have been used in the villa. Certainly the use of hearths with chimneys should also be taken into account. A fragment of a tubulus that was angled at 45 degrees at one end, certainly points to the existence of flues passing through walls. This type of exhaust is known from buildings in the Mediterranean world, but is also illustrated inside the Simpelveld sarcophagus.

A very rare find are the bar-shaped lateres which were recovered from the pits outside the villa building, where they had almost certainly been re-used in some way. In Roman times these lateres were almost certainly related to hearths and ovens, as examples found in situ in the military tilery of the Holdeurn illustrate. Their form indicates that they were meant to carry a heavy load, while the material used suggests that they were expected to be able to withstand the duress of heating and cooling. The most creditable explanation for the use of this type of later in the context of a villa can only be as a support of a boiler related to a bath. In the layout of the villa only rooms 22 and 23 are, due to their heavy foundations and the existence of a drain, possible locations for a bath. It is therefore interesting to note that in room 24, adjacent to room 23, there is a feature which could be explained as the base of a boiler. The bar-formed lateres would fit nicely on this base. In these two rooms, the blocks of lime tufa were concentrated, and as the low density of this type of stone makes it very well suited for the construction of vaults, the idea that room 23 had some special function does not seem to be too farfetched.

The roofing of the villa will have been mostly in ceramic building material, but as slate has also been found on the site, slate roofing of parts of the villa, or during a certain phase, should not be excluded.

The sourcing of the stone used on the site is local to regional, with only the volcanic tufa, the slate and the Jurassic limestone certainly coming from quarries further away. The ceramic building material is also local, probably made of loam deposited by the Meuse on the Pleistocene river terrace, or in the Holocene valley bottom. On visual inspection it does not differ from other Roman ceramic building material found in the region. A regional origin seems to be borne out by the CTEC and AAF stamps belonging to producers whose products were mainly used in the Meuse valley around and downstream from Maastricht.

Notes

1 I would like to thank Ton Lupak, Jo Kempkens, Huub Schmitz and other members of the HVR who participated in the excavation, and were kind enough to share their knowledge and photos. Moreover, I am grateful to my employer Sweco Nederland B.V, formerly Grontmij, for the time allowed for finishing this research.

2 This figure is based on 19 sites in the Netherlands, which were studied in the same manner. See for example Gazenbeek 2009; 2014a.

3 This calculation is based on six complete tegulae from the site of Forum Hadriani, which measured 410×315 (2×), 410×320, 410×335, 415×330 and 420×320 mm (Gazenbeek 2009). These tegulae would each cover about 0.13 m^2. As the overlay is roughly 20%, the net coverage would be around 0.10 m^2. In his study of the ceramic building material from the bathhouse at Beauport Park, Brodribb (Brodribb 1979a, 141-142) calculates a coverage of 0.09 m^2, with tegulae measuring 397×310 mm and an overlay of 25%).

4 Numbers 5-9-D; 14-4-2 and 19-2-2.

5 The complete tegulae from the sites used in this comparison weigh between 5,787 and 9,942 grams, the average weight being 6,843 gr. The average weight of the tegulae fragments from these sites is 322 gr.

6 Data was used from the sites of Eckelrade (Gazenbeek in prep.), Heerlen Trilandis (Gazenbeek in prep. a), Helden Schrames (Gazenbeek 2010), Holtum Noord (Gazenbeek 2012c), Maasmechelen Mottekamp (data collected by author, not published).

7 On the sites mentioned above only in Heerlen (Gazenbeek 2014c) and Eckelrade (Gazenbeek in prep.) were laters found.

8 Numbers 3-1-2, 4-1-2 (5 fragments), 5-6-2D; 6-3-4; 13-1-2 and 20-5-4.

9 Numbers 11-3-1 (290× >240×38 mm), 14-2-3 (>305× >115×53 mm) and 19-2-2 (>265× >205×39 mm).

10 Numbers 14-2-2 (1 complete piece, 5 fragments) and 24-1-3 (2 fragments).

11 Possibly from Zwammerdam or Bodegraven, now in the collection of P.C. Beunder, which is stored at the Provinciaal Depot Bodemvondsten, Alphen aan den Rijn.

12 All the fragments of this kind of lateres were found outside the building in pit 14-2-2.

13 Findnumber 6-3-4.

14 Findnumber 19-3-2.

15 Findnumbers 7-3-2 and 6-2-5.

16 Findnumber 7-2-1.

17 See for examples Wegner 1990, 317; Holbrook and Bidwell 1991, 279, fig. 134 and fig. 135; Neal 1974, 200, Fig. 87; or Robertson 1975, 100, fig. 26.

18 Number 5-11-2B.

19 Findnumber 5-4-2C.

20 For example Voorburg, city, 27 signatures, of which 18 are arcs and 2 are bows (Gazenbeek 2014a); De Meern, site LR 62, military vicus, 40 signatures, of which 37 arcs and 1 loop (Gazenbeek 2012b); Ewijk-Keizershoeve, villa, 26 signatures, of which 18 are arcs and 1 is a loop. See also Warry 2006b, 90-91, who concludes that 80% of the signatures are arcs. Baatz' study of the ceramic building material of the 8th legion stationed at the Saalburg revealed 23 signatures, of which at least 18 were arcs (Baatz 1970, 47-49). Goulpeau and Le Ny concluded that two thirds of the signatures they studied in Brittany are arcs (Goulpeau and Le Ny 1989, 127).

21 Now in the Provinciaal Depot voor Bodemvondsten Limburg, Maastricht. This piece was investigated there. A weight could not be established due to the lack of scales with a sufficient capacity. Findnumber 5-4-5.

22 See Voorburg (Gazenbeek 2009; 2014a), Naaldwijk (Gazenbeek 2012a) and Vleuten (Gazenbeek 2012c).

23 See for example Kisters 1991; Rothenhöfer 2005, 111; Suméra 1997.

24 See Van Dierendonck and Swinkels (1983) for an overview of on-site lime production in the Netherlands during the Roman period.

25 The barge found at Druten on the Waal was carrying a cargo of slate when it sunk, see Hulst and Lehmann 1974.

26 Krell 1901, 39-41; an example of this type of bath was found in Alt-Inden, with a boiler with a diameter of 1.5 metre, which was placed in the room next to the *alveus* (Dodt and Paffgen 2010, 170-172).

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5 The wall painting fragments

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5.1 Introduction

Fragments of wall paintings were found all over the building, and also in two places outside it. The greatest quantities were found in the cellar (6), into which had been dumped fragments of a lavishly detailed decoration featuring human and mythological figures and trompe l'oeil architecture and architectural elements. A second large group of fragments came to light in two pits outside the villa, 5 to 10 metres from its northwestern corner (find nos 7.3.2 and 7.4.2). Most of these fragments belonged to a panel decoration that contained large areas of red in the main zone and imitation marble alternating with areas of black in the dado. Also outside the building, 13 to 18 metres south of the eastern wing, were two pits containing a fairly small number of fragments of a decoration consisting of lines, bands and stylised floral motifs set against a white background (find nos 14.4.2 and 14.4.3). Scattered all over the building, finally, were various small groups of fragments, especially in the wings around the central rooms 1-4. They belonged to various simple decorations that can no longer be reconstructed.

The find context of the wall paintings in Maasbracht closely resembles that encountered at many other findspots in the Netherlands, being the result of demolition work. The plasterwork that was hacked from the walls was not suitable for re-use, and the debris was therefore left at the site. Only there where such fragments were dumped in deep cellars, hypocausts, wells, pits or foundation trenches have large quantities survived in the ground. What was left lying at the surface was eventually completely destroyed by weathering. As Roman buildings were usually demolished in their entirety, including their foundations, wall paintings are rarely found in situ. One fragment of a demolished wall that was found at Maasbracht nevertheless still shows remains of painted plaster.

In the context of this study a full publication of all the wall-painting finds from Maasbracht did not prove possible. Only the fragments of the decoration with figure scenes will be presented and discussed in this chapter.

5.2 Decoration with figure scenes

The great majority of the fragments of this decoration (find numbers 5-2/11-2, 5-2-4, 5-2-9, 5-2-10) were found in the villa's cellar (6). Smaller numbers came to light in two adjacent rooms (22-23). In spite of the large quantities in which they were recovered here, approximately 7 m^2 in total, the fragments can only represent a small part of the original wall area. It nevertheless proved possible to reconstruct large parts of the decoration, give most of the figures a place in it and identify the nature of the figures to a point.

The study of the fragments was complicated by the fact that many of them show traces of burning, which caused colours to change substantially and colour contrasts to blur. The colours yellow and buff (yellowish brown) have consequently turned red, while black has faded. As many unburnt pieces proved to fit fragments discoloured by burning, the fire must have burnt when the paintings had already fallen or been hacked from the wall. There are also fragments on which the painting is only partly discoloured, implying that the non-discoloured parts were covered when the rest was exposed to the heat. Traces of burning were found on fragments from all parts of the wall; no patterns can be made out in the distribution of those affected by the fire.

During the excavation of the cellar the finds were collected per level and, from the fourth level downwards, also per quadrant. A few groups of fragments were found in articulated position, presumably because larger lumps of plasterwork were thrown into the cellar and then broke into fragments. When the remains were studied after the excavation, no unambiguous patterns could be made out in the distribution of the fragments within the cellar. Many fragments from different levels and quadrants were found to fit together. Some of the fragments from the adjacent rooms 22 and 23 were also found to match fragments from the cellar, implying that the mortar debris was dumped secondarily, after the paintings had fallen or been hacked from the walls.

The fragments from the cellar can be divided into three groups on the basis of the thickness and composition of the mortar. Roman building practice was to plaster walls in several layers, using a fairly coarse mortar for the first layer, which was then coated with one or more layers with a finer composition. Besides grey and greyish white mortar, the Roman builders also used mortars of a reddish colour caused by the addition of crushed brick. The situation in Maasbracht

is remarkable in that different groups of mortar were used for different parts of the decoration with figure scenes.

In the case of the fragments of the first group the white stucco layer bearing the paintings covered a coarse reddish mortar tempered with crushed brick that was applied to the wall in two or more layers. The bottom layer differs from the top one only in that it contains fairly large quantities of plant matter (straw). The overall thickness of the layers of mortar varies considerably, from approximately 40 to approximately 80 mm. The study of the fragments revealed that the layer of plaster was thinner at the top of the wall than at the bottom, and that it soon became thicker towards the floor in the dado zone.

The fragments of the second and third groups consist of a fairly fine, greyish white top layer of plaster coating a likewise fairly fine reddish mortar tempered with crushed brick. The far less numerous fragments of the third group differ from those of the second group only in the greater thickness of the bottom, reddish layer of mortar. The greyish white top layer is 9 to 12 mm thick in both groups, the bottom layer varies in thickness from 10 to 15 mm in the second group and from 30 to 40 mm in the third. Many fragments of all three groups also show a thin, pale green layer of loam on their rear side. On the burnt pieces this loam has turned brown.

During the study of the remains some of the groups of fragments that had been recovered in articulated position could be expanded with conjoining pieces, and various new groups of fragments could be refitted. In 1987, twenty groups of fragments of this decoration were restored on panels for an exhibition in the Bonnefantenmuseum in Maastricht (Netherlands). These groups provide the main basis for the reconstruction and interpretation of the decoration. Also important in this context are various groups of conjoining fragments that were not restored, and some isolated pieces. They will be described and illustrated separately below, after the description of the decoration's composition as it can be largely inferred from the surviving fragments.

5.3 The composition of the decoration (fig. 5.1)

In Roman wall painting it was customary to divide the wall into three horizontal zones: a fairly low dado, a high central zone and a mostly lower upper zone. This tripartite division is also evident in this decoration. At the bottom of the central and upper zones was a broad buff strip that constituted a platform on which the figures moved in these zones, creating the impression that the parts of the wall above the dado and the central zone were recessed. This impression was strengthened by bands suggesting a relief moulding running along the bottom of the two platforms. Carved leaf motifs were represented in one of the bands above the central zone. This trompe l'oeil architecture continued in the upper zone in the form of columns erected on the platform, which supported a profiled entablature at the top of the wall.

Skirting the bottom of the wall was a 9.8-cm-high brown band topped by a 1.6-cm-high cream-coloured band. Above that the dado was divided into rectangular panels by vertical green bands with a width of 5.3 cm. The panels were alternately painted black and red. The original height and width of these panels could not be determined. A horizontal green band with a width of 4.4 cm marked off the top of the dado. The subsequent transition to the central zone was formed by two brown bands with black outlines, with a total width of 6 cm. The wall above the buff platform of the central zone was completely black and divided into tall rectangular panels by vertical green bands.

The bands have the same width as those in the dado, and for the reconstruction it was assumed that they lay in line with one another. The platform was at least 10 cm high; the dimensions of the rectangular panels are unknown. The top of the central zone was bordered in the same way as the dado, with a horizontal green band topped by bands suggesting a relief moulding.

The platform in the upper zone was 14 cm high, as could still be inferred from one of the groups of fragments (Panel 16, see below). Unlike in the central zone, the background of the figures was not monochrome but painted in several colours, among which were green and violet. The vertical division of the upper zone was also more intricate, comprising vertical garlands and tendrils and illusionist architecture supported by columns. The top of the wall was marked off by a 4.5-cm-broad red band.

The dado and central zone were plastered with the coarse, reddish mortar of the first group of mortars, while the mortar of the second and third group was used in the upper zone. The joint between the two plaster zones coincided with the boundary between the moulding at the top of the central zone and the platform of the upper zone. In painting the walls, the decorators first applied a layer of mortar and plaster to the upper zone, which they then immediately painted before plastering and painting the bottom part of the wall. This enabled them to work *al fresco* as much as possible, *i.e.* apply the pigments to the stucco layer while it was still wet. The pigments were then fixed in the plaster when the moisture evaporated. Complex, labour-intensive frescoes could only be created by plastering and painting walls in zones.

It is not known which room contained these decorations, but the logical assumption would be a room in the immediate surroundings of the cellar. The dimensions of the decoration can to a certain extent be inferred from the elements contained in it.

The minimum height of the wall can be determined on the basis of the height of the figures in the three decorated zones.

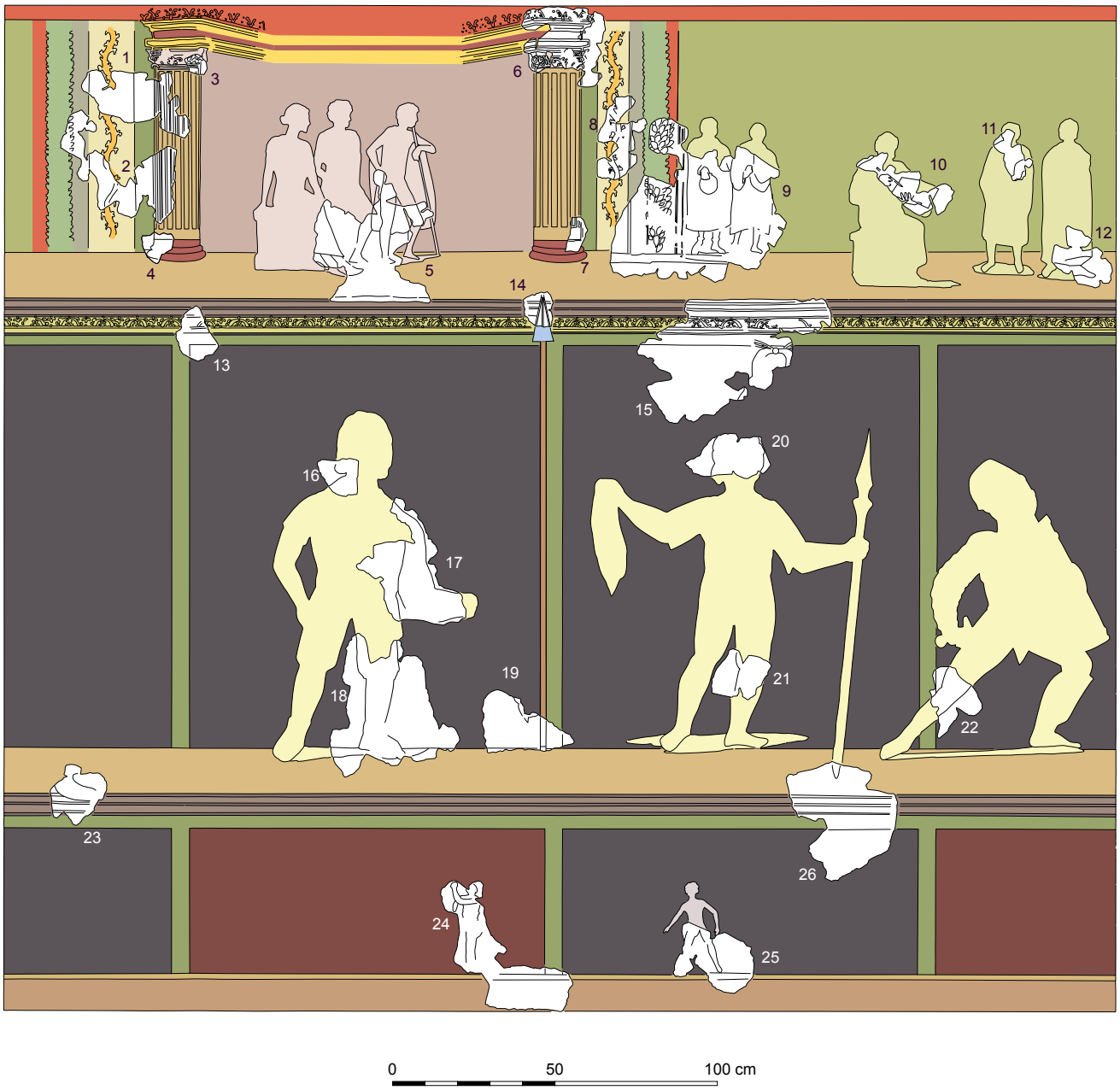


Figure 5.1 Reconstruction; Legend:

1-2	panel 9	8-9	panel 12	15	panel 8	21	fragment 6
3	fragment 28	10	panel 15	16	fragment 10	22	panel 7
4	fragment 26	11	panel 13	17	panel 5	23	fragment 21
5	panel 16	12	panel 14	18	panel 4	24	panel 1
6	panel 11	13	fragment 22	19	panel 3	25	fragment 1
7	fragment 27	14	fragment 2	20	panel 6	26	panel 2

Those in the central zone were just over half-life-size and approximately 100 cm high. The figures in the dado were much smaller and no more than 30 cm high, while those in the upper zone were of different heights, according to the scenes to which they belonged. One group was 40 to 45 cm high, others 50 to 55 cm, and some may even have reached 80 to 90 cm. In the reconstruction drawing (fig. 5.1) a height of 66 cm has been assumed for the dado, 152 cm for the central zone and 90 cm for the upper zone, bringing the wall's total height to 308 cm.[1] It is unlikely to have been much higher. A higher wall would mean that there was a lot of empty space above the figures in the various zones, which is not in accordance with the known use of space in Roman wall painting and relief sculpture. On top of this, the upper zone contained captions comprising letters that were 7 to 17 mm high. Such texts would still have been clearly legible at a height of between 225 and 250 cm; above that height they would probably have been fairly pointless. With the dado height assumed in the reconstruction, people visiting the room will have been more or less face-to-face with the figures represented in the central zone.

Unfortunately, the surviving parts of the decoration provide less to go on for the horizontal dimensions. In the reconstruction drawing a width of 115 cm was chosen for the rectangular panels in the dado and central zone. A rectangular room with three panels on the short wall and five on the long one would imply minimum breadths of 345 and 575 cm. These figures provide an indication of the minimum dimensions of the decoration with figure scenes in the villa of Maasbracht.

The room probably did not have many door or window openings. No more than five fragments from the lower or central zone show the characteristic bevelled edge of such openings. The same green bands that divided the panels in these zones also lined the opening(s) in the wall.

5.4 The fragments and groups of fragments

5.4.1 Dado

Only a proportionately small number of fragments, around 6% of the surviving surface area, can be attributed to the dado zone. Two groups of fragments show the remains of a figure.

Panel 1 (fig. 5.2)

A restored group of fragments shows the bottom right corner of a red dado panel that is separated from a black panel by a vertical green band. The contours of a figure represented mostly in shades of brown can just be made out against the red background. The two large lower fragments fit together; the fragments above them may have belonged to the same figure. It is difficult to interpret this figure; it may well be a herm, a torso supported by a short pillar. The latter stands on a poorly defined base and broadens slightly towards the top. Only a band around the middle and a raised arm are accentuated in a lighter colour on the torso, which is represented as a silhouette.

Fragment 1 (fig. 5.3)

Visible on three conjoining fragments are the bare legs of what is most probably a male figure set against a black background. The legs are spaced apart and the figure appears to be moving from the right to the left. The paintwork of the lower legs has faded substantially and the right foot is no longer visible. The toes of the foot of the left leg that is set further back touch the cream-coloured band bordering the bottom of the black panel.

5.4.2 Central zone

Approximately 41% of the total surviving surface area of the decoration can be attributed to the central zone.

Panel 2 (fig. 5.4)

The transition from the dado to the central zone has survived on three conjoining fragments, large parts of which have been discoloured by heat. On the far right the colours are still as they originally were: the black of the dado, the green of the band bordering the top of the dado, the brown of the moulding above it and the buff of the strip of the platform of the central zone. The white tip of a pointed object casting a shadow to the right of it can be made out on the platform. It is not clear to what extent the object's original colour has changed. It may be the tip of a spear, of which the painting in the central zone most probably contained several specimens.

Panel 3 (fig. 5.5)

Two conjoining fragments show the top of the buff platform and above it the black background of the central zone and the bottom end of a vertical green band. A narrower brown band runs to the left of it. The vertical shading from light to dark brown suggests that it is a round wooden stick. Just above the platform the stick ends in a slightly wider bluish grey area, possibly the head or base of a spear. The stick would then be the spear shaft. The dark purple edge of an unknown figure or object is visible approximately 8 cm above the platform to the left of the stick.

Fragments 2-5 (fig. 5.6a-d)

The motif of a wooden stick alongside a green band recurs on several fragments, but they could not be combined to form a larger whole. There are also more fragments showing parts of bluish grey spear heads. In two such cases the head points upwards in front of the relief moulding between the central and upper zones (Fragments 2 and 3, a and b). On two conjoining fragments the stick or shaft broadens slightly before ending in a bluish grey area accentuated with black

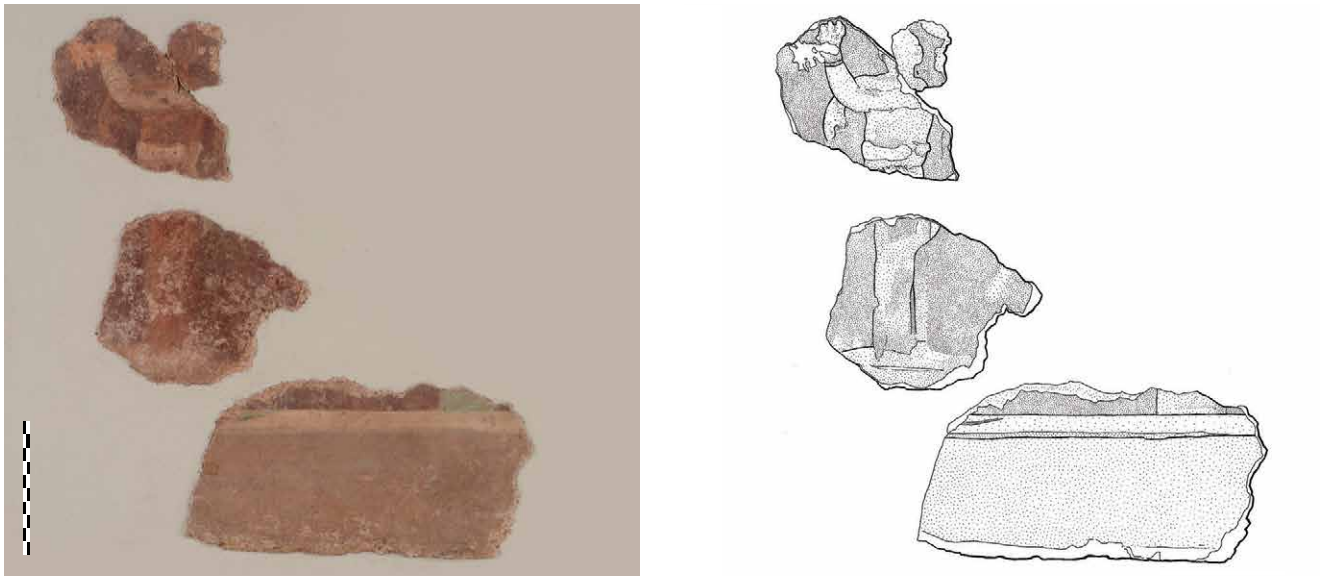


Figure 5.2 Panel 1; one small block in the scale bar of this figure and all following figures represents 1 cm

Figure 5.3 Fragment 1

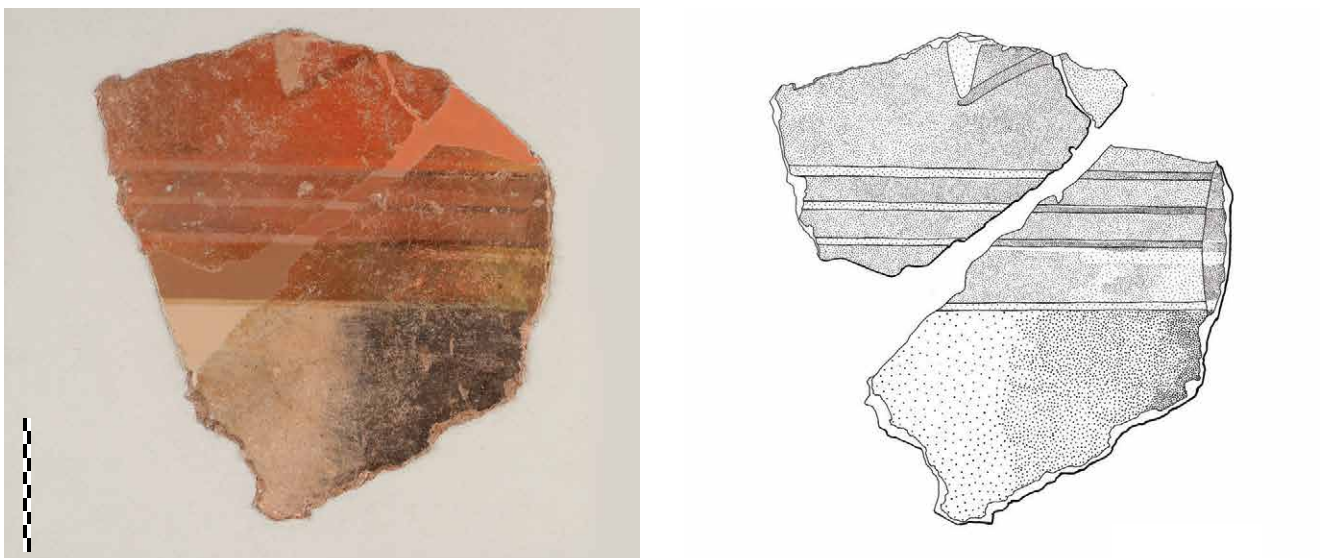


Figure 5.4 Panel 2

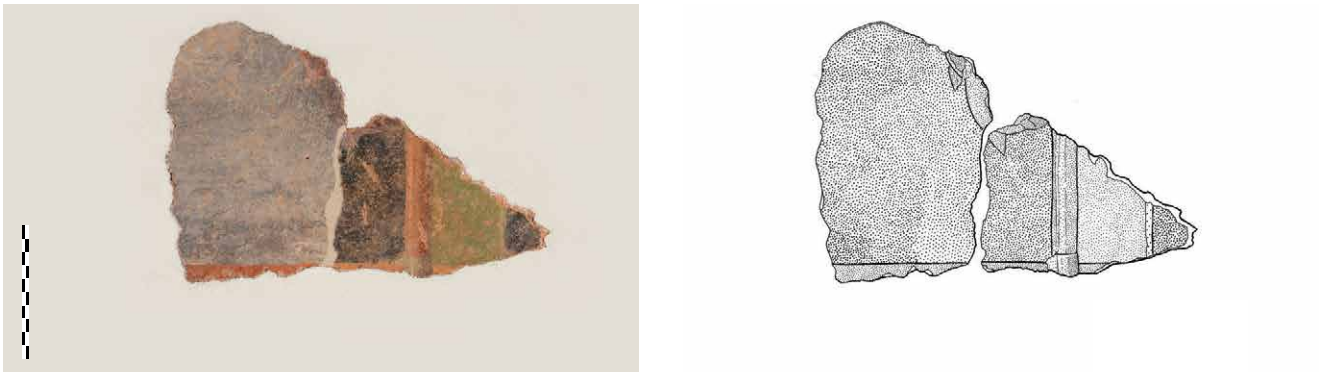


Figure 5.5 Panel 3

Figure 5.6a-d Fragments 2-5

lines (Fragment 4, c). A yellow dot in that area, just beyond the transition, may represent a rivet in the spear head, whose lower part is quite a lot broader than the shaft. An isolated fragment, finally, shows the fingers of a left hand that appear to hold a stick (Fragment 5, d).

Panel 4 (fig. 5.7)
A group of thirteen conjoining fragments shows the left lower leg of a figure standing on the platform. A strip of white fabric is wrapped tightly round the leg from the foot to just below the knee. Above that are purple breeches adorned with green and dark purple patterns. Two non-conjoining fragments showing parts of the purple breeches that appear to match the others have been included at the top left in the restored panel. The bottom left fragment showing the heel of the foot is burnt and discoloured, but fits the other fragments. The foot is encased in an openwork leather ankle-high boot that leaves the toes free. The white fabric swathing the foot also stops at the toes.

Fragments 6-7 (fig. 5.8a-b)
A similar transition from a lower leg swathed in fabric to breeches above it can be identified on two conjoining burnt fragments (Fragment 6, a). The pale red colours in the swathing band and the breeches were probably yellow originally. A motif of dark red wavy lines is visible at the bottom of the breeches. Two conjoining unburnt fragments, finally, show part of a swathed leg against the black background of the central zone (Fragment 7, b).

Panel 5 (fig. 5.9)
Visible on a group of nine conjoining fragments are the left arm and part of the torso of a figure wearing closely-fitting clothing that was originally decorated in rich colours. All the fragments have been discoloured by fire. From a non-fitting, but presumably adjoining fragment at the top it can be inferred that the part of the clothing at the shoulder and upper arm was yellow with red and green motifs. The colour contrast has almost completely disappeared on either side of the elbow, but some reddish brown dots can be seen. Only just visible are double pale brown lines crossing the arms and running between the dots. On the torso, the clothing is now mostly various shades of purple, and purple may well have been its main colour originally. The line patterns that can be made out on it appear to have been painted in yellow and green, just like at the shoulder.

Fragments 8-9 (fig. 5.10a-b)
A few isolated fragments must have belonged to the same or a comparable garment decorated with bright patterns.

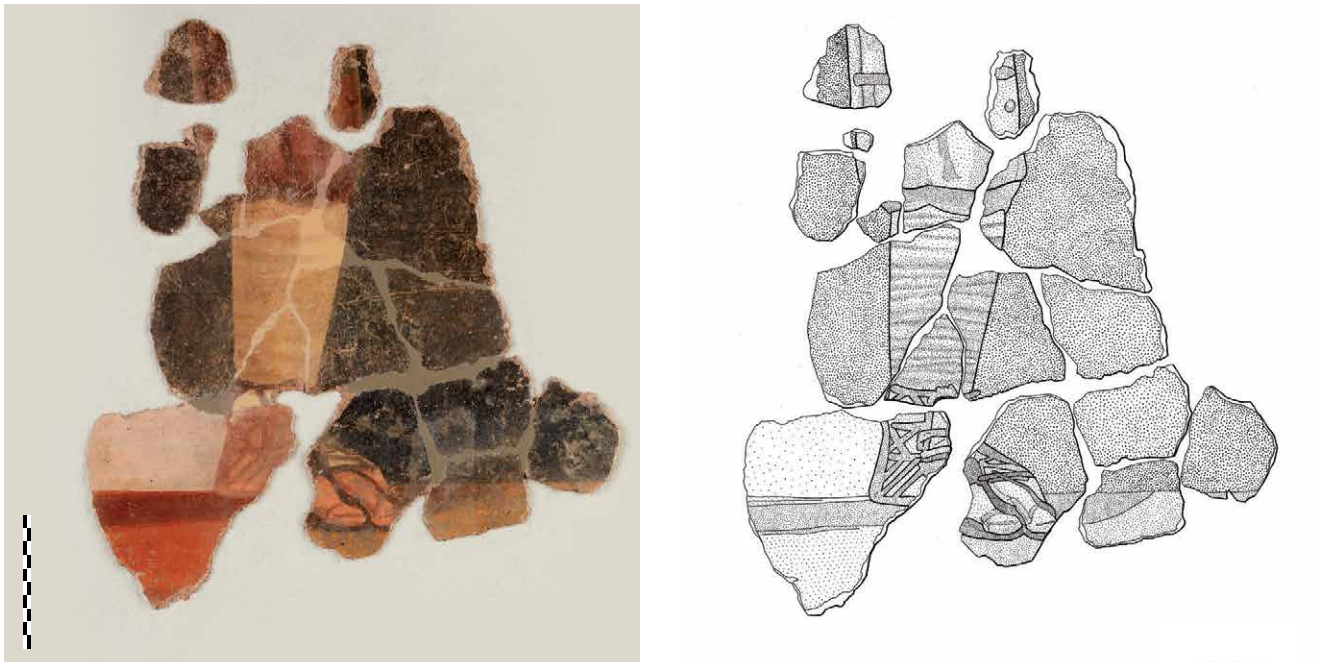


Figure 5.7 Panel 4

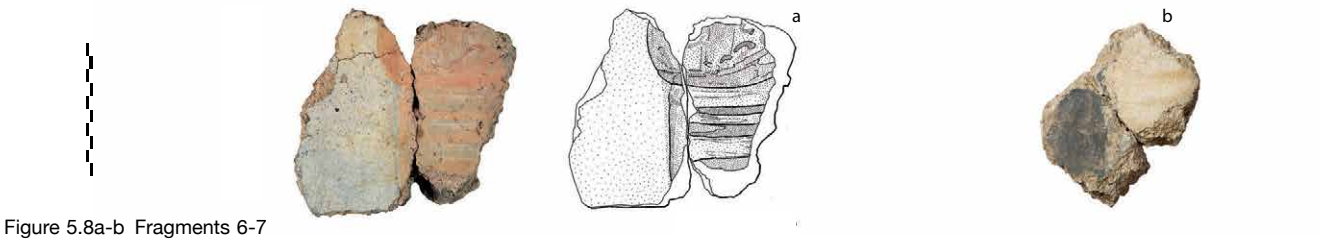


Figure 5.8a-b Fragments 6-7

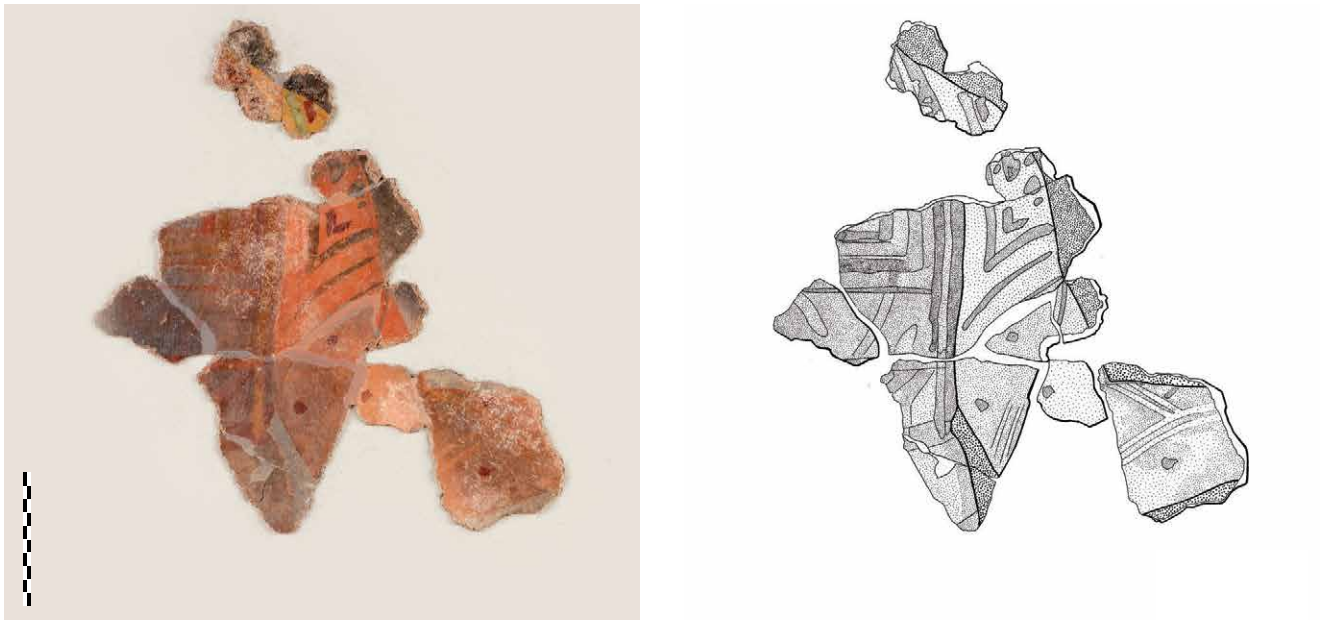


Figure 5.9 Panel 5

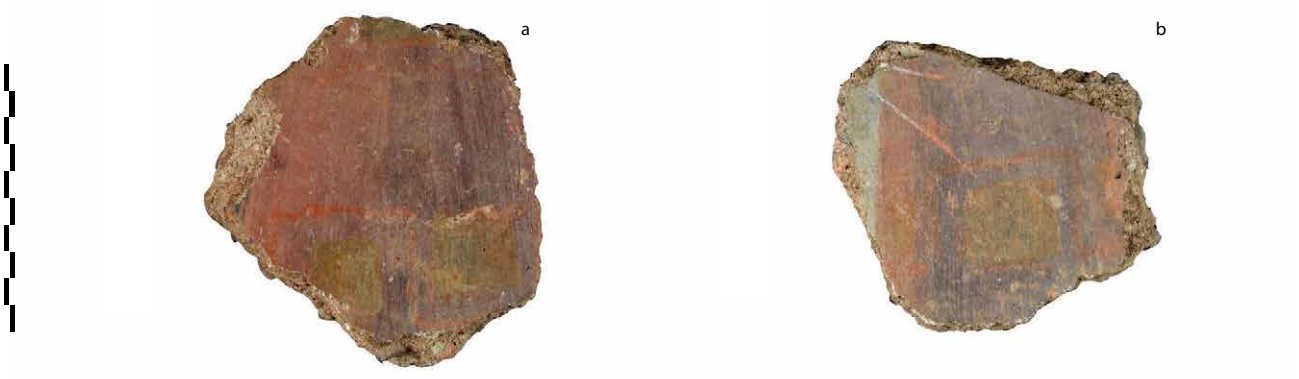


Figure 5.10a-b Fragments 8-9

Figure 5.11 Panel 6

Here, too, the colour purple dominates, and small green squares surrounded by meandering red lines are visible.

Panel 6 (fig. 5.11)
One head of the figures in the central zone has survived almost intact on a large fragment that has broken into three pieces. It belongs to a young male with long blond wavy hair covering the ears. The man is looking sideways. His eyebrows, nose and mouth are indicated by a few dark brown lines on the orange brown face. The pupils in the blue eyes are also dark brown.

Fragment 10 (fig. 5.12)
One burnt fragment shows the bottom of the same wavy hair of a second head, plus the neck projecting above the collar of a purple garment decorated with orange and yellow lines. This may be the same figure as on Panel 5.

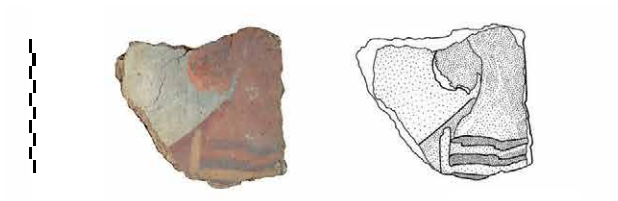


Figure 5.12 Fragment 10

Panel 7 (fig. 5.13)
Part of a bare leg set obliquely in front of a green band can be seen on two conjoining fragments. The leg is represented in profile and evidently belongs to a figure who is moving towards the right.

Fragment 11 (figs. 5.14a-c)
Parts of at least two figures on either side and partly in front of a vertical green band have survived on a large group of fragments. The group could be recovered more or less in context during the excavation, but it is severely fragmented because the bottom part of the mortar is missing and the remaining part is fairly thin and fragile. The largest fragments were later stuck together where possible; this could no longer be done in the case of the smallest ones (fig. 5.14a). A photograph taken during the excavation shows the left part of the fragment after the right part had been recovered (fig. 5.14b). This was used to supplement the now crumbled central part of the fragment in a photomontage (fig. 5.14c). To the left of the green band is the same brown band as observed on the fragments of Panel 3. Here, too, it

Figure 5.13 Panel 7

Figure 5.14a-c Fragment 11

probably represents a wooden spear shaft. At the bottom the shaft and part of the green band disappear behind parts of an unidentifiable figure. The edge of a garment painted in shades of yellow and pale red and decorated with red and green motifs is visible against the black background to the right of the green band. The short red wavy lines form long lines that cross one another to create a lozenge pattern. Within each lozenge five green dots of irregular shape appear to form a foliate pattern. The garment tapers towards the bottom and appears to end in the same way as the breeches decorated with the same pattern on Fragment 6.

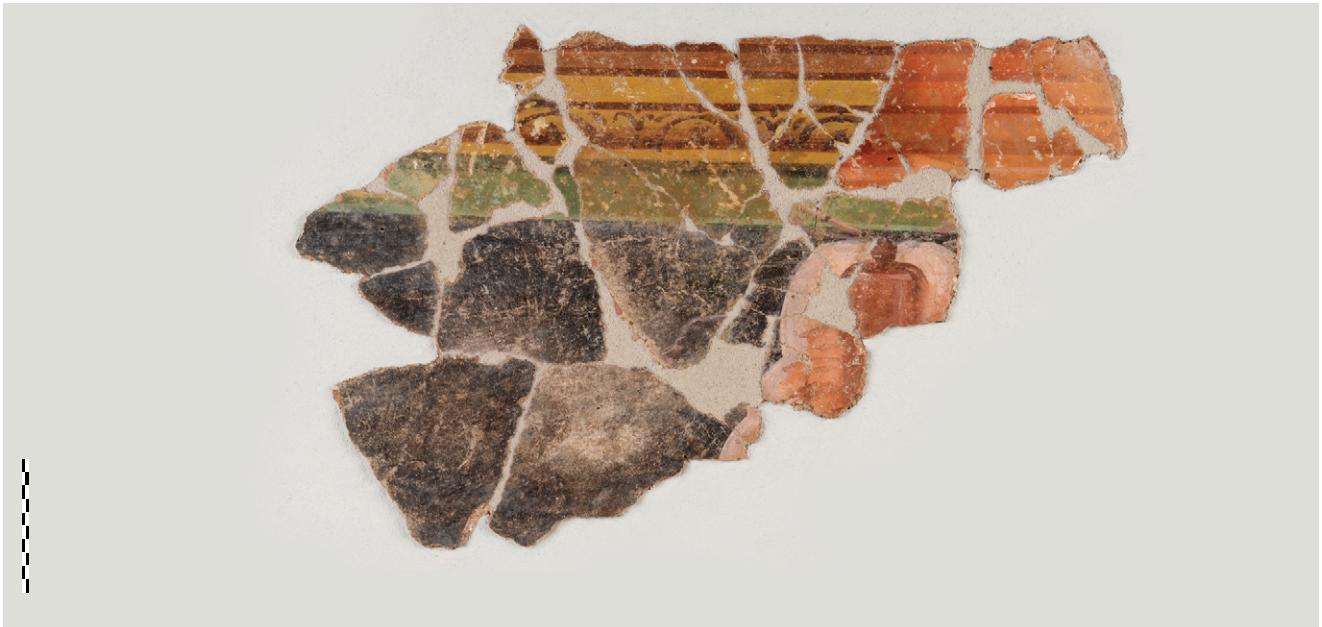
Fragments 12-14 (fig. 5.15a-c)
The same garment and decoration pattern recurs on twelve non-conjoining fragments, three of which are illustrated here. Some of the fragments feature shadows of pleats, while one (14, c) shows the lower edge of a pleat.

Panel 8 (fig. 5.16)
A large group of conjoining fragments shows the top of the black central zone bordered by a green band topped with a yellow and brown trompe l'oeil carved moulding. Some of the fragments at the top right are discoloured by fire. Part of an object that is difficult to interpret is visible near the green band at the top of the black panel. It is painted in shades of brown and appears to have a round knob on its hemispherical top side. To the left and right two loops extend from the knob obliquely upwards to the green band. The object widens incrementally towards its base and appears to show ribs on the left. It is set against a cream-coloured silhouette, whose curved outlines follow the object's contours.

Fragment 15 (fig. 5.17)
A burnt fragment showing what appears to be part of the top of a comparable object, also at the top of the central zone, suggests that the decoration contained at least two of them.

Fragments 16-21 (fig. 5.18a-c)
A distinctive leopard-skin pattern is visible on two conjoining fragments (a) and a few isolated ones (b). Unfortunately no anatomically identifiable parts of a leopard were found. A curved purplish brown band visible on one

Figure 5.15a-c Fragments 12-14



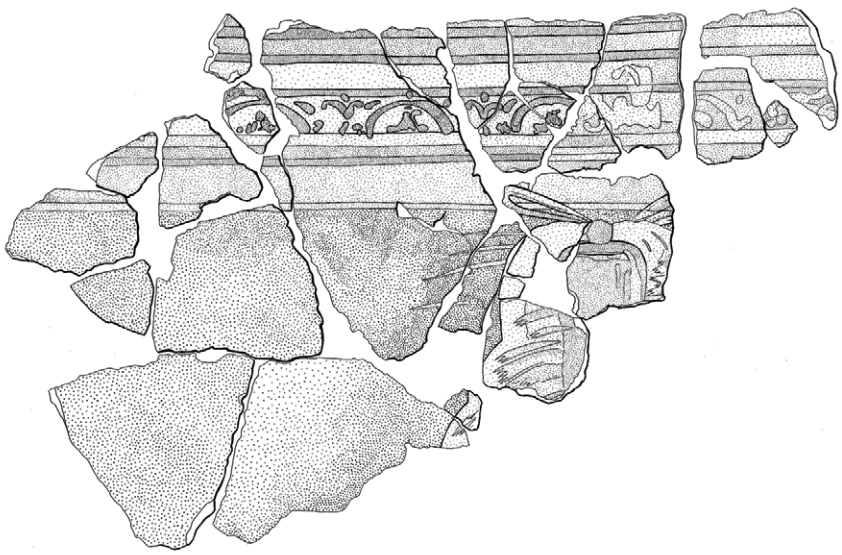


Figure 5.16 Panel 8

fragment (21, c) of the platform at the bottom of the central zone may represent the tail of another animal.

