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## The Roman villa at Voerendaal-Ten Hove

*Excavations of a Late Iron Age enclosure, a Roman villa complex, a Late Roman-Early Medieval settlement and burials*

**Part III-A - Specialist analyses**

**H.A. Hiddink (ed.)**





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Excavations of a Late Iron Age enclosure, a Roman villa complex, a Late Roman-Early Medieval settlement and burials  
Part III-A - Specialist analyses

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## **Part III-A - Specialist analyses**





# 17 Ecological evidence for farming activities at Voerendaal-Ten Hove

Laura Kooistra and Otto Brinkkemper

## 17.1 Introduction

One of the goals of archaeological research in the 1980s was to discover the farming strategy of the Roman villa and the occupation period before and after.<sup>1515</sup> For the Roman period, the emphasis was also on finding indications of surplus production for cities and the army. The archaeological research was led by Willem Willems; the research into farming strategies was the responsibility of the first author. To answer questions about farming and surplus production at Voerendaal-Ten Hove, a study was started in which information was collected on the following subjects:<sup>1516</sup>

- the location of Voerendaal in the landscape (in connection with the potential for arable farming and stock-breeding),
- buildings that could be characterized as farm buildings (outbuildings),
- agricultural tools,<sup>1517</sup>
- the distribution, density and composition of botanical remains in the settlement area (to trace activity centres and the function of buildings),
- the distribution, density and composition of animal remains in the settlement area.

Due to the acidic and hence largely decalcified loess soil, the chance of finding zoological remains was slight.<sup>1518</sup> Therefore the distribution of these remains revealed only minor information about stock farming. The botanical material consisted of charred plant remains. Waterlogged plant remains will not survive through time in the loess soil, with a groundwater level many metres beneath the surface. The distribution, density and composition of charred plant remains can yield information about arable farming. The results of the archaeobotanical research were published in 1996, based on a preliminary phasing of the archaeological traces.<sup>1519</sup>

When plans were made in the second decade of this century to analyse and publish the archaeological finds from Voerendaal-Ten Hove, there was a chance that the phasing of the features and structures would change. This could have far-reaching consequences for the interpretation of the results from the 1996 study. However, the phasing of the successive settlements has largely been maintained in the

current analysis and there is no need to repeat the interpretation of the botanical and zoological data.<sup>1520</sup> On the other hand, we did not wish to present an overview publication about Voerendaal-Ten Hove without the results of the ecological research from 1996. We therefore decided to summarize the results of the 1996 study in this chapter.

Research into farming strategies, especially in Roman times, has not stood still in the past 25 years. For example, new insights have been gained about into settlement structures and farming in the loess area,<sup>1521</sup> and an additional quantitative model has been made to obtain a better understanding of the meaning of cattle in the farming strategy,<sup>1522</sup> while initial explorations in stable isotopes analysis from charred grains showed the potential of this method to learn more about fertilization methods.<sup>1523</sup>

In this chapter we present a state of the art concerning farming at Voerendaal-Ten Hove. To that end, we summarize the results of the investigation published in 1996 (Section 17.2), present research developments and new insights from after 1996 (Section 17.3), reveal what stable isotopes can tell us about the soil conditions of the arable fields of Voerendaal (Section 17.4) and make some concluding remarks (Section 17.5).

## 17.2 Results of the 1996 study summarized and evaluated

Although the periodization from 1996 remains largely intact in the current study, a number of features have been attributed to another period (Table 17.1). This also has implications for the samples with charred plant remains from these features. This section provides a summary of the 1996 results based on this new period classification.

In order to collect as much evidence as possible about the farming system of the Roman villa as well as that of other periods, a sampling programme for charred plant remains was developed. This implied in principle that all potentially datable features were sampled for such remains, as well as features that belonged to archaeological structures (Fig. 17.1). In total, over 1000 samples were taken. They included some 400 that proved unusable for different reasons.

<sup>1515</sup> Willems 1986, 145.

<sup>1516</sup> Kooistra 1996, 14-22.

<sup>1517</sup> For example, in the 1980s we were keen to find evidence for the use of the Gallo-Roman harvesting machine (the *vallus*; see White 1967b and the references in section 15.7), but we did not find any such machine fragments at Voerendaal. Only a small number of other agricultural implements were collected here, mainly during the older excavations (chapter 20.3.13).

<sup>1518</sup> Kooistra 1996, 138.

<sup>1519</sup> Kooistra 1996, 129-252, 104-116.

<sup>1520</sup> Section 5.1.

<sup>1521</sup> E.g. Jeneson 2013; Tichelman 2014.

<sup>1522</sup> Kooistra 2020.

<sup>1523</sup> Bogaard *et al.* 2007; 2013.

**Table 17.1. Voerendaal-Ten Hove. Overview of the samples published before by Kooistra (1996), which are addressed to another period in the current investigation (2022).**

1996 Period	Table	Sample no.	2022 Period	Structure	Remarks
2	28	2-6	3	304-305	ditches dug in period 2, plant remains period 3
2	28	9-16	3-4	609-613	pottery 609-610 dating after AD 150
2	28	19-21	3	772/718	pit 722 Middle Iron Age, density and composition of plant remains point to association with intersecting pit 718
2	28	22	3	323	planting hole
2	28	23	2	813	plant remains AD 30-42/59-205 (Table 5.6)
3	30	14	3(-4)	512	sunken hut period 4, plant remains AD 127-325 (Table 5.6)
3	30	15	3(-4)	512	find no. 22-7-2 (threshing floor 420) was probably typing error/ misprint, 22-7-1 intended (not in table 30)
3	30	16	3(-4)	520	sunken hut period 4 but all finds period 3
3	30	22	4	722	Argonne sigillata present
3	30	38-39	4	-	samples from disturbed layer inside building 402/B
3	30	40-45, 47, 49-50	2	409	fill cellar building 409/l, end of period 2
3	30	64-77	3(-5)	-	sampled from layers 'in' building 410/l; most finds period 3, some later material can not be excluded
4	32	4, 8-9	3(-4)	513	sunken hut period 4, plant remains AD 128-238 (Table 5.6)
4	32	10	3(-4)	650	hearth probably period 4, plant remains AD 131-322 (Table 5.6)
4	32	14-15	3(-4)	632	hearth probably period 4, plant remains AD 132-322 (Table 5.6)
4	32	32-33	3(-4)	509	sunken hut period 4, plant remains AD 131-329 (Table 5.6)
4	32	48	4/5	631	hearth, plant remains AD 666-774 (Table 5.6)
4	32	61-62	2	247	building 247 preceeds 405/E

<sup>1524</sup> The assessment method was new in the Netherlands at that time. Kooistra (1996, 28-33) called it a rough inventory. It was based on earlier research carried out by Dr W.A. Casparie and Mrs R.M. Palfenier-Vegter (Van Zeist & Palfenier-Vegter 1984) and Hall & Kenward (1990).

<sup>1525</sup> The analyses of the animal bones were made by Frits Laarman (Kooistra & Laarman 1996, 176-181).

<sup>1526</sup> Pit 772 is now dated to the Middle Iron Age (table 17.1). Due to the low density and composition of the plant remains in the samples, it is likely that these remains belong to the intersecting pit 718 from period 3 (for the description of these pits, see

The remaining 650-odd samples were assessed to gain an idea about the abundance, distribution and composition (crops, chaff remains and wild plants) of the charred plant remains per period.<sup>1524</sup> A selection of the assessed samples was fully analysed. Besides plant remains, animal bones were also investigated.<sup>1525</sup> These bones were collected by hand. The results concerning plant remains and animal bones are summarized per period.

#### 17.2.1 Period 1. Iron Age settlements (800-100/50 BC)

The samples gathered from period 1 contained only a few, poorly preserved plant remains. Only four samples were fully analysed.<sup>1526</sup> The crops identified during the assessment of 58 samples are oat (possibly cultivated oat), hulled barley,<sup>1527</sup> emmer wheat,<sup>1528</sup> pea and Celtic bean (Table 17.2). In one instance a stone fragment of a wild or

cultivated plum species was found. The animal bones found for this period belonged to cattle (3x) and a horse (1x). These data do not merit further discussion.

#### 17.2.2 Period 2. The first villa (c. AD 25/30-125)

A number of features that were attributed to this period in 1996 are assigned to period 1, 3 or 4 in the current archaeological study (Table 17.1). On the other hand, a number of features from period 3 and 4 seem to belong to period 2. According to the current state of research, 23 samples from period 2 were analysed. They come from ditches, pits and a find layer inside building 403/C. However, these features do not always contain material from period 2. In 1996, for example, comments were made about the origin of plant remains in a pit and two ditches, part of which were found under the building in the southeast corner of the forecourt



Fig. 17.1 Voerendaal-Ten Hove. The sampling and processing of archaeobotanical samples. A sampling different layers of feature 736; B sampling the subsoil of horreum 408; C-E sieving, drying and assessment of samples.

of the villa (building 401/A).<sup>1529</sup> Here, at a higher level in the soil, high densities of plant remains were found from period 3. The strong bioturbation of the loess and the similar composition of the plant remains, although in low densities, suggest that material from period 3 has relocated into features of period 2. In the end, only a few features in and near buildings 409/I and 418/CI in

the southwest corner of the excavated area, some postholes of building 247 (preceding 405/E) and ditch 309/I in the northeast corner of the villa area seem to provide information about food-related activities.<sup>1530</sup>

The crop assemblage consists of spelt wheat,<sup>1531</sup> emmer, hulled barley, oat (possibly cultivated oat) and bread wheat in decreasing

chapter 46). Results of the analysed samples are presented in Kooistra 1996, 154, table 26.

<sup>1527</sup> The crop barley has various species and subspecies. The only subspecies demonstrated with certainty is the hulled subspecies of six-rowed barley (*Hordeum vulgare* subsp. *vulgare*). For reasons of readability we will refer to hulled barley in this chapter.

<sup>1528</sup> We will refer to emmer wheat as emmer in this chapter.

<sup>1529</sup> The pit that is meant here is pit 772. In the current study it is dated to the Middle Iron Age.

<sup>1530</sup> Data presented in Kooistra (1996), table 28, 30 and 32, 189-252.

<sup>1531</sup> We will refer to spelt wheat as spelt in this chapter.



**Table 17.2. Voerendaal-Ten Hove. Overview of the crops found in each of the four periods; the numbers correspond to the number of samples a crop is found in.**

	Period 1	Period 2	Period 3	Period 4	
<b>N assessed samples*</b>	58	78	288	233	
<b>N analysed samples**</b>	4	23	123	55	
<b>English name</b>					<b>Scientific name</b>
<i>Cereals</i>					
Bread wheat, kernels		1	12+1cf.	8+1cf.	<i>Triticum aestivum</i>
Bread wheat, rachis internodes			4	1	<i>Triticum aestivum</i>
Emmer wheat, kernels	+		3+2cf.	3	<i>Triticum dicoccon</i>
Emmer wheat, chaff remains	+	8+2cf.	11+3cf.	10+1cf.	<i>Triticum dicoccon</i>
Spelt wheat, kernels			15+4cf.	3+1cf.	<i>Triticum spelta</i>
Spelt wheat, chaff remains		12	49+5cf.	36	<i>Triticum spelta</i>
Unidentified wheat, kernels		14+1cf.	56+5cf.	29+1cf.	<i>Triticum</i>
Unidentified wheat, chaff remains	1	25	74	50	<i>Triticum</i>
Hulled barley, kernels	+	5+1cf.	15+2cf.	8+2cf.	<i>Hordeum s.l.</i>
Hulled barley, rachis internodes		1	4	1	<i>Hordeum s.l.</i>
Cultivated oat(?), kernels	+	1+1cf.	3+1cf.	4+1cf.	<i>Avena</i>
Cultivated oat(?), awn fragments		5	17	7	<i>Avena</i>
Rye, kernels				6	<i>Secale cereale</i>
Rye, rachis internodes				1	<i>Secale cereale</i>
Unidentified cereal, kernel fragments		24	80	49	<i>Cerealia</i>
Millet, kernels			1	3	<i>Panicum miliaceum</i>
<i>Pulses</i>					
Pea	+	+	3+1cf.	2+1cf.	<i>Pisum sativum</i>
Celtic bean	+		+	1	<i>Vicia faba var. minor</i>
<i>Oil-rich seeds</i>					
Gold-of-pleasure			2		<i>Camelina sativa</i>
Hemp, pollen				+	<i>Cannabis sativa</i>
<i>Nuts and fruit</i>					
Hazelnut	1	1	4	12	<i>Corylus avellana</i>
Walnut			3	9	<i>Juglans regia</i>
Sweet chestnut, pollen			+	+	<i>Castanea sativa</i>
Bramble			1		
Wild cherry			1		<i>Prunus avium</i>
Wild or domestic plum	+			1cf.	<i>Prunus</i>
Elder		4	1		<i>Sambucus nigra</i>
<i>Vegetables and herbs</i>					
Beet				+	<i>Beta vulgaris</i>
Wild parsnip			2		<i>Pastinaca sativa</i>

Cf. = ? = identification not sure; + = found in assessed samples; \* number of samples based on Kooistra 1996; \*\* number of samples based on current investigation

presence (Table 17.2). Regarding wheat, which could not be identified in more detail, in particular many poorly preserved glume bases and bases of spikelet forks were found; these were presumably the hulled wheats – spelt and emmer.<sup>1532</sup> Occasionally, an elder seed was found and once a shell fragment of a hazelnut. In the tables of the 1996 publication, a mysterious charred fragment is presented under the name Type A. This type of fragment has been identified in a more recent study by colleague Liesbeth van Beurden as a chalice tooth of common corn-cockle (Fig. 17.2). This plant species occurred sporadically in our area but became more common, probably because its seeds were contained in Roman sowing seed (presumably of spelt) from Central or Southern Europe.<sup>1533</sup>

Hulled wheat species were often stored in spikelets. These inedible chaff remains were not removed until just before consumption. The combination of many glume bases and spikelet forks with few grains and few seeds of wild plants is therefore interpreted as a waste product of the food preparation process. This mixture was found in two corners of the excavation area: in the northeast corner in ditch 309 (ditch i) and in pits belonging to the cellar in building 409.

The bone assemblage from this period consists of cattle, sheep/goat, pig and horse.<sup>1534</sup> In one of the pits in the southwest corner of the excavated area (pit 813) egg-shell fragments, possibly from chicken, were identified. The zoological data do not merit further discussion.

### 17.2.3 Period 3. The heyday of the villa (c. AD 125-275)

In the 1996 publication, 288 samples were attributed to period 3, 112 of which were analysed. Thirteen samples contained no identifiable plant remains. In the light of the current study, it is plausible that the hearths in the building on the east flank of the villa (building 405) do not date from period 2, but belong to period 3, although it is not known if there is a connection between the hearths and the building.<sup>1535</sup> In addition, the charred plant remains found in some of the sunken-floored huts and hearths from period 4 seem to be residual material from period 3 (Table 17.1).<sup>1536</sup> On the other hand, some samples originally assigned to period 3 are in fact from period 2 or 4. A total of 123 samples from period 3 were

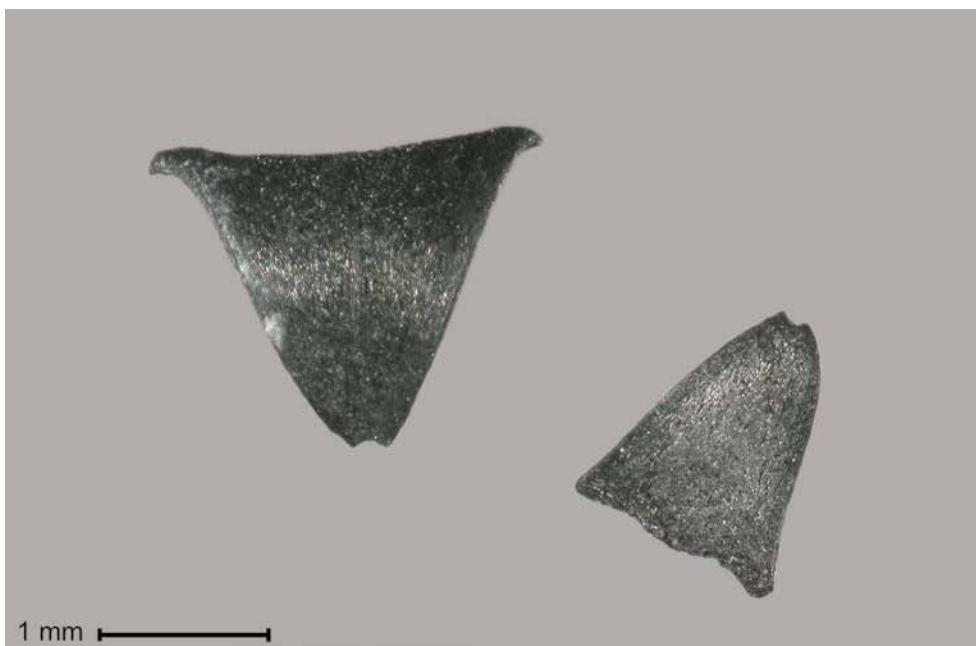


Fig. 17.2 Charred chalice teeth of common corn-cockle (*Agrostemma githago*) from the Roman villa Kerkrade Holzkuil (source: BIAx Consult)

<sup>1532</sup> Only hulled wheat species (in our case spelt and emmer) have glume bases and spikelet forks that are sturdy enough to char. For free-threshing wheat species such as bread wheat, usually only the rachis internodes and glume tips are preserved as charred remains.

<sup>1533</sup> Derreumaux & Lepetz 2008, 57-61; Kooistra 2009, 230.

<sup>1534</sup> The bones of sheep and goat are usually indistinguishable from each other and are classified under sheep/goat in this chapter. For some remarks on the dating of the animal bone, see appendix IX.

<sup>1535</sup> See section 9.6.4 and chapter 43. Some pottery dates after AD 100 (hearth 608) or AD 150 (hearth 609 and 610). None of these hearths delivered recognizable finds from the fourth century AD. Cereal grains from hearth 610 are radiocarbon dated between AD 25-252 and 305-311 (UtC-1570, 1870±50 BP).

<sup>1536</sup> Cf. section 5.3.2 and chapter 44-45.

analysed, 110 of which yielded charred plant remains.<sup>1537</sup>

One of the goals of the 1996 study was to discover the function of the outbuildings of the Roman villa during the second-third centuries. For that reason, the outbuildings were sampled intensively for botanical remains (Fig. 17.3). The assessment demonstrated that the highest densities of plant remains occurred in and around building 401/A, situated at the southeast corner of the villa yard, and in *horreum* 408/H, which was located west of the main building (Fig. 17.3A).

High densities of charred plant remains were found west of building 401, between the stones of a pavement (threshing floor 420). It concerns mainly charred glume bases and bases of spikelet forks from spelt as well as numerous awn fragments from wheat species. Charred plant remains were also found inside the building. In addition to a maximum of 50% chaff remains, these were cereal grains and seeds of wild plants. The stone floor to the west of the building has been interpreted as a threshing floor. Building 401 had a function in processing the harvest, either as a threshing place when it rained, or to store the harvest, which was then threshed outside.<sup>1538</sup>

The samples from *horreum* 408, in the west wing of the villa complex, also contained many plant remains, but here the emphasis was on cereal grains with chaff remains.<sup>1539</sup> Because of this plant assemblage and the heavy construction to support the floor, it is assumed that the building was a granary (*horreum*) in which spelt was stored in the chaff.<sup>1540</sup>

The plant densities in and around other buildings were low. In this case, a negative result does not mean that no farming activities took place at those locations. After all, only charred plant remains have been preserved. Calamities or agricultural activities not involving fire did not contribute to the archaeological record. The charred waste-material found between the stones of the threshing floor can be the result of cleaning the area with the help of fire. The charred remains in the *horreum* could result from a calamity, however.

Although spelt was found most often, other cereals such as hulled barley, bread wheat,

emmer and possibly cultivated oat and millet were also found in the villa area (Fig. 17.3B). In addition to spikelet forks and glume bases, rachis internodes from spelt have been found.<sup>1541</sup> Some rachis internodes from bread wheat and hulled barley were also found. These remnants and remains of glume tips and awn fragments of wheat are part of the primary threshing waste. Together with a variety of seeds from arable weeds, they are proof of arable farming around the excavated site.<sup>1542</sup> Other crops are pea, Celtic bean, gold-of-pleasure and beet.<sup>1543</sup> Beet is identified by its fruit, which is not edible. Finds of fruit of beet imply that this food crop was cultivated at Voerendaal. In the fruit and nuts category, hazel, walnut, chestnut,<sup>1544</sup> bramble, elder and wild cherry are detected (Table 17.2). Pollen of walnut and sweet chestnut were found in sediment in the Hoensbeek valley, which also points to local cultivation of these tree species.<sup>1545</sup> Fruit of wild parsnip was found twice. Wild parsnip did not occur in the Netherlands before Roman times and it is suspected that this vegetable, like beet, was introduced by the Romans.<sup>1546</sup>

The zoological material contained bones of domestic mammals such as cattle, sheep/goat, pig, horse and dog. There are slightly more bones from pig than from sheep/goat. This fits into the existing picture for this period for the more Romanized settlements. Chicken bones were recovered at different places, and also from the area around building 403/C. It is likely that the occupants of the villa settlement practised stock farming and kept chickens, although the archaeozoological evidence could theoretically also be the result of importing these products.

#### 17.2.4 Period 4. The Late Roman/Early Medieval settlement (c. AD (325)/375-700)

Even the current analysis has shown that it is almost impossible to separate the features from the Late Roman and Early Medieval periods.<sup>1547</sup> Another difficulty is that structures such as sunken huts from period 4 contain finds from period 3, including botanical material (demonstrated by <sup>14</sup>C dates). According to two radiocarbon dates for a sample (sample 20-3-63), sunken hut 514 contains material from

<sup>1537</sup> Data presented in Kooistra (1996), table 28, 30 and 32, 189-252.

<sup>1538</sup> The layout of the Voerendaal villa corresponds to guidelines given by Columella for the location of a threshing floor and corresponding outbuilding (White 1970, 184; 431).

<sup>1539</sup> The samples derive from the slightly 'disturbed' subsoil beneath and directly around the *horreum*, as well as from the infill of an excavation trench by Braat. Although not ideal, the association with the *horreum* is substantiated by the radiocarbon dates.

<sup>1540</sup> Spelt is a hulled wheat species. This means that after threshing, the grains are still enclosed by some of the chaff. That chaff would then be removed just before consumption. This meant that the grain was better protected against fungi and damage by rodents and insects.

<sup>1541</sup> Rachis internodes are fragments of the ear.

<sup>1542</sup> Kooistra 1996, 20. Based on Hillman 1984; Jones 1984.

<sup>1543</sup> Beet is found in assessed samples (Kooistra 1991).

<sup>1544</sup> Chestnut is only represented by pollen (Bakels 1996a, 141).

<sup>1545</sup> Bakels 1996a, 141.

<sup>1546</sup> Kooistra 2005, 5.

<sup>1547</sup> See discussion in section 5.1.5 and chapter 16.

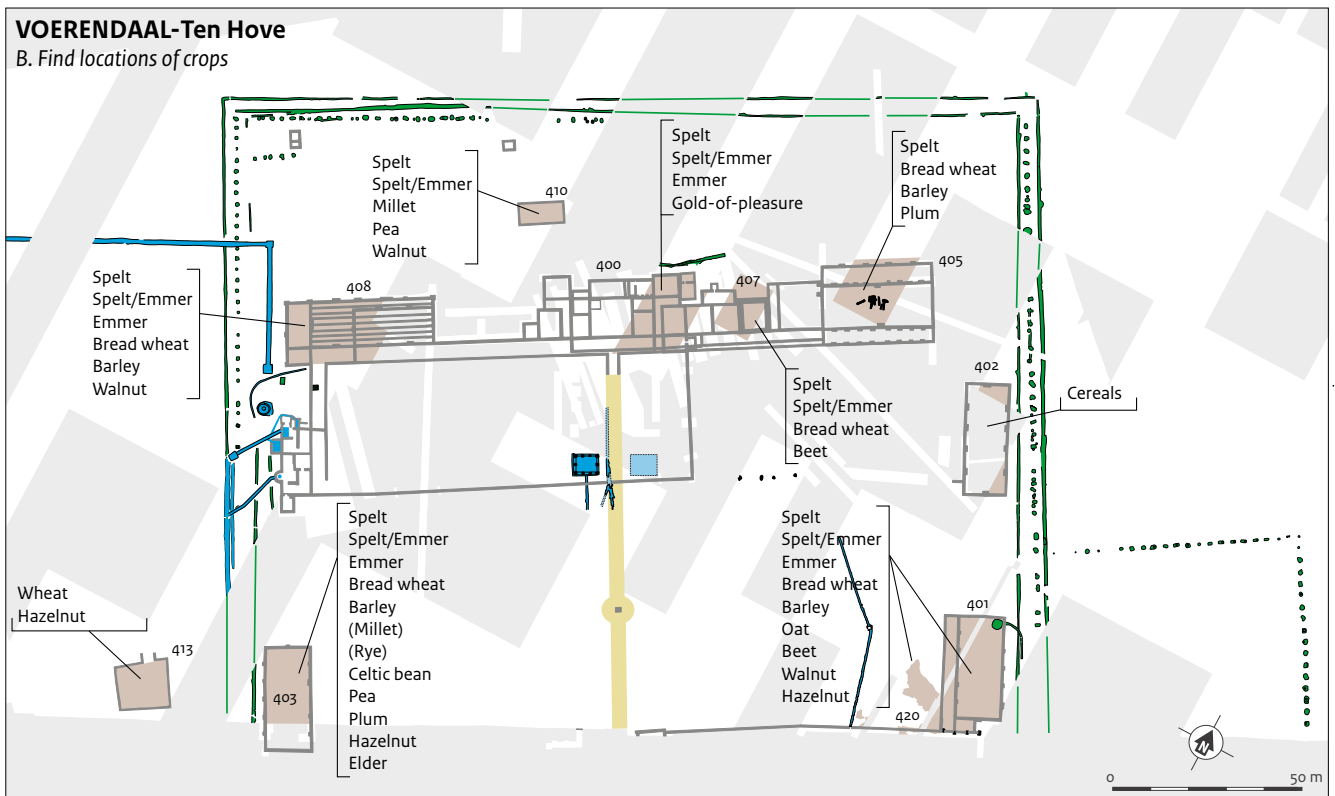
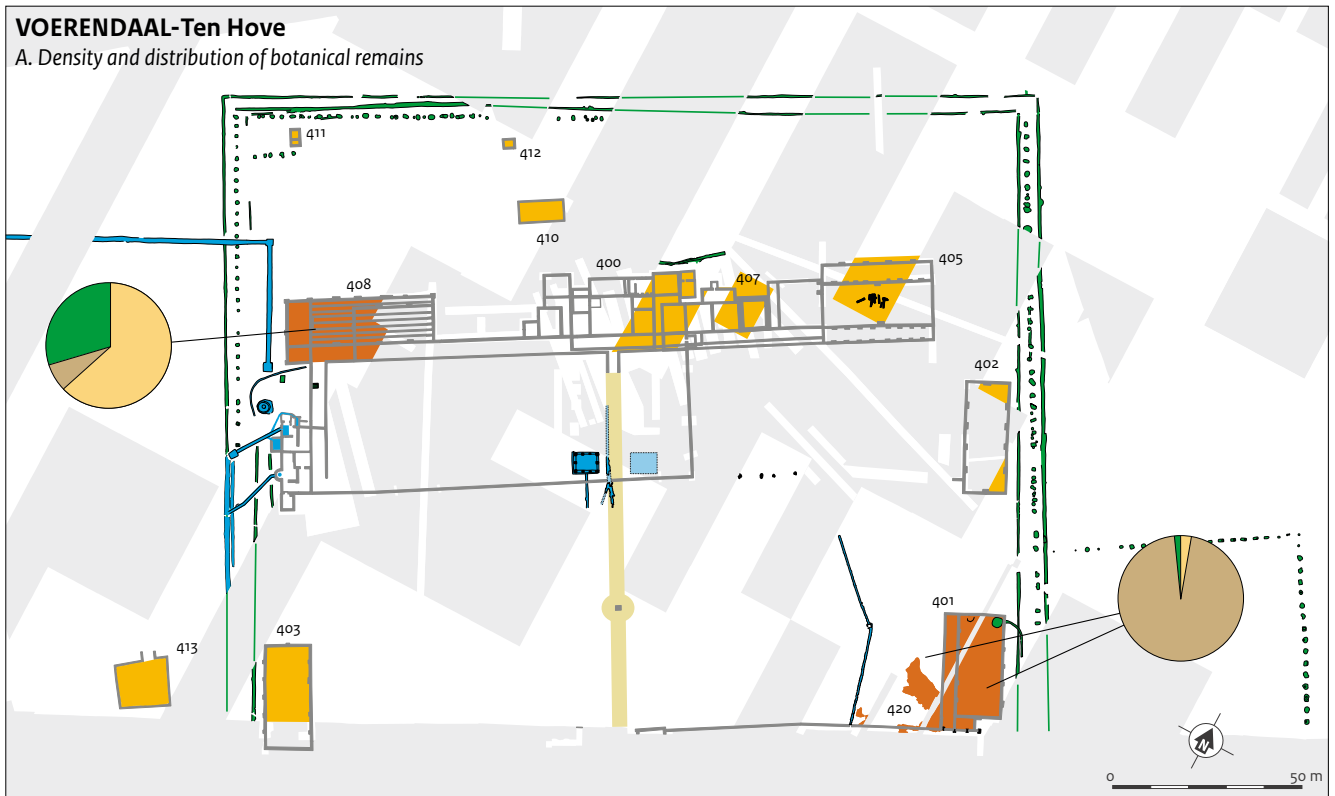


Fig. 17.3 Voerendaal-Ten Hove. Finds of plant remains belonging to period 3 of the villa (source: modified after Kooistra 1991, fig. 2a-b).

A density of plant remains in and directly around several structures of the villa, in orange: < 10 per sample; red > 10 per sample; the pie charts show the proportions of cereals (yellow), chaff (brown) and weeds (green) for buildings 401 and 408; B Crop finds for a number of buildings/areas.

both periods 3 and 4. With the current state of knowledge, 55 analysed samples are assigned to period 4 (Table 17.1).<sup>1548</sup> It seems that initially in this period the same crops were grown as in period 3 (Table 17.2). The emphasis was on spelt, emmer, bread wheat, hulled barley and possibly cultivated oat. In a few instances rye and millet were found. The other food plants found are pea and Celtic bean, as well as hazel and walnut. Sweet chestnut and hemp probably also occurred in this period.<sup>1549</sup> Zoological remains show more or less the same species with the same ranking as in period 3.

### 17.2.5 The farming system during period 3

Although an overview of the structures, finds and organic material was obtained for all periods, something can only be said with any degree of certainty about the farming activities of the occupants of the Roman villa in its heyday (period 3). This is mainly because the archaeological finds from period 3 are so much more numerous than those from the other periods (Fig. 5.8). The features that can be attributed to other periods, therefore, often contain material from period 3, rendering a reliable analysis of the farming activities impossible.

Period 3 covers 150 years and during this period renovations took place and buildings were probably given other functions. It is plausible that farming strategies also underwent changes during this period. However, it is not possible to find out which assemblages belong together and which should actually be attributed to another generation. Although <sup>14</sup>C dating is usually a good tool, the Middle Roman period (the period of the villa in its heyday) has plateaus in the calibration curve, which makes it difficult to make subdivisions in this period. However, the threshing waste from the dark layer under the threshing floor seems slightly older (probably first half of the second century AD) than the waste between the stones (second-third centuries). The dated grain from the *horreum* probably comes from the second half of the third century AD (Fig. 5.10; Table 5.6). This suggests that the cultivation of spelt may have been a constant factor in the management of the villa during the second-third centuries, with fixed

locations for threshing and storage. Perhaps the threshing floor was smaller in the early second century AD and not yet paved with a stone floor, as the *horreum* was certainly smaller in its initial stage. However, there was a period when the threshing floor was large and the *horreum* acquired its truly monumental status. These large-scale structures and the long period of use have led us to conclude that the Roman villa of Voerendaal-Ten Hove specialized in the surplus production of spelt in particular. Other cereals have also been found: bread wheat, emmer, hulled barley, millet and possibly oat. The number of samples in which these remains were found is smaller (Table 17.2) and the number of remains in those samples is also usually (very) small. It therefore seems plausible that only spelt was grown for trade and that the other cereals were for personal use.

Spelt was grown as a winter crop. This is deduced from the composition of the weed flora, which is specific to fields where the grain is sown in autumn. The grain was harvested just below the ears because no straw was found as driftage in the villa yard. This method is attested for the Roman period.<sup>1550</sup> The straw probably remained in the fields to be ploughed under later. It is possible that the fields were manured by livestock, which grazed on the fields after the harvest or in fallow years. However, few indications of animal husbandry have been found. Based on the scarce zoological material, it is plausible that cattle, pigs and sheep or goats were bred in the villa's heyday. In addition, chickens were probably kept. No indications of the size of the herd have been obtained. The size of buildings that may have served as stables cannot be used as a parameter here because some of the cattle presumably stayed outside all year round. However, the size of the herd may have had an impact on the yield of arable crops, as livestock may have provided manure. It is possible that the fields of Voerendaal, which were on fertile loess soil, did not require fertilization. The 1996 publication did not address this aspect of agricultural management.

The farming system in Roman times undoubtedly had more aspects than described here. For example, little or no information was obtained about crops other than grain, or about

<sup>1548</sup> Data presented in Kooistra 1996, 195-252, tables 30 and 32.

<sup>1549</sup> Finds of pollen in Bakels (1996a), 141-142.

<sup>1550</sup> Varro, *nust.* 1.50.1-3; cf. White 1970, 182.



vegetable gardens and orchards. This lack of information is without doubt partly due to the fact that only charred plant remains have been preserved. Fire may have played a role in the processing of cereals, and cereal grains char better than seeds of other crops. During the excavation campaigns in the 1980s, indications of vineyards were explicitly searched for. However, no planting holes were found, nor grape seeds or equipment to process grapes.<sup>1551</sup>

### 17.3 Research developments and new insights since 1996

The Roman villa of Holzkuil was excavated near Kerkrade at the beginning of this century.<sup>1552</sup> The research on botanical and zoological material has yielded the same crops and farm animals as Voerendaal, with spelt as the dominant grain.<sup>1553</sup> No clear indications about the farming system were found, but the composition of the driftage indicates a villa settlement where cereals were grown. The dominance of spelt may indicate surplus production of that crop.<sup>1554</sup>

Kerkrade-Holzkuil and Voerendaal-Ten Hove are in line with data from the German Rhineland, for which a substantial quantity of archaeobotanical data has been collected in the past fifty years compared to the Netherlands.<sup>1555</sup> The villa settlements have mainly yielded many finds of spelt, followed by barley, emmer and bread wheat.<sup>1556</sup> In addition, there are indications of other crops, such as pulses, oil seeds, vegetables and herbs, and cultivated fruit. The greater variation in crops is probably due to the larger number of sites investigated, but also to the presence of waterlogged plant remains, particularly in wells. The dominance of spelt is also an indication that this crop was grown as a surplus for the urban or military population. This idea is reinforced by the results of the archaeobotanical research in cities and military settlements.<sup>1557</sup> Spelt is frequently found in these consumer settlements.

Two villas in Belgium have been examined for plant remains: Dilbeek-Wolsemveld-Zuurweidestraat and Kerkom-Boskouterstraat.<sup>1558</sup> Spelt is also dominant in these villas. In addition, pulses (pea, lentil and Celtic bean),

vegetables and herbs, nuts and fruit and some other useful plants were regularly found in the first-mentioned villa. Research on bones from various villas around Tongeren shows that cattle, followed by pig and then sheep/goat, are the most important farm animals.<sup>1559</sup>

In Northern France, a dozen Roman villa sites have been examined for botanical material.<sup>1560</sup> In Early Roman times, emmer, oat and hulled barley were common crops. In the third century AD, bread wheat and emmer prevailed. In Late Roman villas there was more emmer than bread wheat. Bakels describes the agricultural strategy of the Roman villas on the loess from the German Rhineland to northern France. They started off as mixed farms, but after the first century AD moved to a monoculture of grain. Unlike in the German Rhineland, the Netherlands and Belgium – where all the villas examined sold a surplus of spelt at the market – the villas in northern France specialized in growing bread wheat or emmer.<sup>1561</sup>

The loess area in Roman times is called a villa landscape because of the appearance of Roman-style farms. Various studies of the last 20 years have shown that a variety of agrarian settlement types occurred in the loess area, from Roman villas to post-built settlements.<sup>1562</sup> This last category concerns settlements with wooden byre-houses, and small outbuildings, such as Heerlen-Trilandis.<sup>1563</sup> They were scattered between the Roman-style villas. Jeneson argues that the ratio of villa to non-villa settlements could have been one to one in parts of the loess area. It is believed that the non-villa farmers mainly kept cattle for their own use and grew crops. The economic value of these non-villa settlements probably consisted of labour. The seasonal workers of the villas, who were hired during the harvest or to plough the land, may have lived there.

Heerlen-Trilandis is to date the only non-villa settlement on the loess that has been examined for ecological remains.<sup>1564</sup> This research has yielded a diverse mixture of crops in which spelt was one of the cereals, in addition to barley, millet and emmer. In addition, pulses, oilseeds, herbs, and nuts and fruit were found. The latter were preserved thanks to some deep wells and water pits,

<sup>1551</sup> A row of planting holes for trees is found at several places along ditches.

<sup>1552</sup> Tichelman 2005.

<sup>1553</sup> Kooistra *et al.* 2004.

<sup>1554</sup> Bakels 1996b; Groot & Lentjes 2013, 11-13.

<sup>1555</sup> Knörzer 2007; Schamuhn & Zerl 2009; Brüggler *et al.* 2020.

<sup>1556</sup> Knörzer 1984; Knörzer & Meurers-Balke 1990; Schamuhn & Zerl 2009.

<sup>1557</sup> Brüggler *et al.* 2020, 50; Kooistra 2009, 2012; Zerl *et al.* 2018.

<sup>1558</sup> Van der Meer *et al.* 2019 (Dilbeek); Cooremans 2005 (Kerkom).

<sup>1559</sup> The vicinity of Tongeren: Pigière & Lepot 2013; Voerendaal: Kooistra & Laarman 1996; Kerkrade: Kooistra *et al.* 2004.

<sup>1560</sup> Mattered 2001; Ruas & Zech-Mattered 2012; Van der Meer *et al.* 2019.

<sup>1561</sup> Bakels 2009, 167-169.

<sup>1562</sup> See e.g. section 4.3.4 and 15.2.

<sup>1563</sup> Tichelman 2014.

<sup>1564</sup> Kooistra 2014, 191-307.

creating waterlogged conditions. The lack of a dominant cereal species is a first indication that the inhabitants of Heerlen Trilandis did not produce a surplus of grain. This outcome supports Jeneson's assumption that these settlements provided another product, namely labour. Surplus production is virtually impossible to demonstrate on the basis of ecological residues, however, other than determining that a crop or livestock species is dominant on a site.

One of the goals of the 1980s research was to find evidence of surplus production. A quantitative model was used for this purpose, based on the assumption that farmers essentially grew their own food and bred their own cattle.<sup>1565</sup> One of the outcomes of the model was that farms like Voerendaal were only able to produce a surplus if more than 50% of the inhabitants' diet consisted of cereal products. There were also slight indications that the degree of surplus production was limited by the number of ploughmen available. The emphasis in the modified quantitative model from 1996 was on a villa's area of arable land and the storage capacity of granaries. On this basis, it was argued that the villa of Voerendaal may have been capable of producing a large surplus of spelt. That model did not address the role of cattle as suppliers of animal manure for the fields.

The question is whether fields on the loess had to be fertilized at that time. Long-term experiments in Rothamsted (Great Britain) and Göttingen (Germany) have shown that grain yields from unfertilized fields were not reduced by more than 60 to 80% of the initial yield.<sup>1566</sup> It has been deduced from Roman sources that the Romans used different methods to maintain the fertility of fields: fallowing with or without related grazing,<sup>1567</sup> and fertilizing with animal dung,<sup>1568</sup> vegetable residues and lime.<sup>1569</sup>

The 1996 study took into account a fallow period and manuring by grazing animals on fields, but the model lacked a module on fertilizing fields with dung. In her quantitative model for the Hessen region (Germany), Kreuz elaborates on this type of the fertilization.<sup>1570</sup> The parameters of her model were used in a quantitative model focused on Roman agriculture in the Dutch loess region.<sup>1571</sup> The outcome of this model, which was set up as

a thought exercise, yielded a surprising outcome: only fields with cereals for the villa's own consumption could be fertilized. But to achieve this, the livestock herd would have had to be so large that all other fields belonging to the villa territory would have needed to be transformed into pasture and meadows. That is an unlikely scenario, especially given the indications from archaeological and archaeobotanical research of a surplus of spelt wheat. The quantitative model thus shows that the fields of Voerendaal may not have been fertilized or were not fertilized annually. Another possibility is that manure was supplied from elsewhere, or that fields were not fertilized with animal manure but with other fertilizers (such as lime). The quantitative model of 2020 was the reason for using stable isotope analysis to investigate whether Voerendaal's cereal crops came from fertilized fields.

## 17.4 Presence or absence of manuring in Voerendaal. Stable isotopes from charred grain

### 17.4.1 Introduction

Research into stable isotopes from plant remains, whether or not originating from an archaeological context, almost always involves the chemical elements carbon (C) and nitrogen (N). Due to its radioactive decay, the unstable isotope <sup>14</sup>C is very suitable for dating purposes. In addition, there are two stable isotopes for carbon: <sup>12</sup>C and <sup>13</sup>C. The amount of <sup>12</sup>C in the atmosphere makes up 98.9% of all carbon; for <sup>13</sup>C it is 1.1% and for <sup>14</sup>C less than 0.1%. However, plants discriminate in terms of the carbon absorption that takes place through the stomata in their leaves. A small minority of plant species have a very different photosynthesis, adapted to very dry conditions where less strong discrimination of <sup>13</sup>C occurs. These so-called C<sub>4</sub> plants include the cultivated crops millet and maize. However, the cereals examined here are all C<sub>3</sub> plants, where the deviation of the <sup>13</sup>C content from the international standard (a Cretaceous fossil) Vienna Peedee belemnite ( $\delta^{13}\text{C}$ ) is approx. -22 to -25‰. In field conditions with drought stress, C<sub>3</sub> plants appear to be less able to exclude

<sup>1565</sup> Kooistra 1996, 104-113.

<sup>1566</sup> Results discussed in Lüning & Meurers-Balke (1980, 330, 342-343).

<sup>1567</sup> Pliny the Elder, *Nat. Hist.* 17.6 & 18.53.

<sup>1568</sup> Vanderhoeven 2011, 130-131; 2015, fig. 6.

<sup>1569</sup> Varro, *rest.* 1.7.8.

<sup>1570</sup> Kreuz 2004.

<sup>1571</sup> Kooistra 2020.

$^{13}\text{C}$  and less negative  $\delta^{13}\text{C}$  values are measured.<sup>1572</sup> However, this is not expected to play a major role within the context of Voerendaal, and thus we are mainly interested in  $\delta^{15}\text{N}$ .

The content of  $\delta^{15}\text{N}$  in plants, and therefore also cereals, appears to increase with the amount of nitrogen present in their growing environment, which means that positive discrimination occurs here. In the case of cereal grains from arable fields, this allows the field's fertilization rate to be determined indirectly by the content of  $\delta^{15}\text{N}$  in cereal kernels. It is internationally agreed that the  $^{15}\text{N}$  content of nitrogen in the atmosphere provides the reference to assess  $\delta^{15}\text{N}$ .

The measurements of grains from recent fields that are only fertilized organically (without artificial fertilizer) further specified the relationship between fertilization and  $\delta^{15}\text{N}$ . In the case of unfertilized fields,  $\delta^{15}\text{N}$  in cereals varies between 0 and 3‰, a low manure application of 10–15 tonnes (metric tons)/ha yields  $\delta^{15}\text{N}$  between 3 and 6‰ and intensive fertilization (more than 35 tonnes/ha) results in  $\delta^{15}\text{N}$  values between 6 and 9‰.<sup>1573</sup> Pulse crops have a completely different method of nitrogen fixation involving symbiotic bacteria.

Experiments have shown that the charring process has no significant influence on the ratio of the stable isotopes of carbon and nitrogen.<sup>1574</sup> The centuries of preservation in the soil also appear to have no decisive effect in a test series of 22 samples. However, any external (soil) material that became attached to the grain kernels during charring does influence the stable isotope results.<sup>1575</sup> In the samples from Voerendaal, all grains were clean, with no soil attached (Fig. 17.4).

Within a cereal plant, there appear to be systematic differences in the levels of the stable isotopes between various parts (stem, chaff, kernels).<sup>1576</sup> In order to make comparisons possible, it is therefore crucial to always start from the same parts of the crop; the international consensus is to use the cereal grains for this. Variation occurs not only between different plant parts; even within one cereal species there can be a significant difference between various kernels.<sup>1577</sup> Therefore, it is advised that a minimum of 15 kernels from a single species should be mixed in one sample.<sup>1578</sup>

Another practical advantage of measuring cereal grains is that these are by far the most common crop plant parts in an archaeological context and are also the most relevant parts in reconstructions of the human diet in the past. This is because consumed food sources also influence the ratios of stable isotopes that accumulate in human tissue.<sup>1579</sup>

This section further addresses the question of what stable isotope analysis of charred cereal grains can contribute to our knowledge about the fertilization rate of the fields on which the cereals were grown, and thus indirectly about agricultural management at the Roman villa of Voerendaal.

#### 17.4.2 Materials and methods

The stable isotope analysis of charred grain from Voerendaal was carried out in three steps. Firstly, one sample from our site (sample 20-4-25) formed part of a comparative study of three methods for sample pre-treatment which comprised a total of 22 samples.<sup>1580</sup> For these samples, consisting of 30 grains each, part of the material was measured for stable isotopes without any pre-treatment, a second part was pre-treated in a single acid step (A) and a third underwent a pre-treatment with acid-base-acid (ABA). This latter method is customary for  $^{14}\text{C}$  samples. The measurements of stable isotopes for these samples were carried out at the University of Bradford (UK). Each subsample was measured in duplicate by means of Isotope Ratio Mass Spectrometry (IRMS). The deviation of the untreated and A-only pre-treated subsamples from Voerendaal compared to the ABA-pre-treated subsample was close to zero, which was the case with the majority of the 22 samples studied. All duplicate measurements varied less than 0.15‰.

As part of the current analysis of the features and finds of the Voerendaal excavations, a series of fifteen features was selected for  $^{14}\text{C}$  dating by Henk Hiddink. Short-living cereal grains provide outstanding material for  $^{14}\text{C}$  dating, as they date to the same year as the excavated feature, unless redeposition took place. Charcoal and wood with much higher ages are therefore considerably less favourable.

<sup>1572</sup> Arous *et al.* 1997; Fiorentino *et al.* 2015.

<sup>1573</sup> Bogaard *et al.* 2007; 2013; Kanstrup *et al.* 2012.

<sup>1574</sup> Fraser *et al.* 2013.

<sup>1575</sup> Brinkkemper *et al.* 2018.

<sup>1576</sup> Heaton *et al.* 2009.

<sup>1577</sup> Bogaard *et al.* 2007, e.g. the variation within the grains of their sample 3 is between about 4.5 and 7.5‰. See also Brinkkemper & Fernandes, in prep.

<sup>1578</sup> Kanstrup *et al.* 2011.

<sup>1579</sup> Smits & Van der Plicht 2009.

<sup>1580</sup> Brinkkemper *et al.* 2018.



Fig. 17.4 Voerendaal-Ten Hove. Spelt (*Triticum spelta*) selected for research into stable isotopes (sample 20-4-25). Scale bar = 1 mm.

The second author selected grains from these fifteen features, and in five cases there was a sufficient number of kernels of a single cereal species in the sample to reliably measure stable C and N isotopes. These measurements were a by-product of  $^{14}\text{C}$  dating of the samples, carried out at the Centre for Isotope Research in Groningen (NL) with ABA-pre-treatment. These measurements were again made using IRMS, but as single measurements per sample, not in duplicate.

Finally, a subsequent set of fourteen samples from various Voerendaal features was subjected to an analysis of stable isotopes only (without  $^{14}\text{C}$  dating). These samples were selected based on the availability of a sufficient number of kernels of a single species. One sample of spelt from the nearby Merovingian site of Maastricht-Wolfstraat was added to this series for regional comparison.<sup>1581</sup> Unfortunately, there were no grain samples available from nearby villas or non-villa settlements on the loess.<sup>1582</sup>

This set of fourteen Voerendaal samples and the Maastricht sample were also measured at the Centre for Isotope Research in Groningen, by means of single measurements after ABA-pre-treatment and using IRMS.<sup>1583</sup> The consistent use of IRMS for all samples presented here allows for optimal comparison of the results. We will use the results after ABA-pre-treatment from the first-mentioned sample to further increase comparability.

In all cases, the samples were checked for the presence of only a single cereal species as well as for kernels with no chaff attached before being sent to the laboratory for isotope measurements (Fig. 17.4). In a few cases, especially those of barley, any chaff still attached to the grains was carefully removed. The distribution of the samples used for stable isotope research is presented in Fig. 17.5. Sample 20-4-25 was measured in both Bradford and Groningen. The values obtained for the two stable isotopes varied considerably less than twice the uncertainty in the measurements of

<sup>1581</sup> Kooistra 1996, 282-289.

<sup>1582</sup> The samples from Kerkrade-Holzkuil and Heerlen-Trilandis yielded too few cereal grains of one species per sample studied.

<sup>1583</sup> Since sample 95-4-26 from pit 813 is not properly dated by archaeological finds, it was  $^{14}\text{C}$  dated to ascertain that this feature belonged to period 2.

0.15‰, which means that differences between the two laboratories can be ignored.

### 17.4.3 Results

The results for the three sets of samples are presented in Table 17.3. As expected, the  $\delta^{13}\text{C}$  values are between -22 and -25‰. The slight variation in these values is not considered to have interpretational value.

The results for  $\delta^{15}\text{N}$  are presented graphically in Figure 17.6. One sample dates to the early phase of the villa (period 2). The  $\delta^{15}\text{N}$  of

this sample is higher than that of the later phases 2/3 and 3. The second set of samples derives from period 2 or 3 (AD 25-275). It concerns three samples of spelt, one of bread wheat, two of unidentified wheat and one of hulled barley. It is noteworthy here that the single bread wheat sample reveals a higher  $\delta^{15}\text{N}$  value than the wheat/spelt and barley samples in this period. As the difference between the next highest barley sample is more than 0.30‰, this cannot be attributed to measurement errors and is thus significant. The barley sample also scores

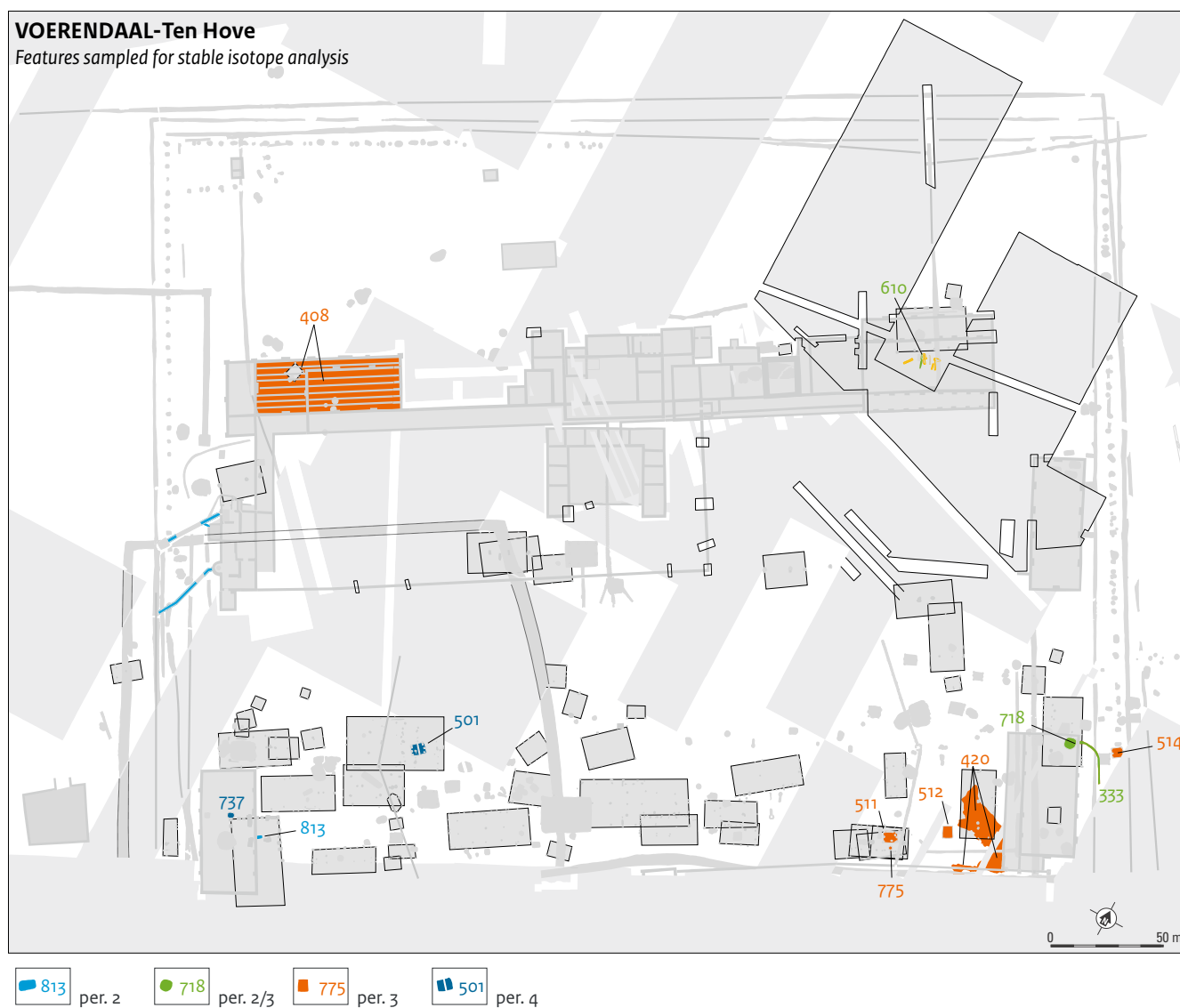


Fig. 17.5 Voerendaal-Ten Hove. Features sampled for stable isotope analysis; colours apply to dates of the sampled material, not per se to those of the contexts.



Table 17.3 Voerendaal-Ten Hove. Results of the research into stable isotopes.

Sample	Kooistra 1996, tab.	Struct.	Type	Per.	Mat.	Yld(%)	%C	%N	$\delta^{13}\text{C}$ ‰IRMS	$\pm 1\sigma$	$\delta^{15}\text{N}$ ‰IRMS	$\pm 1\sigma$
95-4-26	28-023	813	pit	2	W	57.6	63.2	3.5	-23.58	0.15	5.48	0.30
20-3-52	30-010	333	ditch	2/3	W	49.3	50.7	2.3	-23.50	0.15	2.99	0.30
20-4-29	30-013	333	ditch	2/3	S	56.5	76.9	1.9	-23.53	0.15	3.08	0.30
20-4-25	30-008	718	pit	2/3	S	56.1	60.1	1.9	-23.48	0.15	3.17	0.30
20-4-25	30-008	718	pit	2/3	S		57.1	3.0	-23.30	0.20	3.3	0.20
10-2-27	28-016	610	hearth	2/3	W	44.1	52.7	6.6	-23.61	0.15	3.40	0.30
20-2-25	30-006	718	pit	2/3	HB*	57.0	72.0	2.4	-23.04	0.15	4.09	0.30
22-7-1	30-015	512	s-f hut	2/3	BW	57.0	62.7	2.3	-23.31	0.15	4.85	0.30
102-2-16	30-059	408	horreum	3	S	36.6	56.7	2.5	-23.07	0.15	2.58	0.30
16-5-44	30-030b	775	pit	3	S*	46.1	55.3	2.5	-22.40	0.15	2.88	0.30
102-1-21	30-052	408	horreum	3	S	60.5	56.3	2.1	-22.44	0.15	3.28	0.30
102-1-38	30-053	408	horreum	3	S**	8.3	x	3.2	x	x	3.49	0.30
20-3-63	32-006	514	s-f hut	3	BW		62.6	6.3	-22.56	0.15	3.49	0.15
16-5-10	30-030a	775	pit	3	S	49.2	60.0	2.6	-22.61	0.15	3.57	0.30
102-2-17	30-060	408	horreum	3	S		56.7	6.2	-22.71	0.15	4.07	0.15
22-5-13	30-014	512	s-f hut	3	W		63.2	1.9	-23.56	0.15	4.24	0.15
16-6-8	32-044	511	s-f hut	3	W	48.5	58.9	2.5	-22.87	0.15	4.30	0.30
22-5-5	30-024	420	thr floor	3	W		63.3	2.5	-23.55	0.15	5.17	0.15
107-2-48	32-056	501	s-f hut	4	HB		65.0	3.0	-24.72	0.15	4.60	0.15
68-4-26	32-057	737	pit	4	HB	42.9	60.2	2.9	-24.70	0.15	5.85	0.30
Maastr.	-	-	silo	4	S	35.4	58.8	2.6	-23.29	0.15	5.45	0.30

Type s-f Sunken-floored hut; Per Period of archaeobotanical remains, not per se of context; Mat. material submitted: BW bread wheat; HB hulled barley; S spelt; W wheat;

\* 10 instead of 15 kernels submitted; \*\* not enough material left for analysis left after pretreatment

significantly higher for  $\delta^{15}\text{N}$  than the remaining spelt and wheat samples.

It is also remarkable that the  $\delta^{15}\text{N}$  measurements from all periods after the oldest one have values in the range of low levels of manuring. Some spelt in the third period, the villa's heyday, was even cultivated on unfertilized fields. The variation in  $\delta^{15}\text{N}$  values measured for spelt wheat covers a much greater range in period 3 than period 2/3.

All  $\delta^{15}\text{N}$  values for unidentified wheat in period 3 are higher than those for spelt in this period. This makes it plausible that the unidentified wheat is of another species than spelt, possibly bread wheat? Admittedly, this assumption is not supported by the fact that

only spelt has been identified with certainty alongside the unidentified wheat for the sample with the highest  $\delta^{15}\text{N}$  value of the three (22-5-5). In the other two samples (16-6-8 and 22-5-13), low numbers of bread wheat did occur, once (22-5-13) as a tentative identification (*Triticum cf. aestivum*). The sample of bread wheat in period 3, on the other hand, scores relatively low, also compared to the bread wheat from period 2/3. The sample of spelt in period 4 shows a much higher  $\delta^{15}\text{N}$  value compared to spelt in the earlier periods. This is the Merovingian sample from Maastricht-Wolfstraat, which is at the younger end of period 4, probably younger than the two samples of barley attributed to this period.

#### 17.4.4 Discussion

The  $\delta^{15}\text{N}$  values for the cereal samples from Voerendaal-Ten Hove dating to the heyday of the villa (period 3; AD 125-275) consistently show low levels of manuring. At first sight, this might seem unexpected in an agrarian system with a focus on surplus production. However, a large area of arable land was needed for this surplus and it is highly likely that the amount of animal dung available was insufficient to maintain the fertility of the fields at the level that they probably had at the start of Roman habitation, as is shown by the wheat sample from period 2 (Fig. 17.6).<sup>1584</sup>

The fact that the bread wheat sample from period 2/3 shows a much higher  $\delta^{15}\text{N}$  value than all other samples in this period could imply that the fields for bread wheat were fertilized more

heavily than those for other cereals. This would be a logical decision on the part of the Roman farmers, as bread wheat requires nitrogen-rich soils to produce a good yield.<sup>1585</sup> However, the higher  $\delta^{15}\text{N}$  value could also be explained by the import of bread wheat from an area with arable soils richer in nitrogen. The fact that this bread wheat sample originates from the threshing floor of the villa and that some rachis internodes of this wheat species were also found renders the import of this crop unlikely.

In view of the relatively high  $\delta^{15}\text{N}$  value of hulled barley in period 2/3 in comparison with spelt and wheat, there is another explanation. It is well known that this crop produces higher yields in less favourable conditions than the various wheat species.<sup>1586</sup> This might be related to a more efficient uptake of nitrogen from the soil. It does not seem plausible that arable fields

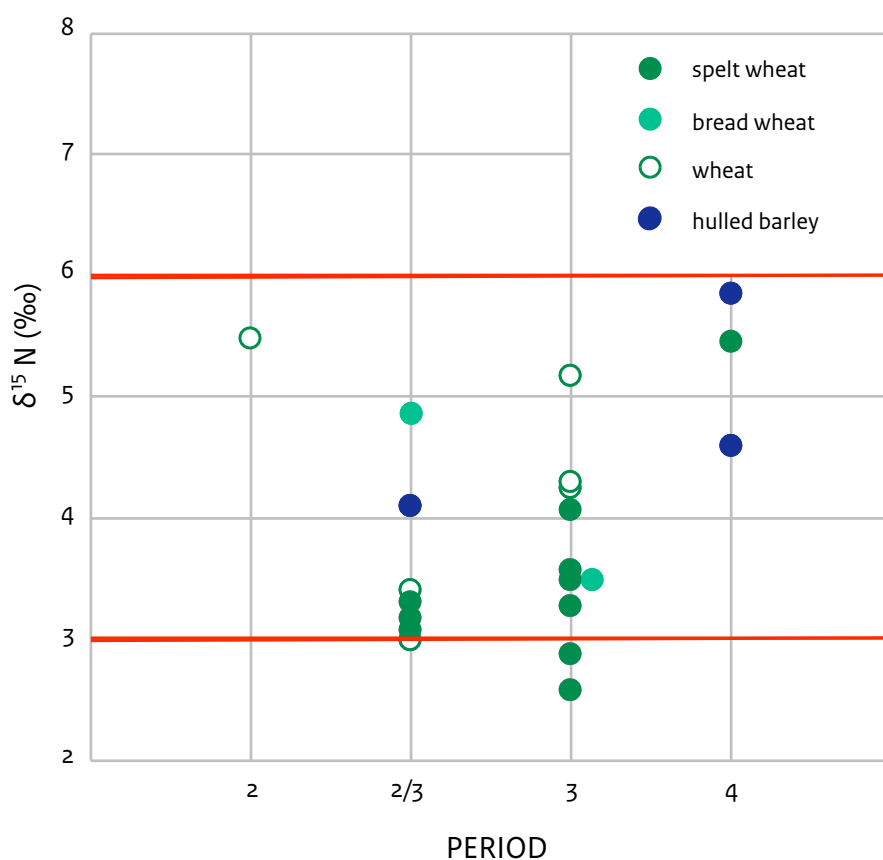


Fig. 17.6 Voerendaal-Ten Hove.  $\delta^{15}\text{N}$ -values for the different cereal species arrange to period.

2 AD 25/30-125; 3 AD 125-275; 4 AD 375-700; Red lines delimit permillages of unfertilized fields (<3 ‰), low level of manuring (3-6 ‰) and high level of manuring (>6 ‰).

<sup>1584</sup> See Kooistra 2020 for the subordinate role of animals in the villa economy.

<sup>1585</sup> Reynolds 1987.

<sup>1586</sup> Enklaar 1850; Körber-Grohne 1987, 42.

for hulled barley were more intensively fertilized than those for spelt, as spelt had a much higher status in the military Roman world and required higher levels of manuring.<sup>1587</sup> However, comparisons of various crops growing on similarly fertilized plots revealed that barley showed comparable  $\delta^{15}\text{N}$  values.<sup>1588</sup> This barley crop might have been cultivated on freshly reclaimed fields.

During the continuous harvesting of crops from the fields, the fertility appears to decline even further, at least at certain locations, in period 3. It seems that the variation in manuring increased during this period but remained within the range of low manuring intensity. The enlargement of the *horreum* in this period could be related to an increased production of cereal crops. It seems unlikely that the yields would increase with a consistently low manuring intensity. The higher production was more likely achieved by creating more arable fields. At the start, these new fields were probably (still) quite fertile, accounting for the greater variation in  $\delta^{15}\text{N}$  values.

The outcome of the quantitative model mentioned in the conclusion of Section 17.3 was that the arable fields could only be fertilized by animal dung if the livestock herd was so large as to only leave arable fields for the villa's own consumption, since the rest of the land was required for pasture and meadows. This picture can be nuanced by the stable isotope research. The fields were only extensively fertilized in periods 2/3 and 3, and some not at all in period 3. The bread wheat in period 2/3 grew on a more nitrogen-rich field and was likely a local crop. This implies that there was deliberate variation in the intensity of manuring in relation to the crop to be cultivated on a particular arable field.

### 17.5 Farming strategies at Voerendaal-Ten Hove in the Roman period

Only general information about farming is available for the oldest period of Voerendaal: there were wooden byre-houses, granaries, cereals and cattle. For the Late Roman period and the Early Middle Ages (AD (325/375-700), the information about farming activities is also minimal.

The majority of the information comes from the Roman period, from the first to the late third century AD. At that time, the settlement developed into a Roman-style agrarian enterprise with spelt as a trade product. The other cereals at Voerendaal were hulled barley, bread wheat, emmer, and possibly cultivated oat and millet. All cereals except for spelt seem to have been cultivated for the farmers' own use. The villa yard probably had an orchard with walnut, sweet chestnut and hazel and a vegetable garden where beet and wild parsnip were grown. It is very likely that more crops were grown, but no remains of them have been preserved. The zoological material has mainly provided insight into the consumption pattern of the residents. On the menu were products from cattle, pig, sheep/goat and chicken. It is plausible that these animals were kept on the farm, although there is no firm evidence for this. In addition, the bones of horse and dog indicate the presence of these animals, which were not eaten. There are no indications for fishing and hunting.

The Roman villa of Voerendaal was situated in an area where a thick layer of fertile loess had been deposited. These soil conditions and the results of the long-term experiments in Rothamsted (Great Britain) and Göttingen (Germany) were not considered in relation to the impact of fertilization on cereal yields in the quantitative model from 1996.<sup>1589</sup> In recent years, more attention has been paid to this aspect of agricultural activities. The addition of a manure component to the quantitative model from 1996 led to the assumption that at most a small proportion of the arable fields of Voerendaal could have been fertilized in Roman times.<sup>1590</sup> This situation would have been different if dung was supplied from elsewhere, but that is not plausible in the middle of an agricultural region with several villas in the vicinity. Another alternative is that arable fields were fertilized with another type of fertilizer, such as lime.<sup>1591</sup>

An impression of the nutrient richness of the fields of Voerendaal has been obtained thanks to the stable isotope analysis. The results show that the fields had a higher fertility in period 2 than in periods 2/3 and 3 (Fig. 17.6). It seems that in the Roman villa's heyday, the fields with the

<sup>1587</sup> On the Roman appreciation of spelt, see e.g. Groenman-van Waateringe 1989, 99; Polak & Kooistra 2013, 213.

<sup>1588</sup> Prof. A. Bogaard (Oxford University), pers. comm. February 2022.

<sup>1589</sup> See Lüning & Meurers-Balke 1980, 330, 342-343 (discussion of experiments); Kooistra 1996, 109-113.

<sup>1590</sup> Kooistra 2020.

<sup>1591</sup> Cf. section 4.1.3.

commercial spelt crop were minimally fertilized. A field on which bread wheat was grown received more manure (period 2/3 in Fig. 17.6). Variation in the nutrient richness of arable fields arose in the course of the Roman period. This result could indicate that fields were being depleted by intensive arable farming in combination with too little fertilization. However, there were also fields whose fertility was probably maintained and new arable fields may have been created (see period 3 in Fig. 17.6). Only three samples from

the Late Roman/Early Medieval period have been examined; it should be noted here that the spelt sample comes from Maastricht. The three samples show higher  $\delta^{15}\text{N}$  values, which could indicate that field fertility was restored after the intensive arable farming of Roman times. The outcome of the stable isotope research and the quantitative model from 2020 seem to point in the same direction. The Roman villa in its heyday suffered from a shortage of manure and presumably from diminishing cereal yields.





# 18 Introductory remarks on chapter 19-38

*Henk Hiddink*

Chapters 19-38 are devoted to the specialist analyses of the different categories of finds. As far as the 'cultural' finds material is concerned, the database contains over 14,000 records or 43,000 finds/fragments, weighing over 2.2 metric tons. It is impossible to state the 'true number' of finds, as will become clear in the detailed discussions in the following chapters. Some of the material was not collected during the excavations or was discarded/lost afterwards (mainly stone, brick and tile). Other finds were not analysed or are impossible to quantify, such as untreated, highly fragmented iron nails. Added to this, different specialists applied different methods of quantification. Table 18.1 therefore provides only an indicative, albeit useful summary of the number of finds. Finds such as iron objects, slag, stone objects and unworked animal bone are virtually undatable by means of their form alone and their numbers per period should therefore be regarded with even more suspicion.

Here we will point out some aspects of the analyses that may not be apparent from the individual chapters but which the reader needs to be aware of. Firstly, some categories were not studied at all. This holds true for baked loam/clay (*huttenleem*) except for a few loom weights, as well as plaster or mortar fragments without obvious traces of paint. Moreover, none of the many charcoal samples and remaining soil samples held in Heerlen were analysed. Secondly, only a selection of other categories were analysed. This mainly applies to the iron objects, less than 10% of which are discussed in Chapter 20, the remainder being mainly nails (although all these were viewed on X-rays). All the Early and Middle Roman terra sigillata and amphora fragments were studied, but only a portion of the remaining material of these periods was investigated in more detail. All 16,490 sherds (425.5 kg) were scanned, but only the rim fragments and some other relevant pieces were analysed in terms of both forms and fabrics (slightly over one quarter). Again with the exception of the sigillata and amphorae, the

Middle Roman pottery at the RMO was not analysed at all, mainly because virtually nothing is known about its context.

A third issue to be noted here is the overlap between some analyses of pottery groups. 'Regional' amphorae (*middelgrote standamforen*) are discussed in both chapter 23 and 24, and later Middle Roman or possibly early Late Roman coarse pottery (e.g. from Urmitz-Weißenhurm) in both chapter 23 and 26. In this way the somewhat diverging ideas of the specialists become apparent. Also some overlap exists between chapter 26 and 27, because the date – either Late Roman or Early Medieval – of some pottery groups is not clear (especially some terra nigra and the material from the 'second transitional period').

The finds are illustrated on different scales. Most figures depict pottery and here the usual scale is 1:3, except for large vessels (1:4 or 1:4), decorated terra sigillata (1:2) and stamps (1:1). Smaller bronze objects such as brooches, glass bracelets and beads, as well as whetstones, are shown in half the standard scale, thus 2:3. A scale of 1:2 is also used for larger iron objects and glass vessels. Most flint artefacts are in scale 1:1. It was our aim to illustrate a broad range of artefacts in all categories. Regarding the pottery, it seemed informative to show a considerable number of complete/reconstructed vessel forms. The profiles of original parts of wheel-thrown vessels are shown in black,<sup>1592</sup> those of the added parts in grey. The same conventions are followed in examples of vessels not found at Ten Hove; they can also be identified by missing find numbers.<sup>1593</sup> Parts added to glass vessels are shown by dashed lines, while complete examples not found at Voerendaal are accompanied by a type designation rather than a find number.

Finally, we are reminded of the fact that the find numbers do not identify specific objects.<sup>1594</sup> Therefore, these numbers, with for example the 16-2-2 or 108-1-15 format, are always accompanied by the serial number per structure (383-16; 772-5) and/or the database ID number (2415; 12013).

<sup>1592</sup> The left half/section of handmade pottery is in light grey with a black outline.

<sup>1593</sup> In chapter 23, many specimens of types produced at Heerlen are modified after those in Van Kerckhove & Boreel 2014.

<sup>1594</sup> Cf. section 3.3.2 and 3.3.5.

Table 18.1. Voerendaal-Ten Hove. Indicative summary of the find material.

Category	Objects/MNI	Fragm.	Chapter/Section	Category	Objects/MNI	Fragm	Chapter/Section
Stone Age				Late Roman period			
Flint	698		37	Coins	98		19
Iron Age				Bronze	4		20
Bronze	5		20	Iron	4		20
Pottery		2981	21	Terra sigillata	53	171	35
E/M Iron Age	58			Amphorae	3	9	34
Late Iron Age	115			Other pottery	346	702	36
Glass bracelets	6	6	31.1	Pottery LR/EM?		257	
millstones	3		33.5	Glass vessels*		37	31.2
iron slag		19	34	Glass jewellery	3		31.3
Early/Middle Roman				Worked bone	1		36
Coins	17		19	Iron slag (incl. EM)		129	34
Bronze (silver)	159		20	Animal bone		125-663	app.IX
Iron	120-1700	8667	20	Early Middle Ages			
Lead	89		20.4	Bronze	4		20
Terra sigillata	69	441	22	Iron	7		30
Amphorae	423	1620	24	Flint	3		37
Other pottery	2176	4381-16490	23	Pottery, fine	11	71	27
Terracotta	5	8	30	Pottery, coarse	16	67	27
Glass vessels		82	31.2	Pottery, Carol.?	2	2	28
Glass jewellery	7		31.3	Glass beads	29		31.3
Worked bone	20		36	Middle Ages>			
Painted plaster		162	35	Coins	4		19
Window glass		151	31.4	Bronze	10		20
Brick and tile		434-5000	32	Iron	3		20
Building stone		1073	33.2	Lead	8		20.4
Stone 'furniture'	4	11	33.3	Pottery, High Med.		79	28
Stone tools	25	200+	33.5-6	Pottery, later		138	28
Millstones	40	96-402	33.5				
Iron slag		1652	34				
Animal bone		164-406	app. IX				

\* some fragments possibly Early Medieval; > High, Late and post-Medieval, Early Modern

# 19 The coins

Stijn Heeren, Henk Hiddink and Rob Reijnen

## 19.1 Introduction

At least 119 coins were collected at Voerendaal-Ten Hove. Apart from four pieces dating to various periods from the fifteenth to the nineteenth centuries,<sup>1595</sup> these were 115 coins of Roman date. This chapter will discuss the Roman coins only. The first goal of this chapter is to provide basic information about the coin finds: description, chronological distribution and spatial analysis. The second is to interpret the extent to which the minting dates of the coins are consistent with coin circulation and deposition at Voerendaal-Ten Hove. In other words, were the coins retrieved at this site used and lost here fairly soon after their minting date, or are there reasons to suggest that many coins came to this site long after being minted? A spatial analysis is one of the elements needed to answer this question. The next section will examine the research history and methods, which presumably had a major impact on the retrieval rate of coins. Section 19.3 will provide a short overview of the coins, while Section 19.4 discusses the spatial distribution of the coins over the Voerendaal site. Section 19.5 compares the Voerendaal finds with other sites and interprets the relationship of the coin finds to ancient circulation. Finally, Section 19.6 presents conclusions and answers the most important questions.

## 19.2 Research history and method, quantities

### 19.2.1 Research history

Seven Roman coins were found during the excavations by Habets and the RMO. This includes a coin of unknown denomination of Severus Alexander, only known from a later nineteenth-century letter by Pleyte.<sup>1596</sup> The other coins are held at the RMO. Although only one coin from Holwerda's excavation is still present, the museum's inventory mentions 'unrecognizable small bronze coins'.<sup>1597</sup> This wording suggests that these were coins of Late Roman date but we cannot check this as they are no longer present. Of 116 coins from the 1985-1987

investigations listed in the original find lists/database, 10-2-11 and 108-2-7 (structure 757) either went missing shortly after the fieldwork or were later identified as not coins at all but were not removed from the records. Two other entries concern tiny bronze fragments, likely to come from other coins in the same contexts. The four possible coins/fragments are not counted here. Also leaving aside the four post-Roman coins, this leaves us with 108 coins found by the ROB. About three quarters of the coins found by the ROB were studied in the late 1980s at the KPK, Leiden. Because the remaining coins were apparently never identified in detail,<sup>1598</sup> it was decided in the current investigation to ask the experienced Roman numismatist Rob Reijnen to analyse all the coins once again.<sup>1599</sup> His coin identifications differ from the original KPK identifications in a fair number of cases.

### 19.2.2 Research method and quantities

Of the 115 more or less identifiable Roman coins, 20 date to the Early and Middle Roman period (before AD 270) and 96 to the Late Roman period (Table 19.1). These figures have little significance in themselves because the question is how the number of coins compare with those at other sites. A related question is how the quantity of coins relates to the methods of excavation and metal detecting.

Of course, metal detectors did not yet exist at the time of the older villa excavations, and the generally very small-size Late Roman coins were quite rare finds. The 7 coins found at Voerendaal between 1892 and 1950 fit the pattern of these excavations.<sup>1600</sup> If we exclude these, only 13 Early and Middle Roman coins from the 1985-1987 excavations remain. This number is higher than the 5 coins of this period found between 1981 and 1985 at Neerharen-Rekem (but see below),<sup>1601</sup> but comparable to that of Maasbracht-Steenakker, investigated in 1981-1982 (14 Early/Middle Roman coins, one Late Roman),<sup>1602</sup> or that of Kerkrade-Holzkuil (16 or 17 Early/Middle Roman coins, 2-3 Late Roman specimens).<sup>1603</sup> The number of coins known from the villa at Borgharen is higher (32 Early/Middle Roman, 72 Late Roman).<sup>1604</sup> It is unknown whether metal detectors were used at Neerharen and

<sup>1595</sup> Two of these coins were identified by the KPK/National Museum of Coins and Medals shortly after the excavations: a half *groot* of Holland (Philip Le Bel, AD 1482-1487; find 48-1-1) and a *duit* or *cent* from the eighteenth or nineteenth century (find 18-1-1). The other two coins are an *oord* from 1716 of Jozef-Clemens van Beieren, prince-bishop of Liège (find 26-1-1) and a seventeenth- or eighteenth-century *oord*, possibly from the principality of Liège/Luik (find 79-1-5).

<sup>1596</sup> Braat 1953, 76.

<sup>1597</sup> Inventory 1932/11.14.

<sup>1598</sup> Identifications were not found in the letters from the KPK kept in the RCE archives, nor in the numismatic database Numis (with thanks to Paul Beliën for providing a query with coins from Voerendaal).

<sup>1599</sup> A separate database is available for the complete identifications, including e.g. mints and RIC numbers.

<sup>1600</sup> E.g. one coin at Groot Haasdal-Op den Billich (Goossens *et al.* 1908, 36), nine at Heer-Backerbosch (Habets 1895, 286), five at Houthem-Ravensbosch (Remouchamps 1925, 75-76), one (Late Roman) at Houthem-Rondenbosch (Brulet 1990, 206, no. 128) and three (Late Roman) at Stein (Brulet 1990, 216, no. 162). No coins were found at Heerlen-Bovenste Caumer (Peters 1930), Hoensbroek-Schuureik (Habets 1887), Lemiers (Braat 1934, 26-28), Mook-Plasmolen (Braat 1934, 10-13), Schaesberg-Oversten Hof (Peters 1922, 112ff), Vaesrade-Zandberg (Braat 1934, 31-32) or Valkenburg-Heihof (Holwerda & Goossens 1907, 17-23).

<sup>1601</sup> Stroobants 2013.

<sup>1602</sup> Driessen 2017, 159.

<sup>1603</sup> Kemmers 2005 (20 coins); appendix 3 (19 coins).

<sup>1604</sup> The numbers are those listed as either second/third century or fourth/first half fifth century AD. The 29 coins found in 1995 and 1999 are all from period 16 or later (Hulst & Dijkman 2008, 41).

**Table 19.1. Voerendaal-Ten Hove. Condensed list of the Roman coins.**

Authority	Denomination	Begin	End	N	VA	SR	Fig. 19.1-2
first/second century (Trajan?)	as	0	200	2			1-2
Augustus (27 BC-AD 14)/P. Lurius Agrippa	as	7 BC	7 BC	1			
Caligula (37-41) for Agrippa	as	37	41	2			3
Vespasianus (69-79)	dupondius	71	71	1			
Domitianus (81-96) / Hadrianus (117-138) ?	dupondius	81	138	1			
Trajanus (98-117)	sestertius	98	103	1			
Traianus (98-117)	as	103	111	1			4
Traianus (98-117)	sestertius	114	117	1			5
Hadrianus (117-138)	sestertius	119	120	1			6
Hadrianus (117-138)	as	125	127	1			
Antoninus Pius (138-161) for Faustina II	denarius	147	161	1			
Commodus	dupondius/as	186	187	1			7
Septimius Severus	sestertius	195	196	1			8
Severus Alexander (222-235)	unknown	222	235	1			
Gordianus III (238-244)	antoninianus	241	243	1			
Claudius II Gothicus (268-270)	antoninianus	268	270	1			
Quintillus (270)	antoninianus	270	270	1			
Postumus (259-268)	double sestertius	260	261	1			9
Postumus (259-268)	double sestertius	263	266	1			10
Tetricus I (270-273), after -	antoninianus	270	293	1			12
Tetricus I (271-274) ?	antoninianus	271	274	1			
Carinus (283-285), for Carus	antoninianus	283	284	1			13
Constantinus I (306-337), for Crispus	nummus	320	320	1			14
Constantinus I en zonen (306-361)	nummus	330	340/360	2			
Constantinus I en zonen (306-361)	nummus	335	340	1			
Constantinus II (337-340)	nummus	337	340	1			
Constans (337-350)	nummus	347	348	1			
Constans (337-350)/Constantius II (337-361)	aes3	348	361	1			17
after AD 330	nummus/aes3	330	388	3			
after AD 330	nummus/aes4	330	403	1			

<sup>1605</sup> About half of the coins there were found by amateur archaeologists before and after the excavation (HVR numbers in Driessen 2017, appendix).

<sup>1606</sup> Tichelman 2005, 221.

<sup>1607</sup> Aarts & Prins 2014. Metal detectors were used there, but not as extensively as in modern excavations and often operated by inexperienced students (personal observation-HAH);

Borgharen, but they were apparently not used at Maasbracht.<sup>1605</sup> They were used extensively at Kerkrade,<sup>1606</sup> but the quality of the work cannot be assessed. Metal detectors were used at Voerendaal. Given this fact, however, our impression is that the number of coins is quite low. Many more have appeared in modern excavations of Roman sites (early to late). Seventy-four coins (including two Celtic pieces) were found at the villa of Hoogeloon-Kerkackers, although this is located on sand where – as in loess soils – metal is not well preserved,

although the excavation was carried out in more or less the same period, the 1980s.<sup>1607</sup> The metal detectors at Voerendaal were probably not used in the most optimal way or were not (always) operated by experienced individuals.<sup>1608</sup>

This last impression is based in particular on the comparatively low number of Late Roman coins at Ten Hove, especially since sites showing activity in this period often yield high numbers of coins.<sup>1609</sup> At Neerharen-Rekem, 607 out of 612 coins are of Late Roman date (only 5 Early and Middle Roman ones!).<sup>1610</sup> At Holtum-Noord,

Authority	Denomination	Begin	End	N	VA	SR	Fig. 19.1-2
Magnentius (350-353)	aes2	353	353	1			15
Valentinianus I (364-375)	aes3	364	367	1			18
Valentinianus I (364-375)	aes3	367	375	2			19
Valentinianus I (364-375) or II (375-392)	aes3	364	378	1			
Valentinianus I and successors (364-392)	aes3	364	378	7			
Valentinianus I and successors (364-392)	aes3	364	392	4			
Valentinianus I and successors (364-392)	aes3	367	375	1			
Valens (364-378)	aes3	364	367	2			20
Valens (364-378)	aes3	364	375	1			21
Valens (364-378)	aes3	364	378	2			
Valens (364-378)	aes3	367	375	3			22-23
Valens (364-378)	aes3	367	378	1			
Gratianus (367-383)	aes3	367	375	7			24-25
Gratianus (367-383)	aes3	375	378	1			
Magnus Maximus (383-388)	aes4	387	388	1			27
Valentinianus II (375-392)	aes2	378	383	1			16
Valentinianus II (375-392)	aes4	378	388	1			26
Valentinianus II (375-392)	aes4	383	392	4	1		
Theodosius I (379-395)	aes4	383	387	1			
Theodosius I (379-395)	aes4	388	395	3		1	
Theodosius' dynasty (379-455)	aes4	383	388	1	1		
Theodosius' dynasty (379-455)	aes4	383	402	19	12	4	
Theodosius' dynasty (379-455)	aes4	388	403	5			
Theodosius' dynasty (379-455)	aes4	389	395	1			
Arcadius (383-408)	aes4	383	402	1			
Arcadius (383-408)	aes4	388	402	6		3	
Arcadius (383-408) / Honorius (393-423)	aes4	388	403	1		1	
Honorius (393-423)	aes4	393	403	1		1	
<b>Total</b>				<b>115</b>	<b>14</b>	<b>10</b>	

VA victoria Augg(g); SR salus reipublicae

which was not even a villa but a post-built rural settlement dating to the early fifth century AD, 637 coins were retrieved; 8 dated to the Middle Roman period, 629 to the Late Roman period.<sup>1611</sup> The excavation of the rural settlement of Gennep-Stamelberg yielded 353 coins.<sup>1612</sup> Wijchen-Tienakker, the site of a Middle Roman villa and subsequent post-built habitation, yielded 271 Roman coins, of which 233 are Late Roman.<sup>1613</sup>

### 19.3 Short overview of the Voerendaal coins

#### 19.3.1 First to early third century

Just 3 or 4 coins date to the first century AD; 2 are of uncertain date within the first or second century AD (Table 19.1; Fig. 19.1). Three coins were issued under Trajan, two by Hadrian, and after that, one coin for various emperors up to Gordian III. In total, 17 coins belong to the first-second century AD.

some coins were found during the sieving of soil samples. A large proportion of coins were found afterwards by 'professional amateur detectorists' on the spoil heaps and in backfilled trenches.

<sup>1608</sup> Detecting took place after the excavation levels were skimmed, but perhaps not while the excavator was working; it is also unknown whether the spoil heaps were investigated.



### 19.3.2 The later part of the third century

Seven coins date to the later third century (between AD 260 and 283), either minted by emperors from the 'Gallic empire', Postumus and Tetricus (Fig. 19.1-19.2), or 'official' Roman emperors (Claudius II, Quintillus, Carinus; Fig. 19.2). It must be noted that in Dutch chronology the Late Roman period begins in AD 270. Because in practice coins struck before this date also remained in circulation afterwards, the later third century is considered part of the Late Roman period.

### 19.1.3 The fourth century

Eight coins were issued between AD 320 and 353, one by Crispus, the latest by Magnentius, and 10 by Constantine I *cum suis*. The following 36 coins were minted by emperors of the Valentinian dynasty: Valentinian I, Valens, Valentinian II and Gratian, dated to the period AD 364-383. Nearly all of these come from Western mints: Rome, Lyon, Arles and Trier. The only exception is a Vota-type coin from Valentinian II (20-1-76/11346) from an eastern mint, which remained in production a little longer (until 388). It is rare for our region. The largest group consists of 47 pieces minted in the period AD 383-402 by Theodosius, Arcadius and Honorius. Of these, 14 are of the VICTORIA AVGGG series and 10 belong to the SALVS REIPVBLICAE type; of the remaining 24, the type cannot be ascertained. They either belong to one of these groups or could be of a divergent type. Finally, four coins could not be attributed with any precision to these periods within the fourth century.

## 19.4 Spatial distribution and contexts

### 19.4.1 General remarks

The distribution of the coins is similar to that of many other find categories: the vast majority are found in the southern, downslope part of the site, where soil accumulated and the preservation was better for all finds and especially metal (Fig. 19.3). At the central part of the site, situated higher on the slope, only Early/

Middle Roman coins are found (apart from the elusive small coins of Holwerda). Six more pieces than shown in figure 19.3 were found here between 1892 and 1950, but their precise location is unknown and they could not be plotted. Although some of the earlier coins in the southern part of the site may have been lost there not long after they were produced, such as those near building 403 and 418, others seem to have been deposited in the Late Roman period or later (see below).

It is obvious that the majority of coins were found near building 401: almost half of all coins (60) were found in trench 20. Perhaps this pattern is due to causes other than past activities. This is suspected because the percentage of Late Roman coins found in trench 20 is far higher (46.7%) than that of the pottery from this period and the Early Middle Ages (roughly 8-9%).<sup>1614</sup> It is possible that the detectorists were encouraged to conduct a close search of all the layers and features in the trench after finding a large number of coins at the first level of the trench at an early stage (e.g. 10 in find number 20-1-61). The crew may already have been alerted by finds in trenches 13 and 16. All trenches in this area were in fact investigated in 1985. However, it is impossible to check whether the intensity of metal detecting declined in later years.<sup>1615</sup>

### 19.4.2 Early and Middle Roman coins

Five of the earlier Roman coins are related to features. An as of August came from pit 744, which was filled in during or after the second half of the third century AD. A dupondius of Domitian or Trajan (752-7) was found in a pit that probably dates to the last quarter of the second century AD; it does not contain (recognizable) younger finds. A sestertius of Trajan was recovered from sunken hut 520, which was poorly recorded and only interpreted as such on the basis of 519 directly to the south. The feature contained only Middle Roman pottery, but if it was indeed a sunken hut, it is probably fourth/fifth century in date. Two double sestertii of Postumus in pit 733 – the only coins of this type on the site – are a remarkable find. The pit contained some Roman pottery sherds, but also several fragments of

<sup>1609</sup> Of course, there are exceptions, such as Neer-Wijnaerden, with only five Late Roman (and two Middle Roman) coins (Meurkens *et al.* 2021, 132, table 10.1) or Alphen-Kerkakkers, with none (and only one Middle Roman; De Koning 2005, appendix 4).

<sup>1610</sup> Stroobants 2013, 77.

<sup>1611</sup> Kemmers 2014, 163-164.

<sup>1612</sup> Heidinga & Offenberg 1992, 63-65.

<sup>1613</sup> Reijnen 2011, 89, table 10.1. Eighty-seven blanks and other coin production remains were also found at this site.

<sup>1614</sup> Sherds 8.8%, weight 7.8%.

<sup>1615</sup> The excavation does not appear to have been rushed in later years. Trench 20 lay open for some three months in 1985, but e.g. 68 in 1986 also for at least 2.5 months. Because daily reports and lists of staff present each day are missing, it is also impossible to check whether volunteers using metal detectors were present during all phases of the fieldwork.

Early Medieval pottery, providing a date of AD 565 or later. There are no indications that the infill of the pit was contaminated and that either the two coins or the Medieval pottery do not belong to it.<sup>1616</sup> In his article on Voerendaal, Braat's phrasing suggests that a sestertius of Trajan was found in the foundation/robber trench of the first villa.<sup>1617</sup> His drawings show, however, that it was found in the subsoil between the foundations.<sup>1618</sup> Its dating value is therefore minimal. An as of Caligula for Agrippa was found at a level above building 221 but, like the coin found near the remains of the first villa, the two cannot be linked with certainty.

#### 19.4.3 Late Roman coins

A considerable proportion of the Late Roman coins were found in or near sunken huts. Only one coin was found in 509, while 502, 503 and 510 contained two pieces and 519 four. The only or youngest coin in 502, 509 and 519 was minted on behalf of a member of the Theodosian dynasty. Features 503 and 510 are provided with a terminus post quem of 367 by their youngest coins, but are probably also later or much later. Only one coin, also Theodosian (after 383), was found in the features of sunken hut 515. Another five examples were retrieved from the layer directly above it and three of these provide a date after 388 AD. The fill of feature 514 contained 11 coins and another was found in the level covering it; one coin with a terminus post quem of 388 was also present here. Ten coins were found at a high level and must belong to 514 and/or 515; they are only attributable to a square of 5 x 5 m. In any event, three of these coins postdate 388 and six 383 AD. Two coins were found near sunken hut 512. They date from the second or third quarter of the fourth century AD, which – coincidentally? – is also the date of a bowl of Argonne sigillata from the fill of the feature. Four coins (all 20-1-86) came to light not far (1 to 2.5 m) from sunken hut 513 (after c. AD 350). It is remarkable that two of the coins are third-century antoniniani; the others date to the middle and end of the fourth century AD.

For the features other than sunken huts, one coin was found in hearth 632, one in pits 717 and 802, two in pit 723, 728, 757 and 770 (in the latter

case with another above it). The coins in five of these seven contexts were minted in the last two decades of the fourth century or first three years of the fifth century AD; hearth 632 is certainly fifth century in date. That the voluminous pit/cellar 757 yielded only two coins is remarkable. They have little dating value because one is lost and the other could not be identified with much precision (AD 330-388). Five coins were found near pit 721, which contained no finds with a more precise date (all after 378; find no. 20-1-76).

A few coins were retrieved from locations near post-built structures: at levels above 238 (one), 241 (three) and 242 (two). Needless to say, the coins do not offer certain evidence for dating the buildings. Finally, three groups of coins in trench 20 bear no possible relationship to structures. Find numbers 20-2-3 and 20-2-21 consist of only two coins, but 20-1-79 of eight pieces. Although their dates allow for a relationship, it is not certain that they were deposited at the same time; it is only known that they were found in a single 5 x 5 m square.

### 19.5 Chronological distribution and comparison

#### 19.5.1 General

In Section 19.2 and Table 19.1 above, the issue date of the coins was noted fairly precisely. However, it is by no means certain that the coins were deposited or left at Ten Hove in the period shortly after their minting date. Coins could remain in circulation for an extended period, up to many decades or even centuries. In general, soldiers in military centres were issued with new coins. If coin supply was stable, coins tended to appear (and disappear) from circulation rather quickly, but in periods when few troops were present in an area, or coin supply was halted for any other reason, older coinage remained in circulation for a long time. We can never establish securely for all coins at a site from a certain period whether they circulated there in the period shortly after their minting date.

However, for part of the material at least it can be demonstrated that 'old' coins ended up in later features, as discussed in the previous

<sup>1616</sup> The pit was not clearly visible at level 1, possible indicating that here some topsoil was present in the upper infill, but at least one coin was found at level 2; the Medieval pottery came from both level 1 and 2.

<sup>1617</sup> 'III h. Vondsten uit de fundamente van het gebouw H' (Braat 1953, 73).

<sup>1618</sup> The subsoil at the spot was perhaps not entirely undisturbed or the coin ended up here through bioturbation or much later activities.



Fig. 19.1 Voerendaal-Ten Hove. Examples of Roman coins (cf. Table 19.1).  
 (source: D.S. Habermehl & H.A. Hiddink)



Fig. 19.2 Voerendaal-Ten Hove. Examples of Late Roman coins (cf. Table 19.1).  
 (source: D.S. Habermehl & H.A. Hiddink)

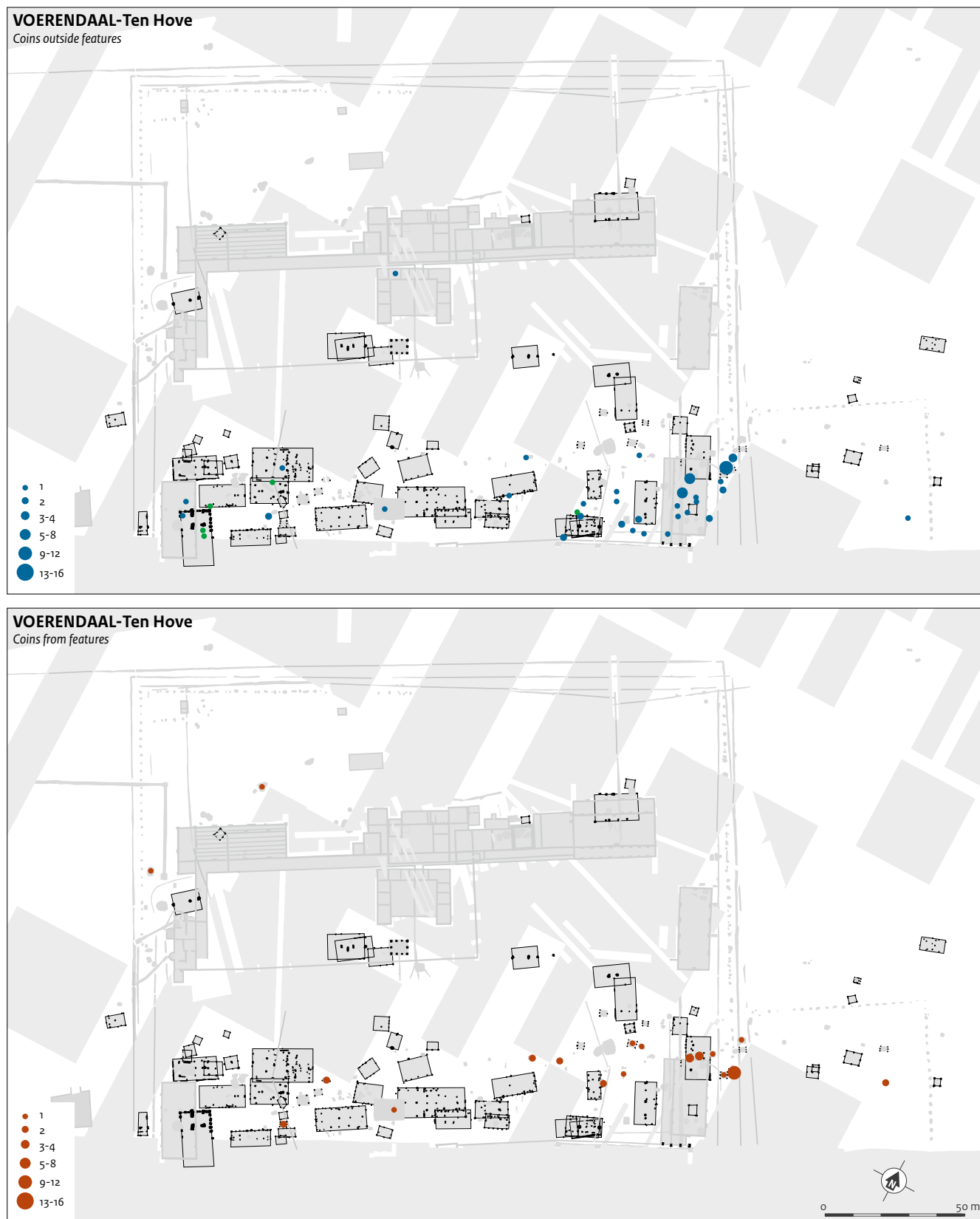


Fig. 19.3 Voerendaal-Ten Hove. Spatial distribution of the coins found outside features (top) and in features (bottom).



section. Some groups of Late Roman coins at Ten Hove were found in the same features. Here, the date (*terminus post quem*) of the youngest coin or coins determines that of all coins from that context (column 2 in Table \*19.2; Fig. 19.5).<sup>1619</sup> This chronological distribution shows more emphasis on later periods or coin periods, compared with the ‘uncorrected’ chronological distribution (column 1; only that of the Late Roman period is considered relevant on the basis of numbers). Yet another correction can be made, also taking into account the coins found just above the level where certain contexts were visible, or clusters next to them (Table \*19.2, column 3; Fig. 19.5). As this results in a very hypothetical distribution, we will not use it for further comparisons. Only the percentages of column 2 are shown in Fig. 19.6-19.7.

### 19.5.2 Comparisons

Besides the contextual analysis of the coins from a particular site, such as Ten Hove, a comparison with other sites in the region is an important tool when interpreting the finds. Aarts’ study of Roman-period monetary circulation in the MDS area offers benchmark values against which the Voerendaal coins can be assessed.<sup>1620</sup> Here, the Late Roman period is most important because enough coins from this period were found to make meaningful comparisons. Aarts’ study contains data on cities such as Tongeren, Maastricht and Cuijk (the latter two are *vici* that became forts in the Late Roman period; Fig. 19.6).<sup>1621</sup> The assumption is that there was a fairly high level of coin supply and monetary exchange there. If rural sites show peaks in coin loss in the same periods as the centres mentioned, we might assume activity at the site under study in that particular period. If coin loss peaks occur in periods different to the centres, different explanations must be sought. For the Late Roman period, the rural settlements at the (former) villa sites of Neerharen-Rekem, Holtum-Noord and Wijchen-Tienakker provide data for comparisons.<sup>1622</sup> Although the dating of the periods differs slightly from one author to the next, it was possible to assign them to the usual numismatic periods. The data are presented in Table \*19.3; the percentage columns are visualized in Figure 19.7.

### 19.5.3 First to early third century

Although the number of coins at Ten Hove from this period is small – strictly speaking too small – to calculate percentages, this was nevertheless done for a general comparison (Fig. 19.4). It appears that the chronological distribution of the Voerendaal coins roughly corresponds to that of the MDS area and the villa site of Hoogeloon-Kerkakkers.

Although the graph suggests that the inhabitants of the villa were involved in monetarized exchange networks, it is impossible to prove this. Considering the find locations of some of the coins, these coins may not have been lost soon after they were minted but may have been part of a much later circulation pool. For the Dutch river area, Aarts already surmised that worn second-century coins were actually part of the Late Roman coin pool.<sup>1623</sup> The example of an as of Augustus in pit 744 of the second half of the third century or later (Section 19.4.3) shows that is also a possibility for some of the Voerendaal coins (if these are not intrusions of older stray finds).

However, at least the 7 coins in the RMO collections (41% of 17 pieces) were found in the area of the main building or buildings, the baths and building 402. Because (virtually) no Late Roman activities are attested here, these coins must have circulated here in the preceding period. The original number of coins lost or left here must have been considerably higher, the small number of finds being the result of several formation processes.

### 19.5.4 The later third century

Although 7 coins from the later third century AD is a small number, their presence could still be significant. Coins from Gallic emperors (Postumus to Tetricus) are common in the region, but coins from their successors (Aurelian, Probus and others) are very rare in all regions of the Roman West.<sup>1624</sup> Because of this shortage of supply, local copies of official coins were made in large numbers; the copies circulated in the period AD 270 to c. 306.<sup>1625</sup> Once Constantine I took over from the Tetrarchy (the period AD 306-317), monetary reforms were passed and new coinage

<sup>1619</sup> Tables marked with an asterisk (\*) can be found in Appendix IX. Some coins cannot be assigned to a single issue period; they are not taken into account in (1) and to a lesser degree in (2); therefore, the total is less than 95. In (2) and (3) these coins are assigned to the issue period of the youngest coins in the context and/or cluster.

<sup>1620</sup> Aarts 2000.

<sup>1621</sup> For Tongeren, data from Stroobant (2013) are mainly used as they involve more coins. Vanderhoeven 2017, 128, citing Jammaers 2013, is more recent, but contains fewer coins (628).

<sup>1622</sup> Reijnen 2011; Stroobants 2013; Kemmers 2010; 2012; 2014.

<sup>1623</sup> Aarts 2007, 124-125.

<sup>1624</sup> Brem *et al.* 1996; Kropff & Van der Vin 2003, 66; Beliën 2020, 18-19.

<sup>1625</sup> Brem *et al.* 1996; Kropff & Van der Vin 2003, 66-67; Beliën 2020, 20, 30.



introduced. However, because the new coins contained more silver, they disappeared from circulation rather quickly.<sup>1626</sup> This might mean that older coinage of lesser quality continued to circulate. As mentioned earlier, of the 7 coins from this period at Ten Hove, 2 were found in a sunken hut (after c. AD 350) and 2 in an Early Medieval pit. The remaining 3 (2.6% of all, 3.1% of the Late Roman coins) could still belong to a habitation phase the latter part of the third century AD (phase 3c).<sup>1627</sup>

#### 19.5.5 The fourth century

Twelve coins issued between AD 318 and 364 again form quite a small group. When compared to the other rural Late Roman sites, the difference is not so marked. All show the same low number of coins from this period. However, the percentage at Voerendaal is less and significantly lower than that for the city of Tongeren. This could mean that the coins did not circulate in 'normal' monetary exchange, as we would expect to be the case in Tongeren, but may have formed part of a later coin pool, as was argued for Holtum-Noord and Neerharen-Rekem (see below).