Fragment 22 (fig. 5.19)
The same sequence at the top of the central zone as on Panel 8 has survived on this fragment, which also shows the top end of one of the vertical green bands. The damaged parts of the painted surface reveal that the area beneath the green of the bands and the brown of the moulding was first painted yellow.

Fragment 23 (fig. 5.20)
Parts of two yellow-brown bands that curve upwards and cross one another can be seen against the black background of the central zone. They may represent tendrils, as suggested by the leaf-like projections on the right. The area between the bands is blue. The motif recalls the plaited candelabra that decorate some of the strips dividing the panels of the central zone in Roman wall painting (Ling 1991, 171).

5.4.3 Upper zone

Over half of the surviving surface area, around 53%, formed part of the decoration of the upper zone.

Fragment 3 (fig. 5.21a-b)
The transition from the central to the upper zone, and hence also the joint between the two different groups of mortar used in these zones (fig. 5.21b), has survived in a small group of three conjoining fragments, which probably adjoin a second group of three fragments. A badly faded spear head projects upwards in front of the moulding separating the two zones, up to the platform at the bottom of the upper zone.

The surviving fragments of the upper zone provide no evidence of any division into panels by means of vertical bands as in the dado and the central zone. The most important elements in the partitioning of the upper zone were probably columns whose bases stood on the platform and which constituted and supported illusionist architecture. However, to the left or right of each of those columns was a green band with approximately the same width as that of the vertical green bands in the other two zones. This partitioning by means of columns was supplemented with vertical strips adorned with tendrils and vertical garlands.

Figure 5.17 Fragment 15

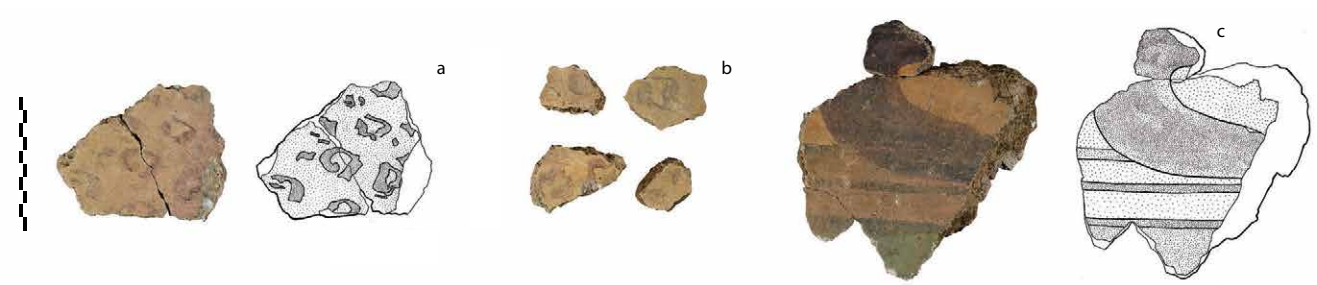


Figure 5.18a-c Fragments 16-21

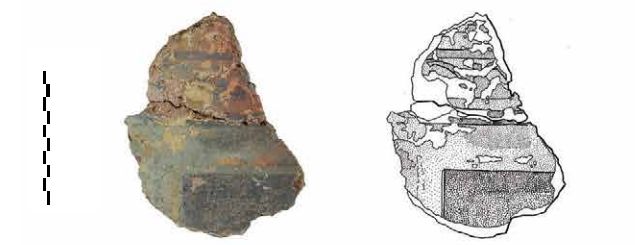


Figure 5.19 Fragment 22

Figure 5.20 Fragment 23

Figure 5.21a-b Fragment 3

Panel 9 (fig. 5.22)
A few isolated groups of fragments that have been restored in a single panel show the channelling of fluted columns on the right, represented in the form of dark brown lines against a pinkish and buff background. The two background colours suggest two slender columns set close together, the pinkish one on the left being 8 cm wide. To the left of it runs a 5.5-cm-wide green band, followed by a 13.8-cm-wide white strip containing a curving branch or a tendril with leaves in yellow and violet. On the left a red line separates the white strip from a grey area showing the edge of a vertical garland with green leaves. On two fragments at the top left, both of which are probably discoloured by heat, the tendril runs alongside a vertical line, now pale red, that was not observed on any other fragments.

Fragments 24-27 (fig. 5.23)
Parts of fluted columns have survived on various other fragments and groups of fragments. The heat of the fire has turned the buff colour on the right of a group of conjoining fragments red (25, b). From two isolated fragments (26-27, c and d) it can be inferred that the columns stood on a red base with a double torus at the bottom.

Panel 10 (fig. 5.24)
The edge of a vertical garland set against a grey background can be seen on a group of conjoining fragments that have been restored. The garland includes a yellow fruit. The red band to the right of the grey area was painted in the corner of the wall, as can be inferred from the raised edge of the plaster. At the bottom a horizontal green band runs at right angles to the red band. The position of this green band in the overall decoration is unclear.

Panel 11 (fig. 5.25)
Corinthian capitals belonging to the fluted columns have survived on a group of conjoining fragments that also show the entablature above them. The yellow on the left of the fragments was affected by heat and has turned red. Two capitals appear to be represented, corresponding to the pair of columns on Panel 9. The right capital is shown in its entire width, the other appears to be half concealed behind it. Above the volutes of the right capital lies the flat abacus with concave outlines and a round flower in the middle. Resting on top of the capital is the architrave with a projecting moulding at the top and bottom. It is decorated with yellow ornaments. The two mouldings in the architrave bend downwards at a slight angle of 10° to 14° on the left, above the volutes of the left capital, creating an impression of perspective and suggesting that the entablature projects forwards from the wall. Above the entablature is a red band bordering the decoration at the top of the wall. Against this red band the upper cornice of the entablature is adorned with yellow and green ornaments or *acroteria*. To the right of the capital is a green area. The bottom right fragment shows the edge of the column on the left and the transition to a white area on the right.

Fragment 28 (fig. 5.26)
An isolated fragment shows the top of a yellow column with the top end of a flute and above it the base of a capital with volutes. The area to the right of the column is grey.

Fragments 29-31 (fig. 5.27a-c)
The top end of the wall has survived on a few other fragments besides those of Panel 11. They all have a flat upper side and a slightly raised edge in the mortar at the top. Above the capitals of Panel 11 the yellow and green *acroteria* cover the entire width of the red band bordering the decoration at the top, but on the other fragments they don't extend all the way up to the top of the wall. There they most probably follow the upper cornice of the entablature running obliquely downwards in perspective. The red band accordingly widens, from 4 cm above the capitals to 6.1 and 6.3 cm on fragments 30 (b) and 31 (c).

The columns and the entablature they support on the fragments and groups of fragments described above must have belonged to illusionist architecture that flanked some of the figure scenes.

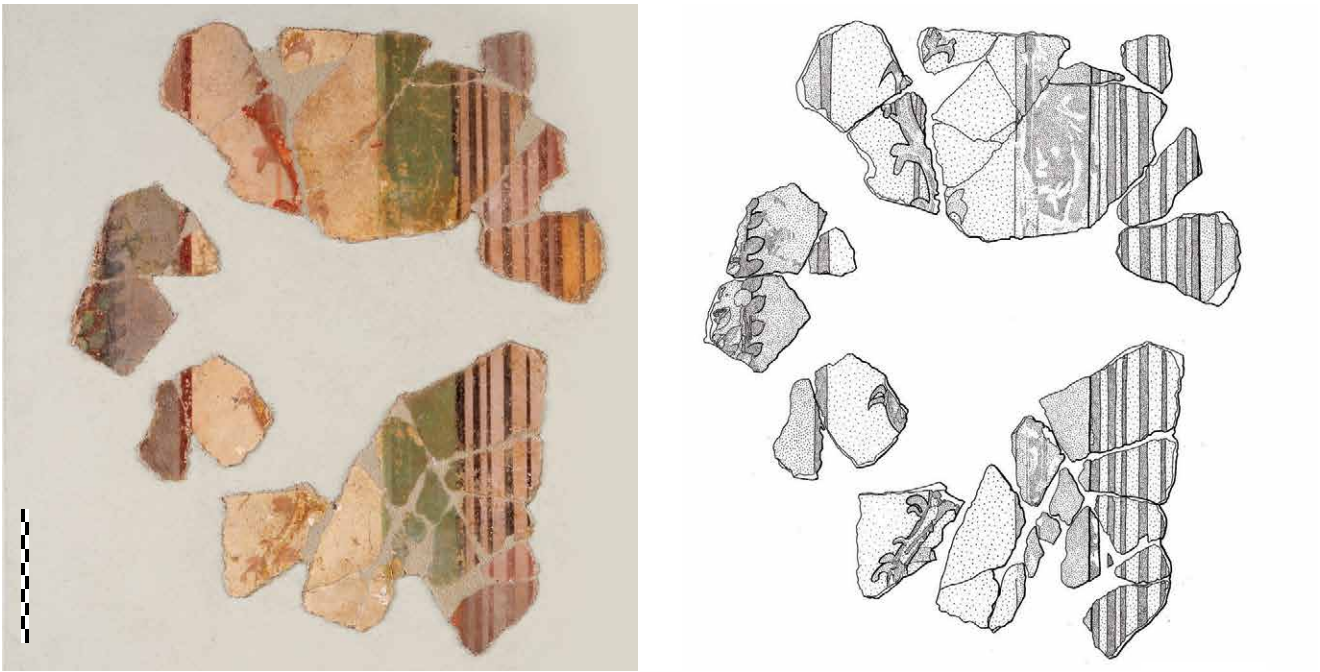


Figure 5.22 Panel 9

Figure 5.23a-d Fragments 24-27

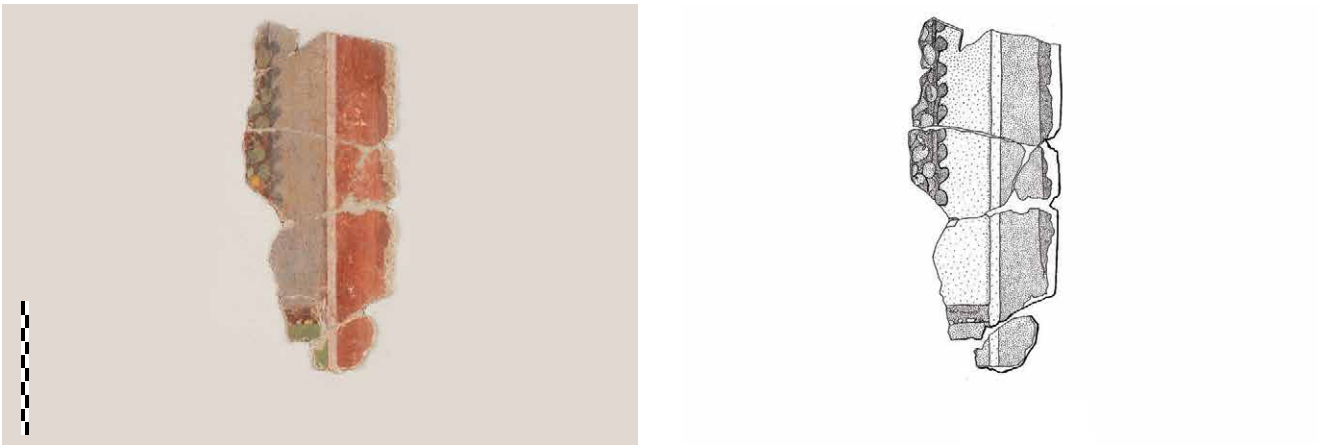
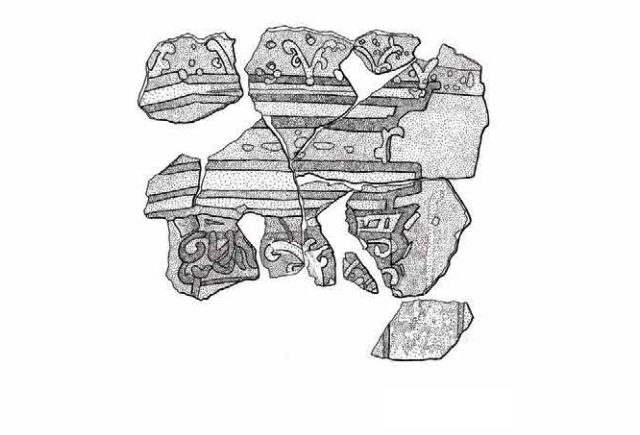


Figure 5.24a-b Panel 10

Figure 5.25 Panel 11



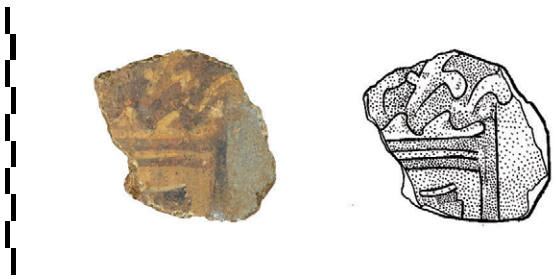


Figure 5.26 Fragment 28

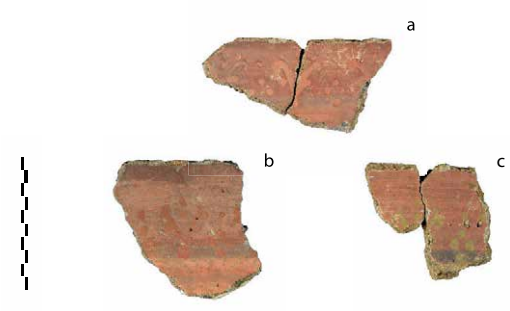


Figure 5.27a-c Fragments 29-31

Panel 12 (fig. 5.28)
The largest group of conjoining and related fragments that could be restored on a panel formed part of a scene to the right of these elements of illusionist architecture. To the left, the same elements as on Panel 9 can be seen in mirror image: the edge of a green band, a 9.8-cm-wide white strip adorned with a tendril winding upwards and a 16-cm-wide strip decorated with a vertical garland set against a grey and red background. Below that is the horizontal yellow area of the platform of the upper zone, which continues towards the right under the two figures standing next to the garland. Large parts of these figures have survived, but the shoulders and heads are missing. The figures must have been about 45 cm high originally.

The figures are both male and wear a loose-fitting, beltless, long-sleeved tunic reaching to just below the knees. The bottom hem is fringed, as is the cuff of the left sleeve of the left figure. Both men wear white socks and sandals on their feet.

The garment of the man on the left is of a uniform purple colour, with slightly darker vertical accents suggesting shallow pleats. The fringes are yellow at the cuff of the sleeve and yellowish red along the hem of the garment. In his right hand the man holds a round, greyish green object showing pleats curving downwards towards the right from his fingers. The object is most reminiscent of a bag or pouch, whose opening the man clamps closed in his fist, with the end projecting between his thumb and index finger.

The man next to him is dressed in a yellowish white tunic with three purple lines running from the shoulders down to the bottom on the left and right. In his right hand he holds a long, rolled piece of fabric that hangs downwards from his right shoulder and then curves obliquely upwards from his middle towards his missing left arm or hand. The roll clearly runs in front of the vertical purple lines on both sides.

The clothing implies that the scene featuring the two men was drawn from real life as opposed to mythology. Although it can no longer be determined with certainty which of the other fragments and groups of fragments from the upper zone belonged to the same scene, there are more fragments showing figures drawn from real life.

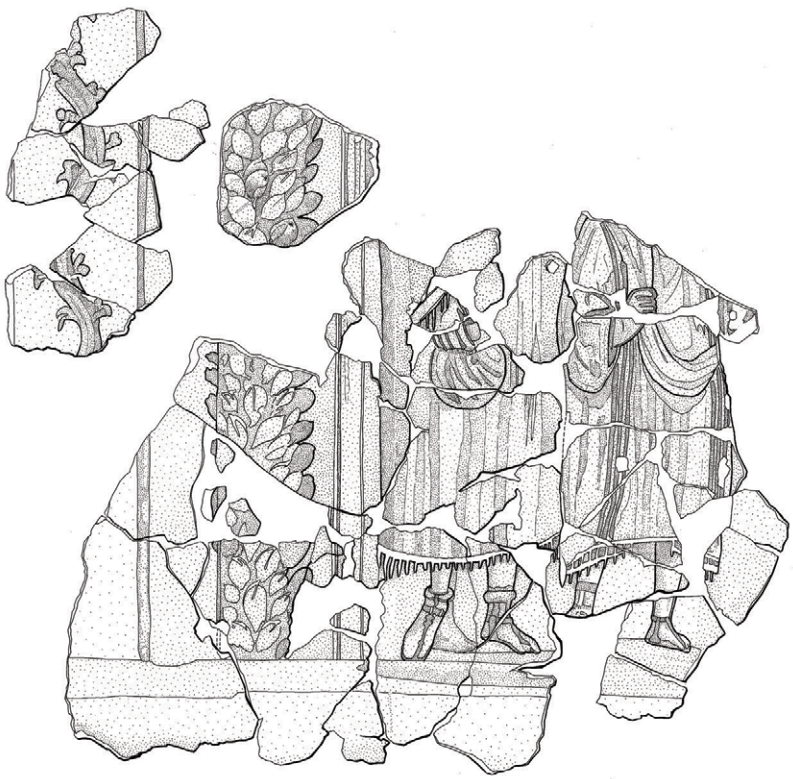


Figure 5.28 Panel 12

Panel 13 (fig. 5.29)
A group of conjoining fragments shows part of the face and upper body of a male figure. He is dressed in a buff garment on which a purple line can be seen running downwards from his right shoulder. The neckline is accentuated by a white line. The man holds his right hand in front of his chest, where he appears to be holding a piece of fabric hanging down from his left shoulder. Only the mouth and bottom part of the nose of the youthful face have survived. The light brown hair cascades in curls into his neck on the right. The background next to the head is pale green.

Panel 14 (fig. 5.30)
A foot and the hem of an ankle-length garment can be made out on a group of conjoining fragments that have been severely discoloured by heat. The foot probably belongs to a left leg and is encased in a sandal of the same design as that worn by the men in Panel 12. The hem of the garment is accentuated by a white line above the foot. Because of the discolouration, it is hard to make out patterns on the garment. It was probably mostly yellow originally, with bands of a slightly darker shade indicating pleats. Two vertical purple lines extending to the hem of the garment are still visible on the right. The now brownish purple ground under the figure is most probably the buff platform of the upper zone with shadows.

Panel 15 (fig. 5.31)
Visible on a small group of conjoining fragments are the right shoulder, a small part of the head, part of the torso and both hands of a male figure holding a pen and a writing tablet. The man is dressed in a purple garment with a narrow white hem bordering the neckline. A narrow length of pale green fabric hangs down on either side of the body from his right shoulder. A white cloak is draped over his left shoulder, covering the left half of his upper body. It is also visible under his left hand. In his right hand, which he holds in front of his chest, is a pen clamped between his index and middle fingers. The tip of the pen points towards an opened writing tablet resting on the palm of his left hand, with the written side facing the viewer. All that remains of his head is part of the chin, on which the curls of a blonde beard are visible. The background changes from violet above the shoulder to pale violet to the right of the man. A small part of another figure has survived on the far right. The writing tablet shows no legible text, but merely the suggestion of writing, in the form of unconnected symbols at the top left and a few wavy lines at the bottom right. As the writing tablet measuring 12 × 7 cm must have originally been at a height of around 2.5 m up the wall, a real text would probably have indeed been illegible and pointless. The script symbols are indicated in brown on the yellow ground of the writing tablet, suggesting that they were written in ink on the pale wood of the tablet.

Fragments 32-34 (fig. 5.32a-c)
Three isolated fragments must derive from one or two figures wearing the same clothing as the persons represented in Panel 12. The first (32, a) shows the right shoulder of a person dressed in an orange-red garment with two vertical purple stripes and a narrow length of white fabric draped across the shoulder. Visible on the second fragment (33, b) is a left foot in a sandal and a white sock standing on the platform. On Fragment 34 (c) the fingers of a left hand appear to be holding a piece of white fabric hanging downwards. The background is violet and dark grey.

Fragment 35 (fig. 5.33)
Some of the pieces joined together in Fragment 35 were found in close proximity to the figure in purple on Panel 12 and at first were thought to have formed part of his clothing, representing a piece of fabric hanging down in a curve. More plausibly, however, this can be identified as the curling body of a snake, set on a violet background.

Panel 16 (fig. 5.34)
The lower parts of the bodies of three figures can be seen on a large group of conjoining fragments. They are standing on the platform, which only here has survived across its full width. On the left, in the middle of the platform, is the right foot of a person who must have been represented seated with the left foot, which is just visible, placed a little further back. The person wears a purple ankle-length garment, but no footwear. A blue cloak lies over the right leg. The left leg is raised behind it, with the knee extending further forwards than that of the right leg on account of the position of the feet.

A little further back on the platform, to the right of the seated person, is the left leg of a second figure who appears to be walking towards the right. The figure wears a green tunic reaching to just below the knees and an olive green boot. A small part of a yellow garment covering the tunic can be seen on the left.

The third figure, on the right, is naked apart from a cloak (*chlamys*) hanging down the back from the shoulders, with vertical pleats indicated in purple and blue. He is standing on his right leg with his left leg slightly raised; his left foot may have rested on an object that has not survived. Just visible on the far right, near the figure's left knee, is part of a stick, possibly the shaft of a spear or a staff, which the figure probably held in his left hand.

Fragments 36 and 37 (fig. 5.35a-b)
Like Panel 16 some other fragments probably derive from scenes on the platform that may well be seen in a mythological context. Fragment 36 (a) shows the profiled end of a staff standing obliquely on the platform and casting a shadow to the right of it. The discoloured Fragment 37 (b)

Figure 5.29 Panel 13

Figure 5.30 Panel 14

Figure 5.31 Panel 15

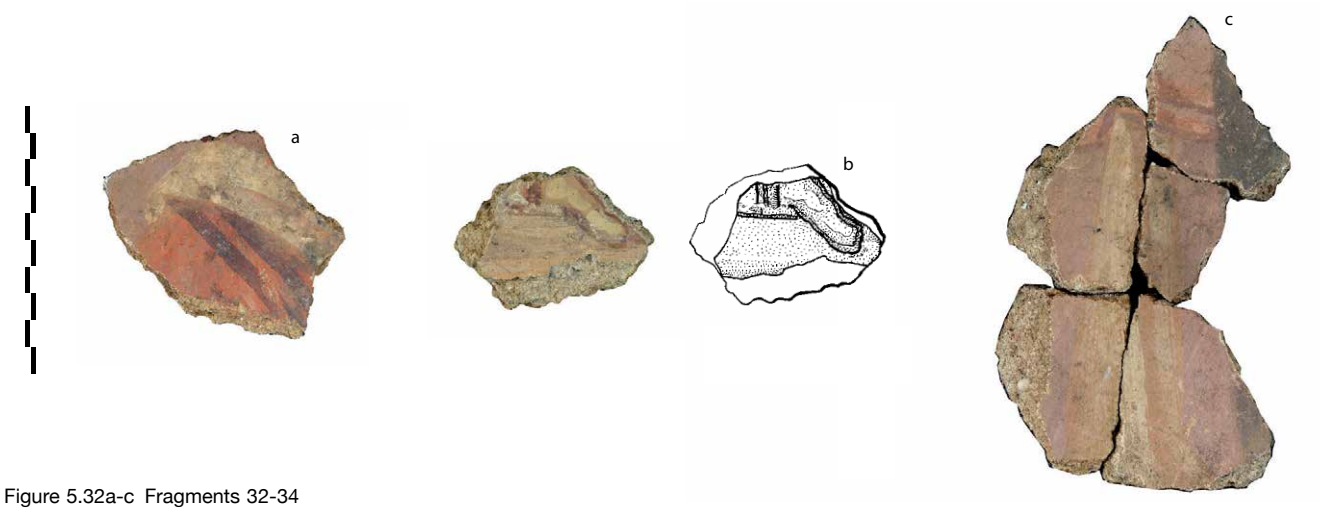


Figure 5.32a-c Fragments 32-34

Figure 5.33 Fragment 35

shows a highly profiled object that is shaped like a wooden furniture leg with bronze fittings. The blue area to the left of it may represent fabric hanging down to the platform floor and covering one side of the leg.

Besides figures that were present on the platform of the upper zone and hence in the room, as it were, there are also indications of figure scenes that were included in this part of the decoration in the form of framed paintings. Some of them appear to have been placed between two columns in an architectural frame. Unlike the columns of the illusionist architecture adjoining the figure scenes on the platform, these columns are not fluted, but decorated with spiralling bands.

Panel 17 (fig. 5.36a-b)
A group of conjoining fragments shows a yellow column decorated with a red spiralling band set against a white background. To the right the white background borders a violet area. One side of the yellow column is partly covered

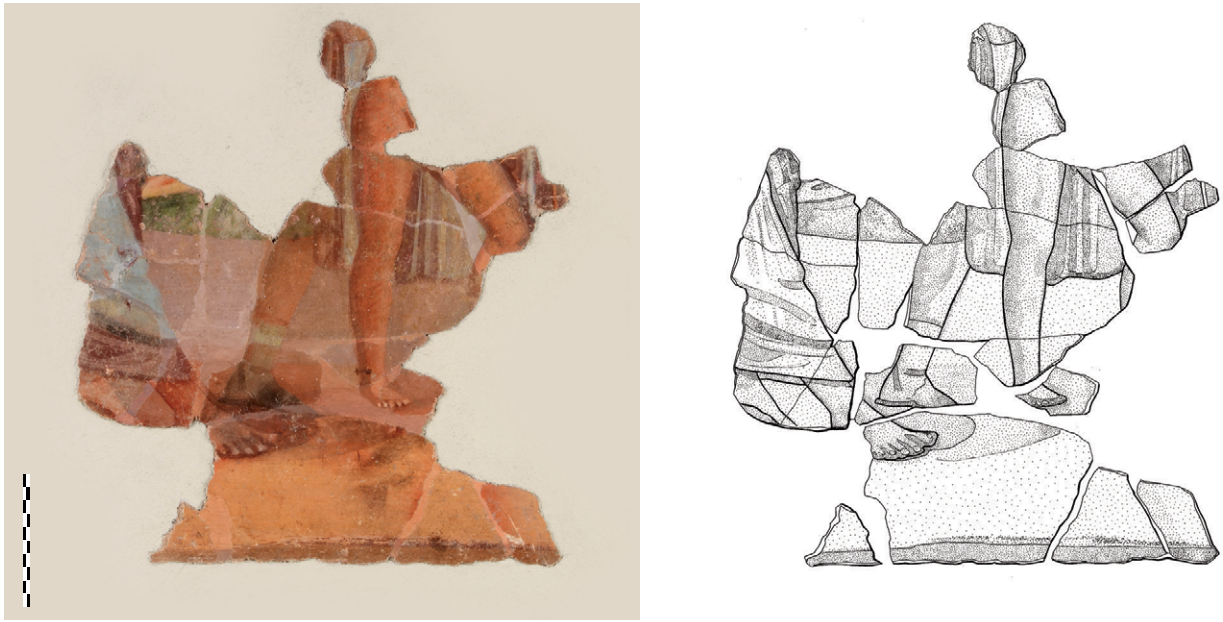


Figure 5.34 Panel 16

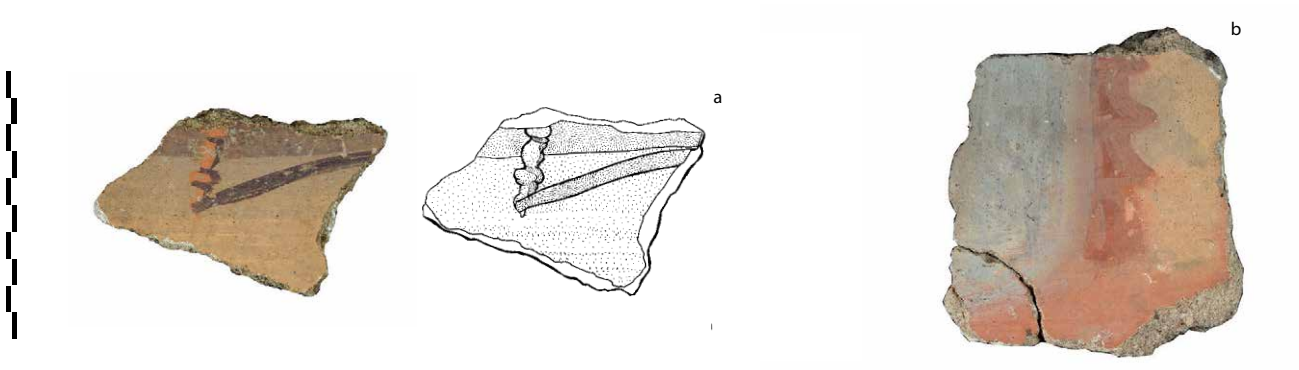
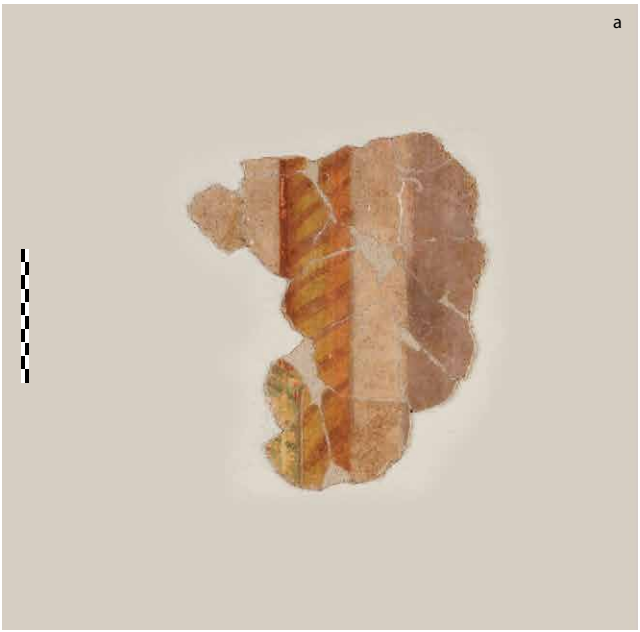


Figure 5.35a-b Fragments 36-37



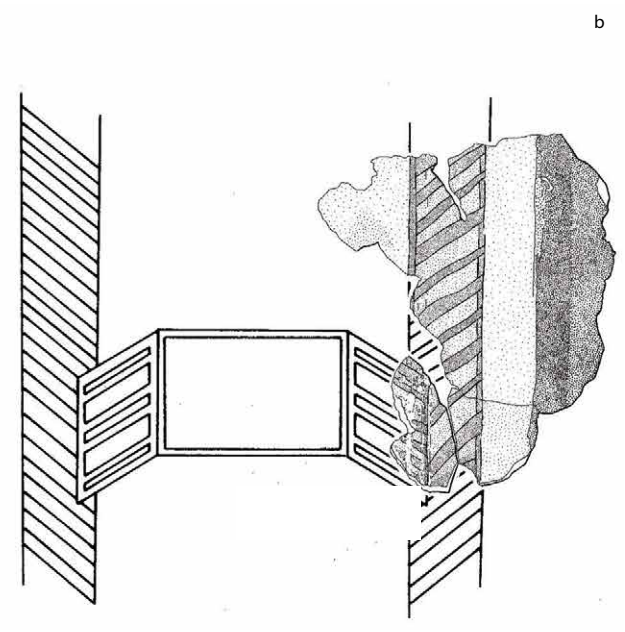


Figure 5.36a-b Panel 17

by a green area with two sides set at an angle of approximately 120°. In the green area a few dark lines run parallel to the top side. The whole is reminiscent of the panel-pictures (*pinakes*) with opened wooden shutters that are represented in various Roman wall decorations, *e.g.* in the Casa del Criptoportico in Pompeii (Baldassare *et al.* 2002, 110) and in the 'Villa aux xenia' in Lyon-Vaise (Barbet 2008, 135-136, Fig. 188-190). In the reconstruction drawing it has been supplemented on the basis of those representations (fig. 5.36b).

Fragment 38 (fig. 5.37)
The columns decorated with spiralling bands that are represented on a small number of other fragments are all set against a white background. How these columns were incorporated in the decoration of the upper zone cannot be inferred from any of the surviving fragments. Several fragments and groups of fragments may derive from the framed figured scenes.

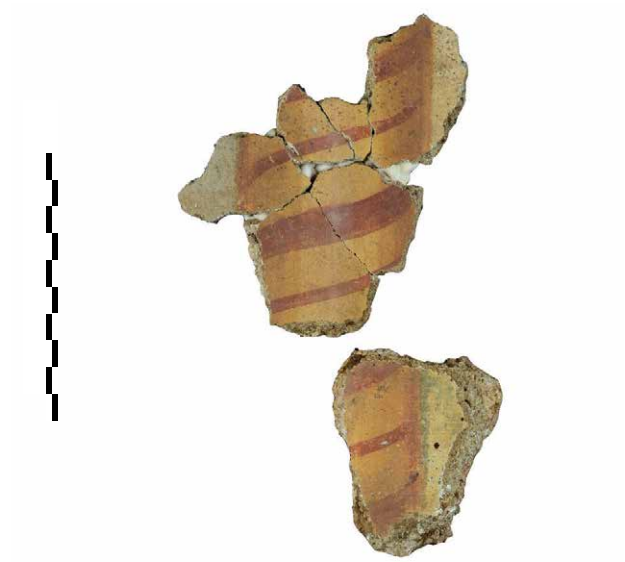


Figure 5.37 Fragment 38

Panel 18 (fig. 5.38)
The face of what was most probably a male figure can be seen on three conjoining fragments. He is looking downwards towards the left. The purple surrounding his brownish red hair could be a cloak that he has drawn over his head as a veil. To the left, a dark line separates the white background of the head from a pale violet to greyish blue area. The violet returns to the right of the head. Some kind of architecture seems to be represented, the white area possibly being part of a column or pillar.

Fragment 39 (fig. 5.39)
Visible on three conjoining fragments is part of a bare shoulder, above which projects the characteristic top part of a quiver hanging on the figure's back. The quiver is suspended from a green strap that crosses the chest obliquely from the right shoulder. The quiver itself is red, its cap is green with black shades. To the left, the pale violet background is bordered by a grey area, possibly the frame of the scene featuring the figure with the quiver.

Figure 5.38 Panel 18

Figure 5.39 Fragment 39

Fragment 40 (fig. 5.40)
Against the same pale violet background, three small conjoining fragments show the contours of wavy brown hair and the leaves of a laurel wreath. The head of the figure concerned was represented in profile, turned towards the right, with only the leaves on the right part of the head in full view. The leaves of the other half of the wreath project above the curly hair.

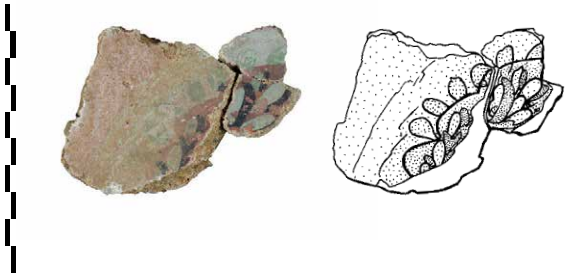


Figure 5.40 Fragment 40

Fragment 41 (fig. 5.41)
Three conjoining fragments show the inside of a right hand extended or reaching towards something set against a white and purple background on the left. The thumb and the index and middle fingers have survived almost intact; only the bottom parts of the little and ring fingers are visible.

Fragment 42 (fig. 5.42)
The toes and front part of a bare right foot can be made out on a small fragment. The toes rest on a brownish red area onto which they cast a shadow towards the right. The foot probably belongs to the free leg of a figure standing on its left leg.

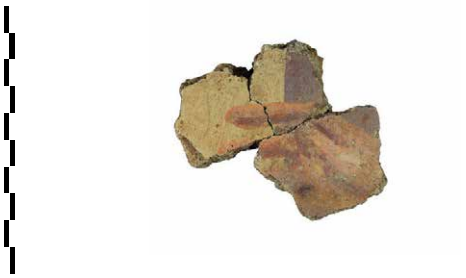


Figure 5.41 Fragment 41

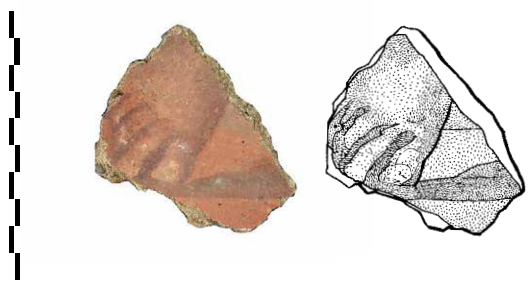


Figure 5.42 Fragment 43

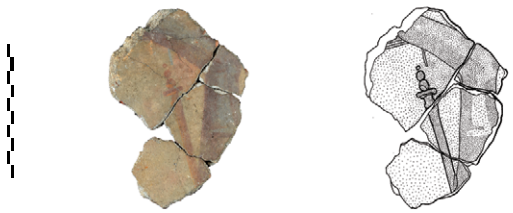


Figure 5.44 Fragment 44

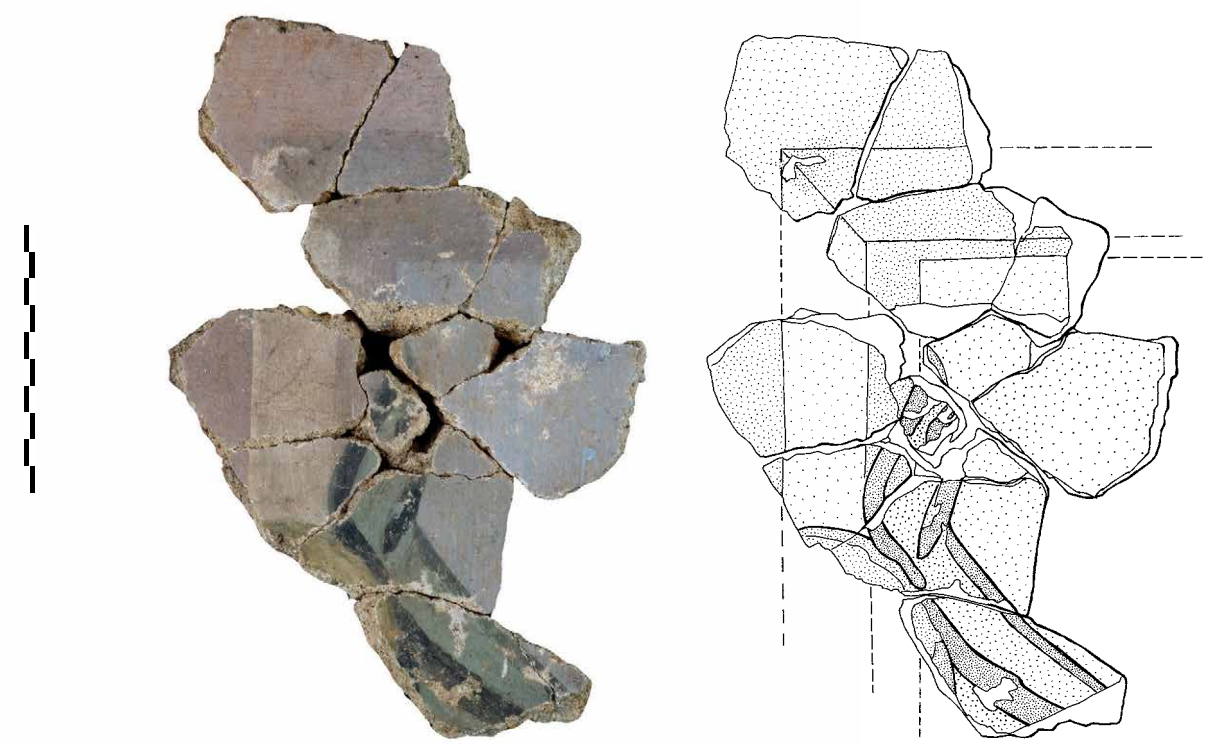


Figure 5.43 Fragment 43

Fragment 43 (fig. 5.43)
A group of conjoining fragments shows the top left corner of a structure represented in purple, grey and white framing a pale blue area. A green band with black outlines winds from the bottom upwards across the blue area to the structure, disappearing behind it in an upward direction. The edge of a spherical greyish green object has survived at the bottom left.

Fragment 44 (fig. 5.44)
Four conjoining fragments discoloured by fire show the profiled end of a staff projecting upwards. It is leaning against what appears to be the trunk of a tree branching upwards.

Of many fragments from the upper zone it is clear that they must derive from figure scenes, but most provide little or nothing to go on for their interpretation and are very difficult to interpret, as the following examples show.

Fragments 45-47 (fig. 5.45a-c)
Fragment 45 (a) consists of two small groups of burnt pieces that appear to belong together. They both show a brownish red area that was probably yellow originally and may have formed part of the platform in the upper zone. In the middle of the area is a purple object that appears to be a basement projecting upwards. A pair of bare feet

Figure 5.45a-c Fragments 45-47

appears to be represented at the top right, against a greyish blue background above the red area. The figure to which the feet belonged was standing on his or her right leg with the left lower leg crossed in front of it. A group of three conjoining, likewise burnt, fragments (46, b) shows parts of what were presumably separate figures, possibly parts of clothing with indicated pleats. The purple areas on Fragment 47 (c) also most closely resemble the pleats in clothing as can be seen on the figure dressed in purple in Panel 12.

The fragments of mortar group 3 (Panels 19-20 and Fragments 48-51) closely resemble those of mortar group 2, not only in the composition of the layers of mortar but also in their decoration.

Panel 19 and Fragments 48-49 (fig. 5.46a-d)
A yellow column decorated with a red spiralling band has just survived over its entire width on the left of a large fragment. To the right of the column is a white area with above it the lower left corner of a figure scene framed by a green band. The scene was presumably clamped between two columns, as it were, and may have been supported by the unidentifiable yellow and red object of which a small part is just visible in the white area below the green frame.

Only a small part of the painting itself has survived, but enough for us to make out the hind leg of a feline animal moving towards the right. The painting may have shown a lion stalking a prey or people hunting wild animals (fig. 5.46d). Fragments 48 and 49 seem to have belonged to the same painting, with Fragment 48 (b) possibly showing part of the body and legs of a lion.

Panel 20 and Fragment 50 (fig. 5.47a-b)
A group of conjoining fragments shows part of the upper body and the head of a nude female figure against a green background. The woman is represented in profile or obliquely from behind and holds her right hand in front of her face, which is turned towards the right. From the small surviving part of her hair it can be inferred that she wore it hanging down the back of her neck. There are more fragments that must derive from the same representation of one or more nude figures against a green background. Fragment 50 (b) may show part of an arm.

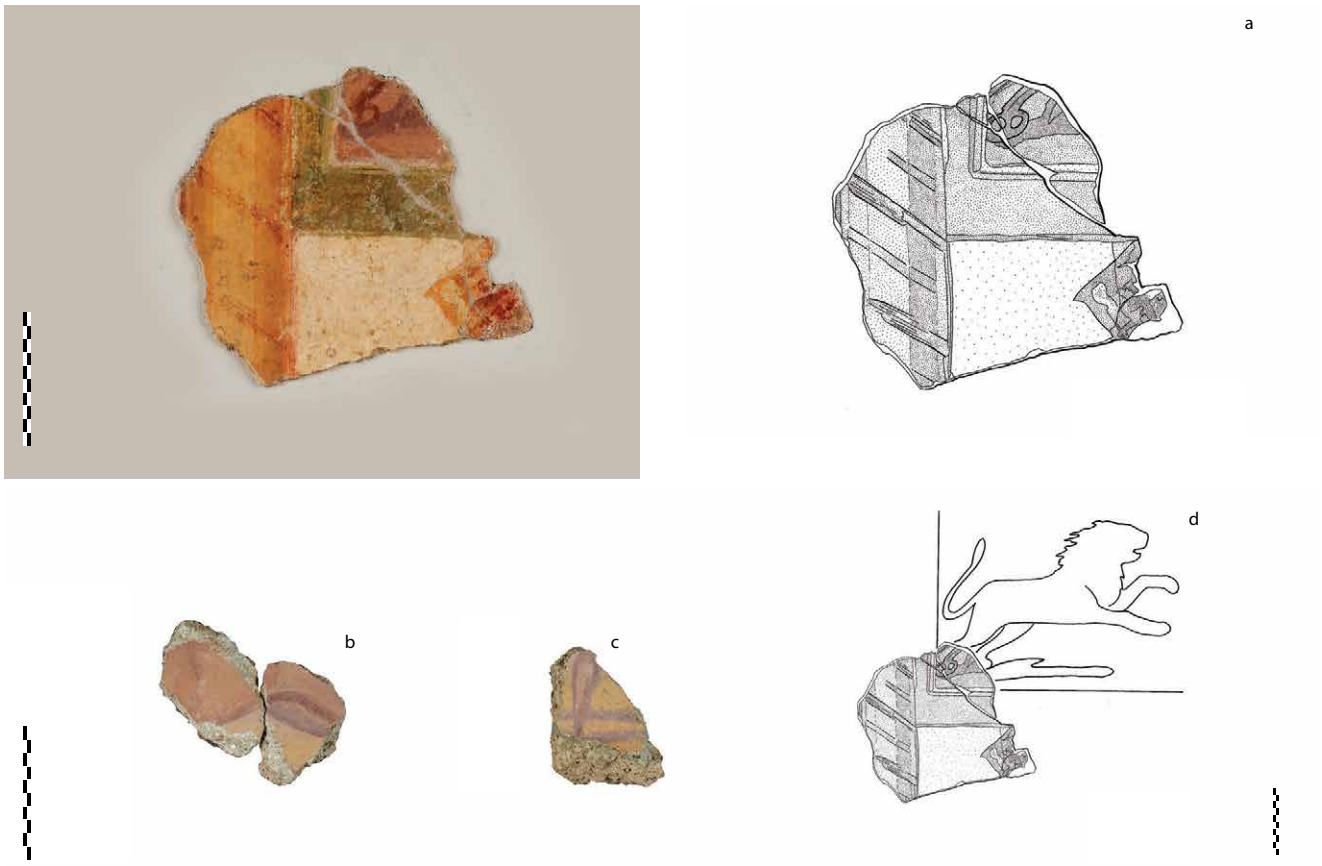


Figure 5.46a-d Panel 19 and Fragments 48-49

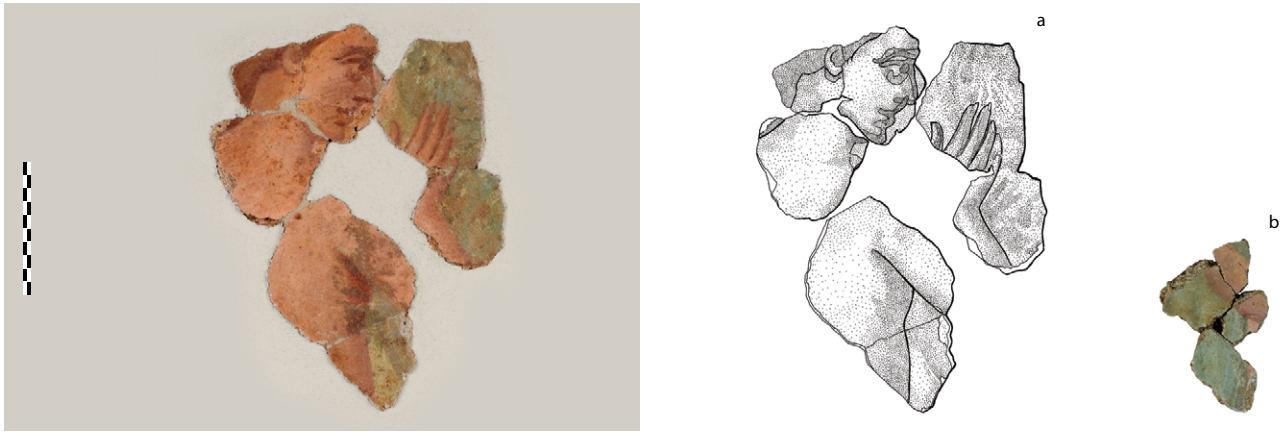


Figure 5.47a-b Panel 20 and Fragment 50

Figure 5.48 Fragment 51

Fragment 51 (fig. 5.48)
The corner of a painting framed by a yellow band shows only a buff area and unfortunately no identifiable figurative elements.

Six fragments showing parts of human heads and thirteen fragments with parts of painted texts will be discussed separately below. They all belong to mortar groups 2 and 3, which means that they must derive from the upper zone of the decoration.

Fragments 52-57 (fig. 5.49a-f)
Six heads or fragments of heads can be divided into two groups on the basis of their dimensions. Those on Fragments 52 (a) and 56 (e) are of almost the same size as those in Panels 18 and 20. The heads on Fragments 53-55 (d, b and c) and 57 (f) are distinctly smaller, and more in line with the heads of the figures in Panels 12 and 13.

Five of the six heads (52-55 and 57) are represented in three-quarter view from the front, facing either left or right. The figures are probably all male, with long, wavy hair, insofar as visible, comparable with the figures in Panel 6 and on Fragment 10 from the central zone and Panel 13 from the upper zone. Only fragment 56 (e) shows a head facing right in profile. It belongs to a bald man with a white beard and moustache.

Small parts of the background have survived on four of the fragments. It is grey next to the head on Fragment 52 (a) and green on Fragment 57 (f). The heads on Fragments 55 (c) and 56 (e) are set against a buff background.

Fragments 58-70 (fig. 5.50a-m)
Thirteen fragments show parts of texts painted in white letters (table 5.1). The text segments vary in length from one to seven letters and include no complete words or names. All the texts are painted in capitals, but the letters do differ from one another in shape and height. The letters with heights of 7 to 10 mm correspond in terms of style, but not all in terms of shape. Clearly different are the letters with heights of 12-13 and 17 mm.

Fragment 58 (a) probably derives from the platform in the upper zone, and the text may have been applied to a shaded area under a group of figures above it. The most obvious conclusion is that the letters AMO are the surviving part of *amor* or a declension of it: the name of the god of love or the word for 'love'. The letters can also be interpreted as the first person singular of the verb *amare*, 'I love'.

The other fragments' original positions in the decoration can no longer be determined.

Fragment 59 (b) shows parts of two texts with differently shaped letters. Below the lower left corner of a panel-picture that may represent a landscape are the first letters of a word starting with SA, possibly followed by the left end of the cross of a T. The letters are of the same elegant style and the same height as those on Fragment 58, but here the A is of a different design: the cross is missing and the right-hand stroke continues upwards. The letters of the second text are larger and less elegantly and meticulously represented, suggesting that they were added at a later stage. In terms of height and style they correspond to the letters on Fragments 61 (d), 66 (i) and 67 (j).

The longest text has survived on Fragment 60 (c) and appears to comprise two words, the first ending in the letter S and the second beginning with the letters CORI. As in the case of the letters RI, part of the paint of the next letter has disappeared, but it could be an N. What may be a small part of the cross of a subsequent T can just be made out at the edge of the fragment. If this is correct, the second word refers to the Greek town of Corinth. However, the fifth letter could also be an A, which would make the second word *coria*, 'skins', unless it is taken to refer to the town of Coria (Corbridge) near Hadrian's Wall in the United Kingdom.

Next to a band made up of red and black dots against a purple background, Fragment 64 (g) shows the last three

Fragment	Text	Letter height
58	AMO[---]	10 mm
59	[---]AE or [---]ME	13 mm
	SA+[---]	10 mm
60	[---]S CORIN+[---]	7 mm
61	PA[---]	12 mm
62	[---]EO[---] or [---]EC[---]	> 14 mm
63	[---]ES	7 mm
64	[---]CVS	10 mm
65	[---]VATI[---] (?)	10 mm
66	[---]C[---]	12 mm
67	[---]OR[---]	13 mm
68	[---]R	9 mm
69	SA[---]	8 mm
70	A, V, M or N	17 mm

Table 5.1 Parts of texts

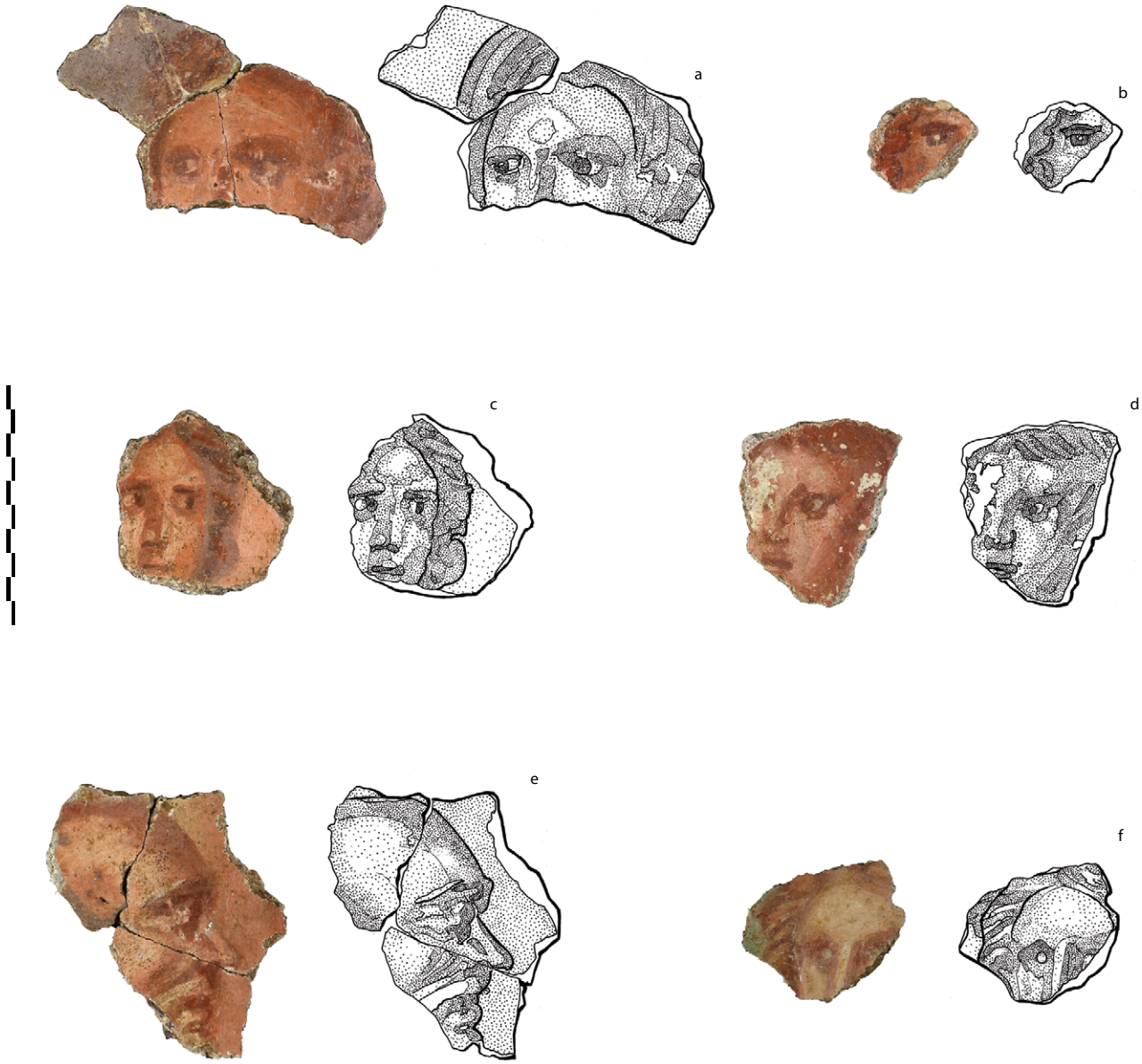


Figure 5.49a-f Fragments 52-57

letters of a word ending in –CVS. The serifs at the top of the V point left are just like those of the V on Fragment 65 (h) and the M on Fragment 58 (a). Turned 180°, the text on Fragment 65 could perhaps also be read as (s)ILVA, 'forest', but if it is read as –VATI– the V corresponds to that on Fragment 64, while the A moreover corresponds to that on Fragment 59 (b).

The letters on Fragments 62 (e) and 70 (m) are quite a bit larger than those on the other fragments. In both cases the letters were painted on a purple ground. Visible above the letters on Fragment 62 are a yellow and a pale purple area with a curved purple band above them, possibly part of a figurative representation.

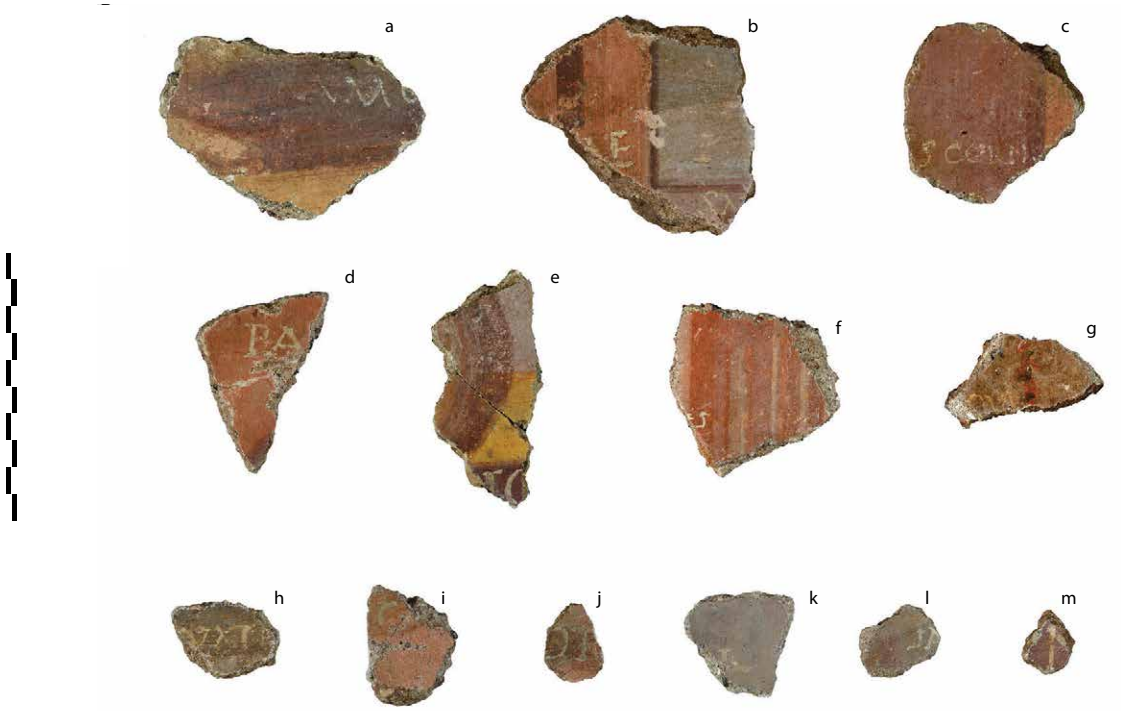


Figure 5.50a-m Fragments 58-70

5.5 Interpretation of the figure scenes

5.5.1 The central zone

The large figures standing on the buff platform against the black panels of the central zone can be identified as animal hunters (*venatores*) and gladiators appearing in the arena of the Roman amphitheatre. Despite the fragmentary state of the paintings, it is clear that the figures strongly resemble the *venatores* and gladiators depicted in a number of mosaic floors and wall paintings found north of the Alps, all dating from the second and third centuries AD. Mosaics in Reims, Nennig, Bad Kreuznach and Vallon and paintings found in Cologne and Yvonand-Mordagne offer the best parallels. In Maasbracht fragments have been preserved of at least two *venatores* and probably one gladiator.

Panels 4 and 5 and Fragments 8, 9 and 10 may all have belonged to one *venator*, standing on his left leg. He is dressed in a tight-fitting one-piece garment that covers his body from just below the knees to the neck. Its main colour is purple, with added linear patterns in green and red. As most of the fragments have been discoloured by heat, the red may originally have been yellow. The original colours have survived on the upper fragment in Panel 5, showing that near the shoulders the sleeves were once yellow, decorated with green and red lines and dots. Most of the left arm appears to be wrapped in a protective cover (*manica*) that is fastened by thin (leather?) straps running crosswise over the arm. On the chest (Panel 5) and near the neck (Fragment 10) the linear patterns on the purple garment possibly formed concentric rectangles. Fragments 8 and 9 show another form of decoration, consisting of green squares set in a rectangular meander line in red. On his lower legs the *venator* wears white wrappings or puttees (*fasciae*) that also cover his feet to the toes. Cut-out leather boots cover his feet to above the ankles.

The tight-fitting one-piece garment and the leg wrappings characterise the animal fighters on the mosaic floors and wall paintings mentioned above. In most cases the sleeves of the garment are short, but in Bad Kreuznach they cover the arms up to the wrist (Parlasca 1959, Taf. 90. Cf. the fighter armed with an axe in Vallon: Rebetez 1992, 28, Abb. 45). A band or belt (*balteus*) around the waist is a standard element of the fighters' clothing, which also seems to be represented on the fragments of Panel 5 found at Maasbracht. Such costumes are moreover usually made of a variegated fabric, decorated in various colours with lines, dots and geometrical designs. One of the animal fighters in the Reims mosaic has concentric rectangles on his chest and meander lines on his thighs (Stern 1957, Pl. XIV, no. 33). In the costume of the *venatores* killing a leopard and a wild boar in the Bad Kreuznach mosaic a meander line runs across the belly,

above the band around the waist (Parlasca 1959, Taf. 90, nos. 2 and 4. Cf. the *retiarius* in Reims: Stern 1957, Pl. XII, no. 7). The protective cover worn by most of the animal fighters on their left arm may take different shapes. In Bad Kreuznach a long (leather?) sleeve covers the arm up to the shoulder, where it is fastened by a strap around the body (Parlasca 1959, Taf. 90, nos. 2 and 3. Cf. the *venator* killing a leopard in Nennig: Parlasca 1959, Taf. 39, no. 2). Elsewhere, only the lower part of the arm is protected, in most cases with small, shield-like plates, often with fastening straps running crosswise over them.[2] In Maasbracht, the cover looks more like a sleeve, reaching to above the elbow and with a double cross of fastening straps, as frequently seen on the arms of gladiators.[3] In the reconstruction drawing (fig. 5.1) the outline of the *venator* on the left is based on the animal fighters of Yvonand-Mordagne and Vallon, armed with a spear and a whip, respectively, held in their right hand (Dubois 1996, 119-120, Figs. 17-18; Rebetez 1992, 21, Abb. 35).

Fragment 6 must derive from a similarly clad *venator*. Although severely discoloured, it shows part of a lower leg with wrappings and the lower end of one of the legs of the breeches. The small curved lines in red on the breeches resemble the red lines in the pieces of clothing on Fragments 11-14. Here they are part of a diamond-shaped pattern in the yellow fabric, supplemented by five green dots in the centre of the diamonds. All these fragments may derive from the same animal fighter, dressed in a tight-fitting costume and possibly wearing an additional cloak of the same fabric, as suggested by the fold on Fragment 14. The *venator* killing a bull in the Bad Kreuznach mosaic wears a similar costume, with one dot in each diamond (Parlasca 1959, Taf. 90, no. 1).[4] An incomplete wall painting with a hunting scene in Cologne (Domviertel) offers the closest parallel (Schleiermacher 1983; Thomas 1993, 198-207). It shows a tiger attacking a hunter and his horse. The tight-fitting costume of the hunter covers the whole of his body, from the feet to the shoulders, and is adorned with a diamond pattern very similar to the one in Maasbracht, formed by straight lines and with a quincunx pattern of five dots in the diamonds. The hunter may be wearing a cloak hanging down on his back from the shoulders (Schleiermacher 1983, 280). The painting from Cologne probably belonged to a wall decoration showing large-scale scenes of animal hunts from the arena of the amphitheatre that also included a crouching leopard. In the reconstruction drawing (fig. 5.1) Fragment 6 has been combined with the head of Panel 6 on the outline of one of the *venatores* standing at rest in the Reims mosaic (Stern 1957, Pl. XIII, no. 21).

Apart from the victorious animal fighters some wild animals must also have been depicted in the central zone. Fragments 16-20, showing yellow-brown fur marked with dark spots, must have formed part of one or more leopards, like the ones in the mosaics of Nennig and Bad Kreuznach and in the wall painting showing hunting scenes in Cologne (Parlasca 1959, Taf. 39, no. 2, Taf. 90, no. 4; Thomas 1993, 199, Abb. 74). Furthermore, the curving brown band on Fragment 21 may have belonged to the tail of a large animal curled up on the platform of the central zone, like that of the bull in Bad Kreuznach (Parlasca 1959, Taf. 90, no. 1).

The motif of the spear heads and shafts occurring on several fragments of the central zone (Panels 2-3, Fragments 2-5 and 11) may also be connected with the animal-hunting theme, as the spear is the most common weapon in the hands of the *venatores*. Some of the spears may even have been used merely as decorative motifs, pointing straight upwards along the vertical green bands of the central zone.[5]

Only one fragment can confidently be attributed to a gladiator. The part of a naked leg in Panel 7 could have belonged to a *secutor* or a *retiarius*, standing ready for the attack with his right leg placed backwards and his left leg bent forwards.[6] *Secutores* and *retiarii* are probably the most popular pairs of duelling gladiators in Roman art. They are for instance depicted in the mosaic floors of Nennig and Bad Kreuznach (Parlasca 1959, Taf. 37, no. 1; Taf. 89, no. 1). In the reconstruction drawing (fig. 5.1) the fragment from Maasbracht has been combined with the outline of the *secutor* in the Reims mosaic (Stern 1957, Pl. XIII, no. 15).

Retiarii wear protective armour only on their left arm and shoulder, and no guards or padded wrappings on their legs. Like the similarly equipped *murmillo,* the *retiarius*'s traditional opponent the *secutor* wears a guard only on his lower left leg, the right leg being unprotected. The fragment of Panel 7 could be part of either type of gladiator. The oblique position of the leg suggests a fighting stance, which would mean that two duelling gladiators formed part of the figure scenes in the central zone, possibly a *secutor* confronting a *retiarius*.

It is tempting to interpret the puzzling object hanging from the upper cornice in Panel 8 in the light of the scenes below it. In Roman wall painting in general we regularly see masks, vessels and musical instruments used as decorative motifs, similarly suspended from ribbons attached to elements of architecture or garlands.[7] Could the object in Maasbracht be part of the equipment of the gladiators and animal fighters, added as a decorative motif like the upright spears along the green bands? Fragment 15 suggests that more of these objects formed part of the decoration, just as there was more than one spear. The colour of the object in Panel 8 indicates that it is made of bronze and its size is in accordance with that of a gladiator's helmet, but it does not seem to correspond to any of the known helmet types (Junkelmann 2008, 53-65, 231-248).

Panel 7 and Fragment 11 show that the central zone of the decoration was conceived as a continuous frieze, with scenes

of duelling gladiators and *venatores* opposing or killing wild beasts juxtaposed on a shallow platform in front of a black wall divided into rectangular panels by vertical green bands. The effect must have been similar to that of the famous but much earlier Dionysiac frieze in the Villa of the Mysteries in Pompeii (Cerulli Irelli *et al*. 1990, Taf. 108-119; Baldassare *et al*. 2002, 100-106), and quite different from that of the more or less contemporaneous gladiator mosaics in the north. Here, scenes from the amphitheatre are integrated as panels in the geometric designs of the mosaic floors, isolating pairs of gladiators or groups of animal fighters and beasts, as in Nennig (Parlasca 1959, Taf. 36; Hönle and Henze 1981, 35), Bad Kreuznach (Parlasca 1959, Taf. 88, no. 1; Junkelmann 2008, Abb. 138-140), Augsburg (Parlasca 1959, Taf. 97) and Augst (Schmid 1993, 91 and Taf. 3; Junkelmann 2008, Abb. 133-137), or even isolating individual figures, as in Reims (Stern 1957, Pl. XI) and Vallon (Rebetez 1992, 17, Abb. 27). In their composition the paintings from Maasbracht seem to have shown more resemblance to the frieze in the mosaic floor in a villa in Zliten (Lybia) or to the friezes on some funeral monuments in Pompeii and Chieti.[8] The arrangement of the scenes in a frieze was better suited for a more narrative depiction of the proceedings in the arena and the different events that made up a day's entertainment in the amphitheatre. In a frieze along the edges of the floor, the Zliten mosaic shows the animal hunts of the morning programme, the executions of criminals during the midday interval and the gladiatorial combats in the afternoon, the latter to the accompaniment of a small orchestra of wind instruments and an organ.[9] The relief from the necropolis outside the Porta Stabiana in Pompeii depicts the procession (*pompa*) at the start of the games in an upper frieze, five pairs of duelling gladiators in the middle and an animal hunt at the bottom (Junkelmann 2008, Abb. 204-209, 214, 217, 219). The *venatores* and gladiators in Maasbracht probably likewise formed separate groups, possibly on opposing walls of the room. If Fragment 23 indeed derives from a plaited candelabrum of intertwined tendrils, that candelabrum may have served to separate the different groups of actors in the arena.

Scenes from the amphitheatre are known from several examples of Roman wall painting in the northern provinces (Barbet 1987; Dumasy 1989). Unfortunately, in most cases, as in Maasbracht, only small parts of the original decorations have survived. Nevertheless, the size and nature of the scenes are evident, as are their positions in the overall decorative scheme of the walls. Some of the paintings even provide clues for the possible reasons why the scenes were chosen as motifs for the decoration of the buildings and rooms concerned.

Large-scale decorations are known from Périgueux (rue des Bouquets) and Cologne (Appellhofplatz), both dating from the end of the first or the beginning of the second century AD.[10] In Périgueux, scenes featuring nearly life-size figures filled the approximately 3-metre-high central zone of a wall in the peristyle of a building that has been tentatively interpreted as the assembly rooms (*schola*) of a religious association (Barbet 1999; Barbet *et al*. 2004, 163-177; Barbet 2008, 228-230). Remains have been identified of twelve figures, approximately 140 cm high, some engaged in duels, some wounded or killed, and several wild animals. Fragments of painted inscriptions indicate that the gladiators were identified by name, making it plausible that the decoration commemorated a real show in the local amphitheatre. How the scenes were arranged is unknown, but they must have been painted at different levels on the wall. In Cologne the scenes filled a 2.5- to 3-metre-high central zone of the walls of a room in a private residence (Thomas 2008). They were arranged in three friezes, with animal hunts at the top, fights between gladiators on horseback in the middle, and duelling gladiators at the bottom. The human figures were approximately 70 cm high. The arrangement corresponds to the order of a day's events in the amphitheatre, as the mounted gladiators (*equites*) opened the fights of the afternoon programme (Ville 1981, 395). The aforementioned hunting scenes in Cologne (Domviertel) belonged to another large-scale decoration, of which two separate groups of fragments, measuring 164 × 242 cm and 154 × 139 cm, could be reconstructed. They were found in the residential area in the northeastern part of the Roman city. R. Thomas has dated them to the second half of the second century (Thomas 1993, 203-207, 387). The fragments must derive from a continuous decoration in the central zone of the wall, bordered only by broad bands at the top and bottom.

Elsewhere, the amphitheatrical scenes are much smaller, but likewise incorporated in the decoration of the central zone. In a house in Colchester they were for instance reduced to small framed panels at eye level in the centre of the wall. One of these panels shows a wounded gladiator, 12.5 cm high, raising his left hand and index finger in surrender. The painting dates from the late first or early second century (Davey and Ling 1981, 99-101; Ling 1984). According to A. Barbet, three groups of fragments found near the forum of Périgueux (terrain de Lestrade) may have similarly belonged to an equal number of panels in the central zone measuring approximately 50 × 50 cm, two of which showed duelling gladiators 36 cm in height (Barbet 2008, 227-228). In the best preserved scene a *retiarius* is identified by name and the fight is being watched by a referee. The paintings may date from the early second century, when the forum was rebuilt. The *venatores* in the decoration of a portico in a villa at Yvonand-Mordagne (Switzerland) have already been mentioned (Dubois 1996; 1999). They were 33 to 35 cm high and painted as central vignettes against a background of red animal skins attached as trophies to the four corners of large black panels in the central zone of the wall.

Alternating yellow panels in the same zone featured wild animals as central vignettes, emphasising the animal hunt as the main theme of the decoration. Fragments of at least seven *venatores* have survived, two of which are almost complete. On the basis of their outfits, Y. Dubois identified three different types, representing separate stages in the development of the venatorial costume during the first and second centuries. As noted above, one of them resembles the animal hunters of Maasbracht.[11] The Yvonand-Mordagne decoration dates from the second or third decade of the second century. It is the earliest known example of this costume so far.

Small figures and figural motifs also fill the lower and upper zones of many Roman wall decorations. Complete scenes from the amphitheatre were found *in situ* on the dado of the walls of a corridor in a villa at Mechern (Germany).[12] It was built in the second century but later demolished and rebuilt at the same site. The lower parts of the walls of the first building were left standing and the spaces in between were filled in, preserving the paintings that remained in place. Against a black ground floral motifs separate small groups of duelling gladiators and animal hunts, together representing a day's programme in the arena. Remarkable are two scenes that seem to parody the games: a pygmy brandishing a sword and shield and a cock blowing a horn (*cornu*) as used by the musicians in the Zliten and Nennig mosaics. The figures seem to be less than 50 cm high.

Fragments of a decoration of the same date were found in the villa of Liégeaud near La Croisille-sur-Briance (France), built towards the middle of the second century (Dumasy-Mathieu 1991; Barbet 2008, 231-234). Here, pairs of gladiators and other scenes were depicted on black in the lower zone of the wall and wild animals and *venatores* on a frieze, also black, on top of the large red panels of the central zone. In the dado the human figures are 20 to 40 cm high, in the upper part of the wall 10 to 12 cm. The decoration is of special interest because it shows the animal hunts and gladiatorial combats, but in the lower zone also includes the procession preceding the games and even the public watching the events from the stands. Most importantly, above the scenes in the dado, texts were added in three lines on a white strip beneath the red panels of the central zone. Although incomplete and badly mutilated, enough of the texts remains to give an impression of their content. Words like *spectac(ulum)* and *signo dato* must refer to the proceedings in the arena depicted below them. As F. Dumasy (Dumasy-Mathieu 1991, 116-130) has argued, the name Romulus above the procession scene may very well identify the person who sponsored these games and, as the owner of the villa, commissioned the paintings to commemorate them.

The small figure scenes in the villa of Ahrweiler (Germany) may also be interpreted as commemorations of real events (Gogräfe 1995, 181-190; 1999, 132-137). They form part of a decoration with imitation marble in the dado and large red panels on a black ground in the central zone. Sea creatures and duelling gladiators were depicted in a frieze less than 20 cm high above the panels. Approximately double in size was an offering scene featuring three male figures between the upper corners of two red panels. R. Gogräfe was able to identify the man in the centre as a *flamen Augusti*, a priest mainly responsible for the cult of the emperor (Gogräfe 1999, 133-135). He is accompanied by two servants carrying sacrificial instruments. According to Gogräfe, this exceptional scene can best be explained by assuming that it depicts the master of the house performing one of his public functions. The gladiatorial combats may likewise refer to the organisation and sponsorship of games in the amphitheatre as part of his holding office as *flamen*.

To this survey of amphitheatrical scenes in wall paintings from the northern provinces may be added a fragment found in the palatial villa of Echternach (Luxemburg) measuring 20 × 27 cm. It shows a gladiator, probably a *secutor*, in an attacking position and a referee. The further context of this painting and its date remain unknown (Metzler *et al*. 1981, 170, Abb. 137). Finally, at Beaumont-sur-Oise (France) fragments of a wall decoration dating from the middle of the third century were found in one of the houses of an ancient settlement, with an almost complete male figure in its upper zone. The figure is 52 cm high and has been tentatively identified as a gladiator, although distinctive attributes are lacking (Eristov *et al*. 2002, 197-219).

The above survey shows that scenes from the amphitheatre were commonly used as motifs in Roman wall decorations in the northern provinces from the end of the first until the middle of the third century. Large-scale scenes in the central zone of the wall, featuring human figures half- to nearly life-size, were exceptional, the largest so far having been found in cities: Périgueux (rue des Bouquets), the capital of the *Civitas Petrucoriorum*, and Cologne (Appellhofplatz and Domviertel), the capital of the province of *Germania Inferior*. Also in an urban context, but here reduced to small panels, gladiatorial scenes were represented in the central zone of decorations in Périgueux (terrain de Lestrade) and in Colchester. In the villas in the countryside the scenes were mostly relegated to the lower and upper zones of the walls, featuring human figures of 12 to 40 or 50 cm in height. In this respect the paintings in the villa of Maasbracht are exceptional. Here a parade of animal hunters and gladiators, just over half life-size, occupied the central zone of the wall, where people visiting the room could look them in the eyes.

As in the mosaic floors, the figures and scenes are mostly set against a neutral, monochrome background: green in Colchester and Périgueux (rue des Bouquets, terrain de Lestrade), blue in Cologne (Appellhofplatz), red in Yvonand-Mordagne and black in Mechern, Ahrweiler,

La Croisille-sur-Briance and Maasbracht. The completely preserved scenes from Mechern convey the best impression of the effect the paintings in Maasbracht must once have had.[13]

5.5.2 The lower zone

The figures in the lower zone of the wall were likewise set against a monochrome – red or black – background. Parts of only two figures have survived, and unfortunately they cannot be positively identified. The scenes in the dado may also have been derived from the world of the amphitheatre.

The stance of the man with naked legs on Fragment 1 suggests that he was engaged in a scene with other figures, human or animal. Whether the rest of his body was also naked is not clear. At the top of his right leg there may be a hint of the lower end of a piece of clothing.

In the above discussion of the Panels and Fragments, the figure in Panel 1 was tentatively identified as a herm. Such small statues with a head or torso on top of a squared pillar were commonly used as decorative motifs in Roman wall painting (Moormann 1988, 58-59 and *passim*),[14] but they were also very much part and parcel of the iconography of the Roman amphitheatre. In the paintings that once adorned the parapet surrounding the arena of the amphitheatre of Pompeii scenes featuring gladiators and animal hunts alternated with figures of Victory on a globe, candelabra and herms, most of them with shields leaning against their bases. A scene showing two gladiators preparing for their duel is on both sides flanked by a herm with the torso of a Victory holding a palm branch and a laurel wreath (Regina 2001, 334-337; Hufschmid 2009, 259-266 and Beilage 50). In the Zliten mosaic the two friezes showing duelling gladiators start off on the left with a herm with a shield at its foot (Junkelmann 2008, 103, Abb. 142; Dunbabin 1978, Pl. XX). In the north we find herms in the gladiator mosaics of Augsburg and Reims. In Reims the herm supports a shield and a palm branch and there is also a helmet lying next to it (Stern 1957, Pl. XII, no. 10). One of the panels in the mosaic of Augsburg, which has survived only in a drawing, shows a herm with a palm branch and a trident and a man standing in front of it holding a palm branch and a stick (Parlasca 1959, 102, Taf. 97). In the minor arts herms feature in gladiatorial scenes on a relief-decorated bronze oil flask from Reims (Petit 1980, 147-150; Braun 2001, 77, Abb. 62, 134-135, Kat. 48, Taf. 53-54; Junkelmann 2008, 14, Abb. 11) and a green-glazed pottery beaker with barbotine decoration from Nijmegen (Junkelmann 2008, 147, Abb. 235; Swinkels 2010). A carnelian gemstone in Berlin shows an entire arena with public in the stands along one side. At the narrow ends of the oval arena are two herms with shields leaning against them, their heads turned towards the centre, where a referee supervises two duelling gladiators and an orchestra of three is making music (Vierneisel 1978, 105-106). According to K. Parlasca, the herm in the Augsburg mosaic represents the divinity to whom the victorious gladiators dedicated their victory palms (Parlasca 1959, 102, n. 1). Th. Hufschmid (2009, 263-264) recently identified multiple symbolism in the herms on the parapet of the amphitheatre in Pompeii. In his opinion, apart from being symbols of victory, they also conveyed the notion of death that lured in the arena, through their association with the Greek god Hermes who escorted the souls to the underworld. They moreover marked the boundary between the actors in the arena and the public watching them from the stands. In this respect the herms in the other depictions cited above may represent the arena floor on which the events were taking place. And in representations of athletic games the motif may similarly refer to the palaestra or stadium (Braun 2001, 74-75, Abb. 59-60; Pirling 1990). Whatever its significance, a herm in the dado in Maasbracht would be very much in accordance with the theme of the decoration in the central zone. The torso might even be that of a Victory, holding a wreath in her raised right hand.

5.5.3 The upper zone

Two different types of figure scenes were represented in the upper zone of the wall. One group of figures belonged to one or more portrait scenes, depicting people in local dress as they would have lived in the villa at the time when the paintings were made. Other figures were derived from Greco-Roman mythology and formed part of an unknown number of scenes, some of which were set in a landscape. A separate category may have been formed by landscapes with scenes of wild animals.

5.5.3.1 Tromp l'oeuil architecture

The figure scenes in the upper zone were integrated in a tromp l'oeuil architecture that can be only partly reconstructed. Best preserved in a number of key fragments (Panels 9 and 11, Fragments 24-31) are *aediculae* consisting of fluted columns resting on red bases and supporting Corinthian capitals carrying an ornamented entablature. The bases of the columns stood on the platform, while the upper cornice of the entablature extended to the top of the wall. The remaining fragments of the columns and capitals suggest that they were paired, each pair supporting the front side of the projecting entablature. There are no surviving fragments showing the columns or pilasters that would have supported the entablature at the back of the *aediculae*. The original number of *aediculae* can no longer be established. It may have ranged from just one at the centre of one of the walls to one or more on each of the walls. A central *aedicula* on one or each of the walls seems the most plausible.

A second type of column can be seen in Panels 17 and 19 and on Fragment 38. Its smooth yellow shaft is decorated

with a red spiralling band. No fragments of the bases or capitals of these columns could be identified. Nor are there any indications of a different type of entablature. The positions of these columns in the overall decoration are therefore unknown, and the same holds for the white background on which they were painted. Panels 17 and 19 show that the columns were combined with other elements of the decoration, *i.e.* scenes in framed panel-pictures.

5.5.3.2 Portrait scene

The portrait scene can best be interpreted with the help of the many portraits and scenes from everyday life observed on a great number of burial monuments in the region between the rivers Rhine and Meuse, with the greatest concentration along the Moselle, in the *civitas Treverorum* and its capital Trier. The majority of these monuments date from the second century and the first half of the third.

The largest group of fragments of the portrait scene has been assembled in Panel 12. The two men depicted here wear a tunic that formed part of the 'basic Gallic ensemble' as defined by J.P. Wild (1968; 1985). For men it consisted of a wide-fitting tunic with wide sleeves that reached to just below the knees, a hooded cape that covered the whole body to the same length and a scarf. Women wore the same tunic ankle length and a rectangular cloak that could be draped in different ways. The tunic was worn ungirt, as opposed to the Roman *tunica*, which was moreover mostly sleeveless. According to Wild, the Gallic ensemble was widely distributed and can be observed on monuments in the Gallic and Germanic provinces and *Britannia* (Wild 1985, 372). It was evidently a native dress dating back at least to the early first century AD, when it first appeared on monuments. Its origins are a matter of debate, especially the question whether or to what measure it evolved from Roman examples. In a detailed study, U. Rothe (2009, 34-37) has recently argued for an indigenous origin, in a time before the Roman conquest.

On the monuments the Gallic tunic, with or without the cape, is worn by people of all levels of society, both in portraits and in scenes from everyday life, in which we see them at work or at leisure in their homes (Wild 1985, 374; Rothe 2009, 54, 67-69). The ensemble does not appear to have signified social status, nor was it reserved for people with a peregrine status who, not possessing Roman citizenship, were not allowed to wear the Roman *toga*. Inscriptions on the monuments show that a great many Roman citizens, most of them of non-Roman descent, chose to be depicted in Gallic clothing (Freigang 1997, 305-306; Rothe 2009, 49-50). In their studies of the monuments, Y. Freigang and U. Rothe have both stressed that this choice should be seen not as an act of resistance against Roman culture and domination, but rather a self-conscious expression of their own cultural identity (Freigang 1997, 308-309; Rothe 2009, 58). It was moreover a choice for a type of dress that was much better suited to the northern climate than the Roman clothing worn in the Italian centre of the empire (Wild 1985, 413; Rothe 2009, 40, 69).

The men in Panel 12 wear the tunic without the cape. Wild regards the latter as an outdoor garment that was dispensed with indoors. As Freigang noted in her study of the Treveran monuments, the cape is usually absent from interior scenes from everyday life, except for scenes featuring people who have evidently just entered a room from outside (Wild 1985, 368-369; Freigang 1997, 337). In the portrait scenes, with no indication of a particular context, indoors or outdoors, the deceased are invariably depicted with the cape, "dressed as if for a winter journey" (Wild 1985, 368. Cf. Rothe 2009, 52). Rothe (2009, 43) emphasises the symbolic value of the cape in the portraits and considers it "an essential element (…) with regard to expressing the cultural identity of the wearer." Freigang (1997, 299-300, 306-307, 336-337) believes that in Gallo-Roman society the cape to a certain extent replaced the Roman *toga* as a garment that conveyed prestige, especially in the elaborate ways that it could be draped at the front (but see Rothe 2009, 42 n. 489). In a similar vein she notes that fringes round the cuffs and lower hem of the tunics are only observed in portrait scenes, and never in scenes from everyday life (Freigang 1997, 336).[15]

It is perhaps consistent with the indoor setting of the scene that the two men in Maasbracht do not wear a cape. Standing as they are on the platform in the upper zone of the wall, the painting suggests that they are present in the room. Their tunics, however, are fringed, which may indicate that they are nonetheless dressed for the occasion. Rothe (2009, 29, 57) has pointed out that tunics and capes of the Gallic ensemble may look quite the same on the monuments, but will probably have differed in fabric and colour in reality (cf. Wild 1985, 407-409). Whereas the relief sculptures have lost almost all of their original colours, the paintings from Maasbracht provide a unique example of such differences. The yellowish white colour of the tunic of the man on the right may have been fairly standard, as also suggested by traces of paint on a few stone sculptures (Wild 1985, 408). The triple purple stripes on either side possibly indicate some form of distinction, just like the purple colour of his neighbour's tunic, though some caution is in order here. Vertical stripes are a ubiquitous element on Roman *tunicae*, both on actual remains, especially from the eastern Mediterranean, and in depictions in mosaics and wall paintings (Wilson 1938, 61; Bender Jørgensen 2011). Single stripes (*clavi*) on Roman *tunicae* originally served to distinguish men of senatorial and equestrian rank. Senators were entitled to a broad stripe (*clavus latus*), knights (*equites*) wore a narrow stripe (*clavus angustus*). But already

in the first century AD Pliny the Elder in his *Natural History* (33.29) observed that even town criers wore the broad purple stripe. To limit ourselves to visual representations of the world of the amphitheatre, in mosaics and wall paintings we often see referees and arena personnel wearing narrow single stripes on their white tunics (*e.g.* Junkelmann 2008, Abb. 51, 127, 142, 149-151, 215-216, 234, 326, 343). In the 'mosaic of the Bulls and the Banquet' from El Djem (Tunisia) two of the dining *venatores* have double and triple stripes (Dunbabin 1978, Pl. XXVII.69). The purple used for the stripes initially also served as a mark of distinction, but written sources reveal that by the first century AD this colour was being used for clothing of all classes in every part of the Roman Empire (Reinhold 1970). The best quality dyes, however, laboriously produced from sea-shells, always remained extremely expensive, and hence reserved for a very small elite, while the masses had to make do with cheaper, less colourfast alternatives. Purple consequently always remained a status symbol, and in the portrait scene in Maasbracht it may indeed have been used to express affluence and social status.[16]

No satisfactory explanation can be offered for the piece of fabric that the man in white clutches in his right hand. It is of the same colour as his tunic, hangs downwards from his right shoulder and curves upwards from his middle towards his left hand, which has not survived. In the portraits on the burial monuments men often hold the edge of their capes in the same way, with the front rolled up to reveal the arms. In most cases it is draped over the right shoulder and the left arm (Freigang 1997, 299-300; Rothe 2009, 42).[17] The piece of fabric in Maasbracht could be a scarf, but there seem to be no other examples of scarves arranged in this way. On the monuments in the Rhine-Moselle region scarves are usually worn wrapped around the neck with the ends tucked under the cape (Wild 1985, 376; Freigang 1997, 301; Rothe 2009, 43). A man on a gravestone from Nièvre (France) in Central Gaul wears a scarf knotted around his neck in full view, the flat fringed ends hanging downwards in front of his body (Wild 1985, 376, Fig. 16).[18] Two stones from Bordeaux show men with similar flat pieces of fabric hanging loose over their left shoulder, the ends also fringed (Braemer 1959, 90-91, nos 74 and 76, Pl. XXI). Several questions remain. Why should the man in Maasbracht be wearing a scarf if this is indeed an interior scene? And why should he be wearing it in this peculiar way, with one end probably held in his left hand, which must have been extended to the right, away from his body?

Both men wear the same type of sandals, but those of the man in purple are represented in more detail. The strapwork consists of a strap around the ankle that is connected to the sole by two vertical straps on either side of the heel and a third strap over the instep to the front. The latter strap shows small decorations near the ankle and toes. A similar type of sandal can be seen in a graphic synopsis of four centuries of Roman footwear published by C. van Driel-Murray (2001, 343, Fig. 10 no. 22). Details of footwear are often unclear on funerary monuments; they may originally have been indicated in paint only. However, various types of shoes can be distinguished in the reliefs of the Treveran monuments, and here men do not appear to wear sandals (Cüppers *et al.* 1983, 202-203). In the north, sandals were introduced as a new type of footwear after the Roman conquest. At first they were worn mainly by women and children. Around the end of the second century they also became fashionable for men (Van Driel-Murray 2001, 355; Knötzele 2007, 55). Interestingly, the men in Panel 12 also wear socks, an item of clothing about which very little is known so far (Van Driel-Murray 2001, 359-360; Knötzele 2007, 67-68).

The circular pleated object in the right hand of the man in purple most probably represents a purse or money bag. In Gallo-Roman funerary sculpture money bags are the most common male attribute in the portrait scenes, along with scrolls and bundles of writing tablets (Freigang 1997, 310; Rothe 2009, 26). In what are generally known as office and payment scenes they are commonly seen lying on a table, often with coins spilling out (Baltzer 1983, 46-60). They evidently symbolise the business achievements and financial success of the deceased.

The men in Panel 12 are standing with their left legs placed slightly further back, thus facing a scene that was originally further towards the right on the wall. The man dressed in the white tunic is set a little further back on the platform, but is standing with his right flank just in front of his neighbour's left flank. The colour of the background changes from dark grey to the left of the man dressed in purple to green to the right of the man dressed in white. No traces of any other figure are observable on the green here. So the men were standing close together at the periphery of a scene that was presumably represented a short distance to the right of them. Indicated on the platform under the man in purple is the beginning of a shadow that broadens towards the right under the continuation of the scene.

Panels 13-15 and Fragments 32-34 may have belonged to the same portrait scene. The young man in Panel 13 has turned his face to the left. He may have been standing on the right-hand side of the scene, opposite the two men in Panel 12. His buff tunic is probably of the same design as that of the man in white in Panel 12, with three stripes running lengthwise on either side of the body. The white piece of fabric that is draped over his left shoulder and covers his left side is perhaps of a similar nature as the one that the man in Panel 12 clutches in his right hand. In a dining scene on a burial monument from Neumagen a female person holds the edge of a flat piece of fabric thrown over her left shoulder in the same way as the man in Panel 13. Another female with

a similar piece of fabric over her shoulder stands next to her, placing a dish of food on a small table at which a husband and wife sit opposite one another. The two females have been interpreted as daughters or servants of the couple, the pieces of fabric as serving towels (Rothe 2009, 143, no. T128.1 (with further references), Pl. XIX). Servants with towels over their shoulders can confidently be identified on two tombstones featuring dining scenes from Cologne (Noelke 1998, 409, Abb. 4; 2005, 173, Abb. 19) and on several altar stones showing sacrificial scenes from the northwestern provinces recently studied by P. Noelke (2011, 485-492). On these monuments the towels are intended for drying the hands after washing them between the various courses of the meal or as part of the ritual proceedings.