The 36 coins for period 22 (the Valentinian dynasty) at Voerendaal is high by any standard (Fig. 19.5). In fact, the percentage is even higher for Voerendaal than for the cities of Tongeren and Maastricht. The peak in this period is also higher than for Holtum-Noord, Neerharen-Rekem and Wijchen-Tienakker. The percentage is roughly similar to that of Cuijk and Heerlen. This suggests that Voerendaal was occupied in this period and that the inhabitants were connected to a market, possibly in either Maastricht or Heerlen. This impression is substantiated by the pottery finds from phase 4b, from c. AD 460/475 onwards.<sup>1628</sup>

Finally, the largest group consists of 48 pieces minted in the period AD 383-402/403 by Theodosius, Arcadius and Honorius (Fig. 19.5). Of these, 14 are of the 'Gallic' VICTORIA AVGGG series and 10 belong to the 'Italic' SALVS REIPUBLICAE type; for the remaining 24, the type cannot be ascertained. They could belong to either one of these groups or be of a divergent type. In both numismatic periods 23

and 24, the Voerendaal percentage is higher than that of Tongeren, Cuijk, Heerlen and Maastricht, although that of the latter differs the least (and is minimal for the 'uncorrected' distribution). In line with the previous period, the similarity to Maastricht might mean that Voerendaal was still connected to exchange networks in the civic centres of the wider region.<sup>1629</sup> The numbers in these final decades of the fourth century AD are much lower for Voerendaal than the other rural settlements. This might indicate a situation somewhat different from the other sites (see below).

#### 19.5.6 The fifth century

A well-known problem for the fifth century in general is the question to what extent late-fourth century coins continued to circulate into the fifth century AD. Small-value copper coins were no longer minted after AD 402, but that does not mean of course that coin circulation itself ceased. High-value coins minted for Valentinian III and dated to c. AD 425-435 were found together, for example, with 33 late fourth-century copper coins in a pit at Beegden.<sup>1630</sup> In the cemetery of Tongeren, coins from the period AD 388-402 were associated with a military belt dated to the mid-fifth century.<sup>1631</sup> These examples are clear indications that older coins were used well into the fifth century, several or many decades after their minting date.

Stroobants and Kemmers established that the proportion of the VICTORIA AVGGG versus the SALVS REIPUBLICAE type is significant. At most other sites in the Roman West, it is common for the 'Gallic' coins of the VICTORIA AVGGG type to be far the most dominant; the 'Italic' coins of the SALVS REIPUBLICAE are normally fewer.<sup>1632</sup> On the one hand, the ratio between the types at a given site could reflect geographical proximity: it is logical that Gallic coins would predominate in the Roman Northwest. On the other hand, there is a chronological factor involved. The Gallic mints ceased production in AD 395, while the Italic mints produced until AD 402; therefore, a higher proportion of the SALVS REIPUBLICAE type could mean an extended dating of the site into the

<sup>1626</sup> Beliën 2020, 30; Van Heesch 1998, 145.

<sup>1627</sup> Cf. section 16.1.3.

<sup>1628</sup> Section 16.2.2-3 and 26.5.

<sup>1629</sup> The percentage of coins from this period at Heerlen is quite low, but the absolute number is still large in comparison with Voerendaal (65 pieces) (Beliën *s.a.* 23, figs 22-23).

<sup>1630</sup> Beliën & Dijkstra 2015.

<sup>1631</sup> Beliën 2020, 33; Van Heesch 1998, 161.

<sup>1632</sup> Stroobants 2013, 80; Kemmers 2014, 164.

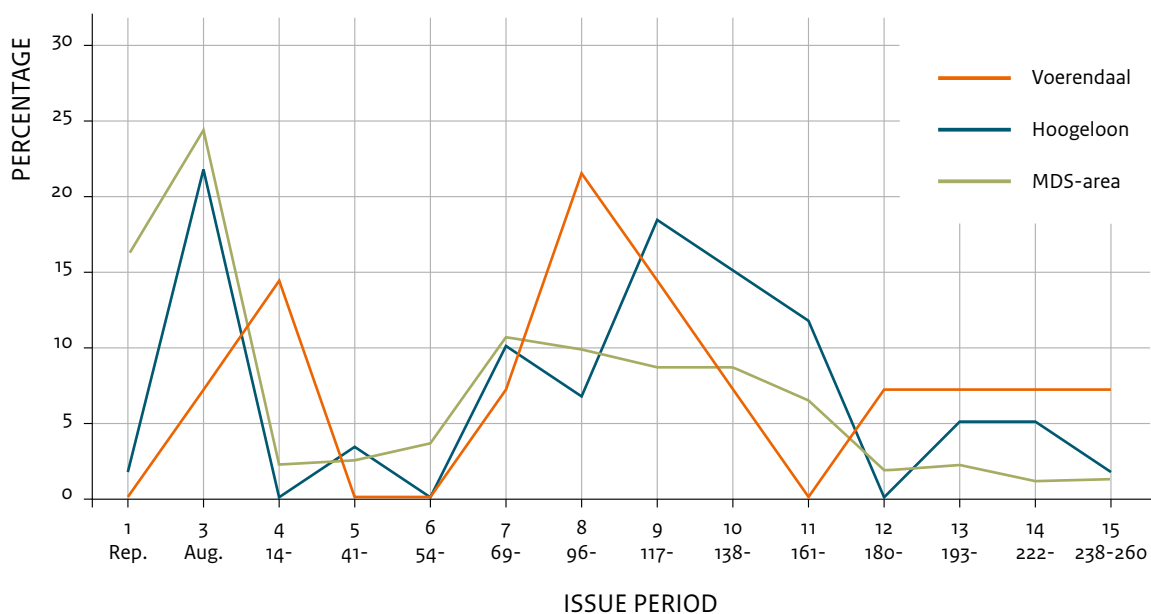


Fig. 19.4 Voerendaal-Ten Hove. The chronological distribution of the Roman coins up till AD 260, compared with those of Hoogeloon-Kerkackers and the MDS-area in its entirety. (source: except Voerendaal after Aarts 2014, fig. 20.5)

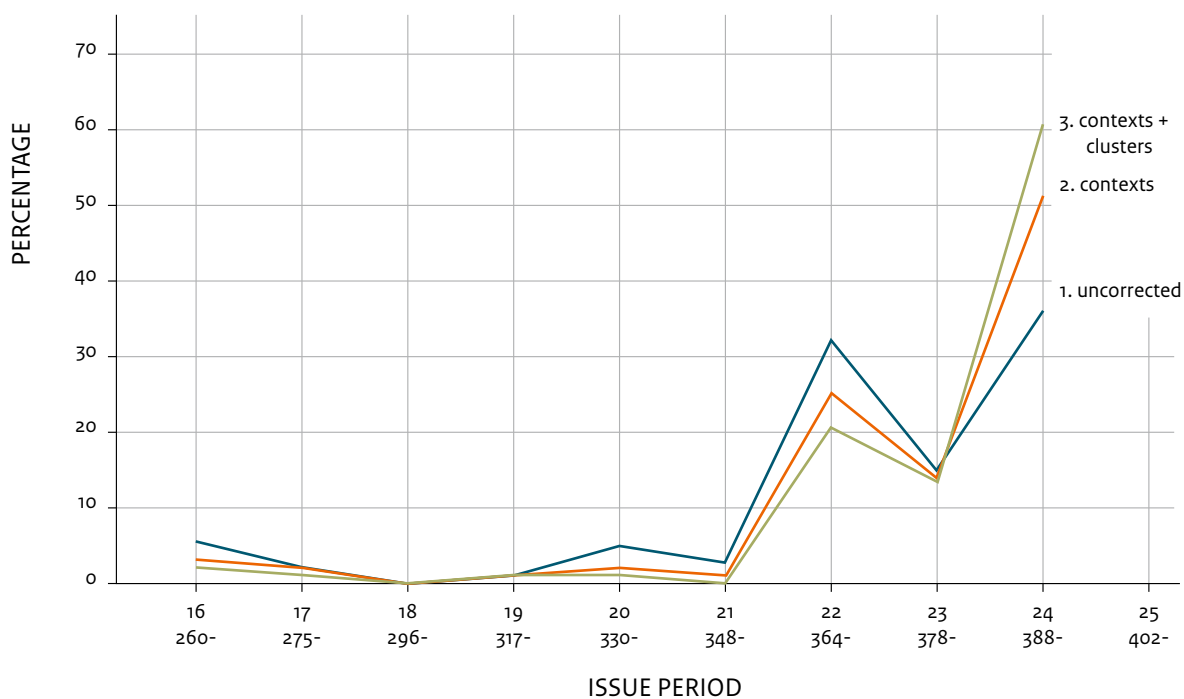


Fig. 19.5 Voerendaal-Ten Hove. Chronological distribution of the Late Roman coins, based on the data of table \*19.2.

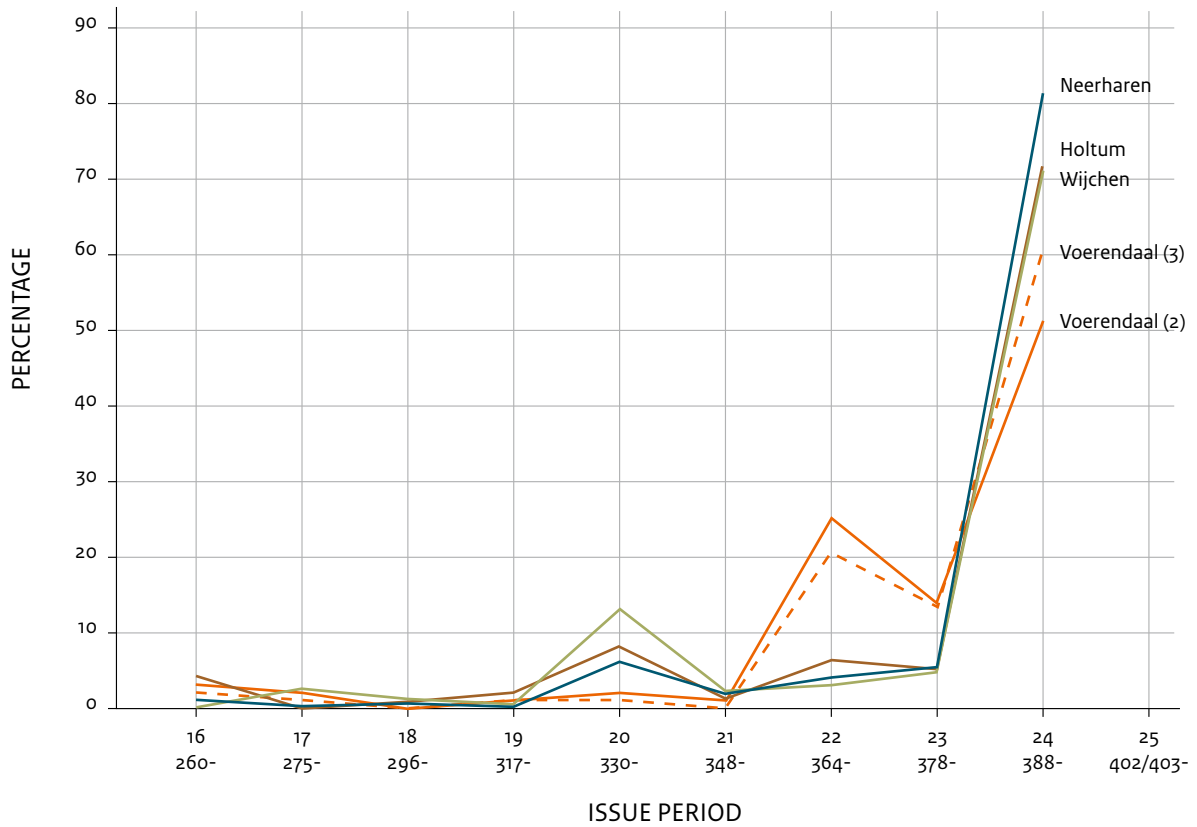


Fig. 19.6 Voerendaal-Ten Hove. Chronological distribution of the Late Roman coins from rural settlements/former villas, based on the data of table \*19.3.

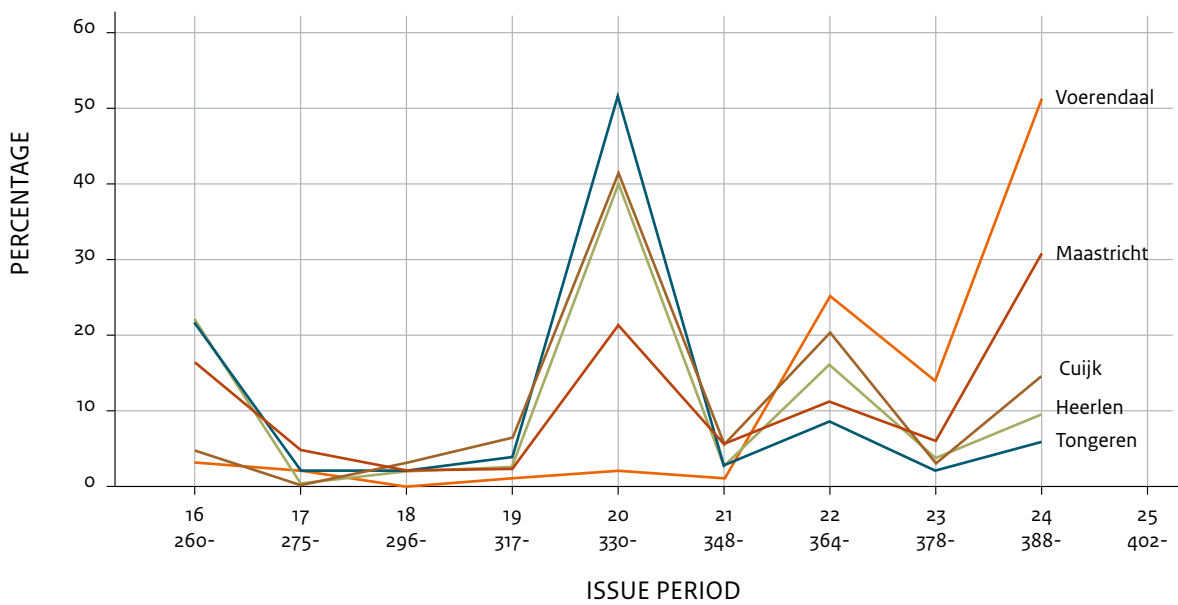


Fig. 19.7 Voerendaal-Ten Hove. Chronological distribution of the Late Roman coins from the city of Tongeren and three (former) vici/forts, based on the data of table \*19.3.

fifth century AD.<sup>1633</sup> Stroobants mentions other studies where the types occur in a ratio 2:1 or 3:1, and Neerharen-Rekem shows exactly those ratios (depending on which selection of coins within the site is studied).<sup>1634</sup> Holtum-Noord is different, with a ratio of nearly 1:1 (49:51), at least for the coins where the type could be ascertained.<sup>1635</sup> This could be taken as an indication that coin circulation at Holtum extended well into the fifth century. At Voerendaal, the ratio is 14 to 10, or 62:58 (Table \*19.3). This sits nicely in between the figures for Neerharen-Rekem and Holtum-Noord, a clear indication that circulation extended into the fifth century as well.

The dating of Neerharen, Holtum, and probably Wijchen-Tienakker,<sup>1636</sup> well into the fifth century is important for various reasons. Stroobants established that the older coins were mixed up with the youngest coins in the same contexts; a large proportion came from a single sunken hut and many others from the bank of the Meuse. They may both be single deposits (hoards). At other sites it is commonly assumed that coins circulated in the decades after minting, but in the case of Neerharen-Rekem, Stroobants surmises that they were used together; the early fourth-century coins were probably also part of the coin pool of the final quarter of the fourth and the first half of the fifth century AD.<sup>1637</sup> Kemmers also concludes clear clustering near one or a few sunken huts, with less relationship to byre-houses; in this case too, it may have been a hoard rather than incidental coin loss over an extended period of time. Holtum differs in that some of the coins were melted together, a clear indication of use as a raw material instead of a monetary deposit.<sup>1638</sup>

For Voerendaal, there are no indications that the coins were melted as scrap, or that they belonged to a hoard deposit. Although those possibilities cannot be excluded entirely, the numbers are not that high (and at least the coins are not found very close together) and it seems that coin loss is more likely here. Finally, proof that fourth-century coins still circulated in the fifth century is provided by contexts such as sunken hut 514 and hearth 628. A number of other sunken huts and pits could also belong to the fifth century, but the pottery does not allow

for a more precise date than c. AD 350/375-425/450 for these features.

## 19.6 Conclusions

For the first and second century AD, almost nothing meaningful can be said about the coins. The few coins present at the site that were minted in those periods could point to local coin circulation at that time, but there is also a strong possibility that these coins were actually part of a much later coin pool.

We seem to reach firmer ground for the third century onwards. Three (of seven) coins from the second half of the third century suggest activity at the site in that period. Since some of the sunken huts contained coins of this period, the first Germanic settlers may have arrived in the later third century AD, but it is also possible that the villa witnessed activities in the later third century and that these coins were mixed up in the much later sunken huts as a secondary process. A few coins from the later third century AD were even found in an Early Medieval pit, demonstrating that they were kept for centuries.

There are few coins from the first half of the fourth century AD, and the peak present at Tongeren, Heerlen and Cuijk is not reflected at Voerendaal. A large percentage of these few coins are found in association with later coins and therefore seem to be part of the late fourth-century coin pool. A different situation arises from the period of the Valentinian dynasty onwards. Coins from the second half of the fourth century are high in number, proportionally even higher than at Tongeren, the *vici* and *castella*. This probably means that the inhabitants of Voerendaal were engaging in monetary exchange in this period. The site may have been producing an agrarian surplus once again, or had other connections to markets in the surrounding area. This is different to Neerharen-Rekem and Holtum-Noord, sites that do not have increased numbers for the Valentinian period. Like Neerharen-Rekem and Holtum-Noord, the Voerendaal coin spectrum has clear indications of coin use extending well into the fifth century AD.

<sup>1633</sup> Stroobants 2013, 80.

<sup>1634</sup> Stroobants 2013, 80-81, esp. fig. 11. The exact numbers for Neerharen are 67:33 and 77:23

<sup>1635</sup> Kemmers 2014, 164 gives 1:1, while Stroobants (who received primary data) mentions 49:51.

<sup>1636</sup> One of the features of Tienakker was a small *burgus* from the early fourth century, which was the transformed well-house of the villa (Heirbaut & Van Enckevort 2011, 49ff.). Dating from the decades around AD 400 are two fragmentary house plans, eight sunken-floored huts, wells and pits (Heirbaut & Van Enckevort 2011).

<sup>1637</sup> Stroobants 2013, 88-97.

<sup>1638</sup> Kemmers 2014, 165-170.



# 20 Objects of bronze, iron and lead

*Henk Hiddink and Stijn Heeren*

## 20.1 Introduction

Although the material presented here dates to different periods, we decided it was decided not to write separate chapters on the metal finds. An important reason is that the bronze objects in particular suggest that the majority of the metal dates to the Middle Roman period. Dividing it up into periods would result in one fairly large and several small chapters. Moreover, many of the iron objects cannot be dated precisely because their form did not change markedly from the Iron Age to after the Middle Ages. For many objects, it would be impossible to decide which chapter to discuss them in.

It was no easy task to collect all the information on the metal objects. It was only relatively easy for the lead, which was all stored in the Provincial Depot for Archaeological finds (PDB) at De Vondst in Heerlen. Only a handful of objects could be identified and drawn; most fragments were only counted and weighed (see next section). The bronze objects, however, were stored both in Heerlen (along with a few silver pieces) and at the RMO in Leiden. The iron had to be studied in Heerlen, at the Limburg Museum in Venlo (loans from Heerlen) and at the RMO. To make matters more complicated, the metal from the ROB excavations present in Heerlen was stored in nearly 30 boxes, half of which contained both treated and untreated material, roughly in order of find numbers. The other half contained treated objects only, but these were stored in no order at all. At the RMO, the treated objects were stored in one depository, the remainder in another in a different building.

Because the original database for the ROB excavations contained scanty information about the objects, we had only a limited knowledge of what to expect. Some guidance was offered by a large number of object drawings (in ink) by Fons Horbach, which were digitized and edited by the second author.<sup>1639</sup> The actual objects were counted and identified in a number of sessions, and were drawn and photographed where relevant. Some twenty objects are missing, but the identifiable ones had already been drawn by Horbach. At two sessions at the RMO, it became apparent that Braat had only

published a rather arbitrary selection of the metal finds from his and earlier excavations. These finds were also drawn all over again, except for the poorly preserved sax 1895-12.112 and hearth shovel 1895-12.110 (Fig. 20.15; 20.28).<sup>1640</sup>

Most metal objects held at the RMO were in fairly good condition, having been treated afresh for conservation in the past two decades. Some, like the sax just mentioned, were also treated, but were essentially in the state they were found in. The relevant bronze objects in the PDB were in good condition, with smaller fragments sometimes untreated. The larger and more complete iron objects were treated, some crudely and using outdated methods (Archeoderm), the majority in more recent times using modern methods. However, a second, far larger group of objects was never preserved. It will be no surprise that these were in very poor condition, with many fissures and/or fragmented. Although the majority of these objects were nails, some other, identifiable pieces were also present. It was decided to simply draw and describe a few relevant objects (some tools, water-pipe collars), as touching this material would only cause further damage.

The conservation and restoration of previously untreated objects was not part of the original setup of the Voerendaal project for a number of reasons. The time and money needed for both selecting and treating the objects would make the project even more costly, while this investment was not expected to make up for the relatively limited amount of extra information gained. Almost two years into the project, a large set of X-ray photos made by Restaura became available because the Heerlen depot wanted to know what kind of objects were hidden in the mass of corroded and untreated iron finds. The X-rays confirmed our impression that most objects were nails, staples, chain links, pins, etc. The most relevant objects had already been drawn and only a handful of corrections/additions were made to the text below. The most remarkable fact is that five more find numbers with fragments of water-pipe collars could be identified (Section 20.3.16).

In this chapter, the metal finds are classified in a practical manner (Table 20.1).

<sup>1639</sup> Some inconsistencies in e.g. the representation of sections originate in these original drawings.

<sup>1640</sup> Braat 1953, fig. 12, no. 12 and 14.



**Table 20.1. Voerendaal-Ten Hove. Shortened summary of the metal objects per (sub) category (cf. table \*20.2).**

Subcategory	Bronze	Iron	Lead	Section 20.3.x
Brooches	37			1
Other jewellery: hair pins, finger rings etc.	9	4		2
Body care, medical instruments	14			3
Eating and drinking	13			4
Writing and sealing	1	1		5
Furniture and casket fittings	7	1		6
Buckles and belt fittings	10	3		7
Horse harness, yoke fittings	25	2		8
Weapons, including axes		9		9
Multi-purpose cutting tools		12		10
Woodworking tools		6		11
Agricultural implements		8		12
Possible tools		4		13
Locks and keys	2	24		14
Fire making, hearth equipment and cooking		8		15
Water pipe collars, flange		31		16
Structural fittings		11		17
Miscellaneous, unidentified		10		18
Lead objects			97	19
<b>Total</b>	<b>118</b>	<b>118</b>	<b>97</b>	

Some categories are obvious because the objects included have a specific function, such as brooches or locks and keys. Other objects are related in the sense that their function was not clear-cut, such as the multi-purpose tools used for cutting materials (knives, shears). A number of finds were used with hearths and were given twisted handles or other components (ladle, flesh hook, hearth shovels). In some instances, even layout solutions – placing objects optimally in a figure – were an argument for a certain classification.

The next section presents some comments on the number of objects and their interpretation. Section 20.3 is the catalogue of the bronze and iron finds, while the lead is discussed in Section 20.4.

## 20.2 The assemblage

### 20.2.1 Numbers

Partly as a result of the disorderly way in which the metal is stored and the loss of some finds, it is difficult to give precise numbers for the amount of metal found at Ten Hove. This chapter describes and discusses 118 bronze objects – including some silver or silver-plated ones (Table 20.1-\*20.2; Fig. 20.3ff.; Appendix XVII).<sup>1641</sup> Because fragments of some objects are recorded under several find numbers, the number of records in the database is slightly higher. The other 64 records contain 139 fragments of some 75 objects. About 10 objects are (probably) post-Medieval, 20 are small pieces of plate/strip and the remainder are unidentifiable or lost. Two records contain 34 fragments of a kind of tin or silver foil. The exact number of iron objects is unknown (Table 20.3). As mentioned above, a

<sup>1641</sup> Tables marked with an asterisk (\*) can be found in Appendix IX.

**Table 20.3. Voerendaal-Ten Hove. Estimated number of objects per metal type.**

Material	Database records	Fragments	Objects
Bronze discussed/illustrated	125	129	119
Bronze remainder	64	139	≈75
Iron discussed/illustrated	134	150	134
Iron remainder	1563	8517	1300+
Lead	81	97	97
<b>Total</b>	<b>1967</b>	<b>9032</b>	<b>1725+</b>

large number of objects or parts thereof were (further) fragmented after excavation. In the original database (OD) many objects were identified, but fragmentation and corrosion prevented a check on this; even the X-rays offered little help. Also, a larger time investment did not seem justified because a fair number of fragments are recent/subrecent. Only 134 objects (150 fragments) are discussed further in this chapter. Nearly 100 fragments of lead are kept in Heerlen, but only a dozen are worth mentioning. The remainder are small, melted or cut-off pieces.

Although the number of objects in the table and the illustrations in this chapter may suggest otherwise, the number of metal finds at Voerendaal is not particularly high (as has been demonstrated in chapter 19 for the coins). The number of bronze objects, for instance, is roughly equal to that found at Hoogeloon-Kerkackers (205 objects), but the latter site was inhabited for only some 250 years, while Voerendaal also had a Late Iron Age and Late Roman/Early Medieval phase. The number of finds may have been higher if a (substantially) larger quantity of soil from features had been sieved and if metal detecting had been carried out across the entire site.<sup>1642</sup> However, excavation finds always represent only a fraction of the material once present at a site. It is important to always bear this in mind. For instance, the roughly 30 Roman brooches of Ten Hove were lost or discarded during a 300-year period and therefore represent only 0.1 brooch per year.

### 20.2.2 Some observations on the metal finds

The metal finds will not be analysed here in relation to the find contexts (with the exception of metal objects from the graves) because the

number found in primary contexts is very limited.<sup>1643</sup> Some objects were found in contexts that were certainly or probably much younger but their number is too low to explain them with certainty. Many will have been collected as scrap metal after the Middle Roman period, or were present at the site as 'settlement refuse'. For instance, brooch 757-27, strainer 757-28, belt hook 757-30 and arrowhead 757-29 were found in pit/sunken-floored hut 757 from the Late Roman period or later. Only the arrowhead may be more or less contemporary with the feature. The same holds true for other finds, but these are few in number.<sup>1644</sup> For the iron objects, the problem is that many types were used from the Iron Age until our times, making it impossible to decide whether they really 'belong' to the context in which they were found. A final obstacle for a contextual analysis is that the vast minority of metal objects were recovered from features (25%), the majority from colluvium, trampled and ploughed layers in the southern half of the site (75%).<sup>1645</sup>

As mentioned earlier, the relatively low number of finds also partly explains the absence of very costly objects. Only a few silver and no gold objects were found at Voerendaal, but this seems a matter of pure chance if we look at finds from other villas. A small golden ring from Hoogeloon came from a pit (latrine?) and was probably found through sieving, and a small piece of jewellery in Kerkrade was attached to the corrosion of an iron collar of a water pipe/drain.<sup>1646</sup> Gold and silver objects were handled and stored carefully when in use, and were collected and melted down later to make new objects.

A few finds from Voerendaal do, however, provide a glimpse of the use of rather fine objects at the site, besides the large quantity of

<sup>1642</sup> Cf. the preceding chapter.

<sup>1643</sup> For the grave-finds, see chapter 13; 83.

<sup>1644</sup> Brooch spring 794-4, pin 516-4, spoon 509-1 (?), seal box 409-44, pendant 502-2, etc.

<sup>1645</sup> Based on both the number of fragments and the illustrated (and therefore identifiable) objects.

<sup>1646</sup> Hiddink & Pulles 2014, 490, fig. 25.5, no. 609-21 (Hoogeloon-Kerkackers); Hoss & Van der Chijs 2005, 29 (Kerkrade-Holzkuil).

pieces belonging to the more common material culture. We mention, for instance, the enamelled disc brooch 20-2-23/3326 (Fig. 20.5), the 'lock pin' with a small bust 16-3-5/2392 (Fig. 20.10), the openwork belt fitting 20-1-14/2901 (Fig. 20.11) and especially the fine niello-encrusted stylus 10-1-1/683 (Fig. 20.9).

When browsing through publications looking for parallels, one forms the impression that the metal assemblages from villa sites are very much alike. There almost always seem to be brooches and other pieces of jewellery, some scoops and needles, a hinge or furniture fitting, a piece of horse harness, an axe, shear, cleaver, auger and agricultural tool, at least one water-pipe collar and some keys. The sometimes numerous references in section 20.3 reveal how common some objects are; it would have been easy to cite many more parallels.

Some categories are not represented at Voerendaal, for example utensils for bathing (*strigiles*, bronze *patera*-like 'bathing dishes' or *ampullae*), scales and iron fittings that undoubtedly belong to carts. In reality, there are of course large differences, but it is impossible – for the reasons mentioned above – to determine whether these are the result of 'chance', chronology or specific functions of/activities at the sites. For this reason, we will not compare all the material from Voerendaal with that from other sites, but discuss only some specific categories that provide more detailed or special information.

#### Statuette?

The question mark is not added here because the identification of the object – a 7.8 cm high bronze statuette of Eros – is unclear (Fig. 20.1). What is not certain is whether it was indeed found at the site of our villa. We did not become aware of the statuette's existence until July 2021.<sup>1647</sup> It was published once, but with no more information than 'probably from the great villa of Ten Hove'.<sup>1648</sup> The Centre Céramique could only provide a little additional information,<sup>1649</sup> namely that the statuette was sold in March 1992 by an antiques dealer in Amsterdam to the Bonnefonten Museum in Maastricht. Because there seems to be no proof that the findspot was Voerendaal, let alone the fields of Ten Hove,

the statuette is not included in the catalogue and Tables 20.1 and \*20.2.<sup>1650</sup>

#### Brooches

Not all brooch finds belong to the phases in which there was a villa at Ten Hove (Table 20.4). This is certain for 794-4, a spring of a Middle La Tène brooch associated with a fragment of a glass bangle and radiocarbon dated animal bone. Some other pieces could belong to either the Late Iron Age – probably the very last decades – or the beginning of the first century AD. It concerns, among others, very Early Roman types such as the collar brooches. As these are typical of the Moselle area,<sup>1651</sup> it is possible that the first inhabitants of Voerendaal had relationships with that area. Since the two collar brooches are very much alike (although not completely identical), they could have been worn as a pair, which is typical of female dress.<sup>1652</sup> Although a military link could be apparent on other grounds, a common Early Roman military find like the Aucissa brooch is lacking, and much of the horse gear dates to the later periods. Therefore, it can be surmised that the initial inhabitants probably had little relationship to the Roman military.



Fig. 20.1 Bronze statuette of Eros, possibly found at Voerendaal-Ten Hove; height ca. 7.8 cm. (source: Centre Céramique, Maastricht)

<sup>1647</sup> It had been on loan to the Limburgs Museum for several years but never brought to our attention! The statuette is part of the archaeological collection of Centre Céramique, Maastricht (no. BC3702).

<sup>1648</sup> De Grooth & Mater 1997, pl. 16.

<sup>1649</sup> We would like to thank José Peeters for this information.

<sup>1650</sup> It is always possible that the finder ascribed the statuette to Voerendaal to obtain a higher price. The find was illegal in any case, as active artefact searches are not permitted, especially at an archaeological monument. Another part of a statuette, the head, found near the villa (some 450 m northeast of the main building), is probably modern and Roman (Archis record/observation 406399, find report 232667, object code 62BN-259).

<sup>1651</sup> Heeren & Van der Feijst 2017, 55-56.

<sup>1652</sup> Heeren & Van der Feijst 2017, 335-339, with references. It is worth mentioning that brooches of other types are also represented by two pieces (fig. 20.4 bottom row; 20.5 top left). This is probably coincidental because they were not found in close proximity to each other as proper pairs.

**Table 20.4. Voerendaal-Ten Hove. The brooches arranged according to their dates.**

Type/variant	Number	Date from	Date to	Group	Fig.
Middle La Tène-brooch	2	250 BC	100 BC		20.3
Middle La Tène (hybrid Empel/Nauheim)	1	150 BC	60/30 BC		20.3
Spoonbow brooch, La Tène	1	70 BC	30 BC		20.3
Spoonbow brooch, Nijmegen	1	30 BC	30 AD		20.3
Collar brooch	2	30 BC	20 AD		20.3
Simple Gallic brooch	1	20 BC	60 BC		20.3
Wire brooch, arched bow	1	1	70		20.4
Plate brooch or wheel-token	1	30	100		20.5
Wire brooch	1	30	300	F8	20.4
Wire brooch, angular bow	6	30/70	150/180	E1	20.4
Hod Hill brooch	1	50	125	E5	20.4
Dagger brooch	1	70	150	E5	20.3
Enamelled bow brooch	3	70	150	E2	20.5
Wire brooch, stretched semi-circular bow	4	90	150/180	E1	20.4
Wire brooch Almgren 16	2	100	200	F1	20.4
Enamelled disc brooch	1	100/150	200	F3	20.5
Wire brooch, flat hammered broad bow	2	150	300	F1	20.4
Crossbow brooch	1	390	520		20.5
Early medieval disc brooch	1	470	650		20.5
Brooch, type unknown	4				

The roughly 25 brooches dating to the Roman period form a small group when compared to other sites in the Netherlands, where the retrieval of hundreds of brooches per site is not exceptional.<sup>1653</sup> Heeren and Van der Feijst developed a way of comparing brooches from various sites. The ‘brooch spectrum’ or fingerprint of a site is established by organizing the brooches into chronological groups, and within these groups by provenance or user groups: regional brooches, military brooches, ‘foreign’ brooches, etc.<sup>1654</sup> This approach hardly seems feasible for Voerendaal since there are only a handful of brooches for each major period; however, the 21 brooches dating to the Middle Roman period show a very consistent picture. The problem of low numbers is overcome because they can be clearly grouped. The Middle Roman wire brooches belong to the regional spectrum groups E1 (the earlier ones) and F1 (the later ones); the enamelled brooches are arranged under the supra-regional groups E2

and F2; the Hod Hill brooch and dagger brooch belong to the supra-regional brooches with a military connotation (group E5); and the unclear fragments are automatically placed in group F8.<sup>1655</sup>

The result is shown in Table 20.5 and Figure 20.2. For the later first and the second century, regional wire brooches (E1) make up the main group, followed by the supra-regional enamelled brooches (E2) and then the supra-regional brooches with military associations (E5). For the second and third century AD, the same pattern emerges: regional wire brooches (F1) are most frequent, followed by supra-regional enamelled brooches (F3). The spectrum resulting from this ordering into categories for Voerendaal differs from that of army camps because, unsurprisingly, the military group is much larger there.<sup>1656</sup> The Voerendaal spectrum closely resembles that of three sites, all with similar proportions of the same groups: the rural settlement of Wijk bij Duurstede-De Horden,<sup>1657</sup> the vicus of Cuijk,<sup>1658</sup> and the rural settlement

<sup>1653</sup> Heeren & Van der Feijst 2017, 203. The number is comparable to that of ‘rich’ sites on the sandy soils of the southern Netherlands, investigated in a similar way in the 1980s and 1990s, e.g. 35 brooches/fragments at Hoogeloon-Kerkkackers (Hiddink & Pulles 2014) and 46 at Riethoven-Heesmortel (settlement and cemetery; Pulles & Hiddink 2013).

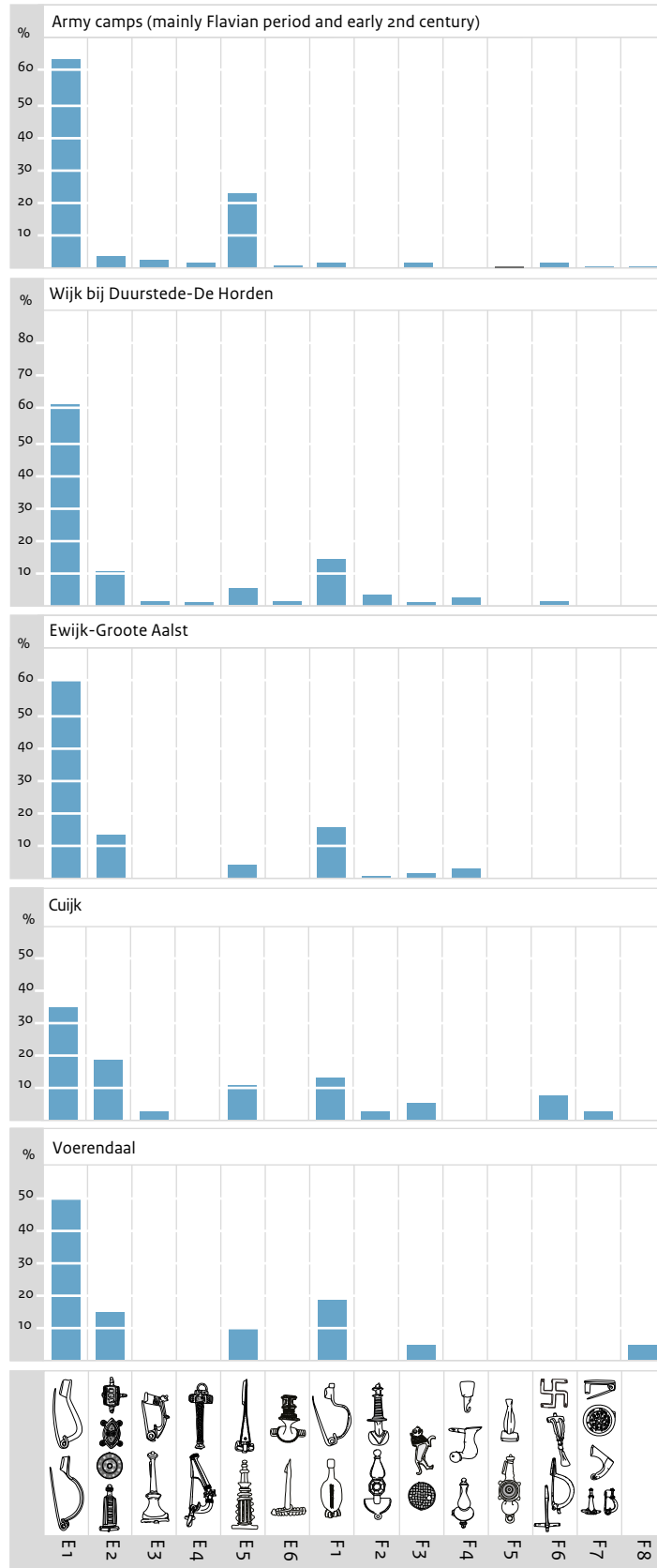
<sup>1654</sup> Heeren & Van der Feijst 2017, 261-329 (chapter 6).

<sup>1655</sup> Heeren & Van der Feijst 2017, 289-290.

<sup>1656</sup> Heeren & Van der Feijst 2017, 291-296.

<sup>1657</sup> Heeren & Van der Feijst 2017, 306.

<sup>1658</sup> Heeren & Van der Feijst 2017, 319-323.



<sup>1659</sup> Heeren & Van der Feijst 2017, 308; Ewijk is discussed, but missing from the tables, and therefore the spectrum is added to fig. 20.2 here.

<sup>1660</sup> Andrews 2012. This author tried to reconstruct the way in which cords passed through the boxes and concluded that it was impractical and unlikely that

Fig. 20.2 Brooch spectra of army camps and four sites, including Voerendaal-Ten Hove. (source: S. Heeren)

**Table 20.5. Voerendaal-Ten Hove. The 'site fingerprint' of the brooches.**

Group/column fig. 20.2	N	%
E1	10	48
E2	3	14
E3		
E4		
E5	2	10
E6		
F1	4	19
F2		
F3	1	5
F4		
F5		
F6		
F7		
F8	1	5
<b>Totaal</b>	<b>21</b>	<b>100</b>

(villa) of Ewijk-De Grootte Aalst.<sup>1659</sup> The small differences that exist must not be emphasized since the numbers found at Voerendaal are so few that a single brooch could distort the picture. Broadly speaking, we can say that regional wire brooches dominate, that the enamelled brooches are more frequent than at most other rural sites, which may indicate a certain level of luxury, and that the types with military associations may imply a link to the military.

#### *Late Roman/Early Medieval objects*

Not mentioned above are the fragments of a Germanic bow brooch (328-1/100-2-15/8588) and a disc brooch (0-0-0/12129). The presence of one or two brooches from the Late Roman/Early Medieval period seems quite meagre. However, they represent 2 out of 36 or 5.6% of the brooches, which is comparable to the percentage of Late Roman/Early Medieval pottery (7.2% at the very most; cf. Table 40.1). Therefore, the youngest brooches do not seem to be underrepresented. Viewed in this light, the modest number of other late objects is also not alarming. Leaving aside the objects from graves, there are only two 'deep-eye' pins, a Cortrat pin, a pendant and two *Tierkopfschnallen*.

Although the percentage of late metal finds is similar to that of the pottery, it is possible that a more extensive use of metal detectors would have resulted in at least some additional metal finds.

#### *Stylus*

Although some researchers doubt that seal boxes, like our find 409-51/68-2-82, were used to protect a seal on written wax tablets, which is the common interpretation,<sup>1660</sup> stylus 10-1-1/683 was undoubtedly used for writing (Fig. 20.9).<sup>1661</sup> This quite luxurious, finely decorated model suggests that it was used by individuals of high social status. Writing equipment is known from several elite graves such as those at Nijmegen-West, the 'sarcophagi' (strictly speaking ash chests) from Simpelfeld and Bocholtz-Vlengendaal and several tumuli in Belgium.<sup>1662</sup> In the context of a burial, writing equipment was probably mainly a symbol of social status, education and literacy.<sup>1663</sup>

At a settlement site like Ten Hove, however, a stylus would actually be used in daily life. There was a good deal of writing to be done at a villa: corresponding with friends, fellow members in the government of the  *civitas* and 'business partners'. Furthermore, records had to be kept concerning agricultural produce (including its sale), the acquisition of equipment and building materials, taxes, wages and leases. Just think of the famous 'lease' or 'office' scenes (*Pacht/Kontorszenen*) depicted on grave monuments, where money is handed over and a clerk or bookkeeper is taking notes.<sup>1664</sup>

#### *Belt buckles, horse harness*

Besides the weapons from graves, discussed elsewhere in this report,<sup>1665</sup> two belt buckles, a belt fitting and bronze fittings of horse harness are objects that are possibly associated with the Roman army. For the (Late Roman) period in which both buckles were used, the division between civilian and military was quite blurred, however, and objects of this kind were probably often worn in the former sphere. The Middle Roman objects were without doubt not used exclusively in a military context. While an early publication by Oldenstein presented finds from army bases along the Rhine and the Obergermanisch-Raetische *limes* and a later one

they were used with folded wax tablets. The alternative interpretation was that they covered seals on purses/small money bags in which sums of cash were transported.

<sup>1661</sup> Or was it? Styli could also be used as medicinal tools and for many other purposes (Schaltenbrand-Obrecht 2012, 79ff.). For argument's sake, we assume that it was used for writing.

<sup>1662</sup> In Nijmegen-West grave 1, 8, 9, 11, 21: inkwells, pen knife, styli, spatulas (Koster 2010, 151-157, 245); in the famous Simpelfeld sarcophagus a stylus with gold and silver inlay (Zinn 1997, 67, pl. 13); in Bocholtz an inkwell and spatula (De Groot 2006, 46, 100-101, no. 211; 113-114, no. 302). Regarding the Belgian tumuli: two styli were found in Overhespen 1 (Mariën 1991, 53-54, fig. 23, no. 19), an inkwell (?), stylus (?), pen knife, two compasses, a spatula in Berlingen 26 (Roossens & Lux 1973, 25, 27-31, fig. 16, no. 10; 20, no. 36-38c) and a compass and styli in St. Huibrechts-Hern B (Massart 2015, 144-145).

<sup>1663</sup> Cf. Faber 1998, 443 (including references to other grave finds); Koster 2010, 245.

<sup>1664</sup> E.g. the famous example from Neumagen (Von Massow 1932; Schaltenbrand-Obrecht 2012, 20, fig. 20). This scene is very similar to the left half of one depicting cloth trading on the Igeler Säule (Dragendorff & Krüger 1924, 53, fig. 30). On the same grave monument, an 'office scene' can be found on the *attica* (1924, 78-79, fig. 48) where leases are probably being handed over.

<sup>1665</sup> Chapter 13 and 83.



<sup>1666</sup> Oldenstein 1976; Gschwind 1998.

<sup>1667</sup> Nicolay 2007.

<sup>1668</sup> Some examples from villa sites and *tumuli*: Afferden (B17; Vermeulen-Bekkering 2006, 41-42, fig. 40); Bochtoltz-Vlengendaal (B7; Goossens 1916, pl. 2, fig. 8); Heer-Backerbosch (B1; Habets 1895, pl. 5, no. 6, 8); Hoogeloon (B1, B2, B8, other horse gear; Hiddink & Pulles 2014, 492, fig. 22.6, no. 45-55; 600-14, 604-452); Houthem-Kloosterbos/Rondenbos (B1 (2x), B5, B10; Schuermans 1867a, pl. 3, fig. 17-20); Köln-Müngersdorf (B1, B10; Fremersdorf 1933, pl. 16, no. 5, 8; pl. 32, no. 5, 6, 9); Jemelle (B1, B5; Vanden Berghe 1996, 74, fig. 10, no. 5-7); Celles-lez-Waremme (B5 on two belts; Massart 2000); Wange (B17; villa Wange Lodewijckx *et al.* 1994, 124, vorm 19); Vaux-et-Borset (B17; Massart 2000, fig. 2, right; 14, 1); Thorembais-Saint-Trond (B1, B5 many pieces, with yoke and wagon parts; Mariën 1991, 22ff., fig. 7-11). Examples from Hambach 133: (B5, five times; Gaitzsch 2013, 162, fig. 3).

<sup>1669</sup> Section 42.3.12.

<sup>1670</sup> At Hoogeloon-Kerkackers, for instance, no keys were found (or recognized); only parts of two locks, two lock springs and cuffs were collected (Hiddink & Pulles 2014, fig. 22.10; Hiddink & Zondervan 2014, fig. 23.12; 23.15). At Maasbracht-Steenakker one iron key was found (Driessen 2017, fig. 8.12); at Kerkrade-Holzkuil four bronze bows and one iron bit (Hoss & Van der Chijs 2005, 224, fig. 7.3). At Heer-Backerbosch, Habets collected five iron keys and part of a lock (1895, pl. 6, no. 6, 12; pl. 7, no. 9-12). The excavations at Köln-Müngersdorf yielded four keys (Fremersdorf 1933, pl. 31, no. 21; pl. 34, no. 2; pl. 40, no. 4 and 17).

<sup>1671</sup> Known e.g. from Pompeii and environs (like a

by Gschwind from a camp along the Danube,<sup>1666</sup> Nicolay published a substantial number of finds from non-military contexts in the Batavian area specifically.<sup>1667</sup> The PAN project even recorded many pieces of second- and third-century Roman horse gear from Friesland, well north of the Roman *limes*.

Bronze fittings are also fairly common finds in the villa zones of Zuid-Limburg and the Belgian Hesbaye region, generally in third-century contexts.<sup>1668</sup> The fittings must have been attached to the harness of both riding horses, used for travelling and undoubtedly also for hunting, and draught animals (including mules) that pulled carriages.

#### Weapons

Weapons were found in grave 320, dating around AD 300 and the Early Medieval graves 382 and 383. These finds are discussed in Chapter 13.

#### Tools

Regarding the tools found at Ten Hove, perhaps the most striking aspect – although similar to other villas – is that relatively few agricultural tools were found.<sup>1669</sup> The only agricultural implements likely dating from the heyday of the villa are a hoe, three reaping or pruning hooks and part of a scythe. The hooks are quite small and were probably used for gardening rather than agriculture. Some of the shears were possibly use for shearing sheep or trimming horse manes, but this is not certain as they are multi-purpose tools. The rakes from grave 320 are Late Roman, while a coulter (?) and part of a spade (?) could even be much younger.

#### Locks and keys

Later in this chapter some 20 keys and parts of locks are described, a relatively high number.<sup>1670</sup> Six finds, or nearly one third, were found in the excavations by Habets and Holwerda. This number is quite high, bearing in mind that the trenches uncovered only a small portion of the site and no metal detectors were used. At the same time, it is unremarkable because many locks must have been present, especially in and around the main building. Finds from trench 10 and 68 in the ROB excavations (three keys) may relate to outbuildings 405 and 403. Four keys

from trench 20, 22 and 27 could have been used in building 401, but this is not certain because they possibly did not end up there until the Late Roman period.

The number of different keys, which represents only a fraction of those used during the Roman period, shows that many locks must have been present on the site. Larger, simpler keys were probably used for doors, not only of the residential buildings and the rooms within, but also for the outbuildings. Pin tumbler and rotary locks were possibly also used for door locks, but certainly for those of padlocks, cupboards, trunks/chests and smaller caskets. Larger chests were used in Roman houses to store both valuable goods (vessels, money) and clothing or linen.<sup>1671</sup> Caskets were used for jewellery or even cosmetics, which were expensive. They are especially associated with women.<sup>1672</sup>

The fact that so many locks seem to have been present is unremarkable. The owner and his family were often absent from the villa and there were many workers and/or slaves on the premises who may have been tempted to steal money, jewellery or clothing.<sup>1673</sup> Furthermore, bandits roamed the countryside, especially near major roads.<sup>1674</sup> It is likely that guard dogs were kept to guard the villa.<sup>1675</sup> The windows of cellars and possibly ground-floor rooms must have been secured by grilles, as is shown by a find from Kerkrade-Holzkuil.<sup>1676</sup>

An interesting kind of lock is shackle 16-3-7/2417, originally combined with a chain. Judging by its rather small size, it was most likely meant to be placed on the wrist. However, this type was also used on necks and ankles, as is shown by larger examples, depictions on grave monuments,<sup>1677</sup> and even grave finds.<sup>1678</sup> In the north of Gaul, along the *limes* and in England, finds of shackles are known from military sites as well as from villas and other rural settlements. In and near the Netherlands they are known from the villas of Voerendaal, Hoogeloon and Rosmeer and from post-built settlements at Budel, Someren and Houten.<sup>1679</sup> Their presence in rural contexts suggests that, even in the southern Netherlands, slavery was more widespread than previously thought, although probably not predominant.<sup>1680</sup> In a rural settling, the work

must have been done by a combination of slaves, free farmers, tenants and wage workers.

Although it is likely that the Voerendaal cuff was used on the site itself during the villa's heyday, it was not found in a dated context. In theory, it may originally have been used elsewhere and only brought to the site in the Late Roman period.<sup>1681</sup>

#### *Water-pipe collars*

Iron collars for wooden water pipes are by no means rare finds at villa sites, but often only one or two are recovered (or published). The quantity at Voerendaal is quite high, with 30 identified examples (Section 20.3.16; Fig. 20.30-32). Their distribution, as indicators of the presence of water mains or drains, is analysed in Section 10.5.1.

strongbox from the villa of Oplontis B), but also depicted on the Sempelveld ash chest (Zinn 1997, 62, fig. 65).

<sup>1672</sup> E.g. a grave monument from Arlon with a woman holding a small casket (Levèbre 1990, 53, no. 23). The keys for these caskets were often worn as a finger ring (some examples: Müller 2011, fig. 11). A grave find with parts resembling 16-3-25 and 20-3-92 is e.g. Nijmegen-West grave 18 (Koster 162-163, pl. 62, no. 16-17). Well-preserved and reconstructed examples in Dewald & Eiden 1989; Müller 2011, fig. 13).

<sup>1673</sup> Curse tablets (*defixiones*) show that clothing was often stolen; see Scholz 2011.

<sup>1674</sup> Jung 2011; Blumell 2007.

<sup>1675</sup> Cf. the finds from well 314 (Kooistra & Laarman 1996, 180-181).

<sup>1676</sup> Tichelman 2005, 68, fig. 5.2.18; Hoss & Van der Chijs 2005, 222, fig. 7.1. An article on the ways to secure doors and windows is Kienzle 2011. One fragment of a grille in Köln-Müngersdorf (Fremersdorf 1933, pl. 29, no. 16). Some grilles from Britain in Manning 1985, 128, pl. 60.

<sup>1677</sup> E.g. Künzl 1993e, esp. fig. 10-12; Roymans & Zandstra 2011, fig. 5.

<sup>1678</sup> For a discussion and references on chains in burials, see Chinnock & Marshall 2021.

<sup>1679</sup> De Boe & Van Impe 1979, pl. 13, no. 13-14 (Rosmeer); Hiddink & Zondervan 2014, 531-535, fig. 23.12-13 (Hoogeloon-Kerkackers); Bink 2012, 104-106, fig. 7.20 (Budel-Duitse School); Vos 2009, 145, fig. 4.21 (Houten-Binnenweg, terrein 21); Hiddink 2009, 85-88, fig. 8.6 (Someren-Ter Hofstadlaan).

<sup>1680</sup> Roymans & Zandstra 2011.

<sup>1681</sup> The irons at Someren had no lock and were part of a small stash of iron objects, probably meant for re-working by a smith. In theory, these could have been collected elsewhere.

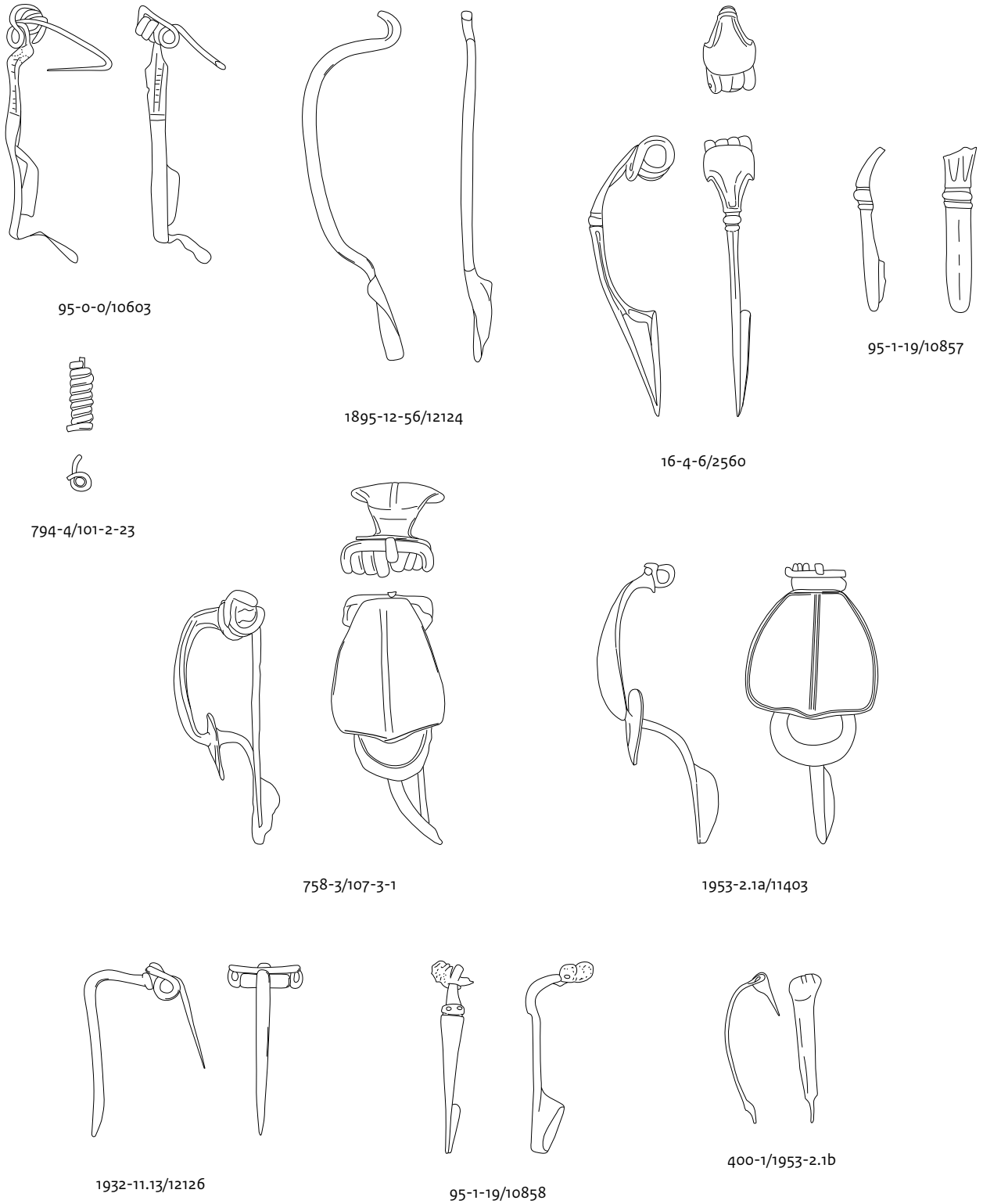


Fig. 20.3 Voerendaal-Ten Hove. Bronze brooches of various types, mainly relatively early ones. Scale 2:3.

## 20.3 Catalogue of the metal finds

### 20.3.1 Jewellery, brooches

#### *Middle La Tène brooches (La Tène II brooches)*

These late prehistoric brooches are furnished with an exterior chord spring consisting of four to sometimes more than ten coils. The characteristic element is the returned foot, which is attached back to the bow with a cuff. Three specimens are present at Voerendaal.

The brooch from trench 95 seems to be a hybrid between Middle La Tène brooches of the 'Empel' variant and late Nauheim brooches. The Empel variant is characterized by 'fishbone decoration' on the top part of the bow, which is a flat strip instead of a round wire, and has an angular rather than a curved side view of the bow.<sup>1682</sup> Moreover, the bow is a strip of metal of even width. The current piece, however, has a more or less lozenge-shaped top part of the bow, not unlike the Nauheim brooch. Moreover, the 'fishbone' incisions of the Empel variant are absent on this specimen but instead there are longitudinal and short transverse lines, which are seen on the simpler, smaller variants of the Nauheim brooch.<sup>1683</sup> Therefore, this piece is considered a hybrid between the Empel variant of the Middle La Tène brooch with characteristics of the smaller Nauheim brooch. The Empel variant is dated from c. 150 to 60/30 BC.<sup>1684</sup> and the same more or less holds true for the simple Nauheim brooch.<sup>1685</sup>

The curved bow of the brooch from Habets' excavations is typical of the 'classical' form of the Middle La Tène brooch, dating from c. 220 to 50 BC.<sup>1686</sup> Only a half spring remains of a brooch from pit 794. On the basis of the associated finds, it must belong to a smaller Middle La Tène brooch (considering the other finds from this feature).<sup>1687</sup> Germanic-style brooches of the Roman period have the same spring, however.<sup>1688</sup>

- |                     |   |
|---------------------|---|
| --/95-0-0/10603     | complete but twisted Middle La Tène brooch; bow with lozenge-shaped top part, decorated with transverse lines (Fig. 20.3).  |
| --/1895-12.56/12124 | bow and part of the foot of a brooch, most likely a Middle La Tène brooch, broken off at the spring and near the catch-plate. The cuff connecting the returned foot back to the bow is no longer visible (Fig. 20.3). |
| 794-1/101-2-23/9794 | half of a copper-alloy spring consisting of eight coils, with the remainder of a support axis present at the far end (Fig. 20.3).   |

#### *Spoonbow brooches*

These are brooches characterized by an interior chord spring of four coils almost completely covered by a spoonbow head; the execution of both the head and the foot varies widely and a fair number of variants are described by various authors.<sup>1689</sup> There is an early generation, characterized by slender models, which are all made by hammering out sheet metal. These date to the late La Tène period, sometimes circulating into the middle Augustan period (c. 70-1 BC). The later generation contains heavier models, which are cast. The earliest may have been developed in the period 30-1 BC but most circulated in the Early Roman period, up to AD 40.<sup>1690</sup>

The specimen found in trench 16 belongs to a variant not previously noted in the literature, having a foot consistent with the Middle La Tène brooch construction but a bow and spring clearly belonging to the spoonbow brooch type. All known La Tène spoonbow brooches have a short catch-plate hammered out of the foot, which is either left plain (closed) or subsequently perforated by cutting out a triangular frame,<sup>1691</sup> like many Nauheim brooches and Late La Tène wire brooches. The current piece, however, has a returned foot, created by folding a long flat strip out of the bow that creates the foot with catch-plate and is then folded back and attached back to the bow with a cuff. The slender bow and plain sheet-metal head is also an unusual combination: the slender foot and modest bow knob is seen on the Kessel-Grave variant of spoonbow brooches,<sup>1692</sup> but the curved grooves on the head common for that variant are absent on the Voerendaal piece. Instead, it has a

<sup>1682</sup> Verhelst 2006a, 151-152; Van Renswoude 2009, 241-242; Heeren & Van der Feijst 2017, 33-36, type 4c.

<sup>1683</sup> Heeren & Van der Feijst 2017, 42-44, type 8b.

<sup>1684</sup> Heeren & Van der Feijst 2017, 33-36, type 4c.

<sup>1685</sup> Heeren & Van der Feijst 2017, 42-44, type 8b, citing Van Renswoude 2009, 246-247.

<sup>1686</sup> Feugère 1985, 187-188; Heeren & Van der Feijst 2017, 35. This end date seems rather late because (possible) examples from La Tène D2 are rare in practice (Hiddink 2006, 71).

<sup>1687</sup> Heeren & Van der Feijst 2017, 33-36, type 4a & 4d.

<sup>1688</sup> Heeren & Van der Feijst 2017, 121-124, type 44; 166-167, type 61.

<sup>1689</sup> Haalebos 1986, 19; Heeren & Van der Feijst 2017, 49-53, type 11.

<sup>1690</sup> Heeren & Van der Feijst 2017, 49-53, type 11.

<sup>1691</sup> Haalebos 1986, 19; Heeren & Van der Feijst 2017, pl. 9-10.

<sup>1692</sup> Haalebos 1986, 19 (Grave group); Roymans 2004, 120-121 (Kessel type).

plain head seen in the Grave-Passewaaij variant.<sup>1693</sup> La Tène spoonbow brooches are dated between c. 70 BC and the start of our era.<sup>1694</sup> Given the peculiar combination with a Middle La Tène foot, this specimen probably represents the earliest stages of the type, and if so should perhaps be dated between c. 70 and 30 BC. The second fragment is part of a Nijmegen-type brooch, which is dated from the Early or Middle Augustan until the Tiberian period, c. 30/15 BC to AD 30.<sup>1695</sup>

- /16-4-6/2560 foot, bow and spring of a La Tène spoonbow brooch; slender bow, modest knob, head of plain sheet-metal head with curved grooves (Fig. 20.3).
- /95-1-19/10857 foot and part of the bow of a spoonbow brooch of the Nijmegen type (Fig. 20.3).

#### *Collar brooches*

The collar brooch has an external chord held by a spring hook and a crossbar, a wide bow in rhomboid or trapeze form and the transition from bow to foot is marked by a broad disc.<sup>1696</sup> The earliest collar brooches have a very long foot with an elaborate openwork catch-plate and can date as early as around 50 BC. The somewhat shorter specimens, often with a simple openwork catch-plate or entirely closed and plain, are younger; they date to the Augustan or Tiberian period (c. 30 BC to AD 10/20).<sup>1697</sup> The two specimens from Voerendaal belong to this younger variant.<sup>1698</sup>

758-3/107-3-1/9763 near-complete collar brooch with pin in a closed position; the foot is bent sideways and part of the catch-plate (the actual catch) is missing (Fig. 20.3).

--/1953-2.1a/11403 collar brooch with foot, disc, bow and part of the spring preserved (Fig. 20.3).

#### *Simple Gallic brooch*

The 'simple Gallic brooch', a translation of the German *einfache Gallische Fibel*, was given that name because the contemporary and similar Langton Down brooch has a spring-tube construction and was decorated, while this brooch has a simpler exterior chord on a spring hook and a crossbar, and its bow is never decorated. Apart from the spring construction, its defining element is the sharp angle in the bow, which continues straight into the foot without a knob or other marker. Our specimen, from Holwerda's investigation, is of the variant most common in the Netherlands.<sup>1699</sup> It is dated to the period 20 BC to AD 60.<sup>1700</sup>

--/1932-11.13/12126 near complete simple Gallic brooch, only the catch-plate and tip of the pin are missing (Fig. 20.3).

#### *Dagger brooch*

This brooch is characterized by a spring and external chord held by a hook above a crossbar, a short narrow bow curved round, developing into a slightly wider bow with incised dots on the shoulders, and a pointed sharp foot. Viewed from above, the bow and foot resemble the blade of a dagger and the narrow bow is the hilt. The type is not yet firmly dated: it appeared some time at the end of the first and disappeared in the first half of the second century AD.<sup>1701</sup>

--/95-1-19/10858 foot, bow and part of the spring of a dagger brooch (Fig. 20.3).

#### *Hod Hill brooch*

The Hod Hill group is considered a uniform group or even a type in English studies.<sup>1702</sup> Continental studies distinguish four groups:<sup>1703</sup> hinged brooches with side wings, with an undivided bow, with a transversely profiled bow and with longitudinal decoration of the bow. The find from Voerendaal most likely belonged to Riha 5.12, the group with longitudinal grooves on the bow. This type was primarily used in the Flavian period, but some pre-Flavian and early second-century dates are known as well.<sup>1704</sup>

400-1/1953-2.01b/12128 bow, hinged head and part of the pin of a Hod Hill brooch; poorly preserved and the decoration is lost (Fig. 20.3).

<sup>1693</sup> Haalebos 1986, 19 (Grave group); Heeren & Van der Feijst 2017, 50 (Passewaaij type).

<sup>1694</sup> Heeren & Van der Feijst 2017, 51, with references.

<sup>1695</sup> Heeren & Van der Feijst 2017, 49-53, type 11d

<sup>1696</sup> Metzler 1995, 205-209, type 10a/b; Möller 2004-2005; Heeren & Van der Feijst 2017, 55-56, type 13.

<sup>1697</sup> Metzler 1995, 206-207; Möller 2004-2005.

<sup>1698</sup> One was already published by Braat, like a number of bronze and iron objects described in this chapter (Baat 1953, fig. 12-13). We will not mention this explicitly for each item.

<sup>1699</sup> Heeren & Van der Feijst 2017, 61-63, type 16a2.

<sup>1700</sup> Heeren & Van der Feijst 2017, 62.

<sup>1701</sup> Haalebos 1986, 52; Böhme 1972, 12-13; Heeren & Van der Feijst 2017, 120-121, type 43.

<sup>1702</sup> Mackreth 2010, 133-142.

<sup>1703</sup> Riha 1979, 123-125, 137-154, type 5.6, 5.10-5.16; Feugère 1985, 331-335, type 23a/b; Heeren & Van der Feijst 2017, 99-106, types 31-34.

<sup>1704</sup> Riha 1979, 137, type 5.12.

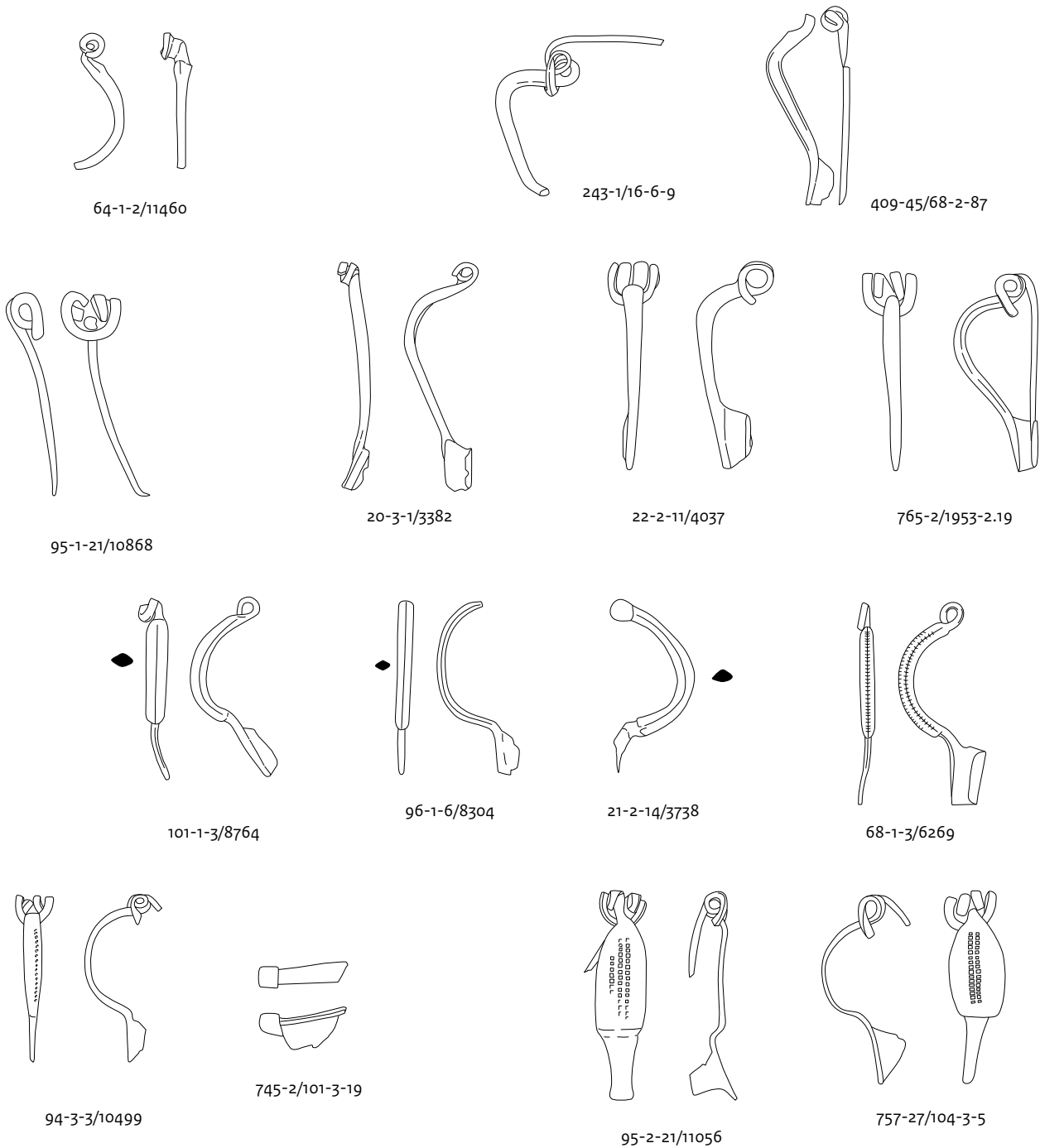


Fig. 20.4 Voerendaal-Ten Hove. Bronze wire brooches and related types. Scale 2:3. (source: F. Horbach & H.A. Hiddink)

#### Wire brooch with arched bow

These wire brooches with an arched bow and a spring with an internal chord are dated to the Early Roman period (AD 1-70).<sup>1705</sup>

--/64-1-2/11460 bow and part of the spring preserved; the foot and the pin are missing (Fig. 20.4).

#### Wire brooch with angular bow

This is a wire brooch with a more or less angular bow and a spring with four coils and an internal chord. The type is dated between AD 30 and 180, enjoying a particular popularity in the period 70-120/150.<sup>1706</sup> The bow from the specimen from trench 22 is heavier than most others in this group, and also differs in that the foot is not bent back (slight S-shape) at an angle to the bow.

243-1/16-6-9/2667 bow, spring and pin (bent open), foot missing (Fig. 20.4).

<sup>1705</sup> Van Buchem 1941, type 22A-B; Heeren & Van der Feijst 2017, 79-81, type 22a/b.

<sup>1706</sup> Heeren & Van der Feijst 2017, 123-127, type 45.



409-45/68-2-87/7142	foot, bow and pin; spring missing (Fig. 20.4).
--/20-3-1/3382	foot, bow and part of the spring (Fig. 20.4).
--/22-2-11/4037	foot, bow (heavy) and spring (Fig. 20.4).
765-2/1953-2.19/11440	complete wire brooch; closed, with pin in catch-plate (Fig. 20.4).
--/27-2-7/4290	part of the foot, straight bow, part of the spring.

#### *Wire brooch with stretched semi-circular bow*

These are wire brooches with a stretched semi-circular bow and a spring with four coils and an internal chord; the cross-section of the bow is rhombic or low-triangular in shape. The type is dated to the period AD 90-150/180. Its distribution area is mostly restricted to the Dutch river area.<sup>1707</sup> Find 68-1-3/6269 stands out because it has rows of notches on three sharp sides (ribs) of the bow. Discussions in the literature speculate whether this rare variant was produced in the Batavian area, like the ones from the group discussed here, or whether it came from Norico-Pannonian provinces, where it is also seen more often.<sup>1708</sup>

--/21-2-14/3738	part of the foot, bow and part of the spring, pin missing (Fig. 20.4).
--/68-1-3/6269	foot, bow and part of the spring; notches on bow (Fig. 20.4).
--/96-1-6/8304	foot and bow, spring and pin are missing (Fig. 20.4).
--/101-1-3/8764	foot, bow and part of the spring, pin missing (Fig. 20.4).

#### *Wire brooch Almgren 16*

This brooch has a slightly flat and rounded cross-section of the bow ('band-shaped bow'), a spring with four coils and an internal chord and a foot with a knob.<sup>1709</sup> The type was introduced in the early second century and circulated until the very end of that century.<sup>1710</sup> The fragment from pit 745 probably belongs to a large specimen with a relatively wide foot (Almgren 16B).

--/94-3-3/10499	part of the foot, bow and spring; the foot knob, part of the catch-plate and the pin are missing (Fig. 20.4).
745-2/101-3-19/8801	foot with knob (Fig. 20.4).

#### *'Wire' brooch with flat hammered broad bow*

This brooch has a flat hammered broad bow, a spring with four coils and an internal chord and a foot with a knob. The bow is decorated with two or three rows of small square blocks stamped into the sheet metal. This brooch is morphologically closely related to the previous type and is therefore sometimes referred to as Almgren 16-derivative,<sup>1711</sup> but is of a much later date: this variant dates from the later second to the end of the third century AD. This chronology is well established on the basis of dated assemblages.<sup>1712</sup>

757-27/104-3-5/9098	part of the foot, bow, spring and part of the pin; foot knob missing (Fig. 20.4).
--/95-2-21/11056	foot, bow, spring and the better part of the pin are present; the pin tip, part of the catch-plate and the sheet metal wound around the foot – forming the foot knob – are missing (Fig. 20.4).

#### *Wire brooch*

This spring and pin could have been part of any wire brooch with an internal chord discussed above, with a date between AD 30 and 270/300.

--/95-1-21/10868	pin and spring with coils of square cross-section (Fig. 20.4).
------------------	--

<sup>1707</sup> Heeren & Van der Feijst 2017, 127-128, type 46.

<sup>1708</sup> Jobst 1975, type 9 (Tafel 12-13, no. 76-84); Heeren & Van der Feijst 2017, 123 (type 45e).

<sup>1709</sup> Almgren 1898, 106-107, fig. 16; Van Buchem 1941, 110-112, type 24Aa (Pl. XIII, 6-10), 24Ba.

<sup>1710</sup> Heeren & Van der Feijst 2017, 129-130, type 47.

<sup>1711</sup> Van Buchem 1941, 110-112, type 24 var. (Pl. XIII, 11-12, 14-15).

<sup>1712</sup> Heeren & Van der Feijst 2017, 131-133, type 48.

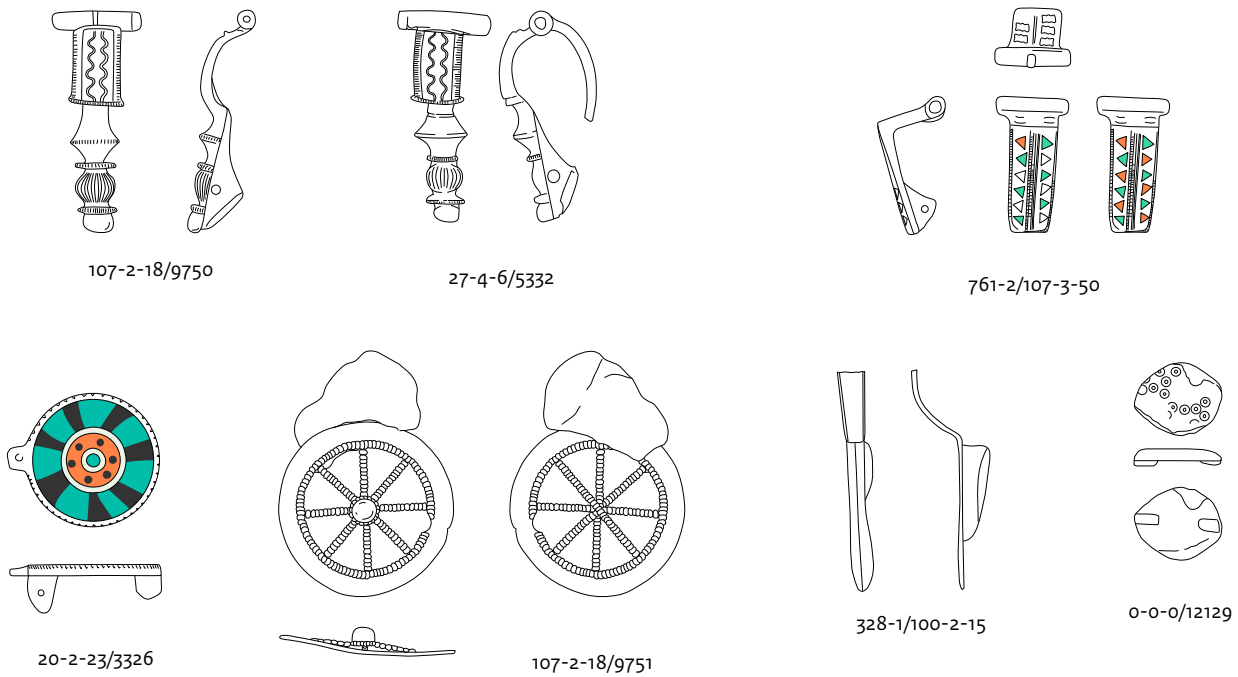


Fig. 20.5 Voerendaal-Ten Hove. Enamelled, wheel and disc brooches; Late Roman/Early Medieval brooches. Scale 2:3. (source: H.A. Hiddink & F. Horbach)

#### Enamelled bow brooches

These brooches have a hinge construction and a bow decorated with enamel; the foot is often decorated with either an animal head or other knobs and profiles. Brooches of this type are usually made of a tinned copper alloy. The shape of the bow itself as well as the shape and fill of the enamel fields varies.<sup>1713</sup> The type as a whole is dated to the Flavian period and the first half of the second century AD.<sup>1714</sup>

Two of the specimens from Voerendaal are very much alike. On the bow there is a square decorative field with enamel within wavy upstanding rims; the foot is furnished with multiple profiles and beaded rims.<sup>1715</sup> The brooch from pit 761 has an unusual short shape, with the catch-plate directly under the bow; in fact this brooch has no foot. There is one parallel from Augst, and Riha refers to another one from Rottweil.<sup>1716</sup>

- |                     |  |
|---------------------|--|
| --/27-4-6/5332      | near complete, just the tip of the pin is missing (Fig. 20.5).   |
| --/107-2-18/9750    | foot, bow and hinge; pin present but came loose; enamel missing (Fig. 20.5).   |
| 761-2/107-3-50/9762 | catch-plate, bow and head of an enamelled bow brooch; the pin is missing; thinned surface, decorated with twelve triangular fields with red and green enamel. On the bow head there were six (one no longer visible) serrated-rectangular fields filled with niello (Fig. 20.5). |

#### Enamelled disc brooch

Enamelled disc brooches occur with a wide variety of plate shapes and decorative motifs. The ones with alternating colour fields are dated to the second century and more specifically to the second half of that century.<sup>1717</sup>

- |                 |   |
|-----------------|---|
| --/20-2-23/3326 | complete except for the pin. Serrated edge; round but with an eye for attaching a chain. Enamel inlay from the centre outwards: light blue, white circle, red with six black dots, white circle, band with alternating green and black (Fig. 20.5). |
|-----------------|---|

#### Early plate brooch or wheel token

This is an openwork disc resembling a spoked wheel, with a central knob. Each spoke and the interior rim is beaded. Although such wheels are known to be executed as brooches,<sup>1718</sup> there are also near-identical wheels without a pin construction accompanying strings of beads.<sup>1719</sup> Brooches of this type are dated to the middle part or second half of the first century (AD 30-100).<sup>1720</sup>

<sup>1713</sup> Böhme 1972, 15-16, type 17; Riha 1979, 154-161, type 5.17; Heeren & Van der Feijst 2017, 143-145, type 55.

<sup>1714</sup> Heeren & Van der Feijst 2017, 144.

<sup>1715</sup> Böhme 1972, 15-16, type 17d; Heeren & Van der Feijst 2017, 143-145, type 55a. Compare a brooch from Riethoven-Heesmortel (Pulles & Hiddink 2013, 116, fig. 9.5).

<sup>1716</sup> Riha 1979, 157, Pl. 47, no. 1387.

<sup>1717</sup> Riha 1979, 188, type 7.13; Heeren & Van der Feijst 2017, 149, 153, type 57a1b.

<sup>1718</sup> Heeren & Van der Feijst 2017, 111-113, type 38a4

<sup>1719</sup> Riha 1990, 69-70, pl. 31, esp. 703-704, 707.

<sup>1720</sup> Heeren & Van der Feijst 2017, 111.

--/107-2-18/9751 disc with large lump of corrosion; although either a hinge or the catch-plate could be hidden in the corrosion, no traces visible on the parts of the back without corrosion (Fig. 20.5).

#### *Elb-Germanic crossbow brooch*

The fragment from drain 328 belonged to a brooch with a composite spring carried on an axis inserted through a single eye in the bow head, with an arched bow and foot. Within this type, there is a wide variety in the shape of the bow head, the cross-section of the bow and shape of the foot. Schulze distinguished no fewer than 255 groups of *Armbrustfibeln*, as they are called in German.<sup>1721</sup> The oldest groups were developed in the Germanic area (now Germany and Poland) in the later second century; the younger groups (fourth and fifth century) are also found in Western Europe.<sup>1722</sup>

Because the largest part of the bow and head of our brooch are missing, an attribution to a specific Schulze group is not possible. Working from the foot and part of the bow alone, Schulze's groups 164 to 166, 183, 247 and 255 bear a close resemblance. The shape of the foot (with a central rib, slightly pointed) resembles groups 164-166 and 183, but these contain short brooches, whereas the foot of the Voerendaal specimen is much longer, with the foot top protruding beyond the catch-plate. The long foot and the flat bow with side grooves are seen in group 247, and to a lesser extent group 255, but the foot is not pointed in Schulze's examples. Besides the poorly dated group 183, the others are dated between the late fourth and early sixth century AD.<sup>1723</sup> Given the long foot, a later date (fifth century) is highly likely. As for the cultural origin of these shapes, all the groups are mainly found in the northern and central Elbe area.<sup>1724</sup>

328-1/100-2-15/8588 foot and part of the bow of a crossbow brooch (Fig. 20.5).

#### *Early Medieval disc brooch*

This small brooch is a surface find. It was probably round originally and is decorated with a circle-and-dot motif. The closest parallel is provided by a disc brooch from Wijchen,<sup>1725</sup> although that specimen is larger than the one from Voerendaal. The Wijchen find is dated by ceramics from a burial context in the later sixth or early seventh century.<sup>1726</sup> Closer to Voerendaal, an Early Medieval disc brooch with circle-and-dot motif was found at the villa of Maasbracht.<sup>1727</sup> Notwithstanding the similar decoration, that piece is also bigger and has a different decoration.

--/0-0-0/12129 small disc brooch, probably round originally, edges not entirely preserved. The back shows the remains of what were once the catch-plate and a single lug that carried an axis for the composite spring (Fig. 20.5).

#### *Brooch*

317-15/13-3-39/1713 pin of a brooch, type unknown (not illustrated).  
 409-66/68-2-2/7103 brooch, lost, possibly shortly after excavation.  
 --/27-2-8/4946 fragment of catch-plate, type unknown (not illustrated).  
 --/69-4-12/7566 small fragment of a spring.

<sup>1721</sup> Schulze 1977.

<sup>1722</sup> Schulze 1977; Heeren & Van der Feijst 2017, 189-194.

<sup>1723</sup> Schulze 1977, 93-94, 130.

<sup>1724</sup> Schulze 1977, 93-94, 130.

<sup>1725</sup> Heeren & Van der Feijst 2017, 594, Pl. 80, NL-0452-11a-024.

<sup>1726</sup> Heeren & Van der Feijst 2017, 227-228.

<sup>1727</sup> Driessen 2017, 161, fig. 8.6, f.

<sup>1728</sup> Moulin 1993, 25, fig. 6, no. 1 (Liberchies); Massart 1983, 82, fig. 31, no. 1; Elie-Lefebvre 1990: fig. 28, no. 3 (Braives). Another example at the villa of Tienen-Schelpheuvel (Provoost 1981, 72-73; Cramers & Van Impe 1981, 228; 234; no. 23.24).

<sup>1729</sup> Jamar 1977, 42, fig. 63 (Heerlen), and PAN-00059443; 00019552 (Sittard-Geleen); 00052770; 00052765 (Valkenburg a/d Geul); 00041772

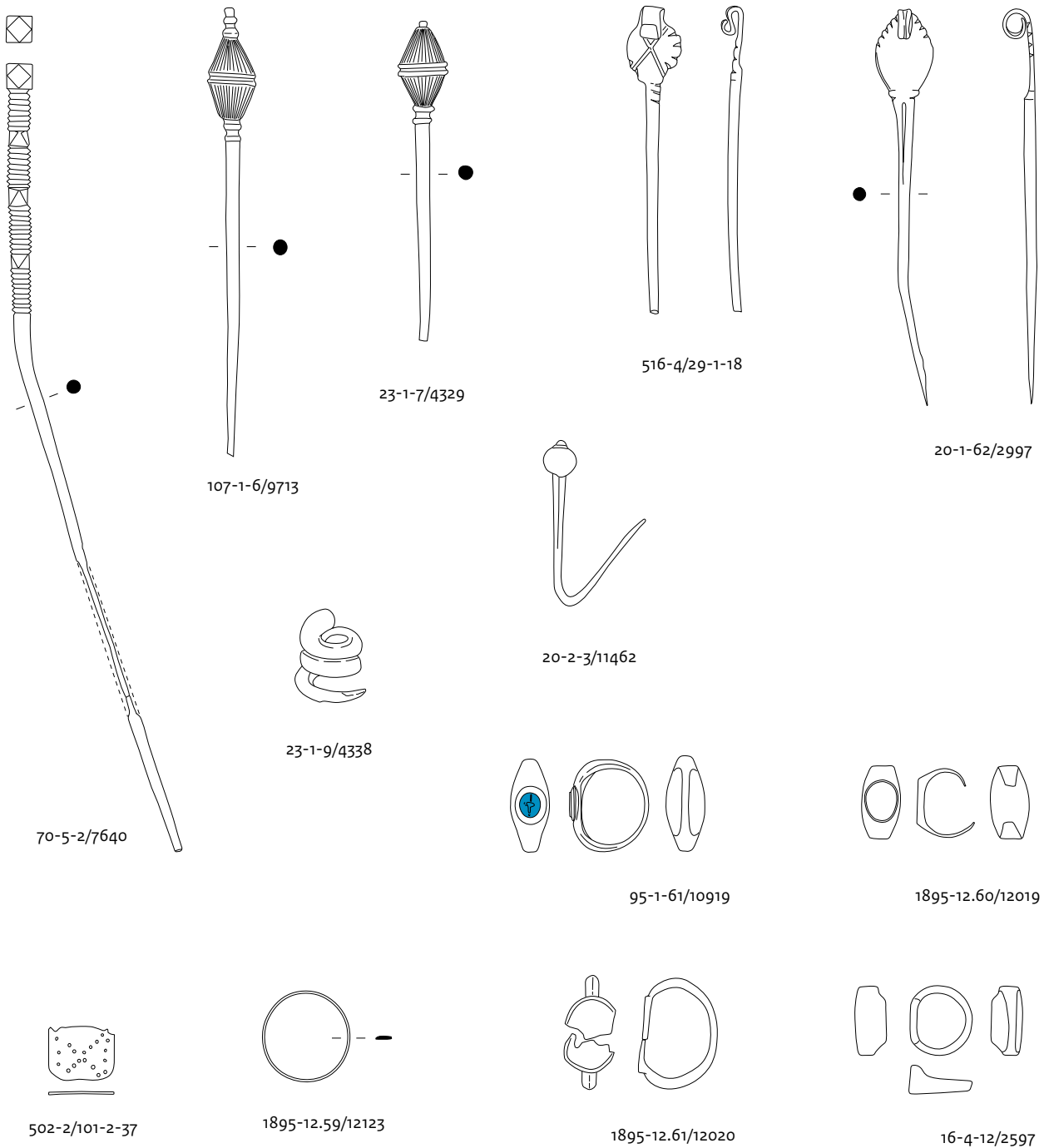


Fig. 20.6 Voerendaal-Ten Hove. Bronze hair-pins, armring(s), finger rings and pendant. Scale 2:3. (source: F. Horbach & H.A. Hiddink)

### 20.3.2 Jewellery. hairpins, finger rings and pendant

#### *Hairpins with biconical head*

The biconical head has one or two transverse grooves at the widest part and longitudinal grooves at both conical sides; the top is often furnished with a small, profiled knob or button. This pin type is fairly common for Belgian *vici* such as Braives and Liberchies,<sup>1728</sup> and is also found in Zuid-Limburg,<sup>1729</sup> as well in the southern Netherlands.<sup>1730</sup> It is quite rare in the Dutch river area: finds there can be considered outliers of the distribution area.<sup>1731</sup> The date of the pins is not well established. Most settlements where specimens were discovered in excavations thrived in the second and third centuries. Therefore, a date in the Middle Roman period is surmised, but an Early Roman date cannot be ruled out.

(Voerendaal); 00017711 (Maastricht); 00002281 (Beekdaelen).

<sup>1730</sup> Hiddink 2005a, 226, fig. 12.4 (Lieshout 8146-6); 2005b, 177-178, fig. 13 (Nederweert-Rosveld 8016-9).

<sup>1731</sup> PAN 7013 (West-Betuwe); Alphen aan den Rijn: Bakker, Bron *et al.* 113, fig. 7.57; Vechten: <https://www.rmo.nl/collectie/collectiezoeker/collectiestuk/?object=VF%20552> (consulted 8-2-2020).

- /23-1-7/4329 top button and tip of the pin missing; remaining length 76 mm; diameter of the shaft below the head 3 mm (Fig. 20.6).
- /107-1-6/9713 tip of the pin missing; remaining length 107 mm; diameter of the shaft below the head 3 mm (Fig. 20.6).

#### Late Roman 'deep-eye' pins

Originally known from northwest Germany is a decorative pin with a curled head, designated a *Tieföhrnadel*, or deep-eye pin. Many more of these pins were identified in a recent article.<sup>1732</sup>

Two separate groups are distinguished: in addition to the ones with a bent head, now termed the Bliedersdorf type, a very similar group but with an upright head is recognized, termed the Köln type (to which our examples belong). Importantly, both types have separate distribution areas. Pins of the Bliedersdorf type are found from northwestern Germany all the way to the Dutch river area (Betuwe), with some outliers further south (Neerharen-Rekem) west of the Meuse, while pins of the Köln type are found between the Rhine and the east bank of the Meuse between Köln, Asperden and Voerendaal.<sup>1733</sup> The pins are dated – not precisely – to the period around AD 400.

- /20-1-62/2997 complete pin, tin/silver-coated; length 94 mm (Fig. 20.6).
- 516-4/29-1-18/11463 tip missing; remaining length 73 mm (Fig. 20.6).

#### Hairpin type Cortrat

Long Late Roman pins with a polyhedral head are termed the Cortrat type by Böhme.<sup>1734</sup> He mentions four examples, two of which are from graves of the late fourth/early fifth century AD. Riha cites examples indicating a continued use into the Early Medieval period (fourth-sixth century AD),<sup>1735</sup> In the Netherlands they seem to be restricted to Germanic settlements of the early fifth century, such as Gennep-Stamelberg,<sup>1736</sup> and Wijk bij Duurstede-De Geer.<sup>1737</sup>

- /70-5-2/7640 polyhedral head, four zones of grooves separated by three bands of diamond-shaped facets; preserved length 19 cm, tip missing; diameter of the shaft under the decorated zone is 3 mm (Fig. 20.6).

#### Hairpin or bracelet with globular head

The straight shaft of this object from trench 20 suggests a use as a hairpin. However, no exact parallels for the globular head with separate small knob are available. While hairpins with a globular or onion-shaped head are fairly common finds,<sup>1738</sup> specimens with a separately profiled small knob on top of the large one are very uncommon. Riha only presents a single example,<sup>1739</sup> which differs from the Voerendaal find in that the shaft is decorated with grooves. Our find's globular head with a separately profiled small knob is very common on bracelets with knobbed terminals dating to the first century AD.<sup>1740</sup> It cannot be ruled out that such a bracelet was secondarily worked to straighten the shaft and serve as a pin.

- /20-2-3/11462 pin with globular head, small, profiled knob on top; the shaft points straight down for approx. the first 3 cm at first and is then bent round at a sharp angle. Remaining length c. 66 mm (Fig. 20.6).

#### Armring

The armring has slightly widened buffer-shaped terminals. This is a type that occurs in gold from the Middle Bronze Age until the Early Middle Ages. It is not exactly known in what period the copper-alloy pieces occur: decoration (if present at all) may assist in identifying specimens from the Roman period or earliest part of the Middle Ages.<sup>1741</sup> Decoration on the Voerendaal find is not visible and the end is not very thick; this ring does not therefore appear to belong to the common pre-Flavian type with broad-conical terminals endings, with a decoration of small points.<sup>1742</sup> Perhaps it belongs to a later variant with less pronounced terminals.<sup>1743</sup>

<sup>1732</sup> Bödecker & Ristow 2011.

<sup>1733</sup> Bödecker & Ristow 2011, fig. 2.

<sup>1734</sup> Böhme 1974, 36-39.

<sup>1735</sup> Riha 1990, 109, type 21.2, pl. 56, no. 2457.

<sup>1736</sup> Heidinga & Offenbergh 1992, 106, photograph bottom left, second pin from the left.

<sup>1737</sup> Heeren & Botman 2021, fig. 9.13, WD 822-3-56.

<sup>1738</sup> Riha 1990, pl. 47-52.

<sup>1739</sup> Riha 1990, pl. 47, no. 1489.

<sup>1740</sup> Sas & Thoen 2002, p. 172-176, cat. 85-89, 96.

<sup>1741</sup> Sas & Thoen 2002, 138 (cat. 3), 170-171 (cat. 80, 82-84), 270 (cat. 290).

<sup>1742</sup> A dozen in the cult place of Wijshagen-De Rietem (Maes & Van Impe 1986, fig. 5, nos 1-8; fig. 6, nos 13-17; fig. 7, 1-3), associated with Early Roman brooches (arched-bow, simple Gallic and Knick brooches). In the cemetery of Maaseik-Aen Moors Bosch grave 3 (Late Iron Age/Early Roman (Janssens 1977, 8, pl. 1, no. 1), 46 (14, pl. 3), 47 (after AD 160, probably residual; 14, pl. 3, no. 6), 117 (Early Roman; 27-28, pl. 117, no. 3) and perhaps 128 (Late Iron Age/Early Roman; 31, pl. 14, no. 3). The cult place of Wijnegem, used from the early first century AD, yielded at least six bracelets (Slofstra & Van der Sanden 1987, fig. 13, 1-3, 6-8).

<sup>1743</sup> E.g. Blicquy grave 157, c. AD 70-180 (De Laet *et al.* 1972, 74, 103, pl. 45, no. 3) or Kortrijk grave 44, Flavian in date (Leva & Coene 1969, 52-53, 87, fig. 25, no. 4).

- /23-1-9/4338 part of an armring, with slightly widened buffer-shaped terminal(s); secondarily turned in three small coils (Fig. 20.6).

#### *Roman inlaid finger ring with rounded high shoulder*

The classical Roman finger ring is the sphenone form, which is round or oval when viewed from all sides.<sup>1744</sup> In a later development of this shape, the shoulders are placed slightly higher than the middle of the curve (seen from the side). These rings are also characterized by a wide top view. This later development dates from the middle of the second century onwards and remained in use into the third century AD.<sup>1745</sup> The specimen from the ROB excavations belongs to this younger group.

The carved decoration on the pseudo-gem of blue glass (nicolo) is not recognizable. The gem is smaller than most other nicolo gems and is round instead of oval, which is more common. This, combined with the higher shoulders, suggests that it is probably of a date rather late within the ring type, the late second or third century.

- /95-1-61/10919 iron finger ring with rounded high shoulder, inlaid with a pseudo-gem of blue glass (nicolo; Fig. 20.6).  
 --/1895-12.60/12019 iron inlaid finger ring with rounded high shoulder. The gem and lower part of the ring are not preserved (Fig. 20.6).

#### *Roman finger ring with application on a thin plate*

In the Late Roman period, applications of (imitation) stones or repoussé plates were attached to the widened upper side of a ring, which is rather thin. This type is often seen with a split or torn widened plate, probably caused by tearing off the decoration, thereby damaging the sheet-metal surface that carried the application. Riha dates this type to the fourth century AD.<sup>1746</sup>

- /1895-12.61/12020 iron finger ring with thin and widened decorative plate, torn in two (Fig. 20.6).

#### *Circular strip. Finger ring?*

An undecorated circular strip of 20 mm in diameter has the perfect dimensions for a finger ring. However, it is undecorated and could therefore also have served different purposes, for instance as the lining of a wooden handle of a tool of some sort. It is even possible that the ring is not Roman, but much younger.

- /1895-12.59/12123 an undecorated circular band of copper alloy; 4 mm wide and 20 mm diameter (Fig. 20.6).

#### *Finger ring?*

An undecorated iron ring with an asymmetrical plate could have been a finger ring since the diameter is right and iron was used for finger rings in the Roman period. However, examples with an asymmetrical plate are not shown by Riha or Guiraud, and therefore an application other than ornamental use must be surmised for this find.

- /16-4-12/2597 iron, finger ring? (Fig. 20.6).

#### *Sheet metal pendant with dotted decoration*

Rhombic plate pendants decorated with a dotted motif, mounted with a piece of twisted wire, are known from various Late Roman contexts, such as Unteren Bühl and Sisak.<sup>1747</sup> In the Netherlands such a piece was found at Wijk bij Duurstede-De Geer.<sup>1748</sup> The find from a sunken hut at Voerendaal is incomplete but seems to be of such a pendant.

- 502-2/101-2-37/8792 piece of copper-alloy plate, approx. 15 x 12 mm preserved, showing dots in a cross pattern (Fig. 20.6).

<sup>1744</sup> Riha 1990, 30 (type 2.1.2);

Guiraud 1988, 79 (type 2a/b).

<sup>1745</sup> Riha 1990, 31 (type 2.1.3);

Guiraud 1988, 79 (type 2e).

<sup>1746</sup> Riha 1990, 36-37 (type 2.11).

<sup>1747</sup> Deschler-Erb 1996, 72-73.

<sup>1748</sup> Heeren & Botman, in prep.



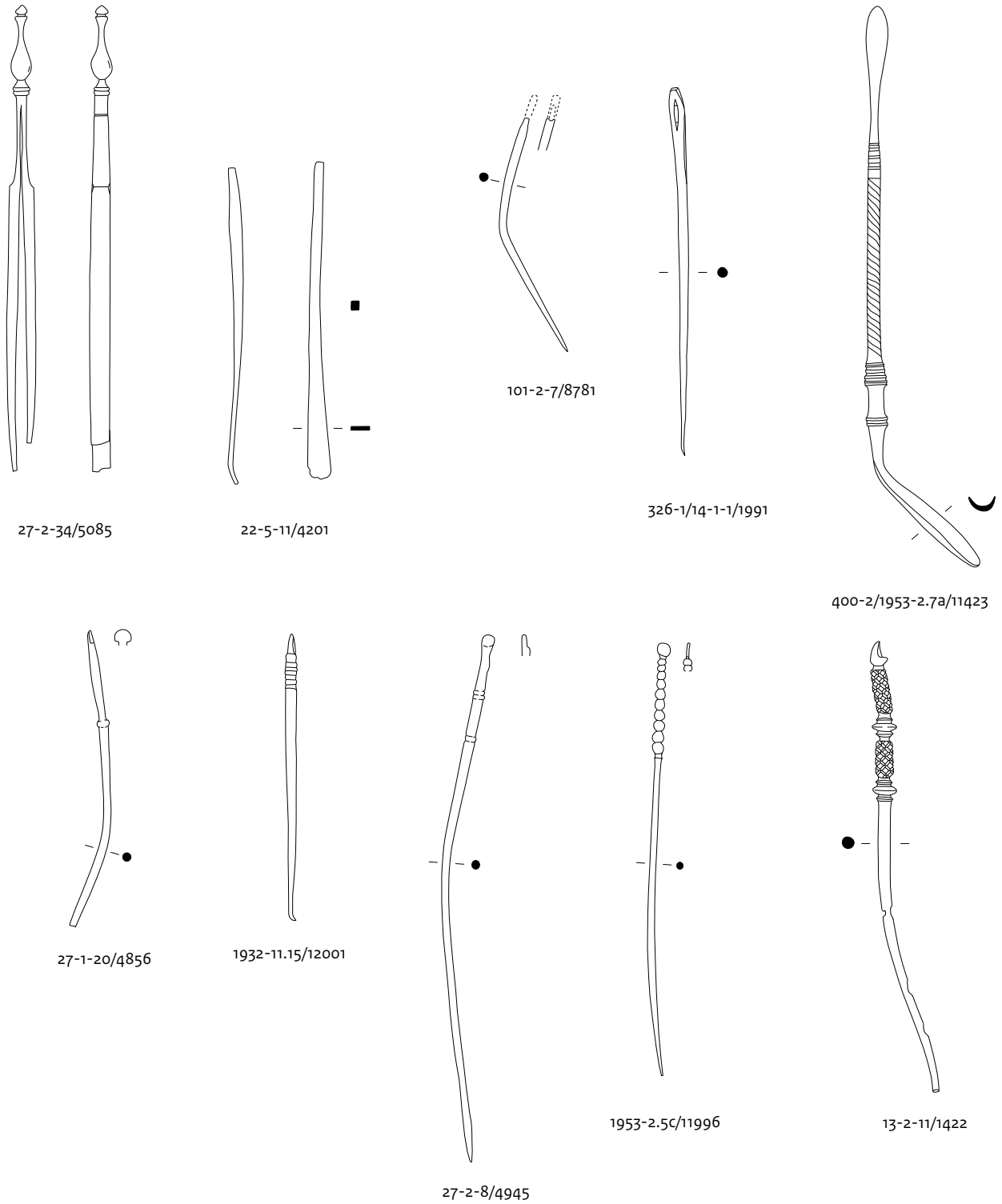


Fig. 20.7 Voerendaal-Ten Hove. Bronze tweezers, ear-scoops, spatula probe and sowing needles. Scale 2:3. (source: F. Horbach & H.A. Hiddink)

### 20.3.3 Body care and medical instruments

#### Tweezers

Tweezers (*vulsella*, *volsella*) were often used for medical purposes, as is shown by their presence in sets of medical instruments.<sup>1749</sup> Of course, they could also have been used for personal body care.

The (nearly) complete specimen belongs to Riha's type C. In Augst there are two context dates available for this type, one in the second century, the other in the later second or third century.<sup>1750</sup>

As an example from a burial inventory in Nijmegen shows, the type was also known in Germania

<sup>1749</sup> Riha 1986, 33-37; Künzl 1982, cat. no. 8, 93-96, fig. 74-76.

<sup>1750</sup> Riha 1986, 33-37.

inferior.<sup>1751</sup> The single blade from trench 22 could in theory date from the Bronze Age up to the Middle Ages. However, it is highly likely that this one is of Roman date. In Riha's classification of Roman-period tweezers it could have belonged to variants F, G or H.<sup>1752</sup>

- /27-2-34/5085 baluster-shaped terminal which splits into two flat arms; terminals lost; remaining length 115 mm; width of the arms 5 mm (Fig. 20.7).
- /22-5-11/4201 part of a blade, slightly widening tip (Fig. 20.7).

#### Ear scoops

'Ear scoops' (*specillum oricularium*, *auriscalpium*) were used both for medical purposes and personal care. The flat end is suitable for cleaning the ears, for taking ointments out of small bottles and mixing them on mixing palettes, and the sharp end for various purposes, maybe for perforating blisters or cleaning fistules.<sup>1753</sup> Most ear scoops from Voerendaal have a simple decoration of a few grooves or small bulbs; Riha classes these as variant A and context dates provide a date of the later first into the third century AD.<sup>1754</sup> The specimen from trench 13 is highly decorated and had two widened knobs/rings, like those on Riha variant B/C.<sup>1755</sup> This object is too thick to use in the auditory passage and therefore a mixing function is more likely.

- /13-2-11/1422 decorated with crossing grooves creating rhombic patterns on the upper shaft, interrupted by two widened knobs; the tip is missing; remaining length 114 mm (Fig. 20.7).
- /27-1-20/4658 tip is lost; remaining length c. 75 mm, diameter 2 mm (Fig. 20.7).
- /27-2-8/4945 complete, length 131 mm, diameter 2 mm (Fig. 20.7).
- /27-2-27/5075 small piece of needle-like object, probably ear scoop.
- /1932-11.15/12001 maybe complete; length c. 60 mm (Fig. 20.7).
- /1953-2.5c/11996 complete but broken, length 103 mm (Fig. 20.7).

#### Spatula probe

These instruments (*cyathiscomela*) also had uses ranging from medical instruments to personal care and even mixing pigments in painting.<sup>1756</sup> A near-exact parallel of the Voerendaal specimen was found at Augst.<sup>1757</sup> It belongs to Riha's *Löffelsonden* variant A, mainly dating from the early first century into the first half of the second century AD.<sup>1758</sup>

- 400-2/1953-2.7a/11423 complete, bent spoon head, length 150 mm (Fig. 20.7).

#### Sewing needle

Sewing needles could be used for a variety of purposes such as working textiles or fishing nets; however, they are also known in medical settings: the burial inventory with a medical set mentioned above also contained a copper-alloy sewing needle.<sup>1759</sup>

- 326-1/14-1-1/1991 complete needle; length 92 mm (Fig. 20.7).
- /101-2-7/8781 bent shaft and tip; lower edge of the eye visible; remaining length 64 mm (Fig. 20.7).

#### Mirrors

Some very small fragments of silver- or tin-plated bronze plate may have been part of mirrors.

- /23-2-16/4393 (not illustrated).
- /24-1-2/4574 (not illustrated).
- /27-2-28/5068 (not illustrated).

<sup>1751</sup> Künzl 1982, cat. no. 8, 93-96, fig. 74-76; Braadbaart 1994.

<sup>1752</sup> Riha 1986, 37-38.

<sup>1753</sup> Riha 1986, 56.

<sup>1754</sup> Riha 1986, 58-59.

<sup>1755</sup> Riha 1986, 56-59, pl. 25, esp. no. 228-229.

<sup>1756</sup> Riha 1986, 33, 64ff., pl. 39ff., esp. 425-426.

<sup>1757</sup> Riha 1986, pl. 39, no. 413.

<sup>1758</sup> Riha 1986, 64-67.

<sup>1759</sup> Künzl 1982, cat. no. 8, 93-96, fig. 75.

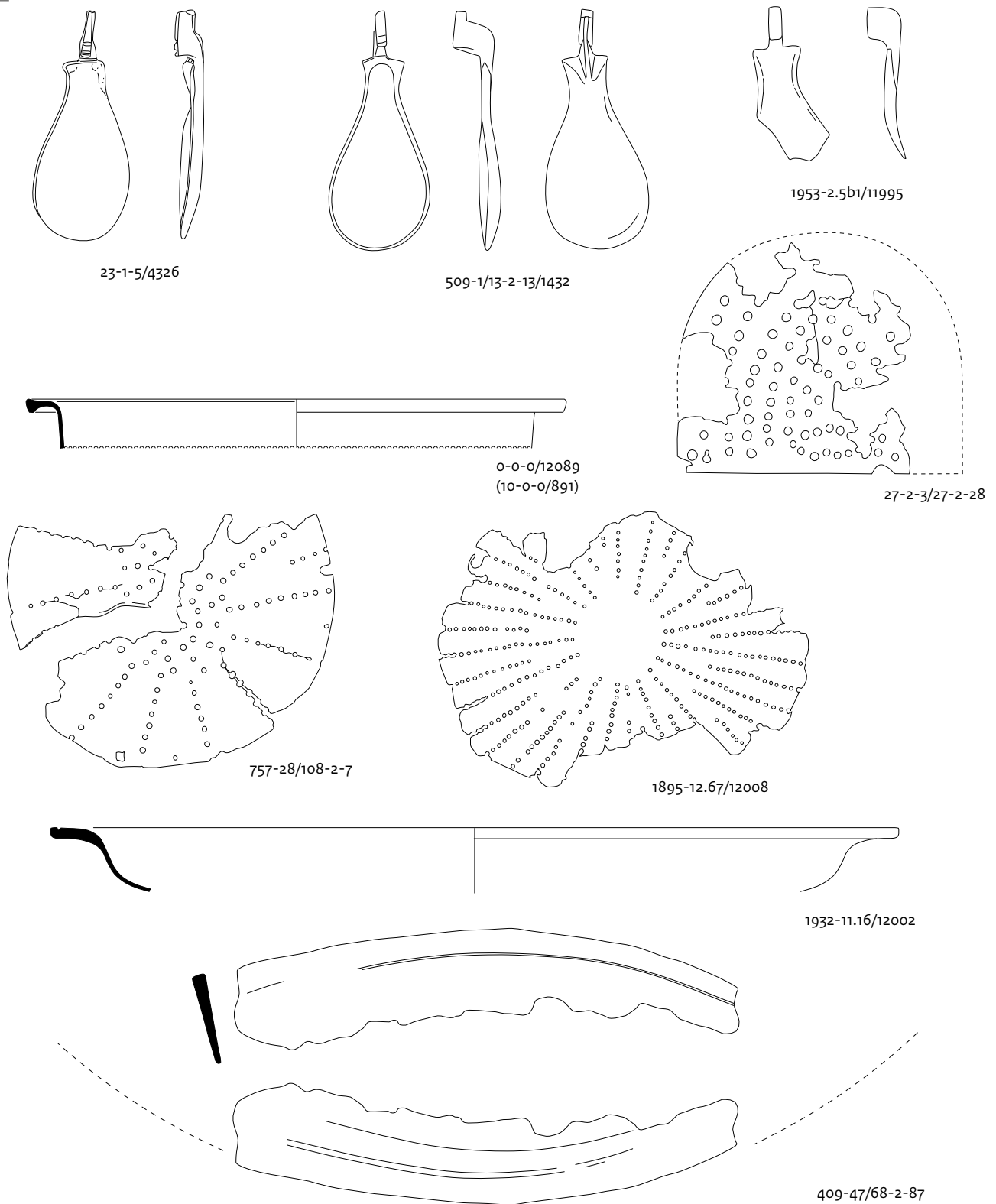


Fig. 20.8 Voerendaal-Ten Hove. Fragments of bronze (tinned/silvered) spoons and vessels. Scale 2:3. (source: F. Horbach & H.A. Hiddink)

**20.3.4 Eating and drinking**

*Spoons*

Roman spoons can be divided into two basic types: the *cochlearia*, which are characterized by a spoon bowl at one end and a long pointed pin at the other, used for spearing food; and the *ligulae*, or spoons with a blunt end.<sup>1760</sup> The shape of the spoon bowl is suitable for dating but does not determine the difference between a *ligula* or *cochlear*. Roman tablespoons have a limited variety of bowl shapes: round, pear/almond

<sup>1760</sup> Riha & Stern 1982, 10-11.

shape or sack-shaped. They have an oval belly, a thin neck and a flat top. All three Voerendaal specimens are of this type. This type was introduced in the second century and continued into the fourth century. However, the Late Roman specimens can be recognized by the volutes hanging from the stem-to-bowl transition.<sup>1761</sup> Given the absence of these volutes, the sack-shaped specimens from Voerendaal can be dated from the mid-second to the late third century. As the Voerendaal spoons are not intact, their function as either cochlear or ligula cannot be identified.

- 509-1/13-2-13/1432 spoon bowl of tinned (?) copper alloy, 50 mm long, max. 26 mm wide; stem missing (Fig. 20.8).  
 --/23-1-5/4326 bowl of tinned copper alloy, 47 mm long, max. 25 mm wide; stems missing (Fig. 20.8).  
 --/1953-2.5b/11995 bowl fragment, 40 mm remaining (Fig. 20.8).

#### *Strainers and sieve (basin)*

Most smaller strainers were used for sieving wine. The most important groups of Roman-period strainers are those with a globular body (Eggers 160) and those with a straight, steep wall, strong bend and more or less flat bottom (Eggers 161). The latter seems to be the type for all the fragments found at Voerendaal. It dates from the second half of the second century into the late third century; judging by their presence in the Haßleben-Leuna group of graves, a continuation into the early fourth century is possible.<sup>1762</sup> The rim and one of the two bases from Voerendaal may have belonged to a single strainer. Perforated sheet 27-2-3/27-2-28 was not part of a strainer because it had one straight and one rounded side. This object was a sieve, mounted inside the spout of a large, bronze basin Eggers 90, dated to the third century AD.<sup>1763</sup>

- /0-0-0/12089  
 --/10-0-0/891 rim and top wall, broken at the upper row of holes; diameter c. 14 cm (Fig. 20.8).  
 757-28/108-2-7/9893 fragmentary base of a strainer; diameter c. 8.5 cm (Fig. 20.8).  
 --/1895-12.67/12008 fragmentary base of a strainer; diameter c. 10.5 cm (Fig. 20.8).  
 --/27-2-3/4891 +  
 --/27-2-28/5069 fragment of a sieve, 74 x 64 mm (Fig. 20.8)

#### *Plate*

A piece of bronze found in 1932 represents part of a metal plate with a horizontal, projecting rim Den Boesterd 82/83. Den Boesterd and Koster cite sources that date this dish primarily to the mid- or late third century AD. However, it could occur from the late second century onwards and some specimens occur in an early fourth-century context.<sup>1764</sup>

- /1932-11.16/12002 rim and part of the curving upper wall; diameter 22 cm (Fig. 20.8).

#### *Basin?*

This is the plain and unprofiled rim of a vessel, slightly widened and in an oblique position. It was most likely part of a basin, such as Den Boesterd 188 or 192, dated from the later second to the fourth century AD.<sup>1765</sup> However, its form is so rudimentary that a much younger date – if the fragment belonged to a Medieval pipkin, for instance – cannot be ruled out completely.<sup>1766</sup>

- 409-47/68-2-87/7139 rim fragment, some decorative (?) grooves, diameter about 33-35 cm (Fig. 20.8).

#### *Vessels*

Five bronze fragments represent four possible vessels but are too small to identify the form or type.

- 757-39/104-2-5/9093 rim fragment.  
 --/0-0-0/12121 two rim fragments.  
 --/69-2-5/7526 rim fragment, or just a piece of bronze plate.  
 --/95-1-1/10645 wall fragment, or just a piece of bronze plate.

<sup>1761</sup> Riha & Stern, 1982, 22, 24.

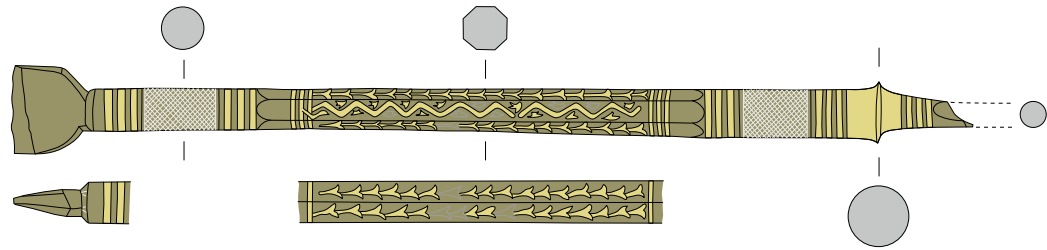
<sup>1762</sup> Eggers 1951, pl. 13, no. 161; Den Boesterd 1956, 21-23 (no. 58-60); Koster 1997, 48 (no. 44).

<sup>1763</sup> Eggers 1955, 202, fig. 4 (no. 58b); S. Künzl 1993, 197. The sieves of these basins are often lost or not illustrated; for a good photo, see T3BYGM at [alarmy.com](http://alarmy.com) (consulted 3-6-2021).

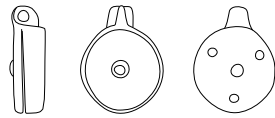
<sup>1764</sup> Den Boesterd 1956, 32; Koster 1997, 51.

<sup>1765</sup> Den Boesterd 1956, 55-56.

<sup>1766</sup> Drescher 1969.



10-1-1/683



409-51/68-2-82

Fig. 20.9 Voerendaal-Ten Hove. Iron stylus and bronze seal box. Stylus scale 1:1, seal box 2:3. (source: F. Horbach & H.A. Hiddink)

### 20.3.5 Writing and sealing

#### Stylus

A nearly complete stylus (*stilus*) was found in trench 10; only the tip is missing. This implement was used for writing on a wax tablet; the spatula at the back could be used for preparing the wax and erasing text.

The stylus is made of iron. Typologically, it belongs without doubt in group Q of Schaltenbrand Obrecht; it is most probably an example of variant Q72.<sup>1767</sup> This kind of stylus dates to the second half of the second or third century AD.

--/10-1-1/683

iron with a damascened decoration; two zones of thin diagonal lines bordered by sets of three lines near the tip and spatula/eraser; zigzag lines and small leaves on the octagonal shaft; length at least 127.5 mm, probably 130-135 mm originally (Fig. 20.9).

#### Seal box

Seal boxes were used to seal a variety of valuables in order to ensure that they were not opened without the recipient noticing. It was long thought that seal boxes were used primarily for sealing written correspondence.<sup>1768</sup> More recently, however, Andrews has shown that the preferred use of seal boxes was for sealing money bags.<sup>1769</sup> The type of the specimen from Voerendaal dates to the first century AD.<sup>1770</sup>

409-51/68-2-82/7134

complete round seal box; the decoration on the lid is confined to a central knob, possibly once inlaid with glass (now lost; Fig. 20.9).

<sup>1767</sup> Schaltenbrand Obrecht 2012, 177-182; the diagonal lines are found e.g. on the similar piece pl. 59, AR 874.

<sup>1768</sup> Derks & Roymans 2002.

<sup>1769</sup> Andrews 2012.

<sup>1770</sup> Derks & Roymans 2002, 89-93.

<sup>1771</sup> Birley 1997, 30.

<sup>1772</sup> E.g. a Silenus from Belgium (Faider-Feytmans 1979, 109, pl. 69, no. 160); Bacchus 5.6 cm high from Bonn (Menzel 1986, 130, pl. 127, no. 319); woman's head from Morken-Kirchberg – from a Merovingian grave in the Roman villa – height c. 5.7

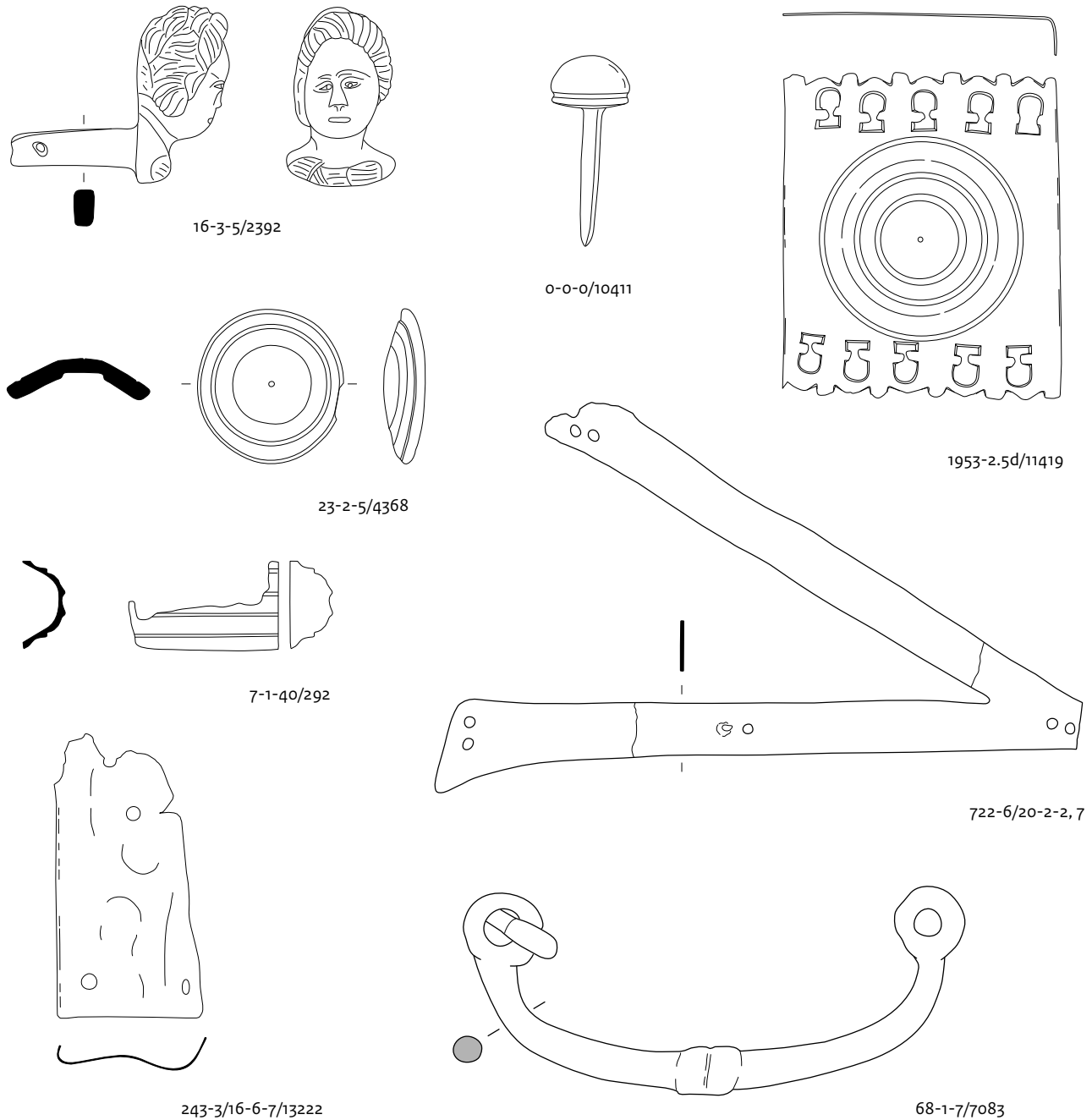


Fig. 20.10 Voerendaal-Ten Hove. Bronze furniture and casket fittings; iron handle. Scale 2:3. (source: F. Horbach & H.A. Hiddink)

### 20.3.6 Furniture and casket fittings

#### 'Lock pin' with bust

So-called 'lock pins' mostly have a concave circular head with a central boss and a rectangular shank with a small hole near the end. They are called lock pins because they are often found in association with key and lock parts, but how they functioned with a lock remains unclear.<sup>1771</sup> They were most likely used as a decorative link between parts of caskets. Busts instead of circular heads are rarer.<sup>1772</sup>

--/16-3-5/2392 lock-pin shank with female bust; height 42 mm, length of pin 30 mm (Fig. 20.10).

#### Bronze plate

Plates with an openwork decoration along the edges in a palmette or 'arcade' motif are an element often found on caskets.<sup>1773</sup> Braat found this one in the area of the main building(s) 399 and 400.

cm (Hinz 1969, 67-68, grave 11, pl. 13, no. 22); woman or goddess - c. 56 mm high - from Köln-Müngersdorf (Fremersdorf 1933, 77, pl. 40, no. 2); bust of Bacchus and three women (4.3-6.7 cm high) from Voorburg-Forum Hadriani (Hoss 2014b, 639-641, fig. II.5-96, 97, 98, 99).

<sup>1773</sup> Riha 2001, 62-63, pl. 35, no. 408-411; Simion 1995, 219, fig. 3, no. 1 (Noviodunum, Isaccea Romania).



--/1953-2.5d/11419 bronze plate, palmette or arcade motif along the upper and lower edge, concentric circles in the centre; size 58 x 50 mm (Fig. 20.10).

#### *Decorative nail*

Decorative nails with wide globular heads are known, for instance, from the Saalburg.<sup>1774</sup> Based on this site a date from the late first to the third century is surmised but by no means certain.

--/0-0-0/10411 complete, length 45 mm, diameter of head 17 mm (Fig. 20.10).

#### *Decorative hollow disc*

Bronze discs could have a variety of functions. If they have a central perforation and a slightly protruding centre, like the Voerendaal find, they were most likely used as decorative mounts on furniture or casket handles.<sup>1775</sup> Another possible function is as the top cap of a cylindrical casing or bobbin, like the one found in a tumulus grave at Overhespen, which was kept in a casket.<sup>1776</sup>

--/23-2-5/4368 complete, diameter 33-34.5 mm, height 10 mm (Fig. 20.10).

#### *Semi-cylindrical mount*

Mounts in the shape of a semi-cylinder were sometimes applied to caskets or furniture.<sup>1777</sup>

--/7-1-40/292 semi-cylindrical rectangular piece of copper alloy, grooves on the front; 35 x 20.5 x 9.5 mm (Fig. 20.10).

#### *Sheet metal lining*

The function of a large V-shaped band of copper alloy is unclear. It may have been used to decorate furniture or a casket. It also bears resemblance to a letter proper: a V or part of an M or N, but in that case it must have been part of a truly monumental inscription; the object shows no traces of gilding or anything else that would indicate such a function.

722-6/20-2-7/3282

and 20-2-2/3265

two pieces of sheet metal, together forming a large V-shape of some 142 mm long and some 105 mm wide; the strips are approx. 12 mm wide, top, middle and bottom with double perforations (Fig. 20.10).

#### *Sheet metal*

This piece of metal could have been part of furniture or a casket, but also of other objects.

243-1/16-6-7/13222

at least 65 x 38 mm, one side intentionally bent, four holes for rivets or nails (Fig. 20.10).

#### *Handle*

This handle could have been fitted to a chest or another piece of furniture but the fact that it is made of iron (and not bronze with a more elaborate shape) suggests that it may have been attached to a door, window shutter or something similar.<sup>1778</sup>

--/68-1-7/7083

length between the eyes 10 cm, diameter 7-11 mm, one 'split pin' remaining (Fig. 20.10).

<sup>1774</sup> Jacobi 1897, pl. 45, no. 13, 17.

<sup>1775</sup> Riha 2001, 35 and Plate 11; for examples in the Netherlands and Belgium see Hiddink 2014, 491-492, fig. 22.6, no. 7077-2 with references.

<sup>1776</sup> Mariën 1994, 58-59.

<sup>1777</sup> Riha 2001, pl. 36, no. 421, no. 424; see also a similar piece from Hoogeloon-Kerkackers, filled with lead (Hiddink & Pulles 2014, 498, fig. 22.8, no. 132-11).

<sup>1778</sup> Cf. the rings in section 20.3.18 below.

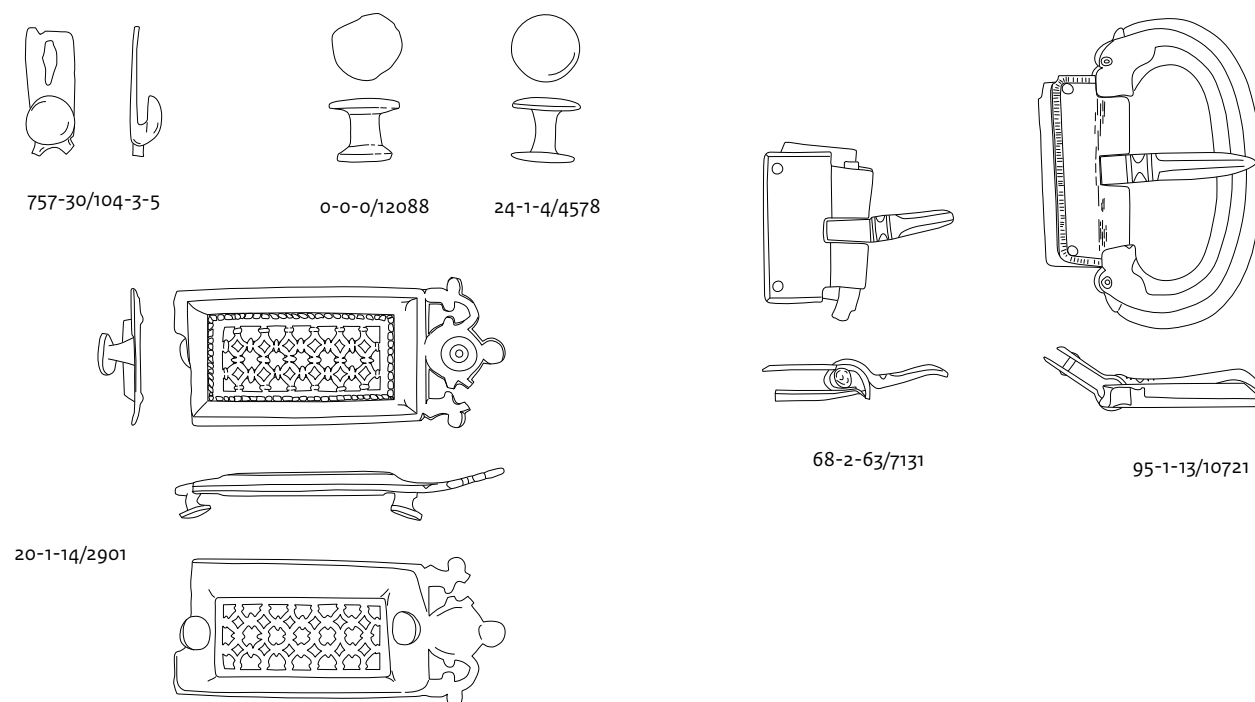


Fig. 20.11 Voerendaal-Ten Hove. Bronze belt buckles and belt fittings. Scale 2:3. (source: F. Horbach & H.A. Hiddink)

### 20.3.7 Buckles and belt fittings

#### Belt hook?

The flat plate-like belt hooks of the Kessel type terminate in a mushroom-shaped or flat knob on an angle to the main plate. The Voerendaal find might be such a knob. These belt hooks date to the Late La Tène period (first century BC).<sup>1779</sup>

757-30/104-3-5/9097 flat knob connected to a plate in a U-bend; length 15 mm (Fig. 20.11).

#### Openwork belt fitting

Openwork (*opus interrasile*) belt fitting within a closed frame. The examples of this kind of rectangular belt fitting show a large variation in the form, size and details of the decoration but clearly belong to a single group.<sup>1780</sup> They were made from the middle, probably mostly the end of the second century, until well into the third century AD. Naturally, there are many examples from military sites along the Rhine and Danube<sup>1781</sup> but also from further 'inland', such as finds from rich graves in the villa landscape.<sup>1782</sup> Three fittings from the rich grave in Bocholtz decorated the belt of a dagger.<sup>1783</sup>

--/20-1-14/2901 closed rectangular frame with very fine openwork decoration in a regular pattern, volute decoration on one of the short sides; connected to the leather by two studs; size 27 x 66 mm (Fig. 20.11).

#### Belt knob

In the Antonine period and early third century, certain belt types were not furnished with buckles proper, but with a round or square frame, called *Rahmenschiessen* in German (frame clasps). The leather straps of the belt are folded through the frame and swung back, re-attached to the belt by fastening slits in the leather around knobs.<sup>1784</sup> Nicolay dates them roughly to his period 3 (AD 120-270); Hoss narrows this down to the late second and the entire third century.<sup>1785</sup> Three of these belt knobs are found at Voerendaal.

--/0-0-0/12088 diameter 14 mm, height 14 mm (Fig. 20.11).  
 --/10-2-17/816 identical to the two others.  
 --/24-1-4/4578 diameter 14 mm, height 13 mm (Fig. 20.11).

#### Dragon buckle/Tierkopfschnalle

The original German name for this kind of buckle is based on the highly stylized, barely recognizable animal heads in the buckle loop. The popular English name is 'dragon buckle'.<sup>1786</sup> Sets of a buckle loop

<sup>1779</sup> Ebel 1990; Roymans 2004, 113-118.

<sup>1780</sup> Oldenstein 1976, 193-197, pl. 62-64; Nicolay 2007, 37-38, pl. 40, type B; Hoss 2014a, cat. 134-146, group 3.

<sup>1781</sup> Such as the examples published by Oldenstein from Niederbieber, Zugmantel, Saalburg and other findspots. See also find from Zwammerdam (Haalebos 1977, 220, fig. 18, no. 39).

<sup>1782</sup> For example, four pieces, somewhat larger, richly decorated in gilded silver from the tumulus of Celles-lez-Waremme (prov. Liège, Belgium; Massart 2015, 130, fig. 51).

<sup>1783</sup> Also (partly) gilded, see De Groot 2006, 108-111, 134, 152, no. 215-1, 6 and 10,

<sup>1784</sup> Nicolay 2007, 35, pl. 41, C; Hoss 2014, cat. 255, pl. 74-75.

<sup>1785</sup> Nicolay 2007, 35; Hoss 2014a, cat. 255.

<sup>1786</sup> Appels & Laycock 2007.

with animal heads, a buckle prong with faceted sides and a high-rectangular double plate with rivets are designated as the Wijster type; most of the plates are undecorated but a band of linear grooves can occur.<sup>1787</sup> Originally, this type was dated from the last quarter of the fourth into the early fifth century AD, but in a later short research report, Böhme re-dated all his material culture to a later period,<sup>1788</sup> around the middle of the fifth century.<sup>1789</sup> Two inhumation graves near the villa of Ewijk-De Grote Aalst were found recently, both containing belts with this kind of buckle.<sup>1790</sup>

- /68-2-63/7131 buckle prong carrying decoration that is common in dragon buckles of the same variant, with buckle plate; the buckle loop is lost (Fig. 20.11).  
 --/95-1-13/10721 complete with loop, prong and plate; height 62 mm, width 45 mm (Fig. 20.11).

#### *Early Medieval single buckle*

In the earlier part of the Merovingian period, the buckles were not yet combined with fixed buckle plates. In most cases the buckle prongs have decorated bases, which can be dated quite precisely. In the case of the buckle from grave 381, the absence of decoration prevents a precise dating. The buckle is either of the earlier type S(iegmund)-Gür. 2.4/5a-b,<sup>1791</sup> dating to the later fifth or early sixth century AD, or a S-Gür. 6.1 from the late seventh and early eighth century.<sup>1792</sup> This later date is preferred here for two reasons. First, the buckle prong is quite thin, whereas the earlier type has a wide and heavy prong, and second, the strap end from the same grave has a preferred date of the later sixth or seventh century (see below).

- 381-10/11-1-67/1128 iron buckle and prong, 25 x 35 mm (Fig. 20.12).

#### *Strap end*

The 'tongue-shaped' strap ends (square with one of the short sides semi-circular) are dated from the middle of the sixth to the eighth century AD.<sup>1793</sup> Generally speaking, the iron specimens are encrusted and the copper-alloy pieces undecorated. The larger strap ends were applied to hip belts and the smaller ones were used for a variety of purposes such as sword belts, as well as on footwear. No exact parallel for Voerendaal 381-11 is available: it is rather large, made of iron and seemingly undecorated. Instead of a V-shaped split end for attachment to the leather, this one has a thick square block as an attachment end, suggesting that a separate iron strip was fixed on top of the strap-end plate. This piece most likely dates to the late sixth or the seventh century since larger iron plates on buckles were more common then, but this date is not well established. In combination with the undecorated buckle from the same grave, this set might date to the late seventh century.

- 381-11 /11-1-68/1129 iron strap end, 70 x 20 mm (Fig. 20.12).

#### *Buckle with plate*

This buckle with a shield-shaped buckle prong and an attached buckle plate of extended triangular form with three nails is described as a waist belt for the larger pieces (Gür 3d) and sword belt (Spa 1d) for the smaller specimens. The Gür 3d is dated to Rheinland phase 8 (AD 610-640), and the Spa 1d also to phase 9 (-AD 670).<sup>1794</sup> In the FAG chronology, these buckles are assigned to phase 7 (AD 610/620-640/650) and 7-8 (-AD 670/680).<sup>1795</sup>

Given the size of the find grave 383-18, it is probably a hip belt Gür 3d. A small plate with four rivets was found in the same grave. The centre with rivets is preserved but the sides are missing; it is therefore unclear whether it is an entirely square plate, or once had a rounded side, common for small attachments to the sword belt (Gür. 5.1).

- 383-18/11-1-102/1155 bronze buckle, 80 x 29 mm (Fig. 20.12).  
 383-19/11-1-117/11464 bronze plate, c. 25 x 25 mm (Fig. 20.12).  
 383-20/11-1-114/1163 bronze rivet (not illustrated).

<sup>1787</sup> Böhme 1974, 69; 274, pl. 71,3 (Wijster grave 116); 298, pl. 99,18 (Samson stray find); 305, pl. 110,1/3 (grave Vieuxville).

<sup>1788</sup> Böhme 1987.

<sup>1789</sup> Possibly these buckles (and the associated belts) could be somewhat older anyway. A date from the late fourth century onwards, as was originally assumed, is suggested by radiocarbon dates from Someren-Waterdael III and Nederweert-Randweg (Hiddink & De Boer 2011, 116-117, 211ff.; Hiddink 2016a, 25ff.; in prep.).

<sup>1790</sup> Heeren 2012.

<sup>1791</sup> Nieveler & Siegmund 1999, fig. 1.6, Gür. 2.4/5a, 2.4/5b, phase 3.

<sup>1792</sup> Nieveler & Siegmund 1999, fig. 1.13, Gür. 6.1, phase 10-11 (AD 670-740); in the FAG chronology phase 9-10 (AD 670/680-before 750; Nieveler 2003, fig. 184-185).

<sup>1793</sup> Heynowski 2017, 162-170, group 6; Kars 2011, 258-259.

<sup>1794</sup> Nieveler & Siegmund 1999, fig. 1.11.

<sup>1795</sup> Nieveler 2003, fig. 182.

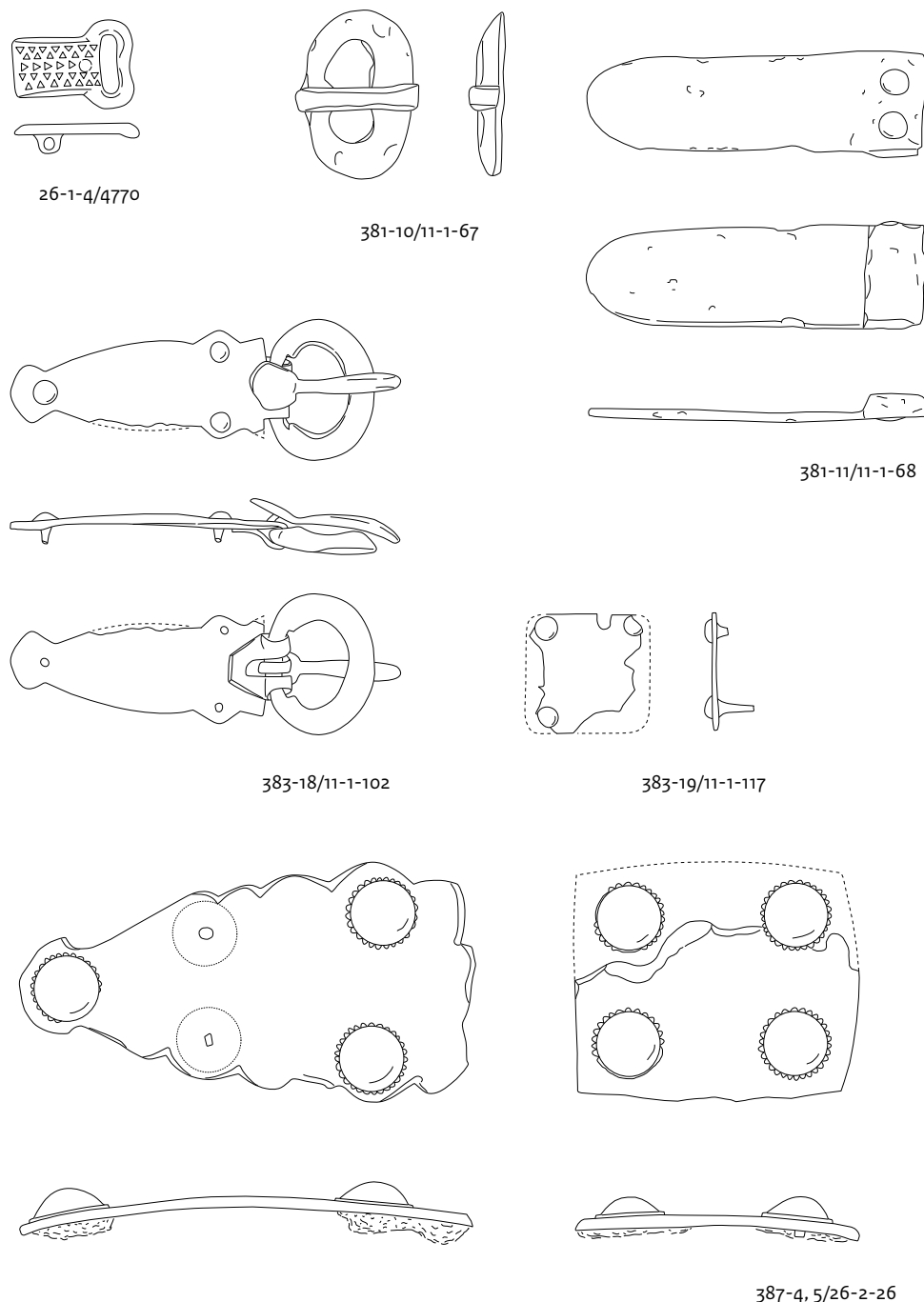


Fig. 20.12 Voerendaal-Ten Hove. Early Medieval iron and bronze belt buckles and fittings. Scale 2:3. (source: F. Horbach & H.A. Hiddink)

#### Belt set

Broad belts with iron buckles and decorative plates in iron, often encrusted with silver or brass damascene work, are often found in richly furnished weapons' graves and are indicative of sword bearers. The Voerendaal set contains a square back-plate with four nails and a leaf-shaped counterplate with five rivets, two pairs at the broad part and a single rivet at the pointed tip. The middle two nails are missing but have left a nail hole. The main buckle with plate is missing from this set and the pieces are made of iron, without encrustation; the globular heads of the nails are executed in copper alloy. The wide plates with five rivets are designated as type Gür 3f. This form is dated by Nieveler and Siegmund to Rheinland phase 8, c. AD 610-640;<sup>1796</sup> in the FAG chronology to phase 6-7, c. 580/590-640/650.<sup>1797</sup>

<sup>1796</sup> Nieveler & Siegmund 1999, fig. 1.11.

<sup>1797</sup> Nieveler 2003, fig. 182.

387-4 and 5/26-2-26, 36, 37/4791-4794      iron counterplate with bronze rivets, leaf-shaped, 94 x 50 mm; iron back-plate with bronze rivets, 59 x c. 50 mm (Fig. 20.12).

#### *Attachment buckle*

In the Early Medieval period small buckles were used to suspend weapons from a belt or to close footwear. These small attachment buckles are simply labelled '*Schnalle*' (buckle), while the larger buckles to close the hip belt are designated as '*Gürtel*'.<sup>1798</sup> Characteristic of these attachment buckles are their small size, the use of a transverse eye on the back rather than decorative nails on the front to fasten them to the fabric and a buckle prong attached through a simple perforation in the buckle frame. An exact parallel to the Voerendaal find was not found in the literature but *Schnalle* 2.2a is similar; it dates to the later sixth or early to mid-seventh century AD.<sup>1799</sup>

--/26-1-4/4770      buckle with oval to kidney-shaped loop (height 18 mm), square plate (approx. 12 x 18 mm) with 31 very small triangular stamps; eye to the back of the plate for attachment; perforation in the plate near the buckle loop to attach the buckle prong (Fig. 20.12).

### 20.3.8 Horse harness and yoke fittings

#### *Strap junction*

Nicolay classified the horse-gear strap junctions into four main forms (A-D). Type A consists of a round eye that connects the piece to a ring and a mount plate connecting the eye to a strap; the shape of the plate is used for further subdivision. The Nicolay A2 strap junction is a more or less square plate with indented sides that divide the square plate into sections or blocks.<sup>1800</sup> A bronze fragment from Voerendaal most likely belongs to a strap junction of this type.

--/7-1-34/282      widened square surfaces; the main part has a flat to square cross-section; the end is broken and shows a crescent-shaped cross-section, consistent with the loop of a strap junction; remaining length 51 mm; width 11 mm (Fig. 20.13).

#### *Looped strap mount*

Strap mounts with a loop at the back were designed to move along the strap. Nicolay places the larger pieces in group B, with a date in the second and third centuries.<sup>1801</sup> The piece from Voerendaal has a leaf shape as a whole, while the two *pelta*-shaped perforations in the top are also reminiscent of the later amphora-shaped strap ends. In the centre there is a shield-boss-like bulb.

--/10-1-1/681      leaf-shaped as a whole, central umbo-shaped bulb, two *pelta*-shaped perforations at the top; size 66 x 48 mm (Fig. 20.13).

#### *Phalera?*

Circular decorations of horse gear are generally termed *phalera*. They can act structurally as strap junctions, or as decorative pieces that carry pendants. At Voerendaal, a fragment of a large piece with a drop-shaped bottom could be a part of *phalera*. However, it may also have been part of an object with a different function.

--/16-1-14/2702      fragment of thin copper-alloy sheet, oval or heart-shaped originally, with drop at the bottom; c. 39 x 26 mm remaining (Fig. 20.13).

#### *Horse-gear pendant*

Horse-gear pendants showing a *lunula* shape are classified as pendants B5 by Nicolay. He dates this type to the second/third century AD.<sup>1802</sup>

711-2/13-1-27/1366      lower part seems incomplete or is uneven (Fig. 20.13).

<sup>1798</sup> Siegmund 1998; Nieveler & Siegmund 1999.

<sup>1799</sup> Nieveler & Siegmund 1999, fig. 1.9, Schn 2.2a, phase 6-9.

<sup>1800</sup> Nicolay 2007, 49, pl. 55.

<sup>1801</sup> Nicolay 2007, 54-55, pl. 82-84.

<sup>1802</sup> Nicolay 2007, 55-57, pl. 90-93.

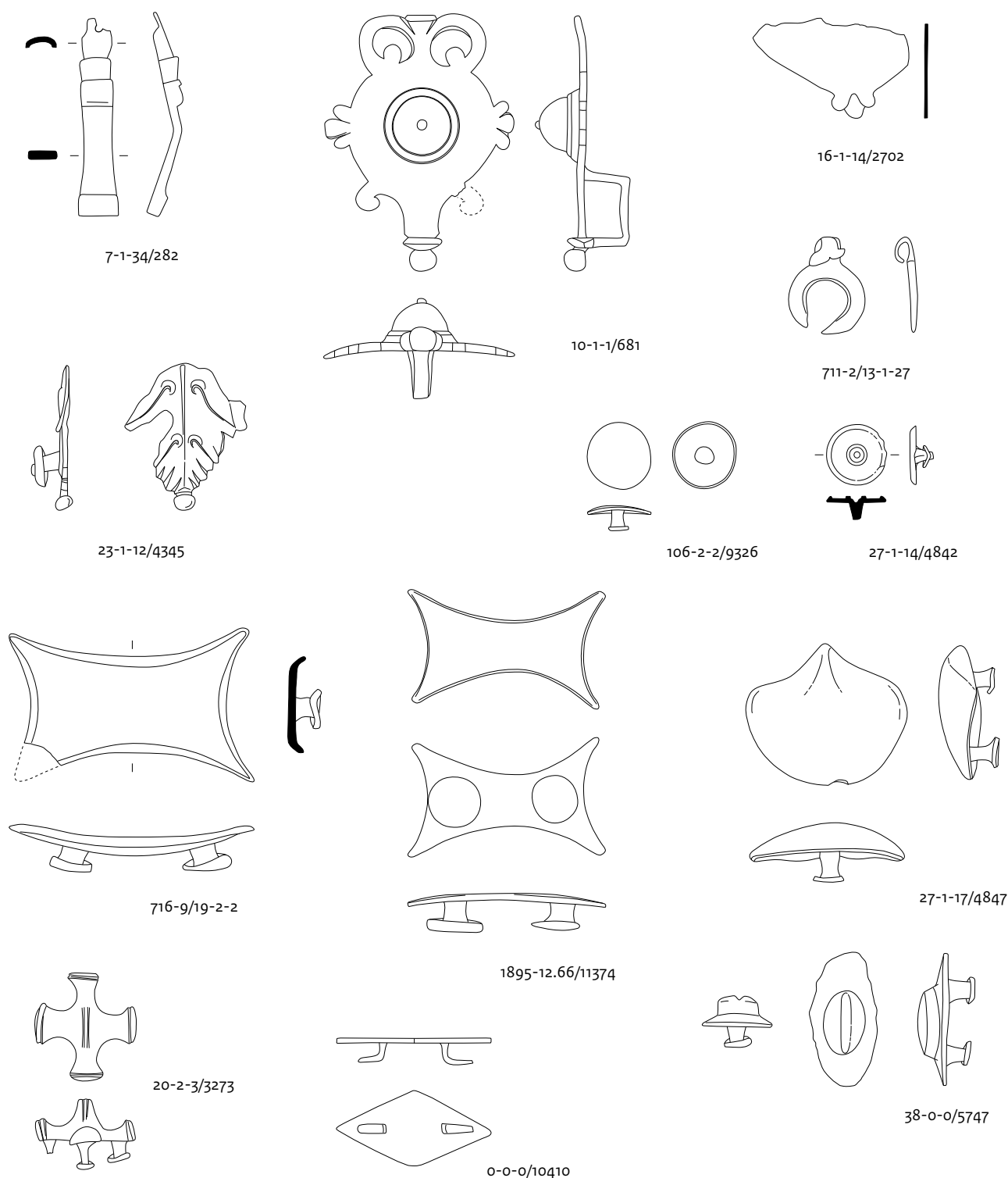


Fig. 20.13 Voerendaal-Ten Hove. Bronze pieces of horse harness. Scale 2:3. (source: F. Horbach & H.A. Hiddink)

#### Decorative horse gear

Decorative horse gear of the Roman period is generally divided into two groups. In the first and early second century the decorative pieces were riveted on to the leather with a counter plate. Pieces with such a plate or broken thin prongs therefore belong to group A. Another way of fastening the decorative pieces – with sturdy knobs inserted into slits in the leather – became common in the early second century. A broad knob, sometimes flat but often of a mushroom shape, therefore characterizes the B-group of decorative horse gear, with a date from c. 120 to the late third century AD.

The following groups of Nicolay are possibly present at Voerendaal:



*A-varia*<sup>1803</sup>

- A8? Rhombic plate o-o-o does not have small rivets for attachment, but small folded prongs. This, together with the 'clean-cut' sides, is strongly reminiscent of Early Modern leather attachment plates.<sup>1804</sup>
- B1 Round (oval), undecorated. Nicolay dates the B1-group to the second and third century, but these studs are primarily known from third-century contexts, even from the second half of that century; this also applies to mounts of the B5 and B17 groups.<sup>1805</sup>
- B2 This group consists of button-shaped, inlaid pieces. Our find probably also had an inlay, which is now lost.<sup>1806</sup>
- B5 Shell-shaped; the later date for this group is preferred (see above, B1).<sup>1807</sup>
- B8 Rhombic-shaped.<sup>1808</sup>
- B13 Cross-shaped.<sup>1809</sup>
- B17 Vulva-shaped; the later date for this group is preferred (see above, B1).<sup>1810</sup>
- /23-1-12/4345 leaf-shaped with small prong and rivet, A-varia; small part of one wing broken off; size 30 x 38 mm (Fig. 20.13).
- /0-0-0/10410 plate of rhombic shape, 40 x 19 mm; type A8? (Fig. 20.13).
- /106-2-2/9326 undecorated round stud, diameter 16 mm, B1 (Fig. 20.13).
- /27-1-14/4842 round button-like stud, diameter 15 mm, B2?; prong at the back broken off (Fig. 20.13).
- 716-9/19-2-2/2844 decorative horse gear in trapezoid shape, B8; max. size 61.5 x 40 mm (Fig. 20.13).
- /1895-12.66/11374 decorative horse gear in trapezoid shape, B8; max. size 49.5 x 31 mm (Fig. 20.13).
- /27-1-17/4847 shell-shaped stud with double prong, B5; size 36 x 42 mm (Fig. 20.13).
- /20-2-3/3273 cross-shaped mount with bulbous ends, B13; size 28 x 25.5 mm (Fig. 20.13).
- /38-0-0/5747 decorative piece in vulva shape, B17; near-complete, worn along the edges, 36 x 17 mm (Fig. 20.13).

*Horse bit*

Part of a horse bit was found in sunken-floored hut 514.

- 514-9/20-3-59/3482 one chain bar complete, of the other only the loop and connecting part of the bar; original length about 175 mm (Fig. 20.14).

*Bead?*

This copper-alloy tubular object may be a bead from horse gear.

- /1953-2.5b2/11998 length 16 mm, diameter 18 mm (Fig. 20.14).

*Strap junction rings?*

Copper-alloy rings had a variety of functions. In horse gear they were used as strap junctions in both the bridle and other parts of the horse harness. However, bronze rings as such were used as part of a multitude of other objects, such as vessel or furniture handles, belts, etc. The two illustrated pieces are somewhat larger than the ones not illustrated, with a diameter around 20 mm.

- /1895-12.57/12122 outer diameter 50 mm (fig 20.14).
- /1932-11.19/12127 outer diameter 37 mm (Fig. 20.14).
- /0-0-0/12116 outer diameter 21 mm.
- /16-0-0/2703 outer diameter 19 mm.
- /69-2-7/7535 outer diameter 20 mm.
- /95-1-18/10808 outer diameter 22 mm.
- /95-1-55/10901 outer diameter 22 mm.

<sup>1803</sup> Nicolay 2007, 52-53, pl. 69.

<sup>1804</sup> Nicolay 2007, 52-53, pl. 69.

<sup>1805</sup> Nicolay 2007, 53, pl. 70-71; Gschwind 1998.

<sup>1806</sup> Nicolay 2007, 53, pl. 71.

<sup>1807</sup> Nicolay 2007, 53, pl. 73; Oldenstein 1976, 187-188, pl. 57, no. 696-699.

<sup>1808</sup> Nicolay 2007, 53, pl. 73; Oldenstein 1976, 187-188, pl. 57, no. 696-699.

<sup>1809</sup> Nicolay 2007, 53, pl. 77; Oldenstein 1976, pl. 51, no. 590.

<sup>1810</sup> Nicolay 2007, 53-54, pl. 79; Oldenstein 1976, pl. 34, no. 267-272.

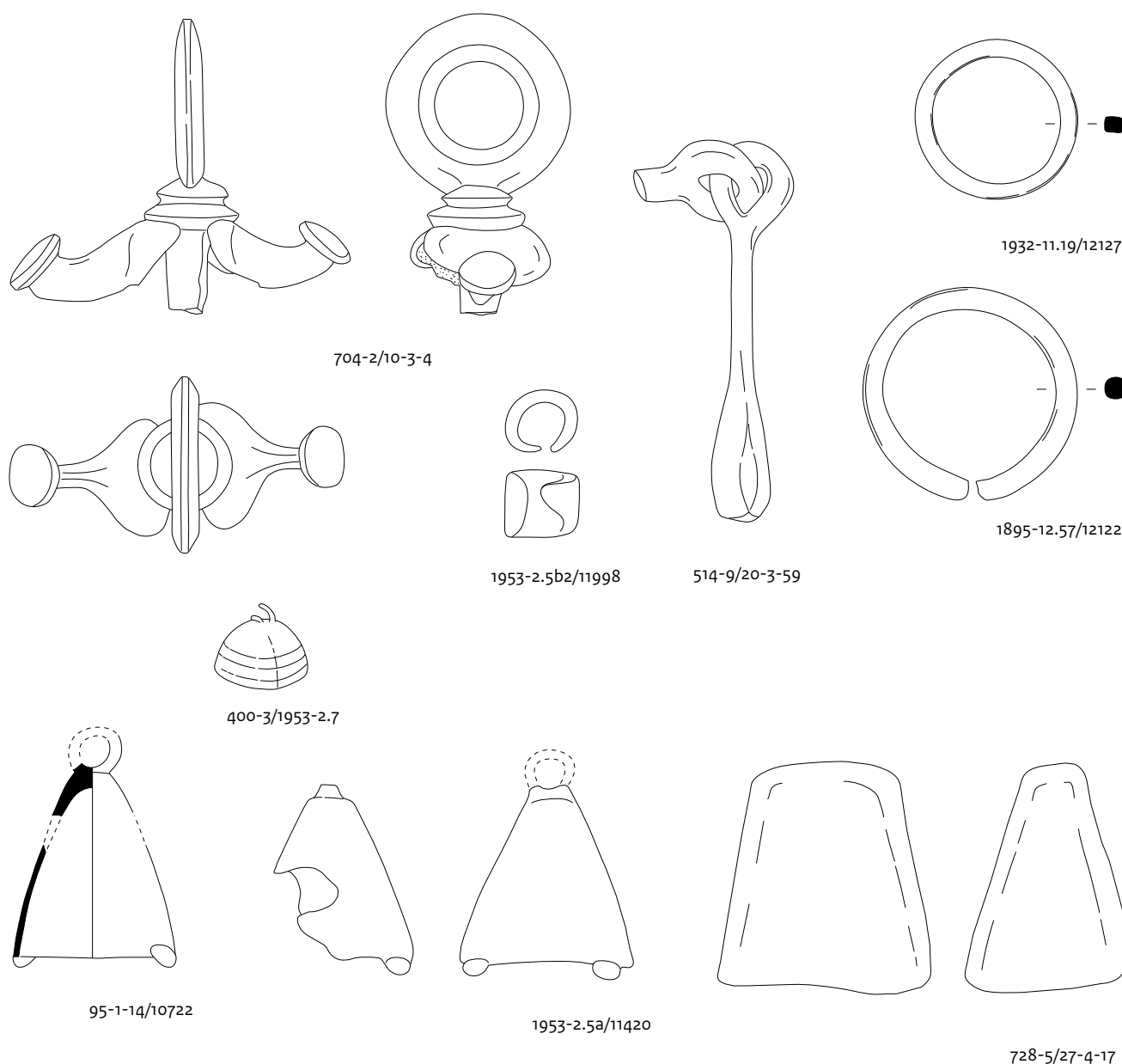


Fig. 20.14 Voerendaal-Ten Hove. Bronze and iron pieces of horse gear, bells. Scale 2:3. (source: F. Horbach & H.A. Hiddink)

#### Terret

Terrets or yoke rings are decorative as well as functional pieces of the yoke, through which the reins of oxen or horses were led. An exact parallel was not found. The more common types are shown by Nicolay and Jacobi.<sup>1811</sup> Terrets are also known from tumulus burials in the Belgian villa-dominated region of the Hesbaye, in combination with decorative horse gear.<sup>1812</sup>

704-2/10-3-4/857 round terret with side knobs; max. width 79 mm, height 69 mm, ring diameter 42/20.5 mm (external/internal) (Fig. 20.14).

#### Bells

Bells are often found as part of horse gear and are therefore discussed here, although they could have had a variety of other uses as well. In general, high, round bells date to the first century. They were replaced by bells with a square opening from the late first century onwards, a form which remained in use throughout the second and third centuries. All four examples from Voerendaal are of the Nicolay C-type bell with a square opening.<sup>1813</sup> A very small piece such as 400-3 was found at Maasbracht.<sup>1814</sup>

728-5/27-4-17/12083 iron bell, heavily corroded, no details visible (Fig. 20.14).  
 --/95-1-14/10722 copper-alloy bell, reconstructed from few fragments with the help of the impression of the inside in dried-out loess (Fig. 20.14).

<sup>1811</sup> Nicolay 2007, 220-225, fig. 6.6; Jacobi 1897, pl. 59.

<sup>1812</sup> Mariën 1994, 22-31.

<sup>1813</sup> Nicolay 2007, 57-58, pl. 95; Van der Veen 2020, fig. 71-72.

<sup>1814</sup> Driessen 2017, fig. 8.11b.

--/1953-2.5a/11420	copper-alloy bell (Fig. 20.14).
400-3/1953-2.7/11424	small copper-alloy bell; not seen, c. 1.5 cm wide and high (Fig. 20.14 after Braat 1953, fig. 13, no. 63).
--/0-0-0/12091	copper-alloy bell, small part of lower corner (not illustrated).

### 20.3.9 Weapons

#### *Sax*

Although badly corroded, this sword can be easily identified as an Early Medieval sax, with a blade sharpened on one side only. A bronze rivet, probably from the scabbard, was collected with it (but we could not locate it at the RMO). The sax was found by Habets, and because he also dug around building 402/B, it is possible that the weapon came from the small cemetery in this area (Section 13.2). The weapon is classified in the German literature as *leichte Breitsaxe* (Sax 2.1) and it dates to Rhineland phase 6-9 (AD 570-), mainly 7-9 (AD 580/590-670),<sup>1815</sup> or FAG phase 5-8 (AD 565-670/680), mainly 6-7 (AD 580/590-640/650).<sup>1816</sup>

388-1/1895-12.122/11375	total length c. 51 cm, blade 30.5 cm long (originally max. c. 35 cm), width 4.5 cm (Fig. 20.15).
-------------------------	--

#### *Spearheads*

Two spearheads from Ten Hove were found in graves. The largest of the two comes from grave 320, dated on the basis of the pottery (also that of grave 321 nearby) to late in the third century or the first half of the fourth century AD.<sup>1817</sup> This spearhead is large, with a length of 34 cm and a blade nearly 8 cm wide. According to Willems, similar large spearheads are not common in Late Roman graves. He mentions some parallels from the second half of the fourth century.<sup>1818</sup> A second spearhead was found in Early Medieval grave 383. It has a closed, unslit socket (S-Lan 2) and is rather short, perhaps belonging to the S-Lan 2.4 variant. This form occurs during several phases: Rhineland phase 5-10 (AD 550/560-710),<sup>1819</sup> FAG phase 4-9 (AD 510/525-c. 710).<sup>1820</sup>

320-3/60-2-3/11459	spearhead, length 34 cm, blade 23.5 cm long and 7.9 cm wide; asymmetrical midrib, wood remains of ash ( <i>Fraxinus excelsior</i> ) (Fig. 20.15).
383-17/11-1-107/1160	unslit, closed socket; length 21.5 m, blade 13 cm long, 2 cm wide (Fig. 20.15).

#### *Arrowheads*

Both arrowheads are quite long and were possibly small spearheads. The first is from Late Roman grave 320, discussed above, the second from the upper infill of pit/sunken-floored hut 757; it could be Late Roman or Early Medieval.

320-5/60-2-5/11457	length 11.6 cm (Fig. 20.15).
757-29/108-2-7/9890	length 12.8 cm (Fig. 20.15).

<sup>1815</sup> Nieveler & Siegmund 1999, fig. 1.10.

<sup>1816</sup> Nieveler 2003, fig. 181.

<sup>1817</sup> Willems 1989, 148.

<sup>1818</sup> Willems 1989, *loc.cit.*

<sup>1819</sup> Nieveler & Siegmund 1999, 8, fig. 1.11.

<sup>1820</sup> Nieveler 2003, fig. 182.



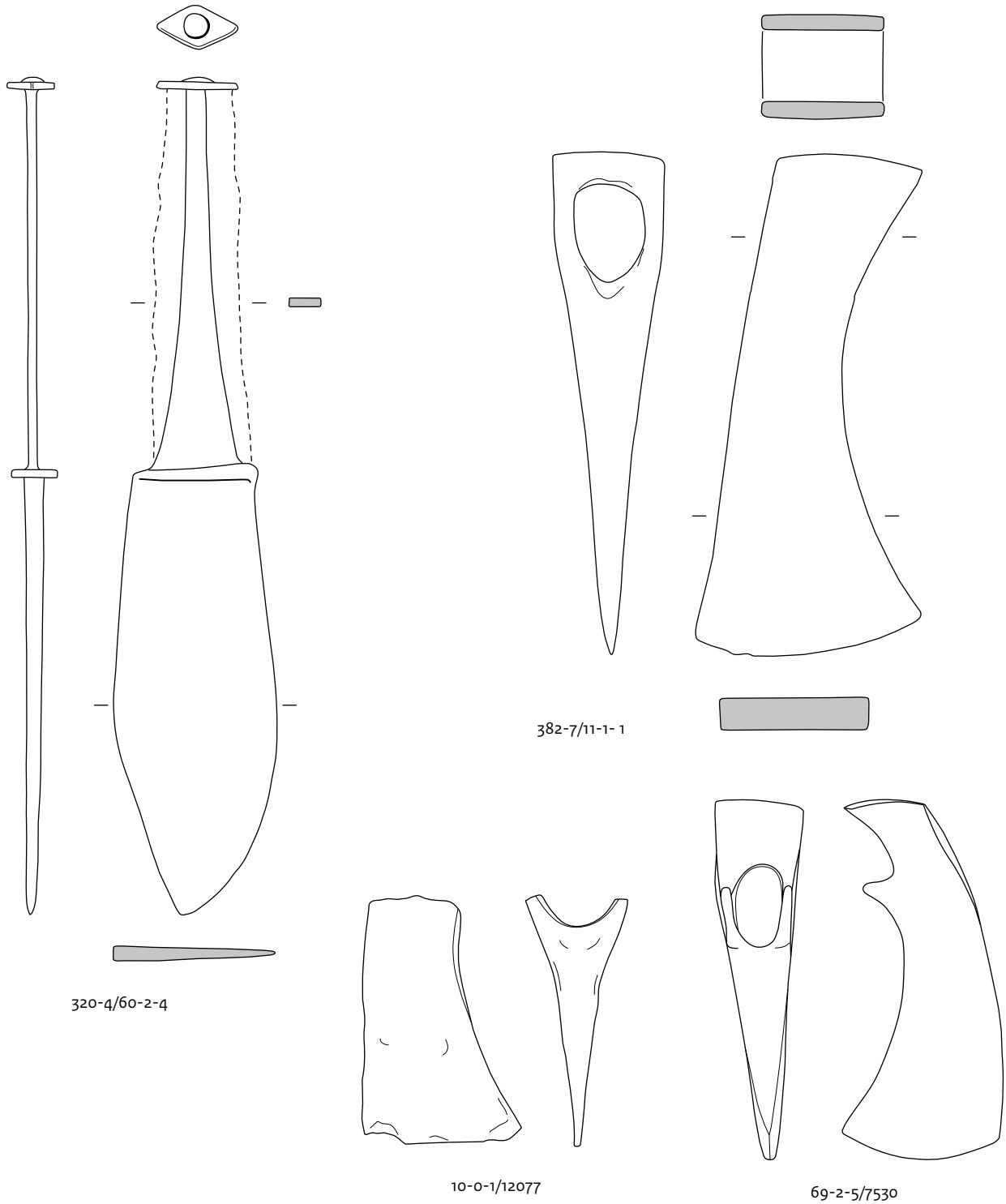


Fig. 20.16 Voerendaal-Ten Hove. Iron knife and axe-heads. Scale 1:2. (source: F. Horbach & H.A. Hiddink)

320-4/60-2-4/11456 total length 27.5 cm, blade 14.5 cm long, 53 mm wide (Fig. 20.16).

<sup>1822</sup> Böhme 1974, 105; Nieveler & Siegmund 1999, fig. 1.5 (phase 1-2: c. AD 400-480/490). In the PAN reference module, it is dated from 370-470 AD (type 16-01-09-14).

**Axes**

Like the knife discussed above, axes were multi-purpose tools. Because the context of the largest piece is a grave, the axes are discussed here. Not much can be said about the incomplete axe.

The smallest complete axe has lugs behind the eye, a slightly curved top (the poll), and a curved blade. It can be classified as belonging to Böhme's *Schaftlochklappenaxt* Typ C or Siegmund's typ FBA 3.2, dated from the late fourth to the end of the fifth century.<sup>1822</sup>

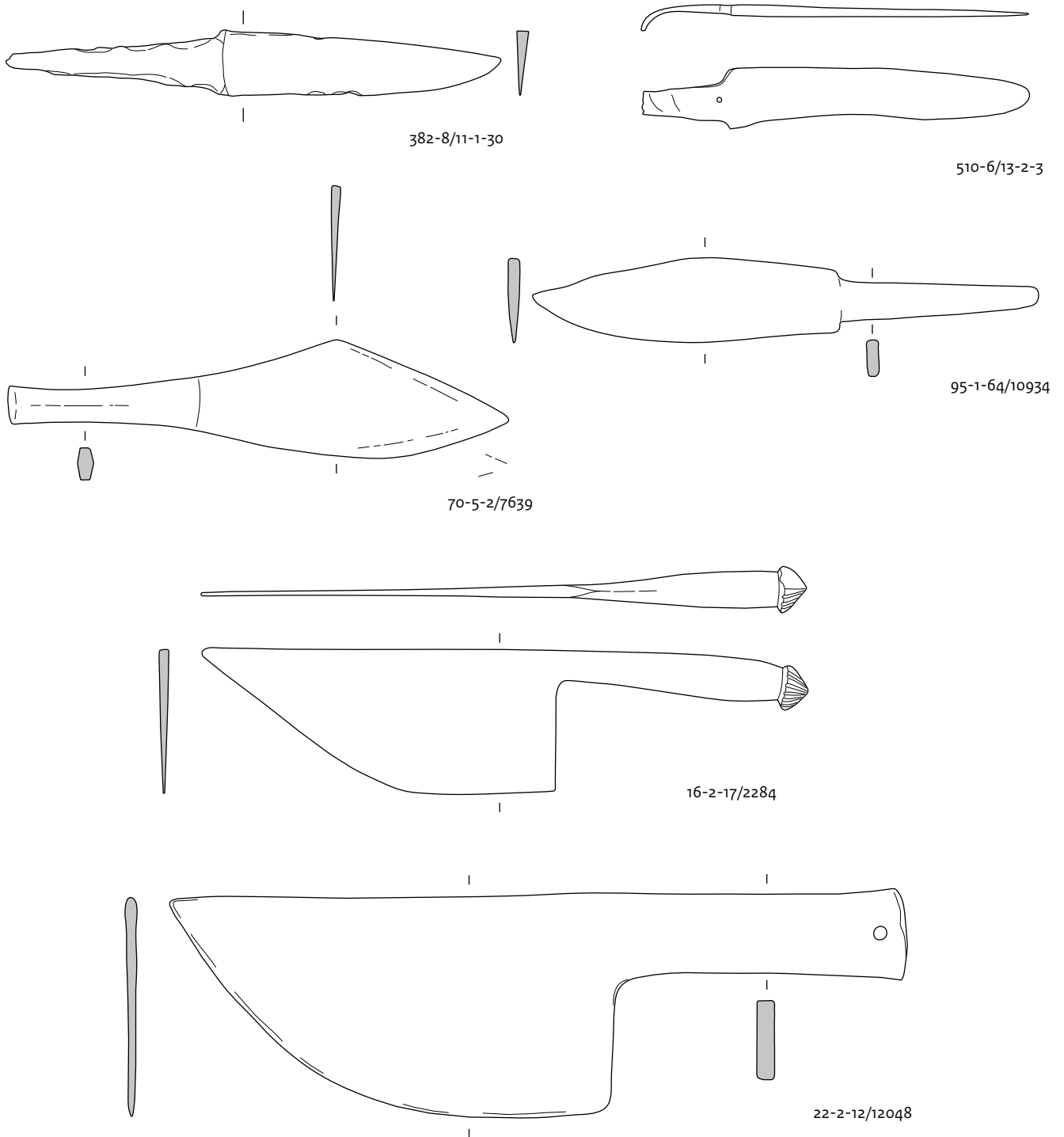


Fig. 20.17 Voerendaal-Ten Hove. Iron knives and cleavers. Scale 1:2. (source: H.A. Hiddink & F. Horbach)

The large complete axe from grave 382 is of the type designated as an Early Medieval small axe or S-FBA 2.1. In the burial chronology it is assigned to Rheinland phase 6-7 (AD 570-610),<sup>1823</sup> or FAG phase 5 (c. AD 565-580/590).<sup>1824</sup> However, the deposition in graves does not reflect the true circulation period. As finds from Dorestad show, it was used for much longer.<sup>1825</sup>

- |                   |  |
|-------------------|--|
| 382-7/11-1-1/1060 | length 164 mm, width near cutting edge 74 mm (Fig. 20.16).         |
| --/10-0-1/12077   | length at least 80 mm, width near cutting edge 52 mm (Fig. 20.16). |
| --/69-2-5/7530    | length 117 mm, width near cutting edge 52 mm (Fig. 20.16).         |

<sup>1823</sup> Nieveler & Siegmund 1999, fig. 1.9

<sup>1824</sup> Nieveler 2003, fig. 180.

<sup>1825</sup> Van Es & Verwers 2009, 218-219.



<sup>1826</sup> Smaller versions in graves from Tongeren-SW cemetery (Vanvinckenroye 1984, 194 (second type)) and Nijmegen: Steures 2013, B 144 (p. 636), B465 (p. 651), B 481 (p. 653), B627 (656), B 687 (658), OO 290 (710), OO 366 (721).

<sup>1827</sup> Examples with a tang: Manning 1985, 114-116, fig. 14, type 12/15, pl. 54-55, Q42, 48-54; Remouchamps 1925, 74, fig. 68, no. 8 (Houthem-Ravensbosch); Fremersdorf 1933, 32, pl. 29, no. 8 (Köln-Müngersdorf); Driessen 2017, fig. 8.9 (Maasbracht; two cleavers); Hiddink & Zondervan 2014, 523, fig. 23.7 (Hoogeloon-Kerkakkers). With socket: Manning 1985, 122, fig. 30, type 2-3, Q97-100; Künzl 1993c, 353-354, 2/133, pl. 616-619, H 134-137 (Neupotz); Mertens & Cahen-Delhay 1970, 81, fig. 34-36, no. 67 (Saint-Mard); Haalebos 1977, 224, fig. 20, no. 70 (Zwammerdam); Van Enckevort 2000, 157, fig. 57, no. 109 (Venray-Hoogrieboek); Van den Hurk 1977, 121-122, fig. 50, VI, 29 (Esch-Hoogkeiteren grave 6); Smeets 1980, 148-149, grave 36, N (Melick-Kennedysingel); Hiddink 2017, 64-66, fig. 6.10, no. 401-6 (Bree-Broekstraat).

<sup>1828</sup> Hiddink 2014f, 120-122, fig. 7.10, no. 373-26.

<sup>1829</sup> For a typology, see i.e.

Kaurin 2011, 238-242, fig. 4.

<sup>1830</sup> Examples of Roman shears, e.g. in Manning 1985, 34-35, pl. 14, D4-D11; Gaitzsch 1980, 209-216, pl. 58, 290 (Klein-Winternheim); Künzl 1993c, 354, 2/135-136, pl. 628-635 (Neupotz); Pohanka 1986, 274-279, 384-387, pl. 52-53, no. 236-253 (Oostenrijk); Duvauchelle 2005, 144-145, pl. 38-41, no. 213-225 (Avenches); Hiddink 2005a, 231, fig. 12.8-9 (Lieshout-Beekseweg); 2005c, 28, fig. 11 (Linne-Ossenbergh); Hiddink & Zondervan 2014, 523, fig. 23.6, no. 606-4 (Hoogeloon-Kerkakkers); Koster 2021, pl. 10 (Maastricht-Belfort).

### 20.3.10 Cutting tools

#### Knives

Besides the large knife or dagger already described with the weapons (from grave 320), a number of smaller knives were found, four of which are illustrated in Figure 20.17. They have different forms. Items 510-6 and 382-8 have a rather straight spine. They were found in sunken-floored hut 510 from the Late Roman or Early Medieval period and grave 382 from the latter period. The others have a curved spine with a clipped point and 95-1-64/10394 in particular can be considered a smaller model of the large knife from grave 320.<sup>1826</sup>

382-8/11-1-30/1086	length of blade 94 mm; tang 72 cm (Fig. 20.17).
510-6/13-2-3/12086	length of blade 102 mm; tang > 26 mm; small riveting hole (Fig. 20.17).
--/70-5-2/7639	length of blade 104 mm; tang 62 mm (Fig. 20.17).
--/95-1-64/10934	length of blade 104 mm; tang 66 mm (Fig. 20.17).
--/1953-2.12/11429	length of blade 103 mm; tang 41 mm (not illustrated).

#### Cleavers

Cleavers are large knives, primarily used for dividing up animal carcasses and larger pieces of meat. The most common forms have either a tang or socket for the wooden handle.<sup>1827</sup> One of the pieces from Voerendaal is rather small to be used as a cleaver; it is still a meat knife, however. A knife from Weert had a similar size and handle, although the knob at the end was not decorated.<sup>1828</sup> The other is larger and has a rectangular tang with a little hole. This was probably meant for a leather strap and not for riveting a wooden handle.

--/16-2-17/2284	length of blade 120 mm; handle 84 mm; blade 48 mm wide (Fig. 20.17).
--/22-2-12/12048	length of blade 150 mm; handle 100 mm; blade 74 mm wide (Fig. 20.17).

#### Shears

Although incomplete, four objects are easily recognizable as shears (*forfices*): all have a small ridge on one side of the blade. Three had an omega-shaped spring (a U-shaped spring is another possibility).<sup>1829</sup> A tip of another shear was found in grave 382 from the Early Middle Ages. Shears were truly multi-purpose tools and existed in a wide range of sizes. The basic form was in use from the Iron Age until modern times.<sup>1830</sup> Smaller shears could be used for personal care, cutting hair and trimming beards, larger ones for shearing sheep, cutting horse manes or cloth.

--/7-1-34/283	blade, part missing, length > 22 cm (Fig. 20.18).
702-18/7-2-4/12042	blade, tip and spring missing, length > 22.2 cm (Fig. 20.18).
--/10-1-1/12074	blade, cutting edge missing, length > 26.5 cm (Fig. 20.18).
--/16-2-18/2288	blade, cutting edge damaged, length 27.8 cm (Fig. 20.18).
382-9/11-1-30/1087	tip of knife or shear blade; length > 75 mm (Fig. 83120).

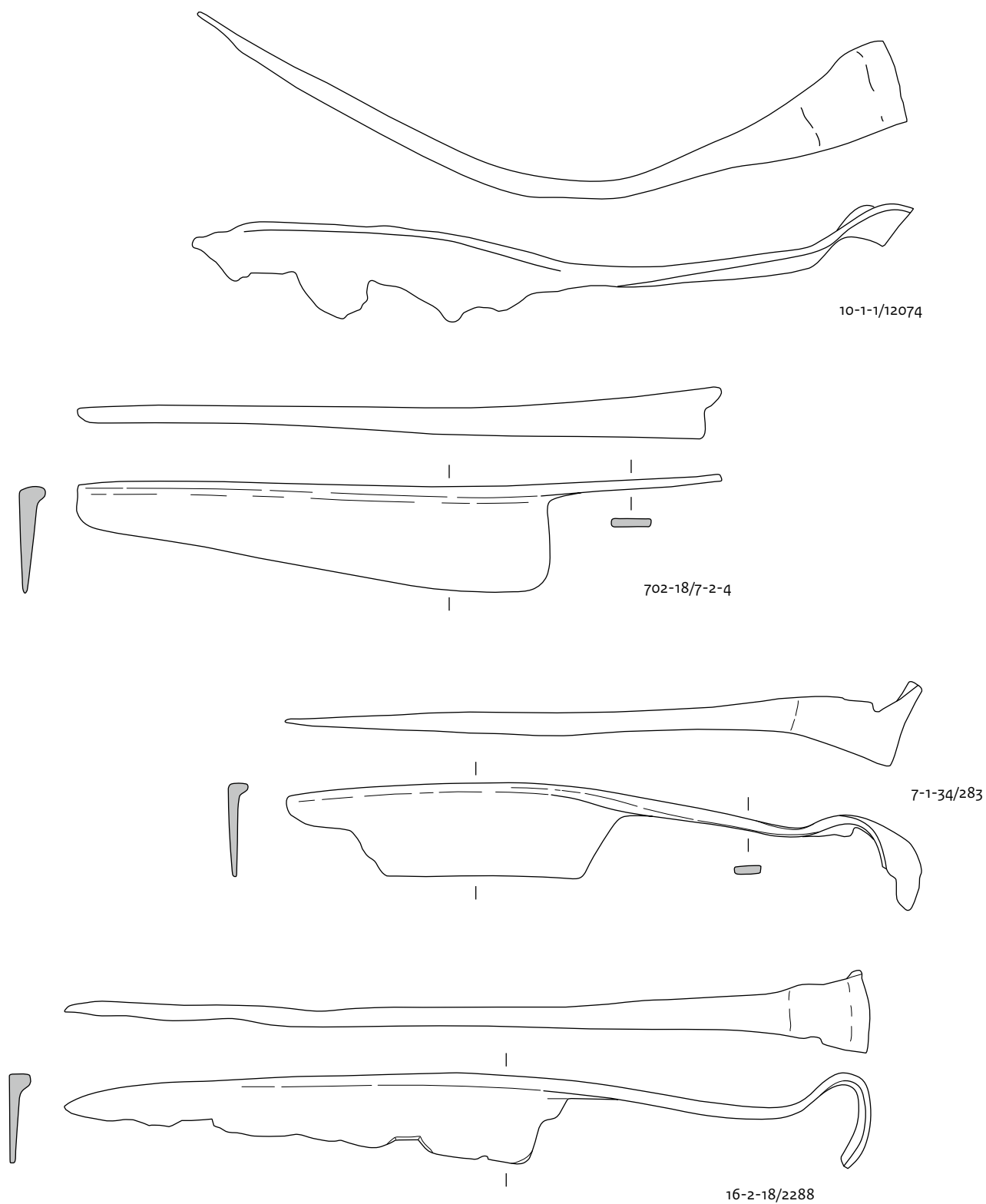


Fig. 20.18 Voerendaal-Ten Hove. Fragments of iron shears. Scale 1:2. (source: H.A. Hiddink & F. Horbach)

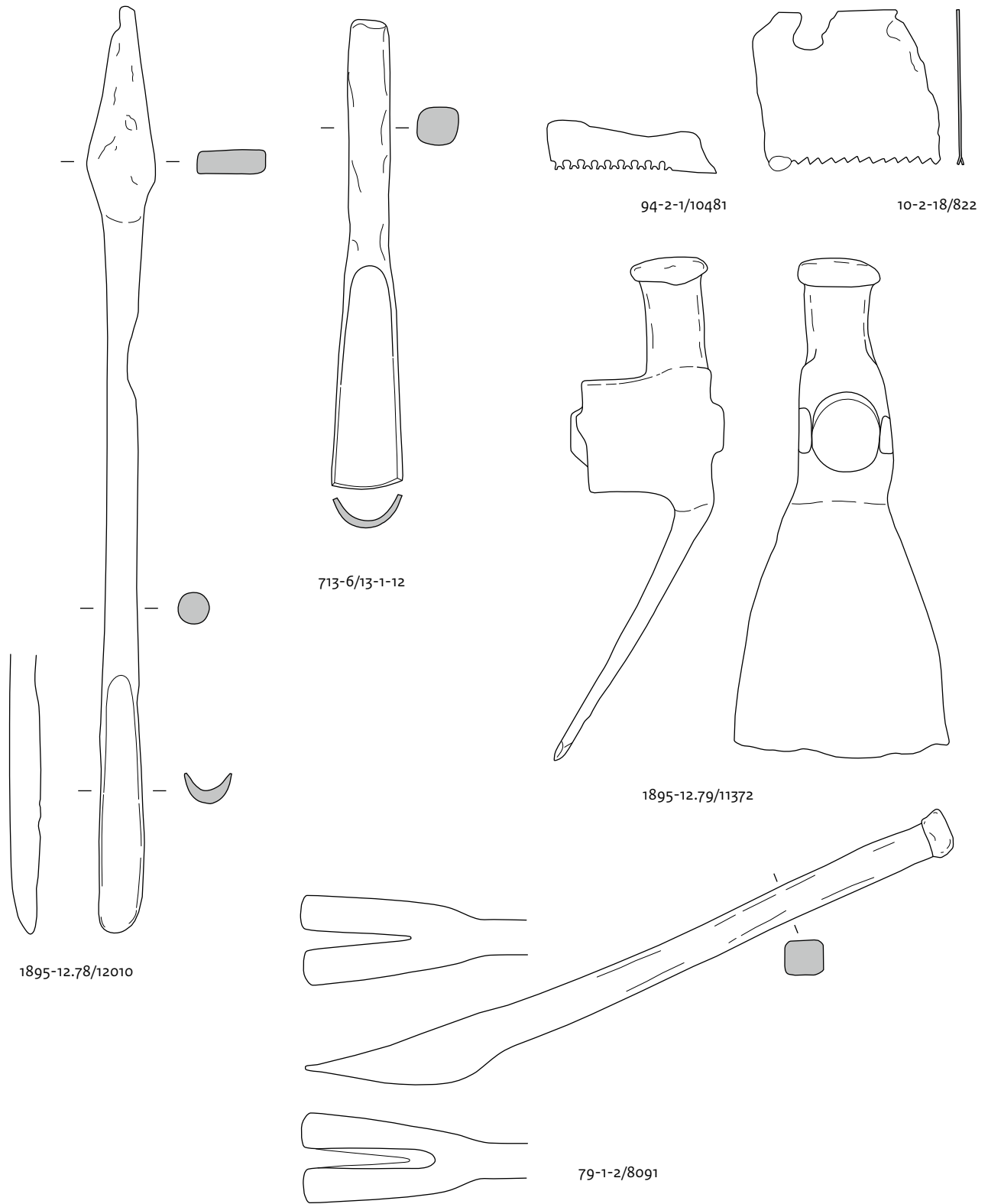


Fig. 20.19 Voerendaal-Ten Hove. Iron woodworking tools. Scale 1:2, crowbar 1:3. (source: H.A. Hiddink & F. Horbach)

<sup>1831</sup> Some examples in Habets 1882, 133-134, pl. 2, no. 1 (Groot-Haasdal/Arensgehout-Steenland); Haalebos 1977, 222, fig. 19, no. 51 (Zwammerdam); Pietsch 1983, 91-92, pl. 7, no.

### 20.3.11 Woodworking tools

#### Adze-hammer

While axes could be used as both weapons and tools, the adze-hammer 1895-12.79/11372 is primarily a wood-working tool. Roman adzes (*ascia*) were made both with and without hammer heads, and when present, these could be either round, faceted or square in diameter.<sup>1831</sup> Adzes cannot be precisely dated, but the piece from Voerendaal probably predates the Late Roman period.

--/1895-12.79/11372 length 172 mm, width of the blade 75 mm, hammer slightly faceted with traces of use on the head; lugs next to the eye (Fig. 20.19).

#### Spoon-bit augers

There is one complete piece from Habets' excavations and a bit with part of the stem from pit 713. The triangular flat part at the upper end fitted into the wooden handle used to turn the auger. There is a slight possibility that 22-2-1/4015 (Fig. 20.28), identified as a fragment of a hearth shovel, is also a fragment of an auger.

Augers of this kind (*terebrae*) are very common finds from Roman sites,<sup>1832</sup> but were made in essentially the same form since the Iron Age.<sup>1833</sup> It was still used in the Middle Ages and through into modern times.<sup>1834</sup>

--/1895-12.78/12010 322 mm long; bit 16 mm wide (Fig. 20.19).

713-9/13-1-12/1285 remaining length 162 mm; bit 24 mm wide (Fig. 20.19).

#### Saw

Only two small parts of a saw blade were identified, which is unremarkable given that the thin blades of saws are prone to corrosion and are often poorly preserved.<sup>1835</sup> In the Roman period, all different types of saws (*serrae*) were used. Our first fragment (10-2-18) could have been part of a small hand-held backsaw,<sup>1836</sup> or a large/larger frame saw.<sup>1837</sup> Viewed from the side, the teeth are slightly asymmetrical, with one side somewhat steeper, to chisel the wood when the saw is pushed forward. The teeth protrude a little outwards, in an alternating pattern (the set, making a kerf broader than the blade). Its purpose is to prevent the saw from jamming.<sup>1838</sup> As the second fragment (94-2-1) was drawn from an X-ray photo, the height and thickness of the blade, as well as the set (if present) of the teeth, are unknown. It is clear, however, that the teeth have an intricate shape, a kind of M-tooth pattern with deep gullets between the teeth to remove the shavings. The blade was probably used as a crosscut saw for cutting wood, bone or antler.

--/10-2-18/822 64 mm long, 52 mm high (Fig. 20.19).

--/94-2-1/10481 55 mm long, >16 mm high (Fig. 20.19).

#### Nail puller/crowbar

At first sight, this tool gave the impression – based on the moderately intense corrosion – of not being very old. Moreover, it was found at a high level in trench 76. Nail pullers like this are known from the Roman period, however.<sup>1839</sup>

--/79-1-2/8091 length 360 mm, shaft c. 18 x 21 mm (Fig. 20.19).

109-116 (Saalburg, Feldberg und Zugmantel); Manning 1985, 18-19, pl. 8-9, B14-16 (Kingsholm, Ewell, London); Gaitzsch 1980, 38-46, 345-346, pl. 10-11, no. 40-46 (Pompeii, before AD 79); 376, pl. 56, no. 279 (Königsforst); 1993, 85, 260, pl. 64, Ger. 7-9 (Xanten-Wardt, mainly middle first century AD); Massart/Cahen-Delhay 51, fig. 46, 1 (Saint-Mard); Hiddink 2016b, 32-33, no. 127 (Oerle-Zuid).

<sup>1832</sup> Manning 1985, 26, type 3 (spoon bits), pl. 12, B55-56; Jacobi 1897, pl. 34, 7, 9 (Saalburg); Gaitzsch 1980, 28-32, 363, pl. 39, 185-186 (Aquileia); 369-370, pl. 47, 229-231 (Niederbieber); 376, pl. 55, 275-277 (Königsforst); Künzl 1993c, 350, 2/129, pl. 594-597, H 94-101 (Neupotz); Metzler & Zimmer 1981, 180, fig. 144, no. 6-8 (Echternach, small examples); Van Renswoude 2009, 276, fig. 8.19.5, V108.1 (Meteren-Hondsgemet); Van Enckevort 2000, 156, fig. 57, no. 107 (Venray-Hoogrieboek); Gaitzsch 1993, 352, fig. 2, no. 811 (Kreimbach-Kaulbach); 356, fig. 4 (Zweibrücken-Ixheim); Duvauchelle 2005, 140, pl. 25-26, no. 135-140 (Avenches); Pietsch 1983, 105-106, pl. 14, no. 326-335 (Saalburg, Feldberg, Zugmantel); Maisant 1970, 60, no. 5, fig. 5, no. 5 (Lebach); Czysz 1974, 72, no. 5-7, pl. 5, no. 5-7 (München-Denning); Koch 1993, 73, pl. 11, no. 11 (Treuchtlingen-Weinbergshof); Hiddink & Zondervan 2014, 519, fig. 23.5 (Hoogeloon-Kerkackers).

<sup>1833</sup> E.g. pieces from Manching (Jacobi 1974, 39-40, pl. 10).

<sup>1834</sup> An example from the High Middle Ages in Hiddink 2012b, 253, fig. 12.4 (Someren-Waterdael) and one from the fourteenth century in Hendriksen 2004, 80, fig. 144 (Utrecht-Leidsche Rijn).

<sup>1835</sup> Cf. Künzl 1993c, 351.

<sup>1836</sup> Like an example from Oerle-Zuid (Hiddink 2016b, 32-33, no. 233).

<sup>1837</sup> A frame saw in Künzl 1993c, 352, fig. 2, no. 805 (Kreimbach-Kaulbach); blades of this type, with holes at either end in Idem,

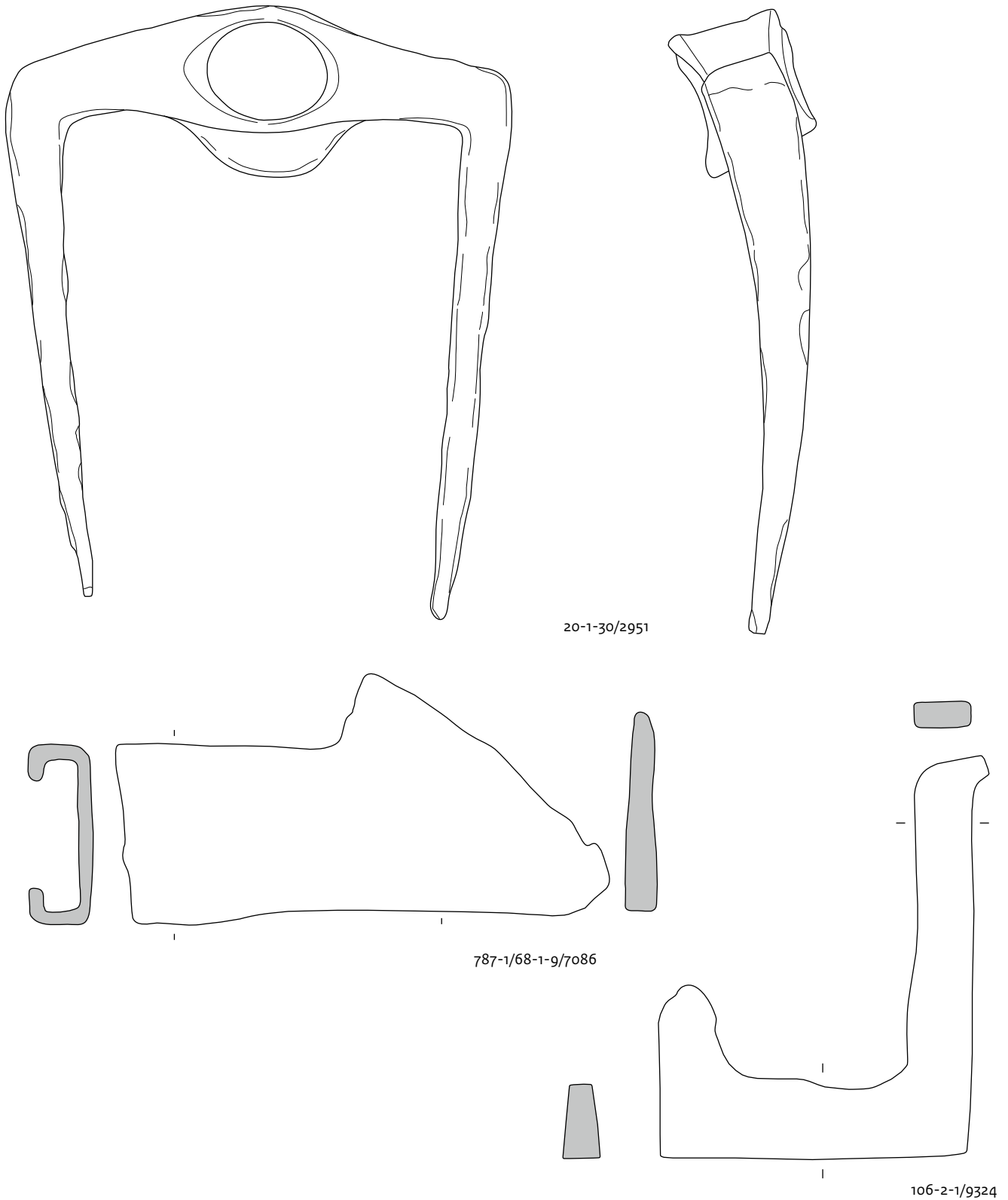


Fig. 20.20 Voerendaal-Ten Hove. Iron agricultural implements. Scale 1:2, 787-1 scale 1:3. (source: F. Horbach & H.A. Hiddink)

351; 1993d, 130, pl. 598, H104-105; Manning 1985, 21, pl. 9, B22 (Hod Hill, first century); Henning 1985, 574-575, fig. 4, no. 1 (Osterburken). Two

### 20.3.12 Agricultural implements

#### *Hoe*

Two-pronged drag-hoes appear as *bidens* in the written sources and in Italy were mainly used to loosen soil when planting or caring for vineyards.<sup>1840</sup> In the north they would have been used in

agriculture and especially in vegetable gardening. Our large hoe has an eye/short socket for the wooden handle, which falls under Mannings' type 1.<sup>1841</sup> These implements are not found very often in excavations.<sup>1842</sup>

--/20-1-30/2951 length teeth 18 cm; width 13-18 cm (Fig. 20.20).

#### Plough coulter?

Because this object was found in a pit with a piece of tile and some iron slag, a Roman date cannot be excluded, although the degree and kind of corrosion suggest that is much later (a few hundred years?). The socket of this implement, with folded wings, bears a resemblance to ploughshares, but it is relatively long. Moreover, the cutting part of ploughshares is symmetrical; it has the rounded U-shape of a spade blade.<sup>1843</sup> If the drawing is rotated 90° clockwise, our object looks more like a coulter. Normally, however, Roman coulters seem to have a 'knife' and shaft made out of one piece of metal, not a separate wooden shaft; they are also more slender.<sup>1844</sup>

787-1/68-1-9/7086 length 25.5 cm, width of socket 9 cm, blade 12.5 cm (Fig. 20.20).

#### Unidentified object

The shape of this object is reminiscent of spade sheaths,<sup>1845</sup> but it is far too thick and the edge is not sharpened. It is possibly a part of a plough or other farming implement of post-Roman date.

--/106-2-1/9324 11 x 14 cm, 9-13 mm thick (Fig. 20.20).

#### Reaping and pruning hooks

Reaping hooks were used for cutting cereals, but not with the swinging motion of sickles.<sup>1846</sup> It was pulled through a bundle of stalks held together with the left hand. The largest hook from Habets' excavations is certainly a reaping hook, belonging to Manning's type 3, with the shape of an inverted letter J.<sup>1847</sup> The middle-sized hook can be seen as either a small reaping hook (Manning type 2) or a pruning hook (type 2).<sup>1848</sup> The term pruning hook is often used for the smaller implements but, as Manning observed, they are found in large numbers and were used for cutting leaves for fodder rather than for pruning.<sup>1849</sup> The smallest piece is an example of a pruning hook. In terms of size, it bears some similarity to a number of implements from Weert-Nederweert, but their blades are less strongly curved.<sup>1850</sup>

--/1895-12.87/12014 reaping hook with tang, length 212 mm (Fig. 20.21).

--/1932-11.17b/12013 reaping/pruning hook with socket and fastening nail, length 104 mm (Fig. 20.21).

--/1895 12.88/11370 pruning hook with flanged socket and hole, length > 102 mm (Fig. 20.21).

#### Scythe

The broken blade of this object has a strengthening rib at the back, like that on scythes.

However, most Roman scythes have a tang at the end of the blade, not a socket like our find.<sup>1851</sup>

Although some scythes have a kind of socket,<sup>1852</sup> the form of our piece is different and is more like that of a (post-)Medieval 'Hainault scythe' (Dutch: *zicht*), with a handle at a right angle to the blade.<sup>1853</sup>

Sadly, the context of our specimen is unknown. The find number written on it is that of an archaeobotanical sample and the object was not mentioned in the original database.

--/10-3-34?/14490 length > 17 cm, blade 28 mm wide (Fig. 20.21).

#### Pushing-hoe?

This implement was severely corroded and the drawing suggests more detail than could actually be observed. It could be a part of a (post-Roman?) pushing-hoe or a trowel.

--/22-3-13/4071 length 16 cm (Fig. 20.21).

complete frame saws with the wood preserved were found in the ship 'De Meern 1' (Bazelmans & Bosman 232-233, 409-410, fig. 8.58-59, cat. 612-613).

<sup>1838</sup> For a detailed discussion of Roman saws and type of teeth, see Gaitzsch 1980, 181-208.

<sup>1839</sup> Gaitzsch 1980, 175-179, pl. 29 (Pompeii); A 53 cm long example was found among the tools of the ship 'De Meern 1' (Bazelmans & Bosman 2007, 230-232, 402, fig. 58, cat. 517).

<sup>1840</sup> White 1967a, 46-52.

<sup>1841</sup> Manning 1985, 47, fig. 12.1. Type 3 has a longer socket (fig. 12.3; pl. 20, F13).

<sup>1842</sup> For *bidentes*, see for example Lenz 1999, pl. 95, no. 1148 (Eschweiler-Lohn/Siedlung 48, same socket, more slender shape); Hiddink & Zondervan 2014, 518, fig. 23.2, no. 45-45; smaller, flat tang).

<sup>1843</sup> See for example Jacobi 1974, 67-70, fig. 21 (Late Iron Age); Pohanka 1986, 9ff, text fig. 1 (Roman period).

<sup>1844</sup> Manning 1985, 44, pl. 18, F6-7; Pohanka 1986, pl. 7-8.

<sup>1845</sup> Manning 1985, 44-47, fig. 11, type 2.

<sup>1846</sup> A distinction made by Manning for classification purposes (1985, 50ff.). Any typology has arbitrary elements because of the numerous forms and sizes.

<sup>1847</sup> Manning 1985, 55-56, fig. 14 (upper), no. 3, pl. 23. Very large hooks of this type should be considered bill hooks, such as a find from Hoogeloon-Kerkakkers (Hiddink & Zondervan 2014, 516-517, fig. 23.2).

<sup>1848</sup> For an example of the same size, but with a blade shape more like our largest knife: Cüppers & Neyses 1971, 188, fig. 25, no. 12 (Newel).

<sup>1849</sup> Manning 1985, 56-58, fig. 14 (middle), pl. 24.

<sup>1850</sup> E.g. Hiddink 2003b, fig. 52 (Weert-Molenakkerdreef); 2003c, fig. 13 (-Kampershoek); 2014, 120-120, fig. 7.10 (-Kampershoek-Noord). Two small hooks were also found at Houthem-Ravensbosch (Remouchamps 1925, 74, fig. 68, no. 13-14).

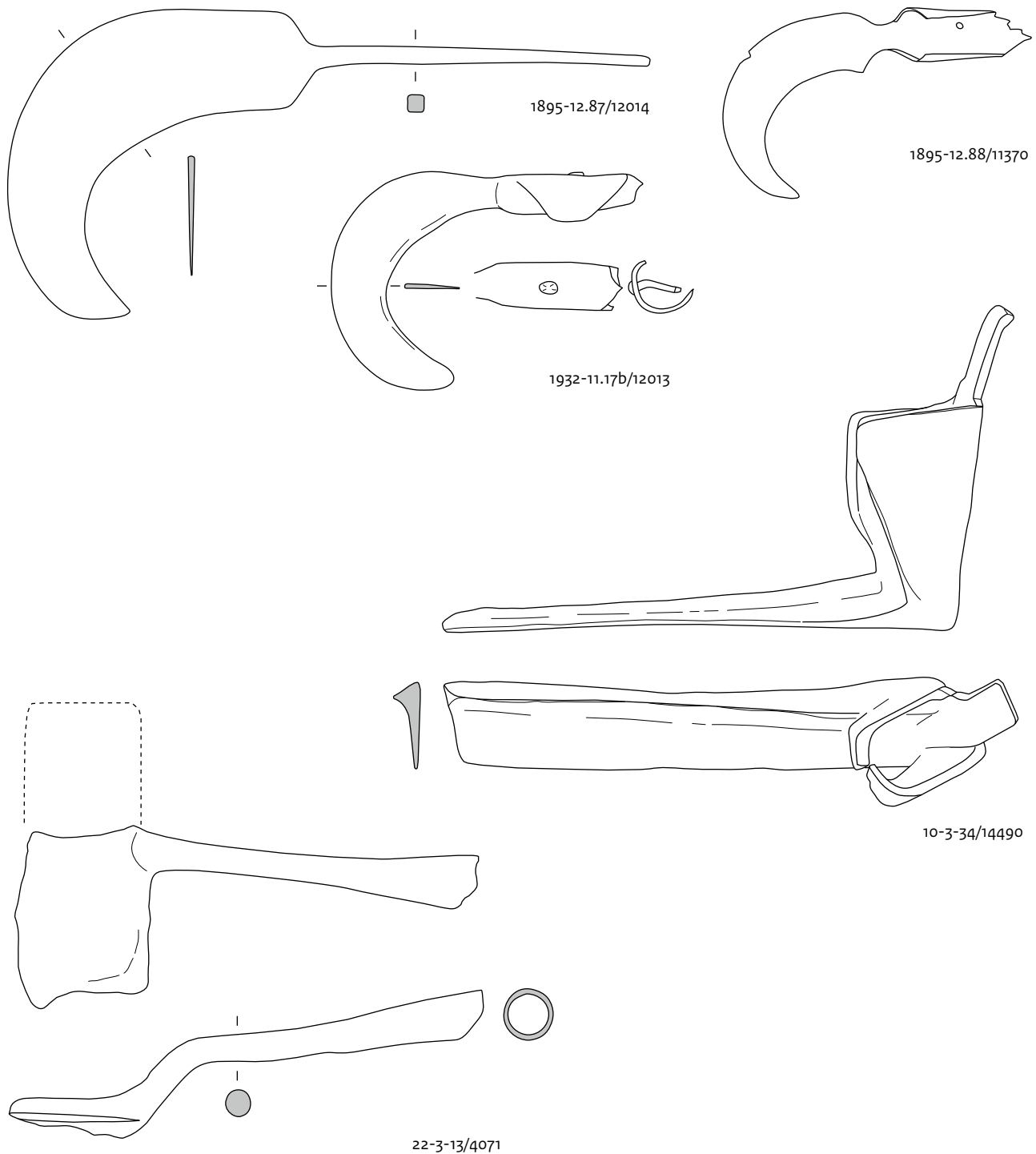


Fig. 20.21 Voerendaal-Ten Hove. Iron agricultural implements, cont. Scale 1:2. (source: H.A. Hiddink & F. Horbach)

<sup>1851</sup> Examples of Roman long scythes: Manning 1985, 49-50, pl. 21, V; Pohanka 1986, pl. 27-34; Henning 1985, fig. 2-3 (Osterburken).

<sup>1852</sup> Pohanka 1986, pl. 34, no. 131; Rech 1980, 484, no. 23, fig. 13, no. 4 (HA 77/264).

<sup>1853</sup> Theuwissen 1991, 43, fig. 40.