In her study of the funerary sculpture of the Moselle region, Y. Freigang (Freigang 1997, 318-323) discusses various gestures that regularly occur in portrait scenes. Men often grab a fold of their clothes with their right hand, in a gesture similar to that of the men in Panels 12 and 13. Freigang believes that this position of the hand, typical of Roman togate statues, was introduced in the Moselle area as a gesture of self-conscious dignity, commanding respect. She notes that it is sometimes combined with another gesture, that of the *tres digiti porrecti*: the thumb, index and middle fingers are held outstretched while the other two fingers are bent inwards to the palm of the hand. In Roman literary sources this gesture is described as that of the orator, and in Roman art it is used in different contexts. Generally, it signifies communication, and Freigang cites some examples in which it can be understood in this way in scenes from everyday life, *e.g.* the aforementioned dining scene from Neumagen. She again interprets it as a sign of self-consciousness in the portraits, and of the cultural aspirations of the deceased (Freigang 1997, 320-322, with further references). The hand in Panel 13 may very well show this same gesture, but unfortunately the fragment with the two lower fingers is incomplete.

The ankle-length garment of the person in Panel 14 can most probably be identified as the female tunic of the Gallic ensemble, implying that at least one woman formed part of the portrait scene or scenes. There is no sign of any fringes. The original colour of the tunic may have been some shade of yellow. The double stripe on the left side of the body must have been repeated on the other side. The feet seem to be in the same position as those of the men in Panel 12, possibly indicating that the woman stood facing the same direction.

The man with the writing tablet in Panel 15 wears a purple tunic. His cloak of a yellowish white fabric does not form part of the Gallic ensemble, and must be Roman in origin. Whether it is a *toga* or a *pallium* is impossible to say. A relatively small number of people wear these garments on the burial monuments of the Rhine-Moselle region, and almost exclusively in portrait scenes, as the studies by Freigang (1997, 301, 304) and Rothe (2009, 40-41, 49-53, 59-61, 63-65) have shown. In the Treveran area the number of men dressed in a *toga* remained fairly constant throughout the first and second centuries and gradually declined in the third. Here, the *toga* was associated with the political and economic elite and concentrated in the capital Trier. Further concentrations of *toga* depictions, dating predominantly from the first century, are known from along the Rhine, in and around Mainz, and Cologne. The rectangular *pallium* cannot always be distinguished from the semicircular *toga*, especially when monuments are damaged and incomplete. Rothe (2009, 60) lists seven portraits featuring a *pallium* from the Middle Rhine area, all dating from the first century, and another portrait of uncertain date from Zülpich. She also mentions two scenes from domestic life. The first is a dining scene from Mainz from the late second or early third century showing two reclining men wearing a *pallium* over a Gallic tunic (Rothe 2009, 159, no. M37, Pl. XXV). In an unusual scene of uncertain date from Arlon, a similarly dressed man reclines on a couch and reads from a scroll, while four men and a woman around the couch seem to be listening (Rothe 2009, 142, no. T122, Pl. XVIII). Rothe (2009, 75) further discusses four funerary portraits in which a *toga* is combined with a Gallic tunic, two from Cologne and two on the Igel funerary pillar, which dates from the first half of the third century. Whereas the *toga* denoted Roman citizenship, the *pallium* was associated with the intellectual in Roman culture. According to Rothe (2009, 76), the men in the aforementioned monuments combined their Gallic tunic with a Roman *toga* or *pallium* not to appear fully Roman, but because of the "symbolic properties of the overgarment, *i.e.* citizenship, education, sophistication".

From the man's left-hand shoulder the edge of his cloak runs obliquely downwards to the right, suggesting that he is sitting with his torso and legs turned to the right. What remains of his head and face also suggests that they were depicted in three-quarter view towards the right.

As we have seen, writing tablets are among the most common attributes held by male persons in the funerary sculpture of the Rhine-Moselle region. In portrait scenes they usually appear as a *codex ansatus*, a bundle of tablets with a handle, carried by the deceased in one of his hands (Freigang 1997, 310). It is important to note that the deceased is never shown writing. The tablets also regularly occur in scenes from everyday life, where they are mostly being used in financial and business transactions, *i.e.* in the aforementioned office and payment scenes or in shopping and trade scenes. One of the men in these scenes usually holds an opened *codex* in front of him and either consults it or makes notes in it with a writing instrument. Here the tablets apparently serve as a register for keeping accounts (Freigang 1997, 310;

Baltzer 1983, 46-60). Finally, we sometimes encounter writing tablets in the hands of clerks who, like other servants, are represented on the side panels of burial monuments, *e.g.* in the 'Schulreliefpfeiler' from Neumagen (Von Massow 1932, 134-135, Taf. 28, 180.a1; Rothe 2009, 143-144, T129.2) and in a similar relief in Zülpich (Willer 2005, 211-212, Kat. 229, Taf. 43.4; Rothe 2009, 170, U54). In a fragmentary relief from Maastricht we see a man holding up an opened *codex* in his left hand and pointing at it with the index finger of his right hand. T. Panhuysen (1996, 275, no. 12, Afb. 110) assumes he is a clerk standing next to a couch on which the deceased reclined. Only his left arm has survived.

In all these scenes the *codices* always consist of two or more rectangular tablets joined by hinges along one of the long sides. Except for the two outer sides of the *codex* the inner areas of each wooden tablet were recessed and filled with a thin layer of wax. Characters were scratched in the wax with the aid of a stylus (*stilus*) and could easily be read because of the contrast between the light-coloured wood and the dark-coloured wax. The end opposite the pointed tip of such styluses was spatula-shaped so that it could be used to erase characters and smooth the wax. On the burial monuments the *codices* of wax tablets can be recognised by the raised border that is often indicated and by the use of writing instruments with a spatula-shaped end. Coloured representations show the dark surface of the wax, *e.g.* the 'Literatenmosaik' in Trier, in which a young pupil holds a set of tablets in his left hand and a stylus in his right one (Parlasca 1959, 28, Taf. 27.2; Hoffmann *et al.* 1999, Taf. 38), and scenes featuring written documents and writing instruments in Campanian wall painting (Blum 2002, Cat. nos 17, 49, 53, Pl. III; Meyer 2009).

In Panel 15 from Maasbracht the characters on the writing tablet are indicated in brown on a yellow ground, suggesting that they were written in ink on the pale wood of the tablet. The man accordingly holds an ink pen (*calamus*), without the spatula-shaped end typical of a stylus. Although ink pens were usually made of reed, the bright yellow colour in Panel 15 is presumably intended to suggest bronze, and tube-like specimens made of sheet bronze have indeed been found at several sites in the northern provinces (Božič and Feugère 2004, 37).[19] On the other hand, the type of writing tablet depicted here was virtually unknown until hundreds of specimens started to come to light in the Roman fort of *Vindolanda*/Chesterholm (United Kingdom) in 1973 (Bowman 1994; Birley 2002). They have been called leaf tablets, as they are made of thin leaves of wood that are no more than 3 mm thick and generally measure around 18-20 × 7-9 cm. They differed from the better known wax tablets in several ways besides the employed writing method. The leaf tablets from *Vindolanda* were made of alder and birch and occasionally oak, woods that were locally available, as opposed to the fir and larch that were commonly used for the wax tablets (Saedlou and Dupéron 2007, who note the use of lime wood for leaf tablets found in Saintes, France). The latter were probably made in a limited number of specialised workshops and had to be imported ready-made, whereas the leaf tablets could easily be produced locally and offered a cheaper alternative. As Bowman and Thomas (1984, 36-37) state:

> "(…) these leaf tablets (…) functioned as the standard writing-material for letters and ephemeral documents in those parts of the Empire which were far removed from the source of papyrus; whilst the heavier, more expensive and more durable stylus tablets would be used, on the whole, for more important documents which might need to be kept for a longer time – wills, certificates, contracts and the like."

Generally, two different formats were used for the documents and letters on the leaf tablets in *Vindolanda* (Bowman and Thomas 1984, 37-44). Most of the documents were written across the grain of the wood, with the lines parallel to the short sides of the leaves. In the letters the lines were written in two columns parallel to the broad side of the leaves, along the grain of the wood. After the leaf had been scored down the centre it was folded with the text on the inner faces. It is the letter format of the *Vindolanda* leaf tablets that appears to be depicted in Maasbracht. In *Vindolanda*, however, this format was not exclusively used for letters, the excavations having yielded documents that were also drawn up in this way. Whatever the writing in Maasbracht was meant to signify, the fragments of Panel 15 probably offer the first contemporary image of this type of writing tablet.

In a study of depictions of writing paraphernalia in Campanian wall painting, Meyer (2009) recently distinguished two different contexts in which they appear: *otium* and *negotium*. To the world of *negotium* she reckons the aforementioned still-life scenes featuring written documents and writing instruments. Some of the documents are sealed, implying that they must be of a legal nature. They all seem to refer to business transactions and the keeping of accounts, a conclusion that is strengthened by the money bags that are sometimes included in the scenes. "These objects belong to the world of men and the world of the paterfamilias who carefully managed and secured his family's wealth…" (Meyer 2009, 575-576). The world of *otium*, on the other hand, is represented by scenes in which men, women and boys are reading or holding scrolls, and by tondo portraits of women holding open wax tablets with a stylus at their mouths. All these scenes, Meyer believes, evoke the world of the Muses and literature, music and philosophy. As we have seen, the writing tablets on the burial monuments from the Rhine-Moselle region are represented almost exclusively in a context of *negotium*. *Codices* are read

or consulted in office and payment scenes, and when people are shown writing, they are keeping accounts or acting as clerks assisting their masters. A world of *otium* dedicated to literature and music is conspicuously absent. Only the aforementioned relief from Arlon, interpreted as a representation of a family gathered in a reading session, can possibly be seen as a rare exception (Freigang 1997, 314, Trev 104; Rothe 2009, 142, T122).

An interesting new parallel has recently come to light among the ruins of a large domestic building under the cathedral of Tongeren (Belgium). One of the black dado panels of an elaborate wall decoration dated within the period AD 70 to 150 contains a man in a purple Gallic tunic holding a *codex ansatus* in his outstretched left hand. He appears to be moving towards the right while looking back over his right shoulder. Like the man in Panel 15 he has a curly beard and the lower hem of his tunic is fringed like those of the men in Panel 12. In the preliminary publications the man is associated with education, administration and commerce, and above all with the world of the local elite (Groetembril *et al*. 2013, 82-83, Fig. 1; Ervynck *et al*. 2014, 105-108).

On the basis of this evidence one is inclined to interpret the man in Panel 15 as a scribe or a clerk, and in combination with the money bag in Panel 12 his writing tablet could be taken to refer to the commercial activities and economic success of the people portrayed in the scene. Nevertheless, he is dressed like the man reading to his family in the relief from Arlon, and his clothing suggests a higher status. If the tablet refers to his profession, he may have served as a secretary in the retinue of a magistrate or as a teacher for the children of a wealthy family. Or could the man portrayed in this way have wanted to appear like a poet, writing newly composed verse lines in a notebook?

Fragments 32-34 may also have formed part of the portrait scene. Fragment 32 shows a similar piece of fabric as on the shoulder of the man in white in Panel 12. Here it contrasts in colour with the orange-red tunic underneath. It likewise seems to be hanging down towards the right in front of the body. Perhaps it is the same type of fabric as that hanging down from the fingers of a left hand on Fragment 34. The foot on Fragment 33 is encased in the same type of sandal over white socks as the feet of the persons in Panels 12 and 14.

The panels and fragments just described feature at least six individuals that must have belonged to the portrait scene or scenes. Panel 12 shows the left-hand side of such a scene on the platform of the upper zone, to the right of an *aedicula* that may have stood at the centre of the wall. It seems reasonable to assume that there was a comparable scene to the left of the *aedicula*. The upright tendril and garland that run between the *aedicula* and the portrait scene were probably repeated on the right-hand side of the scene, along the corner of the wall, as is suggested by Panel 10. The people were thus depicted in a festive setting that must have been in accordance with the meaning of the scene. Among the six individuals we can identify four, probably five, males and probably one female. They wear native dress, except for the man with the writing tablet, who combines a Roman cloak with his Gallic tunic. Apart from holding objects like a money bag, a pen and a writing tablet or a piece of fabric, they do not seem to be engaged in any kind of action.

Nevertheless, the scene was carefully composed, with one or more individuals centre stage on the platform and others to the sides and in the background. The two men in Panel 12 clearly belong to the latter category, standing on the left-hand side of the scene and also represented somewhat smaller than the persons in Panels 13-15 and on Fragment 32, who must have been placed more to the front of the platform, as indicated in the reconstruction drawing (fig. 5.1). The man with the writing tablet in Panel 15 and the woman in Panel 14 seem to have been part of the left-hand side of the composition too, whereas the man in Panel 13 must have stood to the right of the centre. The composition may have been enhanced by subtle variation in the colour of the clothing, *e.g*. by the alteration of purple and white, and by varying details like fringes and stripes on the tunics.

Who are the persons portrayed in this scene? Using the funerary sculpture of the Rhine-Moselle region as a reference one could surmise that a family group was depicted, with a married couple in the middle surrounded by an entourage of their children and servants. Panel 14 could then be ascribed to the wife, standing to the left of her husband (on his right-hand side), as was customary on burial monuments. And as on these monuments, the money bag and writing equipment held by the people in the couple's entourage would have alluded to the family's economic and social achievements. If the people portrayed were divided over two scenes, on either side of the *aedicula*, one can further speculate on how they were related. The scenes may have been different in character, with the one on the right showing the *paterfamilias* in a company of males possibly facing a scene on the left featuring his wife in a female company. Along this same line the scenes may also have referred to the public sphere of the man's world and the private sphere of the lady of the house.

5.5.3.3 Mythological scenes

Panel 16 assembles the largest group of conjoining fragments that can be ascribed to a mythological scene. The three figures represented on these fragments act on the same platform as the people in the portrait scene. In the reconstruction drawing, Panel 16 has been placed between the columns of the *aedicula*, but this is just one of the possibilities. In fact, it is by no means certain that the portrait and mythological scenes were combined on the same wall.

It is not possible to identify the figures in Panel 16 with any certainty, nor to determine the scene to which they belong. The sitting person on the left is apparently female, wearing a blue *himation* over a purple *chiton*. Her body is turned to the right, as are the bodies of the two men standing close to her, a little further back on the platform. The man in the middle seems to be moving towards the right. The contrast between the naked body of the man on the right and the fully clothed woman on the left recalls scenes of mythical heroes and heroines, as in wall paintings featuring Paris and Helen in the Casa del Sacerdos Amandus in Pompeii (Barbet and Allag 1982, 26, Fig. 18) or Jason and Medea in Trier (Cüppers 1987, 32-33). Possible interpretations of the scene in Panel 16 are Adonis' farewell to Venus or Hippolytus' farewell to Phaedra, as the two heroes are about to go hunting. These myths were popular on Roman sarcophagi in the second half of the second century and the early third century. The depictions would always start off with such a farewell scene, in which one of the hero's companions would often be urging him on (Koch and Sichtermann 1982, 131-133, 150-153). The man in the middle in Panel 16 could thus be a member of a hunting party.[20] The tragic hero's ensuing death made the stories appropriate for funerary art. In the early third century the death of Adonis was for instance depicted on the walls of a tomb in Boult-sur-Suippe (FR) (Allag *et al*. 1988; Barbet 2008, 279-280). In Maasbracht the theme could have been chosen for the correspondence between the mythical hunter in the upper zone and the hunters in the arena below, and because of the mortal danger they both courageously faced.

Fragment 36, and probably also Fragment 37, formed part of the figure scenes on the platform, which are probably best interpreted in a mythological context. The end of a staff or sceptre on Fragment 36 rests obliquely on the platform, casting a shadow to the right of it (fig. 5.51). In Campanian wall painting gods and heroes are regularly shown holding staffs with similar profiled ends, *e.g*. the goddess Hera in the Judgement of Paris, king Amphitryon watching the child Heracles strangling the two snakes, and even a tragic actor at rest after playing the role of a king.[21] In a painting in Pompeii, Roxane in the company of her husband Alexander the Great rests her sceptre obliquely on the ground in front of her (Baldassare *et al*. 2002, 197). The sceptres vary in length, but are usually longer than the persons holding them. The profiled object on Fragment 37 has been interpreted as the leg of a chair or bed, partly covered by a piece of blue fabric. The fabric may have belonged to the clothing of the person sitting on the chair, as in the scene of the seated woman dressing her hair in the frieze of the Villa of the Mysteries in Pompeii (Cerulli Irelli *et al*. 1990, Taf. 116).[22] If this interpretation is correct, Fragment 37 may even show part of the chair on which the woman of Panel 16 is sitting, one end of her blue *himation* falling down at the back.

The naked shoulder with the quiver on Fragment 39 most probably belonged to a figure of Apollo, just like the hair with the laurel wreath on Fragment 40. The two fragments have been combined in the reconstruction drawing (fig. 5.52) on the basis of a wall-painting fragment from the Palatine in Rome that shows the god seated on a throne while holding his cither (Baldassare *et al*. 2002, 133). In Maasbracht the god may have been depicted standing, if the part of a naked foot on Fragment 42 can be ascribed to this figure. The toes of the foot probably rest on the platform of the upper zone, which has changed colour to a brownish red due to exposure to heat. A fourth fragment may also be associated with the

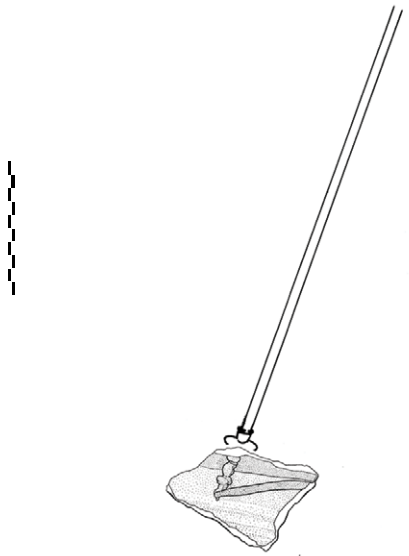


Figure 5.51 End of staff casting a shadow to the right

Figure 5.52 Figure with quiver and laurel wreath

figure of Apollo, whose head and shoulders are set against a pale violet background, of which several more fragments remain. Fragment 35 shows a similar background colour and the curling tail of a snake or a snake-like creature. In Roman statuary art Apollo is often accompanied by a snake, as one of the animals that were sacred to him (Simon and Bauchhenss 1984, 438). It may also refer to Python, the serpent that Apollo killed near Delphi, where he subsequently founded his shrine and oracle and the festival of the Pythian Games. In a standing position the figure must have been approximately 80-90 cm high. Fragments of a life-size painting of Apollo with his cither were found in Famars (France). They formed part of an elaborate wall decoration dating from the late second or early third century AD (Belot 1989, 4, 38 Fig. 3; Barbet 2008, 280-282, Fig. 437). In a painting of the same date from Narbonne the god is represented in the form of a marble bust with a quiver on his back and a laurel wreath in his hair (Sabrié *et al*. 1987, 325-326, Pl. IV and VIII; Barbet 2008, 263-266, Figs. 411-412). Apollo is probably also represented in a wall painting from Trier dating from around AD 100 (Steiner 1927, 60-61, Abb. 12; Gogräfe 1999, 138).

The female figure of Panel 20 was of a similar size as the Apollo on Fragments 39-40 and possibly also of divine status. She was depicted against a background of different shades of green that may represent foliage, but no clear patterns emerge from these or other remaining fragments. There is no sign of any clothing. The way she is shown in three-quarter view from behind and the gesture of her right hand both suggest that she was part of a scene that included at least one other figure. The arm of Fragment 50 and the head of Fragment 57 have the same green background, but must have belonged to figures that were substantially smaller. They may derive from a scene featuring Venus or a nymph in the company of Amor. The reconstruction drawing (fig. 5.53) is based on one of the Three Graces in a painting from Pompeii, likewise seen from behind (Catalogue 1973, 37).

Fragment 43 brings to mind the motif of the sacred gate with a tree or branch growing through it, as frequently observed in mythological and so-called sacro-idyllic landscapes in Roman wall painting (Dall'Olio 1989). The reconstruction drawing (fig. 5.54) is partly based on a painting from Pompeii showing Paris tending cattle on Mount Ida and sitting on a rock next to a large gate and tree (Peters 1963, 128, fig. 104; Dall'Olio 1989, 530, no. 51, Fig. 6b). The edge of the spherical object at the bottom of Fragment 43 has likewise been interpreted as the outline of the hair of a person represented at the gate. In the painting from Pompeii the gate and tree are elements of a small rural sanctuary with a statue on a high base in front of the gate. Two staffs lean obliquely against the base, their profiled ends pointing upwards. In such sacro-idyllic landscapes staffs and spears often feature among the votive offerings deposited at the rural sanctuaries, and the staff resting against a tree on Fragment 44 may well have belonged to such a scene (fig. 5.55). Sacred gates, trees and staffs leaning against them were depicted in a semi-circular exedra of a Roman villa in Pully (Switzerland), as part of the decoration of the dado, dating from the first half of the second century (Drack 1986, 20, Abb. 7). Similar sacro-idyllic landscapes of the same date have come to light in Auxerre (Barbet 2008, 215, Fig. 324-325)

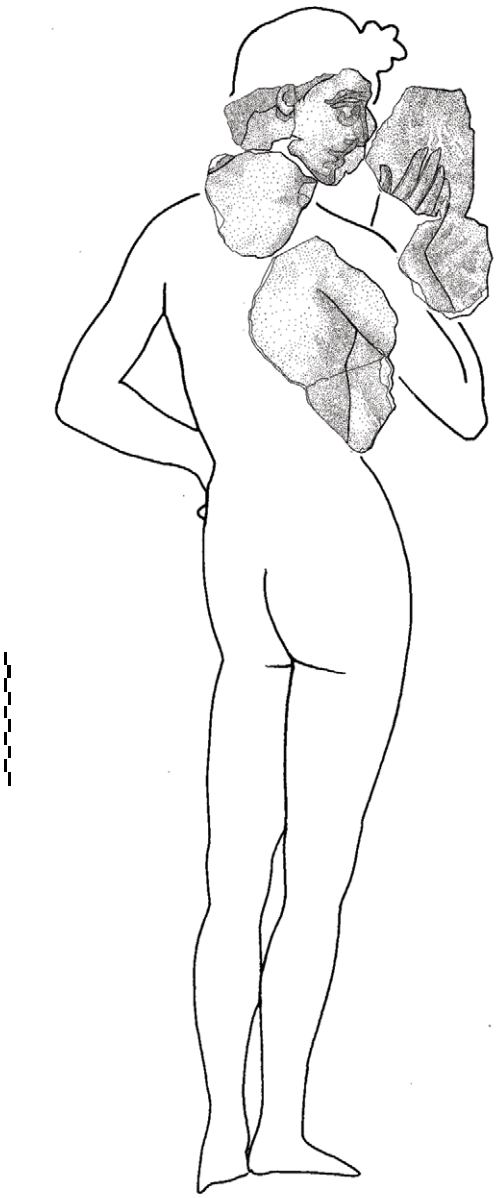


Figure 5.53 Female figure of panel 20

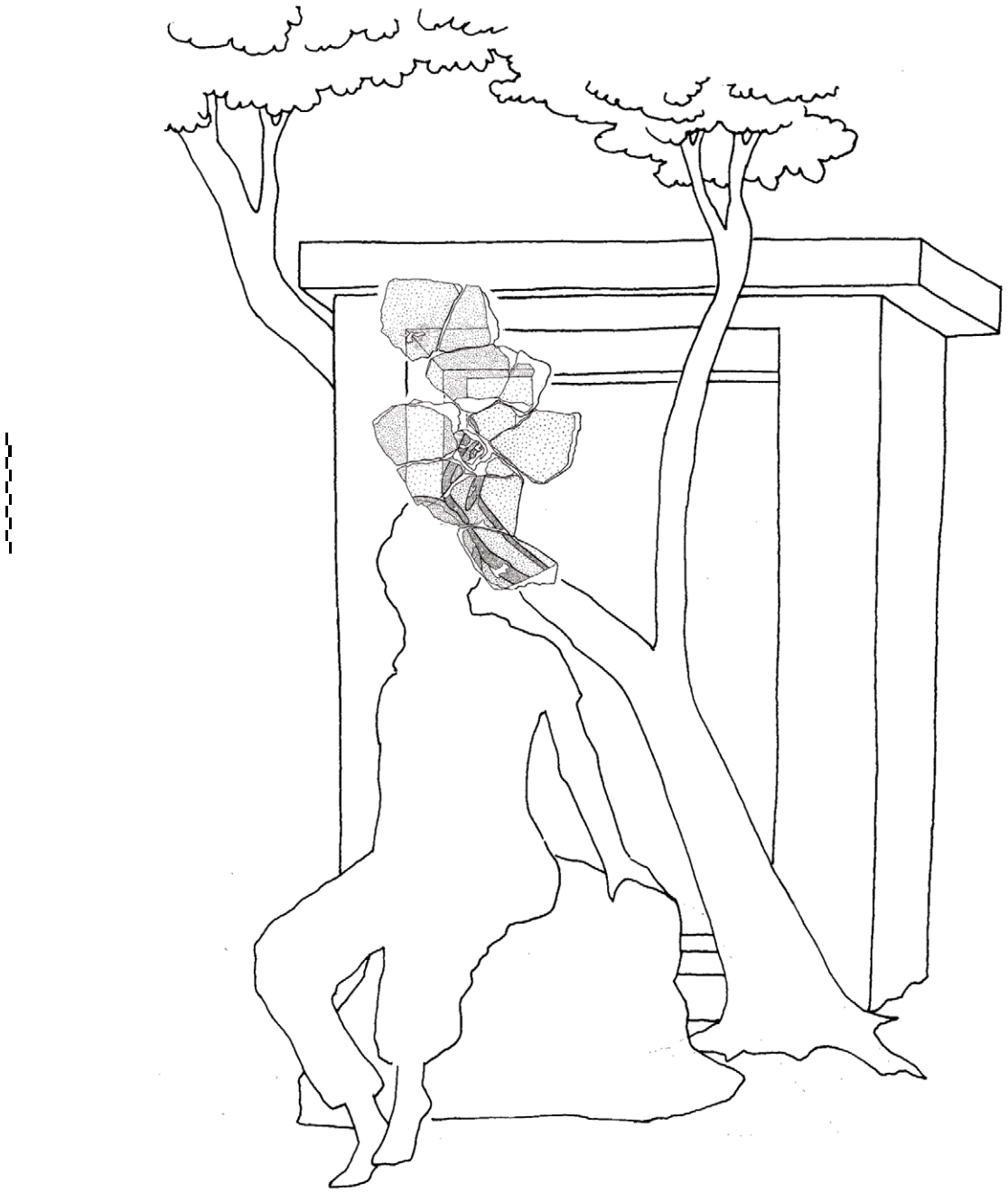


Figure 5.54 Interpretation of fragment 43

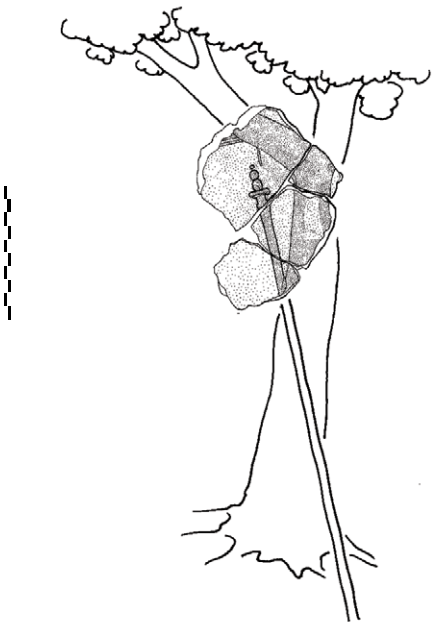


Figure 5.55 Staff resting against a tree

and Strasbourg (Barbet 2008, 250, Fig. 395-396; Dardenay 2012, 151-153, Fig. 11) north of the Alps. The landscape from Strasbourg served as a setting for a scene of the Judgement of Paris. Whether Fragments 43 and 44 were part of a mythological scene or served only as a background for a mythical figure is unknown, as is the figure's identity. If the reconstruction is correct, it is important to note that the scene must have been of a considerable size, comparable to that of the scenes represented by Fragments 39-40 and Panel 20.

The same applies to the head on Panel 18, which appears to be represented in an architectural setting, possibly against a white column or pillar. The pale violet background is similar to that of Fragments 39-40 and 35, but as the figure cannot be identified, no connection can be made or proposed. Nevertheless, like the female figure in Panel 20, he must have been part of a scene featuring one or more other figures, as suggested by the direction of the head and the eyes.

Panel 19 and Fragments 48-49 may have belonged to a landscape painting that featured only wild animals and no figures of human shape. The lion as restored in the reconstruction drawing (see fig. 5.46) is much smaller than the mythical figures just discussed. It probably chased another animal in a scene of the kind familiar from numerous wall paintings and mosaic floors.

5.5.3.4 Fragments of uncertain attribution

Many surviving fragments from the upper zone show parts of figures that cannot with any certainty be attributed to the portrait or mythological scenes presented above. Only a few of them can be discussed here.

As we have seen, Fragment 45 may show the upper part of the buff platform, turned red by heat, and the base of a column. The crossed feet against the bluish background on the right belonged to a small figure, no more than 20 cm high, most probably of a mythical character. The figure that can be made out on Fragment 47 must have been similar in size and most closely resembles the men in the portrait scene in Panel 12. These two figures may both have been children or childlike figures, though they do seem to be rather small for any of the scenes described so far.

The size of the right hand reaching out on Fragment 41 is in accordance with both the portrait scene(s) and the mythological scenes. An attribution to the latter seems more plausible, as the mythological scenes show more evidence of interaction between figures. The body parts (?) on Fragment 46 offer no clues for any attribution.

The heads on Fragments 52-56 may have belonged to either type of scene. The two larger heads on Fragments 52 and 56 are of the same size as those in Panels 18 and 20 and can most likely be assigned to the group of mythological scenes, just like the smaller head on Fragment 57 mentioned above. No suggestions can be put forward for the heads on Fragments 53-55.

5.5.3.5 Fragments with texts

Although it is highly significant that inscriptions were painted in the scenes in the upper zone of the decoration, the scanty remains provide hardly any help in interpreting them. Generally speaking, such texts will have served to explain the scenes to which they were added, such as the name of the *retiarius* in Périgueux or the descriptions of the proceedings in the arena in the villa of Liégeaud near La Croisille-sur-Briance. Due to the very fragmentary state of most wall paintings in the northern provinces, it has in most cases proved impossible to reconstruct the occasional text fragments that have survived. The words *bina manu* on a fragment from a villa in Otford (United Kingdom) must have been part of a quotation from the *Aeneid* of the poet Virgil, included in a depiction of a scene from the poem (Davey and Ling 1982, 146-148; Ling 2007, 76-77). R. Gogräfe (1997, 45, Abb. 33; 1999, 139, 249, Abb. 139) was able to relate the words *tu perfide vecto(r)* in a painting from the villa of Bad Kreuznach to the story of Hercules, Deianira and Nessus. He also discusses the small number of other finds of texts in wall paintings in the northern provinces (Gogräfe 1997, 45-46; 1999, 192-196), that has not increased very much since then. To these may be added a fragment of a figure scene from the *cella* of a temple near Saint-Germain-d'Esteuil (France) that includes the name ABOVNV, probably to be read as APLOVNV (Apollo?) (Barbet 2008, 225-227, Fig. 350-351;

Moormann 2011, 100-102, Fig. 41). The canabae of the legionary fortress of *Brigetio*/Komárom (Hungary) yielded fragments of a decoration featuring framed mythological scenes in the central zone, each figure identified by name or with short captions to the scenes, *e.g. iudicium Pari(dis)*, 'the judgement of Paris' (Baldassare *et al.* 2002, 342-343). A few fragments of a tantalisingly incomplete wall painting from a house in the *vicus* of Schwarzenacker (Germany) show the names of Daedalus and, most probably, Pasiphae (Gogräfe 2002, 255, 258, Taf. 8,2 and 10,2).

In Maasbracht the texts appear to have been applied by four or five different hands and, as the two texts on Fragment 59 suggest, some may have been added at a later stage. They must all have referred to the mythological scenes in the upper zone.

Unless the letters AMO[---] on Fragment 58 formed the beginning of a line of poetry or worldly wisdom, they should most probably be read as the name of the Roman god of love, Amor. As the fragment was part of the platform, the god must have been represented standing or acting on it, similarly to the figures in Panel 16. No other names can be identified with any certainty on the other fragments. If the letters on Fragment 60 indeed refer to the Greek town of Corinth, this might have been the location of the pertinent scene, *e.g.* Theseus slaying the villain Sinis, one of the first of the hero's exploits, but very rarely depicted in Roman art (Neils and Woodford 1994, 930 no. 85, 951). If the letters indicate the place of origin of one of the protagonists, they could refer to Sisyphus, the mythical founder and first king of the city.

The letters PA[---] and [---]AE on Fragments 61 and 59 may very well form the beginning and end of the same word or sentence and can possibly be supplemented to spell the name Pa(siph)ae. In Greek mythology she was the wife of king Minos of Crete, who with the help of Daedalus was able to mate with a bull and bore the Minotaur. Her daughter Ariadne later assisted the Athenian hero Theseus in killing this monster in the labyrinth and fled with him from Crete. He however deserted her on the island of Naxos and eventually married Phaedra, Ariadne's younger sister. Phaedra later fell in love with Theseus' son by an earlier marriage, Hippolytos, a love that proved fatal to both of them. Two scenes from this cycle of myths were depicted in a centurion's quarters in the auxiliary fort of Echzell (Germany) (Schleiermacher 1991), but it must have been represented in more scenes in Schwarzenacker, where the names of Daedalus and Pasiphae have survived (Gogräfe 2002). One might even be tempted to believe that some of the mythological scenes in Maasbracht were similarly linked as part of the same cycle, starting with Pasiphae (Fragments 59 and 61) and ending with Phaedra and Hippolytos (Panel 16).

5.6 Date

Besides on the basis of their archaeological context, the paintings can be dated by comparing them with other wall paintings and with similar figure scenes in stone or in mosaic floors.

The defining features of the decoration are the two tromp l'oeuil platforms in the central and upper zones supporting the various figures peopling the walls of the room. They can be traced back to the platforms bearing illusionist architecture that were introduced in Roman wall painting of the Second Style in the first century BC. In the northern provinces architectural elements were used mostly in a restricted manner, without creating much depth in the decorations. Some remarkable paintings from Narbonne and Famars (France) dating from the late second and early third century AD nevertheless show complex architectural designs. In the decoration of room K in the 'Maison à portiques' in Narbonne-Clos de la Lombarde an elaborate façade rests on a deep platform that runs above the dado. The much plainer tromp l'oeuil architecture of Maasbracht shows more affinity to the *aediculae* on a platform in the central zone of two rooms of the 'Painted House' in Dover (United Kingdom), built around AD 200 (Philp 1989, Fig. 41-42, 50, Pl. I, XXXV-XXXVI). The decorations in Narbonne and Famars featured large figures of a mythical nature. The popularity of large-scale figure scenes or megalographies, often in an architectural setting, in the late second and early third century has been noted in a number of studies (*e.g.* Belot 1985; 1989; Dardenay 2011, 353-355). A fragmentary decoration that was found in the villa of Kerkrade-Holzkuil (Netherlands) in 2002 and has been reconstructed in bare outlines by L. Laken dates from this same period (Laken 2005; 2007; 2010). In the villa's dining room, large mythological (?) figure scenes filled the central zone of the walls, above a dado with carefully executed imitations of marble intarsions. In the province of *Germania Inferior* other megalographies are known from Xanten (Jansen *et al.* 2001, 76-83), Cologne (Thomas 1993, 198-207, 386-387) and Bonn (Horn 1971) and from the temple of Krefeld-Elfrath (Zelle 2006, 93-107). They all date from the middle of the second to the middle of the third century.

The arena and portrait scenes from Maasbracht have already been compared with other representations in wall paintings and mosaic floors and on stone burial monuments. The painted decoration of Yvonand-Mordagne dating from the second or third decade of the second century offers the oldest parallel for the costume of the *venatores* in the central zone (Dubois 1999, 45, *venator* VI). The same costume is still to be found in the mosaic floors of Nennig and Bad Kreuznach from the second quarter of the third century (Parlasca 1959, 36-37, 88-89; Hellenkemper Salies 1984, 74). However, the *venator* in Yvonand-Mordagne does not wear

the one-piece garment represented in Maasbracht and mosaic floors of later date, but a very short tunic that covers the upper part of his breeches. The same applies to the *venatores* in the paintings in the villa of Liégeaud near La Croisille-sur-Briance, dating from shortly before the middle of the second century (Dumasy-Mathieu 1991, 147-153). At the end of that same century the one-piece costume was represented in a mosaic floor in Reims (Stern 1957, 33-35, Pl. 11-14).

Further details of the costumes of the *venatores* in Maasbracht may help to date them more accurately. Meander lines and diamond-shaped patterns both occur in the Bad Kreuznach mosaic, but also in the costumes in the Reims mosaic from the end of the second century (Stern 1957, 35; Hellenkemper Salies 1984, 74). The *venatio* scene in a fragmentary painting from Cologne showing a hunter dressed in a costume decorated with diamonds very similar to those on Fragments 11-14 from Maasbracht was dated between AD 150 and 250 on the basis of its archaeological context. R. Thomas dates it to the second half of the second century on stylistic grounds.

In the portrait scene the Gallic tunics and sandals of the men in Panel 12 may provide some clues. In the funerary sculpture of the Rhine-Moselle region the Gallic costume predominates from the middle of the second century onwards (Rothe 2009, 53, 58, 65). In the third century the Gallic tunics on monuments in the Treveran area were more tightly tailored than before, as noted by Böhme (1985, 432) and Freigang (1997, 299). The tunics of the men in Panel 12 appear to follow this fashion, and indeed differ from the wide-fitting tunic of the man carrying a bundle of writing tablets in a wall painting from Tongeren dating from the last quarter of the first or the first half of the second century. As already remarked above, sandals, initially worn mainly by women and children, became fashionable for men only in the later second century (Van Driel-Murray 2001, 355).

In her study of the wall paintings from Cologne, Thomas (1993, 201-207) discussed the stylistic development of the large figure scenes in a wider context. She assigned the head of Panel 6, and also a large head of a young male from Bonn (Horn 1971, 87), to a transitional period between the classicist style of the Antonine age and the impressionist style of the Severan age. She noted the pronounced shadow lines around the eyes and along the nose and mouth of both heads, a feature that characterises all the heads from Maasbracht and can also be observed on the hands.

The figure scenes from Maasbracht can therefore hardly be dated before the end of the second century. They were most probably painted in the decades around AD 200.

5.7 Technical observations

The figure scenes were painted with great skill and accuracy, but in a fluent, sometimes even careless style. There are no great differences in their execution, and although the texts in the upper zone appear to have been painted by different hands, those hands cannot easily be distinguished in the figure scenes themselves. The largest group of conjoining fragments, assembled in Panel 12, may provide some clues to the working methods of the workshop that executed the paintings. The man in purple was first represented standing on both legs, with both feet turned to the right and parallel to one another. His right foot was later painted over, changing the man's stance into a classical contrapposto, with his left leg carrying the weight of his body and the toes of his right foot touching the ground. The original right foot can still be made out, however, and the man's legs are less far apart than those of the man in white next to him (fig. 5.56). The quality of the new right foot suggests a master painter supervising the work of an apprentice and correcting it when necessary. There is a remarkable difference in the way the fringes on the lower hem of the two tunics have been executed. Those on the purple tunic are evenly distributed along the hem, whereas those on the white tunic appear to have been added in a rather careless way; they are moreover absent in the middle. The white line crossing the fringes on either side is a curious addition.

To add structure to the carnation of naked body parts the paint was applied in zigzag brush strokes, as can be observed on several fragments (fig. 5.57). The same technique was used in a large figure painting in Paris dating from the late second or early third century AD (Eristov and Vaugiraud 1994, 78-79, pl. VII.18-19).

A few samples taken from the Maasbracht fragments were included in a study of pigments used in Roman wall paintings at five sites in the Netherlands (Megens *et al.* 2007). The use of the expensive cinnabar for the colour red was demonstrated only for the decoration featuring figure scenes in Maasbracht, once again underlining its high quality.

5.8 Summary and conclusions

During the 1980s the wall paintings from Maasbracht were presented in a number of preliminary publications. W.J.H. Willems (1982, 15-17), E. Moormann (1983) and W. Peters *et al.* (1985) briefly discussed some of the fragments, but could only touch upon the possible nature of the figure scenes. In a paper for the *3e Colloque international sur la peinture murale romaine* in Avenches (1986) the three groups of figure scenes were defined for the first time (Swinkels 1987), although it was then thought that they once decorated different rooms of the villa, and were possibly also of different dates. The discovery that they must all have belonged to the decoration of one room was presented the following year, in an exhibition that was first shown in Maastricht, and in the accompanying catalogue (Van Dierendonck *et al.* 1987; 1988). A reconstruction drawing

Figure 5.56 Panel 12 showing changes and differences in the execution of the paintings

Figure 5.57 Paint applied in zigzag brush strokes

incorporating the most important of the restored fragment groups was published in 1989 (De Grooth and Quik 1989, 49).[23]

Once they had emerged from the fragments, the portrait and arena scenes played a crucial role in the interpretation of the decoration as a whole. The portrait scene, it was assumed in the first publications (Swinkels 1987, 194; Dierendonck *et al*. 1987, 64; 1988, 30), showed the villa's owner and his family, while the arena scenes were interpreted as referring to a real event in the amphitheatre of *Colonia Ulpia Traiana*/ Xanten, to the territory of which the villa in all probability belonged (Bridger 2008, 607-608, Abb. 426; Derks 2011, 119 n. 70 and Fig. 3). It was thought that, as a member of the ruling elite, and on the occasion of his holding office as a magistrate in the colony's administration, the owner of the villa estate acted as a sponsor (*editor*) of gladiatorial games (*gladiatorium munus*) that also included an animal hunt (*venatio*), and commissioned a wall painting commemorating and demonstrating his achievements in the private space of

his country house. This interpretation was inspired by the study of North African Roman mosaics by Dunbabin (1978) and by the first publication of the wall-painting fragments from the villa of Liégeaud near La Croisille-sur-Briance (Dumasy 1983). The scale of the figures of gladiators and *venatores* and their prominent place in the central zone of the wall were important arguments for considering the arena scenes in Maasbracht as being commemorative of a real event, in spite of the absence of epigraphic evidence as in the case of the mosaic of Smirat (Tunisia) (Dunbabin 1978, 67-69) and the paintings in the villa of Liégeaud. The portrait scene in the upper zone seemed to confirm this interpretation. The people portrayed on the upper platform and the gladiators and animal fighters on the lower one both as it were shared the same depth of space that the painters had created on the walls of the room, suggesting that the two scenes were in some way interrelated.

The conclusions drawn in the 1980s can still be upheld more than 25 years later. Although they had been only summarily published, the figure scenes from Maasbracht have been included and discussed in a number of studies. According to R. Thomas (1997; 1998) they exemplify a development in the themes chosen to be depicted and incorporated in the wall decorations of private residences in the Roman world. Whereas these themes were initially predominantly derived from Greek mythology, around the end of the first century AD new themes that are fully Roman in character began to make their appearance. Scenes from the arena and the circus, with no predecessors in Greek art, feature most prominently in this development, which took place in the Roman provinces in particular. Here, Thomas (1997, 144) sees a newly awakened "Selbstbewusstsein des römischen Bürgers" and she regards the paintings from Maasbracht as a clear example of the self-conscious "Selbstdarstellung der Provinzbevölkerung" that was to become increasingly evident in the course of the second century AD. In her opinion (Thomas 1998; 2010), the new Roman themes became very popular because they related directly to the personal life and experiences of the people who commissioned the paintings and used them as a means of expressing their social achievements and giving shape to their identity and position in Roman society:

> "In den Provinzen lassen sich die Villenbesitzer in den Wanddekorationen ihres Hauses seit dem späteren 2. Jahrhundert in zunehmendem Maße als großzügige Stifter öffentlicher Spiele oder öffentlicher Bauten oder als Empfänger kaiserlicher Ehrungen darstellen." (Thomas 2010, 11)

Dumasy (2004) likewise identified two main themes in the wall decorations of Roman Gaul that were used for the sake of 'self-celebration' and to express social status: public and religious ceremonies and, more frequently, the Roman games. Nevertheless, she agrees with Y. Dubois (1999, 59-64) that some caution is in order in considering all arena scenes as commemorative of real events. Many may only refer to the games in a more general way, underlining the villa owner's commitment to Roman values.

In an extensive critical study of a large number of mosaics and wall paintings featuring scenes from the amphitheatre, Papini (2004) contends that such representations primarily served to satisfy the *voluptas spectandi*, the desire to be entertained by a vibrant spectacle, and were intended mainly as conversation pieces, offered by a host to his guests. Although he does not preclude the possibility that they also commemorated the sponsorship of a *munus*, he believes that in far too many cases they have indeed been interpreted as "Erinnerungsbilder". In his view, there are only very few instances in which textual evidence forming part of the representations leaves no room for doubt. He further cites the paintings in the villa of Maasbracht as an example of the combination of different themes in a single decoration (Papini 2004, 92, 108-110). He warns against seeking too much meaning in such combinations, and refers to the curious mixture of images assembled and used by the fictitious upstart Trimalchio to support and express his cultural pretensions.

Dumasy, Dubois and Papini are certainly right in warning against overinterpreting the available evidence, scanty as it often is. In Maasbracht only a minor part of the decoration featuring figure scenes has survived. Even so, in a domestic setting the portrait scene from Maasbracht appears to be unique, and must have been specially commissioned by the villa's owner. He must also have deliberately chosen to combine this portrait scene with the scenes from the amphitheatre. It is therefore only logical to assume that they were interrelated, and the wish to commemorate a *munus* sponsored by the villa owner offers a very plausible explanation.