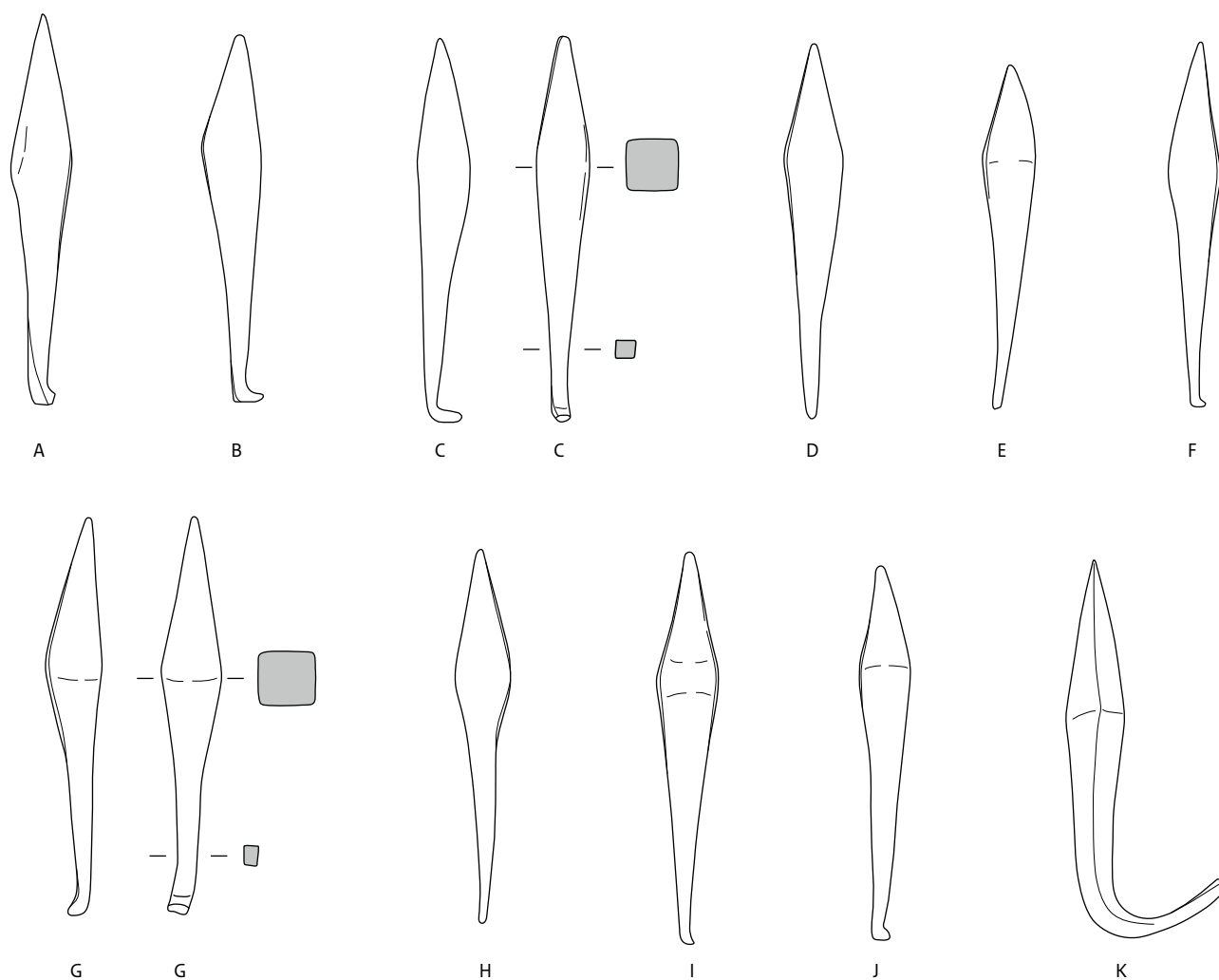
<sup>1854</sup> Willems 1989, 149ff. An array of bolt heads with both sockets and tangs was found

### Rake

Eleven pointed objects were found in grave 320. Because of their position in two opposing rows – suggesting 11 individual objects alternately placed – and of course the presence of ‘weapons’ in the grave, it seemed logical that the points were also weaponry. Aware of the problem that these would be an exceptional grave gift and that the bent tangs of some of the points were difficult to explain, Professor Willems interpreted the points as bolt heads, perhaps used with a kind of cross-bow for hunting.<sup>1854</sup>

After publication, Dr Baatz of the Saalburgmuseum suggested that the points were probably rake prongs.<sup>1855</sup> This could explain the somewhat asymmetrical form of some of the points and the bent tangs. Rake prongs are often much longer and are bent slightly backwards.<sup>1856</sup> However, one with four





320-6 &gt;16 /60-2-6

Fig. 20.22 Voerendaal-Ten Hove. Eleven iron rake-prongs from grave 320. Scale 1:2.

points from the Magdalensberg, with wood remains still attached, is very similar to those of Voerendaal.<sup>1857</sup> It is possible that the finds from grave 320 represent two separate rakes, each originally with six prongs (one missing) or one with six and the other with five prongs. This is another explanation for the position of the objects in two rows and the limited number of prongs on other finds.

With the interpretation as the points of rake prongs, the question remains as to why they appear in the grave of a male. This is discussed in Section 13.1.2.

- 320-6/60-2-6/11458A length 109 mm, bent tang point (Fig. 20.22).
- 320-7/60-2-6/11458B length 102 mm, bent tang point (Fig. 20.22).
- 320-8/60-2-6/11458C length 106 mm, bent tang point (Fig. 20.22).
- 320-9/60-2-6/11458D length 104 mm (Fig. 20.22).
- 320-10/60-2-6/11458E length 96 mm (Fig. 20.22).
- 320-11/60-2-6/11458F length 102 mm, bent tang point (Fig. 20.22).
- 320-12/60-2-6/11458G length 112 mm, bent tang point (Fig. 20.22).
- 320-13/60-2-6/11458H length 104 mm (Fig. 20.22).
- 320-14/60-2-6/11458I length 110 mm, bent tang point (Fig. 20.22).
- 320-15/60-2-6/11458J length 104 mm, bent tang point (Fig. 20.22).
- 320-16/60-2-6/11458K length 134 mm, bent tang (Fig. 20.22).

e.g. in the *burg* at Froitzheim (Barfield 1968, 112-114, fig. 46).

<sup>1855</sup> Willems 1990.

<sup>1856</sup> Willems 1990, fig. 2 (Saalburg; 6 prongs); Holwerda 1923, 149, fig. 8 (Arentsburg; 6 prongs); Manning 1985, pl. 6 (Newstead), 59-60, pl. 25, F63-66 (Borough Hill, Great Chesterford); Heimberg 2011, 84, fig. 63 (Rhineland; 8 prongs); Stika 2005, 291, fig. 368 (Pforzheim; originally 6 prongs).

<sup>1857</sup> Pohanka 1986, 106-107, 354, pl. 22, no. 91. Because of the presence of only four prongs, seen as a type of hoe (*rastrum*). At Köln-Münsterdorf, a point-like object was also found, albeit with a straight tang (Fremersdorf 1933, pl. 35, no. 8).

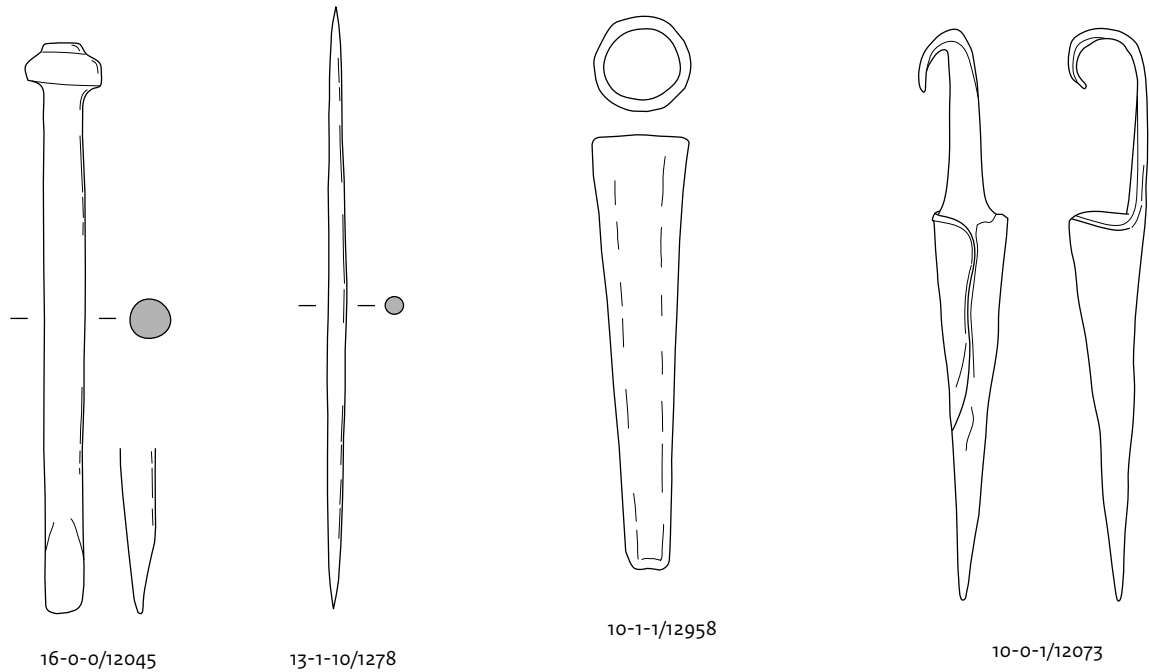


Fig. 20.23 Voerendaal-Ten Hove. Possible tools of iron. Scale 1:2. (source: F. Horbach & H.A. Hiddink)

### 20.3.13 Possible tools

#### *Chisel?*

An iron pin from trench 16 bears some resemblance to a chisel, although the head has a peculiar form; the object may therefore have had another function.

--/16-0-0/12045      length 151 mm, diameter 10 mm (Fig. 20.23).

#### *Engraving tool, awl?*

This pin with two pointed ends could have been used for engraving or writing; it could also be an awl or a kind of small axle.

--/13-1-10/1278      length 160 mm, diameter 4.5 mm (Fig. 20.23).

#### *Ferrule*

Conical sockets such as 10-1-1/12073 are often classified as parts of weapons, the ferrules at the back end of *pila* or other spears. However, they could be used on any tool handle or shaft.<sup>1858</sup> The function of the other conical socket is unknown; perhaps it was a tool/object in itself.

--/10-1-1/12958      max. diameter 26 mm; length 114 mm (Fig. 20.23).

--/10-0-1/12073      max. diameter 20 mm; length of conical part 10 cm, total length 15.2 cm (Fig. 20.23).

<sup>1858</sup> Manning 1985, 140-141, p. 66, S 57-83; Cüppers & Neyses 1971, 192, fig. 27, no. 8 (Newel); Jakobs 1992, 50, fig. 30 (Fischbach); Hiddink 2010, 119, fig. 8.13, 700-182 (Weert-Kampershoek Noord); Hiddink & Zondervan 2014, 512, fig. 23.1, no. 46-506 and 507 (Hoogeloon-Kerkackers); Künzl 1993, pl. 646-649 (boat hooks).

### 20.3.14 Locks and keys

This category consists mainly of keys; only one piece of a lock proper was found and one lock plate. These items belong to four types of locks (Fig. 20.24). Eighteen keys are illustrated, but at least two more were found (Fig. 20.25-20.27; Table 20.6).<sup>1859</sup>

Ten iron keys are quite simple, in the form of a hook with two or three teeth, two in the shape of an anchor (Fig. 20.25).<sup>1860</sup> One of the anchor-shaped keys is quite elaborate, with six teeth on the arms and a seventh on top. This type was already in use in the Iron Age.<sup>1861</sup> They could be used with locks of both larger doors and furniture or larger caskets. The teeth were

inserted directly into holes in the bolt, after which the key was used to slide it open (Fig. 20.24A). Manning assumes – mistakenly – that these keys operated locks with small tumbler pegs, which have to be pushed upwards by lifting the key, and therefore calls them lift keys.<sup>1862</sup>

One bronze bolt and four keys belong to more complicated locks (Fig. 20.26). Here, the bolt had several rectangular or triangular holes (seven in 0-0-0/12087) for pin tumblers, weighted down by a spring. The key bit was used to push the tumblers away and then the key was used to slide the bolt open. The proper name for the keys is therefore 'lift-slide keys' or in German: 'Hebe-Schiebeschlüssel'.<sup>1863</sup> Locks with a

**Table 20.6. Voerendaal-Ten Hove. Summary of the keys and locks; lengths in mm.**

Item no.	Find no.	Id	Length	Description/remarks	Fig.
	0-0-0	12087	52	bronze bolt for pin tumbler-lock, slightly bent	20.26
702-21	7-2-4	296	84	key for pin tumbler lock, bit damaged/unfinished, hole in stem	20.26
	10-1-6	693	97	rotary key	20.27
	10-1-7	695	>63	rotary key, part stem and bow missing	20.27
	13-2-11	1424	116	hook-shaped key, two teeth, hole in stem	20.25
	16-2-6	2236	329	bolt with two barbed springs (deformed) and 4 links of chain	20.26
	16-3-7	2417	82	shackle, int. size 45 x 66 mm, only base plate lock-box present	20.26
	16-3-25	2530	65	key for pin tumbler lock, hole in stem	20.26
	20-3-92	3543	76	key for pin tumbler lock, hole in stem	20.26
	22-3-13	4070	96	rotary key, part of bit missing	20.27
	22-6-6	4246	136	hook-shaped key, two teeth (one missing), bent eye	20.25
	27-2-25	5033	163	hook-shaped key, three teeth, bent eye	20.25
737-7	68-4-25	7186	112	key for pin tumbler lock, one row of pins, hole in stem	20.26
	70-5-2	12113	161	anchor-shaped key, originally six teeth, small tooth on top	20.25
	95-1-19	10860	90	hook shaped key, two teeth	-
	101-1-2	8753	191	hook-shaped key, two teeth, hole in stem	20.25
	107-1-11	9718	125	hook-shaped key, two teeth	-
	1895-12.62	11987	70	round lock plate, very thin bronze plate, 4 square nail holes	20.27
	1895-12.68	11367	>56	bronze bow of an iron key	20.27
	1895-12.90	11369	204	anchor-shaped key, hole in stem	20.25
	1895-12.91	11368	150	hook-shaped key, two teeth, bent eye	20.25
	1895-12.92	12139	>98	rotary key, part stem and bow missing	20.27
	1895-12.93	11366	>84	rotary key, part stem and bow missing	20.27
	1932-11.18	12004	117	hook-shaped key, two teeth (parts missing), hole in stem	20.25

<sup>1859</sup> Two are hook-shaped keys with two teeth, not illustrated because the form of the stem was not clear on the X-rays; a third iron fragment could also be a key, but was not clear on the X-ray.

<sup>1860</sup> An example with five teeth was found at Maasbracht (Driessen 2017, fig. 8.12).

<sup>1861</sup> Jacobi 1974, 153ff., pl. 47. For the Roman type, see Manning 1985, 90-92, fig. 25.1-3, pl. 40, O23-38 (lift keys).

<sup>1862</sup> Manning 1985, 90.

<sup>1863</sup> Brunner 1988, 56-58; Deschler-Erb 1996, 38;

Manning 1985, 92-93, fig. 25.4-7, pl. 41, O39-55 (slide keys).

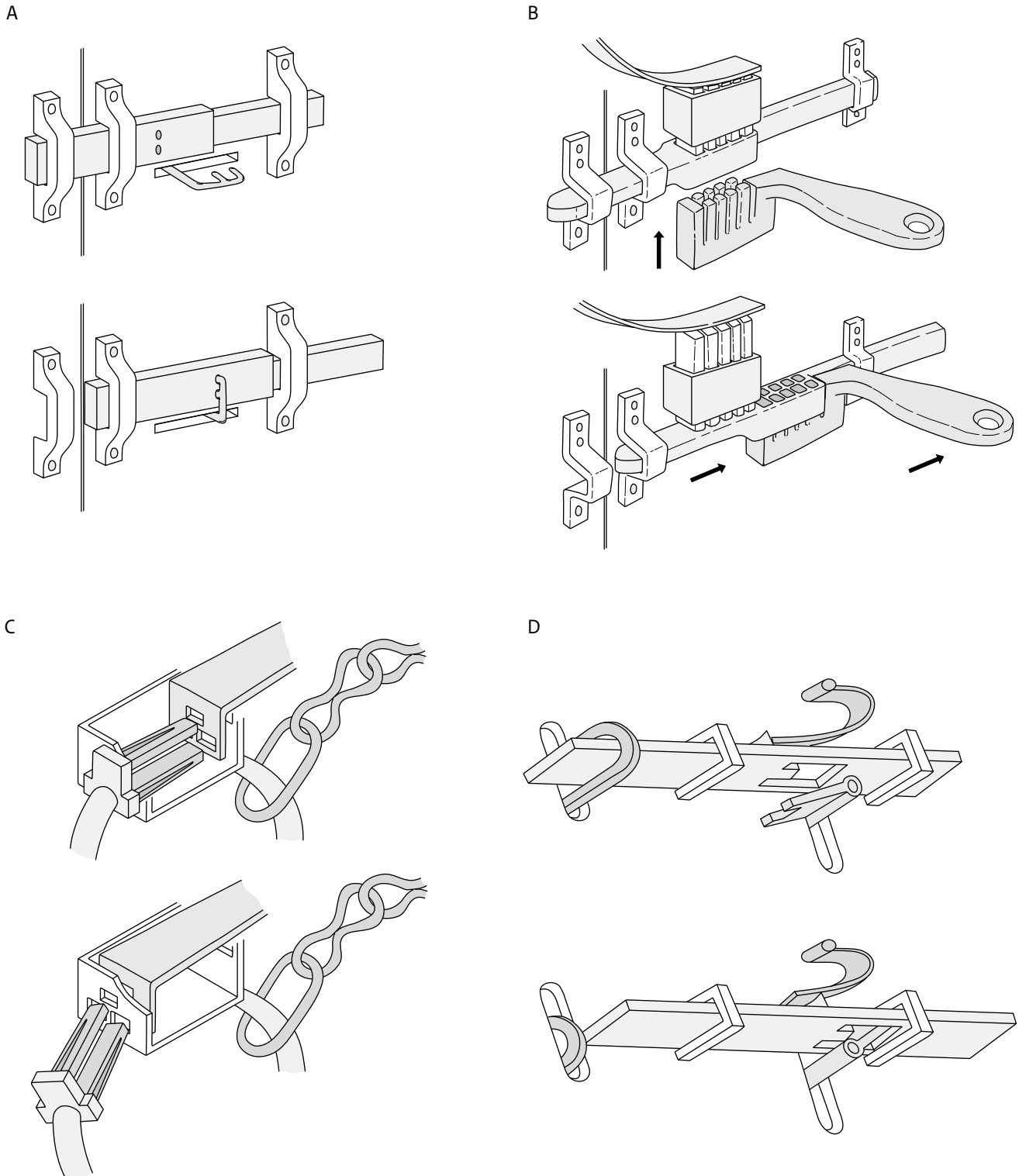


Fig. 20.24 Four types of locks from the Roman period.  
 A latch with hook shaped key; B lift and slide lock; C lock with barbed spring; D latch with rotary key.

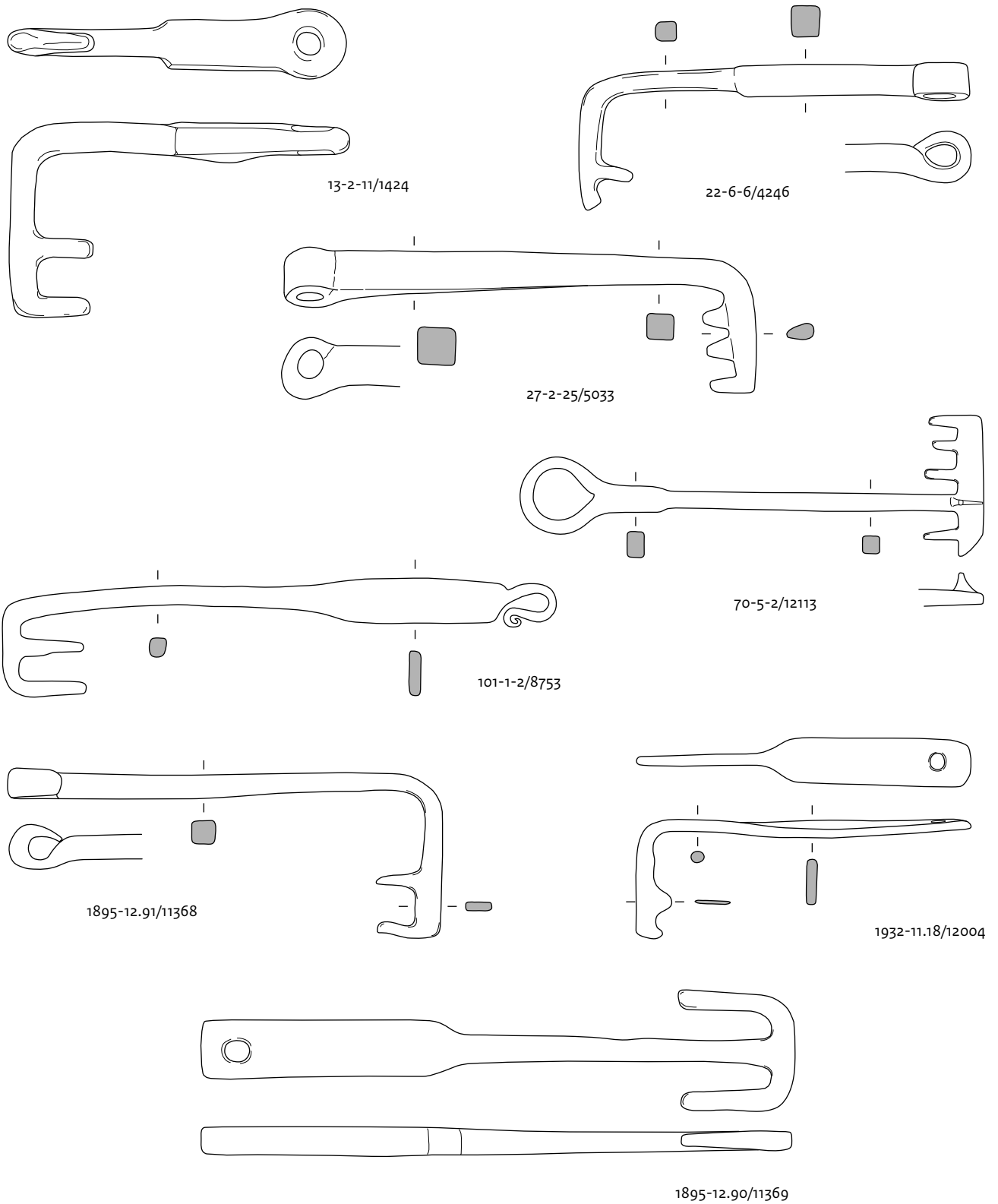


Fig. 20.25 Voerendaal-Ten Hove. Iron anchor-shaped keys. Scale 1:2. (source: H.A. Hiddink & F. Horbach)

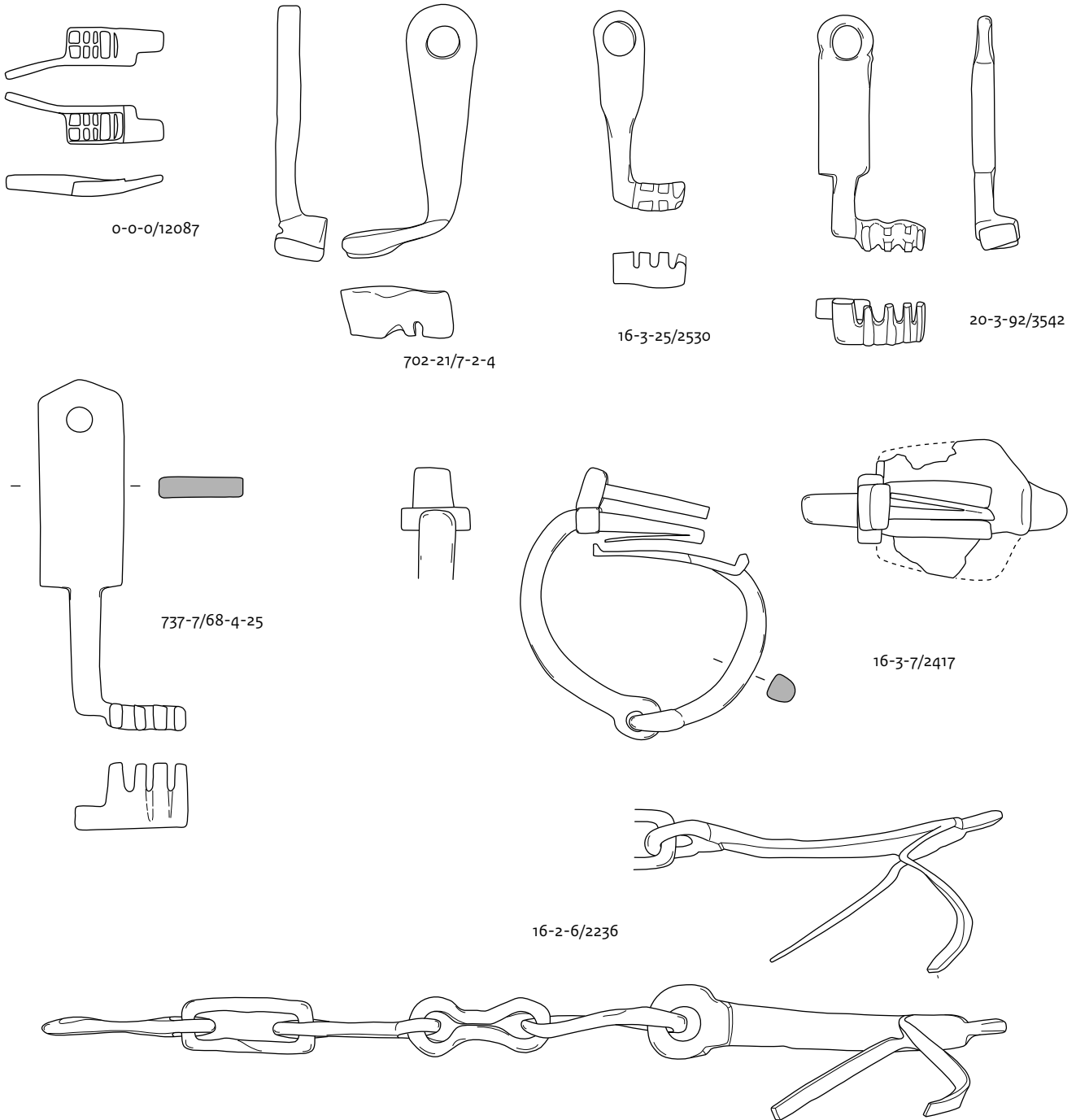


Fig. 20.26 Voerendaal-Ten Hove. Iron cuff/barbed spring bolt, iron keys and bronze bolt of pin tumbler locks. Scale 1:2. (source: F. Horbach & H.A. Hiddink)

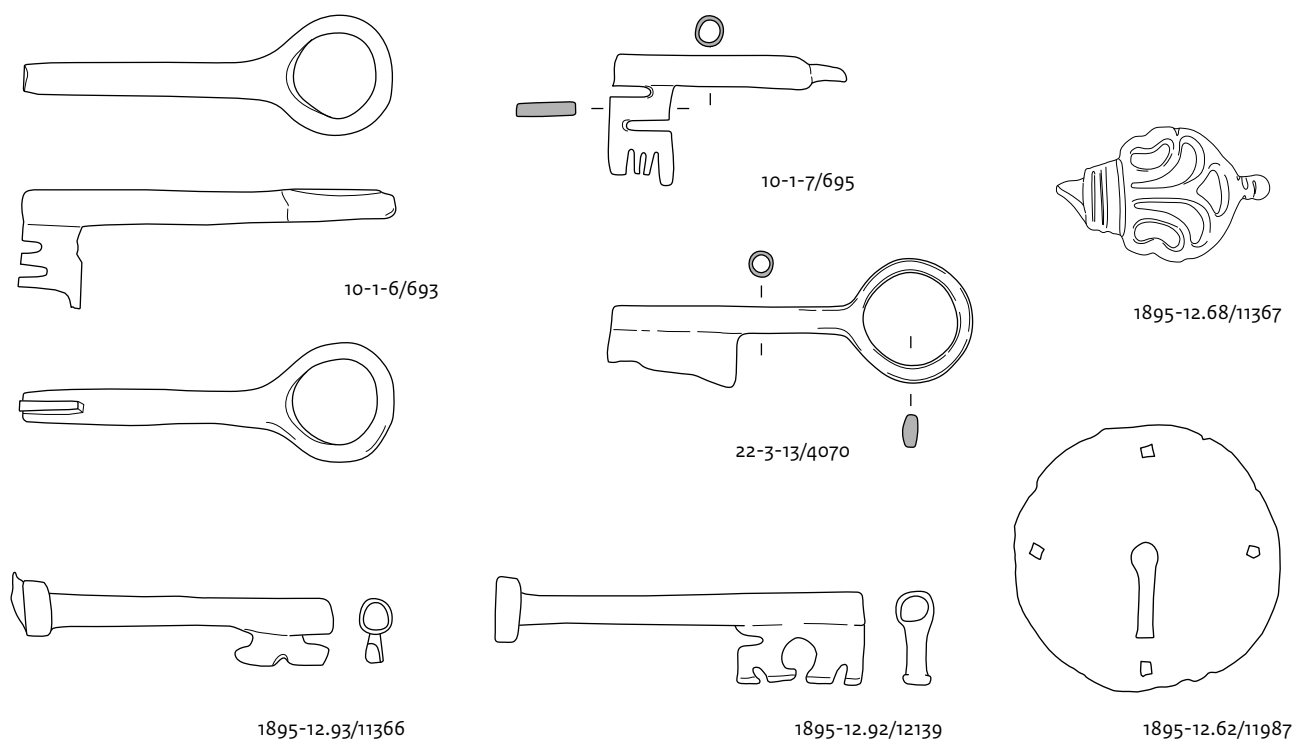


Fig. 20.27 Voerendaal-Ten Hove. Iron rotary keys, bronze bow of such a key, bronze lock-plate. Scale 1:2. (source: H.A. Hiddink & F. Horbach)

few simple pins were also in use from the Iron Age onwards,<sup>1864</sup> and continued in the Early Roman period, as is clear from finds in, for instance, Kalkriese.<sup>1865</sup> Harnecker mentions that they were used well into the second century AD, albeit in decreasing numbers, which is also clear from the context dates at Vindolanda, although residuality may play a role here.<sup>1866</sup> As a result, we maintain a date of the first century BC to the end of the second century AD for the simpler lift-slide key. Its direct successor is a lift-slide key with more complex patterns of holes in the lock bolt, neatly ordered in a block. These locks and matching key bits can be dated from the middle of the first century to the end of the third century AD.<sup>1867</sup>

A third type of lock attested at Voerendaal is that with one or more barbed springs, used for padlocks and shackles (Fig. 20.24C).<sup>1868</sup> This is also a technology that was introduced in the Late La Tène period and continued nearly unchanged in the Roman period and indeed for much longer. ‘Bolt’ 16-2-6/2236, directly attached to a chain, had two springs next to each other (Fig. 20.26). Shackle 16-3-7/2417 had three springs: two next

to each other and a third above them. A key with a rectangular plate at the end, for our locks with two and three separate holes, was pushed over the springs to compress them. The broad plate of 16-3-7 was the base of a box-shaped lock, to which a long chain was linked. Complete examples of this type of shackle are known, among others, from the army base of Künzing.<sup>1869</sup> The lock of 16-2-6/2236 probably had a tubular shape.<sup>1870</sup>

The fourth type of lock is represented by six keys and a lock plate (Fig. 20.24D; 20.27). The keys are rotary keys like those still used today, albeit in a more archaic form than the keys used for modern cylindrical locks.<sup>1871</sup> Turning keys were used in doors and padlocks.<sup>1872</sup> When turned, the key went into a fitting hole in the bolt and then lifted a spring. The examples from Voerendaal all have a rectangular bit, with either a simple or more intricate shape. Two keys are complete, with a stem and a bow, which is ring-shaped. The bow of the other three is lost and could have been made from another material, probably bronze. One such bow was found at Voerendaal, in a kind of palmette

<sup>1864</sup> Jacobi 1974, 153ff., pl. 46, no. 744-750.

<sup>1865</sup> Harnecker 1997, 20-22, pl. 45-47.

<sup>1866</sup> Birley 1997, 10.

<sup>1867</sup> Manning 1985, 92-93, fig. 25.4-7, pl. 41, O39-55 (slide keys).

<sup>1868</sup> Manning 1985, 95-97, fig. 25.10-12, pl. 43, O67-74 (barb spring locks).

<sup>1869</sup> Künzl 1993e, 376, fig. 10; Schiavone 2011, 235, fig. 10.

<sup>1870</sup> Like that on a pair of shackles from Hoogeloon-Kerkackers, although the barbed springs there were not attached to a chain (Hiddink & Zondervan 2014, 531-533, fig. 23.12-13).

<sup>1871</sup> Manning 1985, 94-95, fig. 25, 8-9, pl. 41-42, O57-64 (lever locks/keys).

<sup>1872</sup> For the anatomy of cylindrical padlocks, see Künzl 1993e, 366-367, fig. 1-4.



- <sup>1873</sup> For some examples, see Faust 2004-2005, 186-189; 193-195 (Trier); Aarts & Heeren 2007, 85, fig. 17 (Tiel-Passewaaij); Müller 2011, 29, fig. 9 (Xanten).
- <sup>1874</sup> Pirling & Siepen 2006, 431; www.artefacts.mom.fr: CLE-4051 (consulted 1-3-2020).
- <sup>1875</sup> Jacobi 1897, 477, fig. 76
- <sup>1876</sup> Brulet & Demanet 1993, 115-118 (context), 143-144, key no. 37.
- <sup>1877</sup> Pirling & Siepen 2006, 431 (keys) and 471-493 (date list); it concerns grave 3475 and 5026.
- <sup>1878</sup> Pirling & Siepen 2006, 431 (keys) and 471-493 (date list).
- <sup>1879</sup> Böhme 1974, pl. 75 and 146.
- <sup>1880</sup> Gottschalk 2007, 289 (grave 27).
- <sup>1881</sup> Heidinga & Offenbergh 1992, 107.
- <sup>1882</sup> Find 79-0-0/10417 is complete, but was found bent into a triangular shape, probably caused by modern agricultural equipment.
- <sup>1883</sup> Willems & Kooistra 1986, 146.
- <sup>1884</sup> For example, a shovel with tongues and iron ingots from Ochtrup (Wilhelmi 1981, fig. 5) or finds from Manching (Jacobi 1974, 87-91, pl. 30).
- <sup>1885</sup> See for instance Bogaers & Haalebos 1988, 34-35, fig. 7 (Nijmegen-*canabae*, end first century (?)); Hiddink & Zondervan 2014, 529, fig. 23.10, no. 46-508 (probably third century; Hoogeloon-Kerkakkers); Habets 1878b, 346-347, pl. 1 (Groot Haasdal-Op den Billich); Koster 2004, 491, no. 788 (only small part of handle twisted; Breda); Rech 1980, 482-483, no. 9, fig. 12, no. 1 (HA 77/264); Schnetz 2013, fig. 28, no. 11 (Regensburg-Harting). A Roman example with a twisted handle but a leaf-shaped blade: Haalebos

shape. These bows could have even more elaborate designs, such as heads of animals, humans/gods and even an asparagus stem.<sup>1873</sup>

The palmette-shaped handles are dated from the very late second century at the earliest, but generally have a third- or early fourth-century date.<sup>1874</sup> The ring-shaped handles are even younger and were probably not introduced before the mid-third century. Many contexts are available for dating this key type to the Late Roman period. Only four probably belong to the Middle Roman period: *castellum* Saalburg with a

date between AD 90 and 300;<sup>1875</sup> the *vicus* Liberchies, where a key is dated by its context after AD 238;<sup>1876</sup> plus two keys from Krefeld-Gellep dated to the third century AD.<sup>1877</sup> Late Roman contexts are Krefeld-Gellep grave 533 – dated after AD 293 – and graves 1020, 1470, 3982, 6352 – dated to the fourth century.<sup>1878</sup> Other instances are burials at Villers-sous-Erquerey and Köln-Höfergasse,<sup>1879</sup> Hürth-Hermühlheim,<sup>1880</sup> as well as the settlement of Gennepe-Stamelberg.<sup>1881</sup>

### 20.3.15 Fire-making, hearth and cooking equipment

#### Fire striker

The interpretation of this object is inspired by the associations of three pieces of flint found nearby. 382-10/11-1-30/11466 iron pin with loop, length 113 mm, pin 5 mm thick (Fig. 20.28).

#### Hearth shovels

Two intact 'hearth shovels' were found at Ten Hove.<sup>1882</sup> The rod/handle of the nineteenth-century find is plain, undecorated, but that of the other is twisted. In one of the preliminary reports on the excavations, the latter was dated to around the beginning of the Christian era,<sup>1883</sup> possibly because this kind of shovel was (already) very common in the Late Iron Age.<sup>1884</sup> It is more likely, however, that the shovel from Voerendaal dates to the Roman period.<sup>1885</sup> An explanation for the twisting is that it was suitable for implements used with heat. Shovels with undecorated handles were also produced in the Roman period.<sup>1886</sup> Item 79-0-0 is drawn as if straight, but in reality it is now bent twice. It is not certain if this damage dates back to the Roman period because it could also be the result of (sub) recent agricultural activities. Find 22-2-1/4015 is probably also part of a hearth shovel; it seems less likely that is part of an auger.

- |                      |  |
|----------------------|--|
| --/22-2-1/4015       | blade, probably of a hearth shovel, length > 13 cm (Fig. 20.28). |
| --/79-0-0/10417      | complete shovel, length 89 cm (Fig. 20.28).                      |
| --/1895-12.110/11373 | complete shovel, length 68 cm (Fig. 20.28).                      |

#### Meat fork

At first sight, this object perhaps appears to be a very large key, but it is a meat fork or hook (in continental archaeology known as a *fourchette* or *Fleischgabel*). This implement, sometimes shaped like a ladle at the other end, was used to handle pieces of meat without causing too much damage.<sup>1887</sup> It is typical of the (Late) Iron Age. They are known from sites such as the *oppidum* at Manching and the *Viereckschanze* at Holzhausen and large depositions of iron objects; together with cauldrons, gridirons and roasting spits, these implements belonged to the culture of feasting and eating.<sup>1888</sup> Similar flesh-hooks are sometimes dated without hesitation to the Roman period,<sup>1889</sup> but Manning already noted that they appear to be quite rare then, and that the dating should be based on contextual information.<sup>1890</sup> Trench 70, where our hook was found, is at the very western edge of the excavation, with a number of granaries (201-205) in the immediate vicinity. Therefore, an Iron Age date is quite probable.

- |                 |   |
|-----------------|---|
| --/70-5-2/12041 | length 69 cm, points 38-40 mm (Fig. 20.28). |
|-----------------|---|

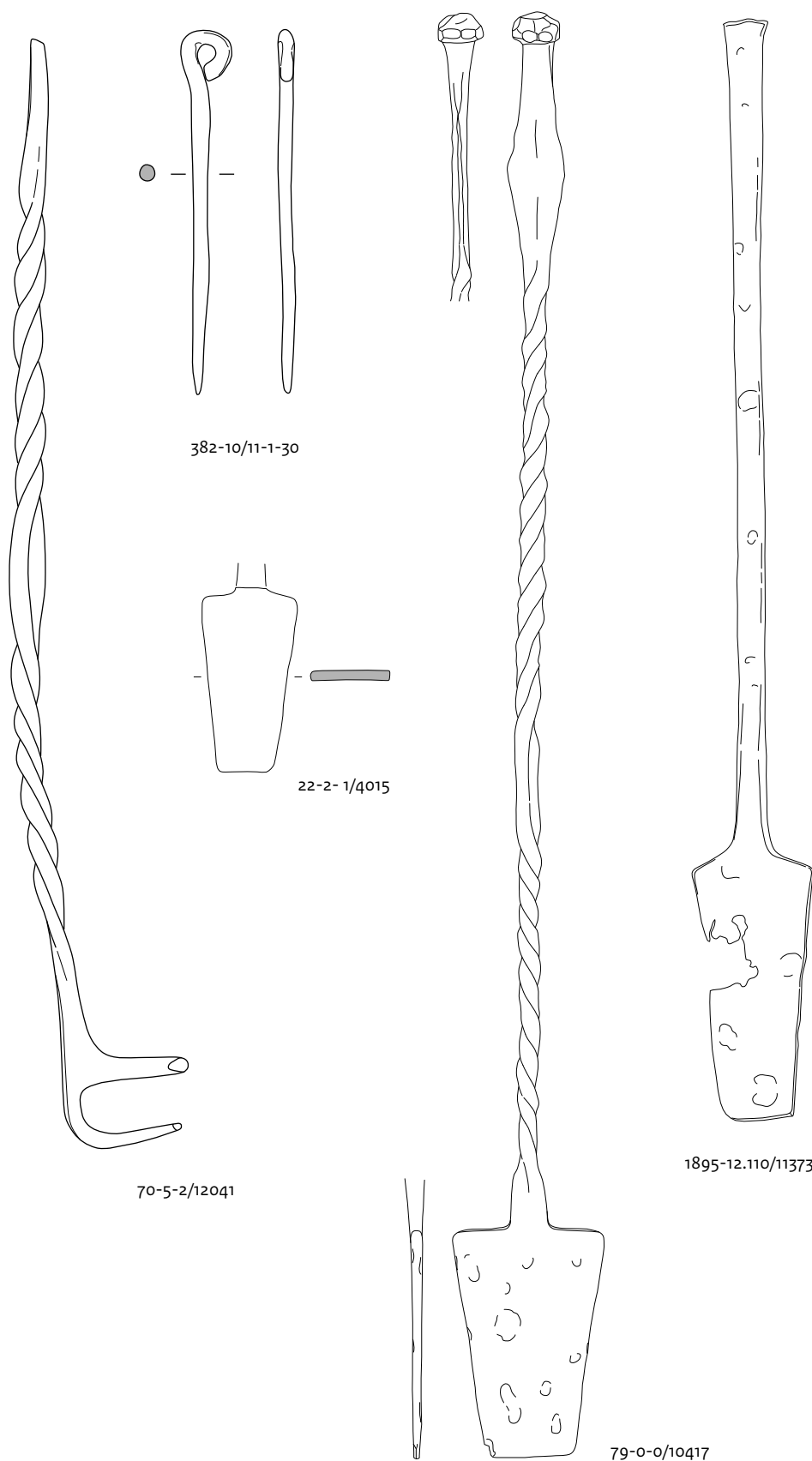


Fig. 20.28 Voerendaal-Ten Hove. Iron fire striker, meat fork and hearth shovels. Scale 1:2, shovels 1:4. (source: F. Horbach & H.A. Hiddink)

1995, 56, fig. 32  
(Nijmegen-Hunerberg).

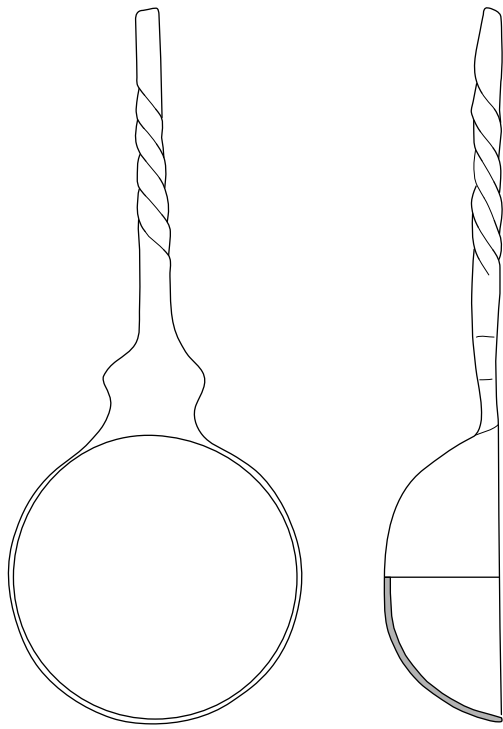
<sup>1886</sup> E.g. Künzl 1993/1c, 354,  
1993d, 136, pl. 639, H 164-165  
(Neupotz).

<sup>1887</sup> It is still in use today as a  
thin rod with one hook, for  
barbecues.

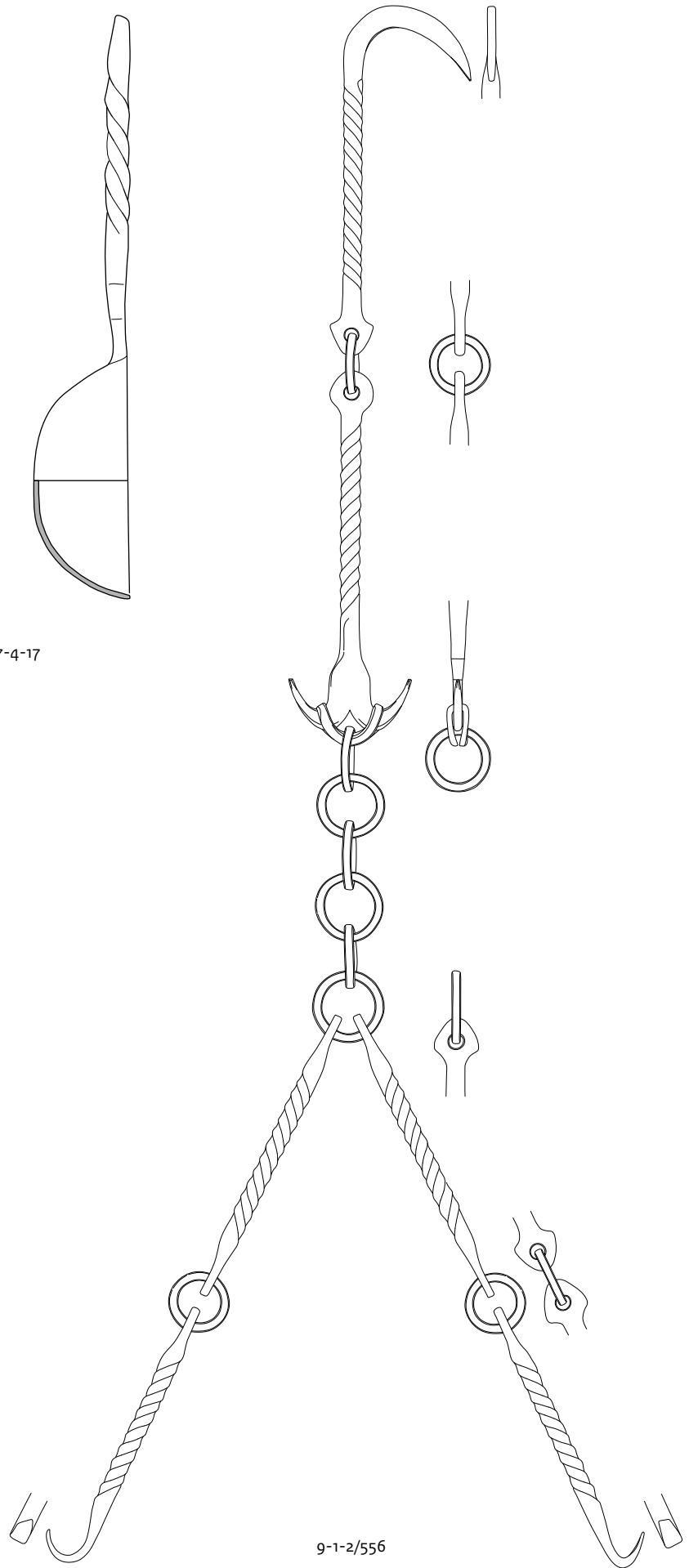
<sup>1888</sup> Metzler-Zens 1991, 143-145,  
fig. 101. Examples are present  
e.g. in the deposit at Larina  
(F, Isère) from LT B2-D2  
(Perrin 1990; Bataille 2006,  
249) and Vienne from LT D1  
(Chapotat 1970), in Iron Age  
deposits in the Saône  
(Bonnamour 1983; 2003;  
Dumont *et al.* 2006) and in  
the deposit of Gründberg  
(Austria) from LT D1 (Urban  
& Ruprechtberger 2003;  
Bataille 2006, 250-251). For  
the Manching finds, see  
Jacobi 1974, 126-129, pl. 32  
and the fork from  
Holzhausen (SW-well), see  
Schwarz 1975, fig. 14.5.

<sup>1889</sup> E.g. at [http://www.  
antike-tischkultur.de/  
kochtechnikaccessoiresfleisc  
hgabelquer.html](http://www.antike-tischkultur.de/kochtechnikaccessoiresfleischgabelquer.html) (consulted  
15-1-2020).

<sup>1890</sup> Manning 1985, 105-106, pl.  
51, P35-37. Although an  
example from an old course  
of the Rhine near Xanten was  
found in association with a  
large quantity of Roman  
material, there are also some  
Iron Age finds (Gaitzsch  
1993, 266, pl. 70, Ger. 24).



728-6/27-4-17



9-1-2/556

Fig. 20.29 Voerendaal-Ten Hove. Iron ladle and hearth chain. Ladle scale 1:2, hearth chain 1:6. (source: F. Horbach & H.A. Hiddink)

### Cauldron chain/hook

This assembly of hooks, rings and chain was found complete, although the pieces were somewhat corroded together. The largest hook at the top was connected to a tripod or a ring/bar over a fireplace and a cauldron was hung from the two smaller hooks. The chain and hooks in the middle could be used to adjust the cauldron's height over the fire. Cauldron chains like this were already made in the Middle Iron Age.<sup>1891</sup>

Roman examples have different details, for instance the number of links, but are in essence very much the same.<sup>1892</sup>

--/9-1-2/556                      total length 1.55 m (Fig. 20.29).

### Ladle

Ladles of this kind can be integrated with meat hooks. Bowls with a diameter of 8-9 cm belong to the smaller types of ladles, with handles up to 40 cm long.<sup>1893</sup> Much larger ladles were also used in the Roman period.<sup>1894</sup>

728-6/27-4-17/5379              length at least 19 cm, bowl diameter c. 7.5 cm, depth c. 3 cm  
(bowl reconstructed on the basis of two small fragments; Fig. 20.29).

### 20.3.16 Water-pipe collars

These objects are iron collars or parts thereof with at least one ridge on the outside and sometimes another on the inside (Table 20.7; Fig. 20.30-32). They were hammered into the face at the end of a wooden water pipe, the ridge preventing it from penetrating too far; then the next pipe was put in place. The logs used were cut into sections 1.5-4.5 m long,<sup>1895</sup> sometimes split into several triangular pieces,<sup>1896</sup> and then drilled through with a large auger with a spoon bit. Oak and alder seem to be the preferred material to make water pipes, but pine wood was also used. Our collar 22-1-61/2972 had pieces of either *Picea*, *Larix* or *Abies alba* adhered to it, in any case a (coniferous) softwood.<sup>1897</sup>

Some 25 possible collars were mentioned in the original database (OD). Some were lost, were no longer recognizable or are probably just flat pieces of iron (Table \*20.8). A few 'new' pieces have just been identified, also because the OD listed two or three separate pieces as one. Only two collars were drawn in the years following the excavations (one as a possible sword!) and were treated to preserve them, together with a third. Most other pieces are

heavily corroded and have disintegrated into small fragments. Sometimes, only the fractured faces showed that they were indeed parts of collars; in two cases only the impressions of wood in the corrosion points to a collar.

At present 30 collars are identified (Table 20.7). All were found between 1984 and 1987, except for one example drawn for an annual RMO report. Five are only identified from X-rays, making it impossible to take exact measurements and determine the position of the central rib or ribs. The diameter of five rings is about 12 cm (11-13 cm); one is smaller (9-9.5 cm) and two larger (15-16 cm; Table 20.7). The average width of the rings is 29 mm, with 21 mm as the lowest value and 37-43 mm the highest. The number found is quite large compared to most other (villa) sites.<sup>1898</sup>

Find number 94-0-1/10470 is not a collar but a kind of flange (Fig. 20.32). The fragmentation and adhering wood (preserved due to corroded iron) prevents the taking of accurate measurements, but the ring seems to be some 4 cm high with a diameter of about 20 cm. It is not certain that this flange was used in a water supply, but it is possible.

<sup>1891</sup> Jacobi 1974, 111-115, pl. 34.

<sup>1892</sup> Koethe & Kimmig 1937; Haffner 1984, 299-307 (Wincheringen); Künzl 1993a, 238; 1993b, 51-54, pl. 274-286, E64-96 (Neupotz); 1993c, 355, fig. 3 (three pieces; Annweiler (RP)); See also Piepers 1981, 169, no. 13; pl. 4.2 (Lürken); Hiddink 2016b, 36-37, fig. 28 (single hook; Oerle-Zuid).

<sup>1893</sup> Künzl 1993a, 242; 1993b, 60, pl. 353, E136-140 (type NE 25); Manning 1985, 104-105, pl. 50, P34; Massart & Cahen-Delhaye 1994, 52, fig. 46, no. 12 (Saint-Mard); Cüppers & Neyses 1971, 194, no. 3, fig. 28, no. 1 (Newel); Hiddink 2016b, 36-37, no. 231 (Oerle-Zuid).

<sup>1894</sup> Neupotz type NE 26.

<sup>1895</sup> Cf. section 10.5.1.

<sup>1896</sup> For some examples, see Neyses 1994, fig. 41.

<sup>1897</sup> Identification by Laura Kooistra.

<sup>1898</sup> Manning 1985, 128, pl. 59, R19 (diam. 12.1 cm; London-New Bridge Street); Stead 1976, 234, fig. 128, no. 237 (Winterton; min. 16 cm); Philp *et al.* 1991, 284-284 (Keston, 65-77 mm); Metzler & Zimmer 1975, fig. 25, no. 6-7 (Mamer; c. 11 cm); 1981, 186, fig. 149, no. 51-53 (Echternach, diam. c. 9 cm); Massart & Cahen-Delhaye 1994, 52, fig. 47, no. 24 (Saint-Mard; diam. c. 10 cm); Maisant 1970, 61, no. 58, fig. 6, no. 21 (Lebach, diam. 13.5 cm); 1990, 73, no. 3-4, pl. 94, 4-5 (Altforweiler, diam. 11.5 and 9 cm); Deru 2000, fig. 111 (Bliesbruck); Weisgerber 1969, 127, fig. 3, no. 8 (Furschweiler, diam. 10.7 cm); Hagendorn 1999, pl. 12, 13, 16, 20, 42, 57, 65 (Großsachsen, at least 10 examples, two of 10 cm); Massart/Cahen-Delhaye 1994, 52, fig. 47, no. 24 (Saint-Mard; diam. c. 10 cm); Mondy & Lefebure 2018, 314-316, fig. 10 (Contil,

**Table 20.7. Voerendaal-Ten Hove. Summary of the water-pipe collars;**

Item no.	Findnumber	Id	Diam. (cm)	Width (mm)	Outer ridge	Inner ridge	Wood
	1895-12.119	13007	?	?	X	x	-
	7-1-40	290	16	28	X	-	-
317-14	13-2-32	1460	9-9.5	27	X	-	-
	13-2-33	1468	*	*	*	*	*
	16-0-0	2698	-	28	X	X	X
	16-4-6	2562	*	*	*	*	*
	20-1-3	2887	12	36	X	X	X
	20-1-3	12158	13	32	X	-	-
	20-1-61	2972	15	28	X	-	X
514-17	20-2-20	3316	*	*	*	*	*
719-2	20-3-32	3431	-	27	X	-	-
	22-2-12	4041	-	26	X	-	-
	22-3-26	4108	-	43	X	-	-
	22-3-26	12092	-	30	X	-	-
	23-2-2	4364	-	24	X	-	-
	27-1-18	4852	12-13	30	X	X	-
	27-3-16	5242	-	30	X	-	-
	27-3-17	5255	-	28	X	-	-
	89-1-1	8131	-	-	-	-	X
	89-1-1	12105	-	28	X	x	-
	89-1-1	12106	-	26	X	-	-
	94-3-4	10502	*	*	*	*	*
	95-2-9	11016	12	37	X	-	-
744-5	100-1-10	8577	-	32	X	-	-
	106-2-12	9332	*	*	*	*	*
785-1	106-3-15	9340	-	28	X	-	-
	110-1-1	10080	-	28	X	-	-
319-16	110-2-1	10082	-	30	X	-	-
	110-2-3	10085	11-12	21	X	-	-
	111-1-2	10090	-	-	-	-	X

10 cm); Hoss & Van der Chijs 2005, 223 (Kerkrade-Holzkuil, diam. 10 cm); Hiddink & Zondervan 2014, 542-544, fig. 23.18 (Hoogeloon; 10-11 cm); Driessen 2017, fig. 8.13 (Maasbracht; c. 11.5 mm); only one fragment of a possible example at Bocholtz-Vlengendaal (Goossens 1916, pl. 4, no 22 (poor photo)).

X present; x possibly present; \* only identified on X-rays.

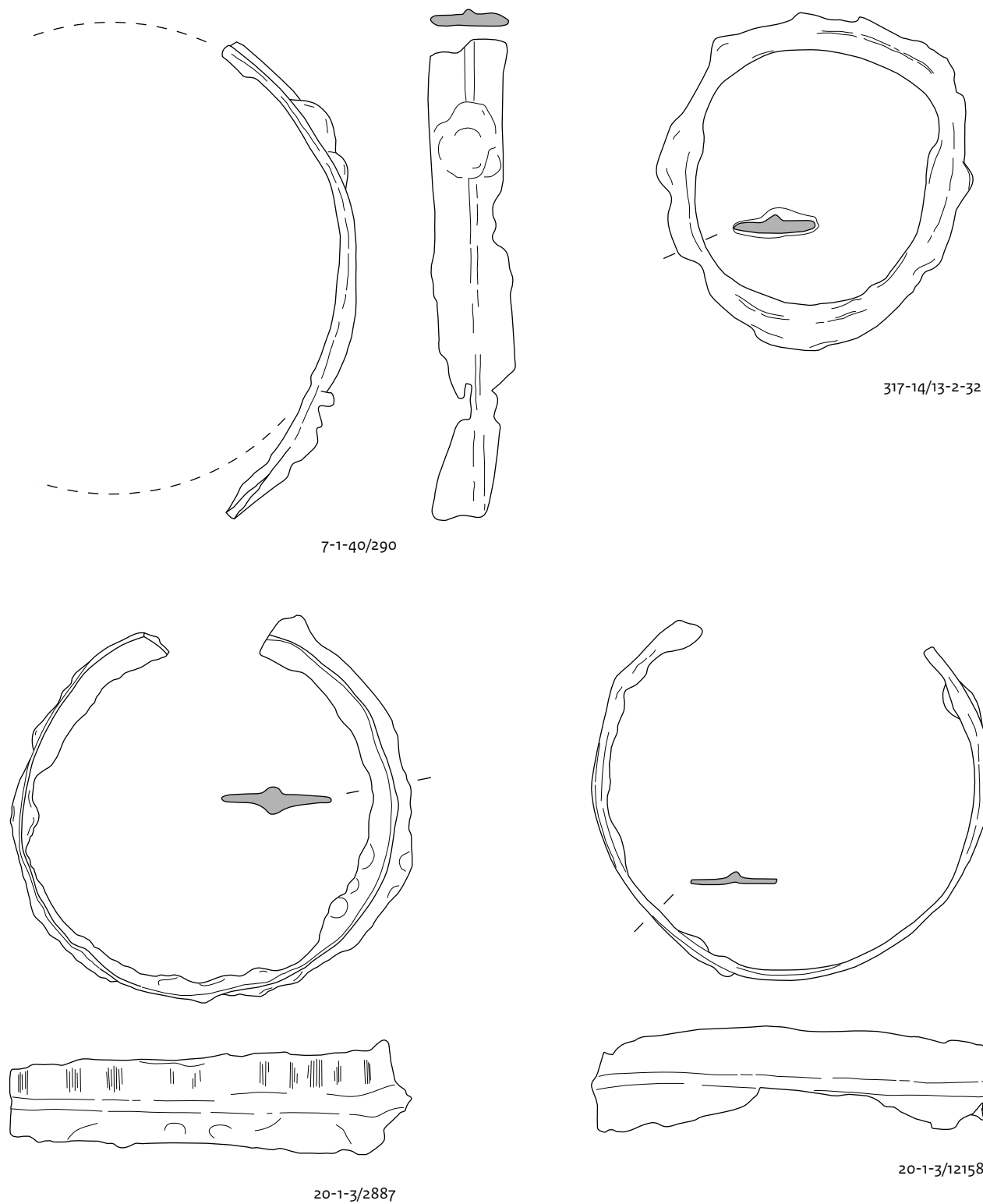


Fig. 20.30 Voerendaal-Ten Hove. Iron water-pipe collars. Scale 1:2. (source: H.A. Hiddink & F. Horbach)

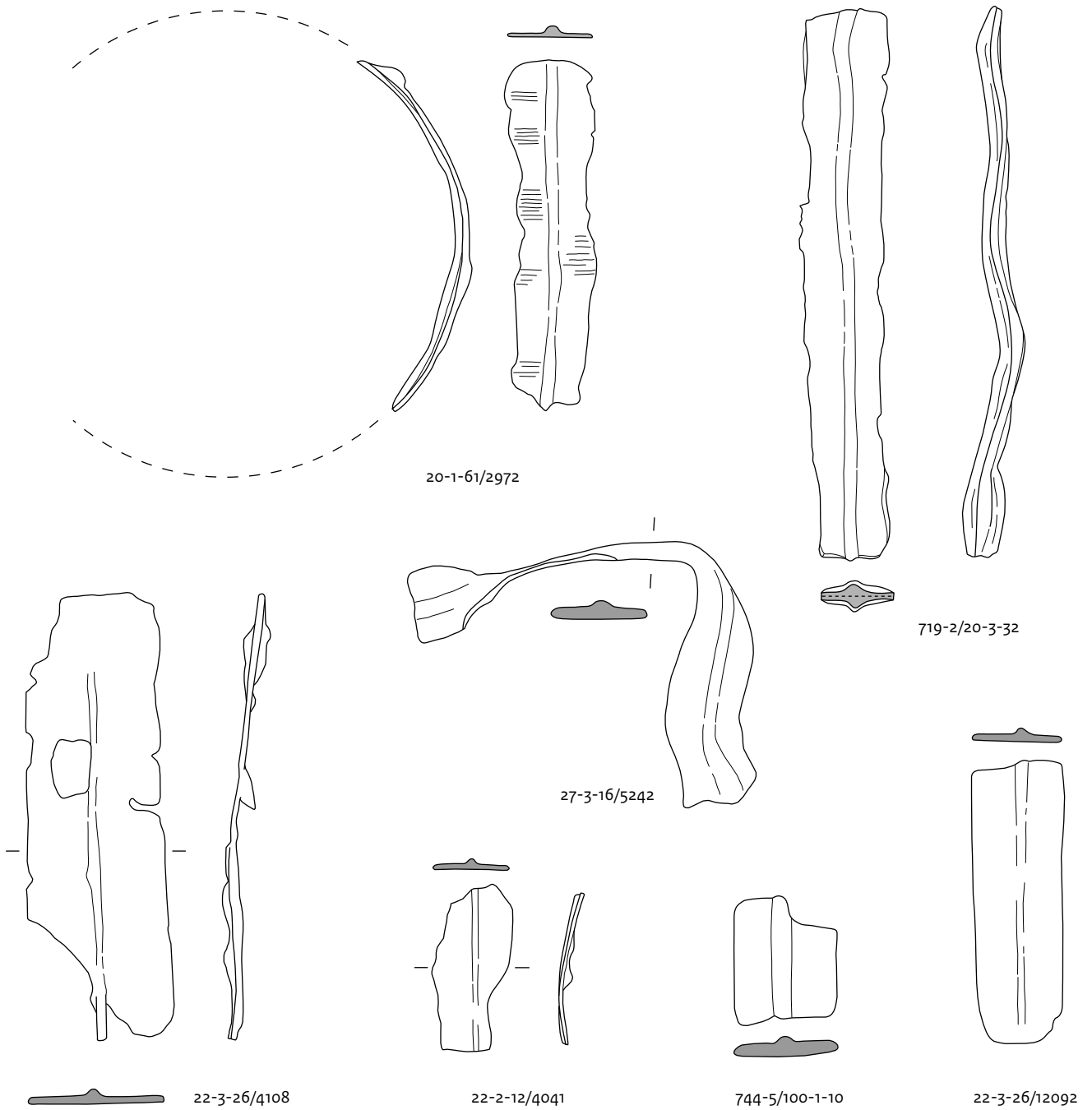
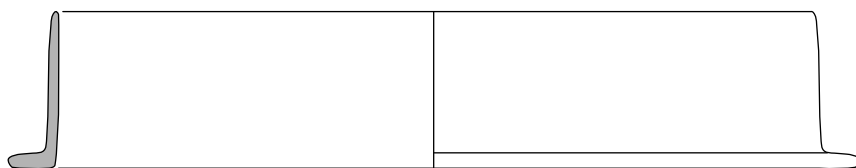
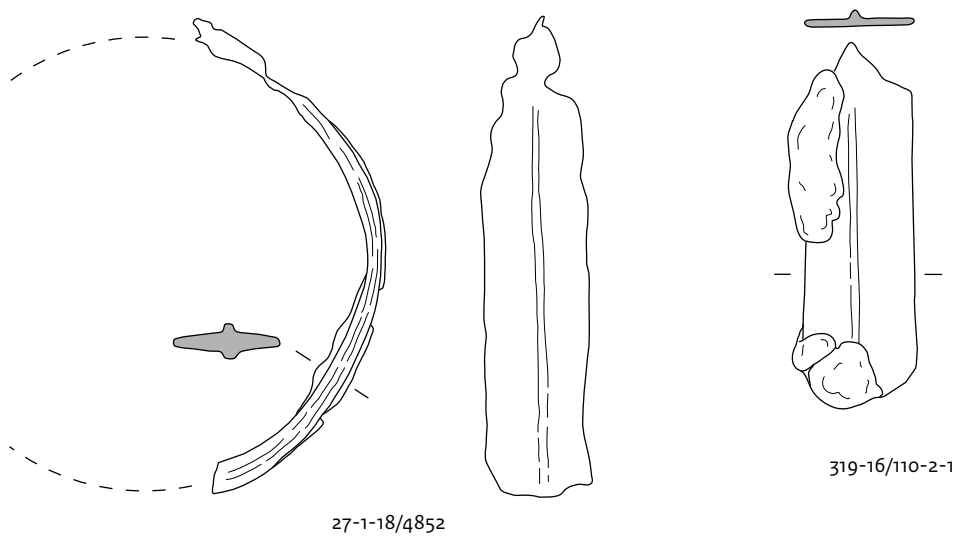


Fig. 20.31 Voerendaal-Ten Hove. Iron water-pipe collars, cont. Scale 1:2. (source: H.A. Hiddink & F. Horbach)





94-0-1/10470

Fig. 20.32 Voerendaal-Ten Hove. Iron water-pipe collars, cont. Scale 1:2.

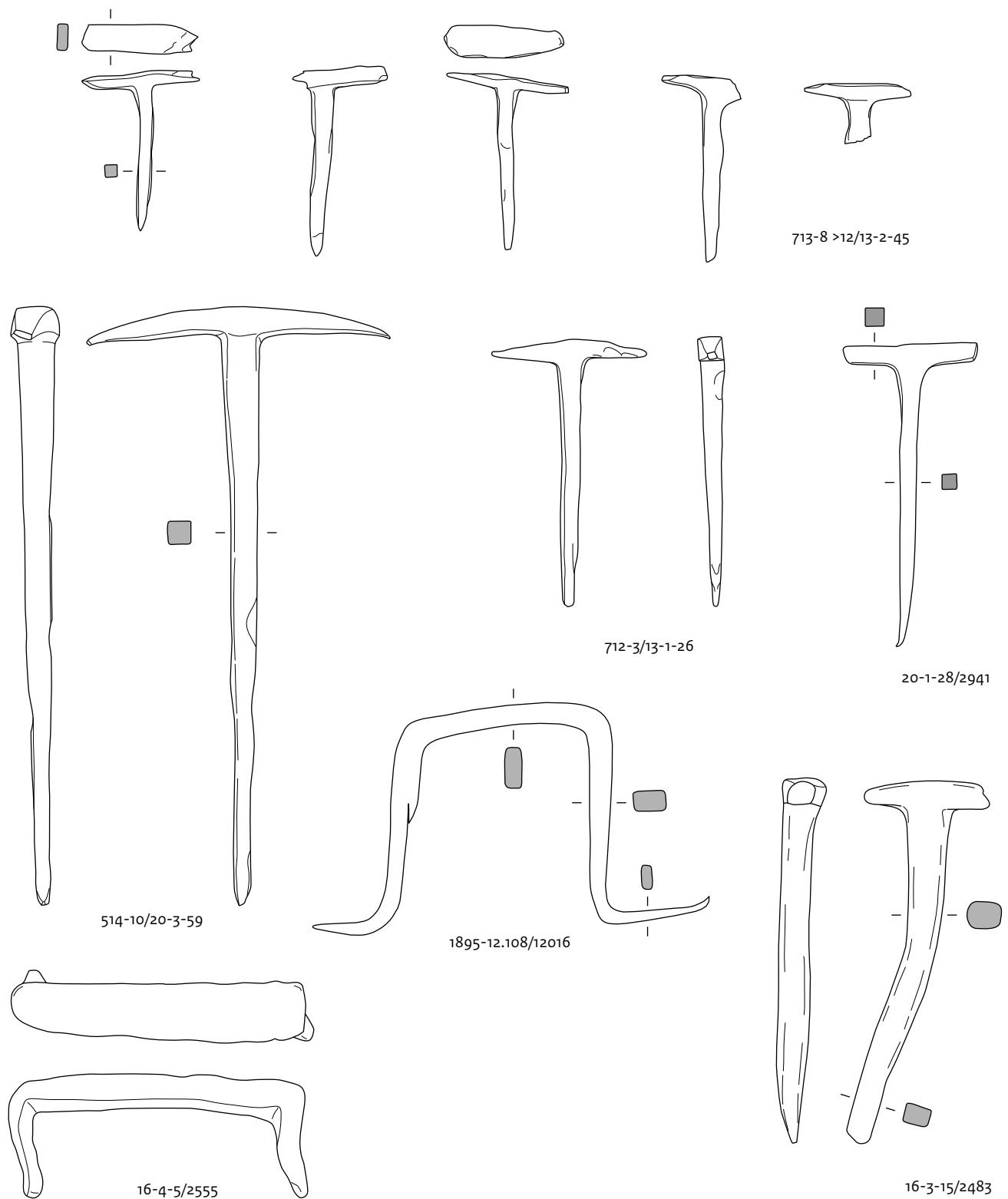


Fig. 20.33 Voerendaal-Ten Hove. Iron T-clamps and joiner's dogs. Scale 1:2. (source: F. Horbach & H.A. Hiddink)

<sup>1899</sup> Compare Manning 1985, 132, pl. 62, R70-72; Piepers 1981, 168, no. 6, pl. 3, 6 (Lürken, described as key); Metzler & Zimmer 1981, fig. 148, no. 33 (Echternach); Haalebos 1977, 234, fig. 24, no. 157

### 20.3.17 Structural fittings

#### T-clamps

T-shaped clamps are common finds on Roman-period sites. If the tips of the head point downwards (and the tip is bent), creating an anchor shape, the clamp was used to join timbers.<sup>1899</sup> Examples with a straight head/bar were certainly used – sometimes combined with spacers – to attach wall tiles or *tubuli*, but they were undoubtedly used in many other ways as well.<sup>1900</sup>

- 514-10/20-3-59/12080 length 206 mm (Fig. 20.33).
- 712-3/13-1-26/1363 length 93 mm (Fig. 20.33).
- 713-8>12/13-2-45/12070 five clamps, 54-64 mm long (Fig. 20.33).
- /20-1-28/2941 length 104 mm (Fig. 20.33).
- /16-3-15/2483 length 124 mm (Fig. 20.33).

#### Joiner's dogs/staples

These large staples in the form of a broadened U were used to join timbers.<sup>1901</sup> The one from Habets' excavation was driven through the wood and subsequently the points were flattened against it.

- /16-4-5/2555 101 mm wide, 40 mm high (Fig. 20.33).
- /1895-12.108/12016 76 mm wide and high (Fig. 20.33).

#### Hinges

Strap hinges like these, with slightly tapering arms and one strap on one arm and two on the other, were also used in all kinds of furniture and constructions. They were made in both bronze and iron, like the examples from Voerendaal.<sup>1902</sup>

- /7-0-0/12064 length 118 mm, width 26 mm; two nail holes visible (Fig. 20.34).
- /1895-12.80/12012 length 99 mm, width 21 mm; two complete nails and parts of two others (Fig. 20.34).

#### Rings with loop-headed spikes

Rings with spikes had a whole range of possible functions: as a simple handle on furniture (including chests) or hatches and window shutters, as a device to fasten animals, on carts, etc.<sup>1903</sup>

- /1895-12.86/12011 ring diameter 46-48 mm, spike 72 mm long (Fig. 20.34).
- /10-2-18/12081 ring diameter 58-59 mm, double spike 69 mm long (Fig. 20.34).

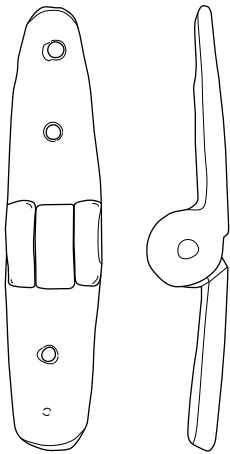
### 20.3.18 Miscellaneous, unidentified objects

Figure 20.34 and 20.35 show a number of objects as a small selection of the many iron finds that are not identifiable. Some of the illustrated objects are reminiscent of wagon parts, although they could have served all kinds of functions. It concerns two bolts,<sup>1904</sup> a large ring (a kind of buffer ring?),<sup>1905</sup> a smaller ring, strip 744-6 and bent strip 1895-12.94 (fork fitting, part of suspension?).<sup>1906</sup> The last two objects, as well as the others in the second figure, could also be structural fittings in buildings or other constructions.<sup>1907</sup> Item 1895-12.95/11371 is similar to a somewhat more elaborate example from Bocholtz-Vlengendaal.<sup>1908</sup> The beautiful piece 1932/11.17 appears to be some kind of knife, with a handle ending in a loop. However, the leaf-shaped 'blade' is blunt and the object was probably a decorative fitting.

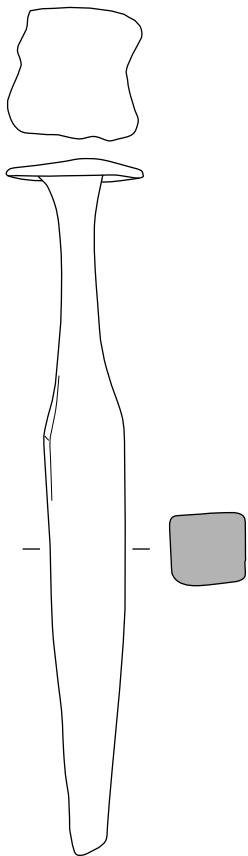
- /27-1-17/4849 bolt, 190 mm long, diameter 18 mm (Fig. 20.34).
- /1895-12.106/12015 bolt, 184 mm long, max. width 20 mm, slender neck (Fig. 20.34).
- /1895-12.83/12137 ring, diam. 117 mm, out of flat strip 10 mm wide, one small nail (Fig. 20.34).
- /1895-12.84/12138 ring, diam. 59-62 mm, 8 mm wide, pointed ends (Fig. 20.34).
- 744-6/100-1-10/12057 strip 264 mm long, 16-28 mm wide, central hole, bent ends (Fig. 20.35).

(Zwammerdam); Hiddink 2016v, 62-63 (Oerle-Zuid).

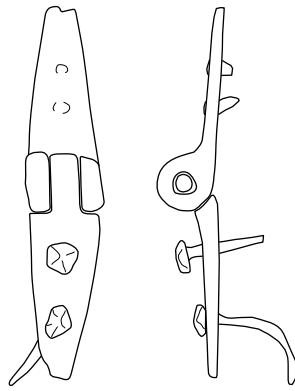
- <sup>1900</sup> Hiddink & Zondervan 2014, 546, fig. 23.20, no. 607-16 (Hoogeloon); Manning 1985, 131-132, pl. 62, R66-69; Fremersdorf 1933, 29, pl. 27, no. 3-4 (Köln-Müngersdorf); Metzler & Zimmer 1975, fig. 25, no. 1-3 (Mamer); 1981, 182-186, fig. 148, no. 34-37 (Echternach); Czysz 1974, 70, no. 1, pl. 4, no. 2 (München-Denning); Koch 1993, 78, pl. 15, no. 14, 16 (Treuchtlingen-Weinbergshof); Harb & Wullschleger 2010, 233, pl. 41, no. 756 (Langendorf).
- <sup>1901</sup> Hiddink & Zondervan 2014, 546, fig. 23.30, no. 302-1. Other examples e.g. Manning 1985, 131, pl. 61, R52; Vanvinckenroye 1988, 28, pl. 3, no. 17 (Broekom-Sassenbroekberg); Weisgerber 1969, 128, fig. 3, no. 13 (Furschweiler).
- <sup>1902</sup> Manning 1985, 127, fig. 31 (type 3), pl. 59, R13 (London-Greenway Loan; rare in Britain); Fremersdorf 1933, 45, pl. 36, no. 23/29 (Köln-Müngersdorf); Vanvinckenroye 1988, 28, pl. 3, no. 14 (Broekom-Sassenbroekberg); Piepers 1981, 170, pl. 2.2, no. 1-3; pl. 4, no. 7-8; Lenz 1999, 183, pl. 115, no. 1373A-C; 185, pl. 124, no. 1471A-B; 1472, 1473 (Lürken); 1999, 131, pl. 24, no. 306 (Aldenhoven-Langweiler); Maisant 1970, 60, no. 23, 25, fig. 6, no. 4, 7 (Lebach); Riha 2001, pl. 12-23 (Augst, bronze and iron); Harb & Wullschleger 2010, 233, pl. 40-41, no. 746-749 (Langendorf); Hiddink & Pulles 2014, 496, fig. 22.9, no. 3-55; Hiddink-Zondervan 2014, 536-537, fig. 23.15, no. 7-58, 45-47 (Hoogeloon-Kerkackers).
- <sup>1903</sup> Manning 1985, 124, 129-131, pl. 58, 59/61, R2, R27-46; Hiddink 2016b, 42-43 (Oerle-Zuid).
- <sup>1904</sup> Visy 1993, 279-282, pl. 431 (Neupotz). Similar to 1895-12.106: Habets 1895, pl. 9, no. 8 (Heer-Backerbosch).
- <sup>1905</sup> Visy 1993, pl. 424; Hiddink 2009, 88, fig. 8.8.
- <sup>1906</sup> Visy 1993, 287ff., fig. 9-11; Leifeld 2013, 86, fig. 8-9.
- <sup>1907</sup> The hook 7-1-40 is similar to Manning 1985, pl. 59, R23-25.



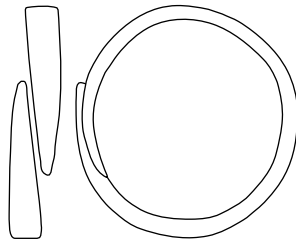
7-0-0/12064



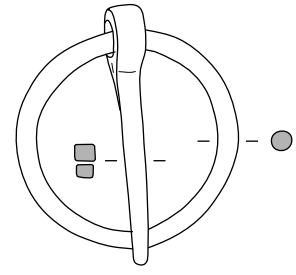
1895-12.106/12015



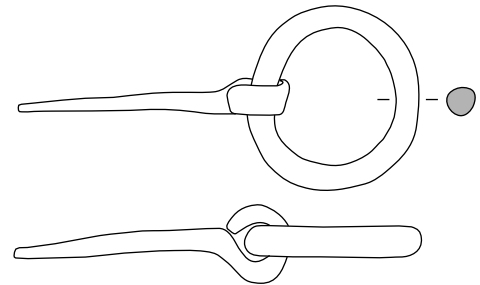
1895-12.80/12012



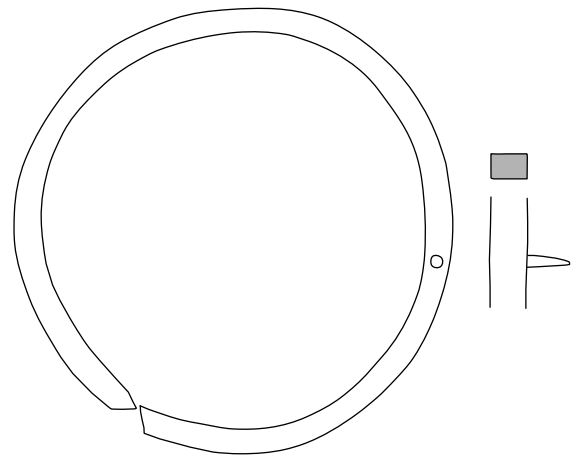
1895-12.84/12138



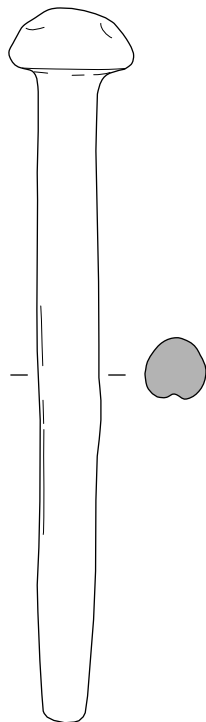
10-2-18/12081



1895-12.86/12011



1895-12.83/12137



27-1-17/4849

Fig. 20.34 Voerendaal-Ten Hove. Iron hinges, rings with loop-headed spikes, bolts. Scale 1:2. (source: H.A. Hiddink & F. Horbach)

--/1895-12.94/12000

fitting, 250 mm long, 140 high, two holes and spike for fastening (Fig. 20.35).

--/1932-11.17/12003

knife-shaped object, 180 mm long, the 'handle' has flattened sides, the 'blade' is leaf-shaped (Fig. 20.35).

<sup>1908</sup> Goossens 1916, pl. 4, no. 15.

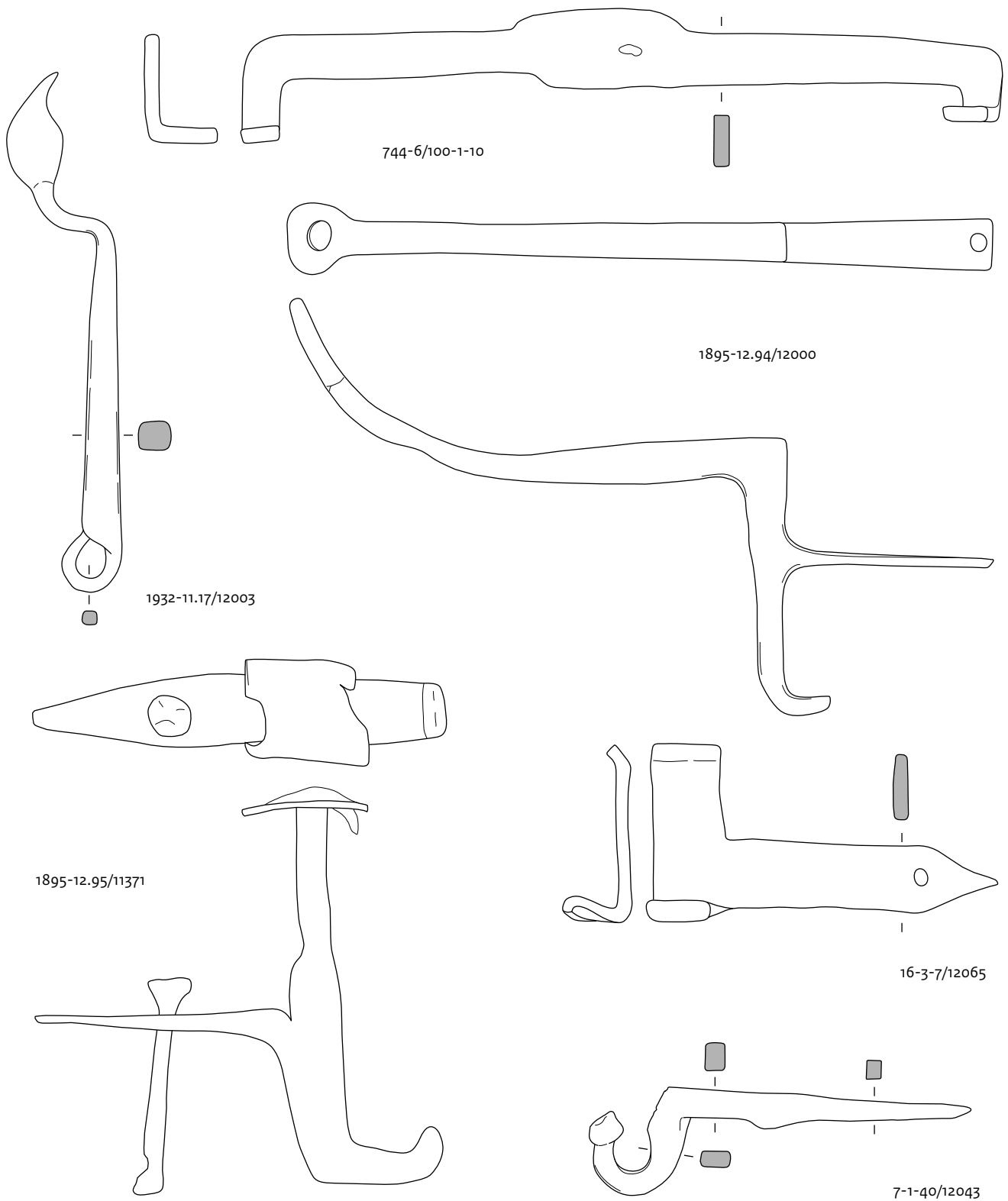


Fig. 20.35 Voerendaal-Ten Hove. Miscellaneous objects of iron, most probably structural fittings. Scale 1:2.

- /1895-12.95/11371 fitting, c. 140 x 140 mm, square head, other end hook, flattened part with hole and nail (Fig. 20.35).
- /16-3-7/12065 fitting, 120 mm long, strip 22-24 mm wide, one end pointed with nail hole, other end kind of flanged socket (Fig. 20.35).
- /7-1-40/12043 hook, 132 mm long, with knob at end of hook (Fig. 20.35).

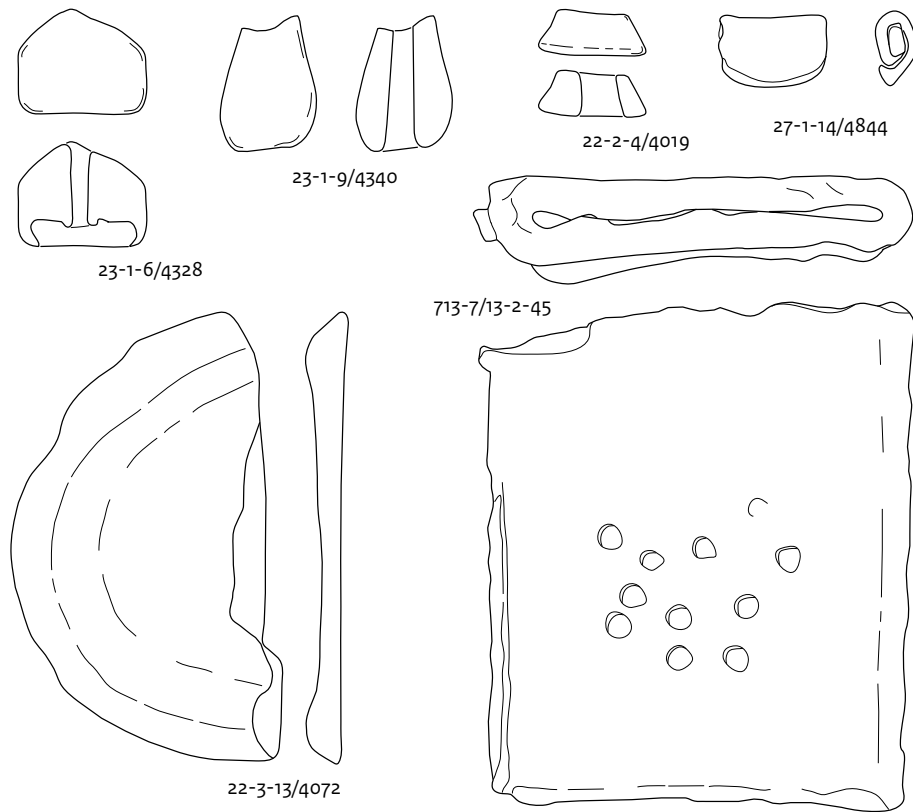


Fig. 20.36 Voerendaal-Ten Hove. Objects of lead. Scale 2:3. (source: F. Horbach & H.A. Hiddink)

## 20.4 Lead objects

Because the number of identifiable lead objects is small, we discuss all the lead in one section. In total, 97 objects weighing a total of nearly 11.8 kg were found. Although the weight suggests a considerable quantity, it is in fact rather small. For instance, the excavations at the villas of Hoogeloon-Kerkackers produced 271 fragments (20.5 kg) and those at Kerkrade-Holzkuil 321 (14.8 kg).<sup>1909</sup> The differences are due to post-depositional processes and different excavation methods, and are probably not very significant. Regarding the weight, a few finds more or less could make a big difference. Two pieces of water pipe at Hoogeloon (11.2 kg) weigh almost as much as all the lead from Voerendaal!

Apart from five pistol or musket balls (81 g), no sub-recent objects were identified; most others must be from the Roman period or Early Middle Ages. In the original database (OD) quite a large number of objects were classified as trimming (*afsnijdsel*), plugs/stoppers (*stopset*),<sup>1910</sup> melted objects (*smelt*), etc. On closer inspection, the classification of specific fragments appears to be quite arbitrary. Moreover, even the supposed traces of melting were often not evident. It was therefore decided that this or any other

classification was not very useful. Only a few objects are worthy of comment.

A fragment of a dolium (22-4-14/4143) and a vessel in coarse ware (409-65/68-3-6) show traces of repair using lead. Three objects are disc-shaped or cylindrical and have a hole in the centre (Fig. 20.36). The former are most probably spindle whorls and the latter could also have had another function. Lead spindle whorls from sites in the Netherlands are commonly dated from early to well into the Late Middle Ages.<sup>1911</sup> They appear to also have been present in the Roman period, however.<sup>1912</sup> As they were not found in dated contexts at Voerendaal, their age can range from Roman times to the Late Middle Ages. The little rolled piece of lead could be used in fishing or hunting (with a net),<sup>1913</sup> although another function is possible, for example as a seal.

Find number 22-3-13/4072 is a half disc with a bevelled edge. It may be part of a non-return valve (from a pump or the baths), with a hinge attached to the missing half; this is far from certain, however (Fig. 20.36).<sup>1914</sup> The last interesting object is a folded slab of 886 g with some round impressions, possibly a kind of ingot made on site by melting lead objects (713-7/13-2-45; Fig. 20.36).

<sup>1909</sup> Hiddink 2014, 557ff., table 24.1 (post-Roman objects excluded); Hoss & Van der Chijs 2005.

<sup>1910</sup> The characteristic plugs of lead, originated when iron clamps between blocks of stone were fixated with molten lead, are not present for instance (cf. Hiddink 2011, fig. 10.9).

<sup>1911</sup> For simple discs like those from Voerendaal, see e.g. Hiddink 2008, 190, fig. 13.4 (Deurne-Groot Bottelsche Akker, Early Medieval); Hakvoort 1998, 26, fig. 5, no. 48 (Someren-Hoge Akkers, twelfth century); Hendriksen 2004, 87, fig. 155 (Utrecht-Leidsche Rijn, twelfth century). More elaborately shaped examples from the end of the High Middle Ages or later: Arts 1992, 167, fig. 113, 4 (Eindhoven-Kasteel, seventeenth century); 1994, 234, fig. 176, no. 12-13 (Eindhoven, thirteenth century or later); Hiddink 2005a, 236-237, fig. 12.15 (Lieshout-Beekseweg, not from locations with Medieval habitation); Baart *et al.* 1977, 128-129, no. 104, 106 (Amsterdam, from end of fourteenth century onwards); Klomp 1999, 1059, no. 196 (Dordrecht, c. 1500); <http://collectie.hmr.rotterdam.nl/objecten> > loden spinklossen of spinstenen (consulted 6-1-2011; Rotterdam, after 1500).

<sup>1912</sup> See Brkojewitsch *et al.* 2017, 749, fig. 11, no. 8-16 (with references).

<sup>1913</sup> Brkojewitsch *et al.* 2017, 751, fig. 11, no. 17-23 (with references).

<sup>1914</sup> Small bronze valves in Haberey 1972, 118, fig. 85; Piepers 1978; our object is perhaps too light for pump valve (see Neyses 1972).

# 21 The Iron Age handmade pottery

Diederick Habermehl and Julie Van Kerckhove

## 21.1 Introduction

This chapter describes, analyses and discusses the Iron Age handmade pottery of Voerendaal-Ten Hove. The complete assemblage includes 2,981 fragments (56.8 kg) and can be dated between the Early and Late Iron Age, a period of at least some 500-600 years.<sup>1915</sup> Part of this material was collected from features such as pits, ditches and postholes. The main focus of this chapter will be the pottery from a selection of such 'closed finds' (Fig. 21.1).<sup>1916</sup> Another part of the material was collected from layers. The pottery assemblages from such features were often mixed, containing material from various periods (including the Roman period). This material will be used to complete the picture of the handmade pottery associated with the different phases of habitation.

The objective of this pottery study is mainly chronological but also includes a broader interpretation of the assemblages. For the Early and Middle Iron Age periods, pottery is essential for dating and reconstructing the earliest activities at the Ten Hove site. Can we reconstruct one or possibly more phases of activity and what was the nature of these activities? For the Late Iron Age, the assemblages associated with fortified enclosure 308 – collected from buildings, pits and the enclosure ditch itself – are studied in detail. Research questions regarding the chronology and development of the complex and the continuity or discontinuity between the Late Iron Age and earliest Roman-period activities are central here. Furthermore, the pottery may be able to inform us about the character of the activities as well as the exchange networks in which the settlement was involved.

The approach chosen is twofold. A quantitative approach is chosen for the most coherent and sizeable assemblages.<sup>1917</sup> With this approach, a series of characteristics is recorded in a database for each fragment.<sup>1918</sup> This allows the assemblages to be analysed in quantitative terms, with their characteristics summarized in table form. The assemblages can then be compared, also with those from other sites. Pottery assemblages of more limited size are described in more general (qualitative) terms and

their characteristics are not presented in table form. For the purposes of dating and interpretation, these assemblages can be compared with those that were analysed quantitatively. In the end, having analysed the separate assemblages, we are able to create a general picture of the handmade pottery assemblages for each activity phase.

A number of publications were used to determine, interpret and date the handmade pottery. The first main work referred to is that by Van den Broeke on prehistoric and (Early) Roman-period handmade pottery from Oss-Ussen (including information on pottery in the wider region).<sup>1919</sup> A second important study is by Martin on the Late Iron Age and Early Roman-period pottery from the *civitas Tungrorum*.<sup>1920</sup> In the Early and Middle Iron Age, the pottery from a large area – the whole southern part of the Netherlands, most of Belgium and the German Rhineland – showed many common characteristics. Especially for these phases, the work of Van den Broeke can be used for determination, description and dating. During the Late Iron Age, however, pottery traditions showed much more regionalized patterns. Consequently, Van den Broeke's typology has a more limited applicability for this period with respect, for example, to the region around Voerendaal. However, the type designations can still be used in a more general sense to describe the overall shapes of vessels.<sup>1921</sup> For the loess region of Zuid-Limburg and surroundings in the Late Iron Age, the work and typology of Fanny Martin is better suited, although forms and elements at Voerendaal are often not exactly similar. Examples of the types defined by Van den Broeke and Martin are shown in figure 21.2-3; the defining criteria and references can be found in Table 21.1. Besides the synthesizing works, several site publications with well-documented handmade pottery assemblages are also used, both to determine and date individual pieces and to compare the general pottery assemblages. Most do not offer fully developed chrono-typologies, however.

Below, the selected pottery assemblages are described in chronological order. First, the pottery from Early and Middle Iron Age pits is described and analysed (Section 21.2).

<sup>1915</sup> All handmade pottery was studied, drawn and roughly dated during a primary scan (by Hiddink). The number given refers to the number of fragments (probably) dated to the Iron Age period. For handmade pottery from the Late Roman and Early Medieval period, see Chapters 26 and 27.

<sup>1916</sup> Of course, these contexts are no close finds proper because some residual material may be present, and in Voerendaal some 'intrusive material' or 'contamination' is often observed (see below and the catalogues). However, the majority of the finds from the contexts discussed belong to a distinct phase.

<sup>1917</sup> 'Assemblage' refers to a coherent set of pottery fragments from a single reconstructed feature (i.e. pit, ditch or building).

<sup>1918</sup> The characteristics that were documented are the number of sherds, Minimum Number of Individuals (MNI), Estimated Vessel Equivalents (EVE), number of rims, wall and rim finish, wall and rim decoration, vessel composition type, firing conditions, temper, vessel shape, vessel type and chronology.

<sup>1919</sup> Van den Broeke 2012.

<sup>1920</sup> Martin 2017.

<sup>1921</sup> In any case, there is still the problem that most vessels from Voerendaal are not 'archaeologically complete'. This hinders identification because esp. criteria concerning proportions (e.g. height-width ratio) cannot be checked.



Next, the focus shifts to the Late Iron Age assemblages, with a study of the pottery from V-shaped ditch 308, building 219, 222, 223 and 236 and the pits in their immediate surroundings (Section 21.3). To further complete and possibly refine the picture of the handmade pottery,

the pottery from a series of trenches is also studied. The final section describes the main pottery groups from the Early, Middle and Late Iron Age, and then discusses their chronology and broader archaeological interpretation.

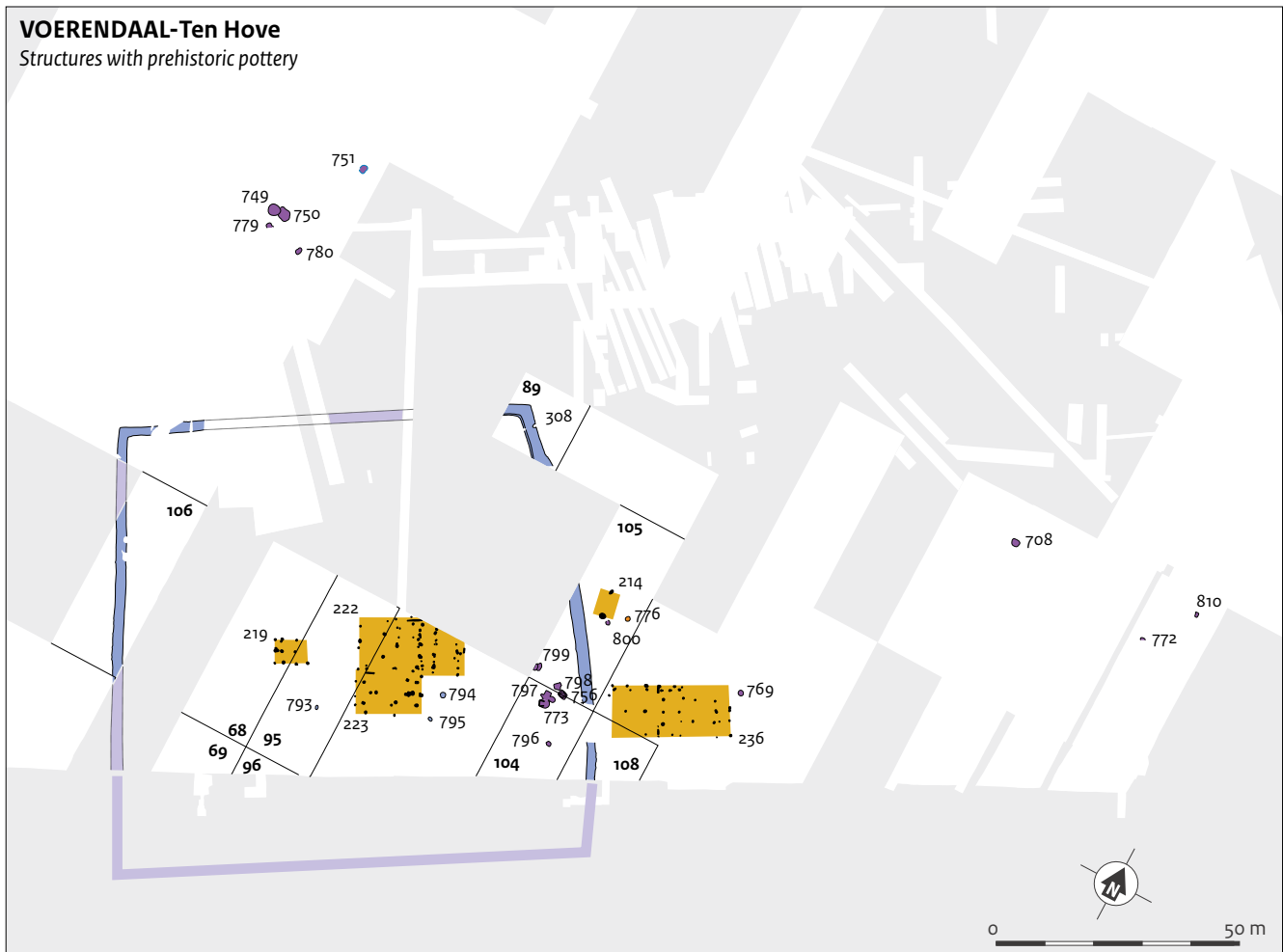


Fig. 21.1 Voerendaal-Ten Hove. Structures and features mentioned in this chapter, including some relevant trench numbers (bold).

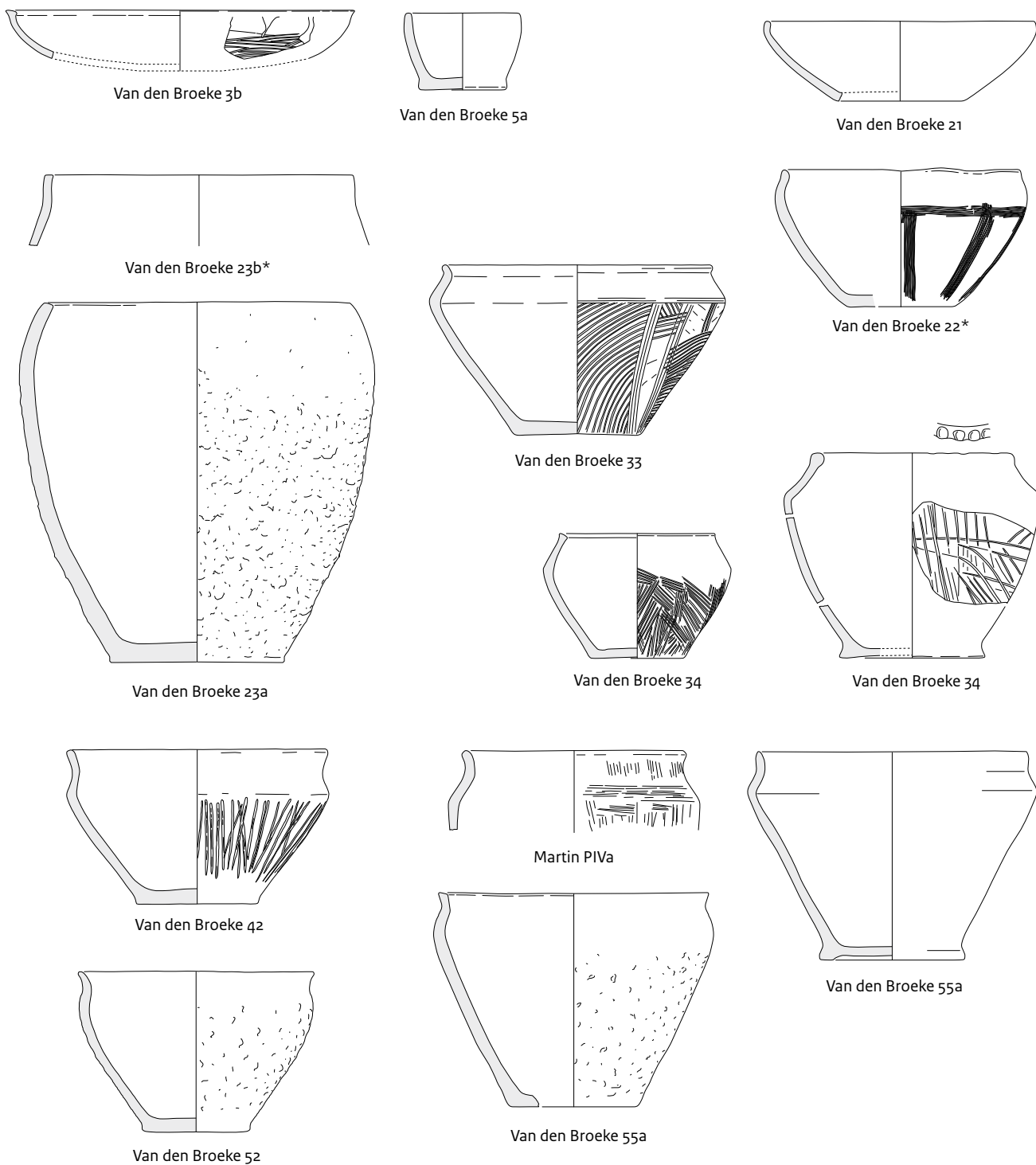


Fig. 21.2 Voerendaal-Ten Hove. Examples of pottery types found at Voerendaal, from the site itself and other sites. Scale 1:5 (\*ca. 1:7). (source: in part modified after Hiddink 2003b, fig. 107; 2006, fig. 20.3; Hiddink & De Boer 3005, fig. 14; Martin 2017, fig. 334; Tol 2000, fig. 4.23; Van den Broeke 1987b, fig. 9.8; 2012, fig. 3.8; 3.20)

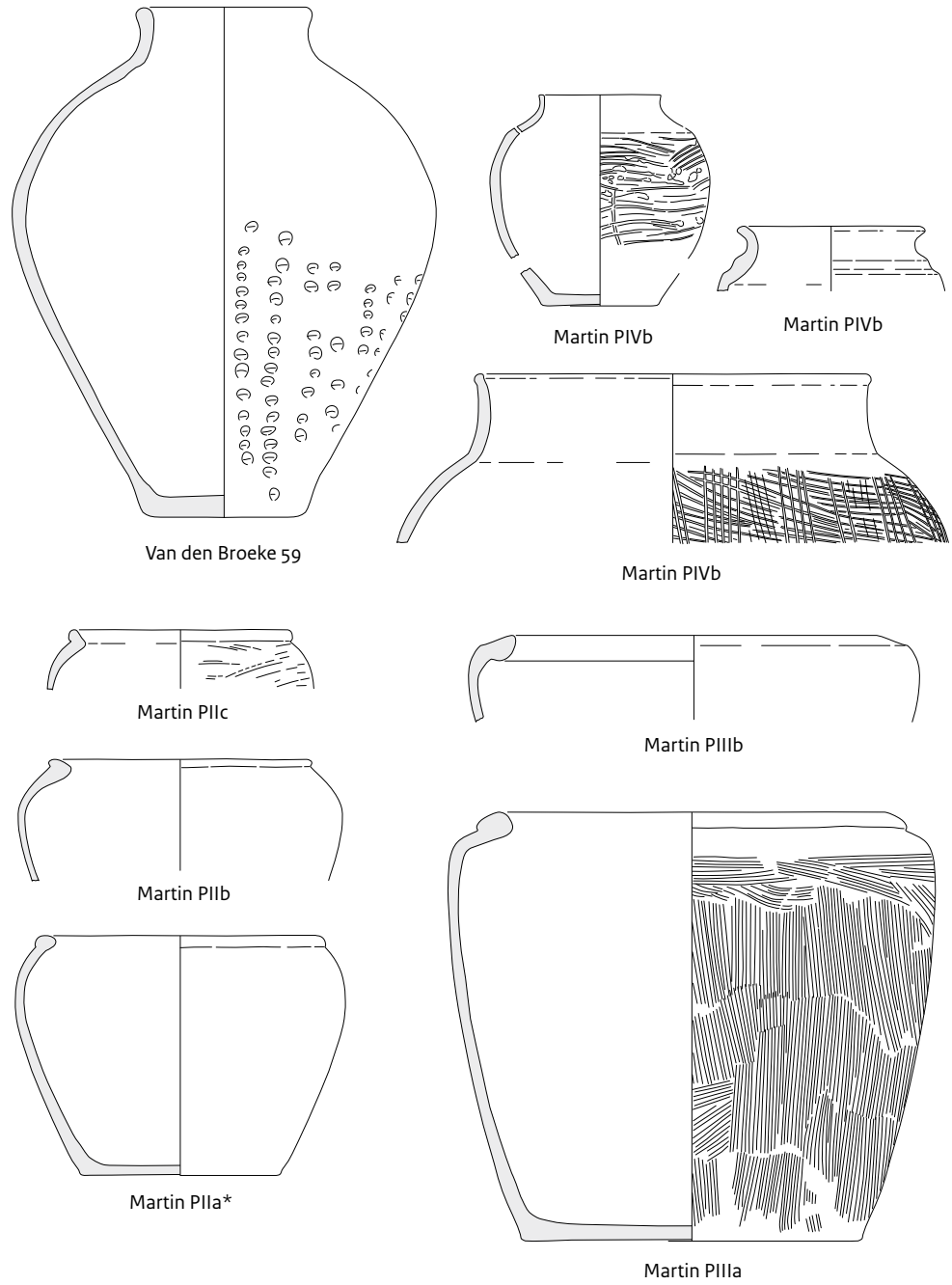


Fig. 21.3 Voerendaal-Ten Hove. Examples of pottery types found at Voerendaal, cont. Scale 1:5 (\*ca. 1:7). (source: in part modified after Martin 2017, fig. 322-330; Van den Broeke 2005, fig. 27.8)

**Table 21.1. Voerendaal-Ten Hove. The main types/forms of handmade pottery present.**

Type	Basic form	Defining characteristics	Reference
Van den Broeke 3b	dish	open, long straight or convex wall, sometimes bend wall	2012, 47-49, fig. 3.5
Van den Broeke 5a	bowl, small	open, straight wall	2012, 50, fig. 3.6
Van den Broeke 21	dish	open, curved near rim	2012, 53-55, fig. 3.8
Van den Broeke 22	bowl	globular, very short shoulder	2012, 55, fig. 3.8
Van den Broeke 23a	jar	slightly closed, barrel shaped	2012, 55-57, fig. 3.9
Van den Broeke 23b	jar	idem, with shoulder bend	2012, 57, fig. 3.9
Van den Broeke 33	bowl/dish, high	(slightly) closed, onset shoulder/bend in body high, sometimes very short 'neck'	2012, 61, fig. 3.11
Van den Broeke 34	pot (high)	idem	2012, 61-62, fig. 3.12
Van den Broeke 42a	bowl/jar	(slightly) closed, onset shoulder/bent in body high, angle with rim obtuse	2012, 67, fig. 3.14
Van den Broeke 52	bowl	(slightly) closed, smooth transition body-shoulder, latter steep	2012, 69-71, fig. 3.18
Van den Broeke 55a/ Martin IVa	jar, high	(slightly) closed, smooth transition body-shoulder, latter steep (LIA sometimes with foot ring)	Van den Broeke 2012, 71-73, fig. 3.20; Martin 2017, 282-285, fig. 334
Van den Broeke 57/ Martin PIVb	jar, high	closed, smooth transition body-shoulder, short neck (Martin includes ≈ Van den Broeke 59)	Van den Broeke 2012, 77, fig. 3.23; Martin 2017, 286-289, fig. 336
Van den Broeke 59	jar/bottle	strongly closed, necked	2012, 79-80, fig. 3.25
Martin PIIa	jar	closed, inwards bent, thickened beaded rim	2017, 264-268, fig. 322
Martin PIIb	jar	idem, rim also (slightly) ledged	2017, 268-269, fig. 324
Martin PIIc	jar	ovoid, rim slightly everted	2017, 269-271, fig. 326
Martin PIIIa	jar	closed, inwards bent, thickened beaded rim; sharply inwards bent shoulder	2017, 272-275, fig. 328
Martin PIIIb	jar	closed, rim sharply inwards bent, with broad groove on top	2017, 276-280, fig. 330

## 21.2 Pottery from Early and Middle Iron Age contexts

### 21.2.1 Early Iron Age pits

#### Pit 750

Forty-nine fragments of handmade pottery were collected from this pit (1,543 g; Fig. 21.4, Table 21.2; \*21.5).<sup>1922</sup> The pit is intersected by pit 749. In general, the assemblage is dominated by large sherds of thick-walled vessels, tempered with grog, sometimes combined with stone grit. A significant proportion of the walls are roughened ('*bemeten*' in Dutch; 30.5%). It appears that many pottery fragments were heavily burned after use (tertiary burn). This could indicate that the pottery assemblage was deliberately burned before being deposited. Such depositions are often interpreted as the archaeological reflection of abandonment rituals.<sup>1923</sup>

Five individual vessel types can be determined within the assemblage (5 MNI): three barrel-shaped jar with a neck

Van den Broeke 23b, a jar 59 and a shallow dish 3b. This latter has a B1-type rim (with an interior thickening), which, combined with vessel composition type 1 (open vessels), should be dated to the Early Iron Age or the early Middle Iron Age.<sup>1924</sup> The large jar Van den Broeke 59 is severely burnt. Its walls are roughened from the shoulder down and its rim is decorated with fingertip impressions on the inside. Two of the jars Van den Broeke 23b are particularly large, thick-walled and roughened storage vessels. The first has a rim diameter of about 38 cm, roughened walls from the shoulder down and a rim decorated with fingertip impressions (750-1/102-2-1; Fig. 21.4). The second jar has a rim diameter of about 36 cm, a flattened rim and a relatively long vertical neck (750-2/102-2-1; Fig. 21.4). This jar is partly burnt. The third jar of this particular type has a wall of lesser thickness, is dark-coloured and slightly burnished. Its belly and shoulder are decorated with fine, curvy comb streaks. Again, this jar is partly burnt. Jars Van den Broeke 23b are especially well

<sup>1922</sup> Tables marked with an asterisk (\*) can be found in Appendix IX.

<sup>1923</sup> Similar phenomena are also known for several Early Iron Age pits at other sites (see, among others, Panningen-Stockx, pits 100-103 (Hiddink 2008a, 15-16, with further reference to finds from Bladel and Kessel) and Lomm-Hoogwatergeul phase II, pit S35.16 (Van Kerckhove 2011c, 141-143). Like pit 103 from Panningen-Stockx, the Voerendaal pit 750 contains a combination of burnt loam, burnt natural stone and burnt pottery (Hiddink 2008, 16). Such depositions are often associated with rituals linked to the abandonment of farmsteads (see also Gerritsen 2003, 84-86 and 95 ff. and Van den Broeke 2002).

<sup>1924</sup> Van den Broeke 2012, 89-90.

**Table 21.2. Voerendaal-Ten Hove. Quantitative overview of the pottery assemblage from pit 750.**

Category	Fabric	Vessel shape	Type	N	Wt (g)	MNI	EVE (%)
Handmade	-	-	-	33	884	0	0
Handmade	-	pot	Van den Broeke 23b	10	427	3	23
Handmade	-	pot	Van den Broeke 59	5	179	1	32
Handmade	-	dish	Van den Broeke 3b	1	53	1	3
<b>Total</b>				<b>49</b>	<b>1543</b>	<b>5</b>	<b>58</b>

represented in the Late Bronze Age and Early Iron Age, while decorated rims on such jars are only known from the Early Iron Age.<sup>1925</sup>

All in all, the dish with B1-type rim, the jar Van den Broeke 23b with decorated rim and the presence of stone grit temper suggest that the assemblage from pit 750 should be dated to the Early Iron Age. This chronology can be confirmed if we compare the assemblage with that from pit 103 at Helden-Panningen-Stokx. Large jars 23b are also dominant in that assemblage, and comparable curvy comb streaks were documented on several wall sherds.<sup>1926</sup> Two other Early Iron Age assemblages from the region could possibly provide us with further chronological indications. The assemblages from Geleen-Haesselderveld-West and Maastricht-Randwyck are dated to the sixth century BC and the period between 550 and 500 BC respectively: the late Early Iron Age.<sup>1927</sup> Both assemblages include carinated vessels, and barrel-shaped vessels Van den Broeke 23a can also be found at Maastricht. As both vessel types are absent in the assemblage from pit 750, this could indicate that the Voerendaal assemblage is somewhat older than the sixth century BC.

#### *Pit 780*

Only 19 fragments of handmade pottery (438 g) were collected from pit 780 (situated in the immediate vicinity of pit 750). Stone grit was added as a temper in half of the fragments. Two wall fragments were roughened. Two rim fragments were identified as being part of a single jar Van den Broeke 23b. This jar has a relatively long neck and its rim is decorated with fingertip impressions. As mentioned, such jars with decorated rims can generally be dated to the Early Iron Age. The stone grit and the jar 23b

suggest an Early Iron Age date for pit 780. Pits 750 and 780 may well be contemporaneous.

#### **21.2.2 Middle Iron Age pits**

##### *Pit 749*

Forty-three fragments of handmade pottery were collected from pit 749 – dug partly through 750 and therefore younger (1,534 g; Fig. 21.4; Table 21.3; \*21.5).<sup>1928</sup> A number of fragments were tempered with stone grit (18.5%). Relatively few fragments (7%) were roughened. No vessel types could be determined on the basis of rim fragments. However, based on their wall curve, two fragments seem to have been part of a dish Van den Broeke 21. Both are decorated with comb streaks. Such dishes started appearing during the Early Iron Age and were especially well represented in the Middle Iron Age. The comb-streak decoration makes a date after the first half of the Middle Iron Age less plausible.<sup>1929</sup> Furthermore, such dishes are found in many of the Middle Iron Age pits of Voerendaal (such as 756, 773 and 776). Other remarkable sherds (99-2-2/8395 and 99-2-1/8364) are decorated with small round imprints (c. 0.5 cm in diameter), partly combined with shallow grooves. Two loom weights from the pit belong to the oblong-pyramidal type (749-1 and 2/99-2-1; Fig. 21.4). In the southern parts of the Netherlands, loom weights like these are current between the Late Bronze Age (c. 1050 BC) and the early Middle Iron Age (probably c. 400 BC), according to Van den Broeke.<sup>1930</sup>

The assemblage from pit 749 is somewhat different from those from pits 750 and 780, discussed above. First of all, the limited amount of roughening is remarkable but difficult to explain. Furthermore, the available vessel types

<sup>1925</sup> Van den Broeke 2012, 57.

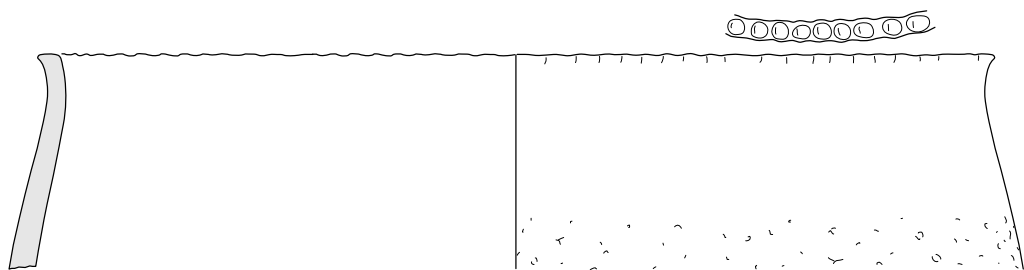
<sup>1926</sup> For the pottery from Early Iron Age pit 100-103, see Hiddink 2008, 55-58.

<sup>1927</sup> Van den Broeke 1980; Dijkman 1989.

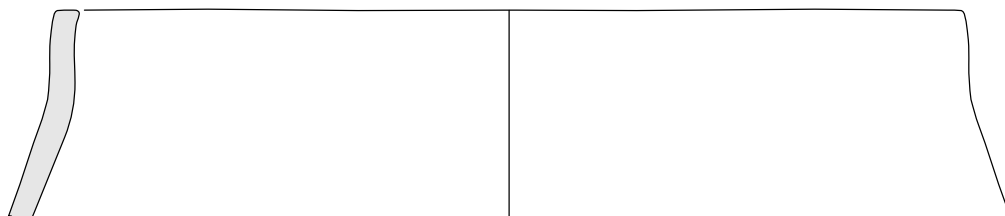
<sup>1928</sup> Some Roman sherds seem to be 'contamination' (cf. Chapter 46).

<sup>1929</sup> Van den Broeke (2012, 118) reconstructs a peak for comb-streak decoration in phase F (450-400/375 BC), with a rapid decline after this phase.

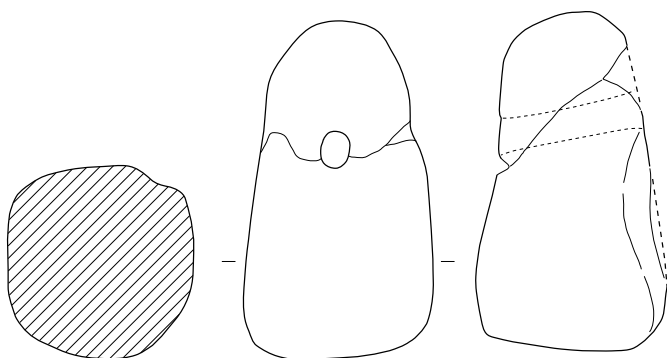
<sup>1930</sup> Van den Broeke 1987a, 38, fig. 9.



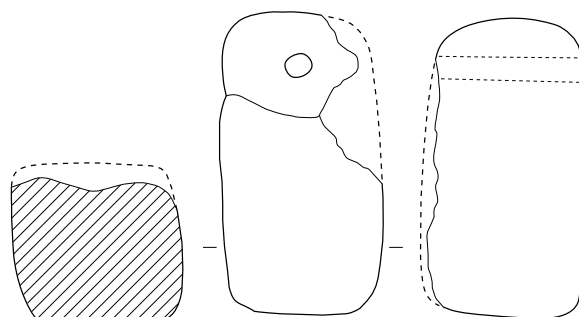
750-1/102-2-1



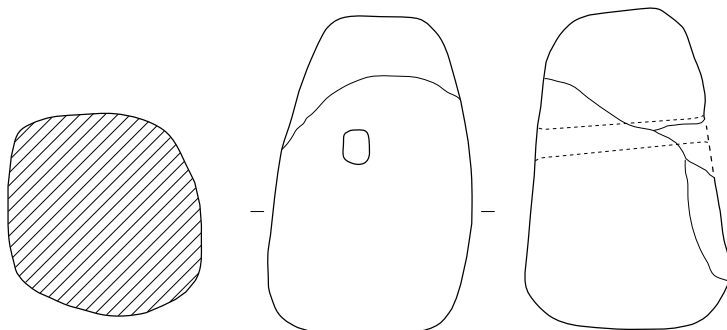
750-2/102-2-1



749-1/99-2-1



749-2/99-2-1



779-1/99-1-17

Fig. 21.4 Voerendaal-Ten Hove. Handmade pottery from pit 750 and loom-weights from 749 and 779. Scale 1:3.

**Table 21.3. Voerendaal-Ten Hove. Quantitative overview of the pottery assemblage from pit 749**

Category	Fabric	Vessel shape	Type	N	Wt (g)	MNI	EVE (%)
Handmade	-	-	-	43	830	0	0
<b>Total</b>				<b>43</b>	<b>830</b>	<b>0</b>	<b>0</b>

are different. The absence of the jar Van den Broeke 23b and the presence of the dish Van den Broeke 21 can probably be regarded as an indication that pit 749 is younger than pit 750 and should probably be dated to the Middle Iron Age. This suggestion is possibly supported by the presence of some decorated wall fragments.<sup>1931</sup> All in all, taking a cautious approach, the assemblage from pit 749 could be broadly dated between the Early Iron Age and the first half of the Middle Iron Age. However, when viewed in the context of the total pottery assemblage from Voerendaal, the latter period is the more likely.

#### Pit 779

Only three fragments of handmade pottery were collected (32 g) from this pit, located 1.5 m south of pit 749. One of the pottery fragments is characterized by a particularly sharp carination and combed decoration. The fragment probably belonged to a vessel Van den Broeke 74 or 75 (99-1-17/8360). Such vessels are dated between c. 500 and 400/375 BC, the first half of the Middle Iron Age.<sup>1932</sup> A loom weight of the oblong-pyramidal type was also collected from this pit (779-1/99-1-17; Fig. 21.4). As mentioned above, such loom weights are dated between the Late Bronze Age (c. 1050 BC) and the early Middle Iron Age (probably c. 400 BC). Another remarkable find from this pit is a small fragment of a square glass bottle from the Roman period. This find should be interpreted as intrusive. All in all, the pottery assemblage from pit 779 should probably be dated to the first half of the Middle Iron Age, between c. 500 and 400/375 BC. However, drawing chronological conclusions from such a small pottery assemblage should be done with caution.

#### Pit 772

Pit 772 is located in trench 20, some 200 m southeast of the pits described above. The pit is cut by the foundations of Roman-period villa building 401. Two hundred and fifty-one fragments of handmade pottery were collected from this pit (6,700 g; Fig. 21.5, Table 21.4- \*21.5). In general, the assemblage is characterized by thick-walled pottery that is predominantly grog-tempered and often roughened (30%). A minority of fragments were tempered with stone grit.

Thirteen vessel types can be determined within the assemblage. The most dominant vessel type is the bowl Van den Broeke 5b (5 MNI). One of these has a diameter of 35 cm and is characterized by nail-tip impressions on top of its rim (772-1/20-4-23; Fig. 21.5). Some stone grit was added as temper. A second well-represented type is the barrel-shaped jar Van den Broeke 23a (4 MNI). One of these jars is decorated with fingertip impressions on its wall, c. 2 cm beneath the rim. The rim itself is decorated with fingertip impressions on the interior side. Two biconical bowls or jars Van den Broeke 33/34 (2 MNI) are also worth mentioning. One of these biconical vessels has a diameter of approx. 35 cm and is decorated with fingertip impressions on top of the rim (772-2/20-4-23; Fig. 21.5). The other vessel is characterized by an everted rim, as well as fingertip impressions, on both the rim and the wall, marking the carination (772-3/20-4-23; Fig. 21.5). The thick walls, large dimensions and decorated rim make a Middle Iron Age date for this vessel most likely.

Another remarkable piece is a briquetage vessel.<sup>1933</sup> This bowl Van den Broeke k-5b is relatively thick-walled and reddish in colour (772-4/20-4-23; Fig. 21.5). The clay is tempered with a large amount of organic material.<sup>1934</sup> It must be emphasized that the examples of this type, described by Van den Broeke,

<sup>1931</sup> Van den Broeke (2012, 112) notes an increase in wall decoration for the first half of the Middle Iron Age. A 'boom' in wall decoration is dated to the Late Iron Age, but on the basis of the other pottery characteristics such a date can be ruled out for pit 749.

<sup>1932</sup> Van den Broeke 2012, 82-87.

<sup>1933</sup> Briquetage is a material used to make vessels for extracting salt from water or transporting it from the coastal regions to sites further inland.

<sup>1934</sup> Thick-walled reddish fabrics are defined as 'B1 fabric' by

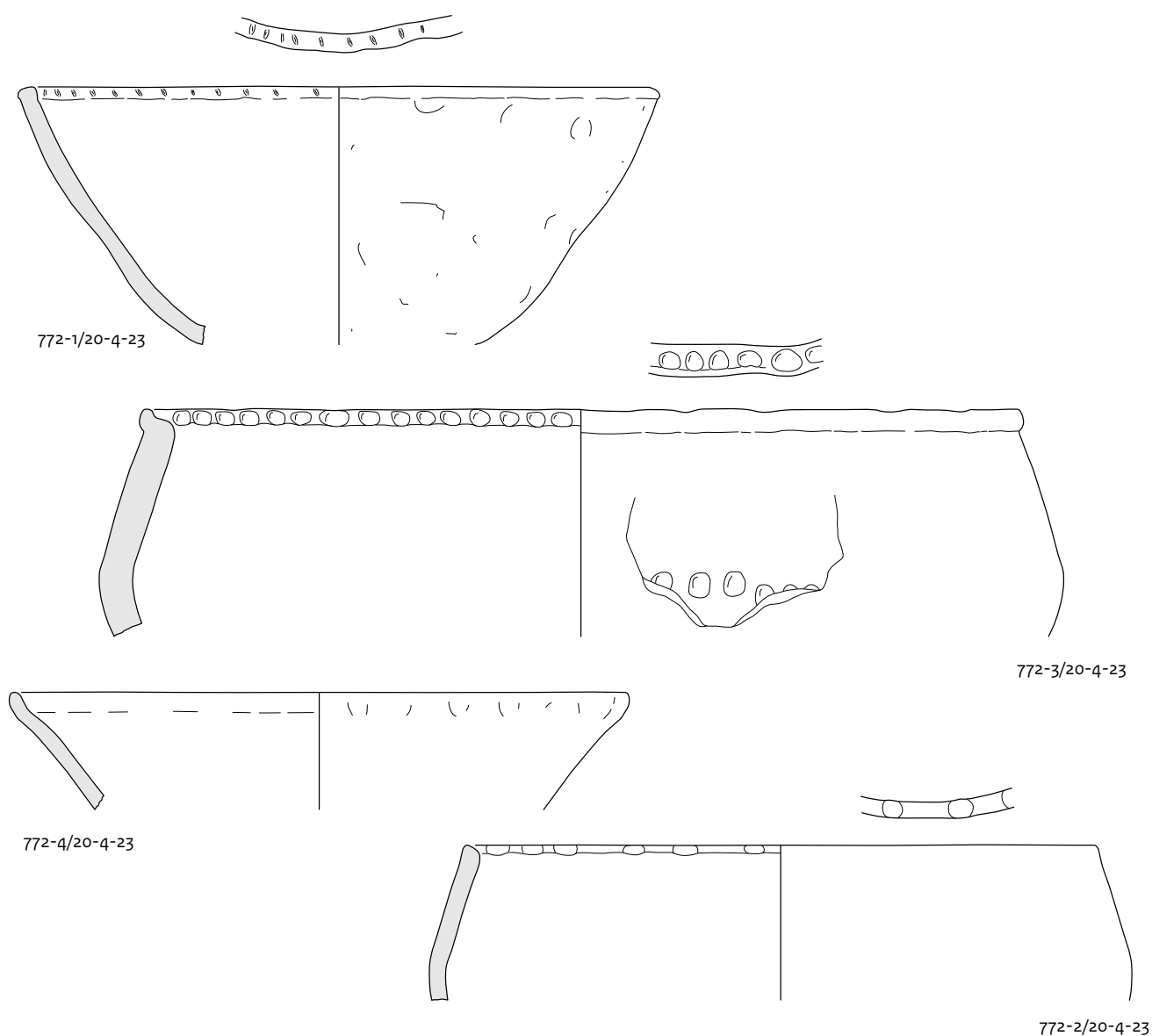


Fig. 21.5 Voerendaal-Ten Hove. Handmade pottery from pit 772. Scale 1:3.

are significantly smaller than the vessel from pit 772. They are also commonly known in thick-walled, yellow fabric. These differences could point to a different region of origin for the vessel from Voerendaal.<sup>1935</sup> With regard to chronology, it could be mentioned that the briquetage bowl Van den Broeke k-5b is the successor to the earliest briquetage vessels in the shape of a small half-cylinder or trough

(Dutch: 'gootjes'; Van den Broeke k-7a).<sup>1936</sup> Consequently, k-5b-type bowls should be dated between c. 500 and 400/375 BC. All in all, on the basis of the presence of stone grit temper, the large biconical jars or bowls, the everted rim and the briquetage bowl, the assemblage from pit 772 should probably be dated to the first half of the Middle Iron Age, between c. 500 and 400/375 BC.

Van den Broeke (2012, 165-166). Briquetage forms have the same type numbers as all other handmade pottery, with addition of 'k' for *kust* (coast).

<sup>1935</sup> Van den Broeke attributes k-5b bowls in B fabric to northern France (2012, 166). However, the characteristic chalk fragments pointing to that region are absent in the Voerendaal bowl.

<sup>1936</sup> Van den Broeke 2012, 166ff.



**Table 21.4. Voerendaal-Ten Hove. Quantitative overview of the pottery assemblage from pit 772.**

Category	Fabric	Vessel shape	Type	N	Wt (g)	MNI	EVE (%)
briquetage	A1	bowl	Van den Broeke k-5b	4	74	1	0
Handmade	-	-	-	222	5538	7	25
Handmade	-	bowl	Van den Broeke 52	2	37	1	8
Handmade	-	bowl	Van den Broeke 5b	13	631	5	49
Handmade	-	bowl/pot	Van den Broeke 33/34	5	290	2	25
Handmade	-	pot	Van den Broeke 23a	5	130	4	26
<b>Total</b>				<b>251</b>	<b>6700</b>	<b>20</b>	<b>133</b>

**Pit 810**

Twenty-four fragments of handmade pottery (461 g) were collected from this pit (located some 10 m from 772). Most fragments are grog-tempered; a few sherds also contain some stone grit. The percentage of roughened pottery is 39%. Within this limited assemblage, two barrel-shaped jars Van den Broeke 23a and one dish 21 can be identified. One of the barrel-shaped jars is decorated with fingertip impressions on top of its rim. Its walls are roughened, most probably indicating a Middle Iron Age date for this vessel.<sup>1937</sup> The rims of the other vessels are rounded. The vessel types represented in pit 810 seem to be typical of the Middle Iron Age assemblages of Voerendaal. The fact that one of the barrel-shaped jars is roughened also points in this direction. All in all, the assemblage from pit 810 should most probably be dated to the Middle Iron Age, between c. 500 and 250 BC.

**Pit 756**

Pit 756 contained 40 sherds of handmade pottery (1,903 g; Fig. 21.5, Table 21.6; \*21.8). All fragments were grog-tempered and 58% of the fragments were roughened. Two vessel types

can be determined within the assemblage. One is a dish Van den Broeke 21 with a rounded rim (756-1/105-3-5; Fig. 21.6), executed in a relatively fine ware. The other is a thick-walled, barrel-shaped jar Van den Broeke 23a, again with a rounded rim (756-2/105-3-5; Fig. 21.6). The walls of this jar are roughened from the shoulder down. As already mentioned above, its roughened walls most probably indicate a Middle Iron Age date for this vessel. The spectrum of vessel types and the roughened barrel-shaped jar suggest that the assemblage from pit 756 should most probably be dated to the Middle Iron Age, between c. 500 and 250 BC. The complete lack of decoration on both the rim and wall fragments is remarkable, especially when compared to several other assemblages (such as those from pits 772 and 776). Possibly, this could mean that the assemblage from pit 756 should be dated to the second half of the Middle Iron Age rather than the first half of this period.

**Pit 773**

Pit 773 yielded 21 fragments of pottery (1,454 g; Fig. 21.6). In general, the material is relatively

**Table 21.6. Voerendaal-Ten Hove. Quantitative overview of the pottery assemblage from pit 756.**

Category	Fabric	Vessel shape	Type	N	Wt (g)	MNI	EVE (%)
Handmade	-	-	-	11	202	0	0
Handmade	-	pot	Van den Broeke 23a	21	1526	1	26
Handmade	-	dish	Van den Broeke 21	8	175	1	34
<b>Total</b>				<b>40</b>	<b>1903</b>	<b>2</b>	<b>60</b>

<sup>1937</sup> Van den Broeke 2012, 106.

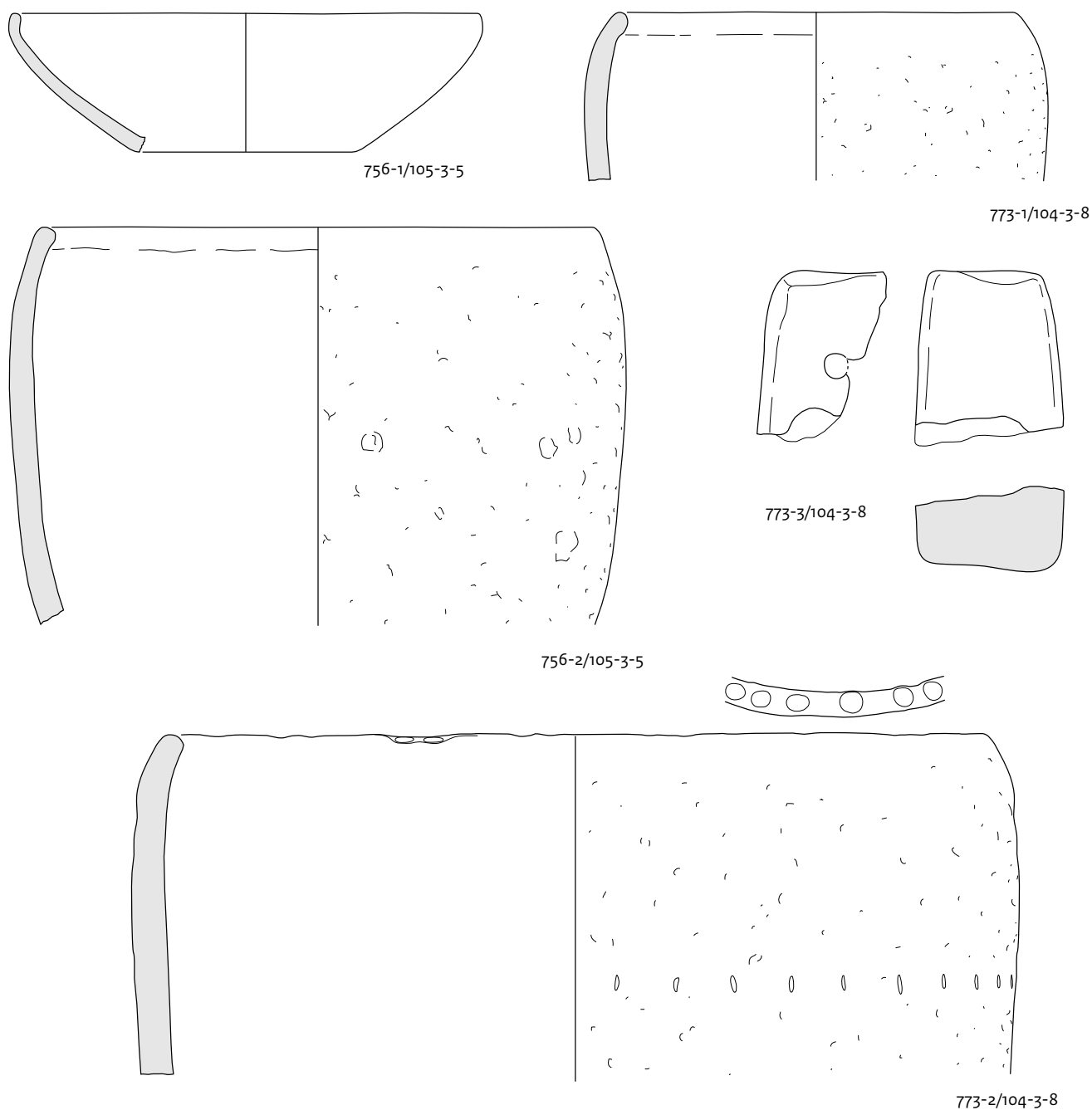


Fig. 21.6 Voerendaal-Ten Hove. Handmade pottery from pit 756 and 773. Scale 1:3.

thick-walled and quite often roughened (24%). All fragments are tempered with grog. In one case, some sand was added. Two thick-walled barrel-shaped jars Van den Broeke 23a and a dish 21 were identified. One of the barrel-shaped jars has a rounded rim (773-1/104-3-8; Fig. 21.6).

A second, very large barrel-shaped vessel (approx. 40 cm diameter) is thick-walled (1-1.5 cm), with fingertip impressions on top of the rim as well as some nail-tip impressions on the shoulder (773-2/104-3-8; Fig. 21.6). The dish Van den Broeke 21 is especially well represented

in Limburg during the Middle Iron Age.<sup>1938</sup> With regard to the barrel-shaped jar 23a, Van den Broeke mentions that this type was very well represented outside Oss until phase G (400/375–350/325 BC).<sup>1939</sup> The fact that both our pots are fully roughened suggests that they should indeed be dated to the Middle Iron Age. Finally, a fragment of a loom weight was found in this pit, again of the oblong-pyramidal type (773-3/104-3-8; Fig. 21.6). All in all, the represented vessel types, the fully roughened barrel-shaped jars and the lack of stone grit suggest that the assemblage from pit 773 should be dated to the Middle Iron Age, most probably to the first half of that period.

#### *Pit 800*

Twenty-one sherds of handmade pottery were collected from this pit (294 g). Most fragments are grog-tempered; a few sherds also contain some stone grit. A fair proportion of the sherds are roughened (21%). The type can be determined for only one vessel: a dish Van den Broeke 21 with a rounded rim. Another small rim fragment can be recognized as an everted rim of the B3-type, as defined by Van den Broeke. This type is not very common in and around Oss; most occurred in the Middle Iron Age, although there are Early and Late Iron Age examples as well.<sup>1940</sup> All in all, the represented vessel type and the rim type suggest that the assemblage from pit 800 should be dated to the Middle Iron Age (c. 500–250 BC).

#### *Pit 776*

Thirty-seven fragments of handmade pottery were collected from this pit (294 g; Fig. 21.7). Most fragments are grog-tempered; several sherds also contain some sand and some stone grit was added to one fragment. A significant proportion of the pottery is roughened (24.5%). Furthermore, thin vertical grooves were documented on two wall sherds. Three vessels can be characterized as dish Van den Broeke 21 (776-2 and 3/105-1-5; Fig. 21.7), two as jar 23a and one is similar to jar 22. The two barrel-shaped jars 23a are relatively large (30 and 32 cm rim diameters), with rounded rims and are fully roughened walls (776-4/105-1-5; Fig. 21.7). These fully roughened barrel-shaped jars should

probably be dated to the Middle Iron Age (cf. the assemblages from pits 756, 773 and 810). As mentioned earlier, dishes Van den Broeke 21 are especially well represented during the Middle Iron Age. The bowl 22 can only be broadly dated between the Late Bronze Age and the Early Roman period. On the basis of the spectrum of vessel types and the fully roughened barrel-shaped jars, the assemblage from pit 776 should be dated to the Middle Iron Age, most probably to the first half of that period.

#### *Middle Iron Age pottery in features of building 214*

Two pits are interpreted as the postholes of an Alphen-Ekeren-like building, although this house type should ideally have three or more posts and its first-century AD date is based on a single pottery fragment (a fragment of terra nigra).<sup>1941</sup> However, in the current analysis the option of a Roman building is preferred, interpreting the handmade pottery as older material. Pit 773, 776 and 800 in the vicinity point to Middle Iron Age-habitation in this area.

Both features together contain 68 sherds of handmade pottery (1207 g), equally divided between the two (Fig. 21.7, Table 21.7-\*21.8). A significant proportion of the pottery is roughened (about 45.5 %). Grog temper is dominant, in several cases combined with some sand (7.5%). Three dishes Van den Broeke 21 can be identified within this assemblage, as well as two bowls 5b, one burnished bowl or jar 33/34 and a bowl 22. The two bowls 5b are quite similar (214-1 and 2/105-1-11; Fig. 21.7). Both vessels have rounded rims and are roughened. Bowls like these are well represented from the Middle Iron Age onwards. The high percentage of roughened pottery, the dominance of grog temper and the undecorated, burnished vessel Van den Broeke 33/34 suggest that at least a large proportion of the assemblage from building 214 should be dated to the Middle Iron Age.

## 21.3 Late Iron Age pottery

### 21.3.1 Pottery from ditch 308

V-shaped ditch 308 yielded a considerable assemblage of handmade pottery. This material

<sup>1938</sup> Van den Broeke 2012, 55.

<sup>1939</sup> Van den Broeke 2012, 57.

<sup>1940</sup> Van den Broeke 2012, 89–92, fig. 3.31–32. In the Oss region, rims of this type are typical of the first half of the Middle Iron Age. However, in the region around Voerendaal, such rims continued into the Late Iron Age (see also below).

<sup>1941</sup> Cf. section 6.3 and chapter 40.

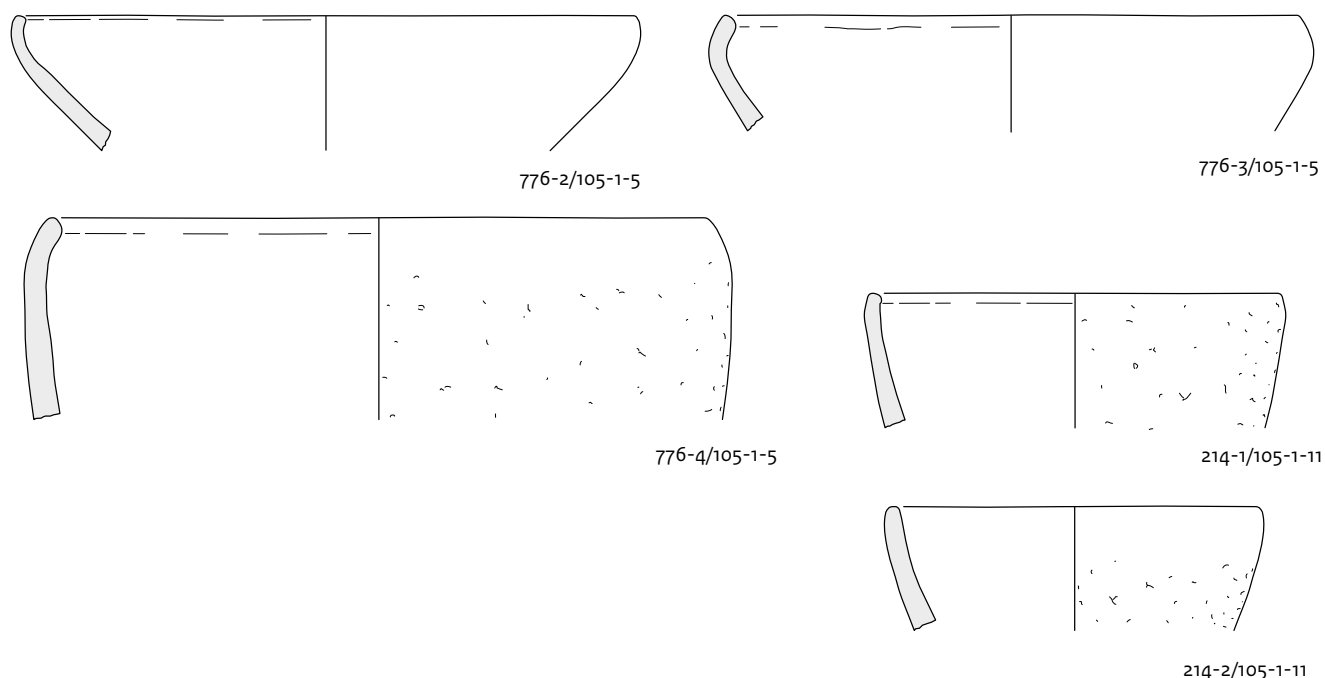


Fig. 21.7 Voerendaal-Ten Hove. Handmade pottery from pit 776 and building 214. Scale 1:3.

**Table 21.7. Voerendaal-Ten Hove. Quantitative overview of the pottery assemblage from the features of structure 214.**

Category	Fabric	Vessel shape	Type	N	Wt (g)	MNI	EVE (%)
Handmade	-	-	-	59	993	0	0
Handmade	-	bowl	Van den Broeke 22	1	29	1	8
Handmade	-	bowl	Van den Broeke 5b	4	103	2	32
Handmade	-	bowl/pot	Van den Broeke 33/34	1	13	1	5
Handmade	-	dish	Van den Broeke 21	3	69	3	14
<b>Total</b>				<b>68</b>	<b>1207</b>	<b>7</b>	<b>59</b>

was collected from various trenches and excavation levels. Even at first glance, clear differences in the composition of the pottery assemblages from different trenches were evident. As a consequence, we have chosen to analyse and describe the pottery by trench or set of (neighbouring) trenches. The most informative Late Iron Age assemblage was collected from trench 89. This material is described first, followed by the material from trenches 105 and 108. Remarkably, this assemblage has clear Middle Iron Age characteristics. The question is how material from different periods ended up in the ditch.

#### *Ditch 308-trench 89*

Two hundred and forty-five fragments of handmade pottery were collected from the part of ditch 208 situated in trench 89 (Fig. 21.8, Table 21.9; \*21.11).<sup>1942</sup> They represent a weight of 4,570 g, MNI of 20 and 20 EVE. All sherds were collected from the upper fill layers of the ditch, from a phase when the ditch was already considerably silted up.<sup>1943</sup> The pottery may have ended up in the ditch unintentionally, together with the soil used to backfill it after it went out of use.

Most of the pottery is tempered with a combination of organic material and sand. Chalk was also added to a significant number of

<sup>1942</sup> Some Roman sherds from the ditch and trench 89, 105-108 can be considered intrusions of contamination, resulting from later (Roman) activities in the area.

<sup>1943</sup> See Chapter 41, fig. 41.6.

**Table 21.9. Voerendaal-Ten Hove. Quantitative overview of the pottery assemblage from ditch 308 in trench 89.**

Category	Fabric	Vessel shape	Type	N	Wt (g)	MNI	EVE (%)
Handmade	-	-	-	191	2977	1	9
Handmade	-	jar	Martin PIIC	1	3	1	8
Handmade	-	bowl	Van den Broeke 22	1	9	1	4
Handmade	-	bowl	Van den Broeke 33	24	667	4	89
Handmade	-	jar	Van den Broeke 34	3	143	1	8
Handmade	-	bowl/jar	Martin PIVa	1	16	1	9
Handmade	-	bowl/jar	like Martin PIVa	1	8	1	10
Handmade	-	bowl	Van den Broeke 52	3	283	1	29
Handmade	-	jar	Van den Broeke 55a	6	81	3	40
Handmade	-	jar	Martin PIVb/Van den Broeke 57/59	14	383	6	65
<b>Total</b>				<b>245</b>	<b>4570</b>	<b>20</b>	<b>271</b>

fragments. Comb streaks were documented on 76 sherds (31%). Grooves were recorded on three sherds and fingertip and spatula impressions on one fragment. A vessel type could be determined for 19 MNI. The jar Martin PIVb/Van den Broeke 57/59 is dominant with 6 MNI, followed by biconical bowls Van den Broeke 33 (4 MNI), jars 55a (3 MNI) and jars Martin PIVa (2 MNI; like 308-4/89-1-7; Fig. 21.8). Represented once are a bowl Van den Broeke 22, a jar 34 (308-6/89-1-9; Fig. 21.8) and a bowl 52 (308-2/89-1-7; Fig. 21.8). As in some other Late Iron Age assemblages (such as pit 793), a 'ribbed' jar was also collected from ditch 308. This jar is a three-partite vessel Martin PIVb/Van den Broeke 57 (308-12/89-1-8; Fig. 21.8). Similar jars with ribs were also found at Eschweiler-Laurenzberg, dated between c. 125 and 100 BC.<sup>1944</sup>

More generally, jars Van den Broeke 57 appear from the beginning of the Late Iron Age onwards and jars 59 are evenly represented during the period between the Late Bronze Age and the Early Roman period. Neither the vessels 52 and 55a are well represented in the Late Iron Age assemblages of the middle and southern part of Dutch Limburg.<sup>1945</sup> Martin dates tripartite pots PIVb broadly between c. 250 BC and the first decades AD.<sup>1946</sup> Jars 308-3 and 4/89-1-7 are both characterized by a short horizontal shoulder section, followed by a relatively long and shorter

neck respectively (Fig. 21.8). The former could be assigned to the Martin PIVb type, although the shoulder is somewhat wider than that of the examples shown by Martin. The latter jar could perhaps best be determined as a Martin PIVa, dated between c. 150 BC and AD 70. Quite a few rims within the assemblage are thickened or everted (308-1/89-1-7; 308-6/89-1-9 and 308-11/89-2-9; Fig. 21.8). Similar rim types can be found in Late Iron Age assemblages from Kesselt, Eschweiler-Laurenzberg and Neerbeek-Oude Pastorie and in many of the assemblages presented by Martin (see for example the vessel types PIIB and PIIC).<sup>1947</sup> Further north, in the sandy regions around Oss and Weert, such rim types seem to be absent, however.<sup>1948</sup> Part of the pottery was burned to a significant degree after use (tertiary burn). Some are even sintered. These sherds may have been part of a hearth, lined with pottery sherds, within one of the nearby Late Iron Age houses.

With regard to the spectrum of vessel types, the assemblage from ditch 308 in trench 89 is somewhat atypical compared to the other Late Iron Age assemblages from the pits and buildings discussed below. While closed vessels are dominant in all of the latter (such as the bowls/jars Van den Broeke 33 and 34 and the jars Martin PIIB and PIIC), the assemblage from ditch 308 is dominated by three-partite vessels Martin PIVb.

<sup>1944</sup> See for example Joachim 1980, 409.

<sup>1945</sup> Van den Broeke 2012, 73.

<sup>1946</sup> Martin 2017, 286-288.

<sup>1947</sup> Martin 2017 (Kesselt);

Joachim 1980 (Eschweiler); Hiddink & De Boer 2005 (Neerbeek).

<sup>1948</sup> Van den Broeke 2012 (Oss region); Hiddink 2014b, 198-200, fig. 137.

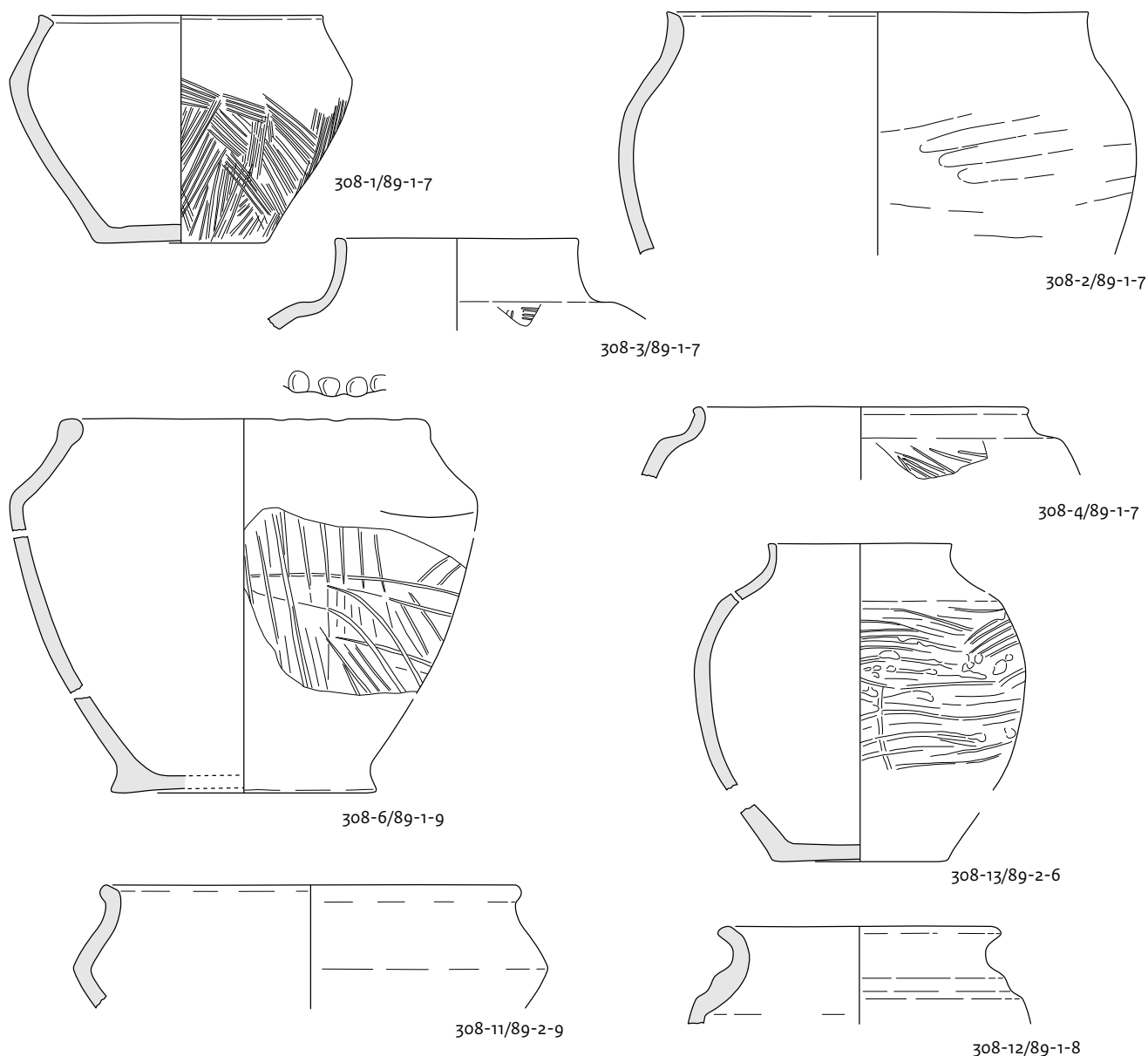


Fig. 21.8 Voerendaal-Ten Hove. Handmade pottery from ditch 308, trench 89. Scale 1:3.

It is unclear how we can explain this particular difference. In any case, there is no reason to assume a chronological factor. Reviewing the above, the temper, the prominent comb-streak decoration, the rim types and the 'ribbed' vessel all suggest that the assemblage from ditch 308 in trench 89 should be dated to the Late Iron Age. The fact that barrel-shaped pots Van den Broeke 23a are absent could indicate that it should be dated after c. 200 BC.<sup>1949</sup> Furthermore,

the general characteristics of the assemblage match those of the other Late Iron Age assemblages from Voerendaal quite well (see below). As in the other features associated with enclosure 308, there are no indications of pottery from the La Tene D2b (from c. 50 BC) or Augustan period. Consequently, the assemblage from ditch 308 in trench 89 should probably be dated between c. 200 and 50 BC.

<sup>1949</sup> Martin (2017, 292) concludes that the barrel-shaped pots (Van den Broeke 23a) disappear from the assemblages after c. 200 BC.

*Ditch 308-trench 105 and 108*

Already at first glance, the pottery assemblage from ditch 308 in trench 105 and 108 is clearly different to that from trench 89. A total of 196 fragments of handmade pottery were collected from these two trenches (Fig. 21.9, Table 21.10-<sup>\*</sup>21.11). Their weight is 3,694 g, MNI 7 and EVE 94. It should be emphasized from the outset that this is a mixed assemblage, including pottery from a combination of activity phases.

The pottery is predominantly grog-tempered, relatively thick-walled and only sparsely decorated. A significant proportion of the pottery is roughened (22.5%). Several rims fragments are decorated with fingertip impressions on top; the others are rounded or flattened. The spectrum of vessel types is also clearly different from the assemblage from trench 89. The dish Van den Broeke 21 dominates (7 MNI; 308-9/105-5-1; Fig. 21.9), followed by the barrel-shaped jar 23a (5 MNI; 308-7 and 8/105-4-1; Fig. 21.9). One example of a bowl or jar Van den Broeke 52/55a and a bowl 33 are present (308-10/105-2-1; Fig. 21.9). Also two bowls 42a are identified, although their rims are not preserved.<sup>1950</sup> All in all, the pottery assemblage from trenches 105 and 108 bear considerable resemblance to those from the Middle Iron Age pits discussed above and are clearly different from that in trench 89. However, although types clearly belonging to the Late Iron Age are missing here, the types that are present could have been made until at least La Tène C.<sup>1951</sup> The dating of ditch 308 in relation to formation processes is further discussed in Chapter 40.

A separate, irregularly shaped, dark-coloured feature in the top filling, 105.006, is also worth

mentioning. The feature itself is certainly Roman on the basis of tile and limestone fragments, but it also contained 56 fragments of handmade pottery (832 g). Again, the pottery is generally thick-walled and often roughened. A dish Van den Broeke 21 can be identified within the assemblage (find 105-2-2/9157). This pottery should probably be dated to the Middle Iron Age.

*Ditch 308-trench 100 and 106*

The (south)western side of the enclosure was excavated in trench 100 and 106. Only a limited amount of pottery was collected here: a total of 32 fragments (459 g). In general, the majority of the pottery could be dated to the Late Iron Age, although some earlier material might also be present. The Late Iron Age pottery is characterized by organic temper, often combined with sand and sometimes chalk. Furthermore, comb streaks were documented on a number of fragments. One rim fragment can be attributed to a dish Van den Broeke 21 (106-3-17/9293).

**21.3.2 Pottery from buildings**

*Building 219*

Although building 219 itself is perhaps not Iron Age in date,<sup>1952</sup> it features contained 117 fragments of handmade pottery (1,218 g; Fig. 21.10, Table 21.12; <sup>\*</sup>21.16). The MNI is 11 and the EVE is 38.<sup>1953</sup> In general, the handmade pottery is tempered with organic material, quite often combined with sand and sometimes with grog or chalk. No fewer than 43 sherds were decorated with comb streaks (37%). Four wall fragments were decorated with fingertip

<sup>1950</sup> Bowl 757-37 in fig. 21.9 was found in a Late Roman 'cellar' and it is not clear whether it is a Late Roman piece or a prehistoric one, originally from ditch 308.

<sup>1951</sup> In Oss, the types just mentioned allow for a date until phase J (225/200-150/125 BC ≈ La Tène C), as can be read from Van den Broeke 2012, fig. 3.30. See further section 14.3.3.

<sup>1952</sup> See the catalogue, chapter 40.

<sup>1953</sup> On the problem of some Roman pottery in the features and the relation to building 409, see Chapter 43.

**Table 21.10. Voerendaal-Ten Hove. Quantitative overview of the pottery assemblage from ditch 308 in trenches 105 and 108.**

Category	Fabric	Vessel shape	Type	N	Wt (g)	MNI	EVE (%)
Handmade	-	-	-	179	3220	3	15
Handmade	-	bowl	Van den Broeke 21	7	116	7	24
Handmade	-	jar	Van den Broeke 23a	6	299	5	43
Handmade	-	bowl	Van den Broeke 33	1	19	1	3
Handmade	-	bowl/jar	Van den Broeke 42a	2	25	0	0
Handmade	-	bowl/jar	Van den Broeke 52/55a	1	15	1	9
<b>Total</b>				<b>196</b>	<b>3694</b>	<b>17</b>	<b>94</b>

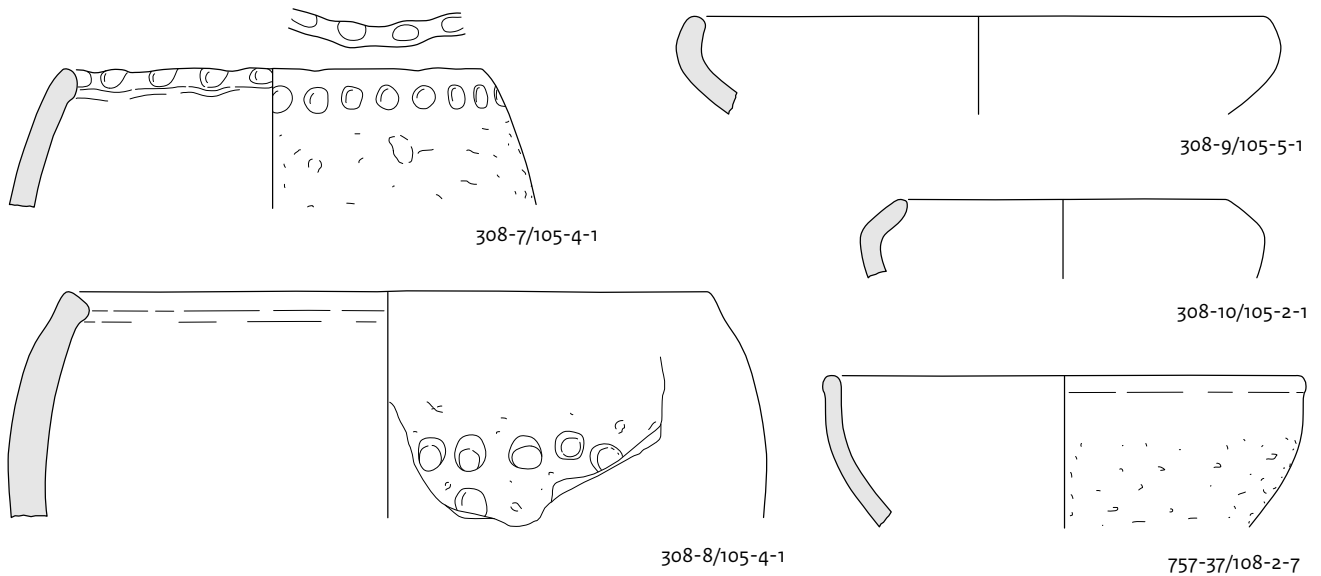


Fig. 21.9 Voerendaal-Ten Hove. Handmade pottery from ditch 308, trench 105 and 108. Scale 1:3.

impressions. With regard to vessel types, the jar Martin PIIc is dominant (4 MNI), followed by the biconical bowl Van den Broeke 33 (3 MNI). The bowl 42a, jar 34 and jar Martin PIVa each occur once. The latter jar is pale orange and has an everted rim (219-1/68-2-51; Fig. 21.10). Its walls are decorated with comb streaks. Besides organic temper, some sand is also added. This type of jar is mostly found in contexts from the period between c. 200 and 25 BC, although it is still found in some Roman period assemblages, until c. AD 75.

The interior of the rim of the jars Martin PIIc is decorated with fingertip impressions (219-2/68-2-51; 219-3/68-2-15; Fig. 21.10). Jars like these are well represented in the central

and southern parts of the *civitas Tungrorum* and are dated between c. 200 and 50 BC by Martin. Comparable pieces can be found at Kesselt,<sup>1954</sup> some 20 km west of Voerendaal, and Neerbeek-Oude Pastorie, some 10 km to the northwest.<sup>1955</sup> This vessel type seems to be absent, however, in the Dutch sandy regions further north. There, it clearly shows that the pottery traditions of the Late Iron Age were more regionalized than in the preceding periods (see Section 21.4).

The orange-coloured jar Van den Broeke 34 is only slightly carinated. The overall shape and rim type also remind us of jars Martin PIIb-c (219-4/68-2-50; Fig. 21.10). The rim is ledged and decorated with fingertip impressions. The upper part of this jar may have belonged to 219-5/68-

**Table 21.12. Voerendaal-Ten Hove. Quantitative overview of the pottery assemblage from building 219.**

Category	Fabric	Vessel shape	Type	N	Wt (g)	MNI	EVE (%)
Handmade	-	-	-	105	1087	1	3
Handmade	-	bowl	Van den Broeke 33	4	42	3	14
Handmade	-	jar	Van den Broeke 34	2	42	1	0
Handmade	-	bowl	Van den Broeke 42a	1	11	1	5
Handmade	-	jar	Martin PIIc	4	19	4	13
Handmade	-	jar	Martin PIVa	1	17	1	3
<b>Total</b>				<b>117</b>	<b>1218</b>	<b>11</b>	<b>38</b>

<sup>1954</sup> The Iron Age settlement activity at this site began in La Tène C but was concentrated in the La Tène D (Martin 2017, 110-122).

<sup>1955</sup> Hiddink & De Boer 2008, 21, finds 507-86. The Neerbeek assemblage is dated to the Late Iron Age, although a start in the Middle Iron Age cannot be ruled out.



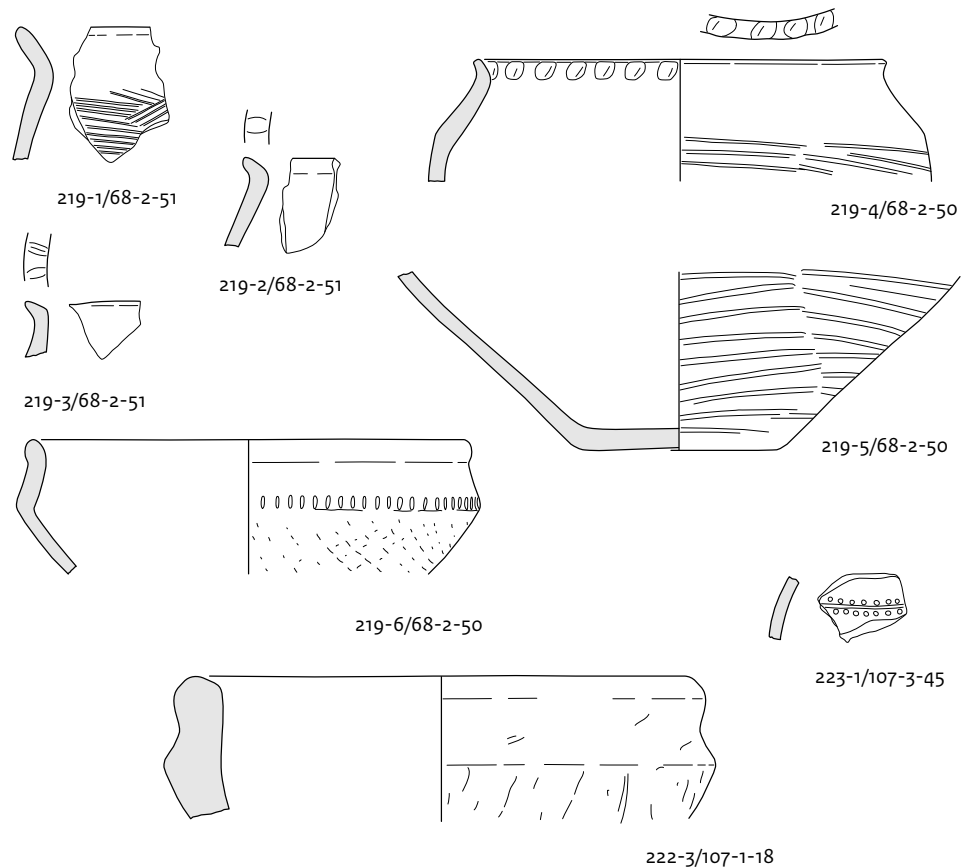


Fig. 21.10 Voerendaal-Ten Hove. Handmade pottery from building 219, 222 and 223. Scale 1:3.

2-50 (Fig. 21.10), although the diameters could not be determined exactly to confirm this. In both, the walls are decorated with relatively crude comb streaks. In a biconical bowl Van den Broeke 33 the carination is marked by a row of spatula impressions (219-6/68-2-50; Fig. 21.10). Another bowl, of type 42a, is somewhat atypical within the Late Iron Age pottery assemblage of Voerendaal. During the Late Iron Age this type is well represented in the Oss and Weert regions but much less so in the southern region around Voerendaal.<sup>1956</sup>

Lastly, it is worth mentioning that a minimum of 15 sherds were found in feature 68.066 (68-2-51/6320), belonging to a single, relatively large, pale orange-coloured jar, decorated with comb streaks and tempered with organic material and sand. Fragments in a similar fabric were also identified in the features of building 222 (finds 107-1-4 and 107-1-18). Reviewing the above, the temper, the dominant

comb-streak decoration and the spectrum of vessel types all suggest a Late Iron Age date for the assemblage from building 219, probably after c. 200 BC.

#### Building 222

Only 24 fragments (471 g) of handmade pottery were collected from the features of building 222 (Fig. 21.10). The MNI is 2 and the EVE is 9. All fragments are tempered with organic material, quite often combined with sand and sometimes also with grog or chalk. Only two fragments are decorated with comb streaks (8.5%). Pottery fragments with a pale, orange colour were present in finds 107-1-4 and 107-1-18. As mentioned above, sherds in a similar fabric were also found in the features of building 219. A (hypothetical) vessel type can be determined for only one sherd, even though the actual rim is missing (find 107-2-36/9566). The lower part of this biconical bowl Van den Broeke 33 is decorated

<sup>1956</sup> Van den Broeke 2012, 67; see also Hiddink 2014.

with comb streaks. The vessel is tempered with organic material, sand and chalk. Almost identical bowls were found in other Late Iron Age features, e.g. 794-1 (Fig. 21.11) and layers in trench 68 and 95 (68-1-7/6213; 95-2-19/11038; Fig. 21.14). Further, two fragments of a thick-walled (>1.0 cm) briquetage bowl in a soft, reddish fabric were collected from building 222 (B1 ware).<sup>1957</sup> This vessel can probably be determined as a Van den Broeke k-41/42. Vessels like this are dated between c. 350/325 BC and the Augustan period.<sup>1958</sup> Several of these bowls were also present in the assemblage of Neerbeek-Oude Pastorie.<sup>1959</sup> Martin mentions that the thick-walled examples of this type could be dated to the last two centuries BC.<sup>1960</sup> The temper, comb streaks and vessel types all suggest that the assemblage from building 222 should be dated to the Late Iron Age, most probably after c. 200, like the pottery from building 219 and 223, as well as pit 793-795.

#### Building 223

Fifty-one fragments (545 g) of handmade pottery were collected from the features of building (Fig. 21.10; Table 21.13; \*21.16). The MNI is 2 and the EVE is 5. Nearly all the pottery is tempered with organic material, quite often combined with sand and sometimes also with grog or chalk. Comb streaks were documented on 22 sherds (43%). One sherd is decorated with grooves. Within this assemblage, a large number of sherds are from one or more large, orange-coloured jars with wall-covering comb streaks in different directions, creating triangular-like shapes. A vessel type can be determined for two rim fragments. The first is a biconical bowl Van den Broeke 33, the other is a briquetage vessel k-52/55a in A1 ware.<sup>1961</sup> According to Van den

Broeke, jars like this are well represented between c. 400 BC and the Early Roman period.<sup>1962</sup> Martin dates these jars to the last two centuries BC.<sup>1963</sup> Briquetage vessels like this were probably imported from the western (coastal) regions of the Netherlands. A wall fragment worth mentioning is decorated with a single groove line with small imprints (about 1 mm in diameter) on both sides (223-1/107-3-45; Fig. 21.10). Comparable decoration patterns were also documented in the Late Iron Age assemblage of Neerbeek-Oude Pastorie.<sup>1964</sup> As mentioned above, several fragments of a single jar were collected from different postholes of this building.<sup>1965</sup> It is most probably comparable to the globular jar Martin PIIa, dated between c. 200 BC and AD 75. According to Martin, the Roman-period versions of this type have less-thickened rims. The jars from building 223 can most probably be identified as Late Iron Age examples. On the basis of the temper, the prominent comb-streak decoration and the vessel-type spectrum, the assemblage from building 223 should probably be dated after c. 200 BC. As an assemblage it can be associated with those from building 219 and Late Iron Age pit 793-795.

#### Building 236

Only 11 fragments (111 g) of handmade pottery were collected from the features of building 236. These poorly preserved fragments should probably be understood as stray finds that accidentally ended up in the features of building 236, either during its construction, or later, after its destruction. Grog temper is dominant, although some organic material was also added in some cases. One rim fragment is characterized by fingertip impressions, situated partly on the

**Table 21.13. Voerendaal-Ten Hove. Quantitative overview of the pottery assemblage from building 223.**

Category	Fabric	Vessel shape	Type	N	Wt (g)	MNI	EVE (%)
Briquetage	A1	jar/bowl	Van den Broeke k-52/55a	2	34	1	4
Handmade	-	-	-	48	502	0	0
Handmade	-	bowl	Van den Broeke 33	1	9	1	1
<b>Total</b>				<b>51</b>	<b>545</b>	<b>2</b>	<b>5</b>

<sup>1957</sup> Van den Broeke 2012, 159.

<sup>1958</sup> Van den Broeke 2012, 171.

<sup>1959</sup> Hiddink & De Boer 2005, 25,

fig. 17.

<sup>1960</sup> Martin 2017, 301.

<sup>1961</sup> Van den Broeke 2012, 159 ff.

<sup>1962</sup> Van den Broeke 2012, 272.

<sup>1963</sup> Martin 2017, 301.

<sup>1964</sup> Hiddink & De Boer 2005, 24,

fig. 16.

<sup>1965</sup> 107-3-5/9572, 107-3-6/9573,

107-3-44/9583, 107-3-

46/9587, 107-3-47/9588,

107-3-56/9595 and

107-3-57/9596.

outside of the rim. The assemblage is too limited in size to allow for reliable conclusions to be drawn.<sup>1966</sup>

**21.3.3 Pottery from pits**

*Pit 793*

Only nine sherds (112 g) of handmade pottery were collected from pit 793 (Fig. 21.11). In general, the pottery is tempered with organic material, sand and in several cases also chalk (possibly shell fragments). Four fragments are decorated with comb streaks and one with grooves. Despite the limited number of fragments, the vessel type can be determined for four rim sherds. These are two jars Martin PIIa and two bowls Van den Broeke 33. One of the former, a closed vessel with a thickened rim, is nearly identical to that of 794-2 (Fig. 21.11). Vessels like this are dated between c. 200 BC and the Early Roman period (until c. AD 75), but the example from Voerendaal seems to compare best with the Late Iron Age vessels shown by Martin. The other jar of this type has at least two ribs on the shoulder, directly beneath the rim. Other vessels with similar ribs are known from Ten Hove (95-2-19/11040; Fig. 21.14)<sup>1967</sup> and other sites, such as Neerbeek-Oude Pastorie (507-87, 507-78),<sup>1968</sup> Lomm-Hoogwatergeul phase II (from grave D25),<sup>1969</sup> and several sites described by Martin.<sup>1970</sup> The best parallels can be found at Eschweiler-Laurenzberg (c. 125-100 BC).<sup>1971</sup> One of the bowls Van den Broeke 33 is characterized by

vertical grooves running down from the jar’s shoulder (793-1/95-3-7; Fig. 21.11). This vessel has a fine, everted/ledged rim with a flattened interior side. The combination of vessel type and decoration makes a Late Iron Age most plausible for this specimen. Few fragments from the assemblage in pit 793 show a decoration pattern very similar to that on the jar Martin PIVb, collected from nearby pit 794 (some 25 m away). It is possible that the sherds originate from the same jar and that the pits were more or less contemporary, although this cannot be determined definitively. All in all, the dominant organic temper, the comb-streak decoration, the presence of the PIIa jars, the decorated type-33 bowl and the fragments, comparable to the jar from pit 794, lead to the conclusion that the small assemblage from pit 793 should probably be dated to the later Late Iron Age, most probably between c. 200 and 50 BC.

*Pit 794*

Seventy-seven fragments of handmade pottery were collected from this pit (Fig. 21.11 and Table 21.14; \*21.16). They weigh 1,089 g and represent 14 MNI and 108 EVE. Almost all fragments were tempered with organic material, partly combined with grog and sometimes sand and/or chalk inclusions. Comb streaks are documented on 26 sherds (34%). Some variation can be observed within the category of comb-streak decoration. While in some cases the entire wall surface is covered with fine, broad and

<sup>1966</sup> Cf. Chapter 6 and 81 for a discussion on the dating of this building.

<sup>1967</sup> Also 95-2-19/11036.

<sup>1968</sup> Hiddink & De Boer 2005, 21.

<sup>1969</sup> Van Kerckhove 2011c, 129, fig. 7.3.

<sup>1970</sup> Martin 2017. Most often, two or three of these ribs are located on the vessel’s shoulder. ‘Ribbed’ vessels are found, among other places, at Bovenistier-Roua de Malaxhe, fosse 1 (c. 150-50 BC), Haneffe-Champs Tirtiaux, fosse 1 (c. 150-75 BC), Eprave-Trou de l’Ambre (c. 175-50 BC) and Hélécine-Chapeauvau (c. 175-19 BC).

<sup>1971</sup> Joachim 1980, 397 (plate 22) and 399 (plate 24, no. 14).

**Table 21.14. Voerendaal-Ten Hove. Quantitative overview of the pottery assemblage from pit 794.**

Category	Fabric	Vessel shape	Type	N	Wt (g)	MNI	EVE (%)
Briquetage	A1	-	-	2	3	0	0
Briquetage	A1	bowl	Van den Broeke k-20/22	5	38	1	3
Briquetage	A1	bowl	Van den Broeke k-20/22	4	86	1	19
Handmade	-	-	-	46	429	0	0
Handmade	-	bowl	Van den Broeke 33	3	83	3	16
Handmade	-	jar	Martin PIIa	7	97	7	36
Handmade	-	jar	Martin PIVb	10	353	2	34
<b>Total</b>				<b>77</b>	<b>1089</b>	<b>14</b>	<b>108</b>

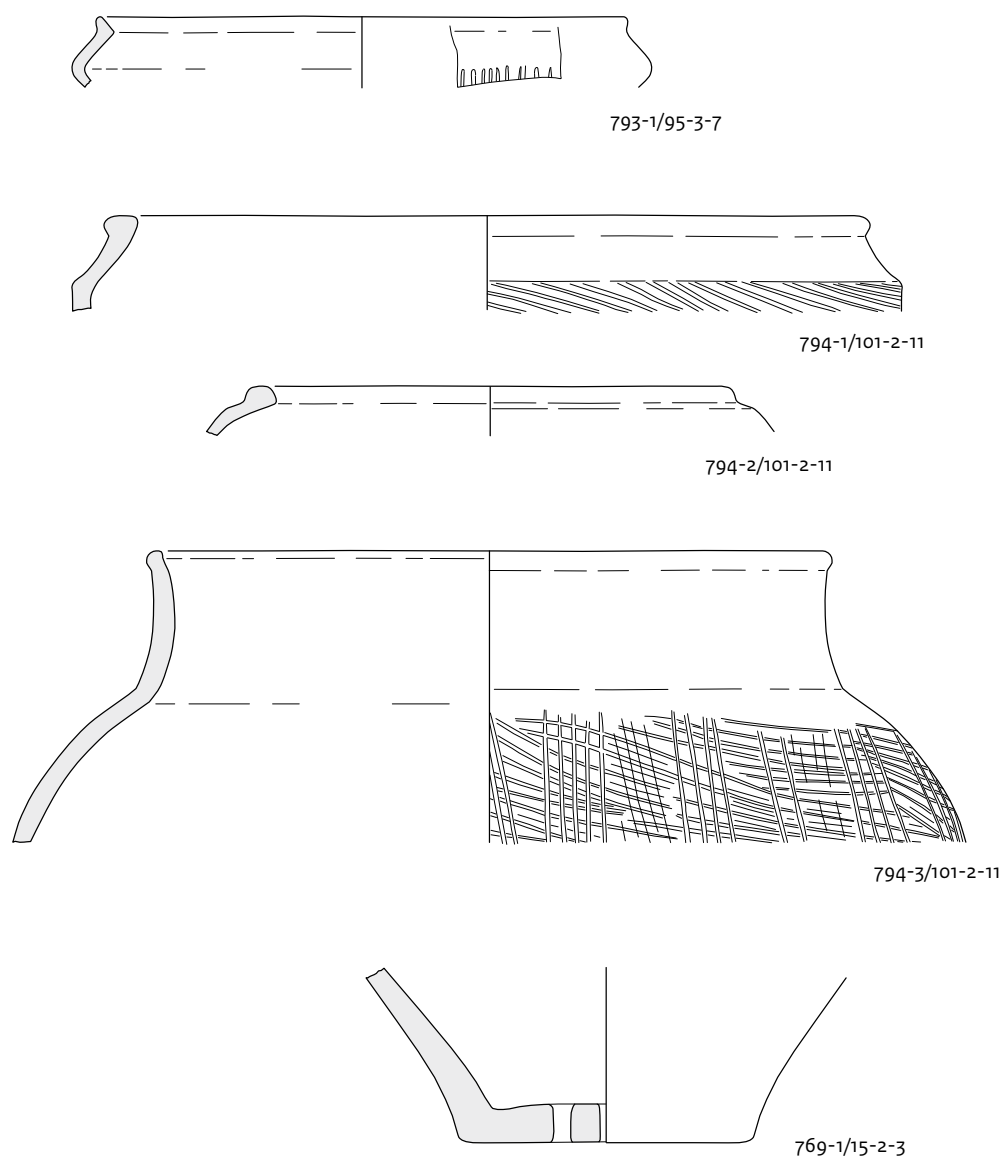


Fig. 21.11 Voerendaal-Ten Hove. Handmade pottery from pit 793, 794 and 769, as well as glass and metal from 794. Scale 1:3.

shallow streaks (termed 'Besenstrich' in German, meaning 'broom streaks'),<sup>1972</sup> other vessels are decorated with much rougher and deeper grooves, applied with a much cruder comb (Fig. 21.12).

Of the rims, eight are thickened, the others are rounded. The vessel type can be determined for a significant number of rim sherds (14 MNI). No fewer than seven rims can be identified as part of jars Martin PIIa (7 MNI); closed, globular jars with thickened rims. In almost all examples, a shallow, wide groove is present directly

beneath the rim (e.g. 794-2/101-2-11; Fig. 21.11).<sup>1973</sup> In some of the jars some form of chalky material was added as temper and in one case shell fragments can be recognized macroscopically. Jars of this type can be regarded as the early predecessors of the cork-urn vessels that were made from the latest phases of the Late Iron Age and the Augustan period onwards (see also Section 21.5.2 below).<sup>1974</sup> They are dated between c. 200 and the Early Roman period (until c. AD 75). The examples from Voerendaal seem to compare best with the examples from the Late Iron Age.

<sup>1972</sup> See for example Joachim 1980, 367.

<sup>1973</sup> Similar grooves can also be seen in similar pots at Eschweiler-Laurenzberg and Neerbeek-Oude Pastorie. For Eschweiler, see Joachim 1980, 385, no. 3; 398, no. 17 and possibly also 410, no. 6-7; for Neerbeek, see Hiddink & De Boer 2005, 19, fig. 13, 507-79, 507-128.

<sup>1974</sup> Martin type PIIa and PIIb; cf. Lepot & Vilvorder 2010.

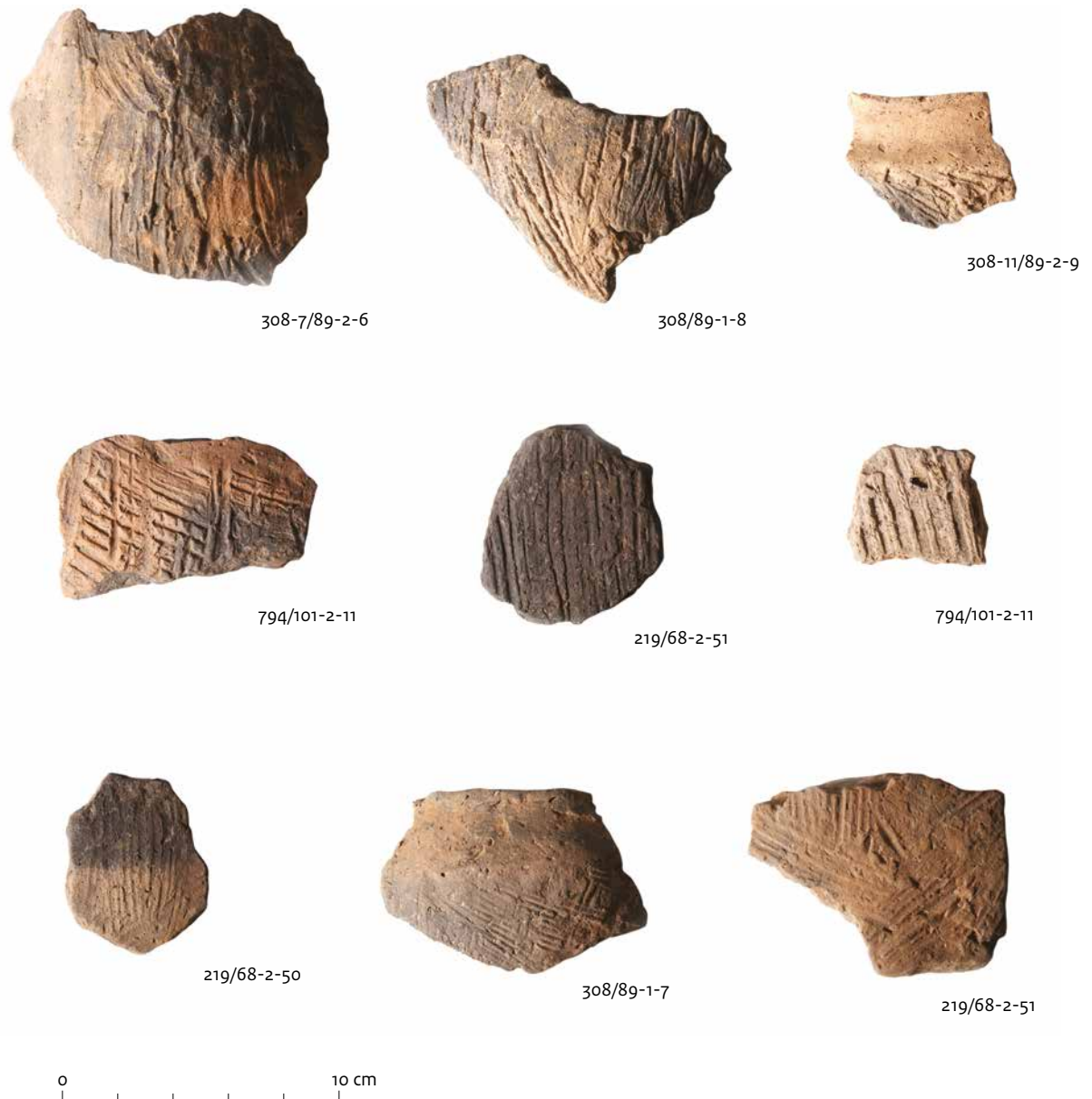


Fig. 21.12 Voerendaal-Ten Hove. Examples of different kinds of combed decoration on Iron Age pottery. (source: D.S. Habermehl)

Further, three bowls Van den Broeke 33 (3 MNI) and two jars Martin PIVb (2 MNI) can be recognized. One of the former carinated bowls is executed in a dark fabric, with chalk and a little sand added (794-1/101-2-11; Fig. 21.11). It has a small, everted rim. Bowls of this type remained particularly popular in the region around the river Meuse during the Late Iron Age (including Kesselt, Itteren, Neerbeek, Maastricht and Voerendaal), while tending to diminish

considerably in number in the Dutch sandy regions around Oss and Weert.<sup>1975</sup>

Another remarkable specimen is a large jar with a long vertical neck, Martin PIVb (794-3/101-2-11; Fig. 21.11).<sup>1976</sup> This jar is decorated with kinds of irregular comb streaks, probably from the shoulder down. Besides grog, organic material and a bit of sand were also added to its fabric. A parallel for this vessel is jar 507-103 from the Late Iron Age site of Neerbeek-Oude Pastorie.<sup>1977</sup>

<sup>1975</sup> See Hiddink 2014b; Van den Broeke 2012, 67.

<sup>1976</sup> Van den Broeke 2012, 79.

<sup>1977</sup> Hiddink & De Boer 2005, 22, fig. 15.

Besides the vessels already described, two briquetage bowls were also collected from pit 794. These bowls Van den Broeke k-20/22 are executed in a thick-walled, yellowish fabric with organic temper. These neckless bowls developed during the period between c. 225/200 and 150/125 BC, but they are found on inland sites, especially between 150/125 and 50/25 BC.<sup>1978</sup> Good parallels are known from Neerbeek-Oude Pastorie, Wange-Damekot and Waremme-La Costale.<sup>1979</sup>

Reviewing the above, the temper, the dominant comb-streak decoration and the presence of the briquetage bowls Van den Broeke k-20/22 suggest that the assemblage from pit 794 should probably be dated between c. 150 and 50 BC. A <sup>14</sup>C date provides a terminus post quem of c. 200 BC,<sup>1980</sup> while a Middle La Tène brooch and glass arming date before c. 100 BC (Fig. 46.31).

#### Pit 795

Only three sherds of handmade pottery (25 g) were collected from pit 795, just south of pit 794. These pottery fragments are tempered with organic material and sand. One of the sherds is decorated with comb streaks. Despite the minimal assemblage, the organic temper and the comb-streak decoration seem to suggest that the assemblage from this pit is more or less contemporary with those from 793 and 794 and dates to the Late Iron Age.

#### Pit 769

Pit 769 is located right next to building 236, with which it could possibly be associated. Seventy-one sherds of handmade pottery were collected from it (1,575 g; Table 21.15- \*21.16). In general, the pottery is relatively thick-walled and coarse. A fair proportion of the fragments

are roughened (19.5%). Two fragments are executed in a burnished, dark fabric (3%) and none of the fragments are decorated. While grog temper is clearly dominant, organic material was also added to some sherds (11.5%). A dish Van den Broeke 21 can be identified within the assemblage. Another piece worth mentioning is a fragment of a jar's bottom with three holes of approx. 0.8 cm diameter each, created after firing (769-1/15-2-3; Fig. 21.11). Vessels with perforated bottoms are likely to be used as sieves (in combination with cloth) or strainers, for example to clean milk or make cheese.<sup>1981</sup> On the one hand, the lack of decoration, the roughening and the dominance of grog temper clearly differentiate this assemblage from the Late Iron Age assemblages described above and could suggest a Middle Iron Age date. On the other, the significant presence of organic temper is remarkable and does not match the other Middle Iron Age assemblages of Voerendaal. Consequently, a date in the second half of the Middle Iron Age or the first half or the earliest phase of the Late Iron Age can be suggested for pit 769.

### 21.4 Completing the picture. Handmade pottery not found in features

To further complete and possibly refine the picture of the handmade pottery, material from a series of trenches located 'inside' enclosure 308 should be discussed. For this pottery, only those fragments that provide us with information on chronology or other themes were analysed and documented in more detail. The rest of the material is described in more general terms. We can distinguish between sets of trenches with a dominant Early/Middle Iron Age pottery

**Table 21.15. Voerendaal-Ten Hove. Quantitative overview of the pottery assemblage from pit 769.**

Category	Fabric	Vessel shape	Type	N	Wt (g)	MNI	EVE (%)
Handmade	-	-	-	70	1567	1	5
Handmade	-	dish	Van den Broeke 21	1	8	1	3
<b>Total</b>				<b>71</b>	<b>1575</b>	<b>2</b>	<b>8</b>

<sup>1978</sup> Van den Broeke 2012, 170.

Martin (2017, 301) states that the examples from Belgium should be dated to the Late Iron Age.

<sup>1979</sup> Hiddink & De Boer 2005, 25, fig. 17; Martin 2017, 301-302, no. 11, 15, 19, 20, 21.

<sup>1980</sup> Chapter 5 and 87; table 5.6.

<sup>1981</sup> Van den Broeke 2012, 98-99. Although shallow bowls with straight walls are better suited for the latter purpose (cf. Fig. 46.25).

spectrum, a dominant Late Iron Age one and trenches with a mixed spectrum, often divided between the lower and upper excavation levels.

#### 21.4.1 Trenches with mainly Early and Middle Iron Age pottery

##### *Trench 104, 105 and 108*

The pottery assemblages from trenches 104, 105 and 108 are dominated by pottery predating the Late Iron Age phase. In general, the pottery is thick-walled, grog tempered and often roughened. Besides the dominant grog, some stone grit was also documented in pottery from trench 108. Among the vessel types we find several barrel-shaped jars Van den Broeke 23a – some with fingertip imprints on top of the rim – and one or two dishes 21. Within these trenches, pit 797, 798 and 799 also contained thick-walled, grog-tempered and roughened pottery. On the basis of the temper, the vessel types and prominent roughening, the pottery assemblage from trenches 104, 105 and 108 should be dated to the Middle Iron Age, between c. 500 and 250 BC (cf. pits 756, 773 and 810).

##### *Trench 106*

Trench 106 is also dominated by pottery predating the Late Iron Age use of the fortified enclosure. Late Iron Age pottery seems to be completely absent from this trench. In general, the handmade pottery is thick-walled, grog tempered and often roughened. Stone grit can also be documented in some fragments. Among the vessel types we find a bowl or jar Van den Broeke 52/55a with fingertip impressions on its rim and barrel-shaped jars 23a (including a very large specimen, 312-3/106-3-14). These characteristics would suggest an Early or Middle Iron Age date for this assemblage, much of which ultimately ended up in the fill of Roman ditches.

#### 21.4.2 Trenches with predominantly Late Iron Age pottery

##### *Trench 68 and 69*

In trench 68 (186 fragments; 2,755 g) and 69 (232 fragments; 4,705 g), a dominant proportion of the pottery – especially that from the lower excavation levels – could be associated with the

period preceding the use of the fortified enclosure (Fig. 21.13-14). However, a predominantly Late Iron Age pottery assemblage was collected from the uppermost excavation levels.

The pottery assemblage from the lower excavation levels (3, 4, 5 and 6) is generally thick-walled, grog-tempered and often roughened. Stone grit is also occasionally added as temper. Among the vessel types we find a dish Van den Broeke 3b (69-5-4/7388; Fig. 21.13) with comb-streak decoration and a short, everted rim (B3-type rim),<sup>1982</sup> barrel-shaped jars 23a and 23b (69-5-4/7388, 69-5-5/7389; Fig. 21.13) and a biconical bowl of type 33, also with an everted rim. A special piece is a band ear (69-4-3/11838) that should be dated to the Late Bronze Age or Early Iron Age.<sup>1983</sup> Another remarkable fragment is a wall sherd decorated with a pattern of broad, partly curved parallel grooves (69-5-5/7390; Fig. 21.13). The dish type 3b with comb streaks should probably be dated between c. 575/550 and 400/375 BC. The jars 23b should be dated to the Early Iron Age.

A Late Iron Age pottery assemblage was collected from excavation levels 1 and 2 in trench 68, mainly from feature 68.005 and other 'dirty layers',<sup>1984</sup> This pottery is tempered with organic material, sometimes combined with sand and chalk. Several wall fragments are decorated with comb streaks. Among the vessel types we find two biconical bowls Van den Broeke 33. One of these is characterized by comb-streak decoration from the shoulder down (68-1-7/6213; Fig. 21.14). The other has an everted rim. In trench 69, Late Iron Age pottery was collected from layer 69.045 (69-4-4), just east of small building 206.<sup>1985</sup> Two rims of a tripartite jar were found in the features of this latter building. The organic temper in these pottery fragments seems to indicate a Late Iron Age date.

Reviewing the above, pottery from the lower excavation levels of trench 68 and 69 suggests that this part of the site was in use during the Early and Middle Iron Age, probably during more than one activity phase. The assemblages seem to overlap with those from the Early and Middle Iron Age pits described above. During the Late Iron Age, the use of this location can be associated with fortified

<sup>1982</sup> Van den Broeke 2012, 90.

<sup>1983</sup> Van den Broeke 2012, 69-70.

<sup>1984</sup> Find 68-1-7, 68-2-90, 68-0-0.

<sup>1985</sup> The pottery assemblage from this feature is mixed.

It contains both sherds with stone grit temper and sherds with organic material and sand, with combed decoration.



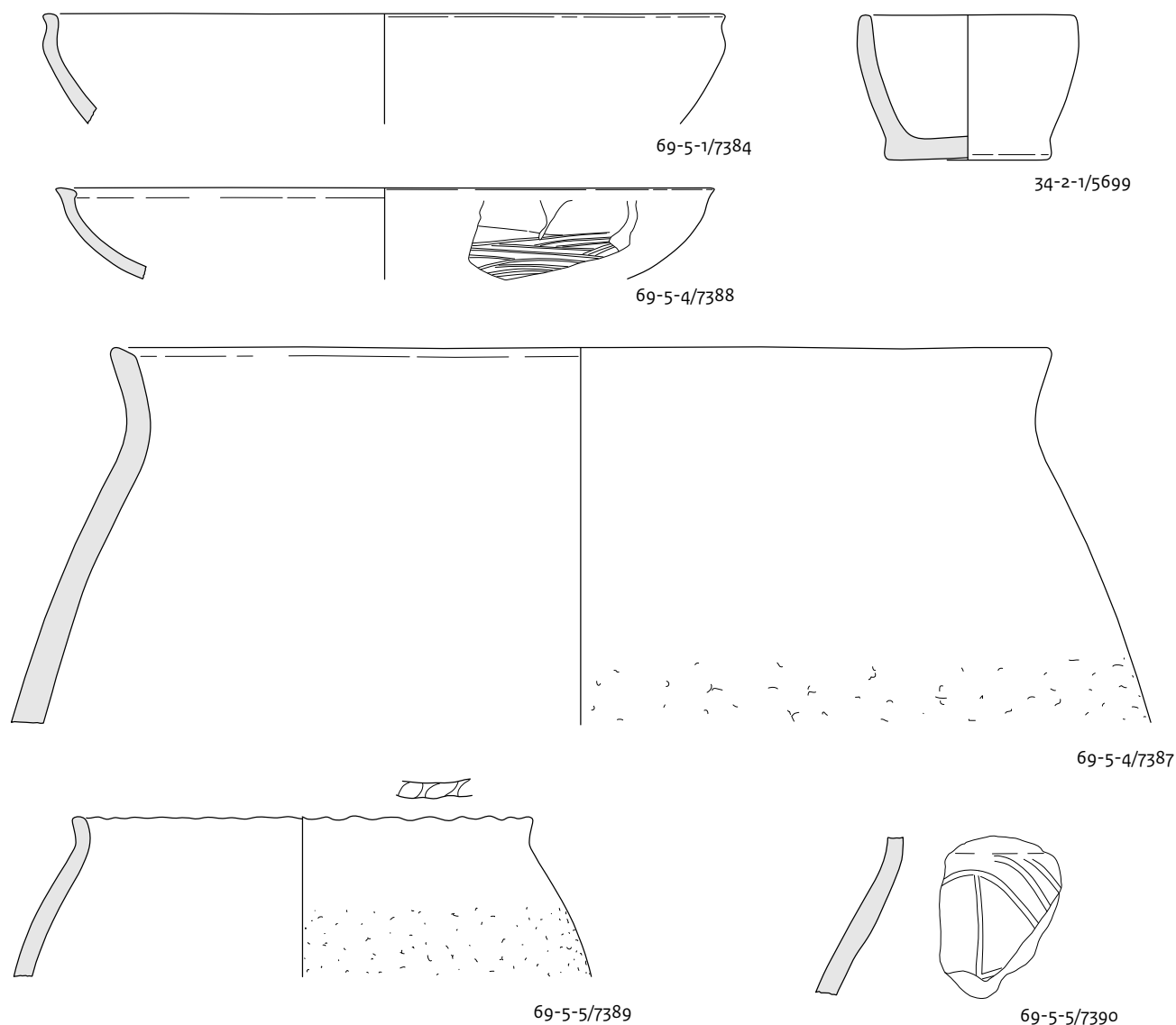


Fig. 21.13 Voerendaal-Ten Hove. Handmade pottery from trench 69. Scale 1:3.

enclosure 308. The pottery described is very comparable to that from the Late Iron Age pits and buildings, as would be expected given its position within the confines of ditch 308 and near buildings 206 and 221.

#### Trench 95 and 96

Late Iron Age pottery is clearly dominant in trench 95 (154 fragments; 1,963 g) and 96 (6 fragments; 50 g), especially at excavation level 1 and 2 (Fig. 21.14). In trench 95, a first assemblage worth looking at is that from feature 95.076, a layer overlapping with Late Iron Age

building 221. Eighty-four fragments of handmade pottery were collected from this layer (908 g; 15 MNI; 94 EVE). All material is tempered with organic material, most often combined with sand and sometimes chalk. A significant proportion are decorated with comb streaks (25%). Among the vessel types, the bowl or jar Van den Broeke 33/34 predominates (5 MNI), with one MNI of the jar Martin PIIa (a jar somewhat similar to Martin PIIIb), jar PIVb and a jar like PIIC. The jars PIIa (95-2-19/11040) and PIVb (95-2-19/11036) are characterized by ribs on the shoulder and neck respectively (Fig. 21.14).



The spectrum from trench 95 compares well with that of the assemblages from the Late Iron Age pits (793-795) and buildings (219, 222, 223) described above. A possible exception is a jar with a shoulder/rim comparable to that of the 'cork-urn' Martin PIIIb (95-2-19/14466; Fig. 21.14). This cork-urn-type vessel is absent from the 'closed' Late Iron Age assemblages and should be dated from c. 50 BC onwards. However, as the same find number/layer also includes four sherds of Roman-period wheel-thrown pottery, it is most likely that this cork urn did not end up there until the Roman period. Nevertheless, the Late Iron Age pottery from this layer clearly indicates that this location was used intensively during the Late Iron Age, as the concentration of Late Iron Age buildings also suggests.

Another feature in trench 95 with a significant Late Iron Age pottery assemblage is layer 95.001, also (partly) overlapping with building 221. With no fewer than 216 fragments of Roman-period wheel-thrown pottery, this is clearly a mixed assemblage. Nonetheless, the assemblage of handmade pottery is worth looking at here. The dominance of organic temper, the comb-streak decoration (46.5%) and the vessel types Van den Broeke 33/34 and Martin PIIc are all typical of the Late Iron Age activities on site. The jar Martin PIIc has a small rim with a flattened interior side, decorated with fingertip impressions (95-1-16/10742, comparable to vessels 219-2 and 3 in Fig. 21.10). Martin dates similar jars between c. 250 and 50 BC. A remarkable piece is a strongly closed, neckless jar with a rounded rim (95-1-1/10034; Fig. 21.14). Burn marks are visible along the outside of the rim. Its fabric is remarkably hard, coarse and dense. Similar vessels were found at the site of Eschweiler-Laurenzberg.<sup>1986</sup> Precise parallels seem to be lacking in the assemblages shown by Martin, although the general shape of the vessel from Voerendaal resembles that of the type PIIIc, which Martin refers to as *dolia*.<sup>1987</sup> However, the examples shown by Martin are larger and characterized by articulated rims.

More Late Iron Age pottery was collected from layers 95.003 – just south of building 221 and partly overlapping with building 418 – and 95.049, situated within the boundaries of building 221. These assemblages include a bowl/

jar Van den Broeke 33/34 and a jar Martin PIIc. Only a few small fragments of handmade pottery were collected from the features of building 221 itself. Nonetheless, these fragments can probably be dated to the Late Iron Age on the basis of their organic temper and comb-streak decoration. Only a few fragments of handmade pottery were collected from trench 96. These few sherds can be dated to the Late Iron Age.

Reviewing the above, it is clear that trench 95 in particular is situated in the location where the Late Iron Age activities were concentrated. The temper, dominant comb-streak decoration and vessel types all closely resemble the pottery assemblages from the Late Iron Age pits and buildings. Consequently, the pottery from trenches 95 and 96 should also be dated between c. 150 and 50 BC.

#### *Trench 101 and 107*

Most handmade pottery from trench 101 (178 fragments) is characterized by the use of organic temper, the addition of sand and the presence of comb-streak decoration (Fig. 21.14). Among the vessel types are bowls Van den Broeke 33 and jars/bowls 33/34 with thickened or articulated rims. A special piece is a jar Martin PIVb/Van den Broeke 59, decorated with circles directly beneath its rim (101-2-22/8686; Fig. 21.14). Besides Late Iron Age pottery, possibly, a small amount of older material can also be recognized in trench 101. Trench 107 provides us with a similar picture as trench 101. Again, jars/bowls Van den Broeke 33/34 are well represented (at least 6 MNI), often decorated with comb streaks (107-1-1, 1-5, 1-7, 107-2-1 and 2-10). Two jars Martin PIIa and a bowl Van den Broeke 52 (107-3-64/9599) can also be identified. A remarkable, closed, neckless vessel (107-2-1/9548) is comparable to vessel 95-1-1/10634, described above (Fig. 21.14). Atypically, its dark fabric is tempered with crude orange grog. In conclusion, the majority of handmade pottery from trenches 101 and 107 can be dated to the Late Iron Age – most probably between c. 150 and 50 BC – and resembles the pottery from the Late Iron Age pits and buildings described above. This would be expected, as trenches 101 and 107 are situated at the core of the fortified enclosure, with Late Iron Age buildings 222 and 223 nearby.

<sup>1986</sup> Joachim 1980, 393, 403.

<sup>1987</sup> Martin 2017, 279-281, fig. 343.

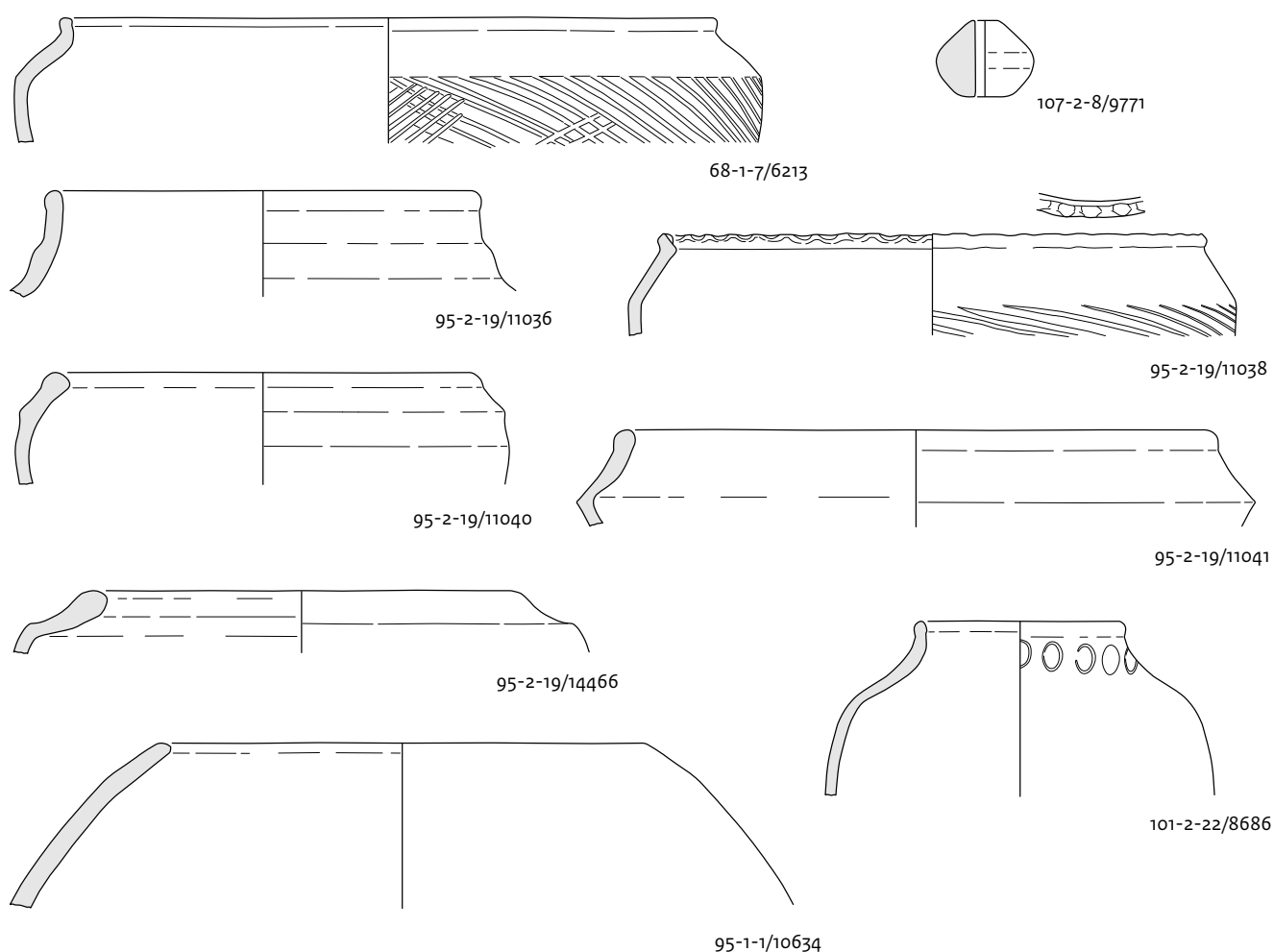


Fig. 21.14 Voerendaal-Ten Hove. Handmade pottery from trench 68, 95, 101 and 107. Scale 1:3.