Derks (2011, 127) tried to put the writing tablet in the portrait scene into further perspective. Assuming that the villa owner played an active role in the administration of his *civitas*, he probably also had a residence in its capital, Xanten. A text in the *Digestae* (50.16.203) provides a legal definition of somebody's *domus* or residence, and explicitly includes an archive of *tabulae* used for bookkeeping. If the writing tablet indeed refers to the business administration of the villa's proprietor, Derks concludes, it may also suggest that Maasbracht was his main residence. This would certainly be in accordance with the extraordinary nature and quality of the decoration featuring figure scenes in the villa.

As it is virtually impossible to identify the mythological scenes in the upper zone, their presence in the decoration can only be explained in the most general terms. It is impossible to say whether the chosen scenes bore any relation to the events in the amphitheatre or to the people portrayed in the portrait scene. Assuming that the latter was restricted to

one of the walls, the mythological scenes may have merely completed the decoration of the upper zone on the other walls, and they may have been arbitrarily chosen from the repertoire available to the painters. Nevertheless, they must have contributed to the self-representation of the villa owner. While the other scenes will have served to express his status and social achievements, the mythological scenes with their explanatory texts, or perhaps even quotations from literary classics, will have testified to his intellectual and cultural baggage. As such, they too must have formed part of the programme conceived for the decoration as a whole, which most probably once adorned a large dining room in the villa, where the master of the house would receive and entertain his guests.[24]

Notes

1 The height of 90 cm assumed for the upper zone is based on the height of the figures that can be associated with the platform.

2 Vallon: Rebetez 1992, 20-21, Abb. 34-35, 28, Abb. 44; Yvonand-Mordagne: Dubois 1996, 119-120, Figs. 17-18; Reims: Stern 1957, Pl. XIV, nos. 31, 33 and 35; Nennig: Parlasca 1959, Taf. 37, no. 3, Taf. 38, no. 1.

3 *E.g.* the *thraex* and *murmillo* in Bad Kreuznach: Parlasca 1959, Taf. 89, no. 4.

4 Cf. the diamond pattern on the legs of one of the *venatores* in Reims: Stern 1957, Pl. XIV, no. 29.

5 Cf. the spears placed horizontally above and beneath a *venatio* scene in a mosaic from Thelepte: Dunbabin 1978, 69-70, Pl. XXIII, no. 55.

6 For the various gladiator types and their equipment see: Junkelmann 2008, 96-128.

7 Cf. the masks and glass jars hanging from a coffered ceiling in a decoration in the Casa del Criptoportico in Pompeii: Baldassare *et al.* 2002, 108-113.

8 Zliten: Hönle and Henze 1981, 33, Abb. 8; Junkelmann 2008, Abb. 141-142. Pompeii, Tomb of Umbricius Scaurus: Hönle and Henze 1981, 43, Abb. 20-21. Pompeii, relief from a tomb in the Porte Stabiana necropolis in Pompeii: Hönle and Henze 1981, 46, Abb. 46; Junkelmann 2008, Abb. 204. Chieti, reliefs from the tomb of Lusius Storax: Hönle and Henze 1981, 47, Abb. 23-25; Junkelmann 2008, Abb. 48-50.

9 Hönle and Henze 1981, Abb. 8; Junkelmann 2008, Abb. 141-142. The date of this mosaic is a matter of debate, but a date at the beginning of the second century now seems to be generally accepted. See: Ville 1965.

10 R. Gogräfe recently identified a fragment of a third decoration showing large-scale gladiatorial combats, probably of late Severan date, among the paintings already published from the villa of Bad Kreuznach (Gogräfe 1997, 39-41, 98 Abb. 90). See: http://amphi-theatrum.de/1409.html. I was not able to consult Hornung and Gogräfe 2011.

11 Dubois 1999, 53 n. 40, questions the identification of the animal hunters in Maasbracht, pointing out that the *paegniarii* of the Nennig mosaic are similarly dressed. Although the presence of *paegniarii* in Maasbracht cannot be ruled out, the fragments showing parts of spears and leopard skin must imply that *venatores* were depicted.

12 Kolling 1975; Cüppers *et al.* 1983, 58, 60, 66; Schumacher 1992; Junkelmann 2008, Abb. 145. I was not able to consult Henz and Schumacher 1998.

13 See the references in note 12. The paintings from Mechern are on display in the Museum für Vor- und Frühgeschichte in Saarbrücken.

14 For a herm with the torso of a satyr in the dado of a wall painting from Cologne see Thomas 1993, 320, Abb. 137.

15 Wild (1985, 371) suggests that fringes on tunics may be a regional phenomenon, represented on the monuments from Metz and Arlon, but not in the lower Moselle valley.

16 Cf. Gogräfe (1997, 128 and Abb 96) for the use of the same colour purple for the clothing of a human figure on wall painting fragments in the villa of Bad Kreuznach.

17 See the drawing in Wild (1985, 369, Fig. 1) and the numerous illustrations in Freigang (1997) and Rothe (2009).

18 Cf. the man on a wagon on a monument from Arlon: Freigang 1997, Taf. 29 Trev 105,1.

19 Bronze ink pens have been found in Nijmegen (Hubrecht 1967, 29 no. 61; Museum Het Valkhof inv.no. 3.1948.5), Tongeren (Schuermans 1874), Cologne (Von Boeselager 1989, 227) and Frechen (Weerth 1882, 96-97).

20 Cf. the companion of Hippolytus, wearing hunting boots and holding the reigns of a horse, in a painting from Pompeii (Naples Museo Archeologico Nazionale 20620) showing the farewell scene (http://ancientrome.ru/art/artworken/img.htm?id=1805).

21 Hera: Naples Museo Archeologico Nazionale 119691, from Pompeii (Kondoleon 2011, 66). Amphitryon: Pompeii, Casa dei Vetti (Cerulli Irelli *et al.* 1990, Taf. 56). Actor: Naples Museo Archeologico Nazionale 9019, from Herculaneum (Ling 1991, 161, fig. 173; Mühlenbrock and Richter 2005, 212 and Kat. 8.5).

22 Cf. the many examples of profiled furniture legs with pieces of fabric or clothing hanging down next to them in the mythological scenes from Pompeii gathered by Hodske 2007, *e.g.* Taf. 17, 18.4, 104.2, 122.2, 129.4, 141.2, 175.3, 192.3-4 and 197.2 and 4.

23 The paintings from Maasbracht were also briefly presented in a picture calendar (Swinkels 1988). Frequin-Delmaar (1989) can best be ignored.

24 In 1982 Willem Willems entrusted the study of the wall paintings to Professor W.J.Th. Peters of the Catholic (now Radboud) University of Nijmegen, who further engaged Robert van

Dierendonck and the present author. After his retirement in 1984 Peters retreated from the project, but remained very interested in its further progress. In Nijmegen many colleagues and students helped in sorting out and assembling the fragments, of whom Richard de Kind, Jennes de Mol and Eric Moormann deserve to be specially mentioned. In 1987 the restoration of a number of fragment groups (Panels 1-20) was funded by the provincial authorities of Limburg and carried out in the facilities of the Rijksdienst voor het Oudheidkundig Bodemonderzoek in Amersfoort by Esther Sluys (Sluys 1987), under the supervision of Ronny Meijers. Later that year those panels were presented to the public in the exhibition 'Villa rustica' in the Bonnefantenmuseum in Maastricht. Career moves brought the preparations for the publication of the wall paintings to a halt and they could only be resumed by the present author in 2012. Thanks to funds made available by the provincial authorities of Limburg, line drawings could now be made by René Reijnen (Projectbureau Auxilia, Radboud University). Rien Polak (Projectbureau Auxilia) provided a digitised version of the reconstruction drawing. Thijn van de Ven (Museum Het Valkhof, Nijmegen) was responsible for the photographs. In 2014 Jo Kempkens and Ton Lupak (Restaura, Haelen) prepared an additional number of fragments (10, 12, 16, 39-40, 52, 55, 58, 59 and 61) for presentation in the Limburgs Museum in Venlo, where the most important fragments and fragment groups are now on permanent display. Susan Mellor translated my Dutch text. She and Maryan Schrover corrected my English. For various kinds of help and support I would like to thank Alix Barbet, Leen Dresen, Marjorie de Grooth, Gemma Jansen, Jo Kempkens, Annelies Koster, Sjeng Kusters, Lara Laken, Ton Lupak, Ronny Meijers, Henny de Water and Stephan Weiss-König. My greatest thanks go to Robert van Dierendonck, who cooperated with me in the early years of the project. The joy of working together on the wall paintings of Maasbracht brought light in even the darkest cellars and attics.

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6 Animal remains and bone artefacts

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6.1 Introduction

The excavations at the the Roman villa of Maasbracht in 1982 revealed a large amount of animal remains, as well as several animal bone artefacts. The majority of the faunal assemblage had already been analysed in 1988 as part of Laura Kooistra's doctoral dissertation *Borderland Farming* (Kooistra 1996). However, the researchers involved did not have access to all excavated remains.

The present study focuses on the whole faunal assemblage, thus including the animal remains and artefacts that were not incorporated in the original analysis. In total, the villa and surrounding features yielded nearly 12,000 animal remains and 11 artefacts[1].

6.2 Research methods

6.2.1 Previous research – Collecting methods and identification

The animal remains were partially excavated by hand and partly by sampling. The samples exclusively originate from the cellar and were sieved with a variety of mesh sizes, the smallest of which measured 1.0 mm (see also Kooistra and Laarman 1996, 262). According to the data from 1988, however, the animal remains originate from the 2.5 mm and 5.0 mm sieves.

These original data were recorded on handwritten forms and refer to taxonomic identification, skeletal elements and their fragmentation, and the age and the sex of the animals. Apart from the number of specimens, also the weight was registered. However, skeletal fragments from the same animal species within a specific find number were weighed together; the weight per specimen was not documented. Measurements were obtained in accordance with Von den Driesch (1976).

6.2.2 New research – Additional data

Since the initial analysis of the animal remains, progressive insights and increased analytical experience of the researchers involved have led to more possibilities with regards to zooarchaeological identification. However, a reanalysis of thousands of specimens was not feasible within the framework of this current study. Neither could the entire sieved assemblage be reassessed, due to untraceable sample sources. Fortunately, some remains of the sieved assemblage were secured for further examination or exhibition purposes. The original zooarchaeological identifications of these remains, as well as the hand collected specimens from the initial analysis, were subjected to random checks. In addition, analysis was carried out of the material that has not been studied yet.

This analysis was built on the previously applied methods, with only some adjustments concerning age determinations based on teeth. The dental formulas were recorded, as well as the TWS (tooth wear stages) and, where possible, the MWS (mandible wear stages) according to Grant (1982). As a result, the tooth recording now correspond better with current Dutch standards.

The zooarchaeological research was carried out by E. Esser and F.J. Laarman. The artefacts were analysed and described by the latter and were interpreted by M.J. Rijkelijkhuizen. All of the data, including the data from the handwritten documents, were recorded in a digital database.

6.2.3 Results and interpretation

Because the majority of animal remains had already been analysed and interpreted (see Kooistra and Laarman 1996), it was decided to ensure the digitalisation and disclosure of the zooarchaeological data as well as to exclusively focus on research topics that have not yet been discussed in the initial study. Particular attention was paid to the contents of the cellar.

6.3 General results

Partially as a result of elaborate sampling thousands of animal remains were collected. The large quantity of remains is also due to the high amount of encountered vermin remains and fish scales (table 6.1): the latter category accounts for nearly half of the entire faunal assemblage.

Although the bone remains are reasonably well preserved, they have also been subjected to considerable leaching. This is expressed by the low average weight of the bone fragments (7.4 grams, with the exception of the vermin assemblage). As a result, some bones are very fragile and tend to break into pieces when handled. Consequently, the skeletal elements are rather fragmented. About 50% of the medium- and large-mammal remains do not represent

Animal group	n	g
human	2	–
mammals (mainly meat-producing mammals)	1,638	12,160.0
mammals (vermin)	1,468	914.0
mammal indet.	71	57.0
birds	515	–
fish (skeletal elements)	1,901	–
fish (scales)	5,245	–
shellfish	138	–
amphibians	870	–
Total	**11,848**	**13,131.0**

Table 6.1 Overview of the animal remains; n = NISP (number of identified specimens), g = weight (gram)

more than a third of the original skeletal element; 31% of the specimens represent half of it, and 19% more than the half of the skeletal element in question. Of the last category 16% exists of nearly complete specimens; the majority represents dental elements and compact bones. Isolated teeth cover almost 9% of the medium- and large-mammal assemblage.

6.4 The artefacts

A total of eleven (fragments of) artefacts were retrieved from the faunal assemblage. Ten of these, namely five needles, two disc-shaped game pieces, two skates and a semi-finished product or waste fragment, are made of bone. These artefacts will be further discussed in the sections below. In addition, a fragment of an ivory ring or bracelet was identified: this rather unique object will be discussed more elaborately.

The needles and game pieces originate from the cellar; the remaining artefacts were found in a variety of other features.

6.4.1 Needles

One of the needles is classified as a hair needle (fig. 6.1 left). This specimen is more or less complete and has a knob at one end (find number 5-12-3D). The needle is 90.0 mm long and has a maximum diameter of 3.4 mm. The maximum diameter of the knob is 6.1 mm. The shank tapers more abruptly to a point than observed on the other specimens. Presumably it was sharpened for a second time after it was broken off during use. The assemblage also includes an isolated needle point, which may be the hair needle's original one. This fragment is 20.0 mm long and has a maximum diameter of 2.8 mm.

Of another specimen the specific needle type cannot be determined as only the point and part of the shank have survived. This specimen consists of two fitting fragments (find numbers 5-11C-2D and 5-11C-2B) and has a total length of 71.0 mm. The maximum diameter is 2.7 mm.

The three identified sewing needles once contained a narrow, elongated slot. One of these needles is complete, of the other two only a fragment has been preserved. The complete needle (find number 5-11-2B) is 117.0 mm long and has a maximum diameter of 3.6 mm (fig. 6.1 right). The head of the needle is flattened and expands to a width of 5.7 mm. The elongated eye is 8.9 mm long, 1.0 mm wide. The eye was made by perforating opposite sides of the needle with a small round grinding stone.

The second sewing needle (find number 5-12-C) is broken off at both ends, but the base of a narrow, slot-shaped eye is still just visible. The fragment has a greatest length of 99.5 mm and a maximum diameter of 4.2 mm. The head of the needle is flattened; the eye is 1.0 mm wide.

Of the third specimen (find number 5-13-2D) part of the shank and part of the slot-shaped eye has survived. This fragment has a greatest length of 62.0 mm and a maximum diameter of 3.6 mm. The needle has a flattened head. The eye is 1.0 mm wide and has a minimal length of 11.5 mm.

Figure 6.1 Three needles, scale 1:1 (photo M. Hemminga)

Similar hair- and sewing needles are known from all over Europe and probably occurred from the 2nd to 5th century AD (MacGregor 1985).

6.4.2 Game pieces

The identified game pieces are both disc-shaped but not identical. The smallest of the two discs (find number 5-11D-2B) is 1.8 mm thick, has a diameter of 21.0 mm and contains a small circular hole in the centre. The obverse side of the disc displays concentric lines caused by turning.

The other disc (find number 5-11-2C) has a diameter of 24.4 mm. It has a flat reverse side while the obverse surface is countersunk. The disc also has a turned profile.

Bone game pieces are known from the entire Roman Empire, with different varieties occurring together in the same time period.

6.4.3 Bone skates

Two bone fragments are likely the remnants of bone skates (both find number 5-4-2C). The first skate is made from a left cattle radius. The proximal (upper) end of the bone has been trimmed. This fragment has a greatest length of 164.0 mm; the greatest width is 76.5 mm.

The other skate is made from a right radius of a horse and misses both ends. However, on the most distal part of the remaining fragment some cut marks can still be observed; the other end displays a chop and part of the gliding surface.

6.4.4 Semi-finished product or waste

One bone fragment from a large mammal (find number 20-4-7) is classified as a semi-finished product or waste. Chop marks can be observed on various sides of this specimen, which is bar-shaped, 70.0 mm long and has a maximum diameter of 11.5 mm. Both of the object's ends are missing.

6.5 An ivory ring or bracelet

The ring or bracelet probably had a diameter of 80.0 mm, but the remaining segment was 40.0 mm long and 5.8 × 6.7 mm thick (fig. 6.2). One side was sawed through. The ring or bracelet is made of elephant ivory.

Figure 6.2 The ivory ring or bracelet (photo Marloes Rijkelijkhuizen)

Ivory rings and bracelets are known from the Bronze Age in Spain (Altamirano García) up to the Early Medieval period in Western Europe. So far, the Spanish rings are the only known prehistoric examples and appear to bear no relation to the late Roman and Early Medieval rings.

6.5.1 Bracelets from the late Roman period

Examples from the late Roman period are more abundant. Rings are mostly found in graves, in both cremation and inhumation. They are usually interpreted as bracelets on the basis of their location within the inhumation. The reason why these bracelets are mainly found in graves, probably lies in their fragile nature: these objects need a closed context to survive of the ravages of time (Biro *et al*. 2012). The bracelets usually contained a metal fastening mechanism. Apart from ivory, bracelets were also made from other materials, such as bone, antler or metal. Antler bracelets were crafted from slender, bent strips (Biro *et al*. 2012).

Bracelets are found at various locations within the borders of the Roman Empire, for example in funerary context in Aquincun (within the Roman province Pannonia, Hungary). A decorated specimen from this location had deliberately been broken in two, with one half probably serving as a *memento* for the next of kin. In the province of Pannonia bone, ivory and antler bracelets are found, as well as metal specimens. The bracelets were worn by both women and children. The children's bracelets have a diameter of ca. 37 to 40 mm; the bracelets for the adults are 66 to 85 mm in diameter (Biro *et al*. 2012).

From Virunum (Austria) only one fragment of an ivory bracelet is known; this specimen has a diameter of *c*. 70 mm (Gostenčnik 2005). Also in Switzerland bracelets were found (Deschler-Erb 1998); excavations in Pfyn yielded not only ivory bracelets, but also locally produced antler imitations (4th century AD, Deschler-Erb 2005).

In Colchester five bone bracelets with metal clasps were excavated, one of which had a diameter of 57 mm (Crummy 1983). In England bracelets made of bone, including those from the late Roman Period, are more numerous than ivory ones. These bangles usually have a diameter of roughly 70 mm (MacGregor 1985). In the Netherlands a decorated bracelet was found in Maastricht. It was dated to the end of the 4th century AD (Dijkman and Ervynck 1998).

A 2nd-century cremation excavated in Winchester produced the oldest known Roman ivory bracelet. This specimen had a maximum diameter of 76 mm. At the same location also bracelets made from other materials, such as bone and jet, were found. On the mainland of Northwestern Europe bracelets appear to occur from the 4th century onward (Theune-Großkopf 1996; Trzaska-Nartowski and Riddler 2013). Most of these rings, however, hardly contain any specific features and therefore the finds are in themselves difficult to date.

Ivory artefacts from the Roman Period are reasonably rare north of the Alps and in the Roman provinces. Here, ivory was not used for the manufacture of artefacts. Ivory artefacts that date to the Roman Period can therefore be classified as imports from more southern regions (Deschler-Erb 2005; Biro *et al*. 2012).

6.5.2 Early Medieval rings

The Early Medieval rings are generally larger and are interpreted as components of purses. Several rings were found in combination with decorative bronze discs; they possibly formed the edge of these ornaments, which were worn on the waist together with other decorative belt-attributes (MacGregor 1985; Theune-Großkopf 1996). The rings can reach a diameter of 150 mm or more and are mostly dated to the 5th/6th century AD. Like the above discussed bracelets, they are mostly found in funerary contexts. Excavations at Heidenheim-Großkuchen yielded an ivory ring from the second half of the 6th century (Theune-Großkopf 1996). In England several dozens of ivory rings are known from graves, for example from cremations in Spong Hill. This location also yielded several antler rings (MacGregor 1985; Trzaska-Nartowski and Riddler 2013). In an Early Medieval grave in Maastricht an ivory ring with most likely a bronze fastening mechanism was found (Dijkman and Ervynck 1998). Another example from the Netherlands is an ivory ring from an Early Medieval women's grave in Borgharen (van der Jagt *et al*. 2014).

6.5.3 Find context of the ivory ring

The ring from Maasbracht was one of the finds (number 50-5-4) excavated from a pit that was located ten metres north of the villa, on the edge of the plateau. The ring is made of elephant ivory and is not locally manufactured but imported as a finished product. The ring is incomplete and does not seem to be decorated. The dimensions of the ring are rather similar to those of late Roman bracelets, which are often found in funerary contexts. The ring was deliberately sawed through, possibly to install a metal fastening mechanism. However, the object could also be damaged for ritual purposes. Grave goods often display such ritual damage, in which part of the object was removed to stay with the next of kin.

The grave-gift scenario agrees with the idea that the context of the ring, which also contained a shield boss (*umbo*), a spearhead and a belt chain (see chapter 8), once harboured the grave of a 'warrior'. Remarkably, this 'warrior' dates to the Iron Age while the ring is supposed originate from the late Roman period. No parallels are known from the Iron Age.[2]

The pit also contained unprocessed animal remains (table 6.2). These remains might have been shovelled up when the grave was dug, but could also originate from animals that served as a grave gift. In cremations the use of meat of cattle, pig and sheep as a burial gift is a well-known phenomenon (see *e.g*. Cavallo and Hiddink 2003). Also (parts of) horses served as burial gifts, as has been demonstrated by the discovery of several horse remains in the 'royal' grave in Oss (Jansen and Fokkens 2007, table 6.1). However, all these remains were burnt, while the faunal remains from the pit in Maasbracht do not show any signs of burning.

Species	n	g
Bos taurus	7	272.0
Equus caballus	1	37.0
Ovis aries/Capra hircus	2	13.0
Canis familiaris	1	4.0
elephantidae	1	2.0
large mammal	5	23.0
medium mammal	4	2.0
Total	**21**	**353.0**

Table 6.2 Animal remains from the Iron Age 'warrior grave' (find number 20-5-4); n = NISP, g = weight (gram)

6.6 The cellar

Most of the animal remains were found in the cellar. Because the fill of the cellar is elaborately discussed in chapter 2, only issues of interest for the analysis of the animal remains will be described in this section.

Within the fill of the cellar, several levels can be distinguished. From top to bottom these levels comprise: a top fill layer with which the cellar was covered, consisting of stones and boulders mixed with waste; two layers of demolition rubble, of which the upper one consists of mortar, façade material, plaster, etc. (infill B, fig. 2.20) and the lower one of various burnt remains (infill A, fig.2. 20); and the so-called 'layered cake' (fig. 2.20).

The two rubble layers were generated after the cellar fell out of use. Within the 'layered cake' *in situ* finds were found that can be attributed to the cellar's final phase of use. For this phase in particular, it is appropriate that the cellar was excavated in quadrants. These quadrants are assigned the following codes:

A= SE quadrant
B= SW quadrant
C= NW quadrant
D= NE quadrant

The boundary lines between the quadrants follow the cellar stairs in an ESE-WNW direction and in a direction perpendicular to the former.

6.6.1 The top fill

As the finds from the top fill can originate from virtually everywhere, they are deemed of limited interest to this study. Table 6.3 provides an overview of these finds. In the initial publication they have been incorporated under the heading of 'top fill' and 'rubble' (Kooistra and Laarman 1996, table 38).

6.6.2 The rubble layers

Table 6.3 also provides an overview of the animal remains from the rubble layers as presented in Kooistra's publication (Kooistra and Laarman 1996, table 38) as well as from the current analysis. The most interesting finds from the rubble layers are the skates. They both were found in the upper layer (infill b). In the Netherlands, skates are generally presumed to occur from the Early Medieval period onwards; the cellar, however, had already filled up in the Roman period, possibly at the beginning of the 3rd century AD (see chapter 2 and 9).

It is not the first time skates with an apparent Roman date are found in the Netherlands. In Wijk bij Duurstede (De Geer), for example, two skates were retrieved from late Roman pits. However, radiocarbon analyses demonstrated that at least one of the skates was of Merovingian origin (Thach and Lauwerier 2010). Unfortunately no attention was paid to the skates that were found in Roman contexts during the excavation of *Forum Hadriani* in Voorburg. It can therefore not be determined whether they represent Roman finds or contaminants (M.J. Driessen, pers. comm.).

	Kooistra and Laarman 1996, table 38				**This volume**							
	topfill		**rubble (a and b)**		**top fill***		**infill b**		**infill a**		**Total**	
Species	**n**	**g**	**n**	**g**	**n**	**g**	**n**	**g**	**n**	**g**	**n**	**g**
Bos taurus	15	395.0	23	834.0	2	116.0	21	419.0	15	694.0	38	1229.0
Equus caballus	2	237.0	-	-	1	64.0	1	173.0	-	-	2	237.0
Ovis aries/Capra hircus	20	38.0	67	190.0	2	6.0	24	52.0	61	170.0	87	228.0
Sus domesticus	25	161.0	37	327.0	2	7.0	28	178.0	31	303.0	61	488.0
Canis familiaris	2	18.0	2	2.0	1	11.0	1	7.0	2	2.0	4	20.0
Felis catus	-	-	3	5.0	-	-	1	2.0	2	3.0	3	5.0
Lepus europaeus	3	4.0	5	6.0	-	-	4	6.0	4	5.0	8	11.0
large mammal	15	69.0	19	94.0	6	20.0	21	83.2	10	64.0	37	167.2
medium mammal	67	85.0	101	128.0	-	-	91	117.0	77	96.0	168	213.0
mammalia	-	-	-	-	2	0.3	-	-	3	0.4	5	0.7
Gallus gallus dom.	5	-	5	-	-	-	5	-	5	-	10	-
Anas platyrhynchos	-	-	-	-	-	-	3	-	5	-	8	-
Anser anser	2	-	6	-	-	-	-	-	-	-	-	-
Columba sp.	2	-	-	-	-	-	2	-	-	-	2	-
Scolopax rusticola	1	-	3	-	-	-	1	-	3	-	4	-
Coturnix coturnix	-	-	-	-	-	-	-	-	1	-	1	-
aves	11	-	1	-	2	-	-	-	-	-	2	-
cyprinidae	-	-	-	-	-	-	1	-	1	-	2	-
Esox lucius	1	-	-	-	-	-	1	-	-	-	1	-
Perca fluviatilis	-	-	-	-	1	-	-	-	-	-	1	-
pisces	-	-	-	-	-	-	-	-	1	-	1	-
pisces, indet.	2	-	1	-	-	-	11	-	-	-	11	-
amfibia	-	-	1	-	-	-	-	-	1	-	1	-
Total	**173**	**1007.0**	**274**	**-**	**19**	**224.3**	**216**	**1037.2**	**222**	**1337.4**	**457**	**2598.9**

Table 6.3 Animal remains from the top fill and rubble layers (infill a and b); * = finds from level 2 and 3, n = NISP, g = weight (gram)

In Germany and Austria, on the other hand, several skates were found that date to the Roman Period (Küchelmann and Zidarov 2005, figure 5).[3]

Worth mentioning is the absence of burnt remains in the lower rubble layer (infill a), while the cellar did yield material that was damaged by fire, such as burnt plasterwork, loam, and wooden planks (see chapter 2). The origin of this burnt material is unclear, but evidently the fire did not reach the kitchen or storage room: had that been the case, one would also expect to find burnt animal bones. Only a metapod from a hare (*Lepus europeus*) was burnt, but this could be the result of roasting the animal on a spit.[4]

During the present study, quail (*Coturnix coturnix*) was added to the species-list of the lower infill. Quail remains are rarely found in archaeological contexts; after all, this animal was considered a luxurious consumption bird. In the Netherlands, Roman quail-finds are only known from the Fortuna Temple located in Nijmegen (Zeiler 1997). In Maastricht a quail skeleton was found in a sunken hut, under a small *Terra sigillata* bowl that was placed upside down. This find dates to ca. 400 AD and can be of either late Roman or Merovingian origin (Dijkman 1991).

6.6.3 Animal remains from the 'layered cake' layers

The 'layered cake' is possibly an accumulation of silt layers that were gradually deposited under a suspended plank floor as a result of regular cleaning activities (see chapter 2.2.1.6). They contain more animal remains than the rubble layers; over 11,000 in total. This large quantity is partly due to the sieving of the 'layered cake' layers. In Kooistra's dissertation, table 38 (Kooistra and Laarman 1996, 263) clearly demonstrates the difference between the composition of the manually collected material and the sieved samples.
The manually collected material originates from the entire 'layered cake' fill, while the sieved samples represent approximately a quarter of the 'layered cake' layers.
The samples originate from 19 different locations, and these are representative of the fill of the cellar.

During the post-excavation analysis, it appeared that the ceramics were concentrated at specific locations, more or less in the middle and in the corners of the cellar (see also chapter 2.2.6). Perhaps, the spatial distribution of the animal remains can provide information about the way in which animal food was stored in the cellar. Like the ceramics, they too are probably still *in situ* prior to the excavation.

If, however, the 'layered cake' layers are indeed the remnants of cleaning activities, there is little point in analysing the distribution of the smallest finds. A more sensible approach would be, to focus on the large mammal remains, especially since these remains represent the food itself.

Furthermore, it should be kept in mind that although the 19 samples could provide a clear indication of the composition of the assemblage from the cellar, they might not be representative for the spread of the material. Table 6.4 demonstrates that the manually collected animal remains mainly originate from the C quadrant, while the remains from quadrants B and D were mostly retrieved from the sieve residues. Focusing on the mammal-, bird-, and fish remains separately does not alter this pattern; apparently, the collection method greatly influenced the generated picture of the distribution pattern.

Because the animal remains from the cellar were excavated and documented per artificial excavation level (3 in total) and not per 'layered cake layer' (in total 7 dark layers alternated by lighter coloured layers) a focus on the dispersion per level would be futile. In addition, the remains have fall down as the interior of the cellar and the wooden floor had rotted away. Finally, it should be noted that the animal bones mostly originate from excavation level 11 and that the south-east corner of the cellar (quadrant A) is rather poor in animal remains (table 6.5).

6.6.3.1 Mammals

In table 6.6 an overview is provided of the encountered mammal remains. Approximately 25% originates from vermin species that probably lived in the cellar. The south-west corner of the cellar in particular (quadrant B) contained many remains from rats (*Rattus rattus*) and small rodents, such as water vole (*Arvicola terrestris*). Also most of the amphibian remains originate from this corner.

Apart from vermins, the material also included the femur of a young cat, a fragment of an incisor that probably belonged to a dog and two human dental elements: an incisor and a molar. The human remains were found at the bottom of the cellar.

The other mammal remains are the remnants of foodstuffs that were stored in the cellar. Instead of boned pieces of meat, people in those days bought entire carcass parts, such as heads and front- or hind quarters. Accordingly, cattle, sheep and pig are represented by skeletal elements from all meat bearing parts of the body; elements that do not bear any meat, for example horn cores and phalanges, are absent (appendix 6.1).

Two mandibles that were previously attributed to a calf (*Bos taurus*) appeared, on closer inspection, to originate from a young red deer (*Cervus elaphus*); a species that is also represented by a femur fragment. These finds imply that besides hare (*Lepus europaeus*), which was previously presumed to be the only game on the menu (Kooistra and Laarman 1996, 265), also large game was consumed. The excavation has also yielded a femur fragment of a roe deer (*Capreolus capreolus*). The bone, however, appeared

Quadrant	2A	2B	2C	2CD	2D	Total
sampling method	**n**	**n**	**n**	**n**	**n**	**n**
manually	147	265	1014	25	159	1610
5.0 mm sieve	20	567	135	-	597	1319
2.5 mm sieve	3	776	119	-	363	1261
Total	**170**	**1608**	**1268**	**25**	**1119**	**4190**

Table 6.4 The distribution of the consumption remains (excluding fish scales) in the cellar per collection method and quadrant; the remains of vermin, amphibians and molluscs are not incorporated; n = NISP

Quadrant	2A	2B	2C	2CD	2D	Total
Level	**n**	**n**	**n**	**n**	**n**	**n**
11	116	1498	564	-	505	2683
12	46	87	275	25	549	982
13	8	23	429	-	65	525
Total	**170**	**1608**	**1268**	**25**	**1119**	**4190**

Table 6.5 The distribution of consumption remains (excluding fish scales) from the cellar per level and quadrant; n = NISP

	Kooistra and Laarman 1996 Table 38, silt layer		This volume							
	manually	sieve	manually		5.0 mm sieve		2.5 mm sieve		total	
Species	**n**	**n**	**n**	**g**	**n**	**g**	**n**	**g**	**n**	**g**
Homo sapiens	-	2	-	-	2	-	-	-	2	-
Bos taurus	89	34	81	1388.0	33	419.0	-	-	114	1807.0
Ovis aries	2	-	2	-	-	-	-	-	2	-
Ovis aries/Capra hircus	238	54	223	799.0	43	122.0	7	2.0	273	923.0
Sus domesticus	324	405	329	1953.0	371	1457.0	20	18.0	720	3428.0
Capreolus capreolus	1	-	1	28.0	-	-	-	-	1	28.0
Cervus elaphus	-	-	3	259.0	-	-	-	-	3	259.0
Lepus europaeus	13	44	13	21.0	37	35.0	7	1.0	57	57.0
Canis familiaris	-	-	-	-	-	-	1	-	1	-
Felis catus	-	1	-	-	1	-	-	-	1	-
Arvicola terrestris	2	-	2	-	-	-	-	-	2	-
Rattus rattus	10	62	10	-	41	-	21	-	72	-
Talpa europea	-	6	-	-	4	-	2	-	6	-
rodentia	3	549	9	-	79	-	456	-	544	-
large mammal	45	-	41	207.0	-	-	-	-	41	207.0
medium mammal	623	21	602	639.0	21	8.0	-	-	623	647.0
mammalia	-	-	4	4.5	1	1.0	1	-	6	5.5
Total	**1350**	**1178**	**1320**	**5300.5**	**633**	**2044.0**	**515**	**21.0**	**2468**	**7361.5**
amfibia	54	805	70	-	104	-	691	-	865	-

Table 6.6 Mammal remains from the cellar; n = NISP, g = weight (gram)

suspiciously fresh; it can most likely be considered an intrusion caused by a burrowing animal, for example a mole (*Talpa europea*). The possibility of bioturbation should therefore be kept in mind when the dispersal of the bone remains is analysed.

The distribution patterns of the cattle-, sheep- and pig remains appear to differ from one another (fig. 6.3). The cellar's south-west corner (quadrant B) displays a rather large concentration of sheep remains, while cattle remains mostly appear in the north-west corner (quadrant C). The remains of pig, on the other hand, are scattered throughout the entire cellar.

Though the epiphyseal fusion and tooth eruption and wear provide indications regarding the age of slaughtering (appendix 6.2 and 6.3), the current data are not sufficient enough to obtain a better understanding of the slaughter policy, than already is suggested in the previous publication. The remains of cattle and sheep/goat yielded insufficient data to draw any solid conclusions. The conclusion that pigs were kept for their meat, on the other hand, remains valid.

6.6.3.2 Birds

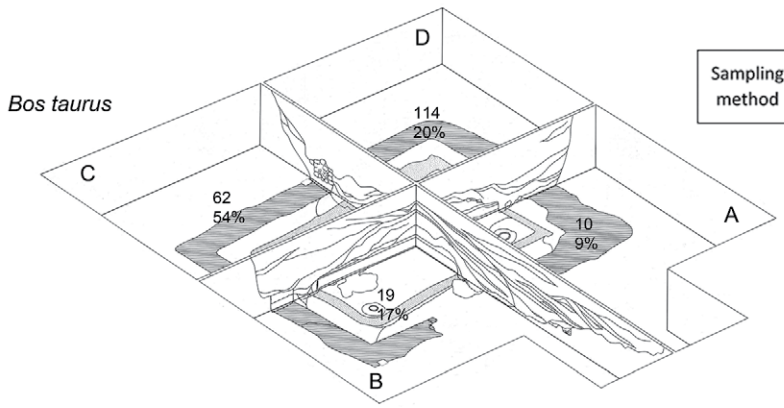
An overview of the bird remains excavated from the cellar is presented in table 6.7. The bird assemblage consists of poultry (chicken and potentially duck and goose) as well as feathered game. Kooistra and Laarman (1996) documented two bird species one would not expect to find as animals for consumption: the jay (*Garrulus glandarius*) and the common kestrel (*Falco tinnunculus*). It has been presumed that these birds ended up in the cellar by accident. The common kestrel, however, was also represented in a remarkably large pit that belonged to a mid-Roman stone building (150-200 AD) located at the 'Maasboulevard' in Venlo (Esser, Beerenhout and Rijkelijkhuizen 2009, 263). Five skeletal remains belonging to at least two birds were retrieved from this pit; a cut mark on a *tibiotarsus* suggests that these birds were indeed consumed.

The other bird remains from the cellar derive from known consumption birds (appendix 6.4), of which all wild species – apart from the ducks and geese – have so far only been encountered in exclusively Roman context in the Netherlands. The common blackbird (*Turdus merula*) from the native settlement at the Scheveningseweg in The Hague (Carmiggelt *et al*. 1998) and the common kestrels from Venlo are the only exceptions. At the site of Venlo also a skeletal element of a pigeon (*Columba* sp.) is found.

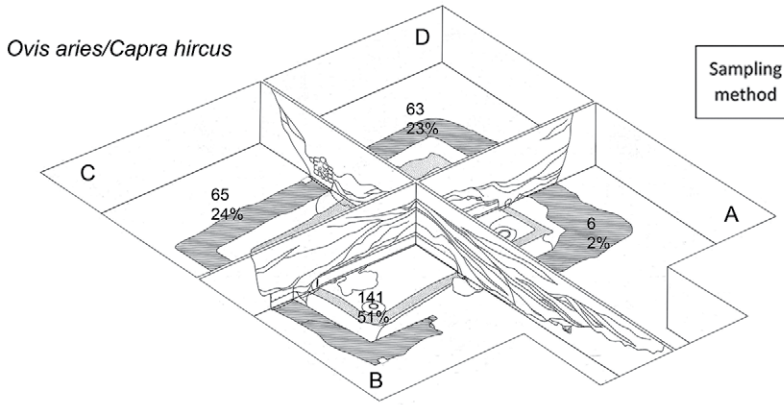
As the sieved samples yielded most of the bird remains, the picture of the distribution pattern is probably skewed (see paragraph 6.6.3). Focusing on the distribution would therefore be a fruitless undertaking. It should however be noted that all eggshell fragments were manually collected and all originate from quadrant C.

	Kooistra and Laarman 1996 Table 38, silt layer		**This volume**			
	manually	**sieve**	**manually**	**5.0 mm sieve**	**2.5 mm sieve**	**Total**
Species	**n**	**n**	**n**	**n**	**n**	**n**
Gallus gallus dom.	42	61	45	51	9	105
Anas crecca/querquedula	-	1	1	-	-	1
Anas platyrhynchos	14	23	15	20	2	37
Anser anser	3	3	4	3	-	7
Columba sp.	11	3	11	2	2	15
Falco tinnunculus	-	1	1	-	-	1
Garrulus glandarius	3	-	3	-	-	3
Perdix perdix	-	1	1	-	-	1
Scolopax rusticola	3	10	5	8	-	13
Turdus merula	-	5	1	3	1	5
passeriformes	-	1	-	2	-	2
aves (eggshell)	(52)	-	(52)	-	-	(52)
aves	9	237	65	149	79	293
Total	**85**	**346**	**152**	**238**	**93**	**483**

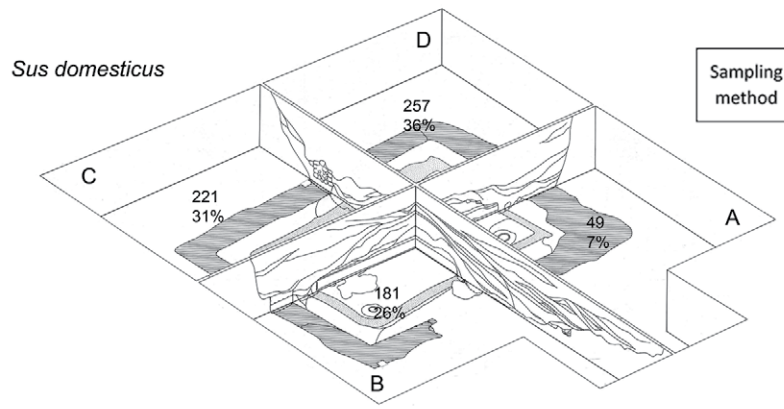
Table 6.7 Bird remains from the cellar; n = NISP



		Quadrants				
	Bos taurus	2A	2B	2C	2D	Total
Sampling method	manually	10	5	62	4	81
	5.0 mm sieve	-	14	-	19	33
	2.5 mm sieve	-	-	-	-	-
	Total	10	19	62	23	114



		Quadrants				
	Ovis aries/Capra hircus	2A	2B	2C	2D	Total
Sampling method	manually	6	110	65	44	225
	5.0 mm sieve	-	24	-	19	43
	2.5 mm sieve	-	7	-	-	7
	Total	6	141	65	63	275



		Quadrants				
	Sus domesticus	2A	2B	2C	2D	Total
Sampling method	manually	47	22	212	36	317
	5.0 mm sieve	2	151	6	212	371
	2.5 mm sieve	-	8	3	9	20
	Total	49	181	221	257	708

Figure 6.3 The distribution pattern of the cattle, sheep/goat and pig remains in the cellar (NISP)

	Kooistra and Laarman 1996 Table 38, silt layer		This volume			
	manually	sieve	manually	5.0 mm sieve	2.5 mm sieve	total
Species	**n**	**n**	**n**	**n**	**n**	**n**
Anguilla anguilla	-	459	6	76	377	459
Abramis brama	-	13	-	13	-	13
Leuciscus cephalus	-	-	1	-	-	1
cyprinidae	-	-	31	19	92	142
Esox lucius	-	58	7	28	27	62
*Perca fluviatilis**	-	45 (5023)	2 (347)	37 (834)	4 (3815)	43 (4996)
Salmo salar	1	10	4	7	3	14
Scomber scombrus	-	6	-	6	-	6
pisces	72	1426	108	389	630	1127
Total	**73**	**2017**	**159**	**575**	**1133**	**1867**
mollusca	-	-	1	32	104	137

Table 6.8 Fish remains from the cellar; * = number of scales are in parentheses, n = NISP

6.6.3.3 Fish

As noted in the previous publication (Kooistra and Laarman 1996, 265), nearly all fish remains identified on species level originate from freshwater fish (table 6.8, appendix 6.5); chub mackerel (*Scomber scombrus*) is the only identified saltwater fish and was most likely imported to serve as an ingredient for a fish sauce. This probably was the *hallex* or *allec* variety, which was a rather low quality fish sauce that, in contrast to *garum*, still contained skeletal remains of fish (van Neer *et al.* 2010, 163).

A cleithrum, probably of a chub (*Leuciscus cephalus*, fig. 6.4) belonged to a rather hefty fish with a length of 30-40 cm. Initially the element was identified as belonging to an asp (*Asius aspius*), a species that was found in a Roman latrine once before. This latrine was located in a wing of the *principia* of the oldest Roman fort (10 BC) at the 'Kops Plateau' in Nijmegen (Laarman 1998). On closer examination the presumed asp remains from this latrine were also identified as chub.[5]

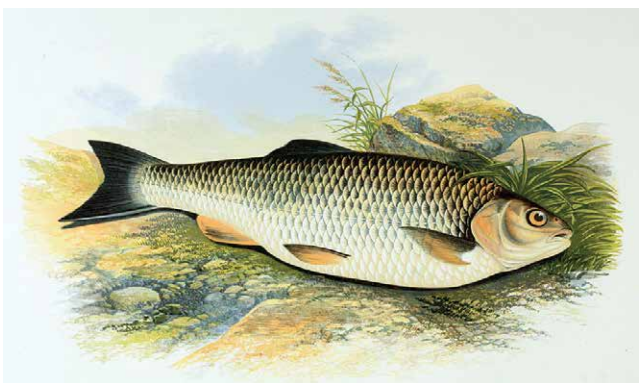


Figure 6.4 *Leuciscus cephalus*. (source https://upload.wikimedia.org/wikipedia/commons/d/d6/British_fresh_water_fishes_(Plate-_Chub)_(8550933557).jpg)

It is possible that the freshwater species also were part of a fish sauce, as several examples of local sauce varieties with freshwater fish are known (Van Neer, Ervynck and Monsieur 2010). These local sauces, however, usually contained small fish, while the assemblage from the cellar contained at least one large chub.

For the same reasons mentioned in the previous paragraph (6.6.3.2.) no statements can be made about the original distribution of the fish remains. An additional complicating factor is the rather large portion of fish remains (60%) that have not been identified on a species level.

6.6.4 The artefacts

The two game pieces and four of the five needles were found in the 'layered cake'. The game pieces were from the same excavation layer (level 11) and were found in quadrants B and C. They were probably located in the immediate vicinity of each other, right in front of the cellar stairs.

The two matching needle fragments came also from level 11, but both were found in separate quadrants, namely, B and D. Because these quadrants were placed diagonally opposite each other, the needle can be situated somewhere in the middle of the cellar. The three sewing needles were each derived from different excavation levels (11, 12 and 13) and

quadrants (B, C, and D, respectively). A sewing needle was also found in the cellar of the villa in Kerkrade Holzkuil (Kooistra and Esser 2005, 306). Apparently, it was customary to keep such objects in the cellar.

6.6.5 Pottery contents

Two complete vessels were found dug into the floor of the cellar (see chapter 2 and 3): a jug (*Oelmann* 96) and a storage pot (*Oelmann* 87). Several suggestions have been made about the function of the pots, one of which concerns a function as mousetrap (see chapter 2.2.1.6). It is unlikely, however, that the *Oelmann* 96 jug fulfilled such a purpose. First of all, this jug was covered with a piece of roof tile and, secondly, the jug was hard to clean; this is rather inconvenient with a content of rotting mice. The roof tile had prevented the jug from filling up with soil.

The storage pot, on the other hand, did contain a fill. This fill was sieved with a 5.0 mm mesh sieve and yielded a fairly large amount of animal remains. Though part of the animal remains are rodents (table 6.9), they do not refer to a function as a mousetrap; the number of vermin remains is too small to draw such a conclusion. It appears more likely that the pot was filled up with material from the lowest fill layer of the cellar.