## 21.5 Discussion and interpretation

Having analysed and described the various pottery assemblages in detail, we will take a step back in this section and study the chronology and composition of the Iron Age pottery assemblage as a whole. We will attempt to define and describe pottery groups on the basis of their shared characteristics and then discuss their chronology and interpretation. A specific theme that we focus on concerns the transition period between the Late Iron Age and the Early Roman period. What can we say about continuity or discontinuity between these periods on the basis of the handmade pottery?

### 21.5.1 Defining chronological groups

By comparing the assemblages from Voerendaal with each other and with assemblages from other sites, we can define three chronological groups: Early Iron Age, Middle Iron Age and Late Iron Age. Before looking at these groups in somewhat more detail, we should emphasize firstly that each group is relatively coherent, meaning that the assemblages within each group are very comparable in terms of characteristics and composition. This could be taken as an indication that the assemblages were deposited during a relatively short period of time. Secondly, it is important to emphasize that the differences between the chronological groups are distinct, especially those between the Middle Iron Age

and the Late Iron Age group. These differences would indicate that there is a considerable chronological gap between the activities associated with the respective pottery assemblages.

### 21.5.2 Early, Middle and Late Iron Age pottery groups

#### *Early Iron Age assemblages*

The assemblages from pits 750 and 780 are dated to the Early Iron Age (c. 800-500 BC). These pits are situated near each other, some 40 m north of Late Iron Age enclosure 308. More Early Iron Age pottery was probably collected from the lower excavation levels in trench 69. Typical of these Early Iron Age pottery assemblages are the presence of stone-grit temper, the necked, barrel-shaped jars Van den Broeke 23b – often with decorated rims – and a band ear (from trench 69). This pottery can probably be interpreted as the reflection of Early Iron Age settlement activity at the Ten Hove site. The pottery from pits 750 and 780 on the one hand and trench 69 on the other (some 110 m apart) could possibly be regarded as reflecting two separate, not necessarily contemporary Early Iron Age farmsteads.<sup>1988</sup> (Fig. 21.1). The deposition in pit 750 stands out because of its composition (pottery in combination with loam and natural stone) and the high degree to which this material was exposed to fire. In the archaeological literature, such depositions are often associated with abandonment rituals. Especially for the Early Iron Age, pits with similar burned contents are well documented. For example, such pits were also found at Helden-Panningen-Stokx,<sup>1989</sup> and at Maastricht-Randwyck.<sup>1990</sup>

This phenomenon was described and analysed by Van den Broeke and Gerritsen.<sup>1991</sup>

The Early Iron Age assemblages from Voerendaal can perhaps be dated with somewhat more precision by comparing them with the well-dated assemblages from Geleen-Haesselderveld-West and Maastricht-Randwyck (sixth century BC and 550-500 BC respectively).<sup>1992</sup> Both include several carinated vessels, and barrel-shaped jars Van den Broeke 23a are also present in the Maastricht assemblage. As both these vessel types are absent in

Voerendaal, this could indicate that we should date the Early Iron Age assemblages from Voerendaal between c. 800 and 600 BC.

#### *Middle Iron Age assemblages*

Several pits from the Ten Hove site can be dated with varying degrees of certainty to the Middle Iron Age (c. 500-250 BC): pits 749, 756, 772, 773, 776, 779, 800 and 810 (Fig. 21.1). For the assemblage from this period, grog temper is clearly dominant (documented in about 98% of the pottery). In some cases, sand (averaging about 5%), stone grit (about 4.5%) or organic material (about 5.5%) are also added. A considerable proportion of the pottery fragments were roughened (average 27.5%); only a small amount was burnished (c. 2%). The proportion of wall decoration is 4%, with groove decoration (38.5%) and comb streaks (34.5%) dominant, followed by fingertip impressions (15.5%) and nail impressions (11.5%). Twenty-seven percent of the rims are decorated. With one exception (with nail imprints), these are all fingertip imprints, almost exclusively on top of the rim and in a few cases on the interior side of the rim. Most rims, however, are rounded (average 50.5%), while some are flattened or thickened. Closed vessels, at 91.5%, are clearly dominant. Open vessels make up 3.5% of the assemblage and closed vessels with a rim 5%. With regard to the vessel types, the barrel-shaped jar Van den Broeke 23a is dominant (16 MNI), directly followed by the dish 21 (14 MNI). The other vessel types include bowls 5b (5 MNI) and jars/bowls 33/34 (3 MNI). Furthermore, two possible bowls 42a were collected. A special piece is the briquetage bowl k-5b.

For several of the Middle Iron Age assemblages, a more precise date in the first half of this period could be suggested or suspected (pits 772, 773, 776, 779 and 800). The indications for such a date include the dominance of barrel-shaped jars Van den Broeke 23a, the presence of comb streak decoration, the presence of the briquetage bowl k-5b, stone-grit temper and pyramidal loom weights, collected from two of the pits. Furthermore, the proportion of wall decoration could correspond to the 'peak' as identified by Van den Broeke for the first half of the Middle Iron Age.<sup>1993</sup>

<sup>1988</sup> A widely known phenomenon is that only pits are left as a reflection of Early Iron Age activity, see e.g. Maastricht-Randwyck (Dijkman 1989), Geleen-Haesselderveld-West (Van den Broeke 1980) and Helden-Panningen-Stokx (Hiddink 2008a).

<sup>1989</sup> Hiddink 2008a.

<sup>1990</sup> Dijkman 1989, 12.

<sup>1991</sup> Van den Broeke 2002; 2015; Gerritsen 2003, 84-86 and 95 ff.

<sup>1992</sup> Van den Broeke 1980; Dijkman 1989, 12.

<sup>1993</sup> Van den Broeke 2012, 112.

The proportion of rim decoration, however, is rather high and would better fit an Early Iron Age date when compared with the patterns reconstructed by Van den Broeke for the Oss region.<sup>1994</sup> A chronological difference can be suspected for the assemblages from pit 756, based on the remarkably high percentage of roughened pottery (58%) and the lack of decoration. This pit should possibly be dated to the later Middle Iron Age. The pottery from pit 769 also stands out for its lack of decoration and the presence of organic temper. This assemblage was dated to the second half of the Middle Iron Age or the earliest phase of the Late Iron Age.

With regard to the location of the Middle Iron Age pits, three clusters can be identified (Fig. 21.1). A first cluster can be found in trenches 105 and 104, including pits 756, 773, 776 and 800. Nearby pits 797, 798 and 799 can also be dated to the Middle Iron Age. This cluster of pits can most probably be associated with the presence of a Middle Iron Age farmstead. The Middle Iron Age pottery assemblage that ended up in Late Iron Age ditch 308 (trenches 105 and 108) can also be associated with this activity zone. The two other 'clusters' include pit 772 and 780, situated some 110-130 m east of the first cluster, and pit 749 and 779, some 110 m away. Although not true clusters but simply pairs of pits, both could be indications of farmyards at these locations.

#### *Late Iron Age assemblages*

The assemblages from pits 793, 794 and 795, buildings 219, 222 and 223, and ditch 308 (trench 89) can be dated to the Late Iron Age (Fig. 21.1). The characteristics and composition of these assemblages are distinctly different from those of the Early and Middle Iron Age assemblages described above. The pits and buildings mentioned are all situated within the confines of enclosure ditch 308. It seems likely that the pottery was used by the households living in and next to the enclosure, although we should bear in mind that its construction date is unknown and our contexts could represent several different phases of activities/habitation.

Virtually all pottery in the Late Iron Age assemblages was tempered with organic material (average about 99%). Sand was also added in many cases (about 83%), and chalk

inclusions were also documented fairly often (c. 30%). Roughened surfaces are practically absent, but the pottery walls are regularly decorated with comb streaks in different variations (average 34%). Only 1% of the fragments are decorated with grooves. Six (8.5%) of the rims, are decorated, five with fingertip impressions and one with spatula impressions. The decoration is usually positioned on the inside of the rim. Quite a few rims are thickened, flattened/ledged or articulated in other ways (see the B3-type rims as defined by Van den Broeke and several of the rim types shown by Martin).<sup>1995</sup> As mentioned above, rims of this type are typical of the first half of the Middle Iron Age in the Oss region, but continued to be used further into the Middle and Late Iron Age in the Voerendaal region. The same applies to the carinated vessels Van den Broeke 33, which clearly diminished in number in the Oss region after 350/325 BC but remain prominently present further south during the later Middle Iron Age and Late Iron Age.

Within the Late Iron Age assemblages, vessels of composition type II are dominant, except for the assemblage from ditch 308 in trench 108, where closed jars with a rim are dominant. With regard to the vessel types, the carinated bowl Van den Broeke 33 (13 MNI) is clearly dominant, followed by the jar Martin PIIa (8 MNI), the jar PIVb (9 MNI) and the jar PIIC (5 MNI). The assemblage also includes some bowls Van den Broeke 42a, jars 55a, biconical jars 34 and a bowl 22. The assemblages also include some briquetage vessels: neckless bowls k-20/22 (3 MNI), a bowl or jar k-52/55a and a bowl k-41/42.

It is difficult to give precise dates for the beginning and end of the Late Iron Age activities at Ten Hove on the basis of the pottery (for convenience sake, ignoring the possibility of distinct phases/discontinuity). Even establishing the period in which ditch 308 was dug is impossible. Although it probably happened in the Late Iron Age, the only evidence is that it was completely filled up sometime in this period (well before the Roman period). The number of truly relevant 'closed contexts' is low: building 219, 222 and 223, and pit 793 and 794. The absence of the jar Van den Broeke 23 can be

<sup>1994</sup> Van den Broeke 2012, 107.

<sup>1995</sup> Van den Broeke 2012, 89-90; Martin 2017, 247, 268, 270.

explained because it was certainly manufactured less, or not at all in some areas, after 200/150 BC. Types like the jars Martin PIIa and IVa/b, bowls similar to Van den Broeke 33 and briquetage bowls k-20/22 provide *termini post quem* for these contexts between c. 200-150 BC.

There are only a limited number of sites in Zuid-Limburg and environs that are suitable for comparison. The pottery assemblage of Voerendaal is somewhat similar to that from Neerbeek-Oude Pastorie, dating to (or around) La Tène D1. In the German loess area, the settlements of Eschweiler-Lohn and Eschweiler-Laurenzberg provided a larger quantity of finds. The former settlement is dated between c. 200 and 150 BC (La Tène C) and the latter between c. 150/125 and 100 BC (La Tène D).<sup>1996</sup> The pottery assemblage of Eschweiler-Laurenzberg is clearly the best match for Voerendaal, with more biconical/carinated bowls or jars, jars such as Martin PIIa, more thickened, articulated or faceted rim types, and more 'ribbed' vessels and combed decorations than in Eschweiler-Lohn.<sup>1997</sup> In conclusion, the date for the Voerendaal assemblages together could probably be placed somewhere between c. 150 and 100 BC.

The question of the end date, albeit a very important one, is impossible to answer. Some pottery types found, could in theory have been produced until the Early Roman period. Furthermore, it is not clear which types would have to be present at Ten Hove to truly prove that habitation/activities continued into La Tène D2. A likely candidate is the 'cork-urn-like' jar Martin PIIIa/b, with an angular, thickened and inward-bent rim and with combed decoration. This form was made from the second half of the first century BC onwards and was preceded by the PIIa jar, found at Voerendaal. However, because PIII-type jars were made until the Early Roman period, the presence of just a few examples do not prove continuous habitation. The handmade pottery as a whole only covers with certainty the period up to c. 100/50 BC. The earliest wheel-thrown 'Roman' pottery appears around AD 40/50,<sup>1998</sup> with only a few brooches dating to the intermediate period.<sup>1999</sup>

Earlier, we touched upon the increased 'regionality' of Late Iron Age pottery compared

to that of the Early and Middle Iron Age. This is by no means an original notion as it is familiar to all pottery specialists. It concerns not so much the variety of vessel forms, but mainly the larger repertoire of surface treatment/decoration, cordoned/ribbed shoulders and rim forms in the Late Iron Age. When consulting site reports, we immediately sense the many differences between the handmade pottery found. The material from Voerendaal is still reminiscent of that from, say, Neerbeek-Oude Pastorie, Kesselt-Meulenweg and Eschweiler-Laurenzberg, sites some 10-25 km away.<sup>2000</sup> It has less in common with the Late La Tène settlements of Niederzier-Hambach (HA 382), Elsdorf-Heppendorf and Weert-Nederweert, some 40-45 km distant,<sup>2001</sup> and still less with that of Oss and Kontich-Alfsberg, about 100 km away.<sup>2002</sup> In the Early and Middle Iron Ages, pottery was quite similar over distances of at least 150 km.

Obviously, similarities and dissimilarities can also be influenced by chronological factors. Most pottery from Weert-Nederweert, for instance, seems somewhat older (La Tène C) than that from Neerbeek and Voerendaal. This micro-region is also interesting because several cemeteries were excavated there. When comparing the pottery from different sites, we find the expected similarities, but also marked differences at times, a kind of 'local pottery tradition'. Although intriguing, we wonder what these 'local' or 'regional' pottery styles mean: What was the significance for the communities involved? Perhaps it was primarily relevant for local groups or households. In contrast to the 'regionalized' pottery, other elements of material culture in the Late Iron Age showed considerable similarity across large areas. Examples are glass La Tène armrings and brooches, such as Middle La Tène, Nauheim and iron 'wire' brooches.

Whatever the explanation for these phenomena may be, they pose a problem for archaeologists. The pottery from a site like Ten Hove is difficult to date because of the relatively large differences from assemblages only 30-40 km away. We can only hope that more sites and features with sizeable amounts of pottery become available in the future in Zuid-Limburg itself, providing new parallels and data on chronology.

<sup>1996</sup> Joachim 1980, 375; Joachim 2006b; 2006c: transition LT C-D or even as late as D1.

<sup>1997</sup> See for example Joachim 1980, 379, 383, 385.

<sup>1998</sup> Cf. Chapter 23.

<sup>1999</sup> See Chapter 20.

<sup>2000</sup> Hiddink & De Boer 2005 (Neerbeek); Martin 2017, 110-122 (Kesselt); Joachim 1980 (Eschweiler-Laurenzberg).

<sup>2001</sup> Joachim 2007 (Niederzier); Ciesielski & Kempken 2019 (Elsdorf); Hiddink 2014 (Weert-Nederweert).

<sup>2002</sup> Van den Broeke 2012 (Oss); Annaert 1993 (Kontich).

# 22 South, Central and East Gaulish terra sigillata

*Ester van der Linden*

## 22.1 Introduction

During the various excavations at Voerendaal-Ten Hove, 441 fragments of South, Central and East Gaulish sigillata were found, including 156 rim sherds. Although the material is quite fragmented, it is fairly well preserved in other respects. Unlike much of the sigillata found elsewhere in the loess areas, the surface slip is generally not seriously affected by the soil. In general, the number of sherds per context is quite small. Therefore, no contextual analysis is presented in this chapter. Information on the occurrence of sigillata per context can be found in part IV of this publication (the structures catalogue).

The terra sigillata mainly consists of the usual forms, dishes, cups and bowls. Three quarters of the total, 347 fragments, belong to one of the main forms. In addition, some mortaria, large dishes and a beaker are present. About a quarter of the material was imported from South Gaul; slightly over half of it was produced in East Gaul. A small proportion could be identified with certainty as deriving from Central Gaulish production centres. The percentage of 3% is possibly a little too low because some fragments may have been classified as 'South Gaulish' or 'South or Central Gaulish'. The portion of decorated Central Gaulish ware is larger than that of plain ware from that region, but it is likely that the importance of the latter category is somewhat underestimated. This is not unusual because it is difficult to tell it apart from South Gaulish material.<sup>2003</sup>

## 22.2 Forms and wares

The oldest identified terra sigillata found at Voerendaal is a cup Ritterling 8 (9-1-1/555; Fig. 22.1). This type belongs to the Claudian-Neronian period and is rare at Flavian sites.

There are a few other pre- or Early Flavian fragments. One of those is a sherd of a bowl Dragendorff 29 (89-0-0/8128), with a decoration similar to the products of Celadus, a potter working from c. AD 50-70. Another example is a cup Dragendorff 27g with a stamp of Perrus, dating to c. AD 55-75 (702-19/7-0-11/259; Fig. 22.10). Finally, a dish Dragendorff 18 has to be mentioned, with a date of c. AD 50-80 (400-8/1953-2.1/13058; Fig. 22.2). In general, pre-Flavian forms, like dishes Dragendorff 15/17, cups 24/25 and decorated bowls Dragendorff 29, are attested, but in quite small numbers. Therefore, the start of the sigillata assemblage was shortly before AD 70.

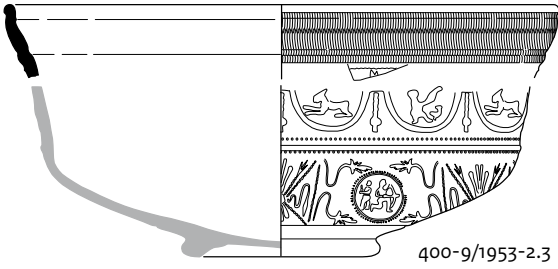
Among the group of dishes, the dish form developing from Dragendorff 18 to 18/31 and 31 is dominant (Fig. 22.2). Over two-thirds of these were produced in Central or East Gaul and can be classified as belonging to either the Dragendorff 18/31 or 31 development stages. Seven dishes were stamped (see Section 22.3 and 22.6). Five stamps date from the Flavian to the third quarter of the second century AD. The remaining two are too poorly preserved to identify and date.

Mortaria with a lion's head Dragendorff 45, dishes 32 and cups 40 are the main late forms at Ten Hove (Fig. 22.1-3). Although the latter two forms were produced from AD 160 onwards, they are typical of the late second and the third century AD. A cup – probably a Dragendorff 40 – had its wall removed so that the base itself, turned upside down, could be used as a small cup (96-2-1/8222; Fig. 22.1). The mortarium Dragendorff 45 was made from the last quarter of the second century onwards, but is characteristic of the third century AD. The production of East Gaulish sigillata is often assumed to have ended c. AD 275, a date based on the idea that the unrest of that time put an end to it. Now, however, it is thought that sigillata was made at Trier and Rheinzabern even after this time, albeit on a limited scale.<sup>2004</sup>

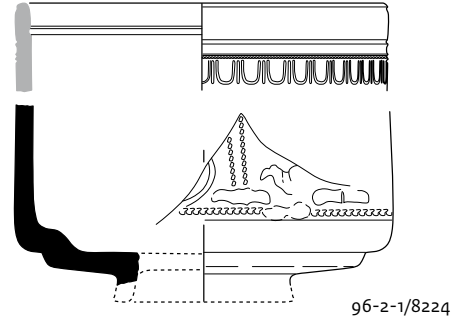
<sup>2003</sup> E.g. Van der Linden 2009, 84.

<sup>2004</sup> Brulet *et al.* 2010, 189-190; 193.

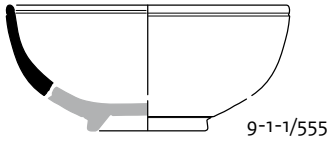
**DRAGENDORFF 29**



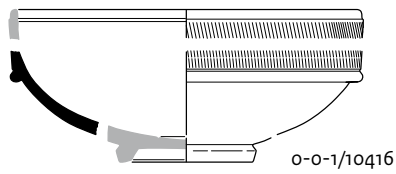
**DRAGENDORFF 30**



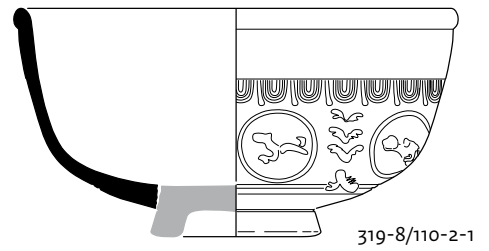
**RITTERLING 8**



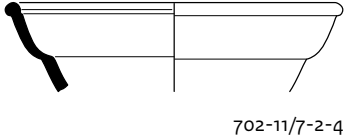
**DRAGENDORFF 24/25**



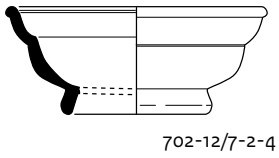
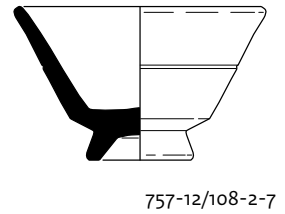
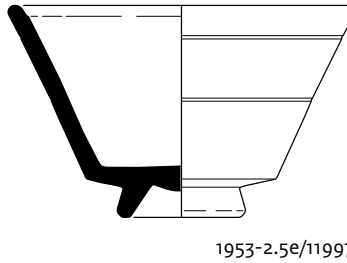
**DRAGENDORFF 37**



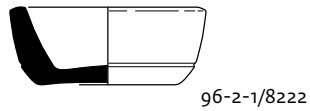
**DRAGENDORFF 27**



**DRAGENDORFF 33**



**DRAGENDORFF 40**



**DRAGENDORFF 35**

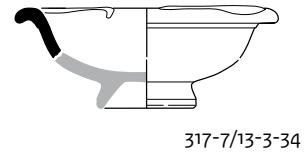
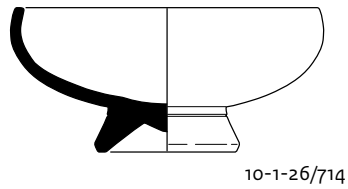
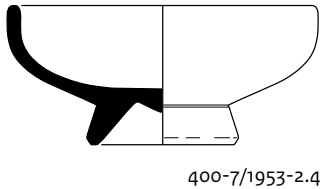
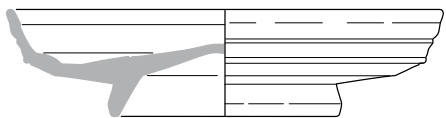
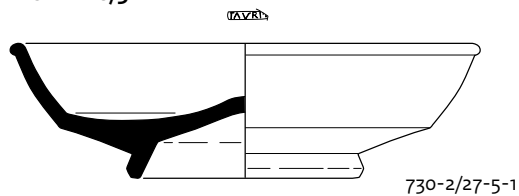
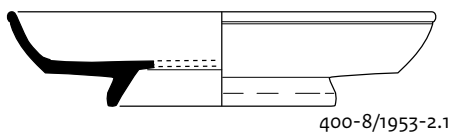


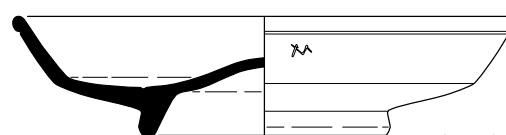
Fig. 22.1 Voerendaal-Ten Hove. Terra sigillata forms found: decorated bowls, cups. In black vessels or fragments actually found, in grey reconstructed parts or forms; for decorated sigillata, see also figure 22.5-9. Scale 1:3.

**DRAGENDORFF 15/17****DRAGENDORFF 18/31**

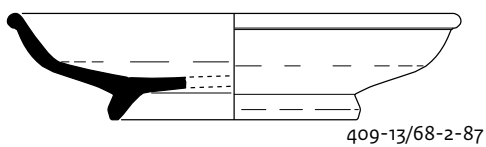
730-2/27-5-1

**DRAGENDORFF 18**

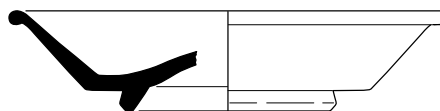
400-8/1953-2.1



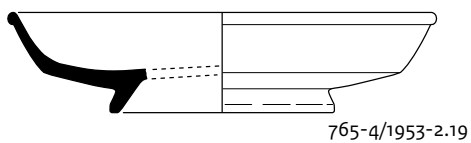
812-2/27-3-7



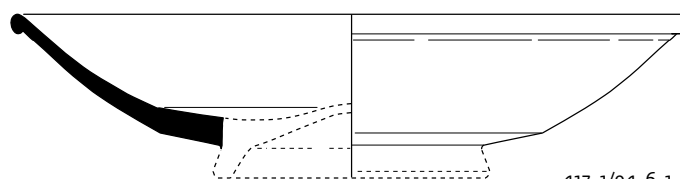
409-13/68-2-87

**DRAGENDORFF 31**

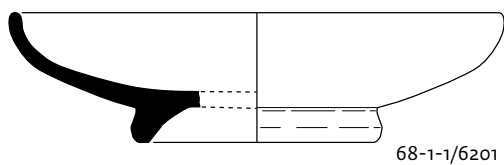
400-5/1953-2.1



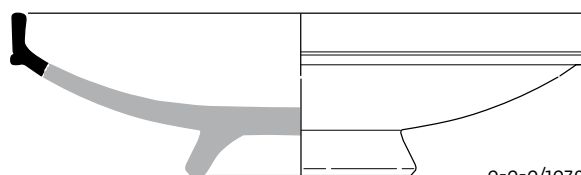
765-4/1953-2.19



413-1/94-6-1

**DRAGENDORFF 32**

68-1-1/6201

**LUDOWICI TI'**

0-0-0/10393

Fig. 22.2 Voerendaal-Ten Hove. Terra sigillata forms found: dishes. Scale 1:3.



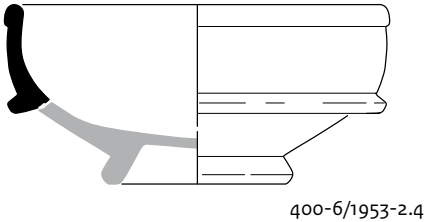
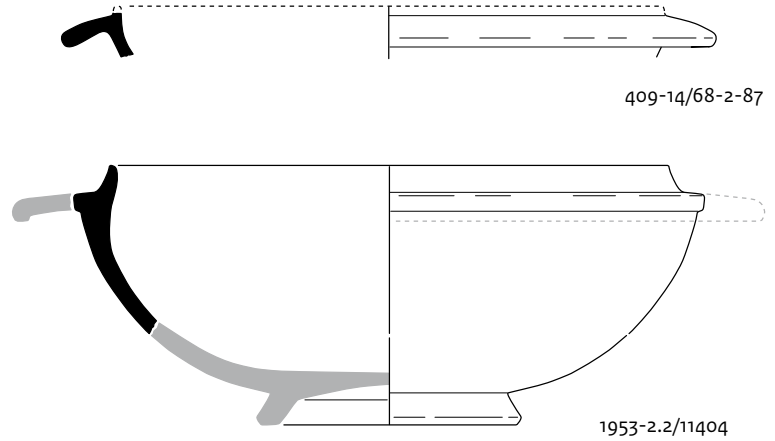
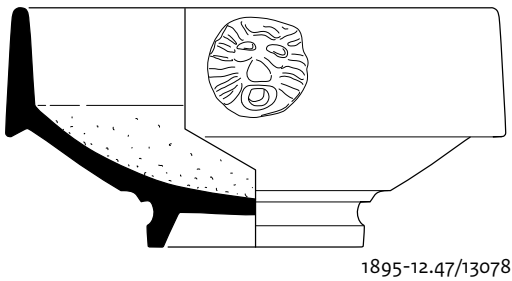
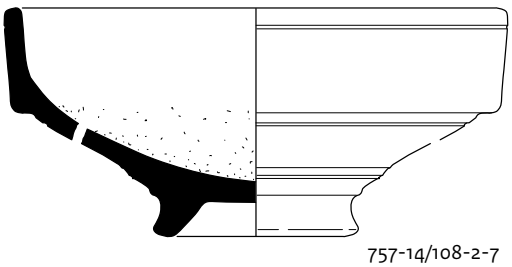
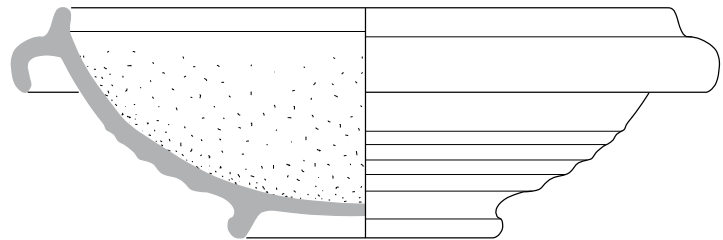
**DRAGENDORFF 44****CURLE 11****DRAGENDORFF 45****CURLE 21**

Fig. 22.3 Voerendaal-Ten Hove. Terra sigillata forms found: bowls with flanged wall or rim, mortaria. Scale 1:3.

### 22.3 Stamped and decorated terra sigillata

The presence of stamped sigillata mainly from the Flavian period and the first half of the second century (Fig. 22.4A; Section 22.6) differs from the picture presented by the unstamped undecorated material (Fig. 22.4B).<sup>2005</sup> The explanation is the declining use of stamps in the course of the second and third centuries.<sup>2006</sup> As a result, the latter period is underrepresented if we consider only the stamps. The number of potters' stamps also declines rapidly at Heerlen, Tongeren and – to a lesser degree – Vechten after the middle of the second century AD.<sup>2007</sup>

Although the quantity of decorated fragments and especially the number of stamps is too small to make reliable comparisons with other sites, a few cautious observations can be

made. The much larger datasets for Heerlen and Tongeren show only a small difference between the curves of the dated decorated and stamped material in the period AD 20-130.<sup>2008</sup> It is likely that this can be explained by methodological issues, personal preferences in dating stamped and decorated terra sigillata.<sup>2009</sup> Because the curves constructed for the small Voerendaal sample are less 'stable', the trend just mentioned is less clear but still seems to apply.

The Voerendaal assemblage of the first half of the second century is mainly characterized by the presence of some decorated pieces from Central Gaul and a bowl by Satto/Saturninus, in combination with the dominance of La Madeleine and the Argonne. The Trier wares are almost exclusively later than the middle of the second century as there are virtually no bowls

<sup>2005</sup> The numbers are calculated in five-year periods. The number of five-year periods covered by its date was determined for each individual vessel. The vessels were subsequently divided over the periods in question (for example, a vessel dated AD 70-85 has been assigned 0.33 to each of the periods AD 70-75, 75-80 and 80-85). Obviously, many inaccurately dated fragments are included in fig. 22.4B, resulting in a graph that shows a general trend only.

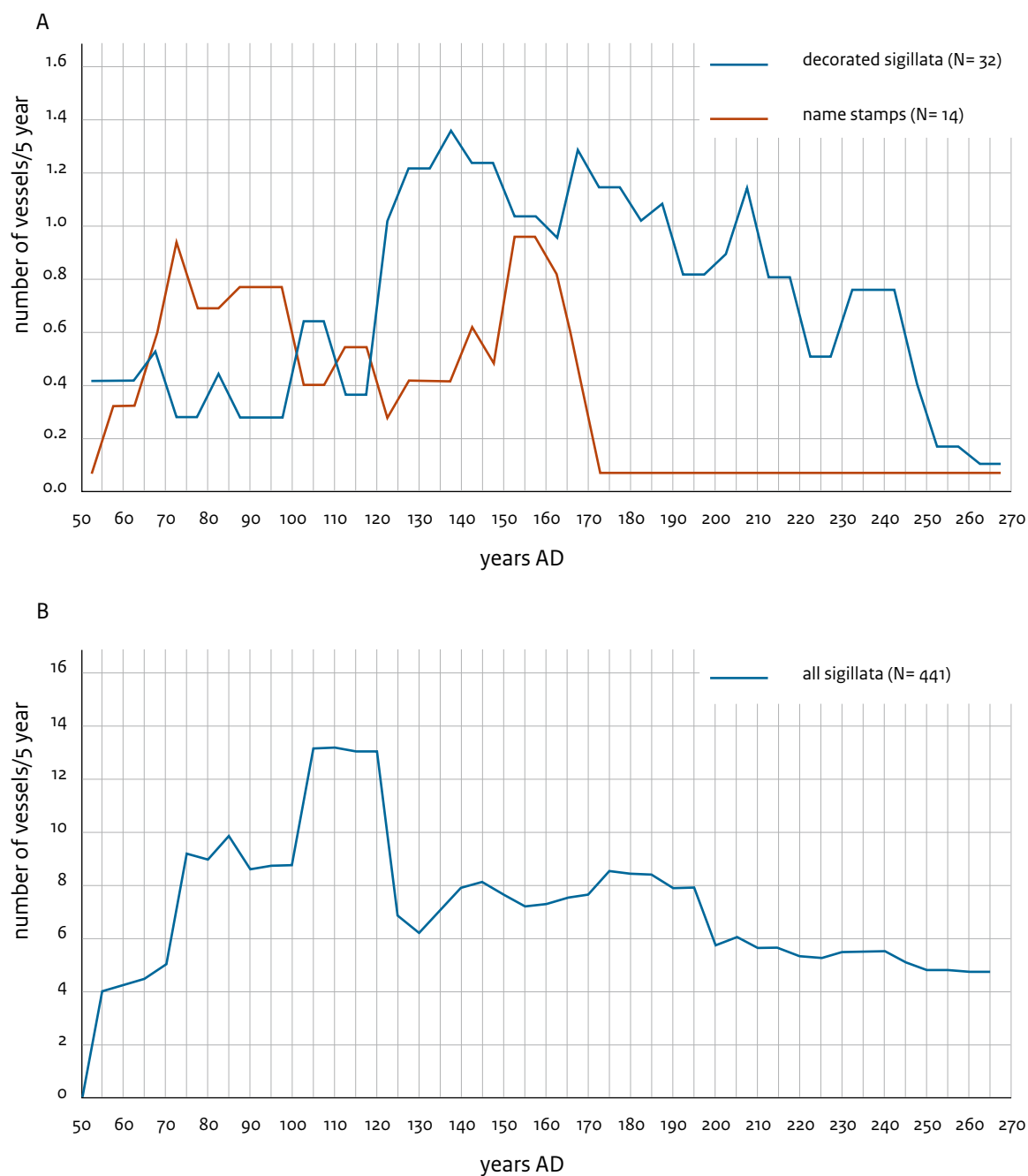


Fig. 22.4 Voerendaal-Ten Hove. Chronological distribution of the terra sigillata. (source: E. van der Linden & H.A. Hiddink)  
A stamped and decorated terra sigillata; B all terra sigillata.

from Werkstatt I or II. The terra sigillata at Ten Hove was supplied continuously until the middle of the third century AD. There is a marked difference from the decorated sigillata found at the baths at Heerlen, where decorated ware became less abundant in the beginning of the third century. It is difficult to explain this because

undecorated forms such as Dragendorff 32, 40 and 45 are present in Heerlen.<sup>2010</sup> Both decorated bowls dating until the middle of the third century and undecorated forms such as Dragendorff 32, 40 and 45 are found at Voerendaal.

<sup>2006</sup> Niemeijer & Polak 2019, 35.

<sup>2007</sup> Niemeijer & Polak 2019, 35, fig. 23.

<sup>2008</sup> Niemeijer & Polak 2019, 38, fig. 26.

<sup>2009</sup> Polak *et al.* Linden 2012; Polak & Niemeijer 2019, 38-39.

<sup>2010</sup> Niemeijer & Polak 2019, 40.

### 22.4 Dating of the site

Based on the combination of the earliest undecorated, stamped and decorated terra sigillata, the Roman settlement seems to have been founded shortly before AD 70. The potters' stamps show an emphasis on the Flavian era and the first half of the second century AD. Among the decorated sigillata, the second half of the second century and the first half of the third are also well represented, although the quantity appears to decline somewhat during that time. The impression that later material is present in fair quantities is confirmed by the undecorated material because several forms from the late second and third century were found. The fact that the supply of decorated sigillata seems to have ended around the middle of the third century is observed not only at Ten Hove but at most sites. Rather than reflecting the true situation, this is mainly the result of dating problems with the later decorated Samian ware from Trier (in combination with the small samples available for many sites). The youngest groups of identifiable potters in Trier worked

until the middle of the third century AD, while production as such continued in the city until at least AD 275.<sup>2011</sup>

### 22.5 Comparison with some other sites

Only a small number of sites in the vicinity of Voerendaal, namely the baths at Heerlen and the well-known Roman rubbish dump at Tongeren, are available for a comparison of the decorated terra sigillata.<sup>2012</sup> Although both assemblages end at an earlier stage, the material is suitable with regard to the first half of the second century AD. Some sites from the west of the Netherlands are added for further comparison: Nigrum Pullum/Zwammerdam and Forum Hadriani/Voorburg (Fig. 22.5).<sup>2013</sup> All sites yielded considerably more sigillata from Central and East Gaul than Voerendaal. A comparison therefore has its limitations, especially because the assemblage at Voerendaal is quite small, with only 26 decorated bowls. However, some trends can be discerned.

In general, the proportions at Heerlen and Voerendaal are similar, while that at Tongeren is

<sup>2011</sup> Brulet *et al.* 2010, 193.  
<sup>2012</sup> Niemeijer & Polak 2019, 115-127 (Heerlen); Vanvinckenroye 1989, 17-30 (Tongeren). Although one might wish to incorporate the finds from the villa of Kerkrade-Holzkuil in the dataset for comparisons, the quantity of sigillata collected there is limited – with 159 fragments, only slightly above that of Ten Hove – and the East Gaulish material is not further identified according to provenance. Moreover, there are very few stamped and decorated pieces (Wiepking 2005).  
<sup>2013</sup> Haalebos 1977, 125 (Zwammerdam); Driessen 2014, 474, table II-1.6.1 (Forum Hadriani/Voorburg).

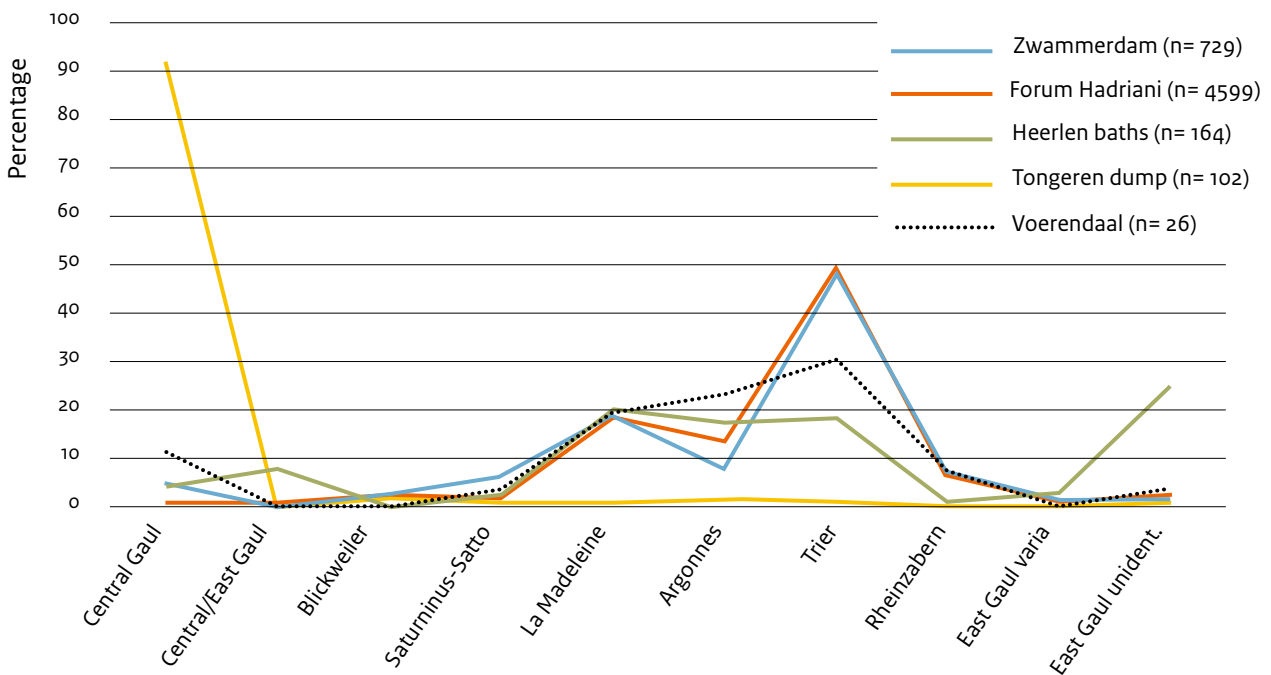


Fig. 22.5 Decorated Central and East Gaulish terra sigillata from Zwammerdam, Forum Hadriani, Heerlen, Tongeren and Voerendaal-Ten Hove. (source: E. van der Linden & H.A. Hiddink)

different. At the former sites, the workshops of La Madeleine and the Argonne are well represented, but at Tongeren their products are less frequent and those from Central Gaul appear to have had a kind of monopoly. This is partly explained by the early end date of the Tongeren dump around the middle of the second century, while the production at La Madeleine and in the Argonne continued well into the second, or even the early third century AD. However, the marked differences cannot be the result of chronology alone. Tongeren on the one hand and Voerendaal and Heerlen on the other were probably connected to different supply routes and trade networks.<sup>2014</sup>

The differences also relate to the bowls from Trier. A larger proportion of the bowls found at Ten Hove were made there, while the proportion of Trier products is markedly lower at Heerlen and negligible at Tongeren. Here, chronology seems to be the main factor responsible. The decorated bowls from Trier found at Heerlen are partly the products of *Werkstatt I* or *II*, and those at Tongeren entirely so.<sup>2015</sup> They date to around or shortly after the middle of the second century AD. The bowls at Ten Hove mainly consist of later products from the second half of the second and the first half of the third century AD. Voerendaal may have been

supplied mainly with sigillata from Central Gaul, La Madeleine and the Argonne for a fairly long period of time, with a greater supply coming from Trier only at a later stage. However, it could also be just a coincidence, and the lack of *Werkstatt I/II* products simply the result of the small sample. Nevertheless, the proportion of later Trier products is due to some degree to a longer chronology at Voerendaal as 3 out of 8 Trier bowls have a third-century date and a fourth dates from the end of the second century onwards. This kind of younger examples are at Heerlen.

Compared with sites in western Holland, Voerendaal and possibly also Heerlen received somewhat more sigillata from Central Gaul and the Argonne because of their proximity to the Meuse.<sup>2016</sup> The *limes* area must have been mainly supplied via the Rhine. Furthermore, Limburg seems to have received fewer early products from Trier than the *limes* area. The transport of Trier ware via the Moselle and Rhine rather than the Meuse probably had a potential negative impact on the supply to Limburg. Again, the composition of the assemblage at Ten Hove could be the result of the small number of vessels found, or of subtle chronological differences between the occupation history of specific sites and regions.

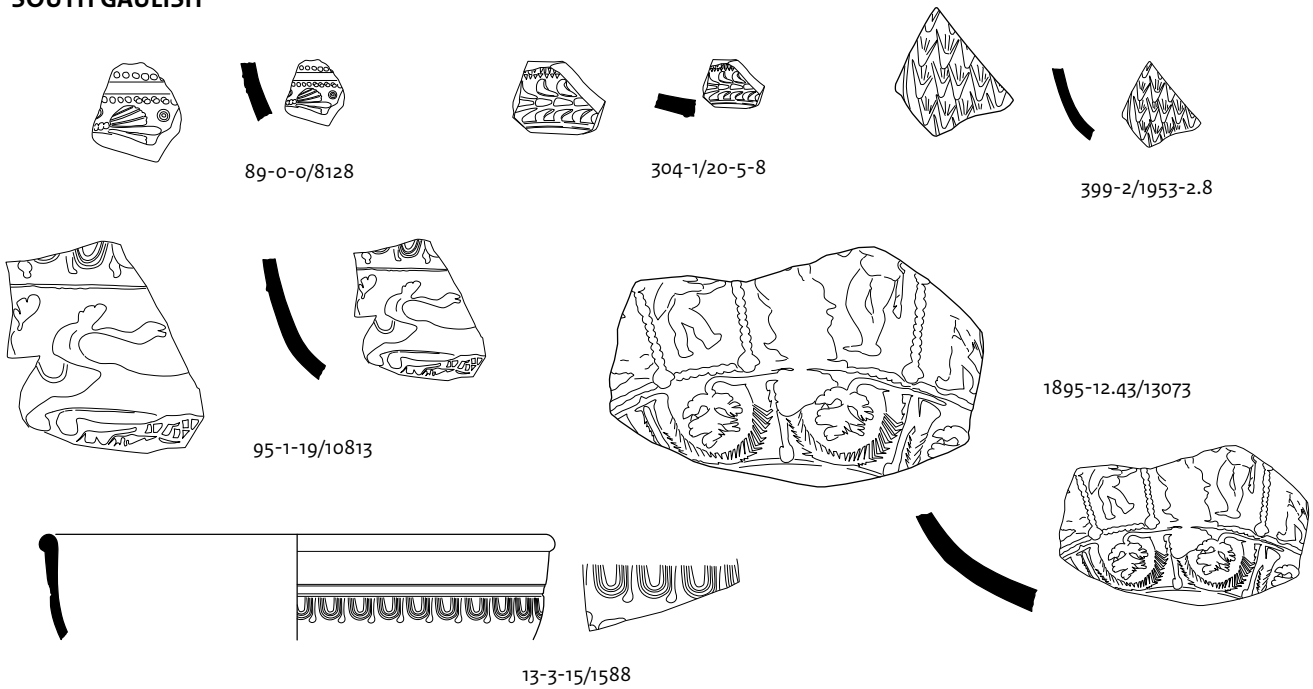
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<sup>2014</sup> The sigillata dumped here does not derive from a single transport or a discarded shop inventory because the diversity of Central Gaulish potters and dates is too large for that.

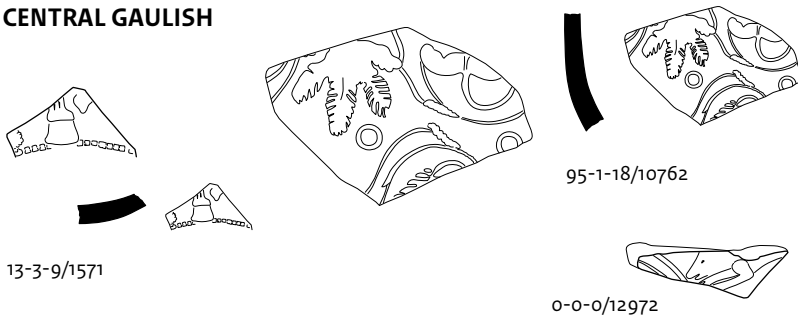
<sup>2015</sup> Heerlen: 12 out of 30 bowls; Tongeren: the only fragment from Trier.

<sup>2016</sup> Because of the less thorough identification of the Heerlen decorated terra sigillata, the categories 'Central or East Gaulish' and 'East Gaulish unknown' are larger than usual (Niemeijer & Polak 2019, 97). Although fewer East Gaulish bowls are present, the quantity of decorated sigillata from 'Central or East Gaul' suggests that some of these are actually Central Gaulish.

## SOUTH GAULISH



## CENTRAL GAULISH



## SATTO/SATURNINUS

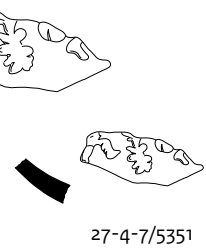


Fig. 22.6 Voerendaal-Ten Hove. Decorated terra sigillata. Scale 1:2, position of decoration (often schematic) in relation to vessel profile 1:3.

## 22.6 Catalogue of decorations, stamps and graffiti

### 22.6.1 Decorations

#### South Gaul

--/89-0-0/8128, Drag. 29 (Fig. 22.6).

Upper decoration zone with leaf and dotted circle cf. *Corpus Celadus* G5, 1043, plain central cordon between beaded borders.

La Graufesenque, *Celadus*, AD 50-70.

304-1/20-5-8, Drag. 29 (Fig. 22.6).

Basal wreath of trifids, cf. Nieto/Puig 2001, 91 (VIRTHV). The carinated profile is typical of the Early Flavian period.

La Graufesenque, AD 70-85.

399-2/1953-2.8, Drag. 29 (Fig. 22.6).

Lower decoration zone with leaf tips, probably within scroll, cf. Knorr 1952, Pl. 44,C (Murranus), pl. 47, D (Niger), pl. 62, D (Niger style), pl. 62, C (Vitalis).

La Graufesenque, AD 50-85.

--/95-1-19/10813, Drag. 37 (Fig. 22.6).

Ovolo above plain border, probably free-style decoration with lion Oswald 1389 (Germanus), fragment of a tree as a dividing ornament between the lion and other figures. Grass and tree are regular elements on bowls of Germanus, cf. Mees 1995, pl. 70,1, pl. 72, 14 (Germanus II), Mees 1995, pl. 76, 3 (Germanus III).

La Graufesenque, Germanus II or III, AD 65-110.

--/1895-12.43/13072, Drag. 37 (Fig. 22.6).

Decoration scheme with panels and festoon, cf. Mees 1995, pl. 86, 14 (Germanus III). Festoon with leaf, Mees 1995 pl. 79, 14 (Germanus III), pl. 89, 7 (Germanus IV).

La Graufesenque, Germanus III, AD 80-110.

--/13-3-15/1588, Drag. 37 (Fig. 22.6).

Ovolo probably identical to L. Cosius, but bowls of L. Cosius mostly have a plain border below the ovolo, cf. Mees 1995, pl. 28,1, 5. Perhaps the heads of the couple cf. Mees 1995, pl. 28,3 are partly preserved.

La Graufesenque, probably L. Cosius, AD 100-120.

#### *Central Gaul*

--/13-3-9/1571, Drag. 37 (Fig. 22.6).

Tree on pedestal as dividing ornament cf. S/S pl. 62, 7 (Avitus and Vegetus). Other elements like the rosette and basal beaded border are also well represented on bowls by this group of potters.

Lezoux, Avitus and Vegetus, AD 120-140.

--/95-1-18/10762, Drag. 37 (Fig. 22.6).

Scrolls in two levels, with two different large leaves and twists, and filled with circles. Dented leaf cf. S/S fig. 18, 9 (Catul[-Potier X-6). See S/S Pl. 74, 2, 3, 5, 11 (X-6) and S/S Pl. 171, 4 (style X-6).

Lezoux, X-6 (style), AD 125-150.

--/0-0-0/12972, Drag. 37 (Fig. 22.6).

Fragment of bowl decorated with scrolls, bear probably Oswald 1627, cf. S/S pl. 163, 66, scrolls cf. S/S pl. 162, 63, both Cinnamus.

Lezoux, Cinnamus, AD 135-170.

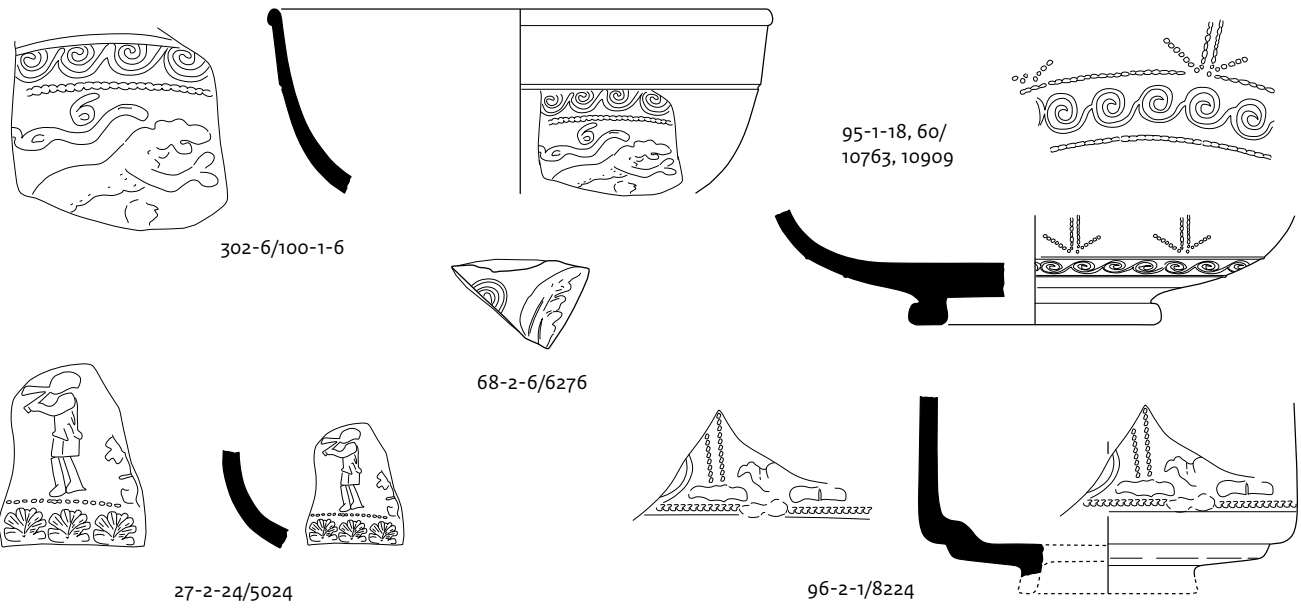
#### *Satto/Saturninus*

--/27-4-7/5351, Drag. 37 (Fig. 22.6).

Amor Lutz P1 and sitting figure Fölzer 152/Lutz P48, divided by palm ornament Lutz V30.

Satto/Saturninus, AD 100-160.

**LA MADELEINE**



**ARGONNE**

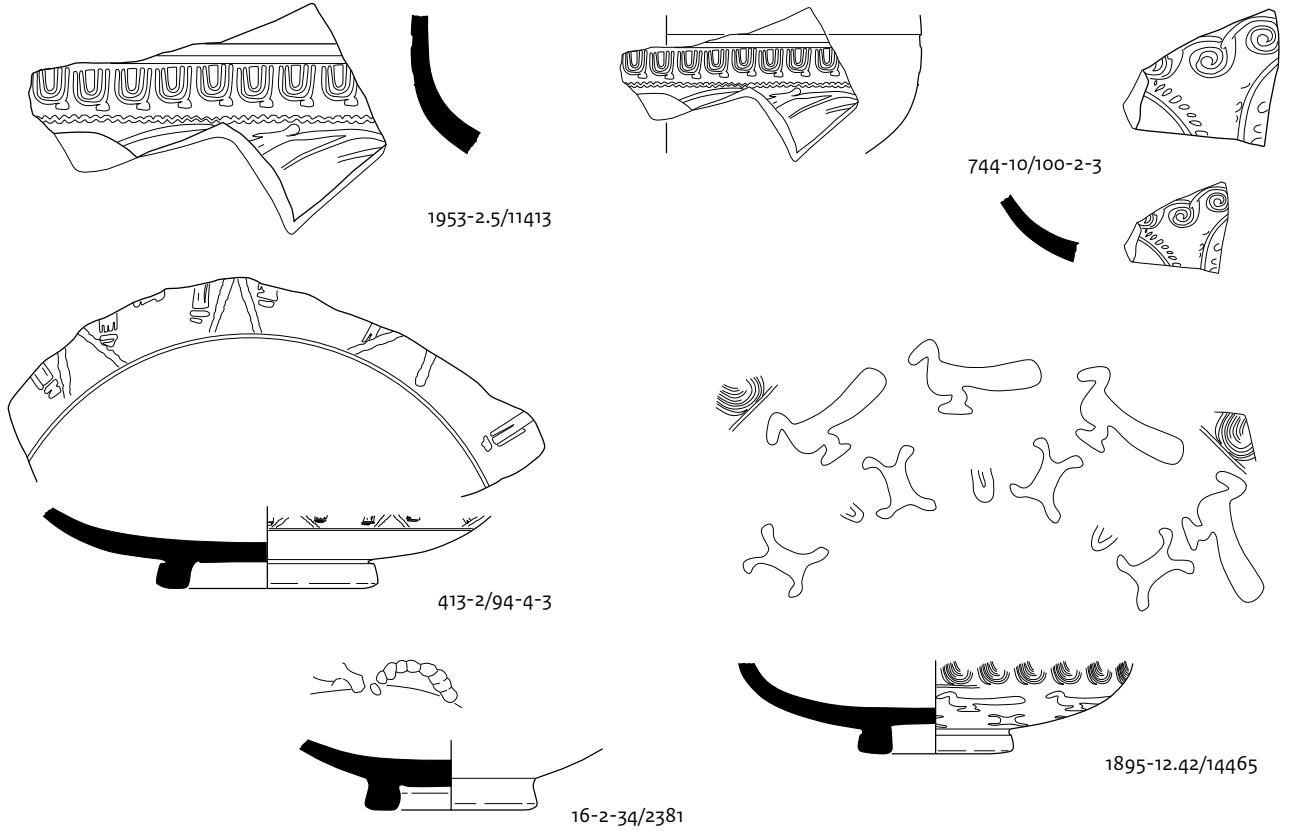


Fig. 22.7 Voerendaal-Ten Hove. Decorated terra sigillata, cont. Scale 1:2/1:3.

*La Madeleine*  
 302-6/100-1-6, Drag. 37 (Fig. 22.7).  
 Spirals Ricken VII, 33 (ovolo A-D) above beaded border, small spiral Ricken VII, 32 above S-shaped ornament Ricken VII, 61, cf. Ricken IX, 2 (ovolo A2), running animal Ricken VII, 115 (ovolo A1).  
 Ware with ovolo A, AD 120-190.

--/95-1-18+95-1-60, Drag. 37 (Fig. 22.7).

Basal wreath of spirals Ricken VII, 33 (ovolo A-D) between beaded borders. Decoration: alternating panels with ornaments within cross of beaded borders, cf. Ricken IX, 1, divided by double beaded borders. Probably ware with ovolo A2, AD 120-190.

--/27-2-24, Drag. 37 (Fig. 22.7).

Flute player Oswald 620/Ricken IX, 7 (Virtus) and basal wreath of leaves Ricken X, 6 (ovolo H, J), divided by beaded border. Possibly Virtus, AD 120-190.

--/68-2-6/6276, Drag. 37 (Fig. 22.7).

Leaf Ricken VII, 50, double circle Ricken X, 19 (ovolo H, J). Ware with ovolo H, J, AD 120-190.

--/96-2-1/8224, Drag. 30 (Fig. 22.7).

Beaded borders on astragalus Ricken VII, 8; leaf ornament Ricken VII, 25, basal beaded border. See Ricken VIII, 3 (ovolo D), VIII, 1 (ovolo A1), IX, 15 (ovolo C). Ware with ovolo A-D?, AD 120-190.

#### *Argonne*

--/1953-2.5/11413, Drag. 37 (Fig. 22.7).

Ovolo Ricken C above wavy line and possibly fragment of scroll. Argonne, ware with ovolo C, AD 120-220.

413-2/94-4-3/10549, Drag. 37 (Fig. 22.7).

Columns Ricken XIII, 18, divided by crossed beaded cords. Cf. Raepsaet XVIII, 95. Profile of the footing cf. Raepsaet XVIII, 90. Argonne, AD 120-220.

744-10/100-2-3/8440, Drag. 37 (Fig. 22.7).

Decoration with spirals Raepsaet D71 and semi-circular arch Raepsaet D1 or D10, cf. Raepsaet XIX, 101, Raepsaet XX, 102, 103. Argonne, AD 120-220.

--/16-2-34/2381, Drag. 37 (Fig. 22.7).

Twisted semi-circular arch Chenet/Gaudron Pl. 57, I and Pl. 61, J, Zwammerdam pl. 66, 580. Lavoye, AD 120-220.

--/1895-12.42/14465, Drag. 37 (Fig. 22.7).

Ovolo above straight line, repetitive series of birds Raepsaet A59/Hofmann 311 (Germanus, Africanus), X-shaped ornaments Raepsaet D46/Arentsburg fig. 81, 13 (student of Tocca), divided by ornaments possibly Arentsburg fig. 81, 15, 20, cf. Arentsburg fig. 18, 9, 13, 20, 25. Argonne, AD 120-220.

744-9/100-1-10, Drag. 37 (not illustrated).

Very worn decoration. Fragment of ovolo above a wavy line is vaguely visible. Argonne?, AD 120-220.



## TRIER

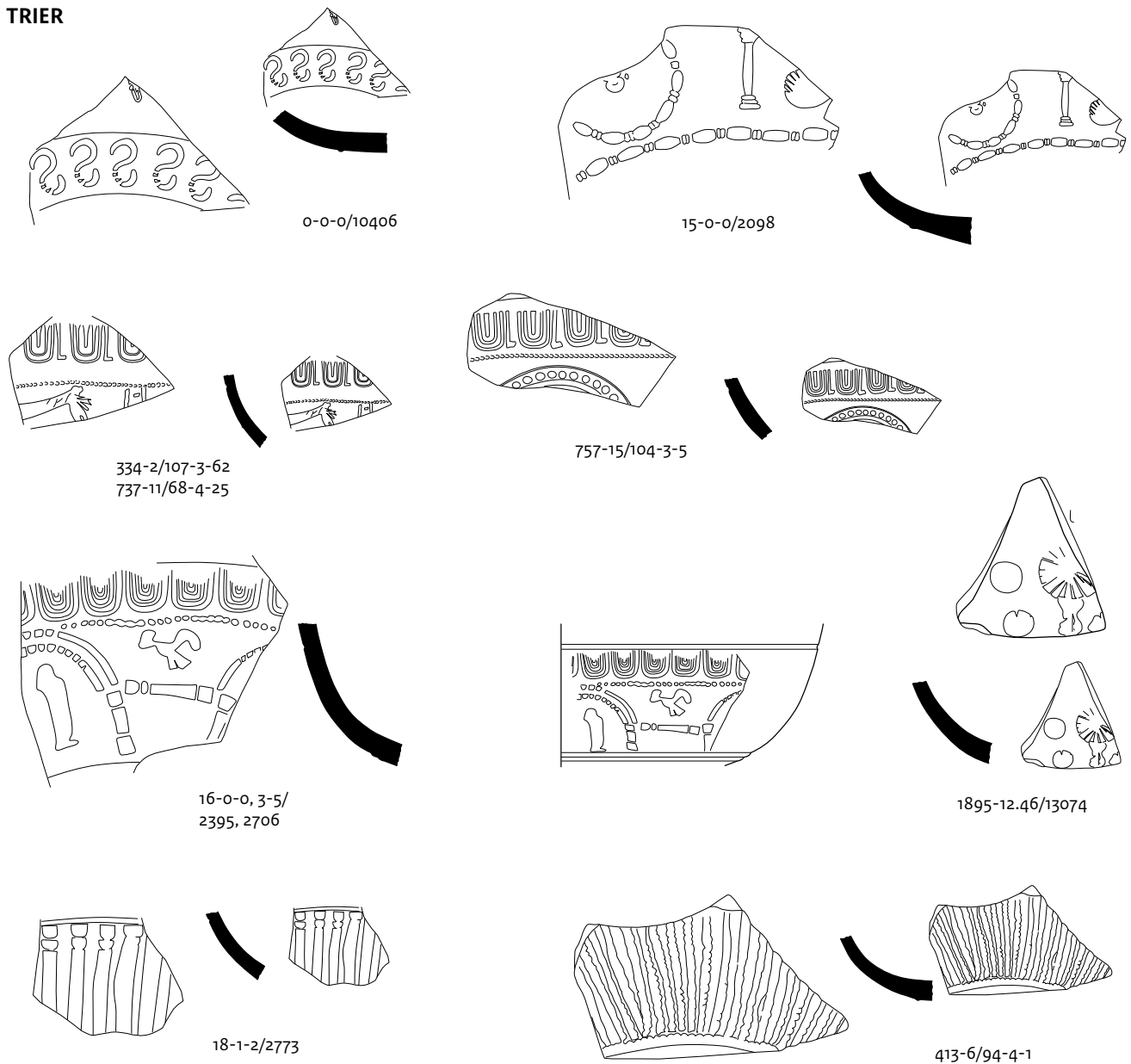


Fig. 22.8 Voerendaal-Ten Hove. Decorated terra sigillata, cont. Scale 1:2/1:3.

## Trier

--/0-0-0/10406, Drag. 37 (Fig. 22.8).

Basal wreath of S-shaped ornaments HZ-II O113 between plain borders, rosette HZ-II O98, spiral ornament HZ-II O116. Identical to HZ-II A14.

Werkstatt II, decoration series A, AD 140-165/180.

--/15-0-0/2098, Drag. 37 (Fig. 22.8).

Medallion, probably with mask, and large beaded cord F917, column F872, shell F708. The slip is very worn. Identical to Zwammerdam pl. 71, 648.

Dexter (or successors), AD 165-210.

334-2/107-3-62 + 737-11/68-4-25, Drag. 37 (Fig. 22.8).

Ovolo F946 above beaded border, semi-circular hanging borders F800, one of them containing a leaf F479, cf. Fölzer XV, 35, XVI, 12.

Censor/Dexter and successors, AD 165-210.

## RHEINZABERN

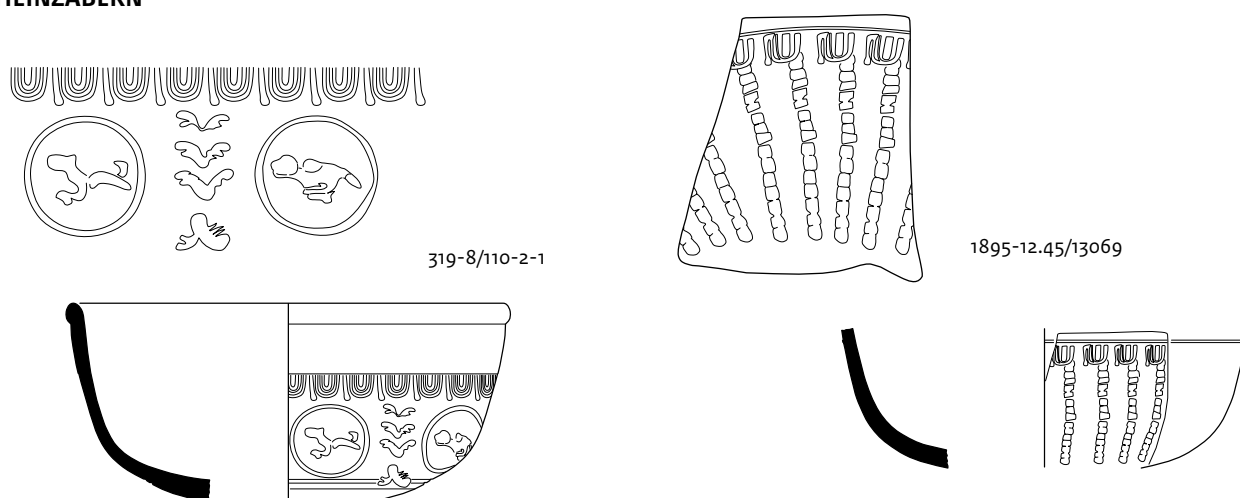


Fig. 22.9 Voerendaal-Ten Hove. Decorated terra sigillata, cont. Scale 1:2/1:3.

757-17/104-3-5, Drag. 37 (Fig. 22.8).  
Ovolo F946 above very neat beaded border, arch F800.  
Censor/Dexter and successors, AD 165-210.

--/16-0-0/2706 + 16-3-5/2395, Drag. 37 (Fig. 22.8).  
Fragments of a burnt bowl. Ovolo F953/Gard R19, rooster F686 and horizontal column between arches Fölzer XVIII, 18 on small columns, one of them containing a human (?) figure. Cf. Fölzer XVII, 21, XVIII, 4, 18, XIX, 18.  
Successors Censor/Dexter, Afer, Dubitus/Dubitatus, AD 190-245.

--/18-1-2/2773, Drag. 37 (Fig. 22.8).  
Repetitive design of vertical motifs placed closely together, possibly oblong leaves like Gard P26, or perhaps columns? Cf. Gard T14, 12, Niederbieber pl. VII, 25.  
Afer (style)?, AD 205-245.

413-6/94-4-1/10531, Drag. 37 (Fig. 22.8).  
Repetitive design of vertically placed beaded borders. Cf. Zwammerdam pl. 55, 438, Niederbieber pl. VII, 36, but there the vertical beaded borders are wider apart. Several Rheinzabern potters used repeating beaded borders more closely together, but the fabric of the sherd is probably Trier.  
Afer style?, AD 205-245.

--/1895-12.46/13074, Drag. 37 (Fig. 22.8).  
Vertical ornament Gard V25 above rosette Gard V91, small circular ornaments Gard V119, cf. Gard pl. 26, 19, 20, 29, Gard pl. 26, 9, 10, 31 and Zwammerdam pl. 60, 713.  
Primanus group, AD 230-250.

#### Rheinzabern

319-8/110-2-1, Drag. 37 (Fig. 22.9).  
Ovolo R/F E11, vertical row of leaves R/F P148 above leaf R/F P146, bird R/F T244 and dog R/F T142 in medallion. Cf. R/T pl. 200, 8b, pl. 201, 7F, 9F.  
Primitivus IV, AD 185-260.

--/1895-12.45/13069, Drag. 37 (Fig. 22.9).  
Ovolo R/T E17 above a repeating design of vertical beaded borders R/F O256. Cf. R/T pl. 212, 13, 16 (Iulius II-Iulianus I). Other potters use the same two elements, but in a different decoration scheme.  
Iulius II-Iulianus I, AD 200-270.

*East Gaul, unidentified*

--/16-3-7/2427+2428, Drag. 37 (not illustrated).

Small remnant of decoration, perhaps of a border, column or bow with striation. On the bottom of the footring possibly a small graffito, reading: X (Fig. 22.11).

East Gaul, AD 100-270.

--/27-3-17/5260, Drag. 37.

--/94-3-5/10503, Drag 37.

--/1895-12.44/13070, Drag 37.

These fragments represent three different bowls on which the decoration is so poorly preserved that identification is impossible.

**22.6.2 Potters' stamps***South Gaul*

<P>ERRVSF.

702-19/7-0-11, Drag. 27g (Fig. 22.10).<sup>2017</sup>

Polak 2000, P60; NoTS Perrus 12d'.<sup>2018</sup> Polak dates this particular die slightly later than Hartley and Dickinson date the production of Perrus (AD 50-70). Since this die was modified (now read as NERRVSF.), it is probably not related to the early production of Perrus. Moreover, this variant was found in the Flavian context of the Nijmegen fortress and *canabae*.<sup>2019</sup> The (end) date suggested by Polak therefore seems to be plausible.

La Graufesenque, AD 55-75.

OF[CAL]VI

--/96-2-1/8220, dish (Fig. 22.10).

Polak 2000, C26; NoTS Calvus I, 5j.

La Graufesenque, AD 65-85.

OFC[.EN]

--/1953-2.5/13052, Drag. 18 (Fig. 22.10).

Polak 2000 C121/NoTS Censor i, 3b. Hartley and Dickinson date this potter to AD 70-90.

Their suggested end date is much earlier than the end date suggested by Polak, who dates this specific die to AD 80-120. The sites on which this stamp was found point to an end date for this stamp after AD 90.<sup>2020</sup> The profile of the dish is used here for dating.

La Graufesenque, AD 70-100.

[OF]VIRIL<L>

--/1932-11.3/13041, cup (Fig. 22.10).

Probably Polak 2000 V28\*/NoTS Virilis ii 6c'.

La Graufesenque, AD 85-100.<sup>2021</sup>

[---]SF ?

--/21-3-5/3776, Drag. 27 (Fig. 22.10).

Stamp unidentified. A small graffito on the inside of the footring (see below).

South Gaul, first century-beginning second century AD.

[---]ND or [---]NT ?

--/1932-11.3/13043, Drag. 18R? (Fig. 22.10).

South Gaul, AD 70-120.

<sup>2017</sup> In the illustrations, the stamps are shown as initially observed by the draughtsman; in the text the author's interpretation is given.

<sup>2018</sup> NoTS (*Names on Terra Sigillata*): Hartley & Dickinson 2008

<sup>2019</sup> Polak 2000, 291.

<sup>2020</sup> Polak 2000, 207.

<sup>2021</sup> Date of this specific die, according to Polak (Polak 2000); Hartley and Dickinson (2008) date the potter to AD 80-105.

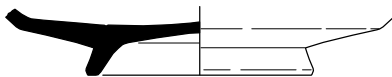
## SOUTH GAULISH

AFRRV



702-19/7-0-11

OFR



96-2-1/8220

OFC



1953-2.5/13052

AFRRV



1932-11.3/13041



21-3-5/3776



1932-11.3/13043

AFRRV



7-1-25/197

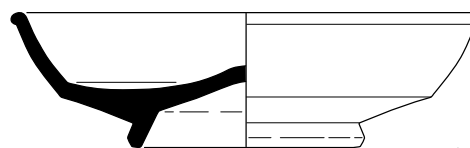
## CENTRAL GAULISH

AF



96-2-1/11698

TAVR



730-2/27-5-1

## EAST GAULISH

ANV



95-2-9/10984

ANV

319-13/110-2-1

ANV



0-0-0/10402

TOCCIVS



1932-11.3/13042

Fig. 22.10 Voerendaal-Ten Hove. Stamps on terra sigillata. Scale vessels 1:3, stamps 1:1.

## Unidentified

--/7-1-25/197, Drag. 27g (Fig. 22.10).

Stamp too worn to be read.

South Gaul, first century-beginning second century AD.

## Central Gaul

AN[NIOSF]

--/96-2-1/11698, Drag. 18/31 (Fig. 22.10).

NoTS Annus ii, 1b.

Lezoux and Les Martres-de-Veyre, AD 110-145.

TAVRI[ANI],

730-2/27-5-1, Drag. 18/31 (Fig. 22.10).

NoTS Taurianus, 1a.

Lezoux, AD 140-170.

Illiterate?

--/95-1-19/10815, dish (probably Drag. 18/31).

Central Gaul (or South Gaul)?, AD 100-150 (?).

*East Gaul*

IANVA[RIVS.F]

--/95-2-9/10948, cup, probably Drag. 27 (Fig. 22.10).

NoTS Ianuarius iii, 1b. This stamp is recorded mainly on dishes Drag. 18/31 and cups Drag. 27.

La Madeleine, AD 125-160.

IV[---]?

319-13/110-2-1, Drag. 18/31 or Drag. 31 (Fig. 22.10).

Unidentified stamp.

Trier? AD 100-270.

M[IIRCOF] (?)

--/0-0-0/10402, Drag. 18/31 or Drag. 31 (Fig. 22.10).

Probably part of the first letter of MIIRCOF. Slip is very worn. NoTS Merco 2a (?).

Lavoye, AD 150-165.

TOCCIVS

--/1932-11.3/13042, Drag. 18/31 or Drag. 31 (Fig. 22.10).

NoTS Ianuarius iii, 1b. NoTS Toccus 3b'.

Avocourt, Lavoye, and possibly Trier. AD 150-170.

Unidentified

317-16/13-3-38, Drag. 31.

This stamp can possibly be read as V[---] or [---]M?

East Gaulish, AD 140-270.

### 22.6.3 Graffiti

M

812-2/27-3-7/5184, Drag. 18/31 (Fig. 22.11).

South Gaul, AD 90-120.

P

21-3-5/3776, Drag. 27 (Fig. 22.11).

Graffito placed on the inside of the footring of a cup Drag. 27 with unidentified stamp.

South Gaul, first century-beginning second century AD.

X?

16-3-7/2427+2428, Drag. 37 (Fig. 22.11)

Possible graffito, placed on the bottom of the footring.

East Gaul, AD 100-270.

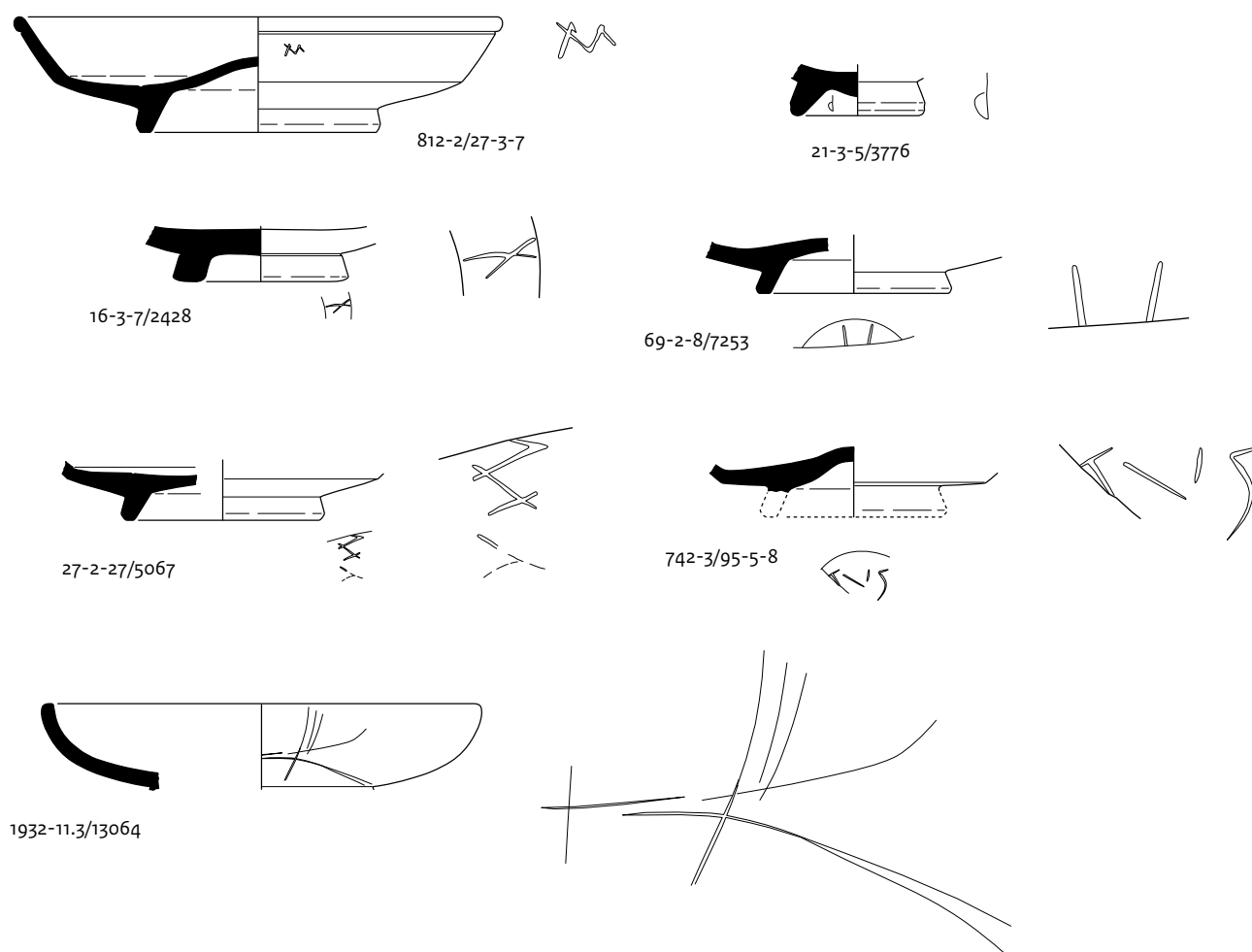


Fig. 22.11 Voerendaal-Ten Hove. Graffiti on terra sigillata. Vessels scale 1:3, graffiti 1:1.

[---] || [---] ?

69-2-8/7253, Drag. 18/31 (Fig. 22.11).

Letter(s) or parallel lines placed under the bottom of the dish.

East Gaul, AD 100-270.

[---]MA

27-2-27/5067, Drag. 18 (Fig. 22.11).

Graffito on the lower wall/outside of the dish.

South Gaul, AD 70-120.

[---]TVS (Fig. 22.11).

742-3/95-5-8/11211, Drag. 31 (Lud. Sb)

East Gaul, AD 140-270.

?

1932-11.3/13064, Drag. 32 (Fig. 22.11).

A number of scratches/lines on the outside of the wall, which seem to have been applied intentionally.

East Gaul, AD 160-270.

Table 22.1. Voerendaal-Ten Hove. Terra sigillata from South, Central and East Gaul.

Production region	Form	Type	Rim fragm	% Rim fragm	Fragm	% Fraggm
<i>South Gaul</i>	cup	Ritt. 8	1		1	
	cup	Drag. 24/5	0		1	
	cup	Drag. 27	5		17	
	cup	Drag. 33	6		10	
	cup	Drag. 35	0		1	
	cup		1		4	
	dish	Drag. 15/17	0		1	
	dish	Drag. 18	10		29	
	dish	Drag. 18/31	1		4	
	dish	Drag. 36?	0		2	
	dish		5		14	
	plate	Drag. 18R	1		9	
	plate		0		1	
	dish/plate	Drag. 18R?	0		1	
	bowl	Curle 11	2		3	
	bowl	Drag. 29	2		6	
	bowl	Drag. 37	4		9	
	bowl		0		3	
	indet		0		10	
<b>Total South Gaul</b>			<b>38</b>	<b>24.4</b>	<b>126</b>	<b>28.6</b>
<i>South/Central Gaul</i>	bowl		1		1	
	cup	Drag. 27	1		1	
	cup	Drag. 33	0		1	
	cup	Drag. 35	0		1	
	dish		3		7	
	indet		0		1	
<b>Total South/Central Gaul</b>			<b>5</b>	<b>3.2</b>	<b>12</b>	<b>2.7</b>
<i>Central Gaul</i>	cup	Drag. 27	1		2	
	cup	Drag. 27?	0		1	
	dish	Drag. 18/31	1		2	
	dish	Drag. 18/31?	0		1	
	dish/plate	Drag. 31	2		3	
	plate		0		1	
	bowl	Drag. 37	1		5	
<b>Total Central Gaul</b>			<b>5</b>	<b>3.2</b>	<b>15</b>	<b>3.4</b>
<i>Central/East Gaul</i>	cup	Drag. 27	3		5	
	cup	Drag. 33	5		18	
	cup	Drag. 33?	0		1	
	cup	Drag. 35	1		6	
	cup		0		1	
	dish	Drag. 18/31	8		11	
	dish	Drag. 18/31?	1		1	
	dish	Drag. 31	1		3	
	dish		0		2	
	dish?		0		1	

Production region	Form	Type	Rim fragm	% Rim fragm	Fragm	% Fragg
	bowl	Curle 11	1		3	
	bowl	Drag. 37	0		1	
<b>Total Central/East Gaul</b>			<b>20</b>	<b>12.8</b>	<b>53</b>	<b>12.0</b>
<i>East Gaul</i>	cup	Drag. 27	2		2	
	cup	Drag. 33	9		18	
	cup	Drag. 40	4		6	
	cup		0		2	
	dish	Drag. 18/31	4		9	
	dish/plate	Drag. 18/31?	2		6	
	dish/plate	Drag. 31	11		29	
	dish	Lud. T1'	1		1	
	dish	Drag. 32	13		14	
	dish	Drag. 32?	0		1	
	dish		0		2	
	dish?		0		1	
	bowl	Drag. 38	5		6	
	bowl	Drag. 44	2		3	
	bowl	Drag. 30	0		1	
	bowl	Drag. 37	14		56	
	bowl	Drag. 37?	2		5	
	bowl		2		5	
	mortarium	Drag. 45	17		52	
	mortarium	Curle 21	0		1	
	mortarium		0		1	
	beaker		0		1	
	indet		0		13	
<b>Total East Gaul</b>			<b>88</b>	<b>56.4</b>	<b>235</b>	<b>53.3</b>
<b>Grand total</b>			<b>156</b>	<b>100.0</b>	<b>441</b>	<b>100.0</b>

**Table 22.2. Abbreviations used and publications referred to in this catalogue.**

Abbreviation	Reference	Abbreviation	Reference
Arentsburg	Holwerda 1923	NoTS	Hartley & Dickinson 2008
Corpus	Dannell <i>et al.</i> 2003	Oswald	Oswald 1936-1937
Fölzer	Fölzer 1913	Raepsaet	Raepsaet-Charlier <i>et al.</i> 1977-1978
Gard	Gard 1937	Ricken	Ricken 1934
Hofmann	Hofmann 1968	R/F	Ricken & Fischer 1963
HZ-II	Huld-Zetsche 1993	R/T	Ricken & Thomas 2005
Lutz	Lutz 1970	S/S	Stanfield & Simpson 1990
Niederbieber	Oelmann 1914	Zwammerdam	Haalebos 1977





# 23 Roman pottery

Julie Van Kerckhove

## 23.1 Introduction

### 23.1.1 General

In this contribution, the results of the analysis of the Roman pottery. Except for the terra sigillata and amphorae (see preceding and following chapter respectively), it concerns the Early and especially the Middle Roman pottery. The Late Roman pottery is the subject of other chapters in this publication. Three research themes are the focus of this chapter: the beginning and end date of the villa site; the exchange networks in which the villa of Voerendaal operated; and the social and economic function of the villa in comparison with other villas in the region.

### 23.1.2 Selection

To contribute to these research themes, all rims have been selected for further analysis. All other sherds had already been registered, at the level of ‘pottery category’, at an earlier stage. Wall or bottom sherds that can provide crucial information on the chronology of the site, or relating to a pottery category that is not represented by rims, have also been selected for further analysis.

As mentioned above, the terra sigillata, amphorae and Late Roman pottery are not discussed in this chapter. The decision to leave out the Samian ware and amphorae (which were both imported through long-distance exchange networks) and the Late Roman pottery (which can be interpreted as ‘post-villa consumption’) has the added advantage that it allows us to focus on the ‘regional exchange networks’ during the lifespan of the villa of Voerendaal-Ten Hove, between c. AD 50 and 275/300.

### 23.1.3 Methodology

The following parameters provide data that can contribute to the research theme and are therefore registered: pottery category,<sup>2022</sup> fabric,<sup>2023</sup> form, vessel type,<sup>2024</sup> functional group, traces of soot/burning/residues, smoking of the walls, decoration and rim diameters. All sherds have been quantified to show the proportion of categories/vessel types and the comparison with

other settlements. The quantification consists of sherd counts, weight, establishing the Minimum Number of Individuals (MNI, based on rims) and the Estimated Vessel Equivalent (EVE).<sup>2025</sup> All these parameters were entered into an Access database.

It should be stressed that pottery categories are quite subjective and are created to help us categorize large pottery assemblages in a logical way. It is therefore not uncommon for researchers to use slightly different names for a category. This should not be a problem, as long as the nomenclature is well thought through and well defined. Table 23.1 shows the pottery categories used in this study, with an indication of the possible function or functions. A definition of all pottery categories can be found in another publication.<sup>2026</sup> Some pottery categories require further clarification. The thin-walled pottery consists not only of the Augusto-Tiberian fine beakers that we know from military sites, such as Dangstetten, Oberaden, Rödgen and Haltern.<sup>2027</sup> The thin-walled bowls and beakers (Haltern 40, Hofheim 85 and 81A) with a coarse fabric (from Köln, for example) are also catalogued as ‘thin-walled pottery’.<sup>2028</sup> In Voerendaal, only the coarse version is attested (see below). The smooth-walled pottery consists of flagons, two-handled flagons, honey pots, dishes and fine beakers. They are grouped within the ‘smooth-walled’ pottery category as the forms cannot be distinguished from one another at (wall) sherd level because of their technological resemblances.<sup>2029</sup> The regional amphorae can be regarded as containers for the transport of food and liquids over short distances or for storage. Both in function and in fabric, they are very comparable to dolia. Regional amphorae and dolia were used for regional trade and were produced in the same ‘regional fabrics’ as other pottery categories, such as the coarse wares. They are usually smaller than the amphorae used for long-distance trade, which usually have a Mediterranean provenance.<sup>2030</sup>

As we will argue below, the pottery from the villa of Voerendaal was mainly supplied by production centres in the region (Heerlen, 5 km away; and Jülich/Düren, between 30–50 km away). A sherd has only been attributed to a specific fabric after macroscopic analysis using a

<sup>2022</sup> A ‘pottery category’ groups pottery that has certain production techniques and a form spectrum in common (Deru *et al.* 1997, 152).

<sup>2023</sup> A ‘fabric’ groups pottery which has clay, temper and production techniques in common. The research into pottery using petrography and chemical analysis can provide information on the provenance.

<sup>2024</sup> A ‘vessel type’ groups pottery that has a number of characteristics in common regarding the form. It groups pottery that is made following the same archetype, the same ‘ideal model’ (Morel 1981, 23).

<sup>2025</sup> Orton 1989, 94.

<sup>2026</sup> Van Kerckhove 2014a, 289–393.

<sup>2027</sup> Roth-Rubi 2006.

<sup>2028</sup> We know these thin-walled beakers from Köln, for example, where they were produced from the Tiberian period until the second century (Vilvorder 2010, 306). In Köln, they were fabricated in what is called Rhineland Granular Grey Ware.

<sup>2029</sup> This means that the ‘smooth-walled smoked wares’ as defined in Hiddink 2010, 109 are integrated into the smooth-walled wares. The reason is twofold. Forms which are indeed often smoked, usually have ‘unsmoked’ counterparts. Whereas dishes and plates from the Meuse region are often smoked, their counterparts from Heerlen are not. Another reason is that it is often difficult to distinguish soot from smoking. The difference in nomenclature does not prevent a comparison of the two datasets.

<sup>2030</sup> Hanut mentions capacities ranging from 7 to 13 l for small regional amphorae and 13–20 l for the larger ones (Hanut 2001, 9).

stereoscope with a magnification of X20 to X60. For the registration of vessel types, regional typologies have been used where possible (Table 23.2). Indeed, the connection between fabric (provenance) and vessel type has proven to be crucial for a sharp chronology, as well as for a good understanding of regional and

interregional exchange networks.<sup>2031</sup> The local typo-chronology (where every vessel type is petrographically and chemically analysed to ensure that it had in fact been locally produced) has been used for the Heerlen ware.<sup>2032</sup> This is also the case for the NOOR1 ware (see below).<sup>2033</sup> For these two fabrics, a list of concordant types is

**Table 23.1. Voerendaal-Ten Hove. Pottery categories and their potential function.**

Pottery category	Functional group
Thin-walled (coarse) pottery	(kitchen ware)
Terra rubra	table ware
Terra nigra	table ware
Mica-dusted pottery	table ware
Colour-coated	table ware
Black-slipped wares	table ware
Smooth-walled	table ware, transport, storage
Red-coated wares	transport, storage
Pompeian red ware	kitchen ware
Regional amphorae	short distance transport
Coarse wares	kitchen ware, transport
Cork urns/Halterner Kochtöpfe	kitchen ware, transport
Mortaria	kitchen ware, varia
Dolia	transport, storage

**Table 23.2. List of (regional) typologies most used in this contribution.**

Publication	Abbreviation	Fabrics	Fabrics and/or categories
Van Kerckhove & Boreel 2014; Van Kerckhove 2020a en b	HEERL	Heerlen ware	all categories, except samian ware and amphorae
Van Kerckhove <i>et al.</i> 2014		NOOR1-ware	coarse ware
Vanvinckenroye 1991 (VV)	VV	Meuse wares	smooth-walled, coarse ware, mortaria, cork-urns
Holwerda 1941	HBW	various	terra nigra, terra rubra
Holwerda 1923	HBG	Low Lands Ware 1	coarse ware, regional amphorae
Ritterling 1914	Hofh	various	thin-walled, smooth and coarse
Oelmann 1914	NB	various (Urmitz, Rhineland, Lower Moselle area)	coarse ware, colour-coated, regional amphorae
Stuart 1962; 1976	ST	various, mostly Rhineland	coarse ware, smooth-walled ware
Deru 1996		various	terra nigra, terra rubra
Martens 2012		Tienen	all, except samian ware, amphorae
Vilvorder <i>et al.</i> 2010	TON	Tongeren	mainly coarse ware; also some terra rubra, smooth-walled ware

<sup>2031</sup> See also Van Kerckhove in prep.

<sup>2032</sup> Van Kerckhove & Boreel 2014, Van Kerckhove 2020a; Van Kerckhove 2020b.

<sup>2033</sup> Van Kerckhove *et al.* 2014.

added to the text. The Niederbieber and Stuart typologies have been used for the Jülich and Soller ware, as there are no local typologies available. Where useful, reference is made to Lenz's preliminary typology for Jülich and to Haupt's publication for the production of Soller.<sup>2034</sup> Vanvinckenroye's typology (the 1991 version) has been used for imports from the Meuse region and for 'cork urns', as it comprises many products from the Central Belgian Meuse region.<sup>2035</sup>

### 23.1.4 Organization of the text

The next section will present some general quantitative aspects of the pottery assemblage of Voerendaal.

Section 23.3 is dedicated to the description and dating of the pottery of each provenance region. The following sections deal with the chronology (23.4), the exchange networks (23.5), the function of the pottery and a comparison with other villa sites in the region (23.6).

The conclusions will be presented in the final section (23.7).

## 23.2 Results. Quantity of pottery per category and provenance category

### 23.2.1 Categories

For each rim, the pottery category, fabric, shape and vessel type is established. Fitting wall sherds belonging to rims are also registered in the database. For fabrics or pottery categories that provide important information, such as terra rubra, all wall sherds have also been included. For an accurate interpretation of the proportions across categories, the MNI and EVE have been used. Table 23.3 shows an overview of all quantified pottery categories from Voerendaal-Ten Hove, according to number of fragments, weight, MNI and EVE. In the text and other tables, for sake of brevity and readability,

**Table 23.3. Voerendaal-Ten Hove. Quantification of the pottery categories; MNI based on the rims.**

Pottery category	Fragm.	Wt (g)	MNI	EVE
Terra sigillata			126	
Amphorae			36	
Thin-walled pottery	3	19	3	0.25
Terra rubra	87	1484	13	2.02
Terra nigra	51	649	22	3.05
Mica-dusted pottery	1	7	1	0.10
Colour-coated	230	2620	141	15.98
Black-slipped wares	114	436	21	2.77
Smooth-walled	583	13924	110	52.52
Red-coated wares	1	83	1	1.00
Pompeian red ware	5	70	1	0.03
Regional amphorae	204	4035	10	2.68
Coarse wares	2123	53572	1217	145.07
Cork urns/Halterner Kochtöpfe	8	103	6	0.32
Mortaria	549	63237	389	36.72
Dolia	422	62295	79	9.70
Varia	1	112	0	0.00
<b>Total</b>	<b>4381</b>	<b>202646</b>	<b>2176</b>	<b>272.21</b>

<sup>2034</sup> Lenz 1990 (Jülich); Haupt 1984 (Soller).

<sup>2035</sup> Vanvinckenroye 1991.

only the MNI is given. For all quantitative data one is referred to the database.

**23.2.2 Numbers per provenance group**

As mentioned above, the fabrics can provide information on the provenance of the pottery. It is not our intention in this section to describe fabrics and their variability in detail. For this, we will refer to other relevant publications. Only when observations concerning fabrics appear to be relevant for the research themes will they be addressed. The following sections will show clearly that the Heerlen ware, NOOR1 ware and Jülich/Soller ware are the best-represented fabrics in Voerendaal-Ten Hove (Fig. 23.1). Therefore, the current state of

knowledge is described first for each fabric. This provides context and a basis for the data from the Ten Hove site.

**23.2.3 Missing early fabrics**

Before presenting the overview of the best-represented fabrics, it is interesting to reflect on those that are missing. Heerlen-Thermenterrein is a valuable reference site for Voerendaal-Ten Hove. In Heerlen, the pre-Claudian period (before c. AD 40) is characterized by the presence of Lyon and Aosta mortaria, Lyon colour-coated wares, Rhineland Granular Grey Ware, ‘cork urns’ from the Condroz region and Campanian Pompeian red ware plates.<sup>2036</sup> These fabrics (in different pottery categories) are missing in

<sup>2036</sup> Some of these fabrics persisted until AD 70.

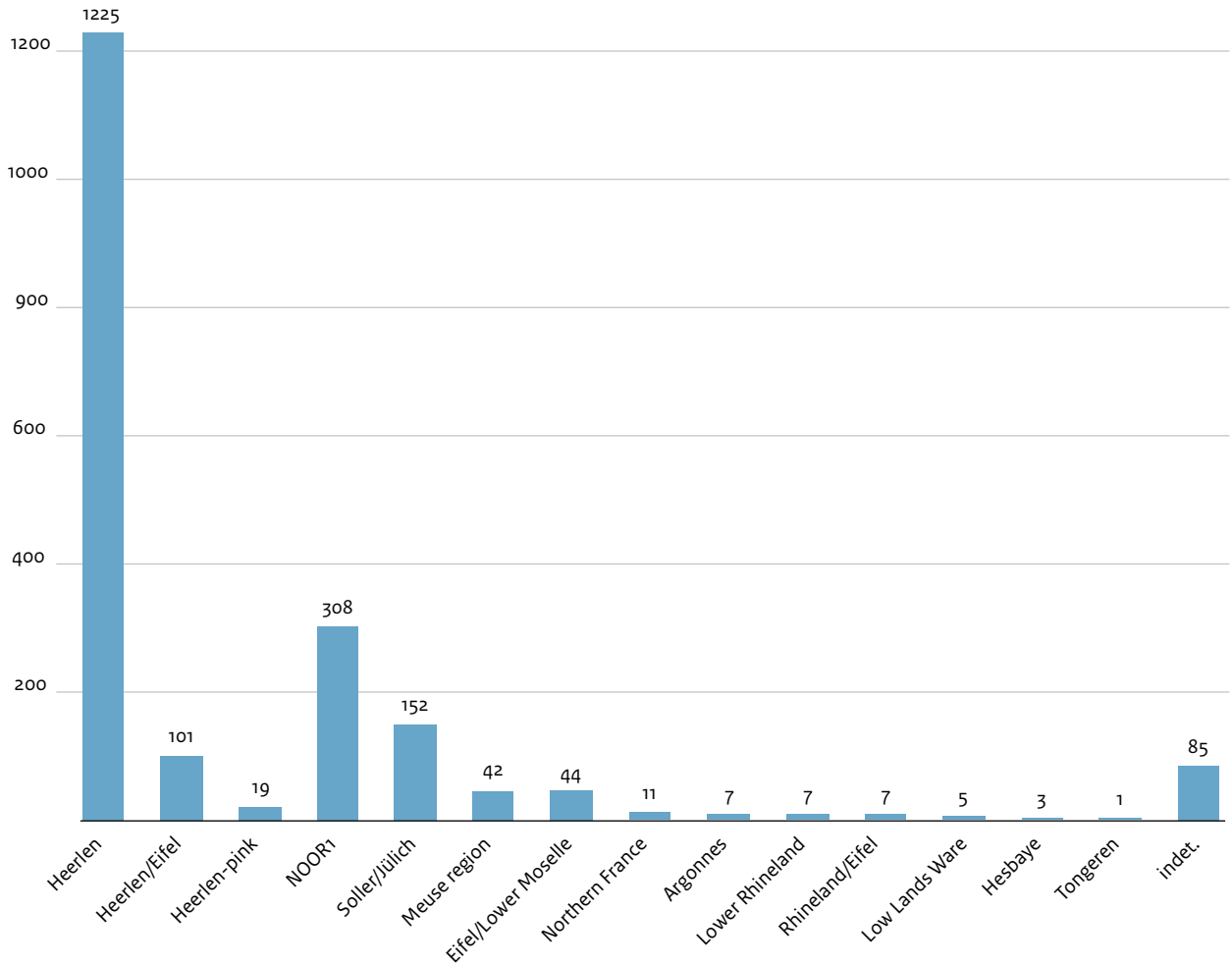


Fig. 23.1 Voerendaal-Ten Hove. MAI for each provenance group (total 2024). (source: J. van Kerckhove)

Voerendaal. We could argue that this is due to the character of the sites, Heerlen being a *vicus* with a military connection and Voerendaal a civilian, rural settlement. It is more likely, however, that the absence of these fabrics has a chronological cause. Indeed, the results of our analysis confirm that there is hardly any evidence for activities at Ten Hove before c. AD 40.

### 23.3 Provenance groups

#### 23.3.1 Heerlen ware

##### *General overview*

The Heerlen pottery production has been studied in detail in the past few years. The pottery finds from over 60 production-related structures (such as kilns and waster pits) were published in an article in 2014.<sup>2037</sup> It showed the variability of the Heerlen fabric (Fig. 23.2) and provided a typo-chronology that included about 80 vessel types.<sup>2038</sup> In 2020, the study of the pottery from Heerlen-Thermenterrein yielded a further 80 new vessel types in Heerlen ware.<sup>2039</sup> The wasters from the kilns and waster pits, which were found during recent excavations at Heerlen-Tempsplein (located next to the Thermenterrein), were also published in 2020.<sup>2040</sup>

These publications showed that the earliest production of Heerlen ware should be dated to around c. AD 50.<sup>2041</sup> The earliest production is characterized by a very fine, white fabric (using a well-levigated clay), which is very hard to distinguish macroscopically from the early Köln

production (Fig. 23.2; Table 23.4).<sup>2042</sup> The first products consisted of colour-coated wares (CC-HEERL-BE4, CC-HEERL-BE4/5) and mortaria (MOR-HEERL-M18) imitating the Lyon production, early types of terra rubra and terra nigra (TR-HEERL-BE27,<sup>2043</sup> TN-HEERL-BE30,<sup>2044</sup> TN/TR-HEERL-BE20),<sup>2045</sup> two-handled flagons of the type SM-HEERL-TWFL10 with an undercut rim, and cork urns in reduced coarse wares (CW-REDU-HEERL-JA7 to 9; Fig. 23.3).<sup>2046</sup>

However, the true beginnings of the Heerlen production can be dated to around AD 70. For the period between 70 and 120, pottery was produced in huge quantities, consisting of many types of fine wares (colour-coated ware, terra rubra, terra nigra), (two-handled) flagons, coarse wares (mostly colour-coated or reduced), dolia and amphorae. Pottery production followed the typologies and traditions of the Lower Rhine region.<sup>2047</sup> Specific resemblances to productions in the Jülich/Düren region are striking, however. In the production centres of Jülich and Soller, the early coarse wares were also produced in a white-firing fabric with an orange-brown colour coat. Moreover, the same vessel types were produced in this technique. We can mention the jars CW CC-HEERL-JA4a-b. In Heerlen, these vessel types were also produced in reduced wares and – to a lesser degree – in an oxidized variant. These vessel types seem to be absent in the so-called NOOR 1 ware, although this was probably also produced in the Düren region (see below). Another specific vessel type that was produced in Heerlen, Jülich and Soller is the pot CW OX-HEERL-P1 (cf. FW OX-NOOR1-

<sup>2037</sup> Van Kerckhove & Boreel 2014.

<sup>2038</sup> Van Kerckhove & Boreel 2014, 244-251 for a macroscopic and microscopic description of the fabric variability. Van Kerckhove & Boreel 2014, 250-269 for a description of the vessel types.

<sup>2039</sup> Van Kerckhove 2020a (Heerlen-Thermenterrein).

<sup>2040</sup> Van Kerckhove 2020b (Heerlen-Tempsplein).

<sup>2041</sup> Van Kerckhove 2019, 99.

<sup>2042</sup> Further petrographic and chemical fabric analysis of these early types (mainly from Heerlen-Thermenterrein) are required.

<sup>2043</sup> Van Kerckhove 2020a, 22.

<sup>2044</sup> Van Kerckhove 2020a, 22.

<sup>2045</sup> Van Kerckhove 2020, 133 (kiln S50 and waster pit S44 from Heerlen-Tempsplein). According to Deru (1996, 103) this vessel type P6 (similar to HBW3a) dates between AD 15 and 40 (possibly until AD 70). This is consistent with the date of this type in the cemeteries of Nijmegen, dating between AD 15 and 40 (Holwerda 1944, 27).

<sup>2046</sup> Flagons with this rim type were produced in Köln from the early first century onwards (Höpken 2005, 107).

<sup>2047</sup> The best example is the production of Köln (Höpken 2005).

**Table 23.4 Heerlen. Vessel types of the first production phase (ca. AD 50-70).**

Heerlen typology	Corresponding vessel types
CC-HEERL-BE4	VV 130 and 141/Greene 20.5/Hofh 26B
CC-HEERL-CU1/5	VV 158-163/Bertrand 4-5/like Hofh 22
TR-HEERL-BE27	Deru P14/HBW 3a-11a
TN-HEERL-BE30	like Deru P15
TN/TR-HEERL-BE20	Deru P6
SM-HEERL-TWFL10	Hofh 58/Höpken T37/Haltern 53
CW REDU-HEERL-JA7/9	like VV 50-51; Oberaden 108/111B
MOR-HEERL-M18	Haltern 59/Oberaden 72/VV 340





Fig. 23.2 Heerlen. Fabrics of pottery produced in the vicus Coriovallum (fresh fractures); for a description of the fabrics, see Van Kerckhove & Boreel 2014, fig. 2. Scale 1:5.

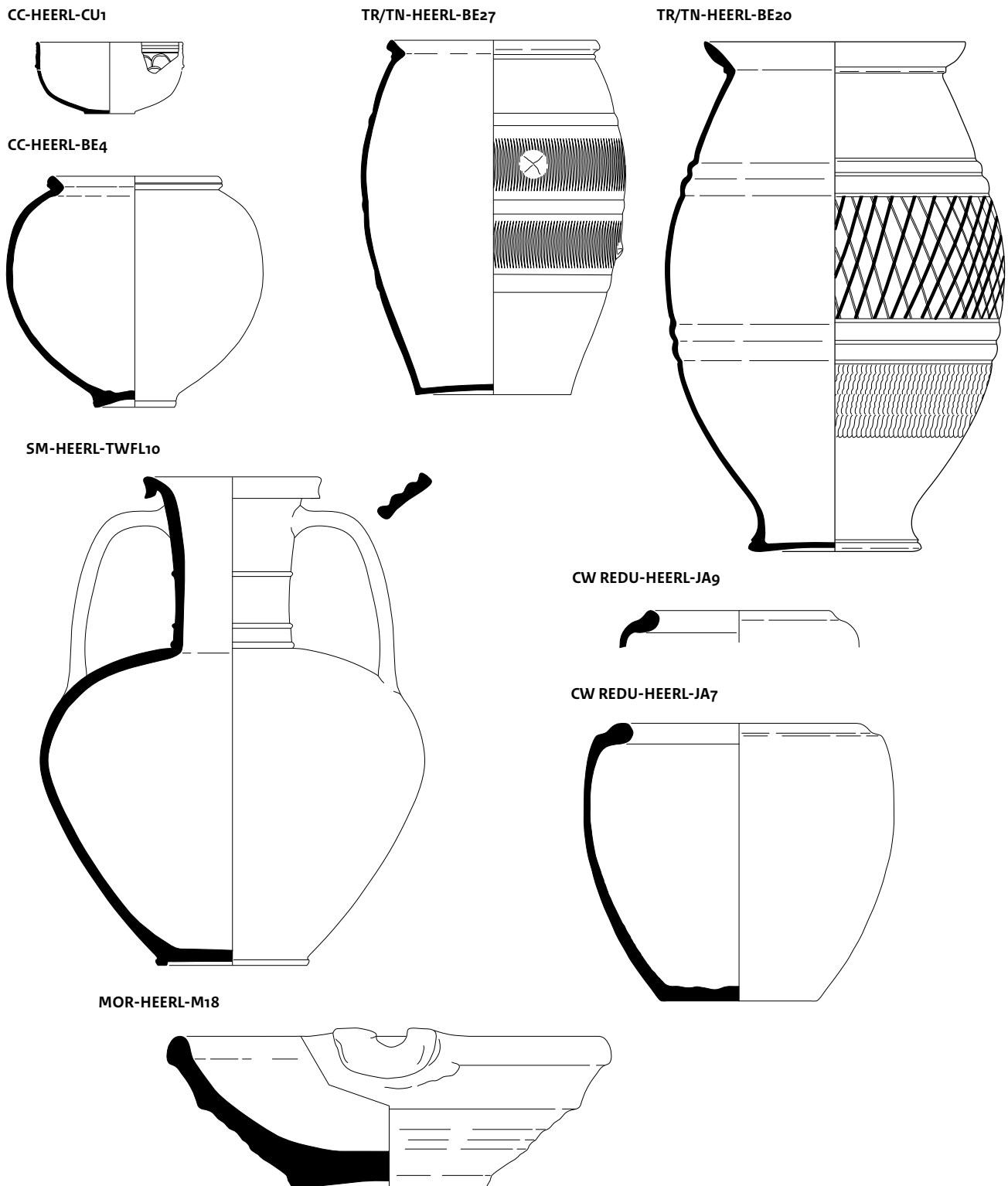


Fig. 23.3 Heerlen. Types from the earliest production phase; the Gallo-Belgic beakers, flagon and mortarium are examples from other sites. Scale 1:4. (source: in part after Deru 1996, fig. 44; Hawkes & Hull 1947, pl. 57; Stuart 1976, fig. 47.1; Van Kerckhove & Boreel 2014, fig. 4; Zandstra & Polak 2012, fig. 302).

BE3/Brunsting 4/Niederbieber 90; Fig. 23.4).<sup>2048</sup> Especially in Heerlen, it has been found in large quantities, with decorations that include painted circles, geometrical patterns or faces. The link

with the Lower Rhine and Soller regions persisted later in the second century.

<sup>2048</sup> Special attention to this vessel type and the places where it was produced is given in Van Kerckhove *et al.* 2014, 787-788, fig. 5.



CW-OX-HEERL-P1

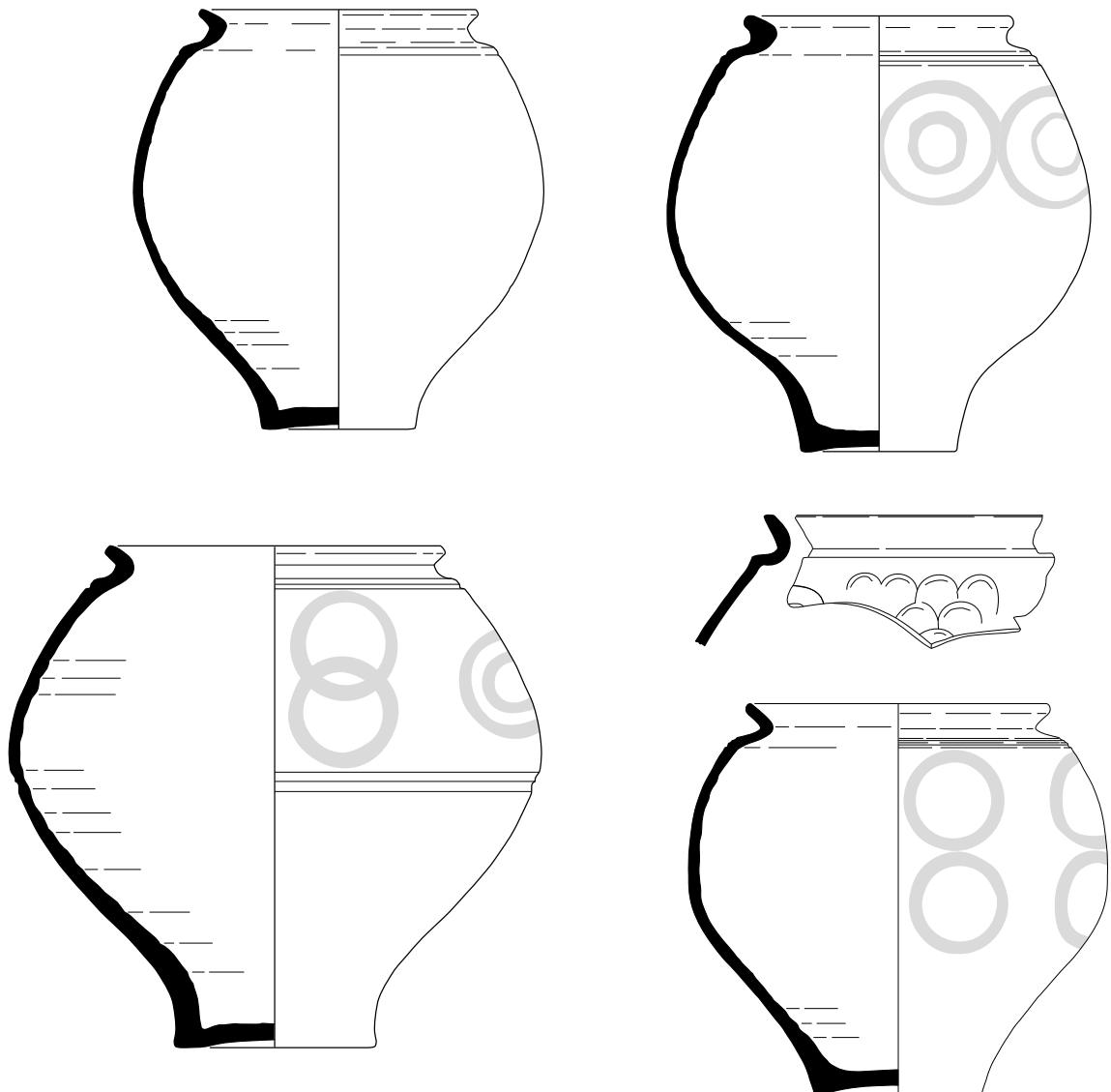


Fig. 23.4 Heerlen. A typical product from this production centre, the decorated pot CW OX-HEERL-P1. Scale 1:3. (source: J. van Kerckhove & H.A. Hiddink)

#### Influences from the Meuse region

Influences from the Belgian Meuse and Haspengouw regions were also incorporated into the Heerlen production (Fig. 23.5; Table 23.5):

smooth-walled dishes, flagons (SM-HEERL-FL5) and two-handed flagons (SM-HEERL-TWFL3) with constricted rims, and regional amphorae of the type REG AM-HEERL-A1.<sup>2049</sup>

<sup>2049</sup> Dishes Vanvinckenroye 563-570 (Vanvinckenroye 1991, 126, pl. 59) have been found in Tongeren but were produced in the Condroz region (Van Kerckhove in prep.) and in Tienen (Martens 2012). The same goes for the (two-handed) flagons (Vanvinckenroye 430/Martens 2012) and the regional amphorae (Haalebos 8052, Mosane type I).

**Table 23.5 Heerlen. Forms produced at Heerlen influenced by those from the Meuse region.**

Heerlen type	Tienen (production)	Meuse region (production)	Tongeren (production)	Tongeren (consumption)	Nijmegen-Hatert
SM-HEERL-D1-2	Tienen B1			VV 563-570	
SM-HEERL-FL5	Tienen KR8-9			VV 419-430	
SM-HEERL-TWFL3	Tienen KRA9		Ton 24	VV 443-444	
REG AM-HEERL-A1	Tienen KRA8	Mosane type I		VV 448	Haalebos 8052
CW REDU-HEERL-JA7-9			Ton 38	VV 51-53	
CW OX-HEERL-BE26	Tienen BE20		Ton 7	VV 526-527	

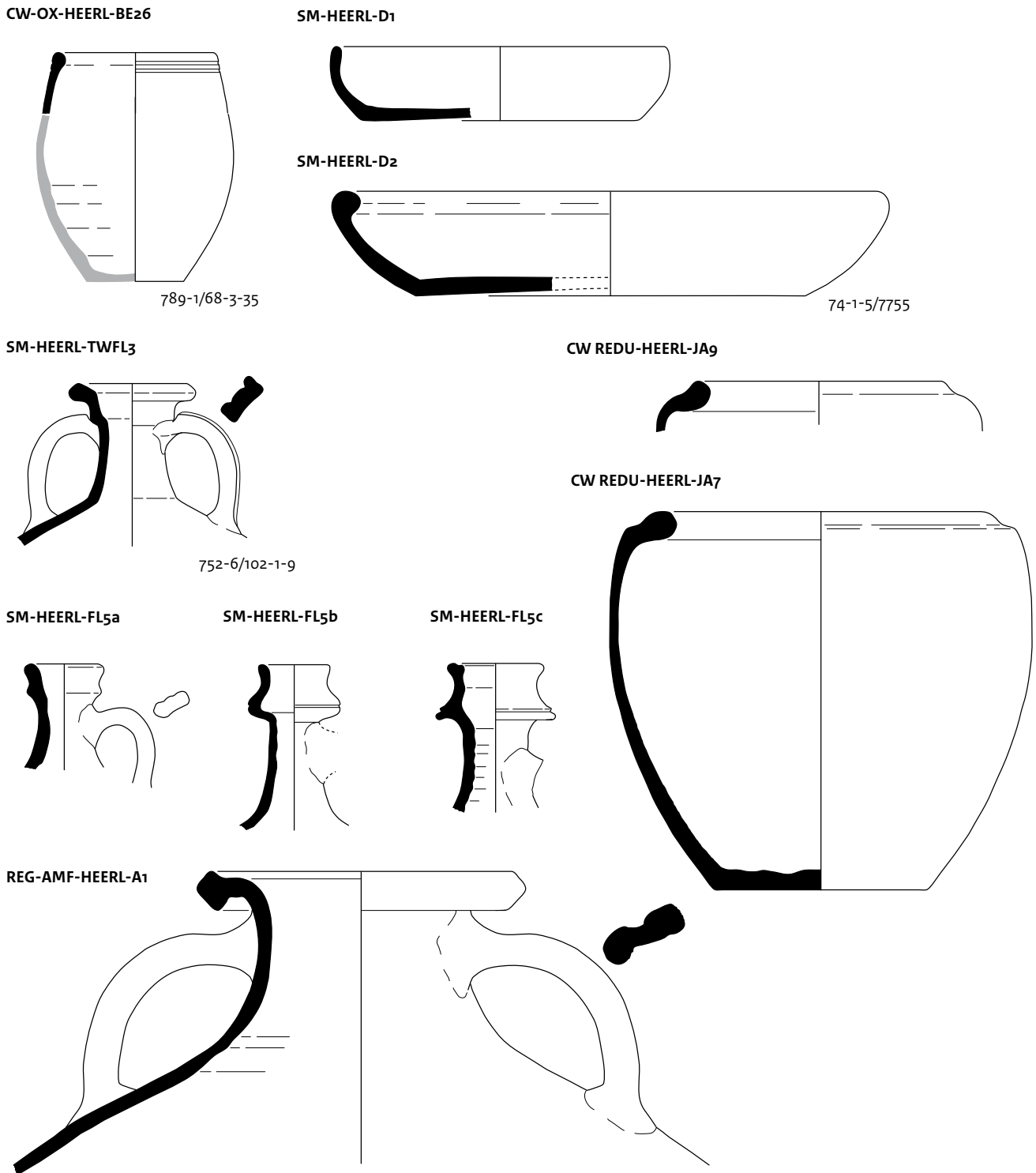


Fig. 23.5 Heerlen. Forms produced at Heerlen, influenced by pottery from the Meuse region; numbered items found at Voerendaal. Scale 1:3. (source: finds from Heerlen after Van Kerckhove & Boreel 2014, fig. 6-8)

#### *The youngest production phase*

At the end of the second century and the early third century, far less levigated clay was used for the production of Heerlen ware. Because of the many inclusions in the clay, the fabric shows resemblances to several Eifel fabrics (coinciding with typological similarities).

However, this late production phase, which has been attested in large quantities, has not yet been analysed petrographically and chemically. Therefore, this fabric group is labelled as 'Heerlen/Eifel' for now. A distinctive group within the youngest production phase of Heerlen consists of the Rhenish ware or black-slipped

ware. In Heerlen, the quality is considerably poorer than its high-quality counterparts from Trier and the Argonne, and the date seems to be confined to the end of the second century and the early third century.<sup>2050</sup> The Heerlen ware appears to have been replaced by Eifel productions shortly after c. AD 230/250, but further (fabric) analysis of well-dated vessel types is needed to confirm this.<sup>2051</sup>

#### *Terra rubra and terra nigra*

For the Ten Hove site, only a small amount of terra nigra and terra rubra could be identified as Heerlen ware (only 13 of 23 MNI; Fig. 23.6-8; Table 23.6).<sup>2052</sup> This is partly because terra nigra is the most problematic pottery category when it comes to identifying its fabric. There are several reasons for this. First, in general, the terra nigra has a very fine fabric (with almost no inclusions) and it is even harder to identify those inclusions because of their reduced firing atmosphere. Second, in Heerlen, there is insufficient knowledge of the variability of the Heerlen terra nigra fabric.<sup>2053</sup> The term 'terra rubra' is perhaps somewhat misleading for the Heerlen production. This calls for some clarification. Terra rubra can be considered the oxidized variant of the reduced terra nigra. A red-firing clay was usually used for the production of terra rubra. In Heerlen, however, the local white-firing clay was used, which results in a white fabric after oxidized firing. However, we have opted to retain the term 'terra rubra' because it clearly involves the oxidized counterparts of the same

terra nigra vessel types (mainly beakers). Moreover, Heerlen-specific vessel types in terra rubra and terra nigra have been found in the waster pits from the same kiln cluster.<sup>2054</sup> Some terra rubra and nigra without a known provenance is illustrated in Figure 23.49. The production of terra rubra and (especially) terra nigra reached its peak between c. 70 and 120, but very likely started around c. AD 50.<sup>2055</sup> Although the majority of these vessel types fit well in the time span from c. AD 70 to 120, the beaker TR-HEERL-BE27 should probably be attributed to the first production phase of Heerlen ware. This beaker type, which is only attested at Heerlen-Thermenterrein, but not from production-related structures, is dated by Deru between c. 25 BC and AD 45; a parallel in Nijmegen can be dated between c. AD 0-30.<sup>2056</sup>

#### *Thin-walled pottery*

The thin-walled pottery in Voerendaal is represented by one rim of a beaker THIN-HEERL-BE21. It is the Heerlen imitation of the Hofheim 81A/Stuart 204B, which is known in the Köln production as the beaker Höpken R27 (cf. Fig. 23.34 and 23.39 for examples in other fabrics). Following Vilvorder, we classify these beakers (which have also been found in Soller and NOOR1 ware, see below) as thin-walled pottery despite their coarse fabric. The beaker BE21 has very fine walls, and is decorated with a row of pearls on the shoulder. In Köln, these beakers were produced from the Claudian era until well into the second century, with a peak

**Table 23.6. Voerendaal-Ten Hove. Terra nigra and terra rubra in Heerlen ware.**

Heerlen vessel type	Corresponding vessel types	MNI
TR-HEERL-BE13	Deru P1,3,10,11/HBW 11d/17/18	4
TR-HEERL-BE27	Deru P14/HBW 3a-11a	1
TR-HEERL-BE33	Deru P13/HBW 3a-b	1
TN-HEERL-BE13	Deru P1,3,10,11/HBW 11d/17/18	1
TN-HEERL-BE16	Deru P42-51/HBW27	1
TN-HEERL-BOT	indet.	1
TN-HEERL-BOT2	Deru BT4-6/HBW 25a/like Höpken B21	7
TN-HEERL-D	indet. = HBW 79/Deru A39	1
<b>Total</b>		<b>17</b>

<sup>2050</sup> Van Kerckhove & Boreel 2014, 254, fig. 4.

<sup>2051</sup> Van Kerckhove 2020a, 54; Van Kerckhove & Boreel 2014, 275.

<sup>2052</sup> The term 'terra rubra' is somewhat misleading and should often be read as 'non-terra nigra', as most of the beakers in fig. 23.6 do not have an orange-reddish fabric, but a white one.

<sup>2053</sup> For the 2014 publication, only one waster pit was so far known, with wasters all having the same fabric (Van Kerckhove & Boreel 2014, 255). The wasters found in the kiln at Heerlen-Tempsplein were of terra nigra in a completely different fabric, using more 'polluted' clay and containing more organic material (Van Kerckhove 2020, 20). The difference in fabric characteristics between the wasters from the two contexts suggests a large fabric variability for the Heerlen terra nigra fabric. More petrographic and chemical analysis of consumption material is needed to establish whether it is Heerlen ware and to describe the variability of the fabric.

<sup>2054</sup> Van Kerckhove 2020b.

<sup>2055</sup> Van Kerckhove & Boreel 2014, 255; Van Kerckhove 2020a, 22-23; Van Kerckhove 2020b, 124-126.

<sup>2056</sup> A vessel Deru P14 is found in an Early Roman funerary complex in Hainaut (Belgium; Deru 1993; 1996, 107). A beaker HBW 3a/11a was found in Nijmegen-cemetery O, dating to c. AD 0-30 (Holwerda 1941, pl. 3, no. 115).

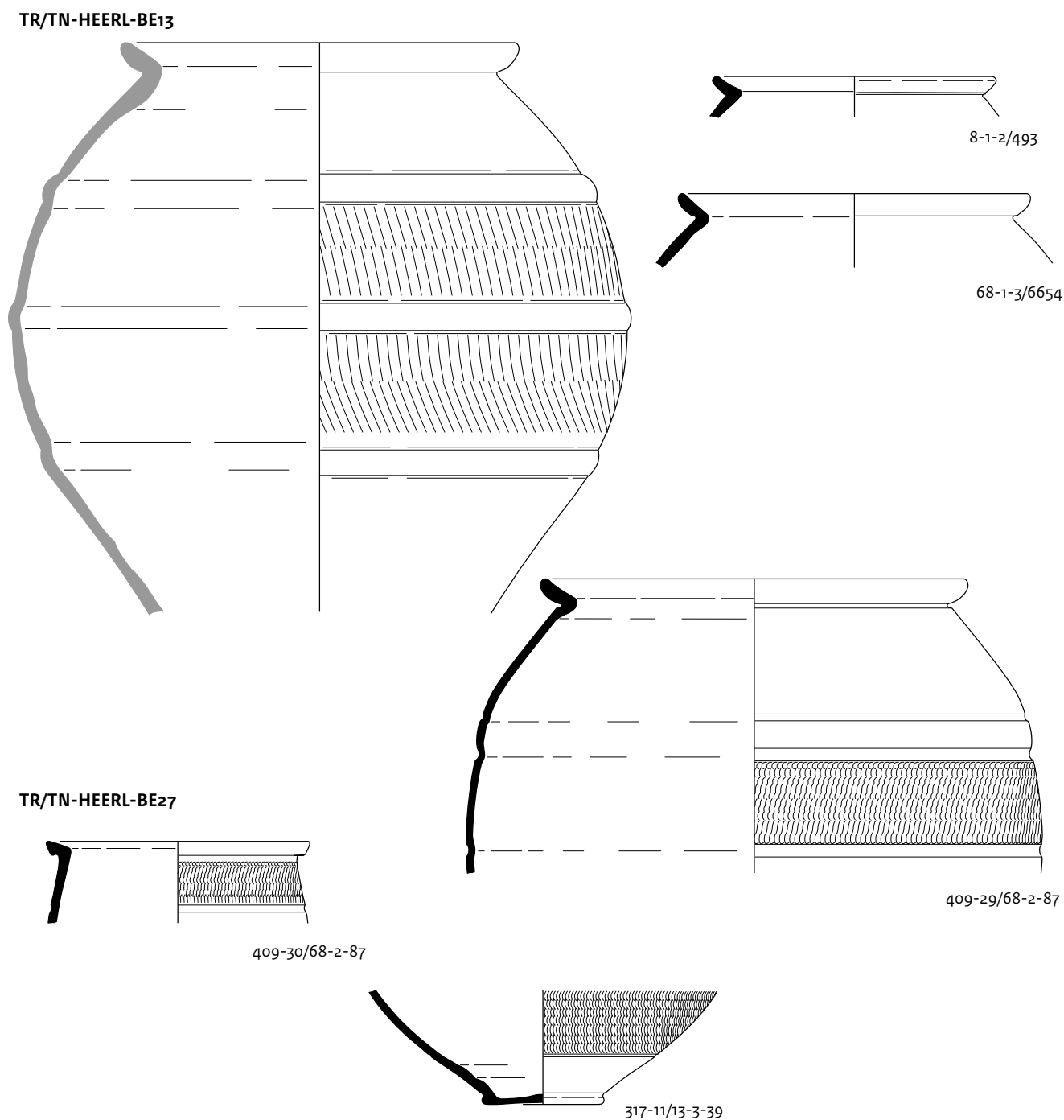


Fig. 23.6 Voerendaal-Ten Hove. Gallo-Belgic beakers in Heerlen ware. Scale 1:3. (source: example from Heerlen after Bloemers & Haalebos 1973, fig. 6)

between c. AD 40 and 80.<sup>2057</sup> The Köln production shows that the 'true' thin-walled pottery evolved into this coarse ware variant (which would eventually evolve into the well-known Heerlen pot P1 with painted circles or human faces; see below) and into colour-coated wares (in Köln ware, often decorated with faces or with applied

scales).<sup>2058</sup> In conclusion, the beaker THIN-HEERL-BE21 is difficult to date, but could have been produced in the first phase of the Heerlen production. However, it cannot be excluded that it continued to be produced into the early second century AD.

<sup>2057</sup> Vilvorder 2010, 306 (with further reference to Hanel 1995, 184, Höpken 2005, Anderson 1981). The thin-walled, coarse pottery from Köln builds on the 'proper' fine thin-walled pottery, with cups such as Haltern 40.

<sup>2058</sup> See Vilvorder 2010, 306 for information on the Köln production.

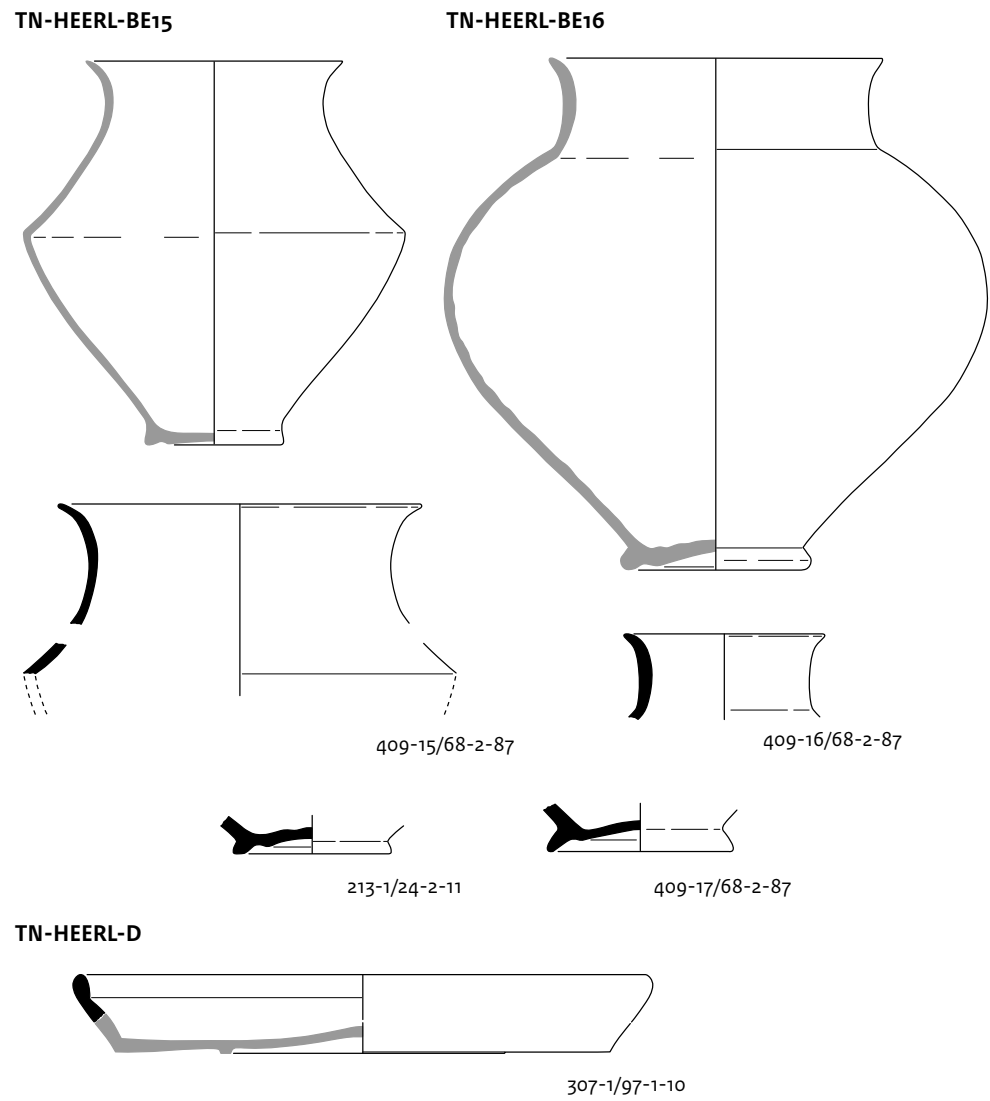


Fig. 23.7 Voerendaal-Ten Hove. Terra nigra beakers and plates in Heerlen ware. Scale 1:3. (source: complete examples after Van Kerckhove & Boreel 2014, fig. 5)

TN-HEERL-BOT2

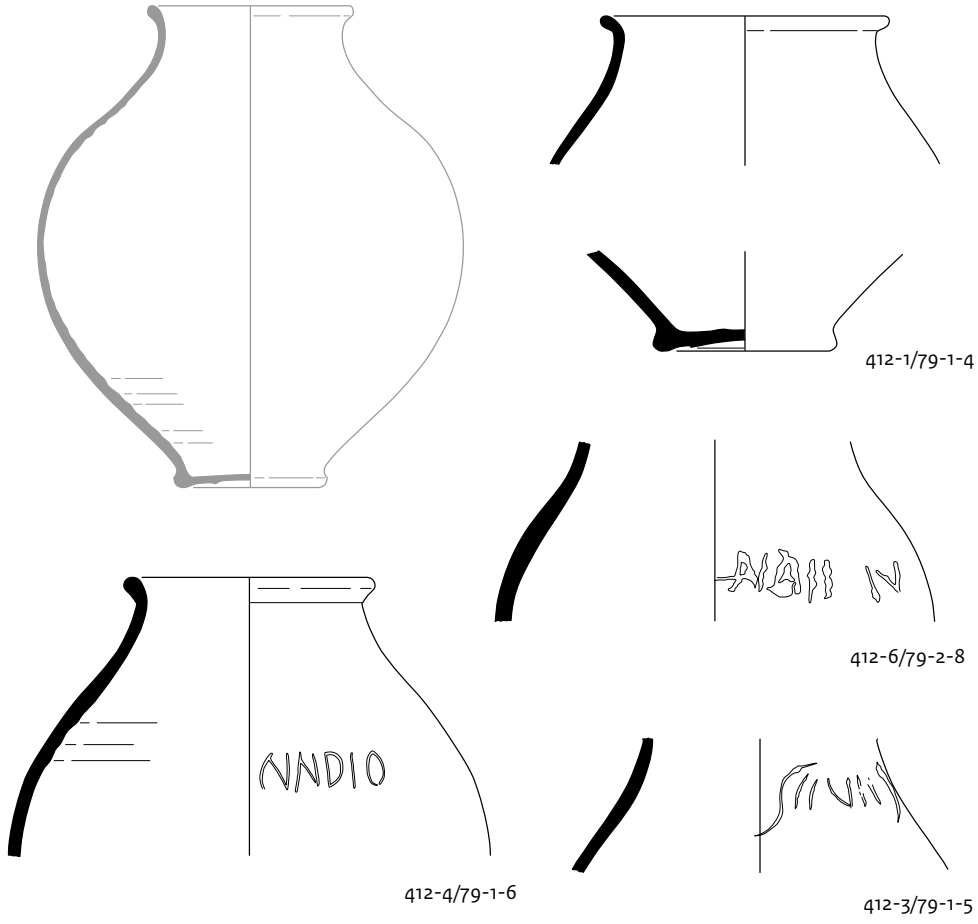


Fig. 23.8 Voerendaal-Ten Hove. Terra nigra 'bottles' in Heerlen ware. Scale 1:3. (source: H.A. Hiddink & F. Horbach)

*Colour-coated ware*

Approximately 10% of the Heerlen ware in Voerendaal-Ten Hove consists of colour-coated ware (136 MNI) (Table 23.7; Fig. 23.9-11). The bulk of the Heerlen colour-coated ware dates in the Middle Roman period. We can mention the three Heerlen dish types D1-3, and the beakers BE18, BE22 (Middle Roman A), BE7 and BE10

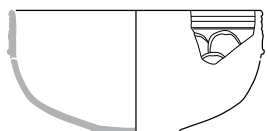
(Middle Roman B). Some vessel types can probably be dated to c. AD 50 (CU1, BE1, BE4); other vessel types have their origin in the Hofheim I horizon, but were produced until the Flavian period (BE3, JU1).<sup>2059</sup> The beaker BE9 represents a 'late' type (late second-early third-century type), which was also produced in black-slipped ware.

**Table 23.7. Voerendaal-Ten Hove. Colour-coated Heerlen ware.**

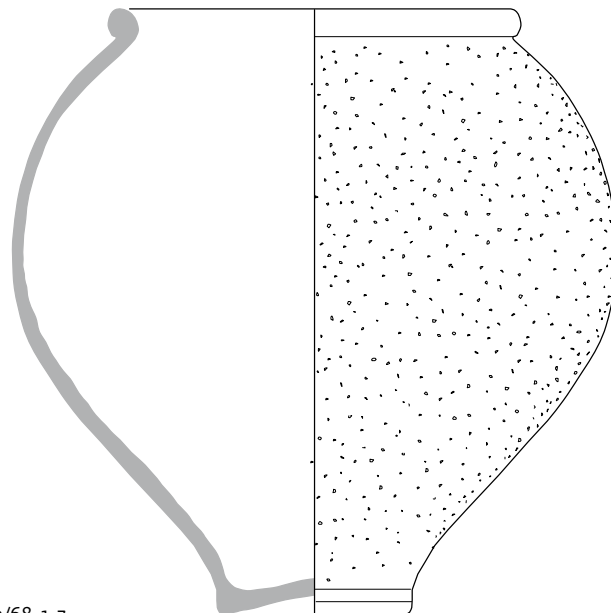
Heerlen vessel type	Corresponding vessel type	Technique	MNI
CC-HEERL-CU1	VV 158-163/Bertrand 4	b	1
CC-HEERL-BE1	unknown	b	1
CC-HEERL-BE3	ST 1/Hofh 26A/Höpken E15/VV 139-143	b	7
CC-HEERL-BE3Var	like ST 1	a	1
CC-HEERL-BE4	Hofh 26B/Greene 20.5/VV 139, 144-146	a	7
CC-HEERL-BE7	NB 32/Höpken E24/VV 192-195	b	19
CC-HEERL-BE8	ST 5/NB 33/VV 216-225	b	1
CC-HEERL-BE9	NB 31/VV 209	b	2
CC-HEERL-BE10	ST 3/NB 30/VV 204-207/Höpken E22	b	12
CC-HEERL-BE18	ST 2/Höpken E20/VV172-180	b	27
CC-HEERL-BE22	ST 4/Höpken E23/VV188-191	b	10
CC-HEERL-BE	Brunsting 10var?	b	3
CC-HEERL-D1	ST 10/Höpken E1/VV148-149	a	19
CC-HEERL-D2	ST 10/Höpken E2/VV 154-155	a	13
CC-HEERL-D3	ST 10/VV 157	b	11
CC-HEERL-JU1	ST 8/Höpken E25/like VV250-251	a	1
CC-HEERL-BE	Brunsting 10var?	b	3
<b>Total</b>			<b>138</b>

<sup>2059</sup> Roughly datable between AD 40-69 (Nüber 1983).

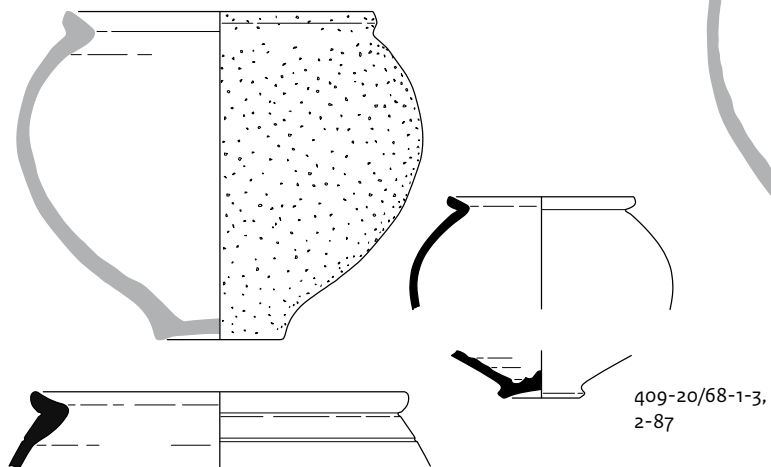
CC-HEERL-CU1



CC-HEERL-BE1



CC-HEERL-BE3

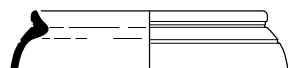
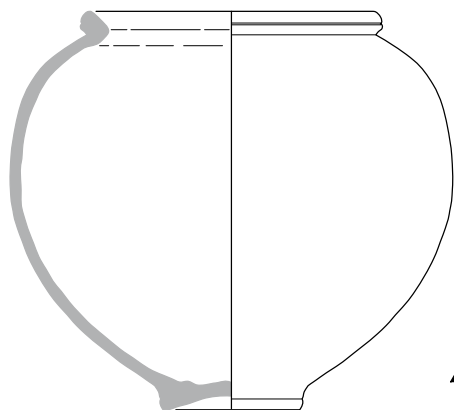
409-20/68-1-3,  
2-87409-19/68-1-3,  
2-87

CC-HEERL-BE

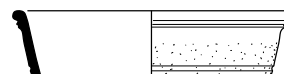


302-9/100-1-1

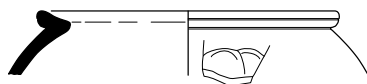
CC-HEERL-BE4



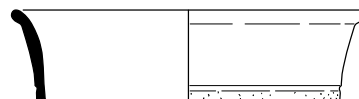
332-1/114-1-4



99-1-16/8401



68-1-3/6530

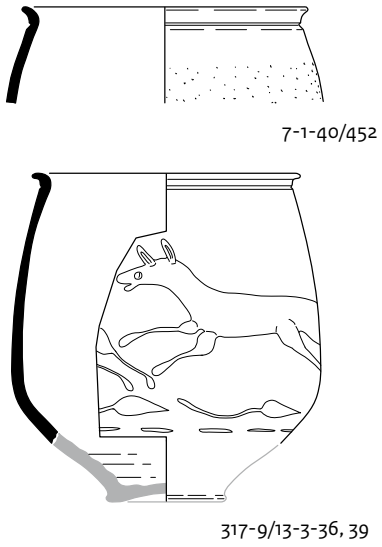


95-1-18/10771

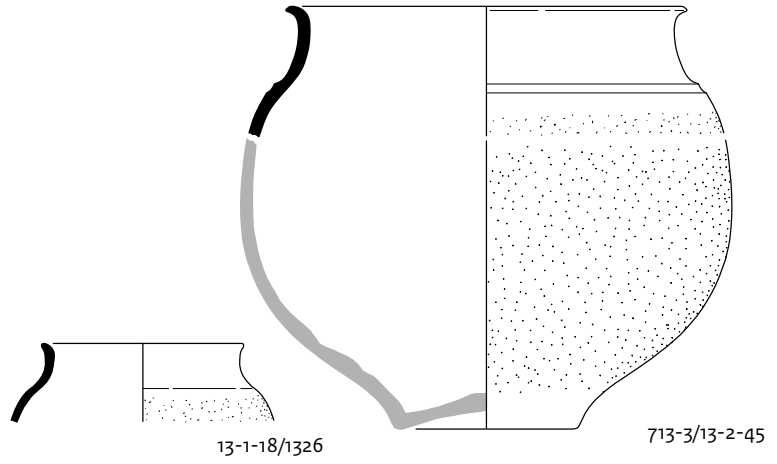
Fig. 23.9 Voerendaal-Ten Hove. Colour-coated beakers and special forms in Heerlen ware. Scale 1:3. (source: complete examples after Van Kerckhove & Boreel 2014, fig. 4)



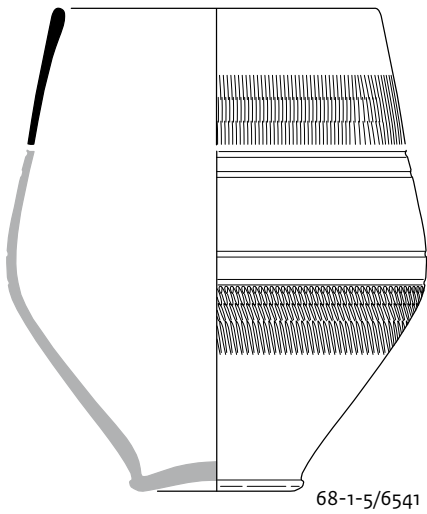
CC-HEERL-BE18



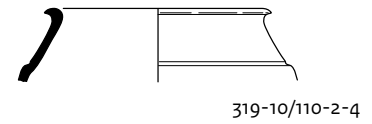
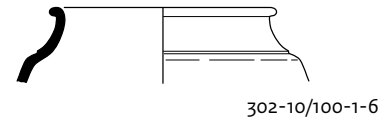
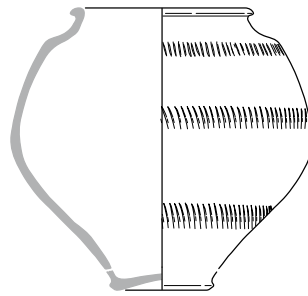
CC-HEERL-BE22



CC-HEERL-BE10



CC-HEERL-BE7



CC-HEERL-BE9

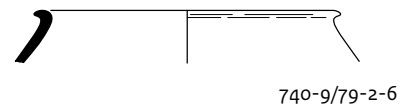
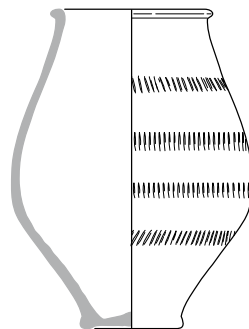
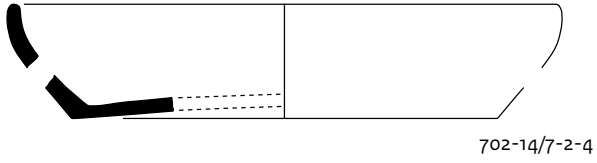
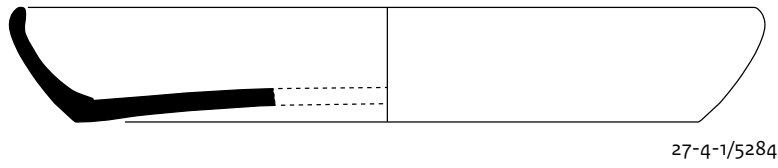
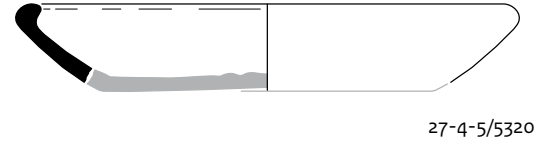


Fig. 23.10 Voerendaal-Ten Hove. Colour-coated beakers in Heerlen ware, cont. Scale 1:3. (source: BE7 and 9 after Van Kerckhove & Boreel 2014, fig. 4)

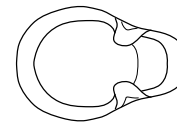
CC-HEERL-D1



CC-HEERL-D3



CC-HEERL-JU1



CC-HEERL-D2

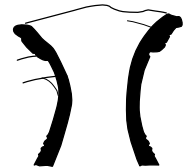
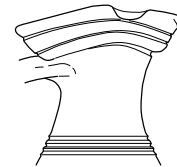
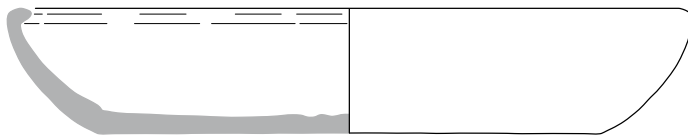


Fig. 23.11 Voerendaal-Ten Hove. Dishes and jug in Heerlen colour-coated ware. Scale 1:3. (source: D2 after Van Kerckhove & Boreel 2014, fig. 4)

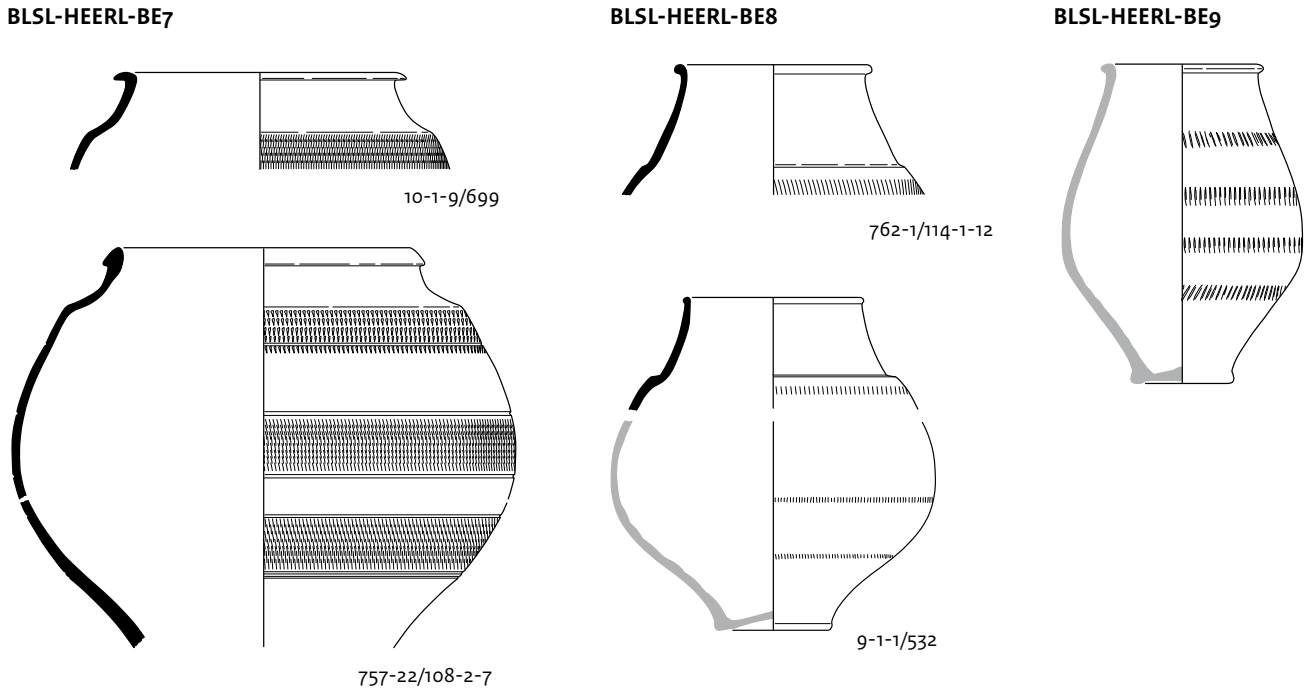


Fig. 23.12 Voerendaal-Ten Hove. Heerlen black-slipped ware. Scale 1:3. (source: BEg after Van Kerckhove & Boreel 2014, fig. 4)

*Black-slipped ware*

The black-slipped or Rhenish ware from Heerlen is only represented by 7 MNI (Table 23.8; Fig. 23.12). The beakers BE7-9 can be dated between c. AD 200-230/250.<sup>2060</sup> The black-slipped ware produced in Heerlen is of a rather poor quality, leading to the hypothesis that it was never a popular product. However, this is not the only possible explanation for the small amount of Heerlen black-slipped ware. Chronology could also play a role, although it seems that in the third century the tablewares were partly imported from Trier and the Argonne (black-slipped wares) and from the Meuse region (smooth-walled beakers and dishes).

*Smooth-walled pottery*

About 7% of the Heerlen ware consists of smooth-walled pottery (95 MNI; Table 23.9). The flagons are best-represented within this group, with 44 MNI (Fig. 23.13-15). There seems to have been a peak in the second century, with the flagon types F3a-c.<sup>2061</sup> The research into the Heerlen production showed that these vessel subtypes were sometimes made in the same kilns and combined in a single kiln load, therefore making it difficult to assign more precise dates to them.<sup>2062</sup> Despite the fact that the subtypes in Heerlen ware cannot be dated absolutely, there is a certain evolution through time from FL3a to FL3d.<sup>2063</sup> This chronological evolution has been dated more specifically by

**Table 23.8. Voerendaal-Ten Hove. Black-slipped Heerlen ware.**

Heerlen vessel type	Corresponding vessel type	MNI
BLSL-HEERL-BE7	NB 32/VV 192-195	2
BLSL-HEERL-BE8	NB 33/VV 216-225/ST 5	4
BLSL-HEERL-BE9	NB 31/VV 209	1
<b>Total</b>		<b>7</b>

<sup>2060</sup> Van Kerckhove & Boreel 2014, 254.

<sup>2061</sup> Van Kerckhove & Boreel 2014, 257-259.

<sup>2062</sup> Van Kerckhove & Boreel *loc. cit.*

<sup>2063</sup> Van Kerckhove & Boreel 2014, 259.

**Table 23.9. Voerendaal-Ten Hove. The smooth-walled Heerlen ware.**

Heerlen vessel type	Corresponding vessel type	MNI
SM-HEERL-FL	-	1
SM-HEERL-FL1	VV 389-390/ST 113/Höpken T36/Hofh 55	1
SM-HEERL-FL2	VV 381-385/ST 106-108/Hofh 50-52/ Höpken T32-33	5
SM-HEERL-FL3a	ST 109	11
SM-HEERL-FL3b	ST 110A/Brunsting 5a	10
SM-HEERL-FL3c	ST 110B/Brunsting 5b	3
SM-HEERL-FL3d	Brunsting 5c	1
SM-HEERL-FL4a	NB 62/ST 111/Höpken T35	3
SM-HEERL-FL4b	Brunsting 6/Niederbieber 61	4
SM-HEERL-FL4var	-	1
SM-HEERL-FL5	like VV423, 425-426, 430/Haalebos 4400/like Gose 388	1
SM-HEERL-FL7	like ST 114, with spatula on rim	1
SM-HEERL-TWFL	-	1
SM-HEERL-TWFL1	ST 129A/Höpken T38A	5
SM-HEERL-TWFL10	Hofh 58/ Höpken T37/Haltern 53	3
SM-HEERL-TWFL12	FL3c with two handles	1
SM-HEERL-TWFL2	ST 129B/Brunsting 20/Höpken T38B	4
SM-HEERL-TWFL3	VV 442	2
SM-HEERL-TWFL8	two-handled FL3a	1
SM-HEERL-HP	-	1
SM-HEERL-HP2	like ST 146	2
SM-HEERL-HP3	VV 359/like ST 146/Höpken T21	12
SM-HEERL-HP4	like ST 146	7
SM-HEERL-HP5	VV 357/like ST 146/Höpken T21	6
SM-HEERL-HP6	rim like FL2	1
SM-HEERL-D1	VV 148-149/ST 10/Höpken E1	2
SM-HEERL-D2	VV 154-155/ST 10/Höpken E2	2
SM-HEERL-STR1	Höpken B8/R7	0
SM-HEERL-KANTH	- (kantharos)	1
SM-HEERL-AMPHST	ST 151	2
<b>Total</b>		<b>95</b>

Brunsting and Haalebos, although it should be noted that the majority of their vessel types were probably made in the Rhineland and not necessarily in Heerlen.<sup>2064</sup> Early flagon types, which could have been produced from c. AD 50, but certainly between c. AD 70 and 120, are the flagon types FL1, 2, and 7. A flagon with a wide neck, 409-40/68-3-6, classified as an FL2, bears more similarity to a Stuart 107 than a 108

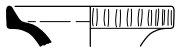
(as most others do). The flagon type FL4 can be dated after c. AD 150.<sup>2065</sup> The number of these younger flagons is undeniably smaller than that of earlier phases.

The two-handled flagons follow this pattern (Fig. 23.16). Most types date to the second century (TWFL1, 12, 8), while the younger two-handled flagon TWFL2 is only represented by 5 MNI. Three rim fragments of the early type

<sup>2064</sup> Brunsting 1937, 95-96; Haalebos 1990, 159-160. Stuart 109 (corresponding type to HEERL-FL3a): produced from c. AD 90-120, Stuart 110A (corresponding to HEERL-FL3b) from AD 90-170, Stuart 110B (corresponding to HEERL-FL3c) from c. AD 130 into the third century, Brunsting 5c (corresponding to HEERL-FL3d) from c. AD 150 onwards.

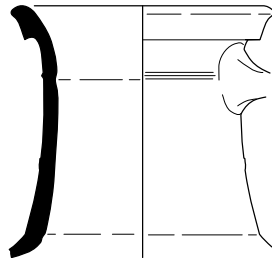
<sup>2065</sup> Van Kerckhove & Boreel 2014, 259.

SM-HEERL-FL7



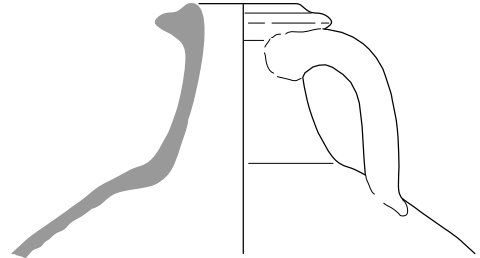
326-4/55-2-2

SM-HEERL-FL2var

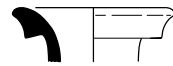
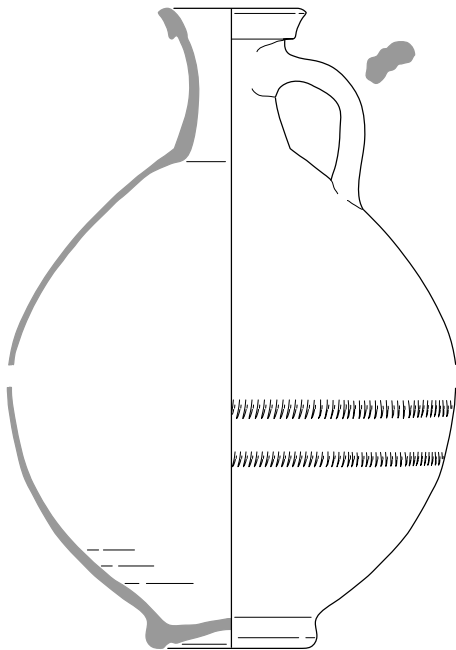


409-40/68-3-6

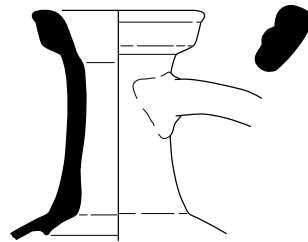
SM-HEERL-FL1



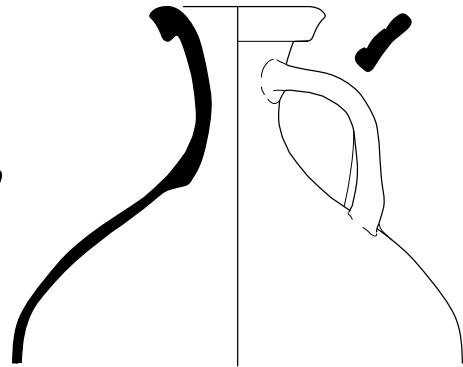
SM-HEERL-FL2



409-41/68-2-3



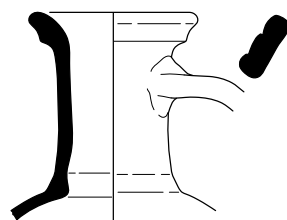
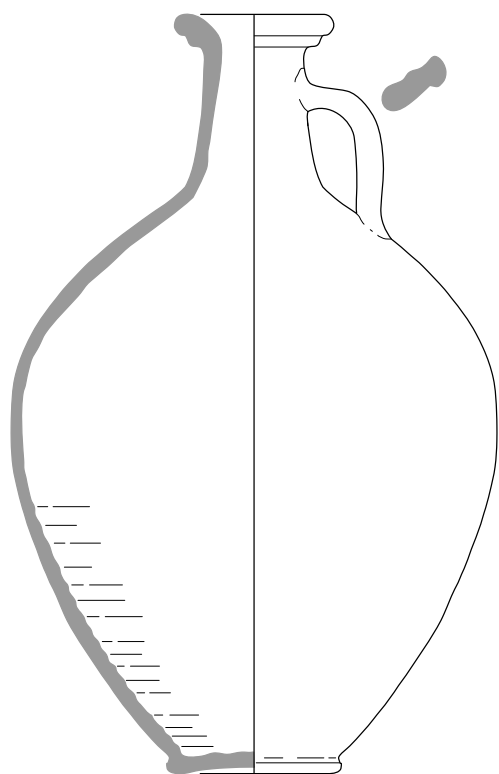
409-38/68-3-27



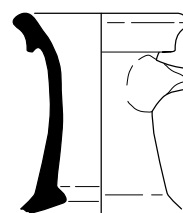
409-44/68-5-1\*

Fig. 23.13 Voerendaal-Ten Hove. Heerlen smooth-walled flagons (409-44 has a non-Heerlen fabric, but the form is typical). Scale 1:3. (source: FL1 and 2 from Heerlen after Van Kerckhove & Boreel 2014, fig. 6)

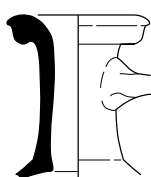
## SM-HEERL-FL3a



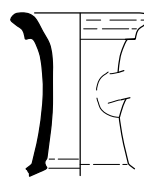
409-32/68-4-14



409-36/68-2-87



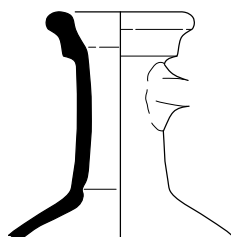
409-37/68-2-87



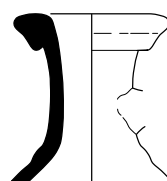
409-42/68-2-87



409-43/68-2-87

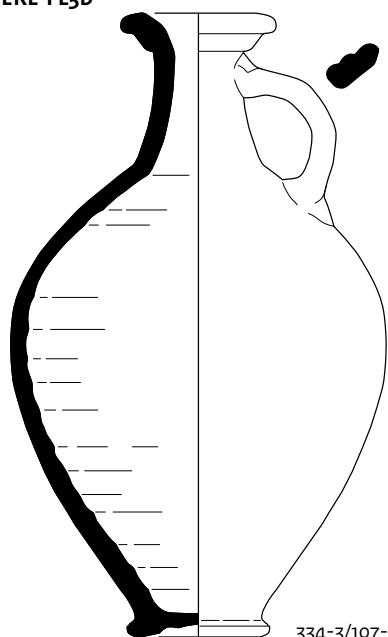


647-1/115-2-11

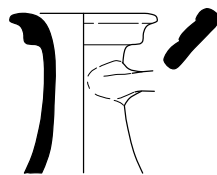


13-1-13/1292

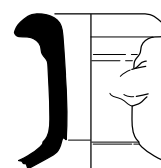
## SM-HEERL-FL3b



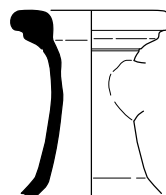
334-3/107-3-62



409-35/68-4-19



729-15/27-5-11



27-4-1/5287

Fig. 23.14 Voerendaal-Ten Hove. Heerlen smooth-walled flagons, cont. Scale 1:3. (source: H.A. Hiddink & F. Horbach, complete FL3a after Van Kerckhove & Boreel 2014, fig. 6)

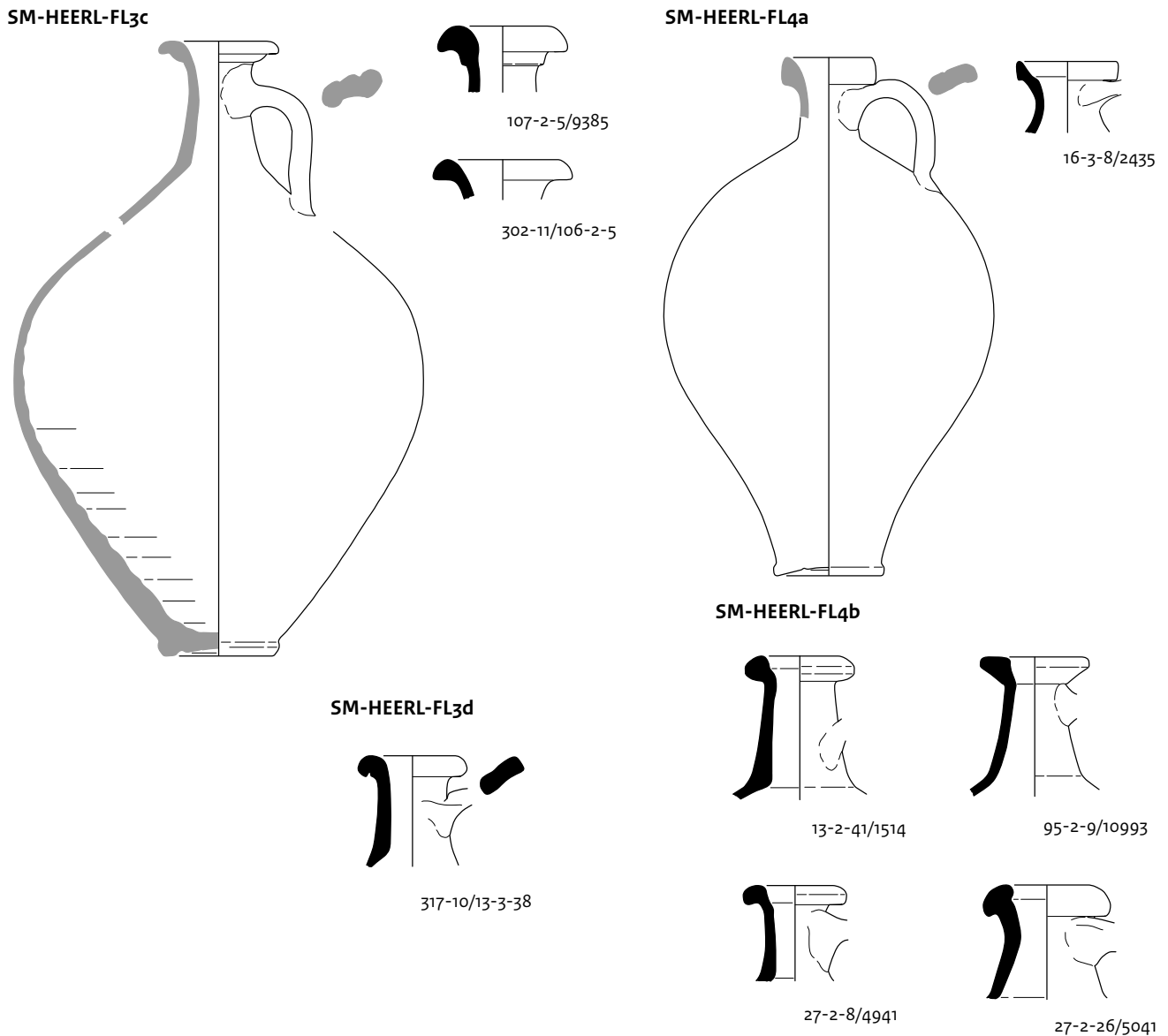


Fig. 23.15 Voerendaal-Ten Hove. Heerlen smooth-walled flagons, cont. Scale 1:3. (source: complete examples from Heerlen after Van Kerckhove & Boreel 2014, fig. 6)

<sup>2066</sup> Van Kerckhove 2014 (Hoogeloon), 334.

<sup>2067</sup> Van Kerckhove & Boreel 2014, 255-257, fig. 5 (SM-HEERL-HP1-5).

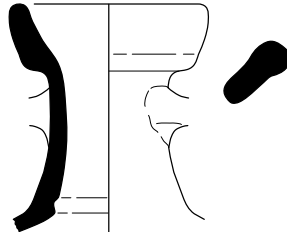
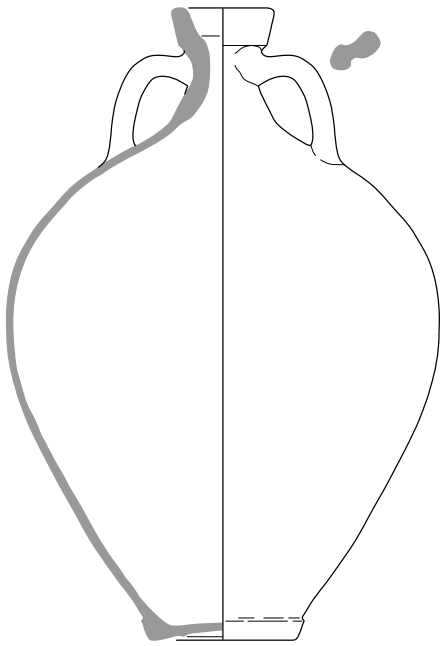
<sup>2068</sup> Vilvorder *et al.* 2010, 247, fig. 7, TON28. Both smooth-walled and coarse ware honey pots in Tongeren ware have been collected at the villa of Hoogeloon. They are

TWFL10 – which can probably be dated from c. AD 50 – were collected from the layers in trench 16, 68 and 95. It should be noted however, that the number of two-handed flagons in Heerlen is relatively small (19 MNI).

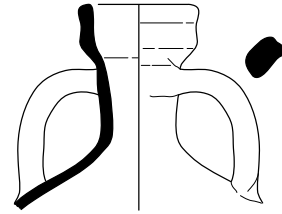
Many honey pots in Heerlen ware have been collected at the Ten Hove site (29 MNI; Fig. 23.17). These vessels, used to transport and store food, were introduced into legionary forts along the Lippe and Rhine, indicating a Mediterranean derivation.<sup>2066</sup> This vessel shape type is barely

present in rural sites, but was popular at villas (such as Hoogeloon), cities and military sites. It was produced in Heerlen,<sup>2067</sup> Tongeren,<sup>2068</sup> the Belgian Meuse region,<sup>2069</sup> probably in Jülich,<sup>2070</sup> as well as in Köln.<sup>2071</sup> Apart from one honey pot in Soller ware, these pots were all produced in Heerlen. As for the chronology, the production peak seems to be in the second century, but it is hard to date these types with precision.<sup>2072</sup> Indeed, the variability of the rims is so high that it hampers an attribution to a

## SM-HEERL-TWFL1

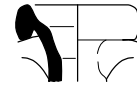
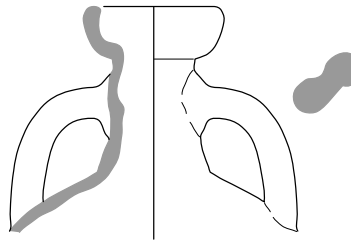


22-5-10/4198



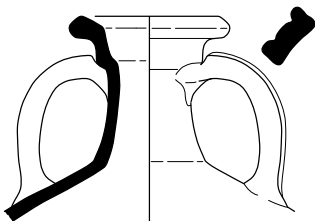
7-1-32/369

## SM-HEERL-TWFL2



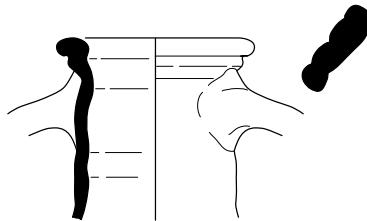
107-2-18/9396

## SM-HEERL-TWFL3



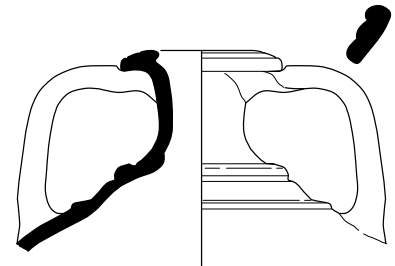
752-6/102-1-9

## SM-HEERL-TWFL8



95-2-9/10991

## SM-HEERL-TWFL12



319-12/110-2-1

Fig. 23.16 Voerendaal-Ten Hove. Heerlen two-handled flagons. 1:3. (source: complete TWFL1 after Van Kerckhove & Boreel 2014, fig. 6)

specific vessel type. The honey pot HP5, however, was only produced in a kiln that can be dated between c. AD 70 and 120. Five MNI of this vessel type have been collected.

Smooth-walled dishes had the same function as their colour-coated counterparts (Fig. 23.18). These smooth-walled versions were very popular in the Meuse and Haspengouw regions, whereas they were always colour-coated in the Rhineland. The Heerlen production followed the tradition of the Lower Rhineland, but as discussed above, we see a slight influence from the Belgian Meuse region. These smooth-

walled plates are only represented by four q MNI. They can be dated to the late second and early third century AD.

Two beaker-like objects are interpreted in the literature as either candle stands or amphora stoppers, but their true function is unknown. The latter function is perhaps less likely because the white smooth-walled fabric is totally different from those – although very variable – of Mediterranean amphorae. They were probably used as stoppers on regional amphorae (see below), although their diameter is comparatively small and an additional sealant

made with an orange-brown firing fabric and are mostly painted white (Van Kerckhove 2014, 334, 355; in prep.).

<sup>2069</sup> Van Kerckhove in prep.

<sup>2070</sup> Lenz 1990, pl. 56, H50.

<sup>2071</sup> Höpken 2005, 103, *Typentafel* 3, T21.

<sup>2072</sup> Van Kerckhove & Boreel 2014, 255-257.



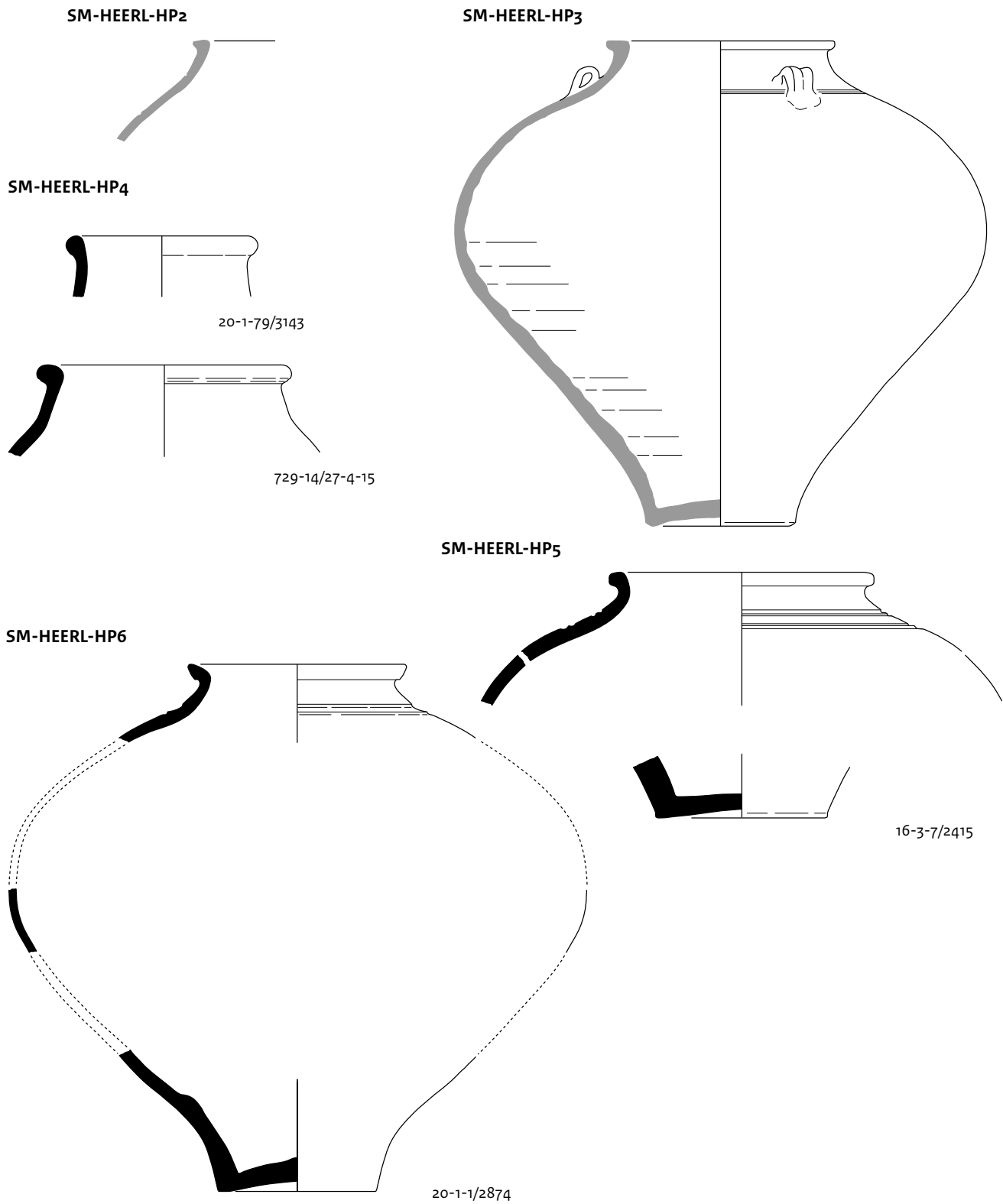
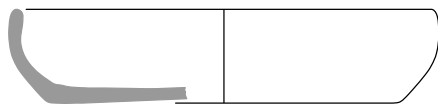
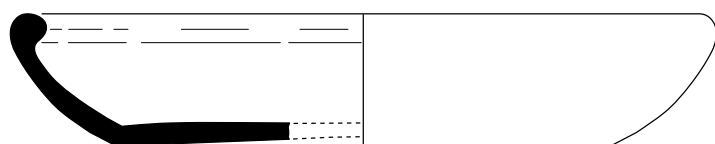


Fig. 23.17 Voerendaal-Ten Hove. Heerlen honey pots. Scale 1:3. (source: HP2 and 3 after Van Kerckhove & Boreel 2014, fig. 6)

## SM-HEERL-D1

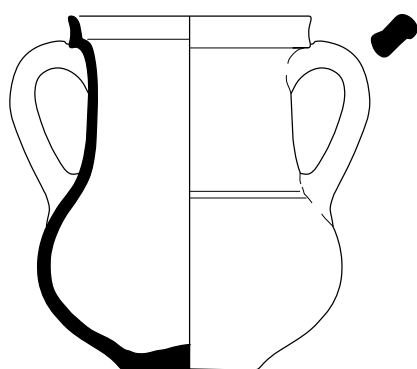


## SM-HEERL-D2



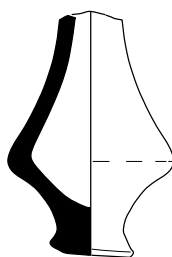
74-1-5/7755

## SM-HEERL-KANT

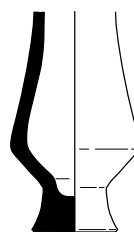


16-3-7/2414

## SM-HEERL-AMPHST



0-0-0/10388



16-3-7/2416

Fig. 23.18 Voerendaal-Ten Hove. Smooth-walled Heerlen dishes, kantharos and 'candle stands' or 'amphora stops'. Scale 1:3. (source: H.A. Hiddink & F. Horbach, D1 after Van Kerckhove & Boreel 2014, fig. 6)

had to be applied to close the vessel.<sup>2073</sup> When rotated 180°, it is clear why the objects could also be interpreted as candle stands (Fig. 23.18). Stuart uses this label but points out that they could have been used differently, as miniature beakers for instance. Some examples do not have a flat base but a pointed or very small one, preventing them from standing upright.<sup>2074</sup>

The only part of a strainer is a wall fragment (10-1-50/745). Although not frequently found, strainers were produced throughout the Early and Middle Roman period.<sup>2075</sup> In Heerlen they were made from c. AD (50)70 onwards.<sup>2076</sup>

Finally, a special form is a small beaker with two ears for which no exact parallels are known to us (16-3-7/2414; Fig. 23.18). It resembles some,

quite rare, smooth-walled 'kantharoi',<sup>2077</sup> although our example has no foot. Two vessels from Morken are quite similar, although these have a rim with an outer groove.<sup>2078</sup> It also bears a resemblance to black-slipped *kantharoi* from Trier and to the terra sigillata Dragendorff 53, which was mainly produced at Rheinzabern.<sup>2079</sup> Samian *kantharoi* were also manufactured at Trier, contemporaneously with their black-slipped counterparts.<sup>2080</sup> *Kantharoi* in black-slipped ware were produced until the fourth century AD.<sup>2081</sup>

#### Regional amphorae

Only 5 MNI of regional amphorae from Heerlen have been found (Fig. 23.19). The limited number of regional amphorae in general at the Ten Hove

<sup>2073</sup> Cf. Trier Augustusstadt 1984, 178, fig. 41e-j.

<sup>2074</sup> Stuart 1962, 67-68, pl. 18, no. 270-274; 1976, 60, fig. 51, no. 6-7; Vanvinckenroye 1990, 126-127, pl. 59, no. 571-579 (575-578 a kind of miniature bottles).

<sup>2075</sup> See e.g. Stuart 1962, 68, pl. 18, type 152; Vanvinckenroye 1991, 132, pl. 62, type 602; Höpken 2005, 90, 98, 118. In Köln, strainers were produced in terra nigra, in smooth-walled ware and in coarse ware, and have been collected in kilns which can be dated from the early first century until the second half of the second century.

<sup>2076</sup> Van Kerckhove 2019b, 25.

<sup>2077</sup> E.g. Wassink 1979, 157, fig. 9; 1980, 233, fig. 2.

<sup>2078</sup> Hinz 1969, 171, no. 111; pl. 8, no. 43-44.

<sup>2079</sup> Symonds 1992, 61-62, pl. 49-50.

<sup>2080</sup> Vilvorder 2010, 196-197, where a *kantharos* Thomas 6 is attested in 'fabric 3', datable between AD 230/240 and 270/280.

<sup>2081</sup> Symonds refers to an unpublished vessel from Krefeld (1992, 69).

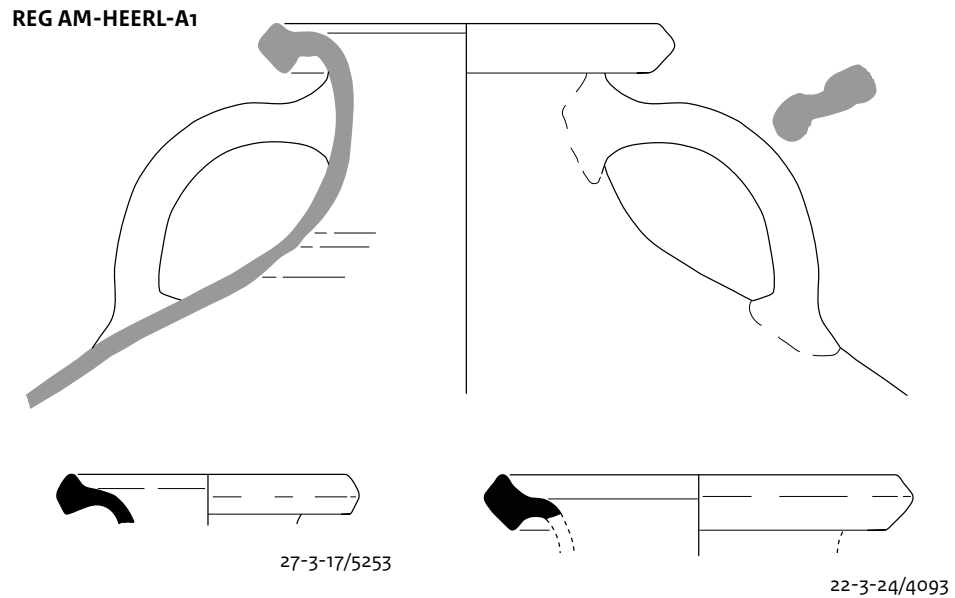


Fig. 23.19 Voerendaal-Ten Hove. Regional amphorae in Heerlen ware. Scale 1:3. (source: example from Heerlen after Van Kerckhove & Boreel 2014, fig. 6)

site is striking (only 10 MNI). They are all of the Heerlen A1-type, which is an imitation of the regional amphora type Haalebos 8052 from the Meuse region (Hanut 'type Mosan', Mosan type I),<sup>2082</sup> Even the Haalebos 8052 from the Meuse region, which is widely distributed in large parts of the Netherlands, is barely attested (3 MNI). This pattern of low numbers of regional amphorae has also been attested for the villa of Hoogeloon (0.5% in Voerendaal versus 2% in Hoogeloon, based on MNI).

#### Coarse ware

The coarse ware is by far the largest pottery group in Voerendaal (60% of all fabrics, based on MNI; Table 23.10; Fig. 23.20-28). For the Heerlen ware, 47% of the MNI consist of coarse ware pottery.<sup>2083</sup> A sizeable amount of the coarse ware was produced in NOOR1 ware or Soller ware (see below). The Heerlen coarse ware can be divided into three groups: reduced coarse ware (Fig. 23.20), colour-coated coarse ware (Fig. 23.21-22) and oxidized coarse ware (Fig. 23.23-28). These groups have a chronological significance, as will be explained below. We can also distinguish a pinkish fabric group (Heerlen pink), which is probably also Heerlen ware. Further fabric analysis would be

needed to confirm this, however. The typology of this pink variant follows the mid-Roman Heerlen coarse ware. A last fabric group is the 'Heerlen/Eifel' group, which is difficult to distinguish from fabrics in the Eifel region (Table 23.11). Here too, further fabric analysis is required to confirm the hypothesis that it is late second- and third-century Heerlen ware.

The reduced coarse ware dates between c. AD 50 and 70/90. The attested vessel types mainly consist of JA4a (and b), which are imitations of the Hofheim types 87a (and b). These types were also the most popular vessels in Heerlen colour-coated coarse ware. They are attested in the early kilns at Tempsplein in a reduced variant and at Putgraaf 1971 and especially 2002, where they are colour-coated. The latter two kilns have vessel types which are also present in the early kiln of the Schinkelstraat (which mainly contained Lyon-inspired colour-coated ware). As mentioned above, we can date the Schinkelstraat wasters to around c. AD 50. We believe that the wasters from Putgraaf are slightly younger than those from Schinkelstraat and Tempsplein because of the absence of reduced wares and of terra rubra and early terra nigra beakers. The jar JA6a also encountered at Putgraaf in 1971 (in an oxidized variant). The jar

<sup>2082</sup> Hanut 2001; 2010, 344-345, fig. 20.

<sup>2083</sup> Including the Heerlen/Eifel and Heerlen/pink fabrics.

JA7 was collected from the early kiln at Tempsplein. We believe that all these types were first manufactured in a reduced variant (around 50 AD), after which they were produced in a colour-coated and oxidized variant (from c. AD 70 until 100/120). The limited presence of the reduced variant, with types imitating Hofheim vessels, can probably be explained by the chronology of the site.

Although Heerlen pottery dating to the Hofheim I horizon (c. AD 40-70) seems to be present at Voerendaal (reduced coarse ware and some terra rubra/terra nigra and colour-coated types), the true beginnings of the consumption of Heerlen ware at the villa site can be placed around c. AD 70. This is probably more than a reflection of the habitation history or intensity at Ten Hove because it shows the pattern of the production of Heerlen, which started between c. AD 40 and 70 but did not really take off until the Flavian period and beyond, both in volume and variety of vessel types. The colour-coated coarse wares were immensely popular in this period but were completely replaced by the oxidized coarse wares after c. AD 100/120. The latter were produced from c. AD 70 onwards but remained popular until well into the third century.

The most popular types for the period between c. AD 70 and 120 were the jars JA1 and JA4a but especially the JA4b. There is certainly a chronological evolution from the reduced variant (mostly JA4a), via the colour-coated coarse ware (mostly JA4b) to the oxidized ware (mostly JA1). Both the jar JA4a and 4b have counterparts in the Hofheim I horizon (Hofheim 87A and B respectively), but the JA4b seems to have persisted a little longer in Heerlen than the JA4a.

The jar JA1 deserves some further explanation. Its concordant type, Niederbieber 87, is often specifically dated to the second and third century AD.<sup>2084</sup> It should be noted, however, that the Vanvinckenroye 471 variant already appeared in the consumption contexts of Tongeren during the reign of Tiberius.<sup>2085</sup> Stuart dated the vessel type to the first and second century.<sup>2086</sup> In Köln, the production peak can be placed in the late first and early second century, although the type was kept in production afterwards.<sup>2087</sup> Vilvorder *et al.* date the jar TON40 (the equivalent of the jar Niederbieber 87) after

c. AD 85/90. The Heerlen JA1 follows the chronology of Köln and Tongeren, with a first production date in the late first century. Production continued, however, until well into the second century AD.<sup>2088</sup> The Niederbieber 87, which we know from the third century, was often produced in Urmitzer ware or in a Meuse fabric. In the latter case, the rim has a kind of almond shape. This younger rim variant has not been encountered in Heerlen ware.

Other vessel types that made their appearance in the period between c. AD 70/90 (the main production period for colour-coated coarse ware) is the bowl BO1 and the P1 pot. The pot P1 probably has its origin in the thin-walled beaker Hofheim 81A (BE24 in Heerlen ware). As explained above, the Hofheim beaker was imitated in Köln in colour-coated ware. In Heerlen, colour-coated imitations (with scales, faces and other decorations) are found at the early production site of Schinkelstraat, but at Heerlen-Thermenterrein and Voerendaal we see that the early P1 pots (mostly with painted circles) have the same rim as the beaker Hofheim 81A. Six specimens of this early P1-type have been collected in Voerendaal (68-1-3/6534 (Fig. 23.21), 69-5-2/7280, 68-3-27/6970, 2 MNI in 68-2-87/6587, 68-2-3/6557). Five of them have an orange colour coat and white pearls and circles. Only 68-3-27/6970 is not colour-coated. This early variant has also been retrieved at the Voerendaal site in Soller ware (see below) and NOOR1 ware (see below). In Jülich, these early variants seem to have been produced in kiln 2 at Wilhelmstrasse 14, together with jars Niederbieber 87 (JA1), bowls Stuart 210 (BO1), lids (L1), plates Stuart 215 (PL1), mortaria Vanvinckenroye 347 (M7-8) and 337 (M1).<sup>2089</sup> Later, the pot P1 had a shorter and everted rim. Although examples from the *vicus* of Heerlen are known with all manner of decoration (see Fig. 23.4), in Voerendaal they are all decorated with painted circles, in various colours. Pots P1 (both the early and younger variant) often have traces of soot on the exterior, which could suggest that they were used in the kitchen.

In the period after c. AD 120, the bowl CW OX-HEERL-BO3 (a and b), jar CW OX-HEERL-JA4 (a and b), lid CW OX-HEERL-L1, and the plate CW OX-HEERL-PL3 were the most popular vessel

<sup>2084</sup> Indeed, they are often found in contexts of that period in the southern part of the Netherlands (Hiddink 2010, 146), although this does not imply the same date elsewhere. See also Vanvinckenroye 1991, 110 for the type VV472.

<sup>2085</sup> Vanvinckenroye 1991, 110.

<sup>2086</sup> Stuart 1977, 71-73.

<sup>2087</sup> Höpken 2006, 127

<sup>2088</sup> Van Kerckhove & Boreel 2014, 261.

<sup>2089</sup> Lenz 1990, pl. 49-56. Mortaria with a vertical rim Vanvinckenroye 337/ Brunsting 37 are generally quite late (with a date after c. AD 150). In Heerlen, however, they were produced from c. AD 120/130 onwards. For Jülich, we do not know whether these mortaria ended up in this kiln after its use, or whether this mortarium type really had been produced that early in Jülich. The rest of the pottery seems to be datable between c. AD 70/90 and 120.

**Table 23.10 Voerendaal-Ten Hove. The Heerlen reduced, colour-coated and oxidized coarse wares.**

Heerlen vessel type	Corresponding vessel types	MNI
<i>Reduced</i>		
CW REDU-HEERL-JA4a	VV 466-467/ST 201A/Höpken R18/Hofheim 87A	6
CW REDU-HEERL-JA4b	ST 201B/Hofheim 87B	1
CW REDU-HEERL-JA6a	Hofheim 89, ST 213A, Höpken R33	1
CW REDU-HEERL-JA7	like VV 50-51; Oberaden 108/111B	2
CW REDU	-	1
<i>Colour-coated</i>		
CW CC-HEERL-P1	like NB 90/Brunsting 4b and c/FW OX-NOOR1-BE3	6
CW CC-HEERL-JA1	VV 471-472/NB 87/ST 201B/Höpken R23	3
CW CC-HEERL-JA1Var	VV 471-472/NB 87/ST 201B/Höpken R23	1
CW CC-HEERL-JA4a	VV 466-467/ST 201A/Höpken R18/Hofheim 87A	3
CW CC-HEERL-JA4b	ST 201B/Hofheim 87B	26
CW CC-HEERL-JA4c	VV 466/like ST 201A/Ton 39/like Hofheim 87A	1
CW CC-HEERL-JA4d	VV 469/like ST 201A	2
CW CC-HEERL-JA3/BO1	jar or bowl	1
CW CC-HEERL-BO1	NB 102/ST 210/Höpken R11/Ton 50-51/CW OX-NOOR1-BO1	18
CW CC-HEERL-PL1	ST 215	1
CW CC	-	1
<i>Oxidized</i>		
CW OX-HEERL-JA1	VV 471-472/NB 87/ST 201B/Höpken R23	32
CW OX-HEERL-JA1/BO1var	jar or bowl	2
CW OX-HEERL-JA11	between NB 87 and ST 202	2
CW OX-HEERL-JA1Var	variant-VV 471-472/NB 87/ST 201B/Höpken R23	2
CW OX-HEERL-JA2a	VV 478-479/NB 89/ST 203/Höpken R24	207
CW OX-HEERL-JA2a/BO2a	jar or bowl	14
CW OX-HEERL-JA2b	VV 478-479/NB 89/ST 203/Höpken R24/CW OX-NOOR1-JA4	53
CW OX-HEERL-JA2b/BO2b	jar or bowl	1
CW OX-HEERL-JA2c	transition type NB 89-Alzey 27	28
CW OX-HEERL-JA3	VV474/ST 202, like Höpken R25	1

<sup>2090</sup> For the southern Netherlands (northern part of the *civitas Tungrorum*), see Hiddink 2010, 154; for well-dated contexts in the Dutch river area (*civitas Batavorum*), see Van Kerckhove 2006 and 2009.

<sup>2091</sup> Many bowls of this type have been retrieved from refuse pit Putgraaf 1971, which can be dated to around AD 100 (Van Kerckhove & Boreel 2014). Bloemers and Haalebos also mention early examples in Neuss (Bloemers & Haalebos 1973, 266.

<sup>2092</sup> The types with a simple, rounded rim (Vanvinckenroye 531-532) are common around the second quarter of the second century AD, while the bead-rimmed variants are more common from the end of the second century onwards (Vanvinckenroye 1991, 122-123, pl. 57).

types. They can be considered the typical cooking set for the period between c. AD 120 and 270/300. The many traces of soot confirm this function. The bowl CW OX-HEERL-BO3 is very common in the Netherlands and Belgium in contexts after c. AD 150.<sup>2090</sup> In Heerlen, however, this type appears to have been produced from c. AD 100 onwards.<sup>2091</sup> This type is divided into two variants: BO3a (with a simple rim) and BO3b (with a beaded rim). Strikingly, the variant with a

simple, rounded rim BO3a is concentrated in working pit 27 (7 of 18 MNI), while several bead-rimmed bowls were mainly retrieved from pit 740 (4 of 19 MNI). This suggests a younger date for the bead-rimmed variants, although we should not use these variants as a tool for absolute dating. An evolution from simple rims to thickened beaded shaped rims is also described for Tongeren.<sup>2092</sup> Around the middle of the second century there seems to have been an

Heerlen vessel type	Corresponding vessel types	MNI
CW OX-HEERL-JA3/BO1	jar or bowl	6
CW OX-HEERL-JA4a	VV 466-467/ST 201A/Höpken R18/Hofh 87A	3
CW OX-HEERL-JA4b	ST 201B/Hofh 87B	9
CW OX-HEERL-JA6a	Hofh 89, ST 213A, Höpken R33	0
CW OX-HEERL-JA7	like VV 50-51; Oberaden 108/111B	2
CW OX-HEERL-BO1	NB 102/ST 210/Höpken R11/Ton 50-51/CW OX-NOOR1-BO1	17
CW OX-HEERL-BO2a	VV 508-512/NB 103/Höpken R15, pronounced groove	4
CW OX-HEERL-BO2b	VV 508-512/NB 103/Höpken R15, with flat groove	2
CW OX-HEERL-BO2c	like BO2a-b, but with rim like JA2c (transition Alzey 27)	1
CW OX-HEERL-BO3	VV 531-538/NB 104/St. 211/Höpken R9/Ton 48-49/CW OX-NOOR1-BO3	4
CW OX-HEERL-BO3a	simple round-rimmed variant	16
CW OX-HEERL-BO3a/PL4	bowl or plate	3
CW OX-HEERL-BO3b	bead-rimmed variant	12
CW OX-HEERL-BO3b/PL3	bowl or plate	1
CW OX-HEERL-BO3var	VV 531-538/NB 104/ST 211/Höpken R9/Ton 48-49/CW OX-NOOR1-BO3	1
CW OX-HEERL-L1	NB 120a/Höpken R37-38	93
CW OX-HEERL-P1	like NB 90/Brunsting 4b en c/FW OX-NOOR1-BE3	14
CW OX-HEERL-PL1	ST 215	1
CW OX-HEERL-PL3	VV 564 en 566/NB 111/St. 217/Höpken R2/Ton 60/CW OX-NOOR1-PL3a	11
CW OX-HEERL-PL3Var	like PL3	1
CW OX-HEERL-PL4	VV 559-561/ST 218/Höpken R1/Ton 59/CW OX-NOOR1-PL3b	3
CW OX-HEERL-PL4Var	like PL4	1
CW OX-HEERL-PL6	like ST 216	2
CW OX-HEERL-JU2	like Höpken R50	1
CW OX-HEERL-JU4	NB 97/Brunsting 15	4
CW OX-HEERL-JU5	transition type NB 96-97	2
CW OX-HEERL-STR1	Höpken B8/R7	0
CW OX	-	2
<b>Total</b>		<b>632</b>

evolution from simple to beaded rims. A similar evolution can be seen for the lid-seated jars JA2a and b. The JA2b variant, with a deep, flat gully, is also known in NOOR1 ware, but is absent in Köln.<sup>2093</sup> The shape of the vessel is slightly biconical. This combination of rim variant and vessel shape seems to date earlier than the jar JA2a, which has a heart-shaped rim and a rounded vessel shape.<sup>2094</sup> Indeed, the earliest Heerlen kiln in which lid-seated jars were produced is the kiln of

Lucius, which dates between AD 130 and 170.<sup>2095</sup> The variant JA2b is absent in this kiln. In the younger kilns, both variants are present. Although the variant JA2a started a little later, it seems impossible to use this information as a dating tool. The lid CW OX-HEERL-L1 is produced in Heerlen after c. AD 100, but especially from 130 onwards.<sup>2096</sup> Lids in reduced coarse ware were not produced in Heerlen, which makes a date before c. AD 100 very unlikely.<sup>2097</sup>

<sup>2093</sup> Van Kerckhove *et al.* 2014, 786-787, fig. 4.

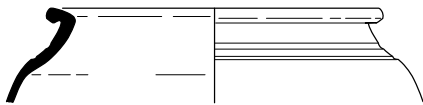
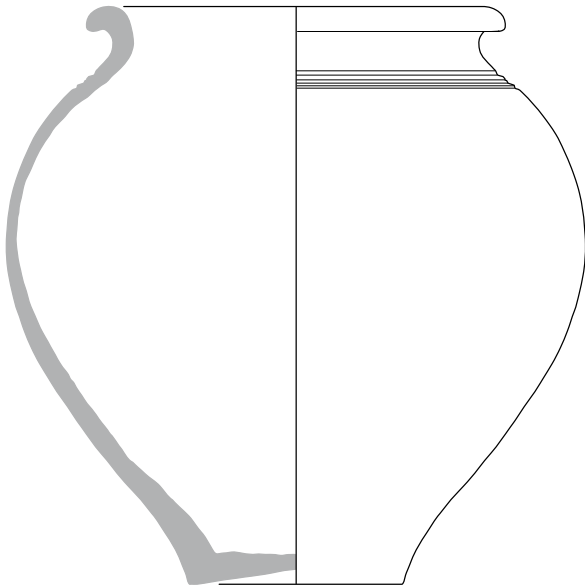
<sup>2094</sup> Compare Vanvinckenroye 478 with 479 (1991, 112-112, pl. 2); and the Tongeren type TON44, which dates slightly earlier than TON 42 (Vilvorder *et al.* 2010, 248-250, fig. 9-10).

<sup>2095</sup> Van Kerckhove & Boreel 2014, 261.

<sup>2096</sup> The earliest production-related structure being Putgraaf 1971. Many lids are found in the kiln of Lucius (Van Kerckhove & Boreel 2014, 264-265). It is interesting that fragments of some 10 lids were found in cellar pit 409 at Voerendaal, but no jars with lid-seated rims.

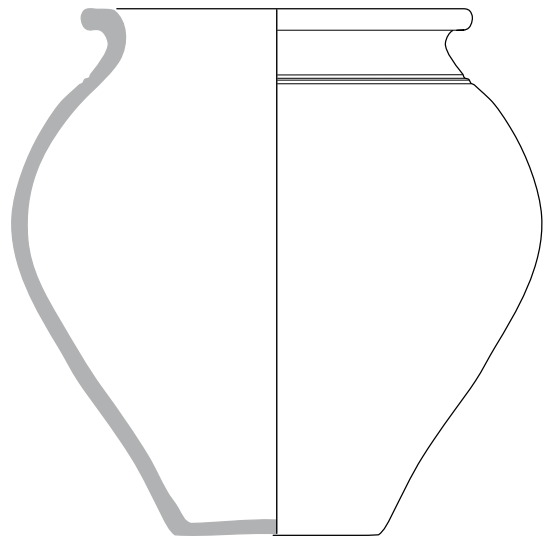
<sup>2097</sup> Reduced coarse ware lids are known from first-century contexts, like Oberaden, Haltern and Köln. The reduced coarse lids from pre-Flavian horizons of Heerlen are imports from the Rhineland (Van Kerckhove 2020a).