Also the hair needle (find number 5-12-3D) with the loose needle point were retrieved from the storage pot. These finds invoke a vision that supports the mousetrap theory, because: what if the needle was meant to pick up something out of the pot? Using the needle for such an activity might have caused the tip to break off and end up in de pot.

6.6.6 Roman cellars

The cellar excavated in Maasbracht had a unique content, not only because it yielded remains that were probably still *in situ*, but also because it was thoroughly sieved. Comparison with assemblages from other villas are complicated, because animal remains usually originate from a variety of other features then a cellar. The villa of Kerkrade-Holzkuil is the only site where a cellar is excavated. The fill from this cellar, however, is sieved with a much larger mesh size (10.0 mm; Kooistra and Esser 2005, 298). This may have resulted in the loss of a significant amount of animal remains. The possible loss is indirectly indicated by the different results per excavation method executed at the cellar of the villa in Maasbracht. The composition of the assemblage from Kerkrade-Holzkuil is comparable to the hand collected material from Maasbracht.

A comparison between the two sites has to limit itself to the mammalian assemblage, as the excavation in Kerkrade-Holzkuil produced no fish remains and hardly any bird remains. The site did yield the same meat-producing mammals as were encountered in Maasbracht, with the exception of red deer. Given the small amount of mammal remains retrieved from de site in Kerkrade-Holzkuil, the lack of red deer does not necessarily imply that this animal was not consumed. Remains from hare were found at both villas. The relative proportions of cattle, sheep/goat and pig (in table 6.10 for Maastricht based on the hand-collected material), differ somewhat per location; again, this difference cannot lead to any solid conclusions, because of the limited amount of remains found in Kerkrade. For both villas, however, it is apparent that pig remains are better represented than those of subsequently sheep/goat and cattle.

Species	n	g
Bos taurus	6	41.0
Ovis aries/Capra hircus	19	122.0
Sus domesticus	6	22.0
rodentia	7	-
large mammal	4	20.0
medium mammal	21	11.0
mammalia	1	1.3
aves	2	-
cyprinidae	1	-
*Perca fluviatilis**	1 (240)	-
amfibia	4	-
Total	**72**	**218.3**

Table 6.9 Animal remains from the dug-in storage pot *Oelmann 87*; * = number of scales are in parentheses, n = NISP, g = weight (gram)

	Maasbracht		Kerkrade	
Species	**n**	**%**	**n**	**%**
Bos taurus	81	13.0	19	27.5
Ovis aries/Capra hircus	225	36.1	22	31.9
Sus domesticus	317	50.9	28	40.6
Total	**623**	**100.0**	**69**	**100.0**

Table 6.10 The remains from cattle, sheep/goat and pig from the villa of Kerkrade Holzkuil and the manually collected remains from the cellar of Maasbracht; n = NISP, % = percentage

6.7 Animal remains from other features

A total of 219 animal remains originate from other features than the cellar or the grave of the Iron Age 'warrior'. The exact contexts of these finds are unclear, as this study was focused on the analysis of the features connected to the Roman villa. However, it is clear that these animal remains date back to prehistoric times, the Roman period

	Kooistra and Laarman 1996 Table 38, other findspots		This volume	
Species	**n**	**g**	**n**	**g**
Bos taurus	30	881.0	53	1474.8
Equus caballus	3	432.0	3	432.0
Ovis aries/Capra hircus	5	32.0	10	51.2
Sus domesticus	12	130.0	20	174.1
Canis familiaris	-	-	2	5.0
Cervus elaphus	2	148.0	2	148.0
cf. *Cervus elaphus*	1	30.0	1	30.0
large mammal	13	77.0	33	178.2
medium mammal	18	36.0	30	53.6
mammalia	-	-	59	49.3
Anas platyrhynchos	2	-	2	-
aves	-	-	1	-
Perca fluviatilis	-	-	2	-
mollusca	-	-	1	-
Total	**86**	**1766.0**	**219**	**2596.2**

Table 6.11 The animal remains from other findspots; n = NISP, g = weight (gram)

and, probably, the Early Medieval Ages. Table 6.11 provides an overview of the identified species as incorporated in Kooistra's dissertation and the current study.

Red deer is represented by an antler fragment and a fragment of the skull with a piece of antler still attached. The assemblage also includes the semi-finished product or waste and a suspiciously fresh-looking fragment of a femur of a sheep or goat. The latter is likely of recent origin.

Notes

1 Many thanks to Elfi Buhr for the translation.

2 The ring could potentially be dated with C^{14} analysis.

3 Also see www.knochenarbeit.de/publications (accessed June 7, 2016).

4 A higher excavation level (level 3) yielded a burnt metacarpal from a sheep/goat; level 12 yielded a burnt fragment of a pelvis (also from a sheep/goat) and level 13 a burnt chicken leg. These are the only burnt animal remains from the entire excavation.

5 The identifications were verified by drs. M. Dutting, with the aid of the zoological reference collection of the Royal Belgian Institute of Natural Sciences in Brussel.

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Appendices

Species	Homo sapiens	Bos taurus		Ovis aries	Ovis aries/ Capra hircus			Sus domesticus			Capreolus capreolus	Cervus elaphus	Lepus europaeus		
Element	**5 mm**	**m**	**5 mm**	**m**	**m**	**5 mm**	**2.5 mm**	**m**	**5 mm**	**2.5 mm**	**m**	**m**	**m**	**5 mm**	**2.5 mm**
cranium	-	1	3	1	5	4	-	22	13	1	-	-	-	1	-
mandibula	-	4	3	-	-	1	-	21	10	-	-	2	1	1	-
hyoid	-	2	1	-	4	1	-	-	4	-	-	-	-	-	-
dentes sup.	-	4	-	-	-	-	-	7	-	-	-	-	-	-	-
dentes inf.	-	-	4	-	1	4	4	13	1	-	-	-	-	-	-
dentes sup./inf.	2	-	-	-	-	2	3	5	34	11	-	-	-	2	2
atlas	-	-	1	-	1	-	-	1	2	-	-	-	-	-	1
axis	-	1	-	-	2	-	-	1	-	-	-	-	1	-	-
vert. cervicales	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-
vert. thoracales	-	-	-	-	9	-	-	3	-	-	-	-	-	-	-
vert. lumbales	-	-	-	-	3	-	-	1	-	-	-	-	-	-	-
sacrum	-	1	-	-	2	-	-	-	-	-	-	-	1	-	-
vert. caudales	-	3	-	-	-	-	-	1	10	-	-	-	-	-	-
vertebra, indet.	-	27	3	-	20	2	-	27	37	3	-	-	2	6	-
sternum	-	3	1	-	-	3	-	-	6	-	-	-	-	-	-
costa	-	29	10	-	127	3	-	121	82	3	-	-	4	15	1
scapula	-	1	1	-	5	-	-	20	8	-	-	-	-	1	-
humerus	-	2	2	-	3	3	-	3	7	1	1	-	-	1	1
radius	-	-	-	-	7	2	-	3	3	-	-	-	1	2	1
ulna	-	-	1	-	2	-	-	8	7	-	-	-	1	1	1
carpale	-	-	-	-	-	7	-	2	21	-	-	-	-	-	-
metacarpus	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-
pelvis	-	2	1	-	3	-	-	3	10	-	-	-	-	2	-
femur	-	-	1	-	3	1	-	6	9	-	-	1	-	1	-
patella	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
tibia	-	1	-	-	3	1	-	10	6	-	-	-	2	2	-
fibula	-	-	-	-	-	-	-	8	8	-	-	-	-	-	-
astragalus	-	-	-	-	-	3	-	1	3	-	-	-	-	-	-
calcaneus	-	-	-	1	1	1	-	2	3	-	-	-	-	-	-
tarsale	-	-	1	-	-	1	-	-	1	-	-	-	-	-	-
metatarsus	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-
phalanx 1	-	-	-	-	4	-	-	14	24	-	-	-	-	-	-
phalanx 2	-	-	-	-	3	-	-	5	15	-	-	-	-	-	-
phalanx 3	-	-	-	-	3	1	-	1	12	-	-	-	-	-	-
metapodium	-	-	-	-	-	1	-	20	33	1	-	-	-	2	-
indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
total	**2**	**81**	**33**	**2**	**223**	**43**	**7**	**329**	**371**	**20**	**1**	**3**	**13**	**37**	**7**

Appendix 6.1 Mammal remains from the cellar (NISP), m = manually, 5 mm = 5 mm sieve, 2.5 = 2.5 mm sieve

Canis familiaris	Felis catus	Arvicola terrestris	Rattus rattus			Talpa europea		rodentia			large mammal	medium mammal		mammalia			Total
2.5 mm	5 mm	m	m	5 mm	2.5 mm	5 mm	2.5 mm	m	5 mm	2.5 mm	m	m	5 mm	m	5 mm	2.5 mm	
-	-	-	1	9	1	-	-	1	10	40	-	-	-	-	-	-	113
-	-	-	4	3	-	-	-	-	6	52	-	-	-	-	-	-	108
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27
1	-	-	-	1	-	-	-	-	7	31	-	-	-	-	-	-	101
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
-	-	-	-	-	7	-	-	-	-	18	-	-	-	-	-	-	39
-	-	-	-	19	1	-	-	-	10	153	-	-	-	-	-	-	310
-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	16
-	-	-	1	1	-	-	-	-	1	10	-	-	-	-	-	-	408
-	-	-	-	-	2	-	-	-	6	16	-	-	-	-	-	-	60
-	-	-	2	1	1	-	-	1	4	28	-	-	-	-	-	-	61
-	-	-	-	-	1	-	-	2	3	5	-	-	-	-	-	-	30
-	-	-	-	1	1	2	-	-	2	19	-	-	-	-	-	-	46
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
-	-	-	1	1	1	1	-	-	12	16	-	-	-	-	-	-	53
-	1	1	-	3	-	-	1	1	11	27	-	-	-	-	-	-	67
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
-	-	1	1	2	1	1	1	4	6	30	-	-	-	-	-	-	72
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	10
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
-	-	-	-	-	4	-	-	-	1	7	-	-	-	-	-	-	69
-	-	-	-	-	-	-	-	-	-	-	41	602	21	4	1	1	670
1	**1**	**2**	**10**	**40**	**21**	**4**	**2**	**9**	**79**	**456**	**41**	**602**	**21**	**4**	**1**	**1**	**2468**

Species	Element	unfused	fusing	fused
		n	n	n
Bos taurus	humerus prox	-	-	1
Ovis aries/Capra hircus	humerus dist	-	-	1
	radius prox	-	-	1
	phalanx 2 prox	1	-	-
	phalanx 1 prox	1	-	1
	tibia dist	1	-	1
	metacarpus dist	-	-	2
	metapodia dist	1	-	-
	calcaneum prox	1	-	2
	ulna prox	2	-	-
	femur prox	1	-	-
	humerus prox	1	-	1
	radius dist	2	-	1
	femur dist	1	-	1
Sus domesticus	scapula dist	1	-	1
	pelvis, acetabulum	3	-	-
	humerus dist	6	-	-
	radius prox	3	-	1
	phalanx 2 prox	6	-	12
	tibia dist	8	-	1
	metapodia dist	47	-	4
	phalanx 1 prox	21	-	10
	fibula dist	4	-	-
	calcaneum prox	4	-	-
	ulna prox	5	-	-
	humerus prox	1	-	-
	radius dist	-	-	1
	ulna dist	1	-	-
	femur prox en dist	10	-	2
	tibia prox	1	-	-
Cervus elaphus	femur prox	-	-	1
Lepus europeus	scapula dist	1	-	-
	humerus dist	-	-	1
	radius prox	-	-	1
Felis catus	femur dist	1	-	-

Appendix 6.2 Epiphydeal fusion in postcranial bones; n = NISP

		TWS							
Species	**Element**	**dP4**	**P4**	**M1**	**M2**	**M3**	**MWS**	**SEXE**	**Remark**
Cervus elaphus	mandibula	X	-	X	X	C	-		
Sus domesticus	mandibula	b	-	C	-	-	8		
		-	-	-	n	j	-	V	including Canine inf.
		k	-	e	½	-	14		
		k	-	c	-	-	-		
		-	-	-	m	f	-		
		-	f	n	X	j	-	V	healed fracture of ramus

Appendix 6.3 Tooth eruption and wear; TWS and MWS according to Grant 1982; X = present, but TWS is not to be determined

Species	Gallus gallus dom.			Anas crecca/ querquedula	Anas sp.			Anser anser		Columba livia	Columba sp.		
Element	**m**	**5 mm**	**2.5 mm**	**m**	**m**	**5 mm**	**2.5 mm**	**m**	**5 mm**	**m**	**m**	**5 mm**	**2.5 mm**
cranium	-	-	3	-	-	-	-	-	-	-	-	-	1
maxilla	-	3	-	-	-	-	-	-	-	-	-	-	-
mandibula	-	-	-	-	-	2	-	-	-	-	-	-	-
atlas	-	-	-	-	-	-	-	-	-	-	-	-	-
coracoid	5	6	-	-	4	3	1	-	-	-	1	1	-
furcula	2	4	-	-	1	4	-	-	-	-	-	-	1
sternum	3	-	-	-	2	2	-	-	-	-	1	-	-
costa	1	-	-	-	-	-	-	-	-	-	-	-	-
notarium	1	2	-	-	-	-	-	-	-	-	-	-	-
pelvis	1	3	-	-	1	1	-	1	-	-	-	-	-
vert. caudales	-	-	1	-	-	-	-	-	-	-	-	-	-
vertebra, indet.	-	3	1	-	-	-	-	-	-	-	-	-	-
scapula	4	3	-	-	1	1	-	-	-	-	-	-	-
humerus	3	5	-	-	2	-	-	-	-	-	1	1	-
radius	2	2	1	1	1	-	-	-	-	-	1	-	-
ulna	7	4	-	-	1	1	-	-	-	-	1	-	-
carpale	-	-	1	-	-	-	-	-	-	-	-	-	-
carpometacarpus	2	3	-	-	-	1	-	-	-	-	2	-	-
femur	5	3	-	-	1	-	-	-	-	-	2	-	-
tibiotarsus	6	4	-	-	-	4	-	-	1	-	1	-	-
fibula	-	1	-	-	-	-	-	2	-	-	-	-	-
tarsometatarsus	3	3	1	-	1	1	1	1	-	1	-	-	-
phalanx	-	2	1	-	-	-	-	-	2	-	-	-	-
indet.	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**45**	**51**	**9**	**1**	**15**	**20**	**2**	**4**	**3**	**1**	**10**	**2**	**2**

Appendix 6.4 Bird remains from the cellar (NISP); m = manually, 5 mm = 5 mm sieve, 2.5 mm = 2.5 mm sieve

Falco tinnunculus	Garrulus glandarius	Perdix perdix	Scolopax rusticola		Turdus merula			passeriformes	aves			Total
m	m	m	m	5 mm	m	5 mm	2.5 mm	5	m	5 mm	2.5 mm	
-	-	-	-	-	-	-	-	-	-	2	3	9
-	-	-	-	-	-	-	-	-	-	-	2	5
-	-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	-	1	1	2
1	-	-	-	2	-	2	-	-	-	2	-	28
-	1	-	-	1	-	-	-	-	-	3	-	17
-	-	-	-	1	-	-	-	-	-	4	2	15
-	-	-	-	-	-	-	-	-	-	22	5	28
-	-	-	-	-	-	-	-	-	-	1	-	4
-	-	-	1	-	-	-	-	1	-	9	2	20
-	-	-	-	-	-	-	-	-	-	2	1	4
-	-	-	-	-	-	-	-	-	-	42	7	53
-	-	-	-	1	-	-	-	-	-	2	1	13
-	-	-	-	-	-	1	-	-	-	2	1	16
-	-	-	1	-	-	-	-	-	1	4	1	15
-	1	-	-	-	1	-	1	1	-	5	5	28
-	-	-	-	-	-	-	-	-	-	-	1	2
-	1	-	1	1	-	-	-	-	1	5	1	18
-	-	-	1	-	-	-	-	-	-	3	1	16
-	-	1	-	1	-	-	-	-	1	3	6	28
-	-	-	-	-	-	-	-	-	-	2	3	8
-	-	-	1	1	-	-	-	-	-	7	6	27
-	-	-	-	-	-	-	-	-	-	20	19	44
-	-	-	-	-	-	-	-	-	62	8	11	81
1	**3**	**1**	**5**	**8**	**1**	**3**	**1**	**2**	**65**	**149**	**79**	**483**

Species	Anguilla anguilla			Abramis brama	Leuciscus cephalus	cyprinidae			Esox lucius		
Element	**m**	**5 mm**	**2.5 mm**	**5 m**	**m**	**hv**	**5 mm**	**2.5 mm**	**m**	**5 mm**	**2.5 mm**
cranium	-	-	-	-	-	-	-	-	-	-	-
dentale	-	-	-	-	-	-	-	-	2	-	-
dentale	-	-	-	-	-	-	-	-	-	-	-
dentes sup./inf.	-	-	-	-	-	-	-	-	-	-	-
basipterygium	-	-	-	-	-	1	-	-	1	-	-
brangiostegale	-	-	-	-	-	27	-	-	-	-	-
vertebra	-	-	-	-	-	-	-	-	-	-	-
vertebra, indet.	6	62	359	10	-	-	-	-	3	27	27
cleithrum	-	-	-	-	1	-	-	-	1	-	-
os pharyngeum	-	-	-	-	-	3	19	92	-	-	-
paraspenoideum	-	-	-	-	-	-	-	-	-	-	-
squama	-	-	-	-	-	-	-	-	-	-	-
indet.	-	14	18	3	-	-	-	-	-	1	-
Total	**6**	**76**	**377**	**13**	**1**	**31**	**19**	**92**	**7**	**28**	**27**

Appendix 6.5 Fish remains from the cellar (NISP); m = manually, 5 mm = 5 mm sieve, 2.5 = 2.5 mm sieve

Perca fluviatilis			Salmo salar			Scomber scombrus	pisces			pisces, indet.	Total
m	**5 mm**	**2.5 mm**	**m**	**5 mm**	**2.5 mm**	**5 m**	**m**	**5 mm**	**2.5 mm**	**m**	
-	34	-	-	-	-	-	-	-	-	-	34
-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	1	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	4	-	-	4
-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	27
-	-	-	2	-	-	-	-	-	-	-	2
-	-	-	1	6	3	6	56	193	537	-	1296
-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	114
-	-	-	-	-	-	-	1	-	-	-	1
322	777	3692	-	-	-	-	25	57	123	-	4996
2	3	4	-	1	-	-	47	192	93	4	382
324	**814**	**3696**	**4**	**7**	**3**	**6**	**129**	**446**	**753**	**4**	**6863**

7 Glass and jet[1]

S.M.E. van Lith and M.J. Driessen

7.1 Introduction

The glass and jet finds of the villa of Maasbracht comprise dozens of sometimes very small fragments, of which 27 objects have been investigated and described. The distribution of the glass is indicated on the plan of the villa (fig. 7.1). Most fragments were retrieved from the cellar, most probably due to the fact that this context was (partially) sieved.

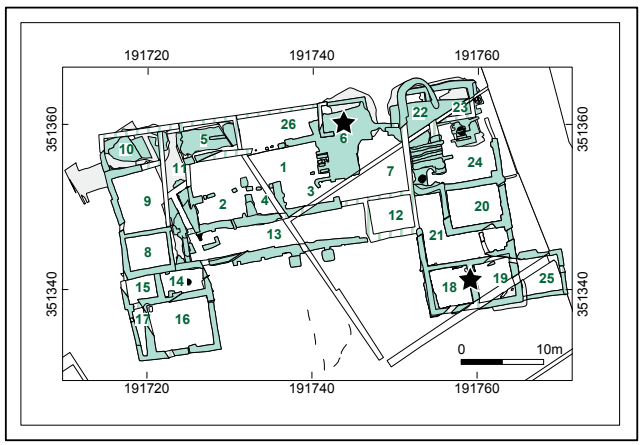

Figure 7.1 Lay-out of the villa with the glass and jet finds indicated by a star (drawing S. Shek)

7.2 Catalogue of the glass and jet

The glass from Maasbracht that could be attributed – with more or less certainty – to a type is described below. The most common types in Maasbracht are depicted in figure 7.2.

7.2.1 Table Ware

Dish (Isings 42b – variant)

1. Fragment of the rim of a bowl of translucent blue-green glass with bubbles. The tubular rim is turned outwards horizontally, downward and inward, and is slightly thickened at the edge (fig. 7.2-1).
   Dimensions: Diameter of the rim: 10.5 cm.
   Thickness: 0.02-0.08 cm.
   Context: Trench 5 – Level 12 – Find no. 2D (5-12-2D); cellar, from sludge layers between floor and foundations.
   Dating: c. 200 AD.
2. Fragment of a hollow footring. Most probably from the same dish as the previous fragment.
   Dimensions: Diameter c. 4 cm.
   Context: 5-11-2D; cellar.
3. Numerous fragments of most probably the same bowl.
   Context: 5-11-2D; 5-11B-2D; 5-11C-2B; 5-11C-2D; 5-11D-2B; 5-11D-2D; 5-12-2D; 5-12-3D; from cellar and under cellar floor.
   An identical rim fragment was found at the Roman villa of Backerbosch near Heer (Limburg – the Netherlands; RMO Inv. H.h. 1882/11, 231). A much larger dish with similar rim was found at tumulus grave V at Esch (Noord Brabant – the Netherlands).[2]

Kantharos (?)

4. Fragment of an outward curved rim with the join of probably a handle, most probably part of a *kantharos*.
   Translucent blue green glass with some bubbles.
   Dimensions: Approximate diameter of the rim is 12 cm.
   Context: 0-0-5, separate finds from an HVR-sondage through the villa.[3]
   Dating: The base of the handle is reminiscent of two *kantharoi* from Valkenburg (Zuid-Holland – the Netherlands), which can be dated in the first century AD (Van Lith, 1978-1979, 64 ff., nos. 207 and 210).

Bowls (Isings 85)

5. Rim fragment of a bowl of colourless glass with light greenish tinge. Milky weathered. Numerous horizontal wheel-cut lines. The rounded rim is bent inward (fig. 7.2-2).
   Dimensions: diameter of the rim approximately 8 cm.
   Thickness: 0.08-0.2 cm.
   Context: 5-11-2B, cellar, from sludge layers between floor and foundations.
   Dating: c. 200 AD.
6. Rim fragment of a bowl of translucent colourless glass, with greenish tinge (fig. 7.2-3). Slightly iridescent, numerous bubbles. The rim is bent inwards and then rounded outwards (Isings type 85, cf. Trier 47a, see Goethert-Polaschek 1977, 48).
   Dimensions: Diameter of the rim is 8 cm.
   Thickness: 0.01 to 0.15 cm.
   Context: 5-6-2D, filling cellar during the demolition of the villa.
   Dating: third century AD.

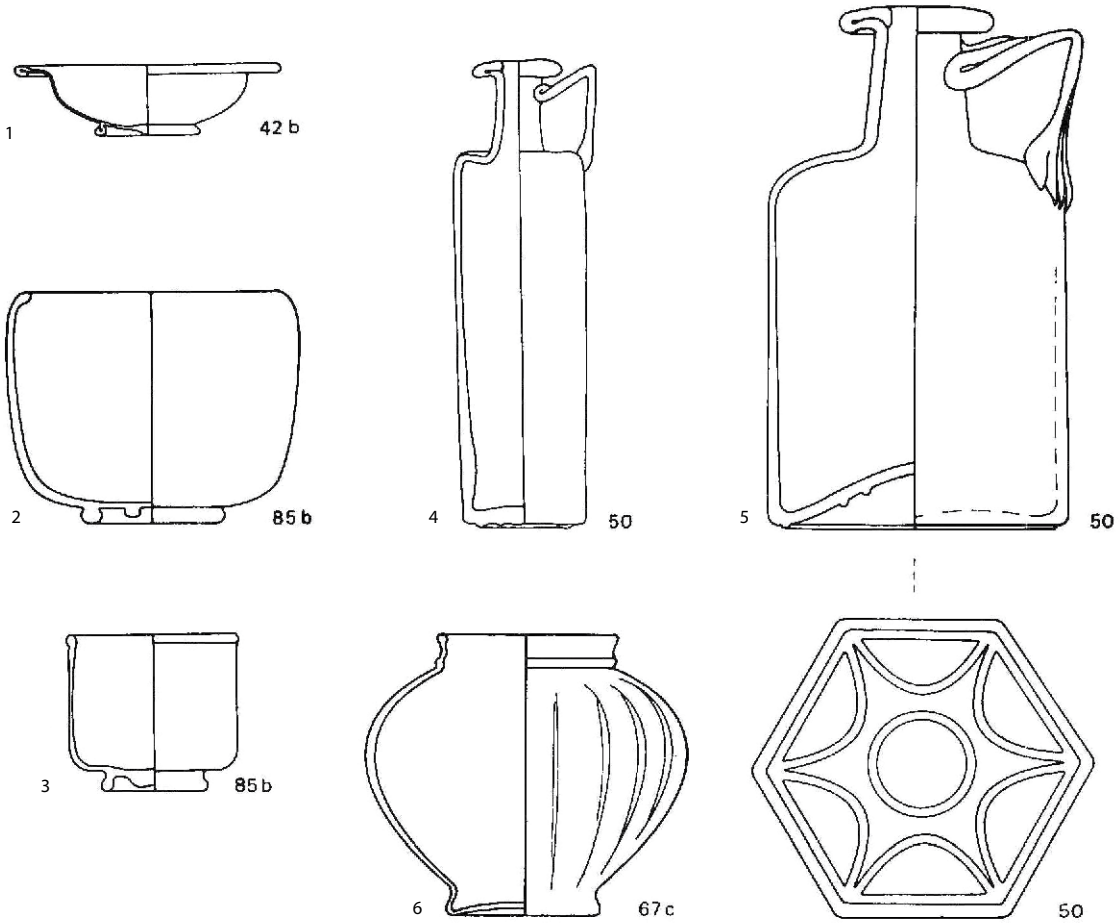

Figure 7.2 Glass types, not the actual fragments found, of the villa (after Van Lith 1984, drawing IPP/ROB)

7.2.2 Household/storage Ware

SQUARE STORAGE BOTTLE (ISINGS 50)

7. Very small fragment of the corner of a base and wall of a square storage bottle, made of light blue-green glass (fig. 7.2-4).
   Dimensions: Thickness base 0.6 cm. Thickness wall 0.4 cm.
   Context: 5-11A-2D, from sludge layers in cellar.
   Dating: c. 200 AD.

HEXAGONAL STORAGE BOTTLE (ISINGS 50)

8. One of the most striking finds at the Roman villa of Maasbracht is a large, almost complete hexagonal bottle (type Isings 50) of iridescent green-blue glass with bubbles (fig. 7.3). The bottle has a 'mushroom'-shaped rim, that is turned inward, and a wide handle with 15 pronounced ribs. The base has a high pointed 'kick' and is decorated with semi-circles on the six sides and a circle in the middle.
   A bottle with a comparable bottom mark was found in a basement of the villa Machelen in Belgium (Mertens 1955, 7, fig. 4).
   Dimensions: Height 19 cm. Diameter of the neck 5.7 cm, diameter opening 2.1-2.5 cm. Length of the six sides approx. 7 cm. Diameter of the bottom 14 cm.
   Context: 5-4-3, from the cellar.
   Dating: late second century to first half of the third century AD.

SQUARE, HEXAGONAL OR CYLINDRICAL STORAGE BOTTLE (ISINGS 50 OR 51)

9. Fragment of the vertical part of a handle decorated with pronounced ribs. A large bottle of rather blue than blue-green glass.
   Context: 10-1-1, from added corner tower on east wing, found during opening level 1.

SMALL STORAGE JAR (PROBABLY SMALL VARIANT OF ISINGS 67C)

10. Fragment of a hollow, inward and downward folded rim of a small storage jar made of very pale, almost colourless glass with bubbles.
    Dimensions: Diameter of the rim 6 cm.
    Context: 5-4-2D, filling basement, demolition of the villa.
    Dating: third century AD.

Figure 7.3 Large, almost complete hexagonal glass bottle of type Isings 50 (Photo M. Hemminga)

7.2.3 Window Glass

11. Side fragment of glass window pane.
    Context: 5-11-2C, from sludge layers in cellar.
12. Side fragment of glass window pane.
    Context: 5-5-2A, filling basement, demolition of the villa.

7.2.4 Beads

'MELON' BEAD

13. A split melon bead of heavily worn opaque turquoise faïence; only seven raised vertical ribs remain.[4]
    Dimensions: height 1.2 cm, width (incomplete diameter) 1.4 cm. Large melon beads are sometimes applied in horse gear, but because it concerns a small specimen this would not have been the case with the excavated bead.
    Context: 0-0-5 (HVR16), separate findings from a sondage through the villa.
    Dating: middle of the first to middle of the third century AD.

DECORATED BEADS

14. Broken green opaque glass bead with inlaid red 'eye' with blue-white pupil (fig. 7.4**).** Eye beads are already known from La Tène contexts, and are found in Roman times especially in the western provinces (Riha 1990, 83-84 and references in note 321).
    Dimensions: height 10.6 mm, diameter 8.5 mm.
    Context: 0-0-4.
    Dating: second century BC to third century AD.

SMALL MONOCHROMATIC BEADS

15. Small yellow beads.
    Five complete and two broken small yellow beads.
    Dimensions: height 3.8 mm, width 4.5-4.8 mm.
    Context: 0-0-4 (HVR25; HVR34)
    Dating: not certain, could be modern.
16. Small green beads.
    Two small opaque green beads kitted together[5], plus broken small opaque green bead.
    Dimensions: height 4.0-5.5 mm, width 6.7-6.9 mm.
    Context: 0-0-4 (HVR32)
    Dating: not certain, could be modern.

Figure 7.4 Broken green opaque glass bead with inlaid red 'eye' and blue-white pupil (Photo ROB)

7.2.5 Bracelets

17. Small fragment of a blue translucent glass La Tène bracelet with five ribs (Haevernick 1960, 141-45; Type 7a).
Context: 7-0-3, Iron Age layer at the bottom of the terrace.
Dating: end of third to second century BC (Peddemors 1975, 107).

7.2.6 Jet Objects

18. Almost complete, but broken heptagonal ring of jet.
At two sides, small holes have been drilled as decoration (fig. 7.5).
Dimensions: outside diameter 14-18 mm, inside diameter 10-11 mm, height 5 mm.
Context: 5-11B-2B, cellar, from sludge layers between floor and foundations.
19. Small lid made of jet (fig. 7.6).
This small square plaque made of jet can be interpreted as a lid of a small box, but due to the wear on one side it could also have been used as a small ointment palette (Riha 1986, 43-49, Taf. 18-24, 68-69).
Dimensions: length 44 mm, width 41 mm, height 4 mm.
Context: 5-11-2C, cellar, from sludge layers between floor and foundations.

7.3 The glass of the villa of Maasbracht in a broader context.

Maasbracht was excavated just after the research of the well-known Hoogeloon villa site (Noord Brabant – the Netherlands) took place. Almost all glass fragments of the villa site at Maasbracht were retrieved within the walls of the villa building. This contrasts with the villa of Hoogeloon, where most were found outside the walls of the building itself. Another striking difference concerns the quantities: in Maasbracht much less glass was retrieved than in Hoogeloon. Because of the high quality mural panels of Maasbracht, which are quite rare for our regions, and the simple panel decorations of Hoogeloon, a higher status and ditto artefacts were suspected for the Maasbracht site. At Hoogeloon 19 fragments of window glass were found while at Maasbracht merely two fragments were retrieved.

There are of course a number of possible explanations for the difference in these quantities. During the excavations of the Maasbracht site no pits were found that had been used for discard, such pits yielded the highest proportions of glass at the Hoogeloon site. The occupants of the villa probably used pits further away on the slope north of the villa, but these could not be investigated. They may have recycled their broken glass and exchanged it with peddlers. From many Roman sites, such as for instance the *canabae legionis* of the legionary fortress of Nijmegen, but also from ancient sources, it has become clear that such collection and trading of broken glass was common practice in Roman times both in the centre and on the fringes of the Roman Empire.[6]

Figure 7.5 Almost complete, but broken heptagonal ring of jet (photo Restaura)

Figure 7.6 Jet lid of a small box, or ointment palette (photo Restaura)

Notes

1 It is not customary to combine glass with jet in one chapter, but it was decided to do so as the latter category concerns only two finds, and there is no separate chapter for jewellery in this publication. This paper is a revision with additions of Van Lith 1984.

2 Van den Hurk 1977, 98, no. V, 3, fig. 7 (a transitional form of Isings 42b and Isings 115a). For other parallels see Vanderhoeven 1961, 43, no. 43; 1962, 29, no. 38.

3 From here on abbreviations are used for the excavation context: 0 = unknown or not given; HVR is find number of sondages by the local amateur archaeological group (Heemkundevereniging Roerstreek).

4 See Riha 1990, 83, type 11.1.4, Taf. 36, 1160-1165, 1168.

5 Not segmented as in Guido 1978, 91-93.

6 Isings 1976, 1980; Van Lith 2006; Martialis I.41.3-5; X.3.3-4; Statius Silvae I.6.73-74; Iuvenalis 5.47.

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8 The metalwork

M.J. Driessen

8.1 Introduction

A variety of metal objects has been discovered at the site of the Villa at Maasbracht. The majority of these was produced from either iron or copper-alloy. Most of the objects are incomplete or fragmentary, although it is possible to establish the function of a portion of them, ranging from large quantities of construction nails to fastenings, tools and personal adornments. The most important objects were restored after decades of ongoing corrosion and detoriation, but the vast majority of the objects has not been cleaned nor restored. Continuing corrosion complicated the determination, but the x-ray pictures made by Restaura were sometimes helpful in this. The corroded, incomplete and indeterminate objects are also included in the catalogue (see appendix) in order to give an idea of the quantity of the metal objects from the villa site. This catalogue provides an overview of all the Iron Age, Roman and early medieval metal objects discovered at the Villa at Maasbracht. It is however not possible – given the poor state of preservation and the unclear find context of some of the artefacts – to provide a profound dating and function on all the objects. The clearly modern metal artefacts were excluded from this catalogue, but some intrusion with possible modern metal objects can not be guaranteed.

The objects and fragments are separated into type of metal finds, ordered according to a classification, which is regular for Roman sites.

8.2 Catalogue of the metalwork

8.2.1 La Tène warrior burial

Shield boss (T20-L5-F4; cat. no. 1; fig. 8.1)[1]

An oblong 'butterfly'-shaped iron shield boss (*umbo*) was found together with an iron spearhead (cat. no. 2), an iron belt chain with end rings (cat. no. 3) and may be some other iron parts (cat. no. 4-5). The shield boss is 297 mm long, 111 m wide at the ends and 99 mm wide at the centre. One of the attachment nails is still at place and intact. The head of the nail measures 29 mm in diameter en the point of the nail is bend, most probably hammered, to fix it to the original wooden shield board. The shield to which this boss was attached, was flat, elliptical in shape with a protruding midrib. Such La Tène shields bosses which developed in the 3rd century BC became one with the midrib and led to a more solid fixation of the handgrip with the rest of the shield. This resulted in better protection, improving solidity and maneuverability (Rapin 1991, 323-4). Rapin (1991, 325, 327) shows the development of such shield bosses from the early 3rd to the first half of the 1st century BC. The retrieved shield boss dates most probably from the late 3rd or 2nd century BC.

Spearhead (T20-L5-F4; cat. no. 2; fig. 8.2)

A spearhead with a broken tip was found in the same context. The passed down length of the spearhead is 12.2 cm,

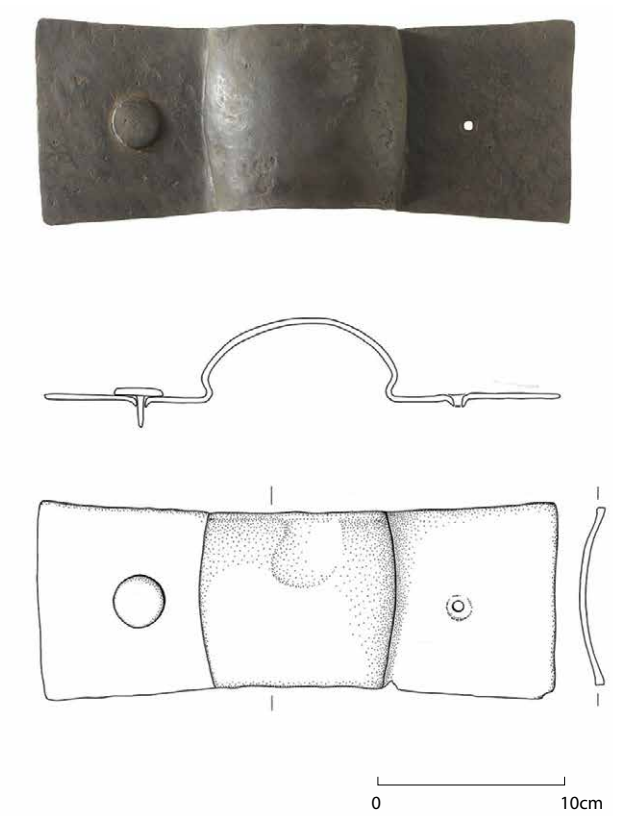

Figure 8.1 La Tène shield boss from the late 3rd or 2nd century BC (photo Restaura after restoration, drawings E.C.M. Koot)

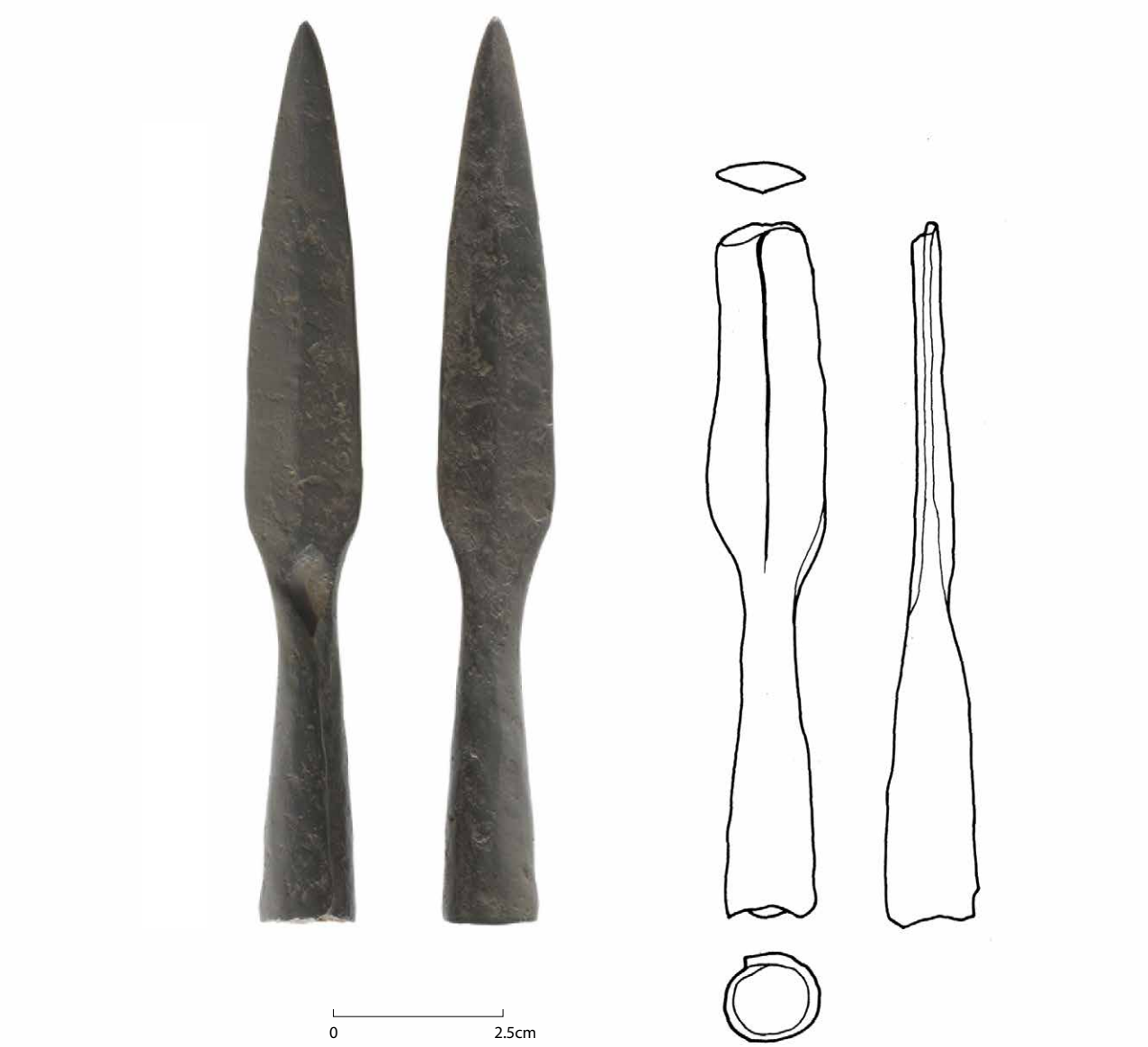

Figure 8.2 La Tène spearhead, drawing by A.J. Horbach before restoration and photo by Restaura after restoration and the point found apart added

and the original length was most probably around 14.5 cm. The maximum width of the blade is 1.8 cm and the diameter of the shaft measures 1.4 cm.

Belt chain (T20-L5-F4; cat. no. 3)
An iron chain with end rings was probably part of the sword suspension of the warrior's gear. The dimensions of the chain and rings are not clear as these were not restored yet, but the x-ray pictures reveal a diameter of the end rings of approx. 2.5 and 3.0 cm. The chain had only received a basic cleaning and fixation after the excavation, as was the case with the shield boss. The x-ray pictures show a different kind of construction than the regular La Tène belt-chain. This belt chain have not been depicted by means of a drawing, as it is not restored yet, and an x-ray picture gives the best result (fig. 8.3). The sword suspension chain – which was attached to the waist strap – consisted of a short chain across the front and a longer one across the back. With the early forms the short chain was connected to the waist belt by a hook and the longer chain with a loop or ring and with the later ones

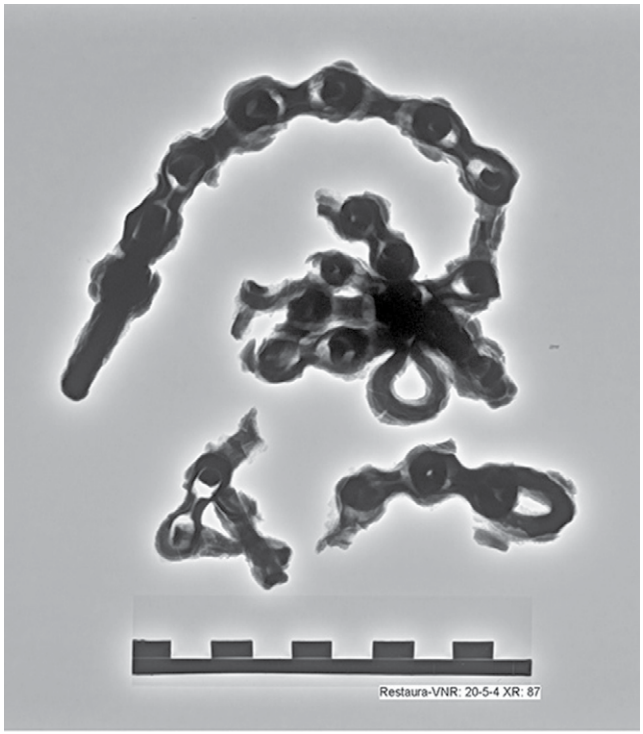

Figure 8.3 La Tène sword suspension chain (x-ray picture by Restaura)

the hook was part of the longer chain and the rings to the short one (Rapin 1991 325). This suspension system gave the bearer freedom to turn and followed the body's rotation (ibidem, 324).

These finds did most probably belong to the four-piece La Tène warrior equipment which developed in the 3rd century BC and consisted of a shield, a spear, a sword and belt-chain (ibidem, 322-3). A link of an iron chain and a fragment of an iron fitting from the same context could have been part of the equipment as well, but these need – as well as the other parts- first to be cleaned before any further conclusions could be drawn. These parts could originally have been part of a warrior burial, but were retrieved in a depression – downhill of the villa site – which was filled with colluvium and artefacts from different periods. This depression of 5 × 6 m with a depth of 1.20 metres contained next to the above described metalwork a variety of other finds. These consisted in a small fragment of a copper alloy bracelet or ring (cat. nr. 28), a fragment of a bracelet or ring made of elephant ivory (see chapter 6), a substantial amount of Roman wheel thrown pottery and some fragments of hand made pottery. Most probably the contents of this depression are the result of a site clearing and levelling which took place at the villa estate during a Roman building or renovation phase. The remains were either disposed on the slope down the villa site towards the Meuse-valley, and are part of alluvial deposits that ended up in the depression, or they ended in the depression as deliberately deposited discard.

8.2.2 Roman coins

Only fifteen Roman coins were found during the excavations. The limited amount of coins is most probably due to the fact that the State Archaeological Service (R.O.B.) did not use metal detectors at their field work in those days. Remarkable is that the majority of the coins was retrieved during the preliminary excavations and sondages by the local amateur archaeological group (Heemkundevereniging Roerstreek). The total amount of fifteen coins is of course too low to come up with any overall conclusions.

Five of these coins had emission dates during the reigns of Trajan, Antoninus Pius and Septimius Severus (see appendix).[2] Seven *antoniniani* struck during the reign of the young emperor Gordian III (238-244 AD) and one during the early years of Phillip I (244-249 AD) were retrieved (cat. no's 11-18). These coins were found in a good condition. These silver alloy coins replaced the *denarii*, but were prone to inflation. During the reign of Gordian III 23 years after their introduction by Caracalla the *antoninianus* was debased and consisted of about 40% of silver, further decrease resulted finally in a silver content of 4% during the reign of Aurelian (Harl 1996, 128-132, table 6.2). These *antoniniani* – although limited in value at that time – were most probably as an assemblage of coins belonging together. The entire set of coins dating to a limited time range, while coins from other periods lack from the archaeological record of this site, can classify them as a small hoard.[3] A household or craftman's hoard is most obvious, but a lost purse or bag can not be excluded. Because no further information is known about the specific find circumstances of most of them, no further conclusions can be drawn on the kind of hoard and possible intentions. One of them (cat. no. 18; T13-L2-F2) with clear find context is found at a mortar floor of room 10 of the third phase C of the villa site. Two other ones are found in a dark brown dirty dump area which contains lots of debris, mortar and pebbles, at the north-western side of the villa near/on the downward slope in the direction of the Meuse river (cat. no. 11; T7-l2-F3, cat.no. 16; T7-L2-F2).

A *follis* struck during the reign of Constans I (cat. no. 19; T0-L0-HVR18) makes it quite probable that some kind of occupation, activity or use took place at the villa site around/ after 347-48 AD.

8.2.3 Personal ornament

The most common categories for personal adornment are finger-rings, bracelets, brooches, ear-rings, necklaces and pins. Of these also some examples have been found in and

around the villa site of Maasbracht. Brooches are quite popular with archaeologists. This is most probably due to the fact that they are part of every day wear used by men and women through all levels of society, and their strong subjectness to fashion changes which makes them quite suitable for dating.

Rings and bracelets

A small fragment of a copper alloy finger ring of 18 × 5.5 mm was retrieved in the cellar of the villa (T5-L12-F2D; cat. no. 21; fig. 8.4). An XRF-analysis of this fragment showed that it consisted mainly of copper (approx. 39%), lead (33-38%) and tin (9-10%), next to other components (see appendix). There are two lines each of three letters carved in the flattened surface of the ring. The letters are not very clear, proper cleaning and restoration will improve the readability. A possible explanation of the letters is AVE for the upper three letters and AMA for the bottom ones. Similar combinations were found at amorous inscriptions on brooches (Martin-Kilcher 1998, 154, Abb. 6). In that case the inscription on the ring could be read as AVE. AME (ME): 'Greetings. Love me'. The letters could also be part of an unintelligible or pseudo-text as is the case with a similar ring from Colchester (Collingwood and Wright 1991-fasc. 3, nr. 2422.50) or a brooch from the Roman burial site of Hatert-Nijmegen (Haalebos 1990, 183, nr. 0306-0307). A comparable ring with a text line of six letters divided over two lines was found at Pfünz (Bayern – Germany) and reads DVL/CIS (Pfahl 2012, 160, Nr. 148, Taf. 13, 148.).[4]

A complete copper alloy finger ring found in the cellar has got an eight-sided exterior and is a bit oval (T5-L2-F4; cat. no. 22; fig. 8.5a). The outer diameter ranges from 21 – 22 mm and the inner diameter from 16 – 17 mm.

Two smooth copper alloy finger rings were found. One of these rings has an outer diameter of 21 mm, an inner diameter of 16 mm and width of 3 mm (T3-L0-F3; cat. no. 23), the other one is a bit smaller (outer diameter of 20 mm, inner diameter of 14 mm and width of 3 mm; stray find-F7; cat. no. 24). Roman finger rings are difficult to label to gender as they were worn on all phalanxes of all fingers, including the thumb (Böhme-Schönberger 1997, 60; Hoss 2014, 621). An iron Sphendon-type finger ring (T7-L5-F1; cat. no. 25; fig. 8.5b) is the only example of a gemstone ring found at the Villa at Maasbracht. The ring has an outer diameter of 21 mm, an inner diameter of approx. 17 mm and a width of 13 mm. The gem or stone is missing. This ring was found in the same dump area as two of the *antoniniani*, but at a deeper level. A small fragment of the bit of a copper alloy keyring (0.7 × 0.9 cm) is the only prove for this popular kind of rings, which are found at many different Roman sites (T0-L0-F5; cat. no. 29).

Figure 8.4 Fragment of a copper alloy finger ring with engraved letters (photo ROB)

Figure 8.5 Copper alloy finger ring (a) and Iron Sphendon-type finger ring (b) (photos Restaura)

The excavations resulted in three fragments of bracelets. The first is a bended fragment of a copper alloy bracelet with decoration (T0-L0-HVR242/27; cat. no. 26) with a length of 58 mm and a width of 4.2 mm. The decoration consists of three small ribs. An end knob of a copper alloy bracelet (T0-L0-HVR22; cat. no. 27) measures 7.5 × 5.5 mm in width with a length of 5.0 mm. The remaining part of the bracelet is 7.4 mm long and 4.5 mm wide. A third part is a small fragment of a copper alloy bracelet or ring (T20-L5-F1; cat. no. 28), which is a surface find of level 5 in this trench 20, so without clear context.

Brooches

A copper alloy 'Augen-fibula' with non-perforated stamped eyes (Riha 2.3.3; Haalebos 6c) of which the pin is missing,

was found during the preliminary sondage-research (T0-L0-HVR15; cat. no. 30; fig. 8.6c). Such brooches were according to Haalebos (1986, 37) quite favourite among soldiers. This brooch can be dated between 15-55 AD and is one of the 'earliest' Roman artefacts from the site, next to a 'Drahtfibel' with round shaped bow (Van Buchem 22A-B) that dates roughly in the 1st century AD.[5] The pin catch of this brooch is bent and the pin is missing (T0-L0-HVR242; cat no. 35). Three examples of 'Drahtfibel' with band-shaped bow (Van Buchem 24) were found: two of the more regular type (120-200 AD) and one variant with a broad hammered bow with a later dating (150-270 AD). The pin of this last brooch (T5-L12-F2D; cat no. 33; fig. 8.6e) was missing. Of the more regular type one was found complete with open pin (T5-L9-F2B; cat no. 31; fig. 8.6b) and of the other one the pin was missing (T5-L11-F2A; cat no. 32; fig. 8.6a). These brooches correspond with the dating of the other finds from the cellar where they were retrieved. The last dateable Roman brooch is a 'Drahtfibel' with bended bow (Van Buchem 22C-D; 60-150 AD). This brooch (T0-L0-HVR19; cat. no. 34; fig. 8.6d) misses half the pin and part of the pin catch. All other Roman brooches and parts were indeterminable (see appendix). Altogether it concerns a meagre dataset of brooches from such a site, especially compared to recently excavated rural sites.[6] This is most probably due – like mentioned before – to the excavation methods employed. Many were found – like with the coins – during the preliminary HVR-sondages.

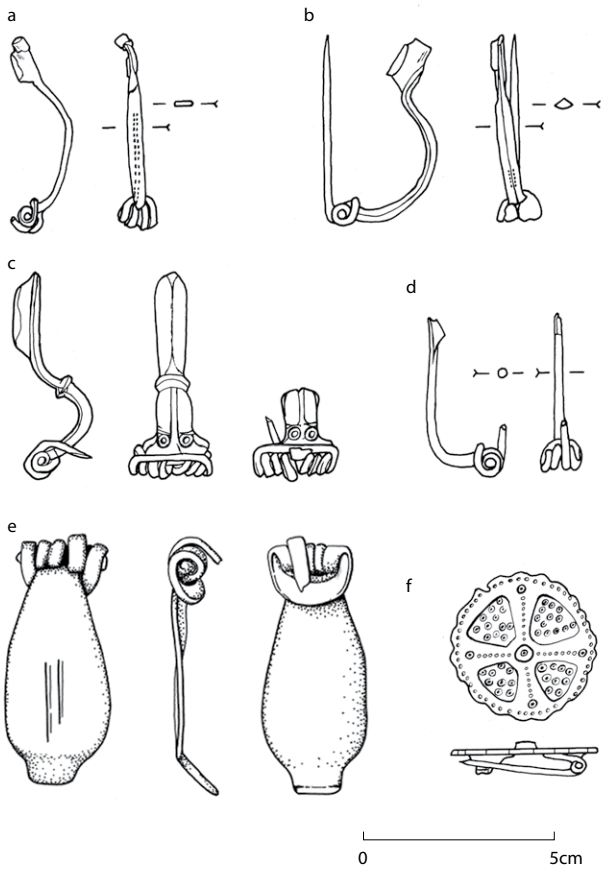

Figure 8.6 'Drahtfibel' with band-shaped bow – Van Buchem 24 (a) 'Drahtfibel' with band-shaped bow – Van Buchem 24 (b) 'Augen-fibula' – Riha 2.3.3 (c); 'Drahtfibel' with bended bow – Van Buchem 22 (d); 'Drahtfibel' with band-shaped bow – Van Buchem 24(e); Copper alloy disc brooch with an iron pin and catch (f); all 1:2, (drawings A.J. Horbach)

A remarkable copper alloy disc brooch with an iron pin and ditto catch dates, because of this combination, probably in the late 4th or 5th century (Stijn Heeren, pers. comment). The brooch consists in a roughly edged more or less round disc with central stud (T0-L0-HVR29; cat. no. 39; fig. 8.6f). The stud is the centre of a cross made of punctuated circles and dots with four lowered, cut quarters. These quarters are decorated with punctuated dotted circles. The irregular waved edge of the brooch is decorated with small punctuated circles. It looks like the disc has originally been covered with a metal (silver or bronze) coating. This brooch resembles a decorated disc from an early medieval grave of a woman in Cobern (Kreiz Koblenz –Germany; Werner 1935, 103-4, Tafel 35-A5) and two early medieval brooches from Wijk bij Duurstede – De Geer (Utrecht –Netherlands; Stijn Heeren, pers. comment), but no identical one is known.

8.2.4 Medicine and hygiene

In Maasbracht three ear probes and one handle of a spatula probe were found. Ear probes (*lingulae*) have a thin handle ending on one side in a blunted point and on the other side in a small flat head or sometimes in a small spoon (Künzl 1983, 27-8; Riha 1986, 56; Braadbaart 1994). According to Celsius (De Medicina 6. 7. 5) they could have been used to remove things like maggots from the ear. Spatula probes are multifunctional instruments that consist of a long thin handle ending one side in a spatula and on the other side with oval probe. They could be used as a personal toilet tool to mix, apply and remove make-up, or as a medical tool to mix medicines or to clean wounds with its sharp edges (Riha 1986, 64-70; Hoss 2014, 623.).

One ear probe is complete, but bended with a length of approx. 13.5 cm and a diameter ranging from 0.1 – 0.3 cm. This undecorated ear probe (T0-L0-HVR3; cat. no. 40; fig. 8.7b) ends in a small flat head. Such undecorated ear probes are classified by Riha as variety E (Riha 1986, 56-63). The second ear probe has got linear decorations – Riha var. A – on the upper part of the handle and the head or spoon is broken and missing. It has got a length of 11.2 cm and a diameter ranging from 0.1 – 0.25 cm (T0-L0-HVR31; cat. no. 41; fig. 8.7a). The third – possible – undecorated ear

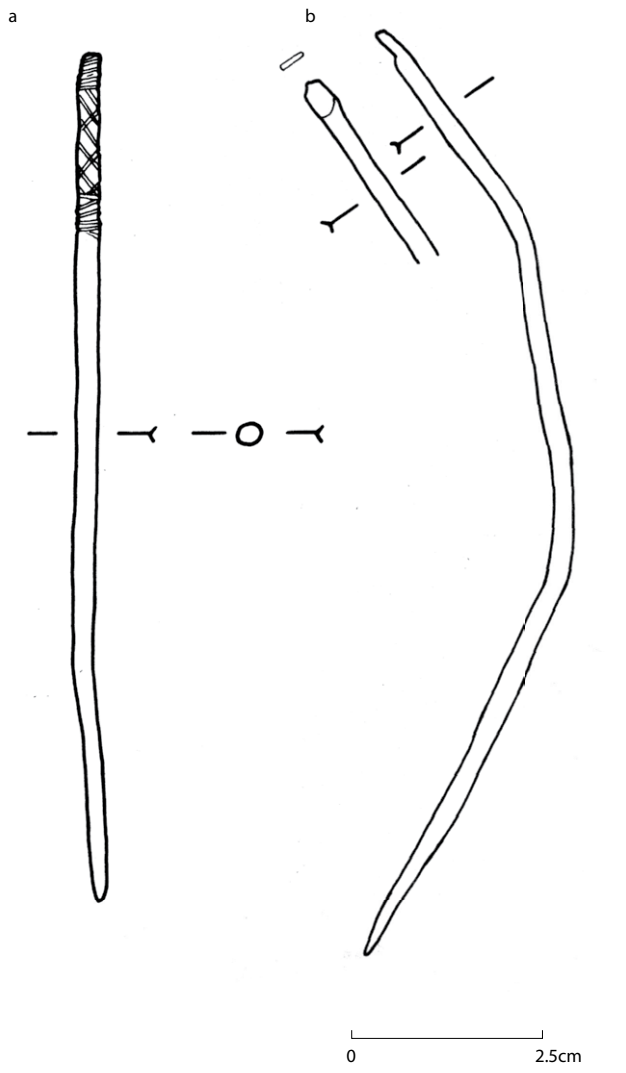

Figure 8.7 Decorated incomplete ear probe (a); Undecorated ear probe (b) (drawings A.J. Horbach

probe of Riha var. E is a small specimen of 7.1 cm (T0-L0-HVR28; cat. no. 42). The small fragment of the spatula handle made of copper alloy was found in the cellar of the villa (T5-L12-F2B; cat. no. 43). Probes are the most common form of (personal) medical instruments in the Roman provinces, and have a date in the 1st to the 3rd/4th century AD (Riha 1986, Tab. 10b, 11a, 12a; Deschler-Erb 1996, 60).

8.2.5 Writing and communication

One heavily corroded iron *stylus* has been excavated. It was found in the cellar of the villa (T5-L11-F2A; cat. no. 44; fig. 8.8b). It measures 12.9 cm in length after restoration. The *stylus* has a thickened central section and a clear incised line under the tip. The top end eraser is rectangular with concave sides. This type has been classified by Schaltenbrand Obrecht (2012, 150-151) as type H43 and has been dated by her to the late 1st and 2nd century AD.

8.2.6 Recreation

A copper alloy slightly concave disc with an engraved ring as decoration has been found in the cellar (T5-L12-F2B; cat. no. 45). It belongs to a percussion instrument with small cymbals. The cymbal disc has got an opening in the centre and the iron pen for mounting it to the instrument is still in place. (fig. 8.8a) A more or less complete cymbal is known from a sarcophagus of a young girl in Roman Nijmegen (Gelderland – Netherlands), and a comparable cymbal disc was found in a ditch in Roman Voorburg-Arentsburg (Zuid Holland –Netherlands; Hoss 2014, 629).

8.2.7 Iron tools and craftmanship

At the villa of Maasbracht a notable number of eleven knives has been found. Previous attempts to classify Roman knives by means of functionality proved to be fruitless due to the fact that variations in shape or form of knife blades or handles have no real significance to the function of the tool (Manning 1985, 108). The allocation of knives in this category is consequently disputable, these could also be attributed to another category such as domestic life. The used arrangement of the retrieved knives is purely typological and based on the classification of Manning (1985, 108-123, fig. 28).

The back of four of these knives continues with the line of the tang. They have got a wide blade with a cutting edge that is convex and curves up to the tip. These knives can be classified as Manning type 12a (fig. 8.9a). Three of them were found in the cellar (T5-L11-F2C; cat. no.'s 48-49) and the fourth one is from unclear context (T3-L2-F2; cat. no. 46). This last knife has got a blade length of 11.9 cm with a maximum width of 7.2 cm and a maximal thickness of 0.9 cm and a handle with a length of 5.9 cm (fig. 8.9 upper left). Cat. no. 48 has got a blade length of 11.1 cm with a maximum width of 4.8 cm and a handle length of 5.6 cm. Due to the corrosion the thickness of this knife was difficult to determine. Cat. no. 49 consist of two knives. The tip of the blade of the first one is missing, a length of 13.2 cm for the blade remains with a maximum width and thickness of 6.1 and 0.9 cm. The handle of this knife measures 12.9 cm. Part of the original wood of the handle remains as well as a copper alloy ring at the end of the handle near the blade. Of the second knife only the blade survived with a length of 12.3 and a maximum width and thickness of 4.7 and 0.4 cm respectively. A small knife (l = 8.6; w = 1.7) has got near the point of the blade a more or less triangular outline with an almost straight back and edge (T14-L3-F6; cat. no. 52). It is much corroded, but the basic shape is still clear and can be distinguished as Manning's type

Figure 8.8 Cymbal disc (a) and stylus (b) (photos Restaura)

Figure 8.9 Three knives with wide blade and convex cutting edge, one with partly preserved handle (a); chisel with wide blade (b) and the head of a cross-pein flat hammer (c) (photos Restaura)

16. This knife was found in a sunken hut. The tip of a 20.9 cm long knife is missing (T0-Lo-F·HVR11; cat. no. 56). The tang is set below the back that is level before it curves tot the tip. The edge seems to be worn intensively due to usage. It can most probably be classified as Manning's type 15, which is according to Manning (1985, 115) the most common form of knife. The back of the knife is straight, but has two long shallow slits, most probably two narrow fullers. The other five knives were either too corroded or too fragmented to further describe them at this stage. Knives do not have a typochronological development in the Roman period and can only be dated as Roman. The same applies for the head of an iron axe or cleaver with an incomplete shaft. This was found in a pit in trench 17 (T17-L3-F2; cat. no. 59). The blade of this cleaver or axe has got a length of 24.6 cm with a width of 8.6 cm and the shaft is 1.5 cm in width.

An iron chisel with a solid tang has got a wide blade with gentle thinning, so no steep bevel. Such paring chisels are finishing tools used for paring the surface of wood (Manning 1985, 21). This chisel (T9-L1-F1; cat. no. 57; fig. 8.9b) is a surface find, found during the opening of level 1 of trench 9, and has a length of 16.1 cm and a blade width of 5.9 cm. The tang has a width of 1.2 × 1.3 cm and is due to construction and wear wider at the hammering edge (1.4 × 1.6 cm).

A cross-pein flat hammer-head was found in a dark brown dirty dump layer which contains lots of debris, mortar and pebbles, at the north-western side of the villa near/on the downward slope in direction of the Meuse river (T7-L2-F1; cat. no. 58; fig. 8.9c). The retrieved hammer had a length of 9.3 cm by a width of 3.1 cm. Remarkable is that it concerns a delicate specimen with a height of only 1.1 cm. The face measured 1.3 × 1.5 cm. These dimensions make it quite plausible that this hammer was most probably used for relatively fine metalworking, as Manning (1985, 6) mentions for these kind of tools. That metalworking took place at the Villa at Maasbracht can also be derived from the fact that in trench 5 some traces of metal working were found such as iron slags and lead and copper waste pieces (cat. no's 60-64).

8.2.8 Militaria

A copper alloy pendant of the Roman military shoulder belt (*balteus*) for the suspension of the sword was found in a perfect state during the preliminary HVR (T0-L0-F6·HVR2; cat. nr. 65; fig. 8.10a). Such pendants can be dated as from 150 AD and were most probably used throughout most of the 3rd century.[7]

8.2.9 Transport

Two horse harness pendants were found at the Villa at Maasbracht. The smallest one is an incomplete regular copper alloy heart shaped pendant found in a large rectangular pit on the slope downhill next to the villa (T7-L3-F2; cat. nr. 66; fig. 8.10b). Such heart shaped pendants date predominantly

Figure 8.10 Copper alloy pendant (*balteus*) of the Roman military shoulder belt (a); heart shaped pendant (b) and iron pendant with an copper alloy knob (c) (photos Restaura)

from the 1st century till around 120 AD, but are known sporadically from later 2nd century contexts (Oldenstein 1976, 126; Deschler-Erb 1999, 51; Nicolay 2005, 441). The second pendant is a special one: it consists in an iron pendant with an copper alloy knob (l 9.6 cm; w 4.6 cm; knob 2.1 × 1.9 cm; T0-L0-F6·HVR23; cat. nr. 67; fig.8.10c). The iron body was most probably covered with a thin bronze or silver coating. No parallel was found for this pendant. They were used to attract attention. They were attached to military horse harnesses, but were also used on civilian wagons and horse fittings. One horse harness strap junction and two strap fittings, all of copper alloy were excavated. The strap junction is a stray find (cat. no. 68; fig. 8.11a). One of the strap fittings was found in the cellar and the other in the large rectangular pit were also one of the horse pendants was excavated (T5-L10-2B; cat.no. 69; T7-L3-F2; cat. no. 70).

Bells were used for horse harnesses, but also attached to the bridle of draught animals and used when pasturing livestock. They are said to have some kind of apotropaic function (Schleiermacher 2000, 168; Hoss 2014, 635). Four bells were found at Maasbracht: two iron bells and two copper alloy ones. A trapezoidal iron bell with square sides (h = 5.2 cm; width = 2.8-5.0 cm and depth = 1.8 – 4.1 cm) misses its clapper, but the catch of the clapper is still intact (T5-L5-F2A; cat. no. 71; fig.8.11b). This bell was found in the cellar. A similar bell is complete with the clapper and with the attachment canon, unfortunately this bell has not been restored (T0-L0-F0; cat. no. 73; fig. 8.11d). The smallest bell (To-L0-HVR5; cat. no. 74; fig. 8.11c) is decorated with four (two by two) engraved lines. It is made of tinned copper alloy and the catch of the small iron clapper is still there. The height of this small bell is 16.5 mm with a diameter of the undercut of 15 mm. The canon is hexagonal and measures 6.5 mm. The last bell is made of copper alloy with an iron clapper, but is flattened. It has got a hexagonal canon and was found in the eastern section of a Roman horizon. (h = 4.3 cm; T7-L0-F1; cat. no. 72; fig.8.11e). These bells can only be dated as Roman (Furger and Schneider 1993, 159-171).

A flat iron fitting with at the end a hook can be identified as part of a wagon (T19-L2-F2; cat. no. 75). Such fittings were attached to the side of the body of wagons and played according to Künzl (Künzl 1993, 301-302) a role in the mounting of part of the coach-box.[8] A similar mounting was found at Voorburg-Arentsburg (Hoss 2014, 635). This fitting was found in large pit of 3.3 × 2.0 m and 1.0 m deep, about 30 m southward of the villa. The content of this pit consisted in a wide variety of artefacts: Roman pottery and building ceramics, but also architectural fragments like parts of a column shaft, a capital and a split column.

8.2.10 Domestic life and building

A rim fragment of a copper alloy pot was excavated in the above described pit (T19-L3-F2; cat. no. 77). The rounded rim of the bronzeware fragment (l 21.0 cm; w 1.5 cm) is bent inward. A complete iron key (T19-L2-F2; cat. no. 78; fig. 8.12a) was found in the same pit. The shank of the iron key is 10.6 cm long and the bended 5.3 cm wide pin has five bits. Thirteen copper alloy studs and fittings were found in the same pit, the cellar and through the HVR-sondages (cat. no. 81-91). One of them is a small bell shaped stud (T0-L0-F7; cat. no. 79, fig. 8.11f). Such studs were for example used to attach strike plates to cupboards and trunks, and they date to the 2nd – 3rd century AD (Allason-Jones 1985, 95; Hoss 2014, 642). Twelve iron hinges of different dimensions and shape were found in different contexts. Some could according to their form and size be interpreted as hinges for large doors or outdoor use, while more modest and delicate ones were probably applied to indoor furniture (cat. no. 93-104; fig. 8.12 b and c).

Two iron bands (cat. no. 110-11) can be interpreted as fittings for wooden water pipes; only one was found in a clear context: the 'cellar' of the villa-complex (5-12-2C en 10-1-1; fig. 8.13) Such bands were also retrieved at the Flavian-Trajanic legionary fortress and the *canabae legionis* of Nijmegen (Swinkels and Koster 2005, 38; Franzen 2009, 1278).

More than 1400 excavated iron nails of different sizes from all contexts could have been used for building and domestic use, but also for other purposes. These have not yet been classified to Manning's system. In this system Manning (1985, 134-135) differentiated ten types of nails from timber nails to upholstery nails, from tacks to sandal hobnails. When this has been executed more information can be given to their use, but this has not been done due to lack of time.

8.2.11 Religion

A fragment of a copper alloy statue was found as a stray find during the HVR-sondages (T0-Lo-Strayfind; cat. no. 113; fig. 8.14). The hollow cast fragment measures 5.2 × 3.8 cm with a thickness of -3 – 0.4 cm. Most probably it is concerns part of a pedestal – because of the dimensions and two horizontal grooves – but part of a anthropomorphic statue can not be excluded. It was damaged severely and the lack of initial preservation measures makes it difficult to provide more definite conclusions on this fragment.

8.3 Conclusions

The results of the analysis of the metal finds of the villa of Maasbracht are strongly affected by two phenomena. For the categories of the small metal finds (coins and personal ornaments) about half of the finds were retrieved during the preliminary HVR-sondages. This makes clear that most probably a large part of these objects were missed or overlooked during the regular R.O.B.-excavations in Maasbracht. This can be due to the objectives, the employed methodology and techniques of the excavation, the financial limitations

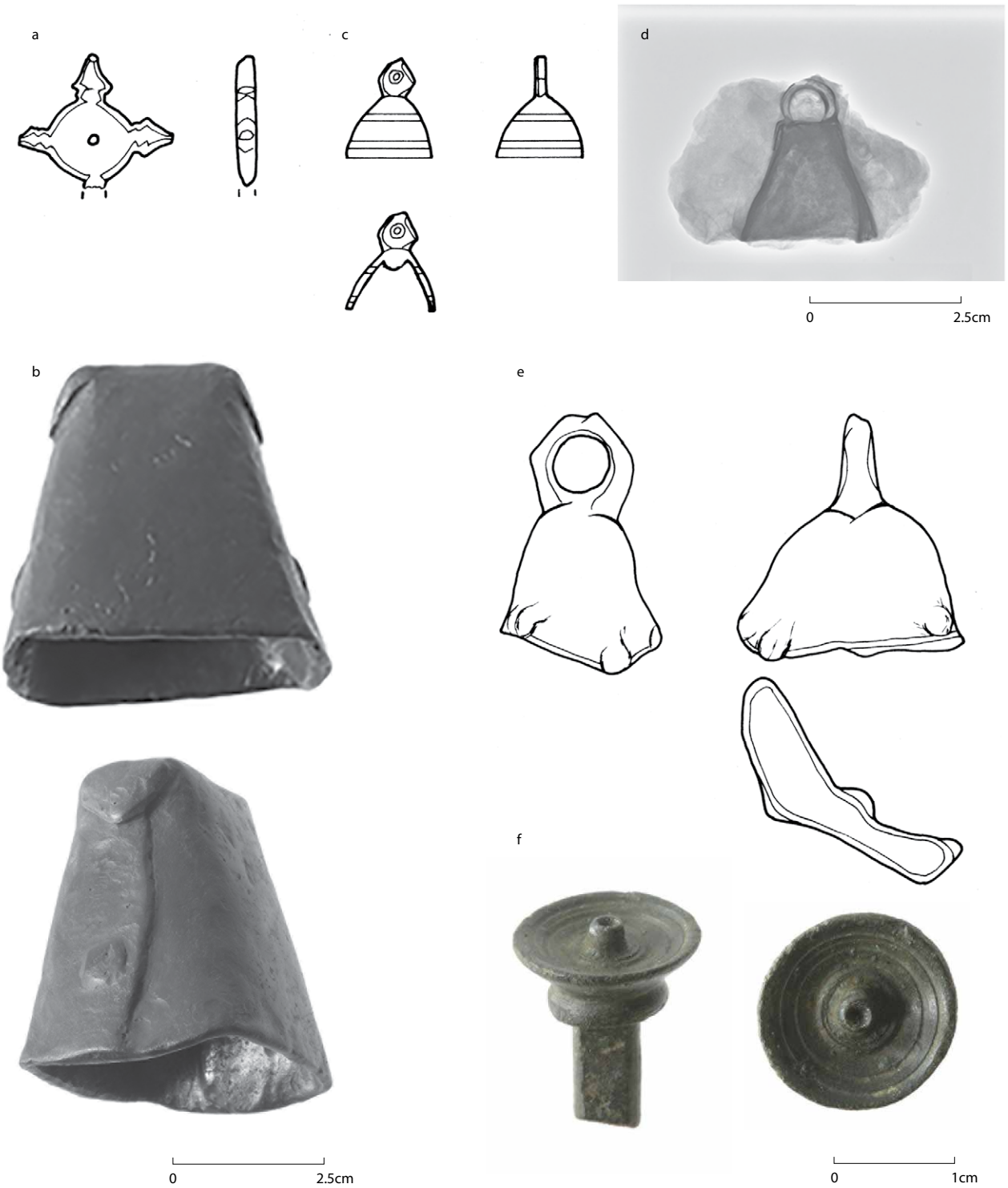

Figure 8.11 Horse harness strap junction (a); convex iron bell (b); small tinned copper alloy bell (c); complete copper alloy bell, x-ray picture (d); flattened bell with hexagonal canon (e) figures a-e 1:1; small bell shaped stud (f) 2:1 (drawings A.J. Horbach, photos Restaura)

Figure 8.12 Iron key with five bits (a) and two iron hinges (b and c) 1:1 (photos Restaura)

and the competence of the R.O.B.-staff involved, but can of course also be a result of the so called spirit of the age. The second aspect that affected this find category concerns the lack of preservation and the storage conditions of the material. Thirty years of storage of especially iron artefacts without proper or even basic desalting, conservation and restoration measures had some serious negative effects on the material involved. Some objects were disintegrated and beyond repair and proper determination. It was nevertheless tried, also by means of x-ray pictures, to get an impression of the function and dating of the retrieved metal finds of the villa of Maasbracht. This was possible, also thanks to the accuracy of the Heemkundevereniging Roerstreek-sondages and the assistance of Jo Kempkens and Ton Lupak (Restaura).

Figure 8.13 Iron bands, probably fittings for wooden water pipes 1:2 (photo Restaura)

Figure 8.14 Fragment of a bronze statuette 1:1 (photo Restaura).

The most remarkable metal objects found at the Roman villa site of Maasbracht are the remains of a La Tène warrior equipment, consisting in a complete shield boss, a spearhead and fragments of the sword suspension chain. These were most likely not found in their initial context, what might have been a grave on top of the Meuse terrace. Such a grave was probably cleared during the construction or one of the rebuilding/-renovation phases of the Roman villa. These objects were likely discarded or re-deposited in a depression downhill during or after the clearing.

It is likely that we lack a substantial part of the coins of especially the active use of the villa complex. The seven *antoniniani*, all with an issue date between 238-246 CE, can be attributed to phase 2 of the cellar. The brooches – although small in number – give some clues. Three of the seven Roman brooches date well before the cellar, and most probably belong to earlier occupation of the villa complex. A mid 4th century *follis* and a most probably late 4th or 5th century brooch make clear that there were some activities at the site in these periods as well.

The other metal objects show an assemblage with an overall pattern that is characteristic for civilian and rural settlements during the Roman era. Apart from two small pieces of iron slag and three castings of lead and copper, no evidence has been found to suggest that metallurgical and/or manufacturing activities took place at the villa of Maasbracht. The absence on the other hand of typical Roman agricultural tools and implements, makes us wonder if the villa of Maasbracht can be considered as self reliant farm with in this case a strict distinction between the residential (*pars urbana*) and the working compounds (*pars rustica*), or merely as an (example of) *urbs in rure*.[9]

Notes

1 Abbreviations are used for the excavation context: T = trench; L = level; F = find no; 0 = unknown or not given; HVR is find number of sondages by local amateur archaeological group (Heemkundevereniging Roerstreek).

2 According to some notes found in the excavation documentation the analysis of the coins to RIC-numbers were (most probably) done by J.P.A. van der Vin. The determination was checked by me and all errors of omission and interpretations are of course mine.

3 See for the classification of hoards e.g. Johns 1996, 14-15; Haupt 2001.

4 Hereby I would like to thank Louis Swinkels and Stephan Weiss-König for helping with this inscription and providing the examples.

5 For the dating of the brooches see Heeren 2009, 217-25 and 146-7, table 16.

6 See for instance: Kesteren – De Woerd (RAM 82); Tiel-Passewaaij (Heeren 2009); Zaltbommel (ADC Monografie 8); Veghel-De Scheifelaar II (ADC Rapport 3350); Oosterhout-De Contreie (ADC Monografie 14).

7 Such pendants are interpreted as *balteus* pendants with this dating, since Oldenstein (1976, 253), although he himself is more cautious and claims that they can also be part of military horse harnasses. Thanks to Stefanie Hoss for her advice with themilitaria and the horse pendants.

8 Künzl 1993, 301-302, Abb. 10, Cat. No. 218-219, Taf. 494.

9 For this concept of *urbs in rure*, see Purcell 1987.

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Appendix

PREHISTORY

LA TENE WARRIOR BURIAL

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture	Restaura nr
1	20	5	4	Iron shield boss, one conneting nail still in place	1	1 (Drawing A.J. Horbach); 2a-b	92	276
2	20	5	4	Iron spearhead, point missing	1	3 (Drawing. A.J Horbach); 4a-b	90	273
3	20	5	4	Iron chain with attachment rings	1	5	87, 88	270
4	20	5	4	Link of iron chain	1		91	274
5	20	5	4	Fragment of an iron fitting	1		89	271

ROMAN PERIOD

COINS

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture	Restaura nr
6	0	0	3 (HVR4)	Sestertius, copper alloy, Hadrian, RIC (II) 637; 125-128 CE	1			330
7	12	0	0	Sestertius, copper alloy, L. Aelius Caesar, RIC (II) 1061, BMC 1925; 137 CE	1			203
8	0	0	7 (strayfind)	As, copper alloy, Antoninus Pius COS III, RIC (III) 679 or 684; 140-44 CE	1			329
9	0	0	7 (strayfind)	Dupondius, copper alloy, Diva Faustina I, RIC (III) 1183; after 141 CE	1			331
10	13	0	0	Denarius, silver alloy, Julia Domna, RIC (IV) 580; 196-211 CE	1			207
11	7	2	3	Antoninianus, silver alloy, Gordian III, RIC (IV-iii) 2; 238-39 CE	1			154
12	0	0	3 (HVR?)	Antoninianus, silver alloy, Gordian III, RIC (IV-iii) 56; 240 CE	1			
13	0	0	3 (HVR8)	Copper alloy coin, indet	1			332
14	0	0	3 (HVR9)	Antoninianus, silver alloy, Gordian III, RIC (IV-iii) 95; 241-43 CE	1			333
15	0	0	3 (HVR?)	Antoninianus, silver alloy, Gordian III, RIC (IV-iii) 89; 242-43 CE	1			

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture	Restaura nr
16	7	2	2	Antoninianus, silver alloy, Gordian III, RIC (IV-iii) 213; 242-44 CE	1			153
17	0	0	3 (HVR5)	Antoninianus, silver alloy, Gordian III, RIC (IV-iii) 154; 243-44 CE	1			334
18	13	2	2	Antoninianus, silver alloy, M. Otacilia Severa, RIC (IV-iii) 123C; 244-46 CE	1			210
19	0	0	3 (HVR18)	Follis, copper alloy, Constans, RIC (VIII – Trier) 195, HK 148; 347-48 CE	1			331
20	5	3	2	Copper alloy coin, indet	1		9	31b

PERSONAL ADORNMENTS

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture	Restaura nr
21	5	12	2D	Fragment of copper alloy ring, with text	1	6	?	125
22	5	2	4	copper alloy ring with eight-sided exterior	1	7a-b	8	28
23	3	0	3	copper alloy ring	1			311
24	0	0	7 (strayfind)	copper alloy ring	1			319
25	7	5	1	Part of iron finger ring, Sphendon-type	1	8a-b	58+59	178
26	0	0	HVR 242/ 27	Fragment of copper alloy bracelet with decoration	1			322
27	0	0	HVR 22	Knob of copper alloy bracelet	1			324
28	20	5	1	Fragment of copper alloy bracelet or ring	1			267
29	0	0	5	Fragment of copper alloy keyring	1			309
30	0	0	5 (HVR15)	Augen-fibula (eyes: non-perforated) – Riha 2.3.3; Haalebos 6c; 15-55 CE (Heeren 2009, Tabel 51, 217-25), copper alloy, pin missing	1	9 (Drawing A.J. Horbach)		
31	5	9	2B	Drahtfibel with band-shaped bow – Van Buchem 24; 120-200 CE (Heeren 2009, 146-7, Tabel 16), copper alloy, complete, pin open	1	11 (Drawing A.J. Horbach)		
32	5	11	2A	Drahtfibel with band-shaped bow – Van Buchem 24; 120-200 CE (Heeren 2009, 146-7, Tabel 16), copper alloy, pin missing	1	12 (Drawing A.J. Horbach)		
33	5	12	2D	Drahtfibel with broad hammered bow and spring with five windings – Van Buchem 24var; 150-270 CE (Heeren 2009, 146-7, tabel 16), copper alloy, pin missing	1	10 (Drawing E.C.M. Koot)		
34	0	0	5 (HVR19)	Drahtfibel with bended bow – Van Buchem 22C-D; 60-150 CE (Heeren 2009, 146-7, Tabel 16), copper alloy, half pin, half pin catch	1	13 (Drawing A.J. Horbach)		

35	0	0	HVR 242	Drahtfibel with round shaped bow – Van Buchem 22A-B; 1-90 CE (Heeren 2009, 146-7, Tabel 16), copper alloy, no pin, bent pin catch	1	Drawing A.J. Horbach		
36	0	0	6 (HVR 26)	Drahtfibel, copper alloy, indet; pin, spring and pin catch missing	1	Drawing A.J. Horbach		313
37	5	12	2B/D?	Fragment of brooche, copper alloy, indet	2			124 & 126
39	0	0	4 (HVR29)	Copper alloy disc brooche with cross and punctuated dots and circles, most probably late 4th or 5th century CE	1	14 (Drawing A.J. Horbach)		

MEDICINE AND HYGIENE

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture	Restaura nr
40	0	0	4 (HVR3)	Copper alloy ear probe (ligula)	1	15 (Drawing A.J. Horbach)		314
41	0	0	4 (HVR31)	Complete copper alloy ear probe (ligula)	1	16 (Drawing A.J. Horbach)		315
42	0	0	4 (HVR28)	Small copper alloy ear probe (ligula)	1			
43	5	12	2B	Fragment of a handle of copper alloy spatula probe	1			118

WRITING AND COMMUNICATION

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture	Restaura nr
44	5	11	2A	Iron stylus, decorated	1	17	28	86

RECREATION

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture	Restaura nr
45	5	12	2B	Copper alloy cymbal, decorated, with iron pen	1	18a-b	37	107

IRON TOOLS AND CRAFTMANSHIP

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture	Restaura nr
46	3	2	2	Complete, broad iron knife	1	19a-b	4	11
47	5	11	2A	Fragment of iron knife	1		27	85
48	5	11	2C	Complete, fragmented iron knife	1	20a-b	30	92
49	5	11	2C	Complete iron knife with copper alloy ring and fragment of iron knife	2	20a-b	32	95
50	5	11	2D	Fragment of iron knife	1		35	97
51	12	2	1	Fragment of iron knife	1		68	204
52	14	3	6	Fragmented small iron knife	1		74	220

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture	Restaura nr
53	16	1	1	Fragmented iron knife	1		75	227
54	18	2	1	Fragment of iron knife	1		78	243
55	20	1	1	Fragments of an iron knife	1			256
56	0	0	HVR11	Complete iron knife	1		97	299
57	9	1	1	Small chisel	1	21	60	181
58	7	2	1	Head of small iron hammer-head	1	22a-b	49	150
59	17	3	2	Head of iron axe or cleaver, shaft incomplete	1			235
60	5	4	2D	Lead casting, concave	1			38
61	5	5	2A	Lead casting	1			45
62	0	0	7 (strayfind)	Cupper casting	1			320
63	5	6	2A	Iron slag	1		19	55
64	5	7	2B	Iron slag	1		22-23	62

MILITARIA

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture	Restaura nr
65	0	0	6 (HVR2)	Military balteus pendant	1	23		166

TRAVEL AND TRANSPORT

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture	Restaura nr
66	7	3	2	Copper alloy horse harness pendant	1	24		166
67	0	0	6 (HVR23)	Iron horse harness pendant with copper alloy knob	1	25a-b	102	308
68	0	0	7 (strayfind)	Copper alloy strap junction (?), incomplete	1	26 (Drawing A.J. Horbach)		327
69	5	10	2B	Copper alloy horse harness strap fitting	1			78
70	7	3	2	Copper alloy horse harness strap fitting	1			167
71	5	5	2A	Iron bell. Clapper missing, but catch still there	1	27a-b	16	46
72	7	0	1	Copper alloy bell with iron clapper	1	30 (Drawing A.J. Horbach)		145
73	0	0	0 (HVR?)	Iron bell	1	28	98-99	301
74	0	0	5 (HVR13)	Small tinned copper alloy bell, with remnants of iron clapper	1	29 (Drawing A.J. Horbach)		326
75	19	2	2	Iron wagon fitting	1		82	349
76	18	5	1	half iron horse shoe	1		80	247

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture	Restaura nr
77	19	3	2	Fragment of rim copper alloy bronzeware	1			255
78	19	2	2	Complete iron key	1	31	81	248
79	0	0	7 (strayfind)	Copper alloy bell shaped stud	1	32		312
80	5	4	2A	Iron leg (of stove?)	1		10-11	33
81	2	1	2	Head of copper alloy stud	1			3
82	5	10	2A	Two incomplete copper alloy studs	2			76
83	0	0	5 (HVR?)	Copper alloy stud	1			316
84	0	0	7 (strayfind)	Copper alloy stud	1			318
85	0	0	HVR30	Copper alloy stud	1			323
86	5	5	2B	Fragment of copper alloy fitting	1			48
87	5	11C	2B	Fragment of copper alloy fitting	1		38	109
88	19	3	2	Two fragments of copper alloy fitting	2			253
89	20	3	1	Fragment of copper alloy fitting	1			264
90	0	0	HVR12	Fragment of copper alloy fitting	1			325
91	0	0	0 (HVR?)	Fragment of copper alloy fitting	1			327
92	5	3	2	Part of iron handle and iron fittings	6		9	31A
93	5	5	2A	Complete iron hinge, folded and broken in two parts	1	34a-b	13-14	42
94	5	5	2D	Complete iron hinge, folded	1		17	51
95	5	6	2D	Complete iron hinge, broken in two parts	1		20	56
96	5	8	2D	Half iron hinge	1			68
97	0	0	3 (HVR10)	Half iron hinge	1	33		
98	7	4	1	Iron hinge, incomplete	1		56	173
99	13	1	1	Fragment of iron hinge	1		70-71	208
100	21	2	1	Half iron hinge	1			278
101	3	0	0	Half iron hinge	1			300
102	2	1	1	Fragment of iron band hinge	1		1	2
103	7	5	1	Complete iron band hinge	1		57	177
104	9	1	7	Fragment of iron band hinge	1		64	190
105	5	11A	2D	Fragment of iron fitting with two holes	1		36	103
106	6	1	13	Fragment of iron fitting with two holes	1		45	134
107	6	2	2	Fragment of iron fitting with four nails	1		46	136
108	7	3	1	Fragment of rounded iron fitting with two holes	1		53	161
109	0	0	5 (HVR14)	Fragment of fitting with one hole and pin	1		101	307
110	5	12	2C	Iron band (water piping?)	1	35a-b	43	121
111	10	1	1	Fragments of iron band (water piping?)	1	35a-b	66	15
112	20	2	1	Iron swivel	1			259

RELIGION

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture	Restaura nr
113	0	0	7 (strayfind)	Fragment of a copper alloy statue (casted)	1			317

MISCELLANEOUS

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture	Restaura nr
114	5	4	2B	Copper alloy thread	1			35
115	0	0	0 (HVR?)	Copper alloy thread	1			321
116	5	5	2A	Fragment of iron fitting	1		15	43
117	5	5	2D	Fragment of iron fitting	1		18	53
118	5	6	2D	Fragments of iron fittings	2		21	59
119	5	8	2D	Fragment of iron fitting	1		24	69
120	5	13	2C	Fragment of iron fitting	1		44	129
121	6	2	6	Fragment of iron fitting	1		47	139
122	7	1	1	Fragment of iron fitting	1		48	148
123	7	2	1	Fragment of iron fitting	1			151
124	7	3	1	Fragments of iron fittings	2		52	158
125	7	3	1	Fragments of iron fitting	1		54	163
126	9	1	1	Fragments of iron fittings	2		61	182
127	9	1	4	Fragment of iron fitting	1		62	186
128	12	2	1	Fragment of iron fitting	1		69	206
129	20	2	1	Fragment of iron fitting	1		83	258
130	3	0	3	Fragment of iron fitting	1		100	305
131	10	1	1	Iron hook with eye	1		65	193
132	5	11	2B	Iron ring	1		29	89
133	5	11D	2D	Iron ring or collar	1		41	114
134	7	3	1	Iron ring or collar	1			162
135	7	3	1	Fragment of iron ring or collar	1			165
136	15	1	1	Iron rings or collars	2			226
137	20	5	1	Iron open ring	1		86	269
138	5	11	2C	Fragments of iron chain and fitting	2		33-34	96
139	7	5	1	Fragment of iron chain	1			176
140	14	3	3	Fragment of iron chain	1			216
141	18	2	1	Fragment of iron chain	1		79	244
142	20	2	1	Fragment of iron chain or hook	1		85	261
143	24	1	2	Fragment of iron chain	1		96	292
144	5	9	2A	Iron pen	1		25	72

145	5	11	2A	Iron stick	1			84
146	19	2	2	Iron stick	1			251
147	21	3	1	Iron stick or pen	1		94	281

NAILS

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture
148	2	1	1	Corroded iron nail	1		1
149	2	1	2	Five corroded iron nails	5		
150	3	1	1	Three corrodediron nails	3		
151	3	1	3	Fourteen corroded iron nails	14		
152	3	1	4	Corroded iron nail	1		
153	3	1	7	Four corroded iron nails	4		
154	3	2	1	Two corroded iron nails	2		
155	3	3	1	Corroded iron nail	1		
156	4	1	1	Corroded iron nail	1		
157	4	1	2	Six corroded iron nails	6		
158	4	1	4	Corroded iron nail	1		
159	4	1	6	Three corroded iron nails	3		
160	4	1	7	Two corroded iron nails	2		
161	4	1	9	Two corroded iron nails	2		5
162	4	2	1	Four corroded iron nails	4		
163	4	2	3	Two corroded iron nails	2		
164	4	3	2	Corroded iron nail	1		
165	5	1	1	Nineteen corroded iron nails, plus bombshell fragment	19		7
166	5	2	1	Three corroded iron nails	3		
167	5	2	2	Thirteen corroded iron nails	13		
168	5	3	2	Thirty corroded iron nails	30		
169	5	3	2	Fifty corroded iron nails	50		
170	5	4	2A	Thirteen corroded iron nails	13		
171	5	4	2A	Three corroded iron nails	3		
172	5	4	2B	Seven corroded iron nails	7		
173	5	4	2C	Two corroded iron nails	2		
174	5	4	2D	Thirty corroded iron nails	30		
175	5	4	3	Three corroded iron nails	3		
176	5	5	2A	Twelve corroded iron nails	12		
177	5	5	2A	Corroded iron nail	1		
178	5	5	2B	Eighteen corroded iron nails	18		
179	5	5	2C	Thirteen corroded iron nails	13		
180	5	5	2D	Fifteen corroded iron nails	15		

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture
181	5	6	2A	Sixteen corroded iron nails	16		
182	5	6	2B	Eighteen corroded iron nails	18		
183	5	6	2C	Sixteen corroded iron nails	16		
184	5	6	2D	Twenty-five corroded iron nails	25		
185	5	7	2A	Twelve corroded iron nails	12		
186	5	7	2B	Eighteen corroded iron nails	18		
187	5	7	2C	Six corroded iron nails	6		
188	5	7	2D	Eight corroded iron nails	8		
189	5	8	2B	Twenty-seven corroded iron nails	27		
190	5	8	2C	Fifteen corroded iron nails	15		
191	5	8	2D	Twenty-three corroded iron nails	23		
192	5	9	2A	Twenty-six corroded iron nails	26		
193	5	9	2B	Sixteen corroded iron nails	16		
194	5	9	2C	Two corroded iron nails	2		
195	5	9	2C	Nineteen corroded iron nails	19		
196	5	10	2B	Thirty corroded iron nails	30		
197	5	10	2C	Thirty-four corroded iron nails	34		
198	5	10	2D	Nineteen corroded iron nails	19		
199	5	11	2A	Twelve corroded iron nails	12		
200	5	11	2A	Twelve corroded iron nails	12		
201	5	11	2B	Eleven corroded iron nails	11		
202	5	11	2C	Seventeen corroded iron nails	17		
203	5	11	2D	Thirteen corroded iron nails	13		
204	5	11A	2B	Corroded iron nail; large head	1		
205	5	11A	2D	Four corroded iron nails	4		
206	5	11B	2B	Three corroded iron nails	3		
207	5	11B	2D	Two corroded iron nails	2		
208	5	11C	2B	Corroded iron nail and pointed iron strip	1		39
209	5	11C	2B	Fourteen corroded iron nails	14		
210	5	11C	2D	Several corroded iron nails			
211	5	11D	2D	Five corroded iron nails	5		
212	5	12	2A	Twelve corroded iron nails	12		
213	5	12	2B	Six corroded iron nails	6		
214	5	12	2C	Three corroded iron nails	3		
215	5	12	2C/D	Corroded iron nail	1		
216	5	12	2D	Eleven corroded iron nails	11		
217	5	12	3D	Three corroded iron nails	3		
218	5	13	2C	Seven corroded iron nails	7		

219	5	13	2D	Two corroded iron nails	2		
220	6	1	1	Corroded iron nail	1		
221	6	1	8	Several corroded iron nails			
222	6	2	1	Corroded iron nail	1		
223	6	2	2	Corroded iron nail	1		
224	6	2	5	Corroded iron nail	1		
225	6	3	2	Corroded iron nail	1		
226	6	3	3	Corroded iron nail	1		
227	6	3	5	Corroded iron nail	1		
228	6	3	8	Corroded iron nail	1		
229	6	3	11	Corroded iron nail	1		
230	7	0	1	Four corroded iron nails	4		
231	7	1	1	Ten corroded iron nails	10		
232	7	2	1	Fifty corroded iron nails	50		
233	7	3	1	Approx. hundred corroded iron nails	100		
234	7	3	2	Corroded iron nail	1		
235	7	3	2	Thirty-four corroded iron nails	34		
236	7	4	1	Thirty corroded iron nails	30		
237	7	4	2	Ten corroded iron nails	10		
238	7	5	1	Twenty corroded iron nails	20		
239	8	1	1	Three corroded iron nails	3		
240	8	2	1	Corroded iron nail	1		
241	9	1	1	Twenty-four corroded iron nails	24		
242	9	1	2	Seventeen corroded iron nails	17		
243	9	1	4	Eight corroded iron nails	8		
244	9	1	5	Ten corroded iron nails	10		
245	9	1	9	Four corroded iron nails and fragments	4		
246	9	1	10	Six corroded iron nails and fragments	6		
247	10	1	1	Four corroded iron nails and fragments	4		
248	10	1	2	Five corroded iron nails	5		
249	10	2	5	Four corroded nails	4		
250	11	1	1	Twenty corroded iron nails	20		
251	11	2	1	Two corroded iron nails	2		
252	12	2	1	Three corroded iron nails and fragments	3		
253	13	1	1	Twenty corroded iron nails	20		
254	13	3	4	Corroded iron nail	1		
255	14	1	1	Several iron nails			
256	14	2	2	Corroded iron nail	1		
257	14	3	1	Corroded iron nail	1		

Catalog no.	Trench No.	Level No.	Find No.	Description	N	Fig. No.	X-ray picture
258	14	3	3	Thirty corroded iron nails and fragments	30		
259	14	3	4	Corroded iron nail	1		
260	14	3	6	Corroded iron nail	1		
261	14	3	10	Corroded iron nail	1		
262	14	4	7	Three corroded iron nails	3		
263	15	1	1	Two corroded iron nails	2		
264	16	1	1	Two large corroded iron nails	2		
265	16	2	1	Corroded iron nail	1		
266	17	1	1	Corroded iron nail	1		
267	17	2	1	Six corroded iron nails	6		
268	17	3	1	Two corroded iron nails	2		
269	17	3	2	Corroded iron nail	1		
270	17	4	1	Corroded iron nail	1		
271	17	4	2	Corroded iron nail	1		
272	17	5	1	Corroded iron nail	1		
273	17	5	3	Corroded iron nail	1		
274	18	1	1	Three corroded iron nails and fragments	3		
275	18	2	1	Six corroded iron nails	6		
276	18	3	1	Corroded iron nail	1		
277	19	2	2	Two corroded iron nails	2		
278	19	3	1	Corroded iron nail	1		
279	19	3	2	Six corroded iron nails and fragments	6		
280	20	1	1	Six corroded iron nails and fragments	6		
281	20	2	1	Thirty-five corroded iron nails	35		
282	20	3	1	Ten corroded iron nails and fragments	10		
283	20	4	1	Corroded iron nail	1		
284	20	4	7	Three corroded iron nails	3		
285	20	5	1	Nine corroded iron nails and fragments	9		
286	20	5	3	Six corroded iron nails and fragments	6		
287	20	5	4	Fifteen corroded iron nails and fragments	15		
288	21	1	1	Corroded iron nail	1		
289	21	2	1	Corroded iron nail	1		
290	21	4	1	Corroded iron nail	1		
291	21	4	2	Corroded iron nail	1		
292	21	4	3	Four corroded iron nails	4		
293	21	5	1	Six corroded iron nails and fragments	6		
294	22	1	1	Three corroded iron nails	3		
295	22	2	1	Two corroded iron nails	2		

296	23	1	1	Two corroded iron nails	2		
297	23	2	1	Corroded iron nail	1		
298	24	1	1	Corroded iron nail	1		
299	24	1	2	Nine corroded iron nails and fragments	9		
300	24	1	7	Corroded iron nail	1		
301	24	2	1	Four corroded iron nails	4		
302	24	2	7	Corroded iron nails			
303	24	2	8	Six corroded iron nails and fragments	6		
304	-	-	-	Fifty-one corroded iron nails and fragments	51		
					1401		

9 Synthesis

W.K. Vos and W.J.H. Willems

9.1 Introduction

In this closing synthesis on the villa in Maasbracht the different, earlier discussed specialist investigations, have been collected and an attempt has been made to interpret the results and their meaning in a mutual correlation. The archaeological research into the villa of Maasbracht has yielded many data that, as compared with the earlier published data (Willems 1982; Van Dierendonck *et al.* 1987; Willems and Kooistra 1988), provide a renewed picture of this site. The larger story behind the villa, in relation to the Limburg villa landscape and the developments there has, however, remained largely unchanged. The new data on Maasbracht do not influence it and for that reason, besides the more pragmatic reasons of time and money, an in-depth embedding of Maasbracht in the micro region and outside it, has been largely omitted.

The synthesis presented here contains a number of relatively short sections in which the history of the site has been articulated in many facets. There is first a section on the integrity and conservation of the findspot with regard to the excavated features and the cultural finds material that has survived. This is followed by a further explanation, in summary form, about the material culture of the findspot. Next the occupation history is discussed. This is followed by aspects regarding the ecology and economy; in other words the landscape and the existence economy. To conclude, the contacts of Maasbracht within the micro region have been looked at in a modest way and a few concluding conclusions are presented.

9.2 Integrity and conservation

The integrity and conservation of the archaeological remains of the villa in Maasbracht can be characterized as very variable in quality. For a proper overview and value judgement they can best be divided into features and cultural finds material.

For by far most features it holds that the integrity and conservation was moderate to reasonable. A few qualifying comments can be made that have influenced the interpretation of the data. First and foremost, it was remarkable that almost no (sub)recent soil disturbances were present on the terrain. These were limited really to one elongated feature of a zigzag-shaped trench from World War II. This feature has in fact not caused any substantial disturbance of the Roman legacy.

Further, a considerable part of the surface appeared to be eroded due to post-Roman soil cultivation and erosion. The features were ploughed out by agricultural activities in the course of time, or they had disappeared or were, to say the least, truncated. As the Roman features were lying quite near the surface, this was the case with nearly all features. Hence, through ploughing, the Roman building remains ended up spread over the site in the course of centuries. The result was a 20 to 40 cm thick layer of gravel, roof tiles, mortar and rubble that was present on the entire site. Overlying this was a top layer also containing a reasonable amount of rubble which can be recorded as recently worked soil. All in all, on top of the first visible and recognizable features of Roman times was a layer of soil, 40 to 60 cm thick, in which all kinds of scattered demolition material of the Roman villa was present. In that sense it is therefore not surprising that the terrain had been known for a long time under the toponym of 'Steenakker' (English 'Stone field').

The underlying features have sometimes been reasonably preserved. The assumed plinths of the wall construction had in fact disappeared but deeper dug-in pits, in particular in the forecourt of the villa, sometimes survived quite well, up to nearly 120 cm deep. The features of the villa itself, the stone constructions and foundations of gravel that is, reached nowhere deeper than 100 cm below ground level. Only the walls of the cellar (room 5) were still present up to 2 m under ground level, but that was an exceptional situation that is not representative of the rest. A second, deep feature that survived was the remains of a cesspit on the transition from room 22 to room 24. Under the decayed parts of the original wooden tank construction of the pit, the phosphate-rich feature continued up to at least 220 cm below ground level.

Besides the ploughing out of the top layer of the villa, natural soil erosion has not helped the archaeological remains. It has remained unknown how much of the top of the findspot has disappeared because of it. Estimates vary from 30 to 60 cm. North of the findspot, at the foot of the slope of the terrace was a thick layer of colluvium of minimally 100 cm, consisting of a layer of fine and a layer of coarse

material with large pieces of find material, of roof tiles in particular. This has been demonstrated in one of the profiles that had been made through the river terrace. The results most probably say much about the whole strip along the foot of the terrace where large quantities of washed-down material can be expected, including Roman finds material. However, we should not expect too much from it in terms of integrity and conservation.

Finally, influences of the weather through the centuries have affected the features of the Roman period and sometimes even made them disappear. It concerns specifically the loam constructions. It is, after all, very likely that large parts of the villa of Maasbracht were built with blocks of loam. Specialist research of the building material and the wall paintings of the villa has shown that substantial pieces of plasterwork have been found with remains of loam on the back. From that we can infer that the plasterwork was applied directly onto the loam walls and did not (always) have a stone wall as bearer. Loam occurs naturally in Maasbracht, as in the rest of Middle and South Limburg. The natural product provides a large degree of solidity to building constructions, but when it is not protected against weathering it will disappear very quickly.

Concerning the ceramic material, the integrity and conservation of the cultural find material can be said to be quite good. The pottery from the villa and the features around them were of course fragmented, as is common on archaeological sites. In the cellar, this degree of fragmentation was even slightly higher, but that did not mean that the conservation was by definition worse. Moreover, it had no influence on the (eventual) completeness of the material, on the contrary. The reason is that the find material was dumped in its entirety in the cellar. Due to the pressure of the stacked dump layers the pottery has become more fragmented, but when the sherds were fitted together it was shown that quite complete specimens were present in the cellar. Also the numbers were much higher in the cellar than in the rest of the terrain, and thus that context as waste dump was very interesting to study.

Brick and natural stone are also rather well preserved, but in view of the integrity and degree of fragmentation there is very little complete material present. Actually, of the villa itself nothing remains that can be characterized as complete. Apart from a reasonably large piece of a single *tubulus* and a worked piece of natural stone, most of the complete find material all comes from two to three places on the forecourt of the villa. *Lateres*, *tegulae*, sandstone (half)column fragments and other architectural pieces were found in these so-called waste dumps in deep pits. The question is whether these pieces were all originally used in the villa main building or that we should think of a separate, special stone construction outside the stone main building. The building material specialist thinks in the direction of a pillar, shrine or small sanctuary (cf. Smith 2002, 288-291). Be that as it may, the fact is that almost all building material was very fragmented, and that only a few (intentionally?) buried fragments have survived, probably by chance.

As to the painted plasterwork, that was mainly found in the waste dump of the cellar, fragmentation was high. This vulnerable material group is also present elsewhere on the villa terrain but very rarely *in situ*. After all, walls are often no longer upright and plasterwork was not suitable for re-use and was therefore left behind at the findspot after, for instance, a renovation or the abandonment of the site. In Maasbracht plasterwork has been found *ex situ* at several locations inside and outside the stone main building. We can assume that, by far, the most material ever present has disappeared through the ravages of time. Only in a few deep pits, a couple of foundation trenches and especially in the cellar has a considerable quantity of plasterwork been excavated, amongst which quite a number of fragments with very complete and beautiful paintings of, amongst others, human and mythological figures. Only the harmful effects of fire at that time has made the colours disappear or fade, but in general the cellar apparently offered very good conservation conditions, so that the material has withstood several centuries.

Another material group is the zoological finds material. The finds from both inside and outside the cellar were generally reasonably preserved, though some brittle pieces of bone broke very easily. The fragmentation of the bone is rather high and the completeness therefore small. Of many bone fragments remains at most one third (particularly the large bones) were very incomplete. The most completely preserved part of an average skeleton was compact material and teeth remains.

The integrity, degree of fragmentation and conservation of glass varies greatly both in quality and in composition. Fragments of different sizes of utensils were found, as is usual on almost every Roman excavation. The sole exception was a beautiful, almost complete specimen of a bottle that stood out as a unique piece. This bottle was found in a foundation trench of the villa and can perhaps be interpreted as intentionally deposited there. Some very fine and complete beads were found with the ornaments, such as a bead with red-white eye. On the other hand, very weathered specimens were also present, such as a glass melon bead.

Most of the metal finds material is fragmentary, very corroded, and often in a poor condition, making it very difficult to ascertain a function or to identify the material. Moreover, much metal has been lost after the excavation during thirty years storage in a depot. The most important cause was that no conservation measures were taken, such as desalination of iron objects or sufficient stabilisation of

the objects. Hardly any conservation or restoration of vulnerable artefacts had been carried out. Sometimes there are a few X-rays available but the documentation of these has in general remained very limited.

In any case, we have to state that very little metal was found in Maasbracht. One of the causes lies in the fact that no systematic use was made of a metal detector, nowadays an indispensable instrument in an archaeological investigation. However, the pedological conditions were also not ideal for a good conservation. Really remarkable is that most metal finds were made during the preliminary investigation of the trial trenches by the Heemkundevereniging Roerstreek. We can infer from this that the excavation method of the second investigation had huge consequences for the discovery of metal artefacts in Maasbracht, and did not contribute to a rich and varied material group, as could have been expected in the villa.

Summarizing, the conservation, fragmentation and completeness of the archaeological legacy of Maasbracht often leave much to be desired. Nonetheless, a sufficient number of very interesting finds was made, and despite the colluvium and the erosion of the site, quite a bit can be concluded about the villa settlement.

9.3 Material culture

Concerning the material culture of the site, we would refer to the comprehensive specialist contributions elsewhere in this publication, in which the material groups concerned are discussed in detail. Here we only discuss the summary and in particular the highlights, and we looked, if possible, into to what extent Maasbracht deviates from the standard, and a few special aspects of the material culture have been singled out.

To the pottery it applies that not all the material of the site has been analysed, chiefly fragments from specific vestiges or contexts. Of course features were also examined but unfortunately no properly datable finds were made there, they could only be characterized as 'Roman' in a very general sense. Most attention went to the finds material from the cellar. Firstly because many finds were made there, in fact more than 5000 sherds. And secondly because those finds could perhaps provide a good insight into the function of the cellar, but also in the use of the pottery in the villa in general as we are dealing here with waste dumps that later ended up in the cellar space.

Most material originates, as expected, from the potter's wheel and only close to 2% are hand-made ceramics. Almost the entire to be expected spectrum was present in the wheel-thrown pottery group. Noticeable though was that within the context of the cellar, the principal part consisted of tableware. Plates were discovered but in particular beakers. It is remarkable that much coarse-walled and smooth-walled kitchenware and ceramics used for storage are lacking. Of course there are sherds of *dolia*, *amphorae* and storage pots present, not least the dug-in complete jug (type Niederbieber 96) and the storage pot (type Niederbieber 87), but quantity-wise, there is no profusion of pottery that could have been used for storage / stores, such as perhaps to be expected in a cellar. Even when the minimum number of individuals is included in the mutual comparison of the pottery, the ratios appear to be clear. The painted and varnished wares stand out clearly with a minimum of over 200 individuals, whereas only 1 *amphora*, 1 *dolium* and 13 *mortaria* have been identified among the finds from the cellar. The coarse-walled material is very much present with almost 150 individual specimens. In weight, the latter category surpasses all other kinds with over 18 kg, against for instance *c*. 4 kg for painted wares and *c*. 2 kg for varnished ones.

Very special ceramics do not occur in the finds spectrum. An exception are the sherds of a clay sculpture of a boy's head that was published earlier (Van Boekel 1986, 131). When a comparison is made for instance with the villa of Kerkrade-Holzkuil (Tichelman 2005, 321-323), it is noticeable that more *mortaria* were found there, while that share is hardly noticeable in Maasbracht. Of course in Kerkrade, all the pottery of the site was investigated, whereas the study in Maasbracht chiefly focused on the contents of the cellar. Comparable though is that the share of *mortaria* is largest among the thick-walled pottery. Also comparable with Kerkrade, and with other villas in the German Rhineland, are the nearly complete absence of Low Lands Ware, the small percentage of *terra sigillata* and the high number of painted wares.

The glass (and jet) found also mainly originates from the cellar. An important reason for this is not only that this context has been studied, but in particular that the finds were retrieved by sieving the soil. Glass is rather fragile material, and with the exception of one specimen, is not found in a complete condition. The variation in forms and functions is, as usual in Roman settlements: mainly tableware and storage material. It concerns, in the first group, remains of a *kantharos*, a plate and a bowl, while the hexagonal and square bottles rather represent the storage.

In addition, a number of pieces of glass were found that can be designated as ornaments. It concerns different types of beads that have probably once belonged to a necklace, and a fragment of a glass bracelet dating from the Late Iron Age. This La Tène fragment was discovered in a finds layer at the foot of the plateau, in which hand-made sherds from the Iron Age were also found. A relationship with the villa occupants is therefore not directly present, despite the fact that La Tène bracelets are often found on villa terrains.

Finally, window glass was found in two different spots in the cellar. That points in any case to the use of closed-off frames with windowpanes in the villa, though the exact spot is difficult to ascertain. If other villas in the province of Limburg, such as Kerkrade-Holzkuil, can serve as an example, then the biggest chance of finding the right spot would be the bath building or one of the living rooms in the main building.

Among the metal finds are a few unusual objects, of which the grave of a warrior (umbo, spearhead, chain) stand out most. Only the sword is missing in this assemblage but would certainly have been present originally. The grave dates from the third century BC and was situated *ex situ*, halfway the slope of the terrace, among many other finds from later periods, including also Roman material. Undoubtedly, the finds have been eroded and have slid down the slope as colluvium. In view of the presence of Roman finds also in the surviving pit, this would have occurred already in or just after Roman times. Perhaps it happened when the terrain was prepared before the villa was built, or during a renovation phase of the complex.

Other interesting finds are 15 silver coins from the third century. Most likely they represent the final stage of occupation of the villa and thus the decline and demolition of the complex around 250 AD. The follis of Constant I from 347-348 and a probable late antique ivory ring testify to the continued use of the site, but occupation of the Roman main building ceases around the middle of the third century.

In addition to these late finds, there are also a number of finds with an early date, amongst which a bow fibula and a spectacle fibula from the (first half of the) first century AD. It is remarkable that other personal ornaments were discovered in the cellar. Among them are rings, fibulae, bracelets and hairpins. Also from the cellar came a couple of metal rings that were part of the attachment of a drainage pipe. Furthermore, a rather exceptional part of a musical instrument was recognized, namely one of the cymbals of a percussion instrument or a tambourine.

Iron objects were poorly preserved, but what has been recognized, points to a considerable variation. An iron stilus, various knives, an axe, hammer, chisel and all kinds of scrap, which together with some iron slag, could indicate small-scale metal working on the spot. Tools that reveal agricultural activities are unfortunately lacking.

Finally, a part of a belt (*cingulum*) or baldric (*balteus*) of a sword were found, together with a rather rare pendant (fig. 8.23). They were found in the same pit in room 21. Both can be interpreted as a piece of military equipment (kit), and they can be ascribed to a horse harness. However, the boundary between military and civilian use of a harness becomes blurred in the course of the second century. We can, therefore, not say that this equipment necessarily points to a military connection (Nicolay 2007, 215-216). It could be though that we are dealing with parts of the personal equipment of, for instance a veteran, but whether that points also to the character and career of the owner of the villa remains guesswork.

The zoological material is represented by a few thousand animal bone remains, only a handful of which consists of worked artefacts. Most investigated material originates from the cellar because there soil samples were sieved which yielded a lot of material. Among them are noticeable chiefly the small vermin such as rats and mice, but also amphibians and fish remains, among which many fish scales. Besides, also bones of a cat or dog come from the cellar, as well as one human tooth and one molar. Most bone remains can, however, be ascribed to the storage of meat, like the meat-rich parts of pig, sheep and cow. In view of the distribution of these bone remains, we can assume that cows and sheep were stored in different corners of the cellar. Game was also present, amongst which red deer, hare and fowl. Pig bones were, as earlier investigations indicated (Kooistra 1996, 266, 270), very dominantly present in the bone spectrum, both in quantity and in weight.

Bone artefacts include needles, gaming pieces and, very noticeably, two skates from the infill of the cellar. Usually these latter objects are dated in the (Early) Middle Ages but a very few Roman dates are known also from elsewhere (see chapter 6). A very special object is a fragment of a ring or bracelet made of elephant ivory. This find is surely imported from a southern region. The intentionally sawn-through ring could reflect a ritual, the more so as it derives from the same context as the earlier mentioned warrior grave from the Iron Age. The ivory object does not however date from that period but should rather be placed in later Antiquity.

And finally, the fill of one of the complete storage pots was sieved at the time. In the residue were a considerable number of animal remains but the idea that the pot served as mousetrap cannot be confirmed on the basis of the zoological find material. The numbers are too small for that. It rather looks as if the pot became filled with material from the lowermost layer of the cellar infill.

The zoological investigation of the cellar is quite exceptional and therefore difficult to compare with other sites. Not only has an unusual quantity of (sometimes *in situ*) material been studied, but also a lot of sieving was done which made many data available. With other villas, the find material usually comes from ‘normal’ features and this makes a comparison tricky.

From the investigation into building material, ideas spring to mind about the use of a *hypocaustum*, the erecting of walls of the villa and the specific application of special building elements and kinds of materials such as *lateres*, half-columns

and limestone. Summarized briefly, there would be too little material for a *hypocaustum* to underpin a hot-air heating system. At the same time, there are a considerable number of bricks present that could be associated with such a system. However, the application of *tubuli* demands not necessarily a *hypocaustum* but could also have been applied for another heating system by means of, for instance, local hearth places (Smith 2002, 28-32). The find of a piece of a probable chimney pipe confirms that idea, as does the lack of features, such as the small floor pillars of *bessali* that would underpin and endorse a usual under and over floor of *hypocausta*. We do not however know for certain what has been knocked down and has disappeared after the abandonment of the villa. A combination of different heating systems in the villa is certainly one of the possibilities, as can be assumed elsewhere (cf. Tichelman 2005, 62, 98-99).

For erecting the walls, loam would certainly have been used, undoubtedly originating from the immediate surroundings. The idea that the loam blocks would have been lying directly on the gravel foundations or that first a stone plinth was used is difficult to prove. Both the idea that the river terrace itself would have provided sufficient firmness without full foundation, and the occurrence of stone wall parts on a gravel basis (fig. 2.8) underpin both viewpoints of the discussion. The lack of sufficient stone material to argue for the presence of plinths can easily be explained by post-Roman re-use. Stones were probably so near the surface that robber trenches are lacking, and the building material could simply have been taken away in the (Early) Middle Ages. That people did, subsequently, not look for the deep cellar wall could be because that one was in fact covered more deeply.

The special application of the *lateres*, a number of which have been found together, is a splendid find and the assumed function seems very likely in view of the context of a bathhouse. And the heavy foundation or frame of *lateres* could easily have supported a boiler. Many excavated architectural elements of half-columns and such like were located outside the villa in a deep pit in the forecourt. Presumably these fragments were used in the main building, but it cannot be excluded that perhaps they were used in a structure located just outside the villa, like a column or shrine (cf. Smith 2002, 288-291). Be that as it may, the half-columns could have been plastered and thus the stones would not primarily have served for outward show but rather they were used in the construction for their technical properties.

Apart from that, the limestone mortar required for the plastering of the complex should not be underestimated. Together with the required mortar for the building of wall constructions and the roof construction, it would have involved huge quantities of limestone. The stone was collected in the Meuse valley and all the burning would have happened in kilns close to the villa. The lime mortar was next also used for the plasterwork. As in the villa in Voerendaal (Braat 1953, 62-63), so also in Maasbracht was a rectangular lime spot found in which the burnt lime was slaked. That spot had at the deepest level very clear imprints still of a box made of planks (fig. 2.27).

In particular brick is suitable as roofing material (*tegulae* and *imbrices*), though slate is not lacking. Perhaps this was specifically used for the roof covering of the in-house bathhouse. That specific groups of material were used there, is shown by the find of considerable numbers of calcareous tufa in situ. The lightweight properties of this stone, that was found almost nowhere else in the villa, could very well have been incorporated in all kinds of arch and dome constructions inside the bathhouse.

And finally, a number of interesting graffiti have come to light, amongst others, of a possible sundial. In addition, about twenty brick stamps have been recognized with the stamps of CTEC and AAF. The stamps originate from one or more producers who operated somewhere near Maastricht, in the valley of the Jeker or the Meuse, and they endorse the civilian brick production in the Limburg region.

The excavated plasterwork and the paintings tell a special story, not only because of the unusual number of preserved pieces but also because of the figurative representations that were represented on them. Most finds were made in the cellar, but also outside in the building and on the villa forecourt has painted plasterwork been found. In addition, plasterwork originates from a few foundations of main building C, from which we can deduce that the material was re-used in an unusual way. Secondly, it is clear that a renovation or extension has once taken place, whereby older rooms, that had been fitted out with painted plasterwork, were demolished. This renovation of phase B to phase C thus also shows that main building B was at the time decorated with paintings.

Probably all rooms in the villa had been painted, both the walls and perhaps parts of the ceiling. It usually concerns geometrical divisions of the surface in a modest number of colours without figurative elements. Remarkably a large number of paintings with figures were still preserved. They were mainly found in the cellar infill and in the northeastern corner of the main building at the level of the in-house bathhouse.

The material dates, with some leeway, from the end of the second century to the middle of the third century. The specialist assumes that the figure paintings, with amongst others, a gladiator and mythological characters, were applied in the reception area of the villa. With the qualitatively high standard of the representations, the villa owner could exhibit his status and impress his guests and visitors. Where exactly this area was is not known but we can keep in mind, in view

of the similarities with other villas – and also the presence of a mortar floor – room 19 or otherwise around rooms 1 to 4. In any case, the eastern part of the villa seems to have a more representative building part and that corner qualifies more than the rooms in the western wing.

9.4 Occupation history

9.4.1 Prehistory and Early Roman times

The history of the occupation of the findspot 'Steenakker' in Maasbracht begins in the Iron Age. In view of the number of finds of hand-made pottery and, for instance, a piece of La Tène glass from a find layer at the bottom of the slope of the terrace, we can assume that prehistoric occupation or burial has taken place on the terrace above it. The features are however scarce and difficult to distinguish from other non-villa features that have been found here and there on the excavation terrain.

The difference between post holes and other features from the (Late) Iron Age or Early Roman period can therefore not be distinguished, the more so because specific find material nowhere originated from the features. It should be mentioned though that no extensive research was done here either, as the focus of the investigation was directed mainly on Roman times. Nonetheless, if it had been present, a ground plan or structure from prehistory would undoubtedly have been recognized. The only indirectly arguable structure concerns the grave of a warrior (see chapter 8). It was found at the foot of the slope but the exact position of the feature has not been documented. Only a zone in which find material was found has been recorded as separate feature. Later it was discovered that remains of a grave were present among the material, which was deduced amongst others from an umbo and a spear. Human remains have not been found and also lacking is the sword characteristic of such graves.

From the Early and partly Middle Roman period dates a very small number of finds. It concerns some *terra nigra* pottery, a *terra sigillata* bowl of the type Dragendorff 35 and a few metal finds, amongst which a first century spectacle fibula. On that basis, we can assume that the location has indeed been occupied; or was it only visited (?!).

The exact layout of the features from this period has remained undetermined. A number of features in one line can possibly be counted as belonging to one and the same construction or structure (fig. 2.28). The parallel and perpendicular to them traces represent perhaps a wooden predecessor of the stone main building. Or perhaps they existed at the same time as main building A and together formed a construction that can now no longer be recognized, for instance, a palisade or enclosure of (a part of) the site. In particular on the eastern side of the excavation terrain a few parallel rows of posts were visible as well as a remarkable circular cluster of features. We could deduce possible building structures from them, but the precise form and size is unclear.

Comparable sites are scarce but it seems that the development of palisade-like constructions in Druten-Klepperhei (Hulst 1978) or, for instance, Hambach 403 (Gaitzsch 1986) provide some leads. It is also conceivable that, analogous to other villa complexes in Limburg such as Kerkrade-Kaalheide/Krichelberg (Brunsting 1950) and in the Rhineland, wooden predecessors of the stone constructions have existed, possibly in the shape of an extended byre house that had transformed into a full stone complex (cf. Habermehl 2011, 71-74 with references).

9.4.2 Middle Roman times

Habitation of the area becomes clearly visible in the second century. The exact beginning is difficult to determine but there is the idea that the first stone construction emerges sometime in the (early?) second century[1]. First probably as a relatively small complex when only the main building A existed, but soon after there will have been a full-fledged villa with corner towers and a porticus (main building B) with a surface area of *c.* 17 by 35 m. In this time the cellar was possibly also already in use.

The later development is not easy to determine as *in situ* datable material and cross-cutting features are lacking to enable a decision on a definitive building sequence. This is not only an issue in Maasbracht but also elsewhere the internal evolution of a villa building complex is often difficult to follow. Moreover, outside the cellar context not much material has been studied to provide a basis onof which a development could be properly recovered.

Two scenarios are conceivable in Maasbracht. The first is that sometime in the first half of the third century there was a fire in parts of the complex. The cellar fell into disuse, the space was filled up and levelled, and subsequently a large-scale renovation took place and main building C appeared.

In the second, perhaps more likely scenario, the material from the cellar ended up there at the end of the occupation of the villa. Although the dating of the finds seems to point in this direction, there are also counter-arguments possible. Problematic for instance are the placing and dating of the complete pots (which moreover were only used briefly) at the bottom of the cellar in relation to the dating of the dump layers above them which are almost similar. The pottery from the lowermost excavation levels of the cellar space dates roughly from AD 175 and, including the remarkable 'layered cake', can be associated with the use of the cellar (see figs. 2.25 and 2.26). The dump of material lying above it dates at the earliest to about the same period or from the beginning of the third century. The end date of the dumped layer can be assumed around AD 260, but this date is mainly based on the absence of certain types of pottery typical of the second half of the third century. Its lacking can, however, also mean that the cellar was filled up earlier than this end

date supposes; that means sometime in the first half of the third century. And thus the cellar would have fallen into disuse already in the Roman occupation period and not just afterwards when the villa terrain was abandoned.

Another argument against a late date is the fact that the hacked-out wall construction of the cellar is covered by dump layers from the cellar. If the dump layer dates from the first half of the third century, then the walls must have been knocked down prior to the dump layer having been shoved into the cellar. In theory this can have happened just before the dump was shoved in there but this is not certain. In the waste dump of the cellar was neatly chipped-off plasterwork together with all kinds of burnt loam and rubble. What is noticeable is that the painted plasterwork sometimes fits together, and that some pieces were burnt and others were not. That indicates in any case that there was a fire before the material was shoved into the cellar. Why go to the length of neatly tidying away the chipped-off plasterwork and then dump it in the cellar? Was this done because the space of the cellar was going to be used again, and thus scenario 1 applies?

And finally, it seems that the cellar was neatly covered with a layer of stone and rubble and then levelled to provide a new ground floor. It is an indication that the space was not suddenly abandoned or was filled with material that was available everywhere, after the villa for instance had been robbed of all the stone wall construction, as is often assumed with the falling into disuse of Roman villas. Robber trenches of wall constructions have not been found, but that can have been caused by the material lying at the surface. It seems that the filling up of the cellar was done consciously and for a reason, possibly in the first half of the third century and thus perhaps before the definitive abandonment of the villa. It is, however, also conceivable that this happened when the villa was abandoned, that is that the occupants themselves stripped their domain. The discovered – scattered – coin haul can date this action on the basis of the final coin to around AD 240-250.

Be that as it may, the earlier mentioned fire probably occurred near the cellar space as remains of burnt material, among which plasterwork, wood and loam, ended up as residue in this deep space. In accordance with scenario 1, this fire could have been the overture for a thorough renovation of the villa complex. The transition from main building B to C, probably sometime in the first half of the third century, carried with it an increase in scale of nearly 50%, thus creating a complex of *c*. 30 by 50 m. In particular the eastern part of the villa was thoroughly renovated and expanded. This included an in-house bathhouse on the north-eastern rear of the main building, and the façade of the villa was defined by two projecting corner ressaults that were probably built as sizeable towers, perhaps with a storey.

From some foundations of the new development plasterwork and bricks emerged with some regularity. This can be interpreted as secondary use of demolition material from phase B. And from that can be inferred that also phase B knew painted, plastered rooms. It even cannot be excluded that in the north-eastern corner of building phase B, where later the bath complex of phase C was created, there was at some time an in-house bath facility. But nothing remained of it after the full-scale renovation.

The central room or core construction of phase C seems to keep the same surface area (and layout?) only the central main entrance was moved a little to the east and thus was lying again precisely on the width axis of the complex. Has this also been the formal reception area and where was the triclinium then (dining hall)? The answer to that is difficult to formulate, but perhaps the infill of the cellar can provide a solution. There was actually a lot of tableware found there and also quite a number of beautiful wall paintings that had to impress and charm the visitor. If we assume that the dump originated from a space close to the cellar, then the dining room qualifies. But it remains unknown where exactly that room was situated.[2]

Apart from the main building, nothing is known of other, more economically orientated buildings of the villa complex. East of the main building, the excavators of the time detected a rubble concentration in the field that could perhaps point to an outbuilding. West of the excavation terrain, foundation trenches with gravel were discovered at one time, which because of the same orientation and position can undoubtedly be counted as part of the villa of Maasbracht. Unclear however is the size and meaning of this possible outbuilding of the villa. Also the enclosure of the villa, in the shape of for instance a palisade, trench or wall, has remained unknown. Perhaps the row of post holes, that were excavated just south of the main building inside the contour of the excavation terrain, can be counted as belonging to it. We are possibly dealing here with the entrance gate, the more so as the front entrance of main building C is a continuation of it, and on the same line remains of a road surface paved with gravel were recognized.

9.4.3 Late Roman times / Early Middle Ages

It is unclear what happened after the villa had fallen into disuse. Judging from the pottery, the villa must have been abandoned in the turbulent period round the middle of the third century, probably already before AD 270. Where elsewhere robber or break-away trenches pointing to a search for stones of Roman building constructions do occur on villa terrains from the post-Roman period, these trenches are completely missing in Maasbracht. On the one hand, this can mean that they were not there as the stones were lying at the surface. On the other, it is also possible that later working of the soil and erosion from the surface level have made the search trenches of that time less recognizable during the excavations. Or would people not have looked for Roman building material?[3]

It should be clear that the terrain was inhabited in the Late Roman period and Early Middle Ages. Not only do some finds prove this but there is also a small number of features that can be linked to it. Several large pits and typical sunken huts are evidence of this (fig. 2.29). The sunken huts are typical of these habitation periods and are often found on abandoned villa terrains. The function of the sunken huts could not be ascertained on the basis of the finds, but it can be assumed that in general we are dealing with small workshops for, for instance, weaving or metalworking activities or that they played a role in food processing or preparation.
A number of remarkable pieces of brick and architectural fragments of natural stone have been found in the large pits. These have undoubtedly ended up there when the villa was dismantled or demolished. That could perfectly well have occurred in these Late Roman or Early Medieval phases but could also have happened earlier, round the middle of the third century upon abandonment of the main building, as already mentioned above.

Concerning the finds material, the numbers are very small but not totally absent. A sherd of an Early Medieval Badorf pot came from the cellar infill of excavation level 5. The metal research also yielded some late fourth or fifth century finds, such as a fibula and a *follis* (see chapter 8), but the numbers stay very low.

In summary, we can assume that the villa terrain was certainly visited in the post-Roman period and that the main building was also perhaps partly used.[4] But the activities are limited to a handful of sunken huts and some loosely dispersed find material from the fourth to the seventh century, so that there does not really seem to be an active occupation phase.

9.4 Economic basis

It is very difficult to say something with certainty about the economic basis of Roman Maasbracht. Of course, in view of the fertile loess soil and the Meuse valley, it is obvious that the Roman villas in the Limburg countryside would have been involved with agriculture, but any concrete evidence for that is lacking in Maasbracht. Apart from the main building, very few other data have in fact been found that can reveal anything about the specific economic basis and function of the villa. What are lacking are, amongst others, the outbuildings on the basis of which economic functions could have been investigated.

As regards outbuildings, we could think of barns, the stabling of livestock, haystacks, *horrea* and other storage structures. Indeed, on the eastern and western side of the main building of Maasbracht have been other stone buildings that were probably involved with the business operation of the villa complex. However, almost none of these have been excavated, so both on the exact building ground plans and on the questions regarding the management and economic basis and production we will have to remain silent.

Any necessary detailed information is also lacking on the surrounding area where arable farming could have been practised. Clear indications of agriculture are missing and data are extremely scanty, whether it concerns fields and arable land products or for instance iron objects, (un)charred sowing seeds, etc. A few cereal grains have been found in for instance the cellar but that probably says more about the consumption than that it proves anything about the production side of the economy of the villa of Maasbracht. And Kooistra supposes the cultivation of lentils (Kooistra 1996, 259-260).

We are slightly better informed about the consumption of animals both domesticated and, in particular, wild animals. On that basis we can say something about the food economy of the villa occupants of that time. For instance we know that cattle, sheep, chicken and especially pig have been consumed. The latter is characteristic of the different menu of the villa occupants compared to the more indigenous, rural settlements where sheep/goat was more often dominant in the bone spectrum than pig (Kooistra 1996, 270). Regarding game, also red deer and hare were on the menu, and fowl and fish were also eaten. There are hardly any indications available for the keeping of cattle or matters involved with this and we will have to largely remain silent on this subject. However, judging from a writer from antiquity such as Cato, we can assume that the villa was self-supporting. In addition, the presence of both meat-rich and less meat-rich parts of consumption animals could indicate slaughter *in situ*.
It would in any case point to livestock that could originate from import or from their own business operation, whereby we can think of the breeding of pigs but also fowl (Kooistra 1996, 270).

There are fewer proofs for the catching of fish but it is likely that a considerable number of fishes originated from the immediate surroundings. Mackerel was an exception but as not all fish remains have been investigated, this need not be exceptional. Undeniably, fish has been consumed in the villa in view of the large number of fish scales and fish remains in the deposits in the cellar, and in some way the preparation of fish sauce (*garum*, *allec*) could have been a possibility.

Summarizing, on the basis of all the above data, we cannot say with certainty that no arable farming and stock breeding were carried out in Maasbracht. Also hunting and fishing are likely in view of the number of game and fish remains in the excavation data.

Regarding small-scale, industrial business activities, we can perhaps in theory assume some form of metalworking, brick and pottery production and perhaps also glass production. All indications of the latter three activities are

lacking in Maasbracht, whereas some scrap material has been found of the former, but almost all the slag material is missing so that metalworking cannot be determined with certainty. Other business activities are even more difficult to verify: woodworking has left little waste behind in the soil, and indications have only been found of lime burning for the necessary plasterwork and mortar, also indirectly in the form of a lime pit with imprints of wooden bottom planks of a box. We can infer from this minimally that in any case slaking of burnt lime was carried out *in situ*.

9.6 Conclusion

The excavation of Maasbracht has yielded a well recognizable ground plan of the main building of a Roman villa. This building went through an evolution in size and surface area and has roughly, albeit with a different layout and arrangement like for instance the in-house bath complex, comparable dimensions as the villas in for instance Kerkrade-Holzkuil, Hoogeloon-Kerkakkers, Bochholtz-Vlengendaal or Lemiers. Hence, the main building comes in the category of medium-sized villas, larger than the hall-like types such as Overasselt but also for instance Druten, but smaller than the complex in Voerendaal-Ten Hove. The precise organization and size of the entire farming business of the villa in Maasbracht cannot be ascertained through lack of excavated area outside the main building. Probably there were some stone outbuildings on either side of the main building, but future research *in situ* could perhaps shed some light on this.

Undoubtedly the owner kept in touch with the outside world, which can be seen in the material that has been found. That material came from the local surroundings and the wider region of the Meuse area, the Rhineland and the further away Eifel/Moselle region. Examples are a dolium from Tienen, beakers from the Argonne, natural stone from the environs of Liège and Dinant, but also from further afield such as the tufa that has the Eifel as nearest producing area, and material from the valley of the Würm in Southern Germany. In addition, articles were obtained via local and regional markets and thus for instance originating from Northern Gaul, such as the Pompeian red pottery.

Regarding aura and luxury we have obtained quite an impression of the villa. What actually is lacking is, is a mosaic floor and also window glass is rare compared to other villas, as is the luxury pottery and the wealth of dinnerware in metal and glass. However, it is to be expected that all goods of any value were taken away when abandoning the villa and only superfluous matters were left behind.

Although only a small part was left behind on the terrain of what was once present, and was therefore retrieved during excavation, we can say quite something about the luxury and wealth on the basis of in particular the wall paintings. The figurative representations are unique in the Netherlands and are evidence of a very prosperous person with a high status on the social ladder.[5] The very high in quality paintings possibly represent the occupants themselves (see chapter 5). A further suggestion is that it is conceivable that they have played a role in bearing the costs of gladiator games in nearby Xanten, of which the gladiator painting has been an expression with which the owner could impress his guests.

It raises the question whether we are dealing here with an active farming business or that we rather should think of a country house of a townsman from Xanten for instance, who kept a residence in the country. Or did he perhaps, in view of the military looking metal finds, have a career in the Roman army? Be that as it may, the owner was part of the social upper class of the region and his *pars urbana* has been an impressive abode along the Meuse.

Notes

1 See also Van Dierendonck *et al*. (1987, 62), who states however that the first villa building was erected at the end of the first century, but it is unclear on what this is based.

2 This was possibly above the cellar, and the remains of wood, plasterwork, etc. originate from the floor of that room, or, in other words, are from the ceiling of the cellar. The dining room of the villa can also have been elsewhere in the eastern, residential part of the villa, possibly in room 19, where plasterwork was also found and that was probably a heated room (see chapter 2).

3 Or is it conceivable that in the substructure of the villa hardly any stone was used, and that there, therefore, was little to rob and drag off, apart from the stone cellar walls.

4 On the excavation drawing a Merovingian coin is recorded originating from the easternmost room 25, but this coin could no longer be found.

5 Perhaps other villas would have had the same wealth of wall paintings but they have rather rarely survived. Maasbracht forms a direct exception, brought about by the good conservation conditions in the excavated cellar.

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THE ROMAN VILLA AT MAASBRACHT

THE ARCHAEOLOGY AND HISTORY OF A ROMAN SETTLEMENT ON THE BANKS OF THE RIVER MEUSE (PROVINCE OF LIMBURG, THE NETHERLANDS)

In the Dutch archaeological community, the Roman Villa of Maasbracht has become famous for the beautiful remains of murals that have survived to this day. Almost all of this material was found in the infill of the stone cellar, a veritable time capsule that has been excavated with much patience and care.

The first field campaign in 1981 consisted of some four trial trenches excavated by members of the local archaeological society. These yielded amongst others foundation trenches of walls and floors of mortar and rubble from the Roman period. This was in 1982 cause for the State Service for Archaeological Research to join forces and to begin a full scale excavation covering 0.8 ha. The most important result was the uncovering of a stone main building of a Roman villa complex.

After the excavations, the villa has been left on the shelf as one of the investigations of interest from Roman times with the prospect of one day being further analysed. The opportunity at last presented itself and this has resulted in the present volume. The names of the chapters are self-explanatory: settlement traces and structures, pottery, the building material, the wall painting fragments, animal remains and bone artefacts, glass and jet, the metalwork and of course a synthesis.

The part of the book that appeals most to the imagination is of course the chapter on the wall paintings beautiful illustrated with 58 colour figures.

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