CW REDU-HEERL-JA4a

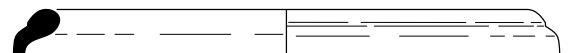
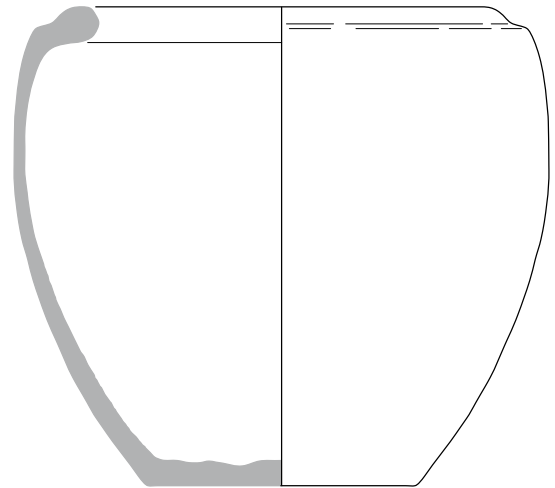


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CW REDU-HEERL-JA4b

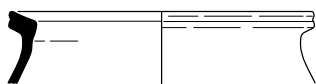
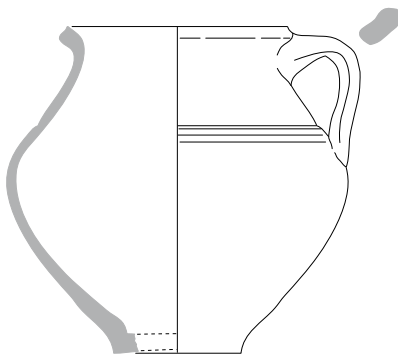


CW REDU-HEERL-JA7



73-1-1/7657

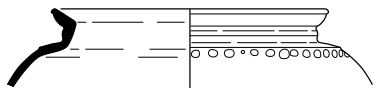
CW REDU-HEERL-JA6a



74-1-14/7774

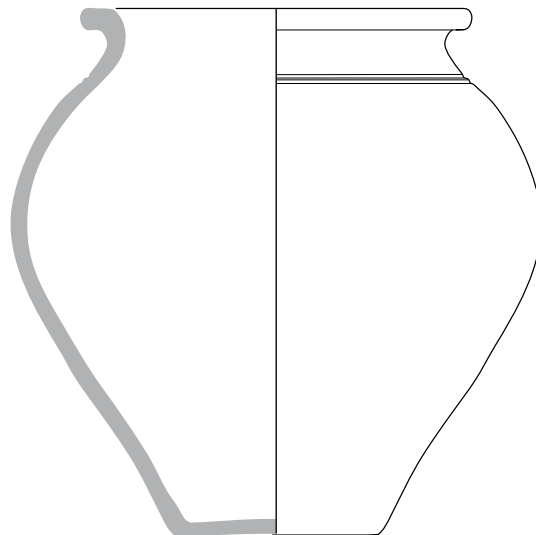
Fig. 23.20 Voerendaal-Ten Hove. Heerlen reduced coarse ware. Scale 1:3. (source: complete examples after Van Kerckhove & Boreel 2014, fig. 7)

CW CC-HEERL-P1

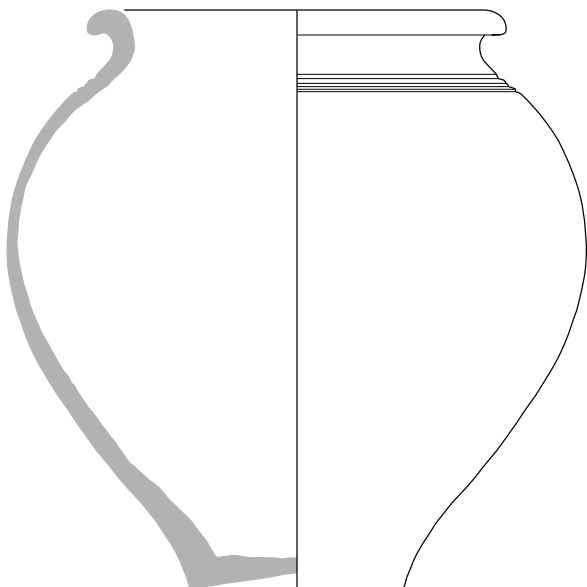


68-1-3/6534

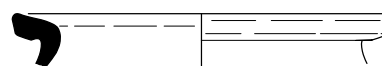
CW CC-HEERL-JA4b



CW CC-HEERL-JA4a

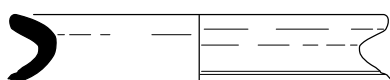


409-22/68-2-87

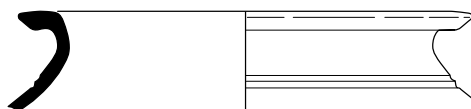


10-3-26/885

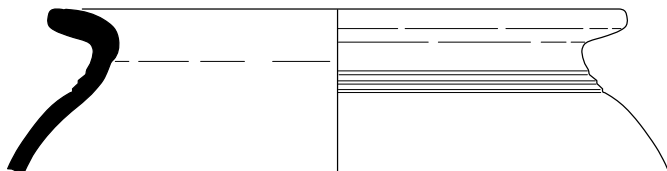
CW CC-HEERL-JA1/1var



702-15/7-2-4



409-23/68-2-87

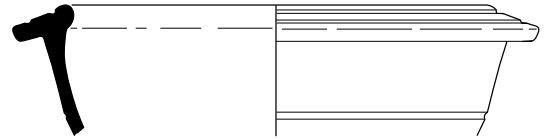
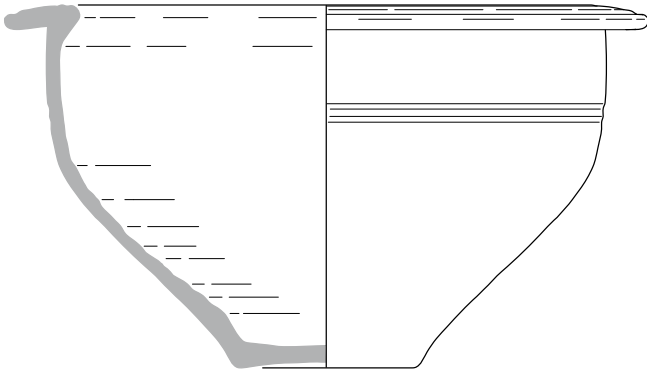


409-63/68-3-6

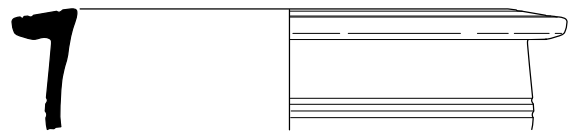
Fig. 23.21 Voerendaal-Ten Hove. Heerlen colour-coated coarse ware, beaker and jars. Scale 1:3. (source: complete examples after Van Kerckhove & Boreel 2014, fig. 7)



## CW CC-HEERL-BO1

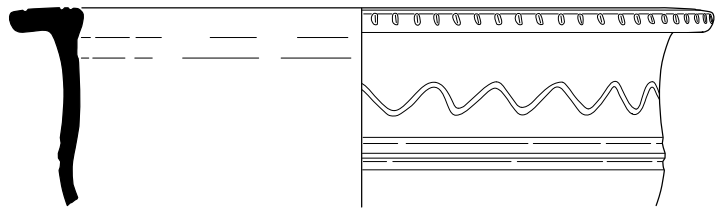
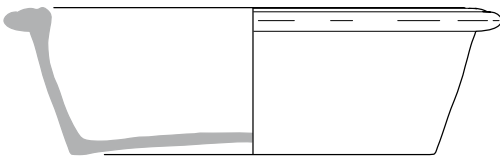


68-o-o/6639

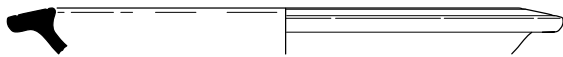


409-26/68-2-87

## CW CC-HEERL-PL1



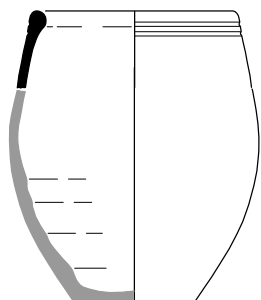
68-1-3/6528



409-27/68-2-3

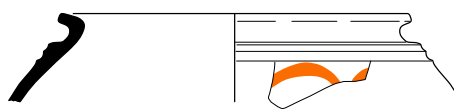
Fig. 23.22 Voerendaal-Ten Hove. Heerlen colour-coated coarse ware, bowls and dishes. Scale 1:3. (source: complete examples after Van Kerckhove & Boreel 2014, fig. 7)

CW OX-HEERL-BE26

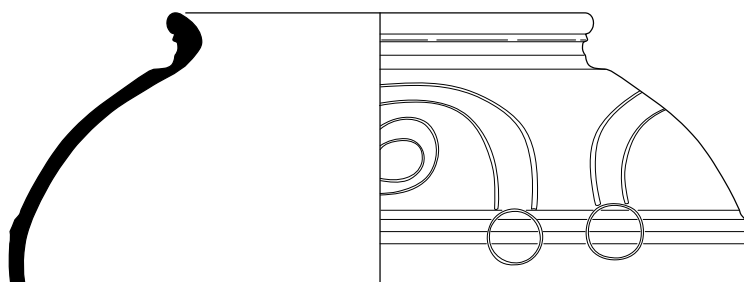


789-1/68-3-35VV

CW OX-HEERL-P1

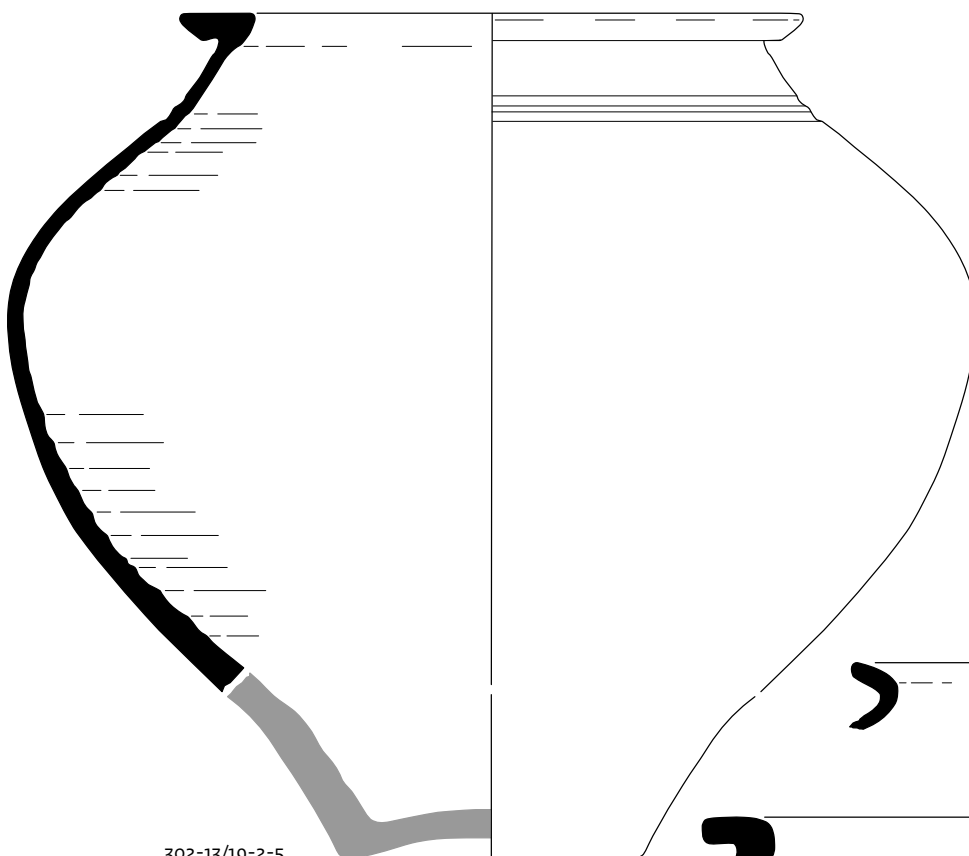


89-1-1/8152

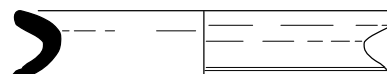


409-21/68-2-87

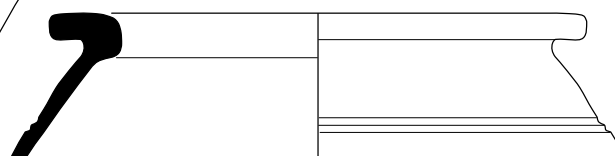
CW OX-HEERL-JA1



302-13/19-2-5



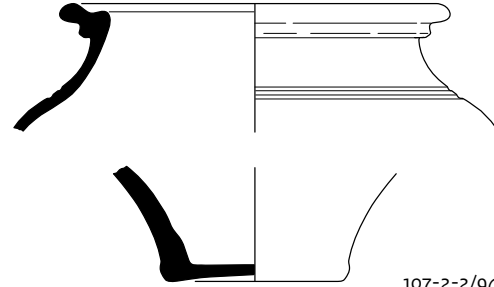
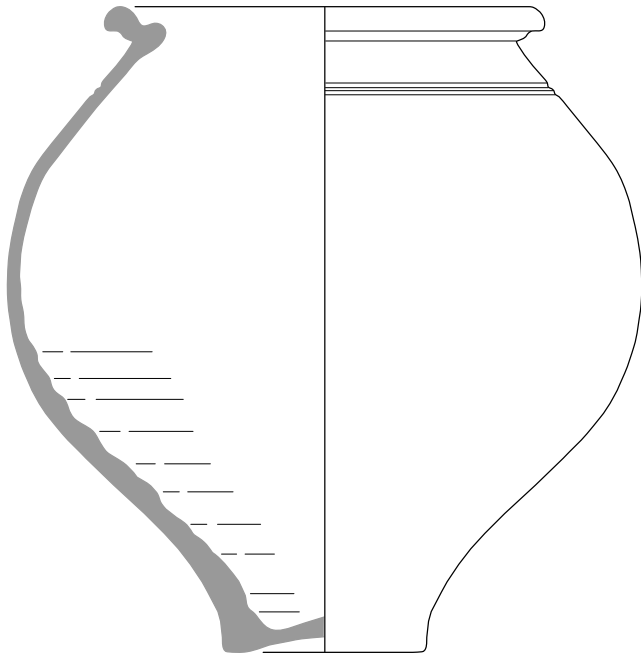
702-15/7-2-4



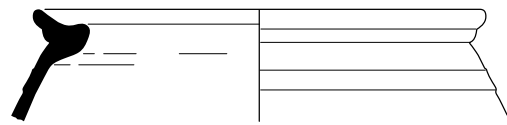
740-4/79-2-6

Fig. 23.23 Voerendaal-Ten Hove. Heerlen oxidized coarse ware, beakers and jar JA1. Scale 1:3. (source: H.A. Hiddink & F. Horbach)

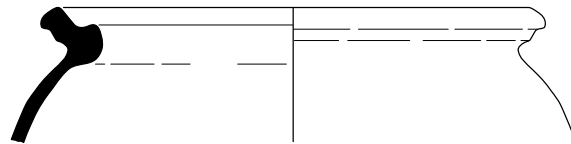
**CW OX-HEERL-JA2a**



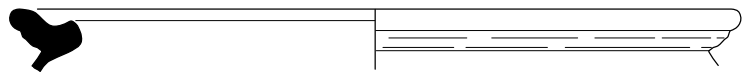
107-2-2/9494



702-7/7-2-4

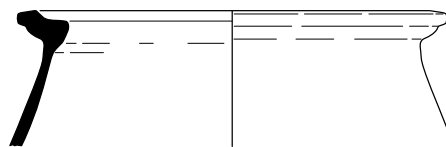
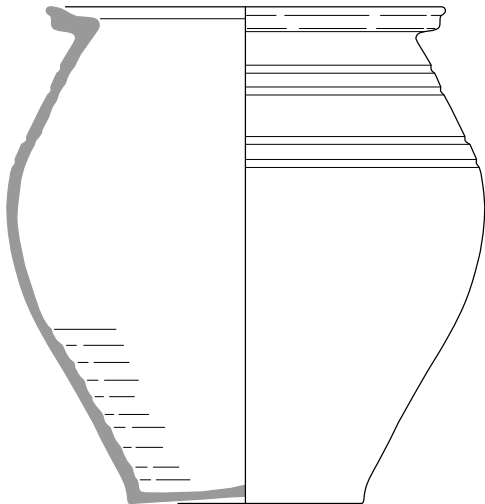


752-2/102-1-9

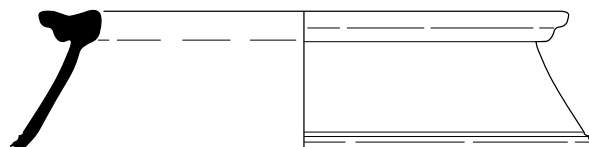


739-1/74-1-8

**CW OX-HEERL-JA2b**

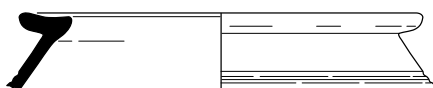


302-3/100-1-6

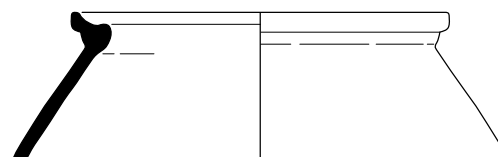


107-2-2/9450

**CW OX-HEERL-JA2c**



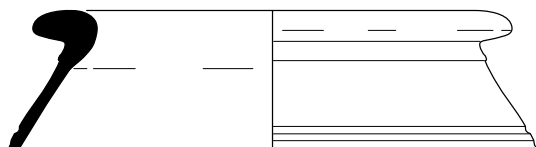
302-2/100-1-6



781-2/100-1-3

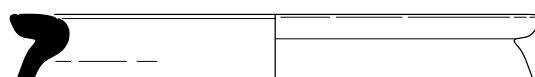
Fig. 23.24 Voerendaal-Ten Hove. Heerlen oxidized coarse ware, jars JA2. Scale 1:3. (source: complete examples after Van Kerckhove & Boreel 2014, fig. 7)

CW OX-HEERL/EIFEL-JA10



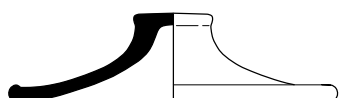
319-1/110-2-2

CW OX-HEERL-JA11



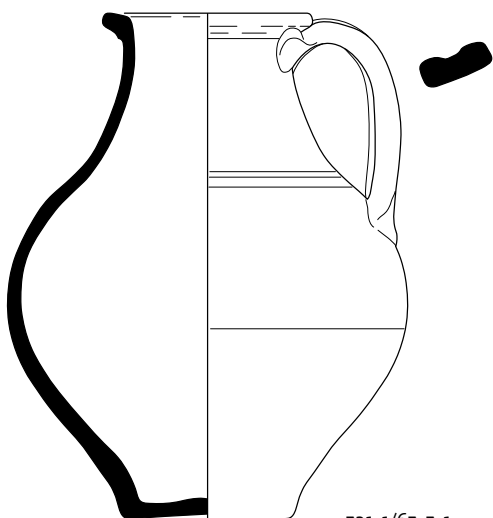
74-1-5/7758

CW OX-HEERL-L1

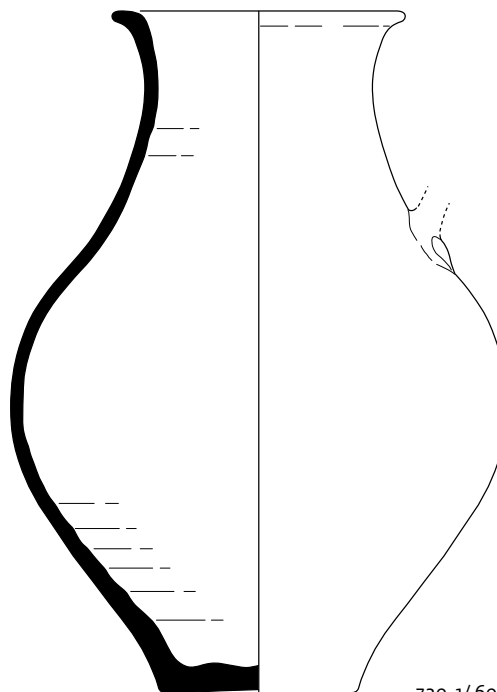


757-7/108-2-7

CW OX-HEERL-JU4



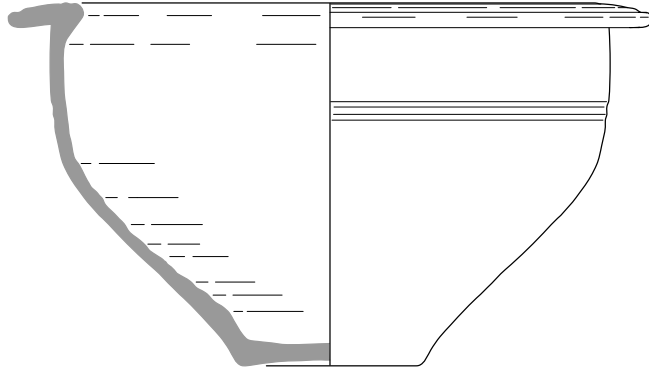
321-1/63-3-1



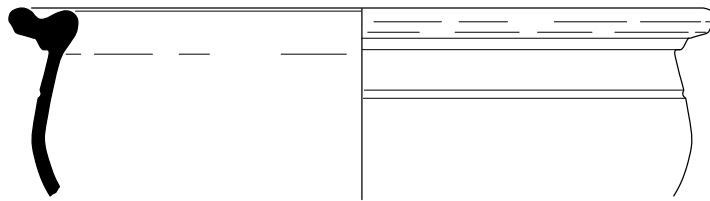
320-1/60-2-2

Fig. 23.25 Voerendaal-Ten Hove. Heerlen oxidized coarse ware, jars JA10-11, lid, jugs. Scale 1:3. (source: H.A. Hiddink & F. Horbach)

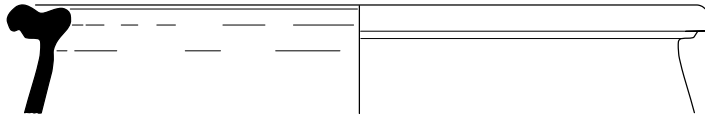
## CW OX-HEERL-BO1



## CW OX-HEERL-BO2a

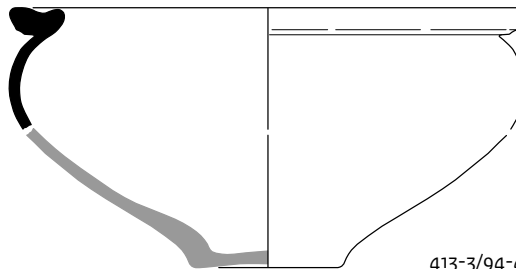


740-1/79-2-6



740-3/79-2-6

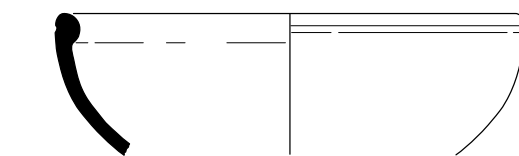
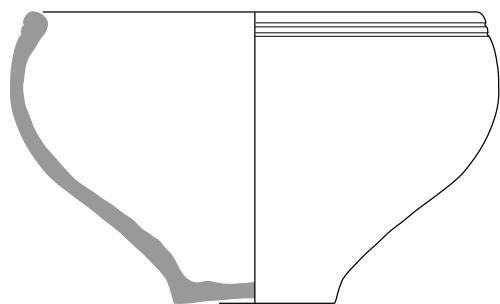
## CW OX-HEERL-BO2b



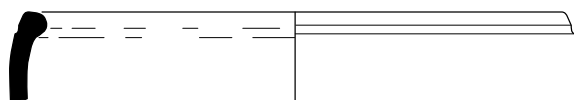
413-3/94-4-1

Fig. 23.26 Voerendaal-Ten Hove. Heerlen oxidized coarse ware, bowl BO1-2. Scale 1:3. (source: BO1 after Van Kerckhove & Boreel 2014, fig. 7)

## CW OX-HEERL-BO3a

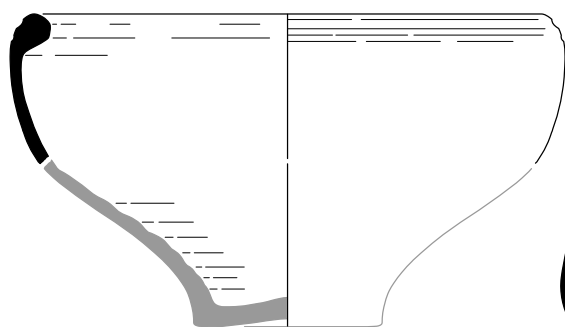


27-2-9/4966

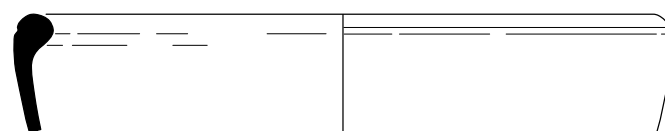


729-8/27-5-5

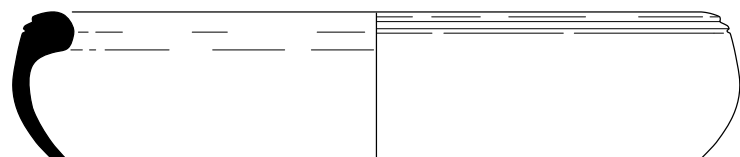
## CW OX-HEERL-BO3b



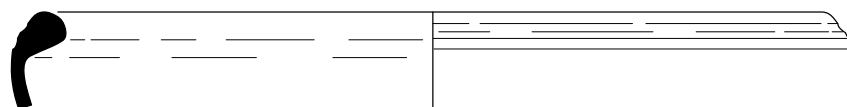
722-1/20-2-2



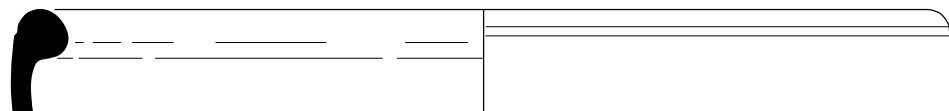
302-5/100-1-6



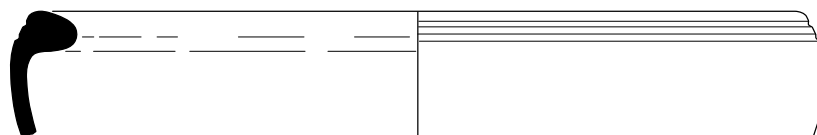
21-2-17/3750



319-5/110-2-2



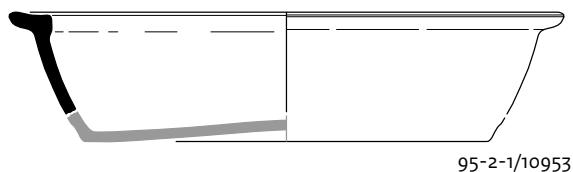
740-6/79-2-6



319-6/110-2-7

Fig. 23.27 Voerendaal-Ten Hove. Heerlen oxidized coarse ware, bowl BO3a-b. Scale 1:3. (source: BO3a after Van Kerckhove & Boreel 2014, fig. 7)

## CW OX-HEERL-PL1



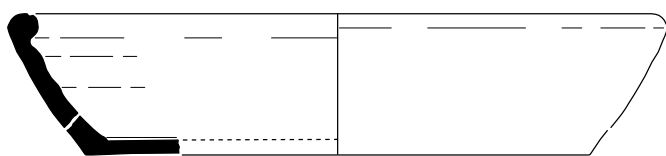
95-2-1/10953

## CW OX-HEERL-PL4var

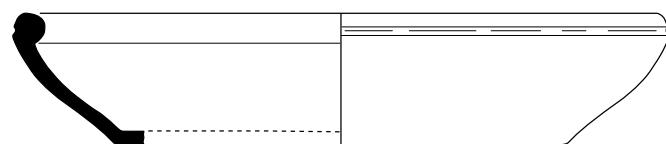


27-2-27/11515

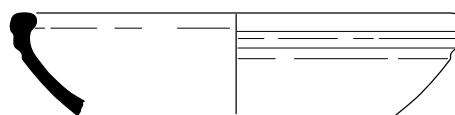
## CW OX-HEERL-PL3



413-4/94-4-1

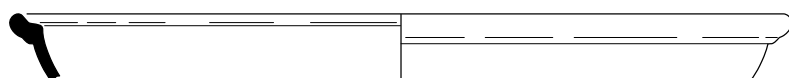


740-5/79-2-6



22-3-24/4102

## CW OX-HEERL-PL6



74-1-14/7773

Fig. 23.28 Voerendaal-Ten Hove. Heerlen oxidized coarse ware, plates. Scale 1:3.

For the late second century AD onwards, it is difficult to distinguish the Heerlen ware from contemporary Eifel productions. This is due to the fact that a less levigated clay was used and the fabric bears resemblances to several Eifel fabrics because of the many inclusions (mainly consisting of quartz, poly-quartz, iron-rich inclusions, and clay pellets). Moreover, the same vessel types were produced in both Heerlen and the Eifel, and many vessels are smoked.<sup>2098</sup> Therefore, this fabric group is labelled 'Heerlen/Eifel' for now (Table 23.11). Petrographic and chemical analysis is needed to distinguish the two groups. The jugs JU2, 4 and 5 can be attributed to this youngest phase. The JU2 was produced in the early third-century kiln at Heerlen-Uilestraat in a smoked variant.<sup>2099</sup> In Voerendaal too, it has been retrieved in a third-century context, basin 319 (110-2-1/10025). The jugs JU4 and 5 were found in cremation

grave 320 and 321 at Ten Hove. The third century and especially the time span between 270/280 and 320/330 was a period with a certain continuity (where local types continued to be produced) but also of clear changes (with the popularity of imports from the Eifel regions, with parallels in the *castella* of Niederbieber and – later – in Alzey). In Tongeren too, locally produced vessel types continued to be consumed alongside Eifel imports, even for the period between 270 and 330.<sup>2100</sup> Many vessel types had a long production period and are therefore very hard to date accurately. They are present in both third-century and (early) fourth-century contexts.<sup>2101</sup> In the *vicus* of Heerlen, there is no hard evidence for production in the later third or early fourth century, as no wasters or production-related structures have been found that could be attributed to this period. Here too, petrographic and chemical analysis of

<sup>2098</sup> This is attested for Heerlen-Thermenterrein (Van Kerckhove 2020a) and Voerendaal, but also for the Heerlen-Uilestraat kiln (dating to the early third century AD).

<sup>2099</sup> Van Kerckhove & Boreel 2014, 265, 262, fig. 7.

<sup>2100</sup> Vilvorder *et al.* 2010, 252.

<sup>2101</sup> We can mention the Niederbieber 89 (from many different production areas), Low Lands Ware 1-jars (HBG 140-142), the late variant of Niederbieber 87, the bowl Niederbieber 104, jugs Niederbieber 96-98, but also the Urmitz ware.

**Table 23.11. Voerendaal-Ten Hove. The Heerlen/Eifel and Heerlen-pink (oxidized-coarse) wares.**

Heerlen vessel type	Corresponding vessel type	MNI
<i>Heerlen/Eifel</i>		
-		2
CW OX-HEERL-BO1	NB 102/ST 210/Höpken R11/Ton 50-51/CW OX-NOOR1-BO1	1
CW OX-HEERL-BO2a	VV 508-512/NB 103/Höpken R15, pronounced groove	4
CW OX-HEERL-BO3a	VV 531-538/NB 104/St. 211/Höpken R9/Ton 48-49/CW OX-NOOR1-BO3, round rim	6
CW OX-HEERL-BO3b	VV 531-538/NB 104/St. 211/Höpken R9/Ton 48-49/CW OX-NOOR1-BO3, bead-rimmed	4
CW OX-HEERL-JA1	VV 471-472/NB 87/ST 201B/Höpken R23	6
CW OX-HEERL-JA1o		1
CW OX-HEERL-JA2a	VV 478-479/NB 89/ST 203/Höpken R24	31
CW OX-HEERL-JA2a/BO2a	jar or bowl	1
CW OX-HEERL-JA2b	VV 478-479/NB 89/ST 203/Höpken R24/CW OX-NOOR1-JA4	16
CW OX-HEERL-JA2c	transition type NB 89-Alzey 27	9
CW OX-HEERL-JA3/BO1	jar or bowl	1
CW OX-HEERL-JU2/4	like Höpken R50 or NB 97/Brunsting 15	0
CW OX-HEERL-JU4	NB 97/Brunsting 15	1
CW OX-HEERL-L1	NB 120a/Höpken R37-38	10
CW OX-HEERL-P1	like NB 90/Brunsting 4b and c/FW OX-NOOR1-BE3	3
CW OX-HEERL-PL1	ST 215	1
CW OX-HEERL-PL4	VV 559-561/ST 218/Höpken R1/Ton 59/CW OX-NOOR1-PL3b	1
CW OX-HEERL-PL6	like ST 216	1
<i>Heerlen-pink</i>		
CW OX-HEERL-BE26	VV 526-527	1
CW OX-HEERL-BO3a	VV 531-538/NB 104/St. 211/Höpken R9/Ton 48-49/CW OX-NOOR1-BO3, round rim	1
CW OX-HEERL-JA2a	VV 478-479/NB 89/ST 203/Höpken R24	8
CW OX-HEERL-JA2c	transition type NB 89-Alzey 27	1
CW OX-HEERL-L1	NB 120a/Höpken R37-38	6
CW OX-HEERL-P1	like NB 90/Brunsting 4b en c/FW OX-NOOR1-BE3	1
CW OX-HEERL-PL4	VV 559-561/ST 218/Höpken R1/Ton 59/CW OX-NOOR1-PL3b	1
<b>Total</b>		<b>118</b>

consumption material could be helpful to establish the end of the Heerlen production.<sup>2102</sup> Of interest though is the jar HEERL-JA2c. The rim shape had evolved from a lid-seated rim (JA2a and b) to a somewhat heart-shaped rim (JA2c). This rim type is very similar to the jar Alzey 27 from the Eifel region (Urmitz and Mayen among

others), which appeared in the late third century AD.<sup>2103</sup> The Heerlen variant JA2c, however, appears to be a transition type between the Niederbieber 89 and Alzey 27. A total of six Heerlen jars JA2c have been collected in the third-century basin 319.

<sup>2102</sup> Although many kilns and other production-related structures have been found in Heerlen, we know for certain that the wasters found there are not representative of the production as a whole. The Heerlen ware consumed at Thermenterrein comprised many more types, and the recently discovered kilns at Tempsplein also contained new vessel types (Van Kerckhove 2020a; 2020b).

<sup>2103</sup> Cf. Chapter 26.



### Mortaria

The mortaria are very well represented within the Heerlen fabric group (282 MNI from a total of 1345 MNI of Heerlen ware; Table 23.12; Fig. 23.29-31). This means that the mortaria make up 20% of the Heerlen ware. The most common types are the mortaria M1 (with a vertical flange), M7-8 (which are closely related types) and – to a lesser degree – the M5 and M25. We have deliberately chosen to distinguish many types in the Heerlen typology by analogy with Vanvinckenroye's typology.<sup>2104</sup> His typology clearly shows that some vessel types were only produced in specific regions.<sup>2105</sup> Moreover, the types clearly have a chronological significance. The enormous variety in rim shapes, however, makes it difficult sometimes to attribute it to a specific vessel type.

The mortarium with a vertical flange and a groove on the outside of the rim is the most common mortarium type, in both Voerendaal and the kilns of Heerlen. Unfortunately, this is the type which is the most difficult to date. In Heerlen, it was produced for the first time in the kiln of Lucius (c. AD 130-170) and is still present in the Uilestraat (c. AD 200-230). The early rims tend to be finer than their younger counterparts,

but this pattern should be considered a chronological evolution, which cannot be used as an absolute dating tool. Mortaria of the M7 type are found in kilns dating from the late first century onwards and they persisted until c. AD 150/170.<sup>2106</sup> It is closely related to the mortarium Vanvinckenroye 347, which is dated in Tongeren to the late first century AD.<sup>2107</sup> The mortarium M8 with a rolled flange is closely related to the Vanvinckenroye 348, which is dated in Tongeren between c. AD 75-150.<sup>2108</sup> The M8 is very rare in the production site of Heerlen, where it is found in structures dating to the first half of the second century.<sup>2109</sup> The types M7 and M8 were both also found in the kilns of Jülich.<sup>2110</sup> The mortarium M5 also has a vertical flange like the M1, but the flange is heavy and it has two prominent grooves on the outside of the rim. This mortarium type can be dated to the second and third century AD.<sup>2111</sup> It is also found in the kilns of Soller.<sup>2112</sup>

The mortarium type M25 has been created to highlight a group of mortaria found in Voerendaal, which is similar to Vanvinckenroye 349, dated in Tongeren between c. AD 70 and 200.<sup>2113</sup> The type is very abundantly present in the

<sup>2104</sup> Vanvinckenroye 1991.

<sup>2105</sup> The mortarium

Vanvinckenroye 351 is typical of the Bavay region (Van Kerckhove 2014a, 372, fig. 15.40 for this type from Hoogeloon), whereas the 352 and 353 were very popular in the Belgian Meuse and Hesbaye regions (cf. Van Kerckhove 2014, 376, fig. 15.43).

<sup>2106</sup> Van Kerckhove & Boreel 2014; Putgraaf 2002 (c. AD 70-100) and Putgraaf 1961 (c. 90-120 AD), Akerstraat 1976 (c. AD 100-150/170).

<sup>2107</sup> Vanvinckenroye 1991, 74-75, pl. 33.

<sup>2108</sup> Vanvinckenroye 1999, *loc.cit.*

<sup>2109</sup> Van Kerckhove & Boreel 2014, 267 (Akerstraat 1976 and Putgraaf 1970; with our current knowledge, we date Akerstraat to the first half of the second century).

<sup>2110</sup> Lenz 1990, pl. 6-7 (Stiftsherrenstrasse 15), pl. 20-22 (Wilhelmstrasse 16), pl. 29-37 (Wilhelmstrasse 12).

<sup>2111</sup> Van Kerckhove & Boreel 2014, 356-357, fig. 8.

<sup>2112</sup> Haupt 1984, pl. 186, 5-6, 8.

<sup>2113</sup> Vanvinckenroye 1991, 74-75, pl. 33.

**Table 23.12. Voerendaal-Ten Hove. The Heerlen mortaria.**

Heerlen vessel type	Corresponding vessel type	MNI
MOR-HEERL-M1	VV 336-337	110
MOR-HEERL-M2	-	6
MOR-HEERL-M3	Gose 451	1
MOR-HEERL-M4	-	8
MOR-HEERL-M5	Gose 453	13
MOR-HEERL-M6	VV 345-346	5
MOR-HEERL-M7	VV 347(-348)	39
MOR-HEERL-M8	VV 348(/350)	35
MOR-HEERL-M9	VV 352var	6
MOR-HEERL-M9var	VV 352var	1
MOR-HEERL-M13	VV 349var	1
MOR-HEERL-M20	transition type M7 and M8	1
MOR-HEERL-M25	VV 349	16
MOR-HEERL-M26	VV 352var	1
MOR-HEERL-M	no clear type/intermediate forms	36
<b>Total</b>		<b>279</b>

## MOR-HEERL-M1

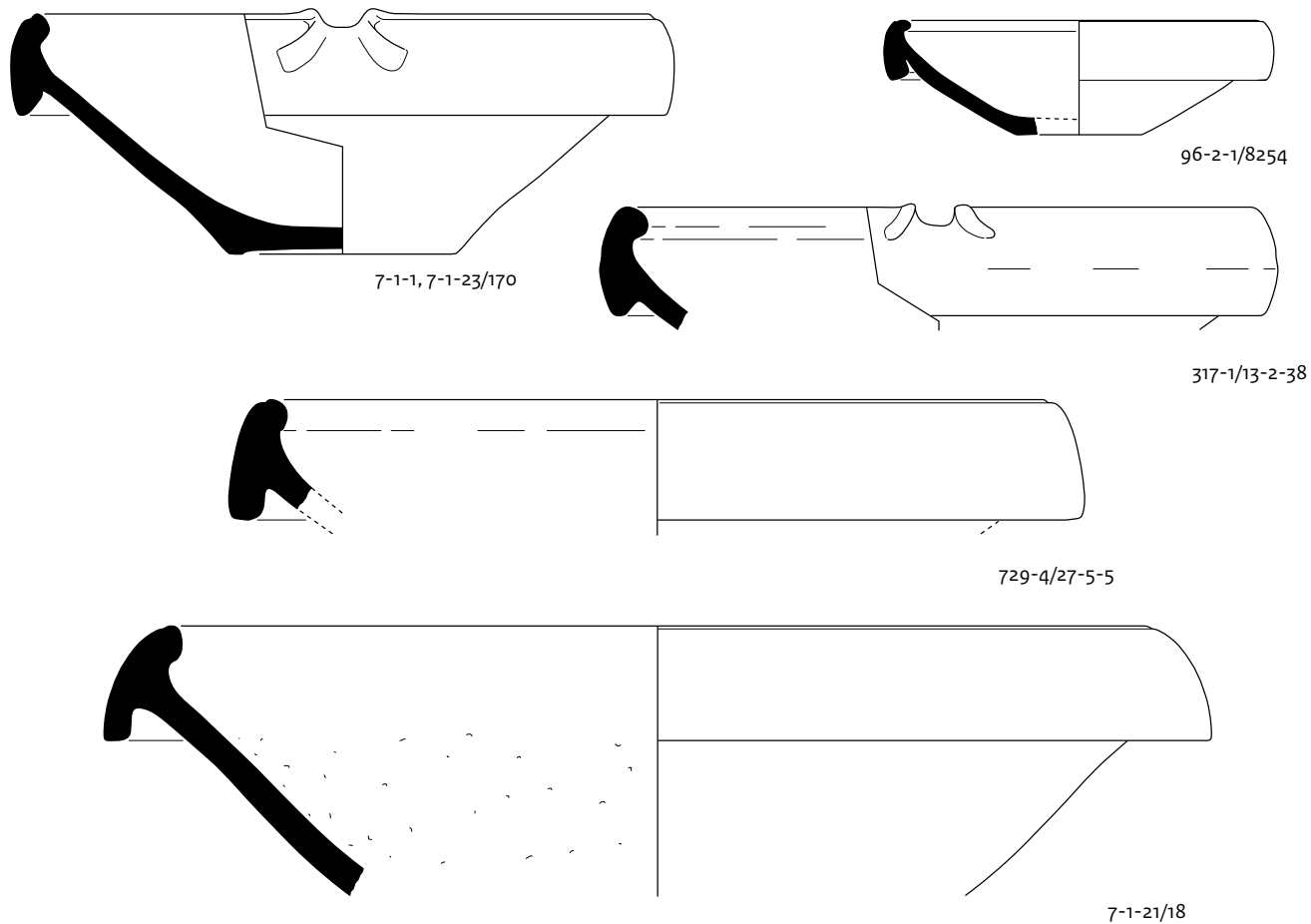


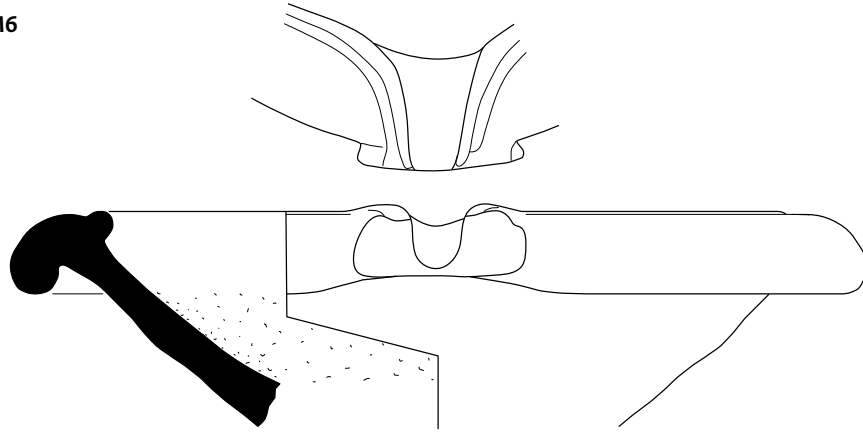
Fig. 23.29 Voerendaal-Ten Hove. Heerlen mortaria, M1. Scale 1:3. (source: H.A. Hiddink & F. Horbach)

kilns of Soller, where they are often very large and sometimes stamped with the name VERECUNDUS. In Soller, these mortaria can be dated to the late second and third centuries.<sup>2114</sup> The type is also present in Jülich, associated with

the same kilns where the M7 and 8 mortaria were produced. This implies that this type was mainly produced in the late first and second century, but that it persisted in Soller in the third century.

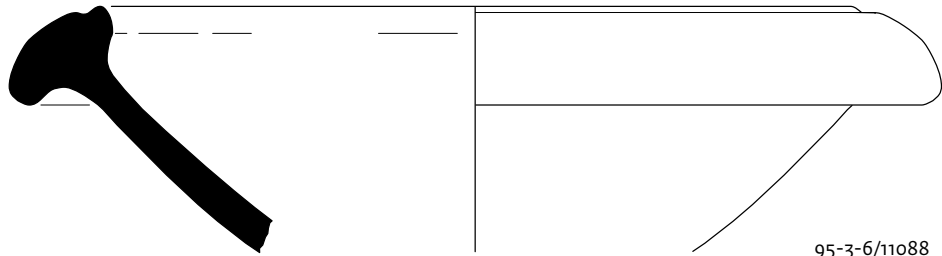
<sup>2114</sup> Haupt 1984, pl. 178-180.

MOR-HEERL-M6

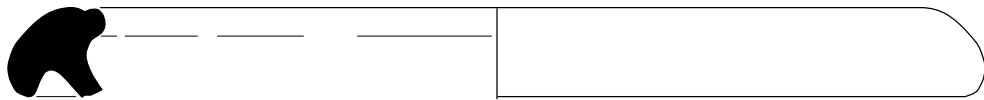


182-1-5/11904

MOR-HEERL-M7

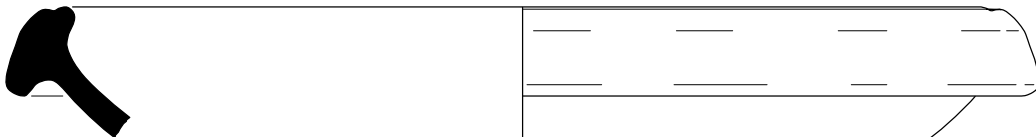


95-3-6/11088



409-3/68-2-2

MOR-HEERL-M8



409-2/68-2-87

Fig. 23.30 Voerendaal-Ten Hove. Heerlen mortaria, M6-8. Scale 1:3.

*Dolia*

The dolia make up almost 4% of the Heerlen ware (50 of 1345 MNI; Table 23.13; Fig. 23.32). The dolia DOL1 and DOL3 are quite similar to one another and have rim diameters ranging from 24 to 60 cm. Most dolia, however, have a coarse fabric (with grog temper) and are rather large

(with a diameter of between 34 and 54 cm). These transport and storage vessels are difficult to date, as they were produced over a long period with almost no significant changes in shape or type.

Among other things, the frequent finds of products from different regions at a single

<sup>2115</sup> Von Massow 1932, no. 209; Cüppers 1987 in *2000 Jahre Weinkultur*, 115, no. 51-52 (association of ships and amphorae is hypothetical).

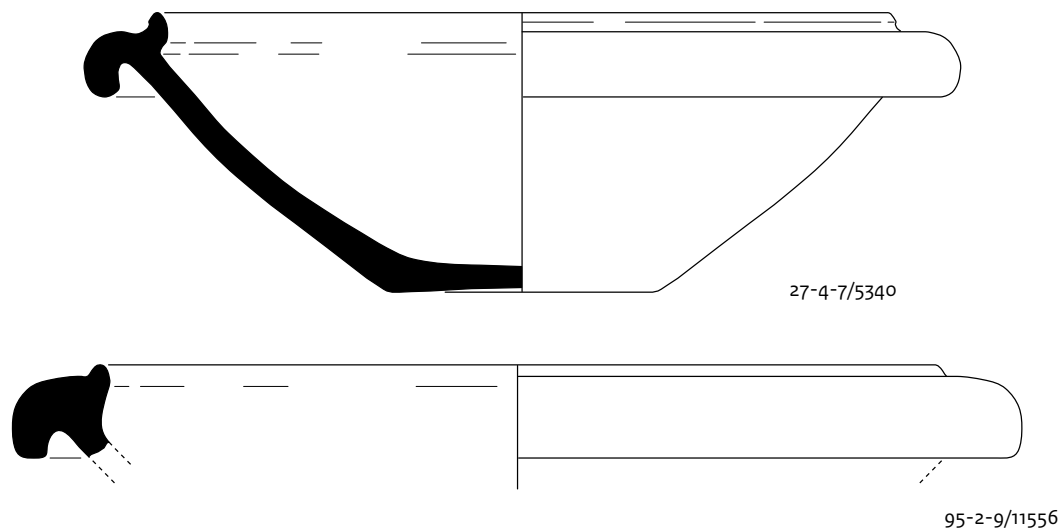
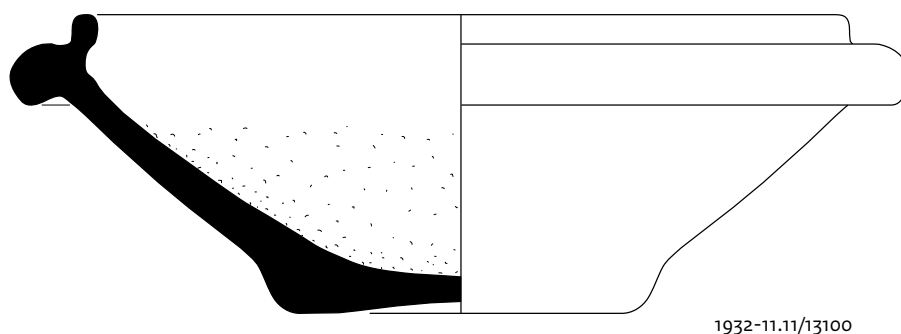
**MOR-HEERL-M9****MOR-HEERL-M26**

Fig. 23.31 Voerendaal-Ten Hove. Heerlen mortaria, M9 and 26. Scale 1:3.

consumption site (see below) allows us to deduce that – at least some of the – dolia probably did not arrive empty for use as storage vessels but functioned primarily as transport containers. In Voerendaal too, some of the dolia were produced in fabrics other than the Heerlen fabric. A further clue for a transport function is the often-present decoration of bands with incisions imitating ropes or braided bands of straw. Ropes or straw bands were used to protect large transport containers from breakage during transport (especially by road). Roped ‘Gauloise amphorae’ from South Gaul, are depicted as ship’s cargo on two grave monuments found at Neumagen,<sup>2115</sup> while smaller roped (regional) amphorae in a shop feature on a grave monument from Augsburg and a relief from

Avignon.<sup>2116</sup> Rope imitations were particularly popular on regional amphorae and dolia from the Meuse region (see below; Fig. 23.45). Another possible argument for their function as transport vessels is the presence of resin on the rim.<sup>2117</sup> Sixteen Heerlen dolia have a thick layer of resin on their rim (409-4 in Fig. 23.32), sometimes in combination with little holes in the rim (7-2-4/362, similar to 729-5 from the Meuse region in Fig. 23.45). These are indications that the dolium was covered with some kind of lid, on top of which a cloth was then placed (which was attached under the rim with a rope) and finally sealed off with a layer of resin. The little holes could indicate that this ‘closing mechanism’ was secured with extra nails in the rim. However, the covering or closing of dolia

For Gauloise amphorae from Voerendaal, see the next chapter.

<sup>2116</sup> Martin-Kilcher 1994, 538-539, fig. 255 (August); Casson 1965, pl. 3,2 (Avignon).

<sup>2117</sup> Resin on the rim of vessels is often an indication of a function as transport container (Van Kerckhove 2014b: In the port of Forum Hadriani, resin traces are attested on flagons from Köln and an amphora from Crete; Van Kerckhove 2014a Hoogeloon for resin on northern French jars).

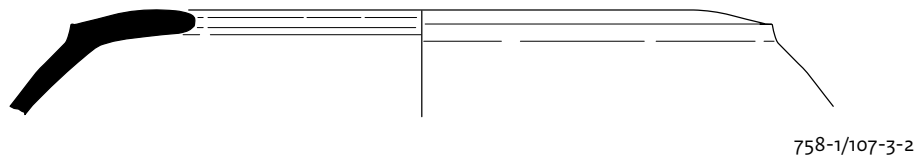
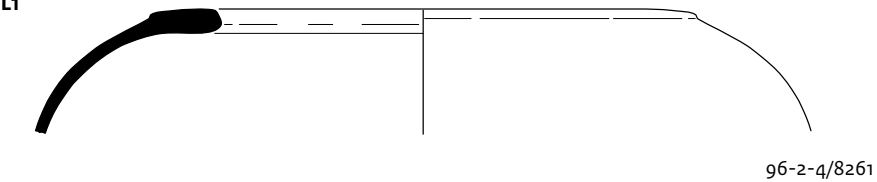
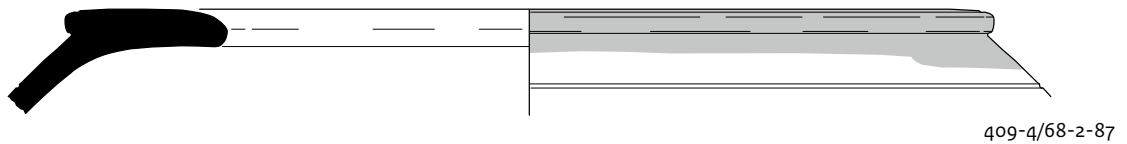
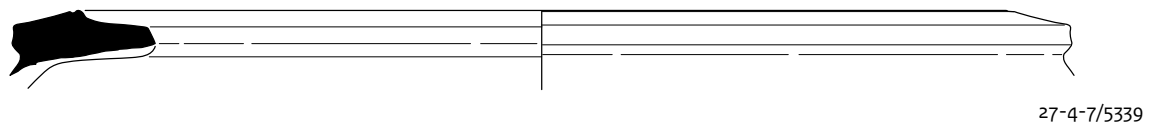
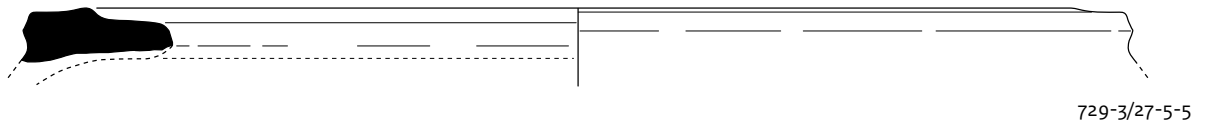
**DOL-HEERL-DOL1****DOL-HEERL-DOL3****DOL-HEERL-DOL6**

Fig. 23.32 Voerendaal-Ten Hove. Heerlen dolia. Scale 1:3.

**Table 23.13. Voerendaal-Ten Hove. The Heerlen dolia.**

Heerlen vessel types	Corresponding vessel types	MNI
DOL-HEERL-DOL1	ST 147/Haalebos 8002	11
DOL-HEERL-DOL2	like Höpken T22	1
DOL-HEERL-DOL3	ST 147/Haalebos 8001	35
DOL-HEERL-DOL6	like DOL3, with elaborate rim	2
DOL-HEERL-DOL7	storage bottle, like SM-Soller-DOL	1
<b>Total</b>		<b>50</b>

<sup>2118</sup> Cf. section 24.2.2.

<sup>2119</sup> Willems 2005, Van Kerckhove *et al.* 2014.

<sup>2120</sup> For a description of the fabric and typology, see Van Kerckhove *et al.* 2014, 785-787, fig. 3 with additions in Van Kerckhove 2014a, 351-352, fig. 15.29-30.

<sup>2121</sup> Based on the MNI, the NOOR1 ware makes up 5% of

was useful not only during transportation, but also when they were used – secondarily as well – for storage and production. The latter applies to a number of Dutch finds, suggesting that *garum* was made locally in dolia.<sup>2118</sup>

### 23.3.2 NOOR<sub>1</sub> ware

NOOR<sub>1</sub> ware is a fabric that was described for the first time by Willems and subsequently studied by Van Kerckhove *et al.*<sup>2119</sup> This high-quality pinkish ware consists of coarse wares and was probably produced in the Düren region (near Soller).<sup>2120</sup> In the Middle Roman period it was mainly distributed to settlements with a certain social status (the city of Tongeren, *vici* of Braives and Heerlen, villa of Hoogeloon, and even ritual sites in the north of France). They are only attested in rural settlements within this distribution area.

This NOOR<sub>1</sub> kitchen ware is abundantly present in Heerlen-Thermenterrein.<sup>2121</sup> It is also well attested in Tongeren.<sup>2122</sup> The question remains as to why kitchen wares were sent in such quantities to places where they were also produced locally. One could argue that this relates to the high quality of the NOOR<sub>1</sub> ware. Another possibility is that this pottery was used in the first instance as transport containers and with a secondary use as cooking and storage vessels, etc. This seems very unlikely, however. First, almost all vessels have traces of soot.

And second, not all shapes are suitable for the transport of food and drink. We are dealing with a typical set of kitchen ware, consisting of jars, bowls, plates, lids and jugs for cooking.

In Voerendaal, the NOOR<sub>1</sub> ware makes up 25% of all coarse wares and 15% of the entire pottery assemblage (based on MNI; Table 23.14; Fig. 23.33-37). One sherd (CW OX-NOOR<sub>1</sub>-BE5) can be interpreted as an imitation of the thin-walled beaker Hofheim 81A in coarse ware (Fig. 23.34).<sup>2123</sup> Following the chronology of Köln and Heerlen, the NOOR<sub>1</sub> version can be dated between c. AD 50 and 120. The beaker BE<sub>3</sub>, with painted circles, differs a bit from its Heerlen counterparts (CW OX-HEERL-P1). In NOOR<sub>1</sub>-ware, this vessel type imitates not only Hofheim 81A beakers (as is the case in Heerlen in the earliest production phase), but also colour-coated beakers Stuart 1, 2, 4 and Niederbieber 32 (whereas in Heerlen they evolved into beakers with an elaborate everted rim). In NOOR<sub>1</sub> ware, six of the BE<sub>3</sub> beakers imitate the Hofheim 81A; the other specimens imitate colour-coated beakers. Many beakers (13 of 19 MNI) have traces of soot, confirming their use as cooking vessels.

The bulk of the NOOR<sub>1</sub> ware in Voerendaal can be dated between c. AD 70-150: the beaker BE<sub>3</sub>, bowls BO1a and BO3a and jar JA1. It remained in use until well into the third (and perhaps start of the fourth century) with jars JA4 and even a plate PL6, imitating the well-known plates Niederbieber 113 from Urmitz.<sup>2124</sup>

all the pottery and even 12% of all coarse ware at Heerlen-Thermenterrein (Van Kerckhove 2020a, 30, fig. 11; 41, fig. 15). Because a considerable amount of the pottery at that site is either Early or Late Roman, the proportion of NOOR<sub>1</sub> ware is even higher for the mid-Roman period.

<sup>2122</sup> Willems 2005, 76.

<sup>2123</sup> As the NOOR<sub>1</sub> ware can clearly be interpreted as kitchen ware, and as we have attested for the Heerlen ware that early versions of the coarse ware P1 pots imitated these beaker types, we decided to catalogue this type as 'coarse ware'.

<sup>2124</sup> In Tongeren, the NOOR<sub>1</sub> ware makes up a limited, but consistent part of the pottery assemblage between c. AD 70 and 300 (Vanderhoeven *et al.* 2017, 118). Urmitz ware reached this city mainly in the third century, although we know that this fabric was produced from the second century until well into the fourth century (Vanderhoeven *et al.* 2017, 118).

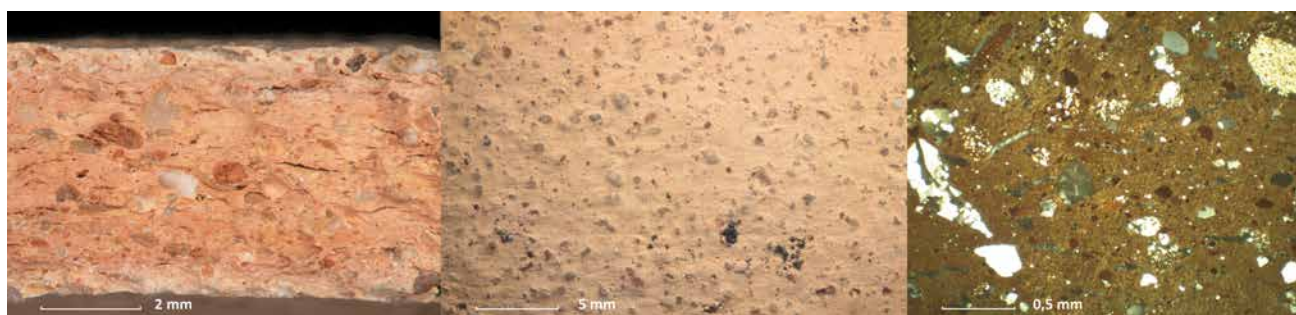
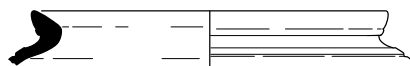


Fig. 23.33 Voerendaal-Ten Hove. Fabric of the NOOR<sub>1</sub>-ware, fracture, surface and thin-section. (source: Van Kerckhove *et al.* 2014, pl. 5).

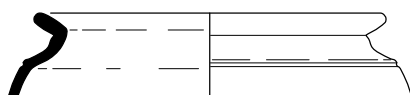
**Table 23.14. Voerendaal-Ten Hove. The NOOR1-ware.**

NOOR1-vessel type	Corresponding vessel types	MNI
CW OX-NOOR1-BE3	CW OX-HEERL-P1/Br. 4/like St. 1/like St. 2	19
CW OX-NOOR1-BE5	Hofh. 81A/THIN-HEERL-BE21/early variant CC OX-HEERL-P1/Höpken R27/St. 204B	1
CW OX-NOOR1-JA1	VV 471-472/NB. 87/St. 201B/Höpken R23	76
CW OX-NOOR1-JA1 Var	variant	1
CW OX-NOOR1-JA2	St. 202/VV474/Höpken R25	3
CW OX-NOOR1-JA2/BO1a	jar or bowl	18
CW OX-NOOR1-JA3	like JA2	3
CW OX-NOOR1-JA4	NB. 89/St. 203/VV478-479/Höpken R15/CW OX-HEERL-JA2b	30
CW OX-NOOR1-JA4/BO2	jar or bowl	2
CW OX-NOOR1-JA8*	VV 466-467/ST 201A/Höpken R18/Hofheim 87A/CW OX-HEERL-JA4a	1
CW OX-NOOR1-BO1a	NB 102/St. 210/NB 102/Höpken R11/Ton 50-51/VV 498-507/flat or pending rim	36
CW OX-NOOR1-BO3	VV 531-538/NB 104/St. 211/Höpken R9/Ton 48-49	4
CW OX-NOOR1-BO3a	simply rounded rim	16
CW OX-NOOR1-BO3a/PL3b	bowl or plate	4
CW OX-NOOR1-BO3aVar	variant	1
CW OX-NOOR1-BO3b*	bead-rimmed	6
CW OX-NOOR1-BO3 Var	variant	1
CW OX-NOOR1-BO7*	CW OX-NOOR1-BO1a, without grooves on the rim	3
CW OX-NOOR1-L1	NB 120a	47
CW OX-NOOR1-L2	NB 120b	1
CW OX-NOOR1-PL1	St. 215/Höpken R4/VV547-550	2
CW OX-NOOR1-PL2	St. 216/VV551-555	6
CW OX-NOOR1-PL2 Var	variant	2
CW OX-NOOR1-PL3a	NB. 111/St. 217/Höpken R2/VV564 and 566/CW OX-HEERL-PL3	1
CW OX-NOOR1-PL3a Var	variant	2
CW OX-NOOR1-PL3b	St. 218/Höpken R1/VV559-561/CW OX-HEERL-PL4	17
CW OX-NOOR1-PL3b Var	variant	1
CW OX-NOOR1-PL6	NB. 113	1
CW OX-NOOR1-PL9	like PL2	1
CW OX	-	2
<b>Total</b>		<b>308</b>

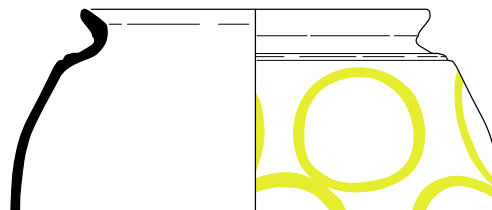
## CW OX-NOOR1-BE3



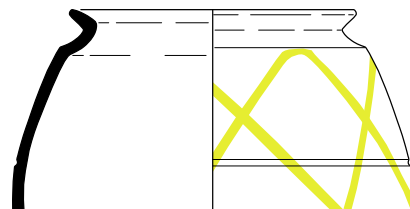
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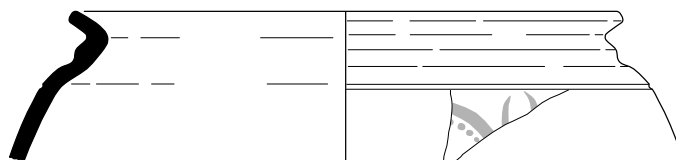
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812-3/27-3-7



13-1-18/1336



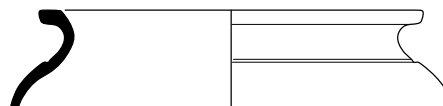
68-1-5/6870

## CW OX-NOOR1-BE5



13-3-10/1573

## CW OX-NOOR1-JA8

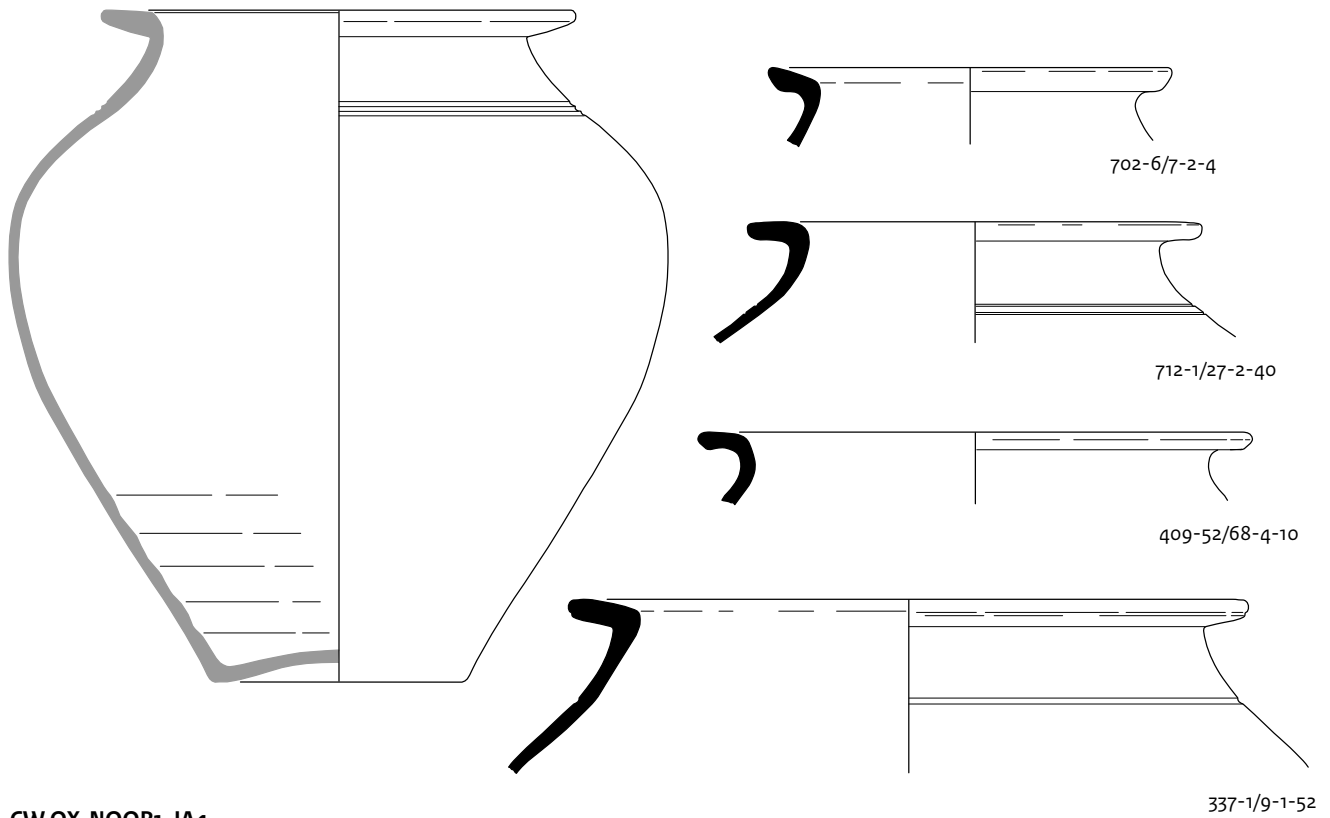


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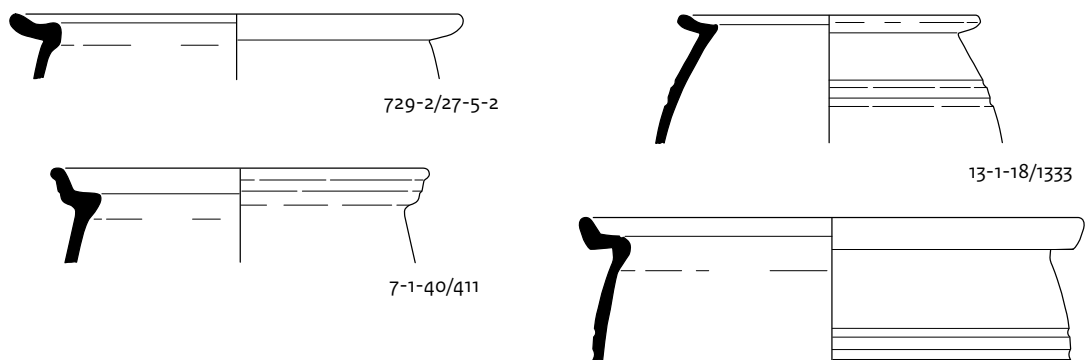
Fig. 23.34 Voerendaal-Ten Hove. Beakers in NOOR1-ware. Scale 1:3.



## CW OX-NOOR1-JA1



## CW OX-NOOR1-JA4



## CW OX-NOOR1-L1

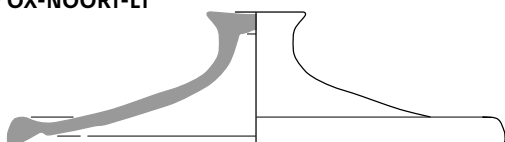
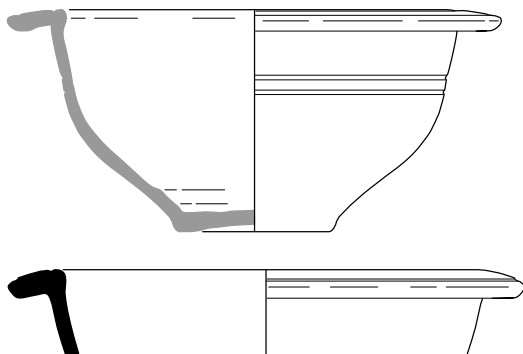
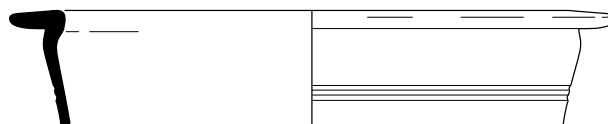


Fig. 23.35 Voerendaal-Ten Hove. Jars in NOOR1-ware. Scale 1:3. (source: complete jar after Hiddink 2005d, fig. 26; lid after Van Kerckhove et al. 2014, fig. 3)

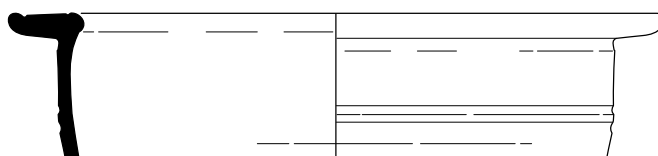
## CW OX-NOOR1-BO1A



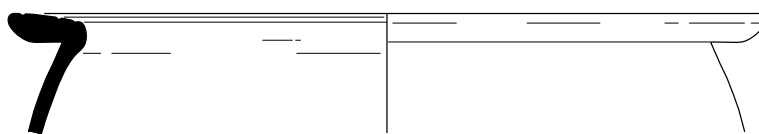
336-1/111-2-4



418-1/96-4-10

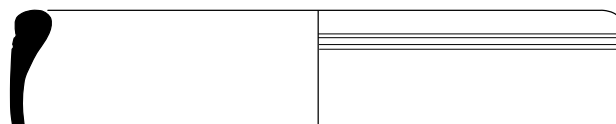
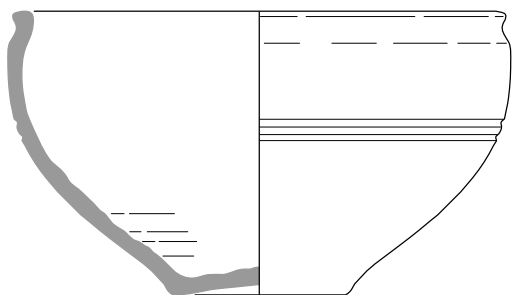


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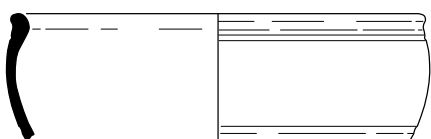


702-2/7-2-4

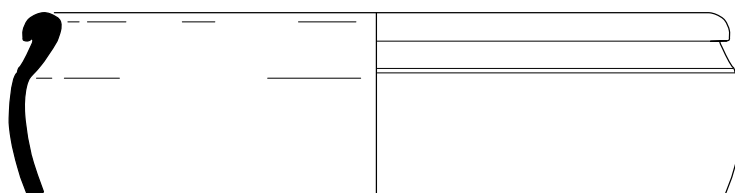
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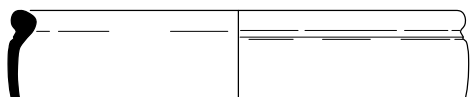
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115-2-16/10295

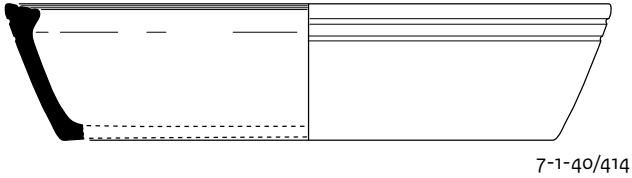


68-1-5/6873

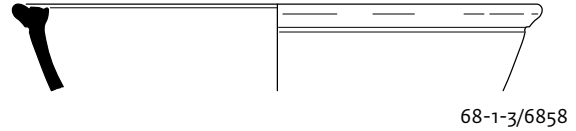


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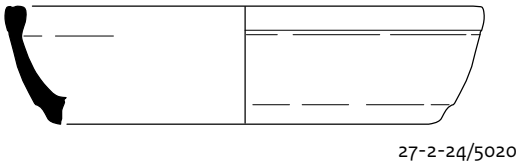
Fig. 23.36 Voerendaal-Ten Hove. Bowls in NOOR1-ware. Scale 1:3. (source: complete bowls after Van Kerckhove et al. 2014, fig. 3)

**CW OX-NOOR1-PL1**

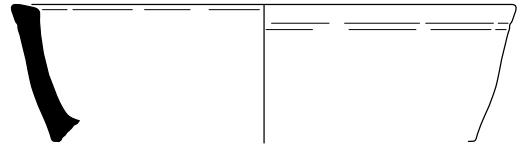
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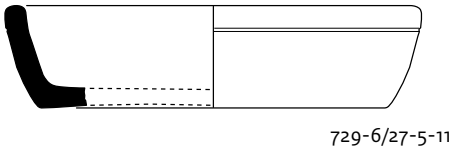
68-1-3/6858

**CW OX-NOOR1-PL2**

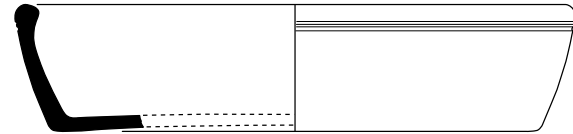
27-2-24/5020

**CW OX-NOOR1-PL9**

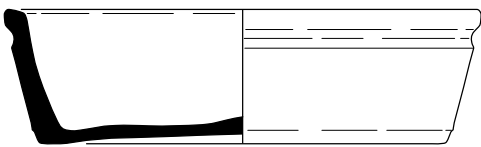
9-1-1/13301

**CW OX-NOOR1-PL3b**

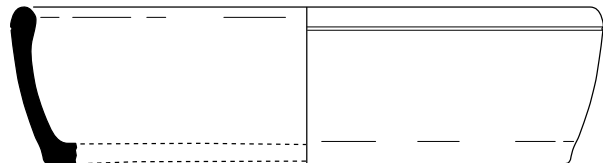
729-6/27-5-11



95-2-9/11001



805-1/13-2-52



95-2-2/10962

Fig. 23.37 Voerendaal-Ten Hove. Plates in NOOR1-ware. Scale 1:3.

<sup>2125</sup> The fabric has a white to light yellow-orange fabric, tempered with large, rounded 'pebbles' of quartz (coloured by iron) and dissolved iron (author's own observations on material from Soller and Jülich). See also Tomber & Dore 1998, 79 (white Soller variant); Willems 2003, 41-42 (coarse variant) and 44-45 (fine); Okrush & Strunk-Lichtenberg 1984 (Soller in general). For the typology, see Haupt 1984 (Soller); Lenz 1990 (Jülich).

**23.3.3 Soller ware**

About 7% of the Voerendaal pottery assemblage consists of pottery from the Soller region (Table 23.15; Fig. 23.38-42). The Soller fabrics are very similar to those of Jülich but – based on an examination of the production material of both productions using a binocular microscope – the fabric from Voerendaal is probably Soller ware. Of course, petrographic and chemical analysis would be welcome to confirm this hypothesis.<sup>2125</sup> The pottery from the Soller kilns, published by Haupt, can be dated after c. AD 150. The assemblages of Voerendaal and Heerlen-

Thermenterrein demonstrate that this production began in c. AD 50/70.

The largest group within the Soller ware consists of mortaria (Fig. 23.40). The mortarium with a vertical flange, similar to Vanvinckenroye 337, is the most common mortarium type. Three of these are fabricated in a smooth, fine, white fabric.<sup>2126</sup> The other specimens have a coarse fabric and heavy rims with quite large diameters, ranging from about 26-54 cm but mostly between 28-36 cm. This mortarium type can be dated after c. AD 130, but was highly popular in the late second and the third century AD. The mortaria Vanvinckenroye 347 and to a

**Table 23.15. Voerendaal-Ten Hove. The Soller ware.**

Soller-category/shape	Corresponding types	MNI
TW-Soller-BE	Hofh 81a/TW-HEERL-BE21/early var. CC OX-HEERL-P1/ Höpken R27/St. 204B/CW OX-NOOR1-BE5	1
CW CC-Soller-BE	Brunsting 4/CW CC-HEERL-P1 (early variant)/CW OX-NOOR1-BE3	2
CW OX-Soller-BE	Brunsting 4/CW CC-HEERL-P1 (early variant)/CW OX-NOOR1-BE3	1
CW OX-Soller-BE	Brunsting 4/CW CC-HEERL-P1 (younger variant)/Haupt 1984, pl. 185B	2
SM-Soller-HP	ST 146	1
REG AMF-Soller-A	Haalebos 8052/REG AM-HEERL-A1	1
CW CC-Soller-JA	NB 87/CW CC-HEERL-JA1	4
CW CC-Soller-JA	ST 201A/CW CC-HEERL-JA4a	3
CW CC-Soller-JA	ST 201B/CW CC-HEERL-JA4b	5
CW OX-Soller-JA	NB 87/CW OX-HEERL JA1/CW OX-NOOR1-JA1	6
CW OX-Soller-JA	NB 89/ST 203/CW OX-HEERL-JA2a	5
CW OX-Soller-JA	ST 201B/CW OX-HEERL-JA4b	1
CW OX-Soller-JA/BO	ST 202/210	1
CW OX-Soller-BO	NB 104/ST 211	2
CW OX-Soller-BO	ST 210/CW OX-HEERL-BO1/CW OX-NOOR1-BO1	1
CW CC-Soller-BO	ST 210/CW CC-HEERL-BO1	3
CW OX-Soller-L	NB 120a	11
CW OX-Soller-JU	-	2
MOR-Soller-M	-	1
MOR-Soller-M	VV 337	62
MOR-Soller-M	VV 347	12
MOR-Soller-M	VV 348	4
MOR-Soller-M	VV 349	3
MOR-Soller-M	VV 350	4
MOR-Soller-M	VV 352	4
DOL-Soller-DOL	ST 147/Haupt 1984, Tafel 196-197; Lenz 50G	10
<b>Total</b>		<b>152</b>

lesser degree 348 are also well represented. They can be dated considerably earlier, between the last quarter of the first and the first quarter of the second century AD.<sup>2127</sup> This early time span is definitely represented in the coarse wares. We can mention colour-coated and oxidized jars Niederbieber 87 and Hofheim 87a/b, which have their counterparts in the Heerlen production. The beaker with painted circles – which we know in Heerlen as the pot P1 is found in two versions: the early one (imitating the Hofheim 81A beakers) and the younger one (which were

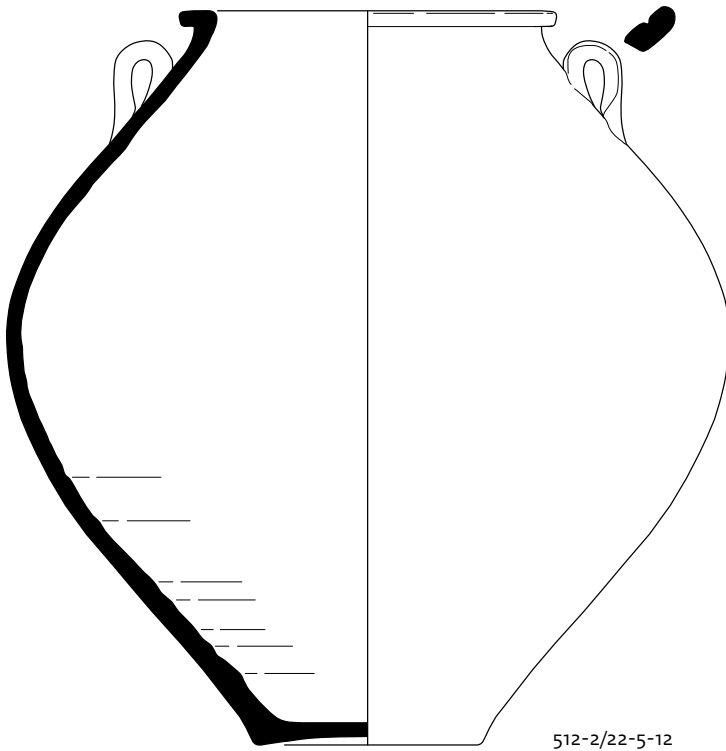


Fig. 23.38 Voerendaal-Ten Hove. Fabric of the Soller-ware. Scale 5:1. (source: J. van Kerckhove)

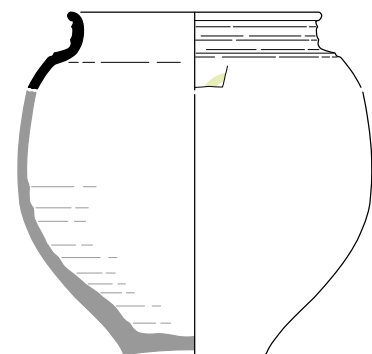
<sup>2126</sup> Small mortaria of this type in a similar fabric are also found in the kiln of Soller: Haupt 1984, pl. 172.

<sup>2127</sup> Vanvinckenroye 1991, 74.

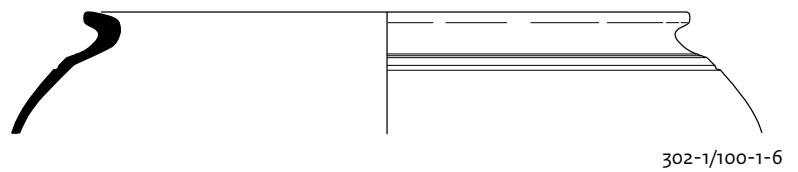
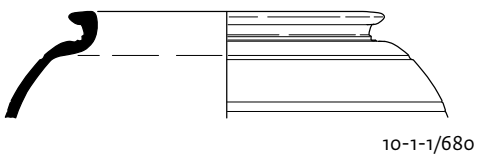
SM-SOLLER-ST146



TW-SOLLER-BE-Hofh81a



CW OX-SOLLER-BE-BRU4



CW CC-SOLLER-JA-ST201b

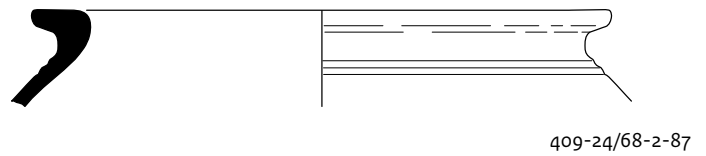
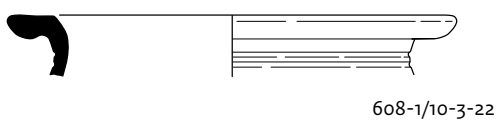
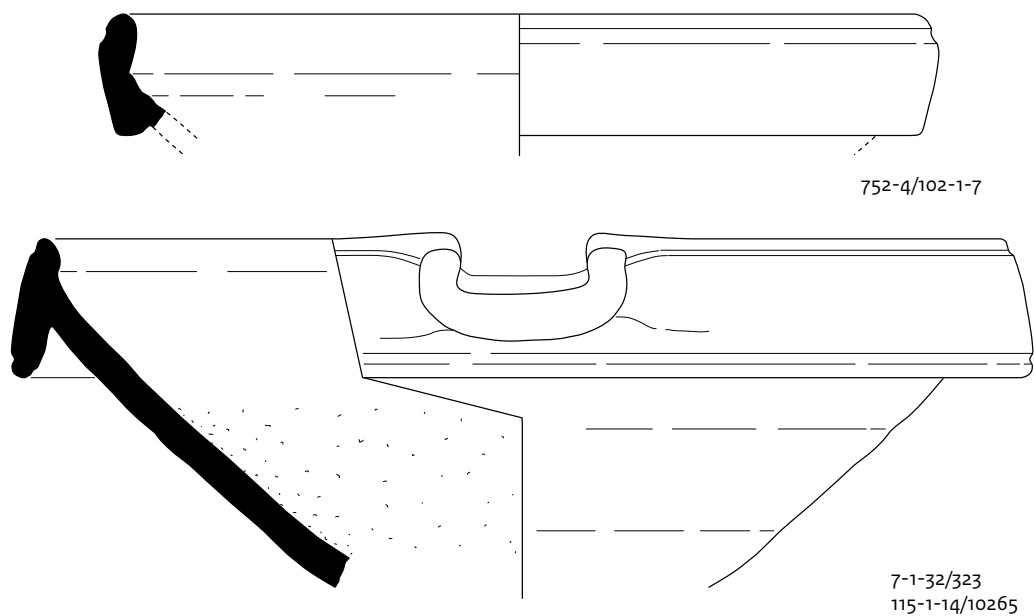
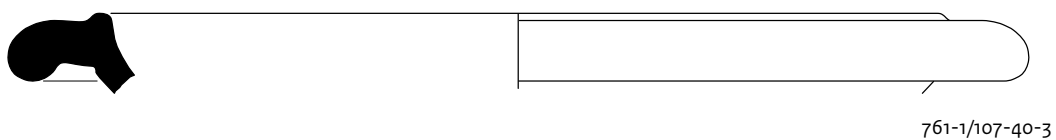


Fig. 23.39 Voerendaal-Ten Hove. Honey-pot, beakers, jars and bowl in Soller ware. Scale 1:3. (source: H.A. Hiddink & F. Horbach)

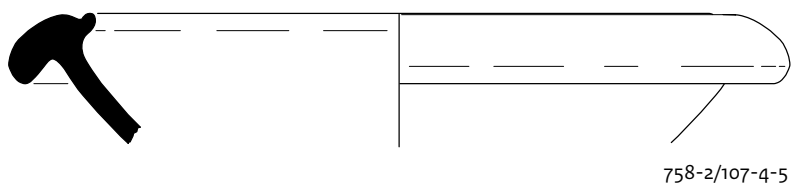
MOR-SOLLER-VV337



MOR-SOLLER-VV349



MOR-SOLLER-VV347



MOR-SOLLER-VV452

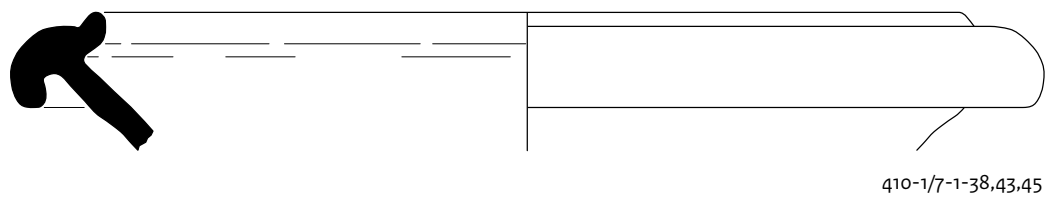


Fig. 23.40 Voerendaal-Ten Hove. Mortaria in Soller ware. Scale 1:3, find 7-1-32 and 761-1 scale 1:4.

## DOL-SOLLER-DOL

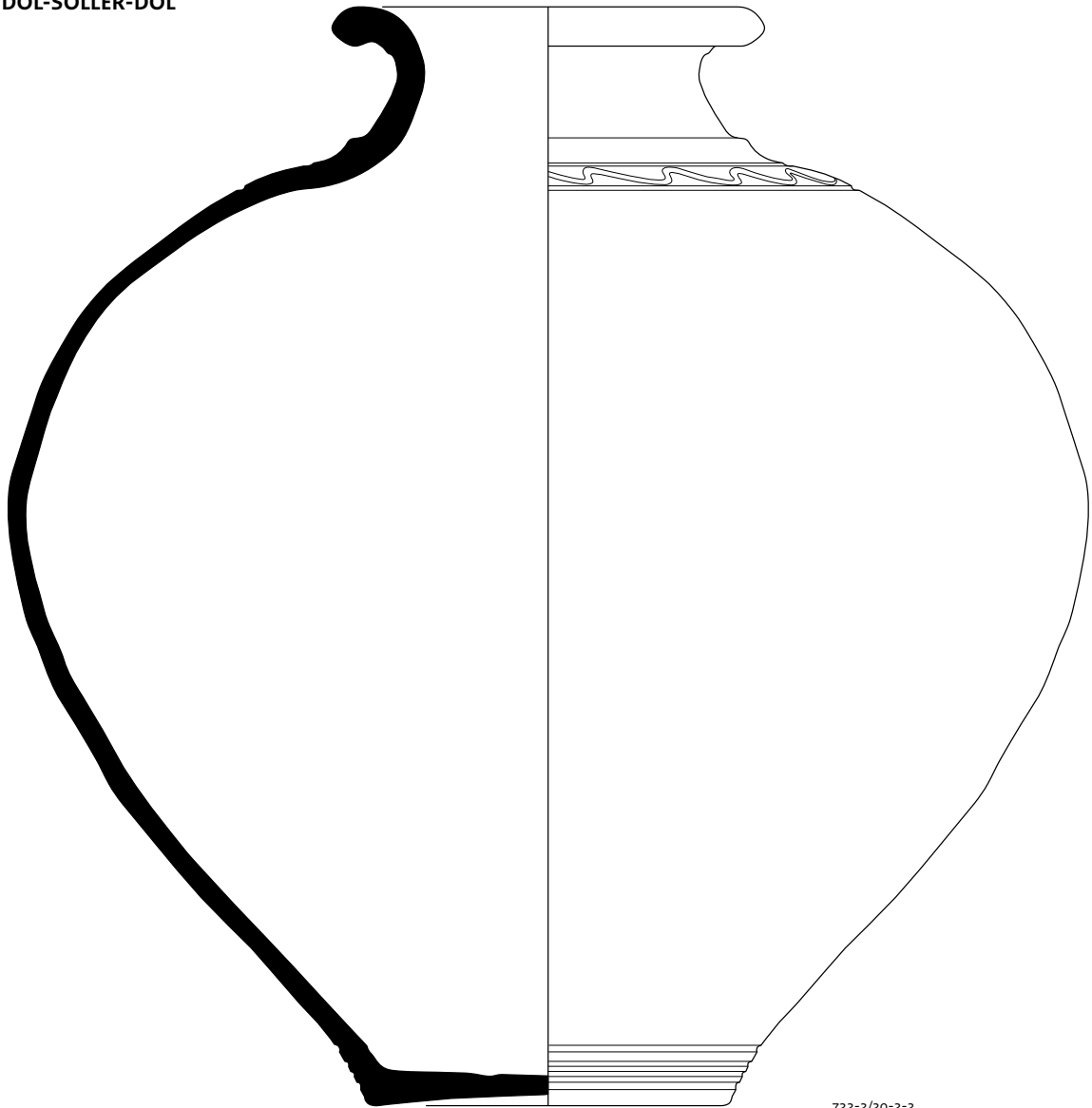


Fig. 23.41 Voerendaal-Ten Hove. Soller storage flask. Scale 1:4. (source: F. Horbach & H.A. Hiddink)

produced in both Soller and Heerlen). As in Heerlen and NOOR<sub>1</sub> ware, we see a coarse variant of the thin-walled beaker Hofheim 81A.

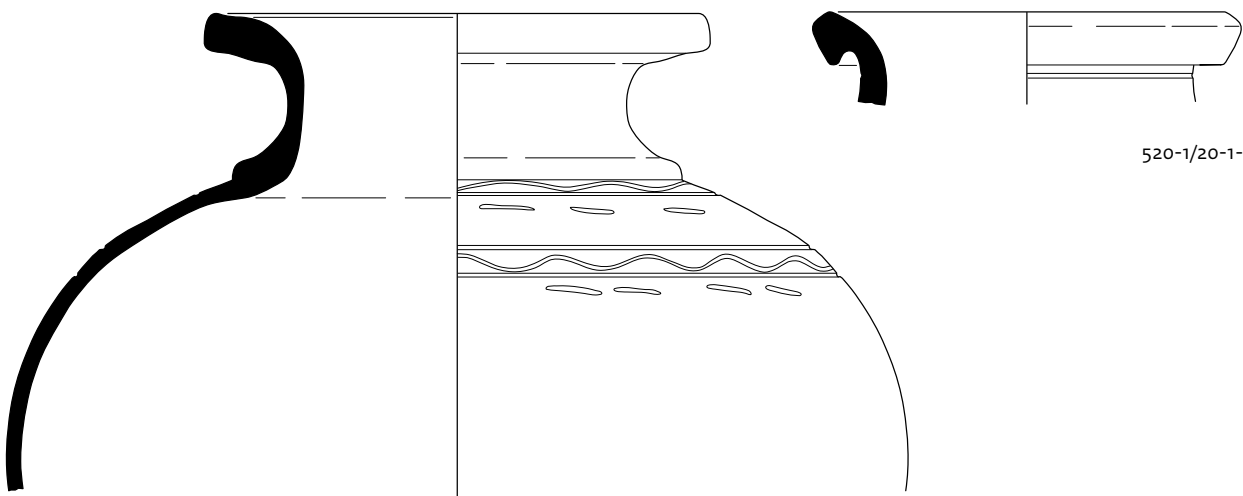
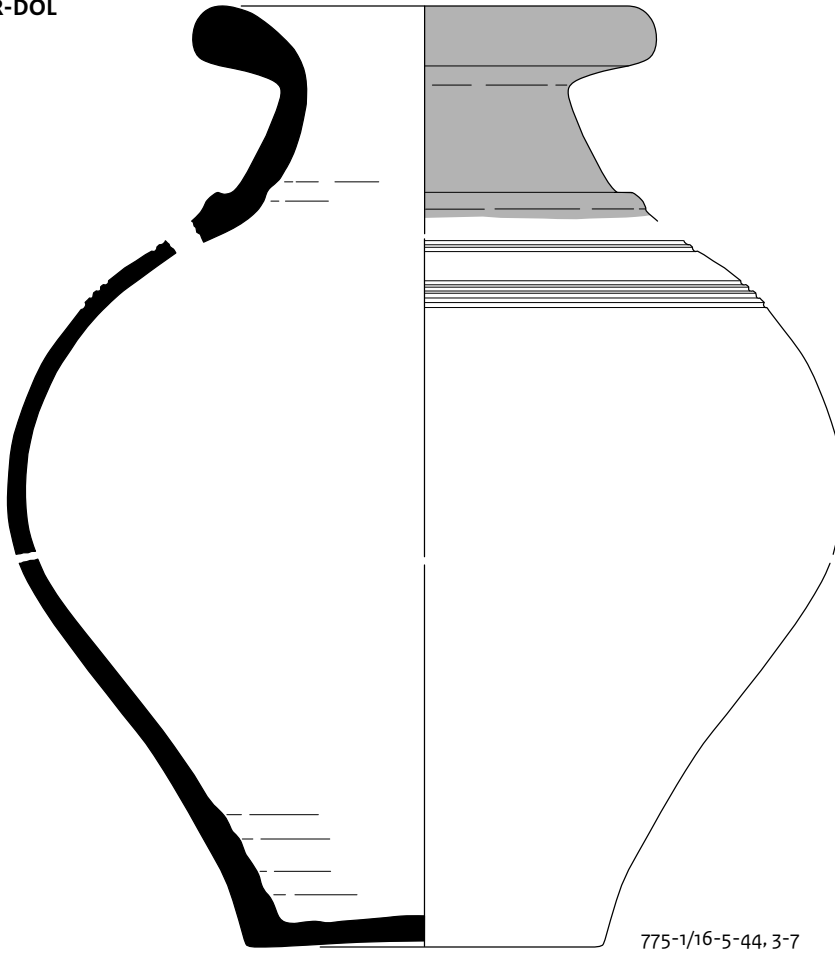
A striking form is the flask-shaped storage vessel (Fig. 23.41-42). Like dolia and regional amphorae, these large vessels can be viewed as transport containers for regional trade. In total,

ten of these large vessels have been found at Voerendaal. At least two of them have traces of resin on the rim. Some of the wall fragments are decorated with wavy lines, maybe an abstract imitation of ropes.<sup>2128</sup> This form seems to have been produced during much of the third century AD at least.<sup>2129</sup>

<sup>2128</sup> Cf. section 23.3.1, Heerlen-dolia.

<sup>2129</sup> Haupt 1984, 454-458, esp. 457.

## DOL-SOLLER-DOL



744-1/100-1-10, 2-3

Fig. 23.42 Voerendaal-Ten Hove. Soller storage flasks (744-1 could be a Heerlen product). Scale 1:3.



### 23.3.4 Pottery from the Meuse region

Only 2% of the pottery assemblage consists of products from the Meuse region (Table 23.16; Fig. 23.43-45). The Voerendaal assemblage shows a completely different pattern than other areas in the Roman-occupied part of the Netherlands (river area, sandy soils), where pottery from the Belgian Meuse region is always well represented.<sup>2130</sup> One terra rubra vessel has been collected, a beaker Deru P1-12. The smooth-walled beakers and dishes date (in the Netherlands) to the late second century and especially the third century AD.<sup>2131</sup> These beakers and dishes make up a small but consistent portion of the pottery spectrum in the Netherlands below the *limes* (Fig. 23.43).<sup>2132</sup> They are labelled 'smooth-walled smoked' wares by Hiddink.<sup>2133</sup> We chose to label them 'smooth-walled ware' as they are not always smoked. Indeed, the specimens from the Meuse valley

often are smoked (in Voerendaal 23 of 40 sherds) but their Heerlen counterparts are not (see above). Flagons and coarse wares are barely present.

Surprisingly, the large export products from the Meuse region – regional amphorae, dolia and mortaria – are also very sparsely present at Voerendaal. For the mortaria, we could argue that this kitchen utensil was simply replaced by mortaria from the region (Heerlen and Soller). The regional amphorae and the dolia, however, can be considered transport vessels that reflect a certain desired product. Only a small number of regional amphorae were collected in Voerendaal, and those from the Meuse valley are only represented by 3 MNI (Fig. 23.44). Even stranger is the fact that regional amphorae were barely produced in Heerlen. Moreover, the number of regional amphorae (regardless of provenance) is very low in the *vicus* of Heerlen itself.<sup>2134</sup> Indeed, regional amphorae can be divided into three large provenance groups: the Meuse region,

**Table 23.16. Voerendaal-Ten Hove. Pottery from the Meuse region.**

Pottery category/shape	Vessel type	MNI
TR-Meuse-BE	Deru P1-12	1
SM-Meuse-BE	VV 528Var	1
SM-Meuse-BE	VV 485	1
SM-Meuse-BE	VV 487	1
SM-Meuse-BE	VV 527	2
SM-Meuse-D	like VV 563-565	2
SM-Meuse-D	VV 565	6
SM-Meuse-D	VV 566var	1
SM-Meuse-BO	like VV 520	1
SM-Meuse-L	NB 120a	1
SM-Meuse-FL	VV 422	1
REG AMF-Meuse A	Haalebos 8052	2
REG AMF-Meuse A	Haalebos 8052Var	1
CW OX-Meuse-BO	NB 104/ST 211	1
MOR-Meuse-M	-	1
MOR-Meuse-M	VV 337/Brunsting 37	2
MOR-Meuse-M	VV 352	3
DOL-Meuse-DOL	ST 147 (coarse)	9
DOL-Meuse-DOL	ST 147 (grog tempering)	5
<b>Total</b>		<b>42</b>

<sup>2130</sup> Hoogeloon (Van Kerckhove 2014a), Den Haag-Uithofslaan site 3 (Van Kerckhove 2011), Tiel-Passewaaij (Van Kerckhove 2006), Geldermalsen-Hondsgemet (Van Kerckhove 2009).

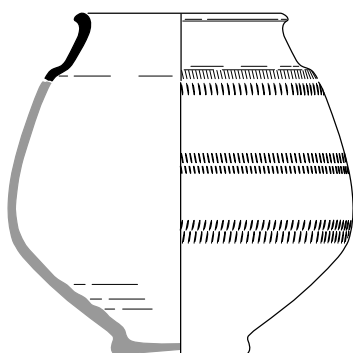
<sup>2131</sup> Hiddink 2014d, 108ff.; Vanvinckenroye 1991, 126 (dishes), 114 (beakers Vanvinckenroye 484-487) and 120 (Vanvinckenroye 525-530).

<sup>2132</sup> Van Kerckhove in prep.

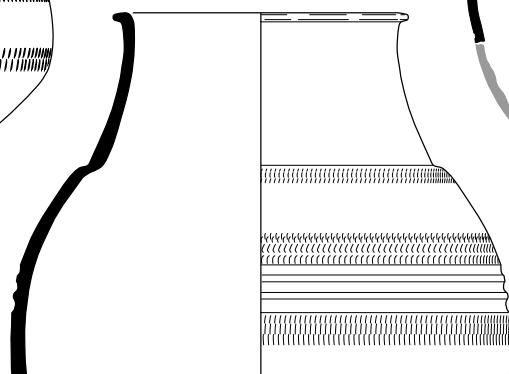
<sup>2133</sup> See this volume, and Hiddink 2010, 110-113 (who acknowledges the fact that only a part is smoked).

<sup>2134</sup> Van Kerckhove 2020a, 42-43.

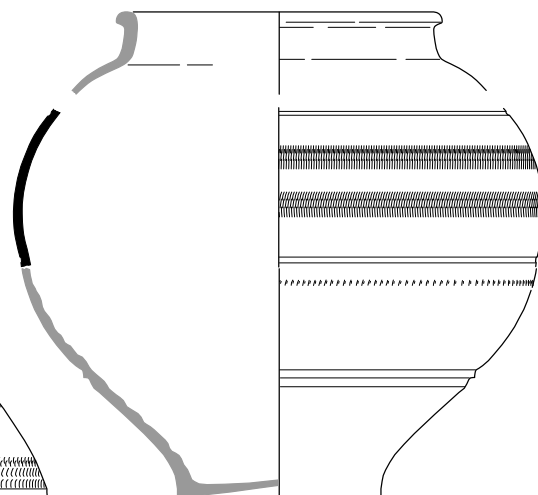
## SM MEUSE-VV 484-487



9-1-21/564

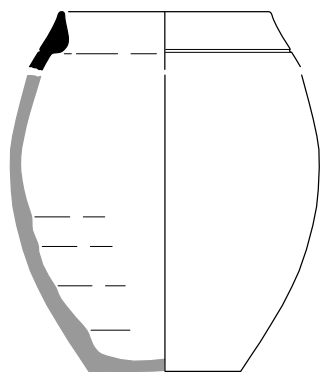


1895-12.36/13098



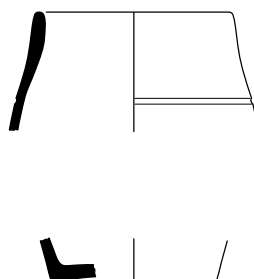
409-31/68-2-87

## SM MEUSE-VV527



740-13/79-2-6

## SM MEUSE-VV528var



412-9/79-1-7

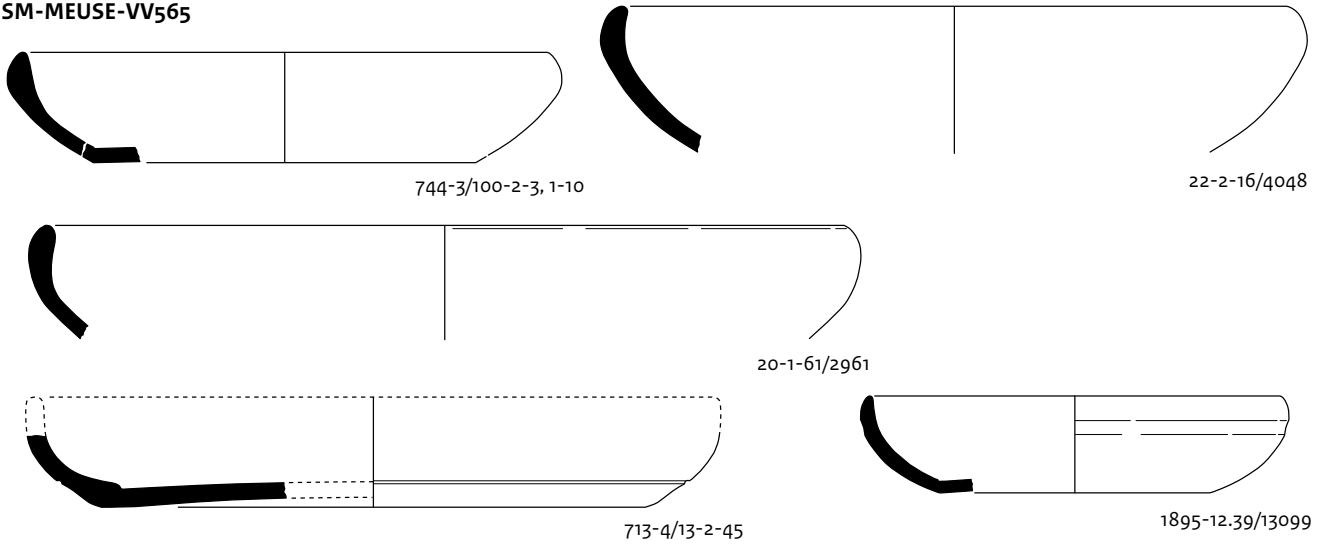
Fig. 23.43 Voerendaal-Ten Hove. Beakers from the Belgian Meuse region. Scale 1:3.

Scheldt valley and (later) the Mosel valley. The production in Heerlen, Soller, Jülich and even Köln is very low. How we should interpret the limited import of these regional transport vessels into the larger region of Heerlen certainly needs further investigation.

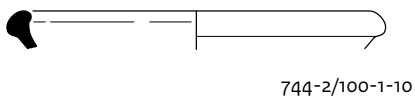
Dolia from the Meuse valley are represented by 14 MNI, most of which have a layer of thick resin on the rim and little holes on top of the rim

(Fig. 23.45). Some of the dolia are decorated with imitations of ropes on the wall. Most of the dolia are made in a coarse fabric, comparable to the coarse wares. Other dolia have a distinctive fabric, which is tempered with large particles of grog. The size of the dolia is the same for both fabrics. The diameters vary from 26 to 58 cm, with a peak between 49 and 56 cm.

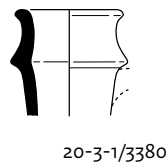
**SM-MEUSE-VV565**



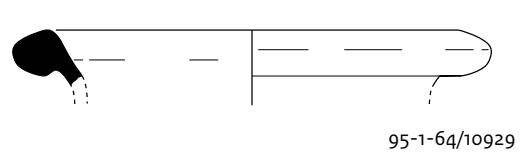
**SM-MEUSE-VV566var**



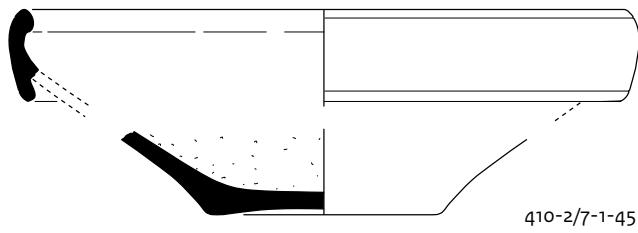
**SM-VV422**



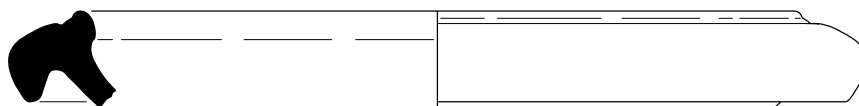
**REG AMF-MEUSE-HB8052**



**MOR-MEUSE-MORVV337**



**MOR-MEUSE-MORVV352**



334-1/107-3-62

Fig. 23.44 Voerendaal-Ten Hove. Meuse-region dishes, regional amphora and mortaria. Scale 1:5.

DOL-MEUSE-ST147

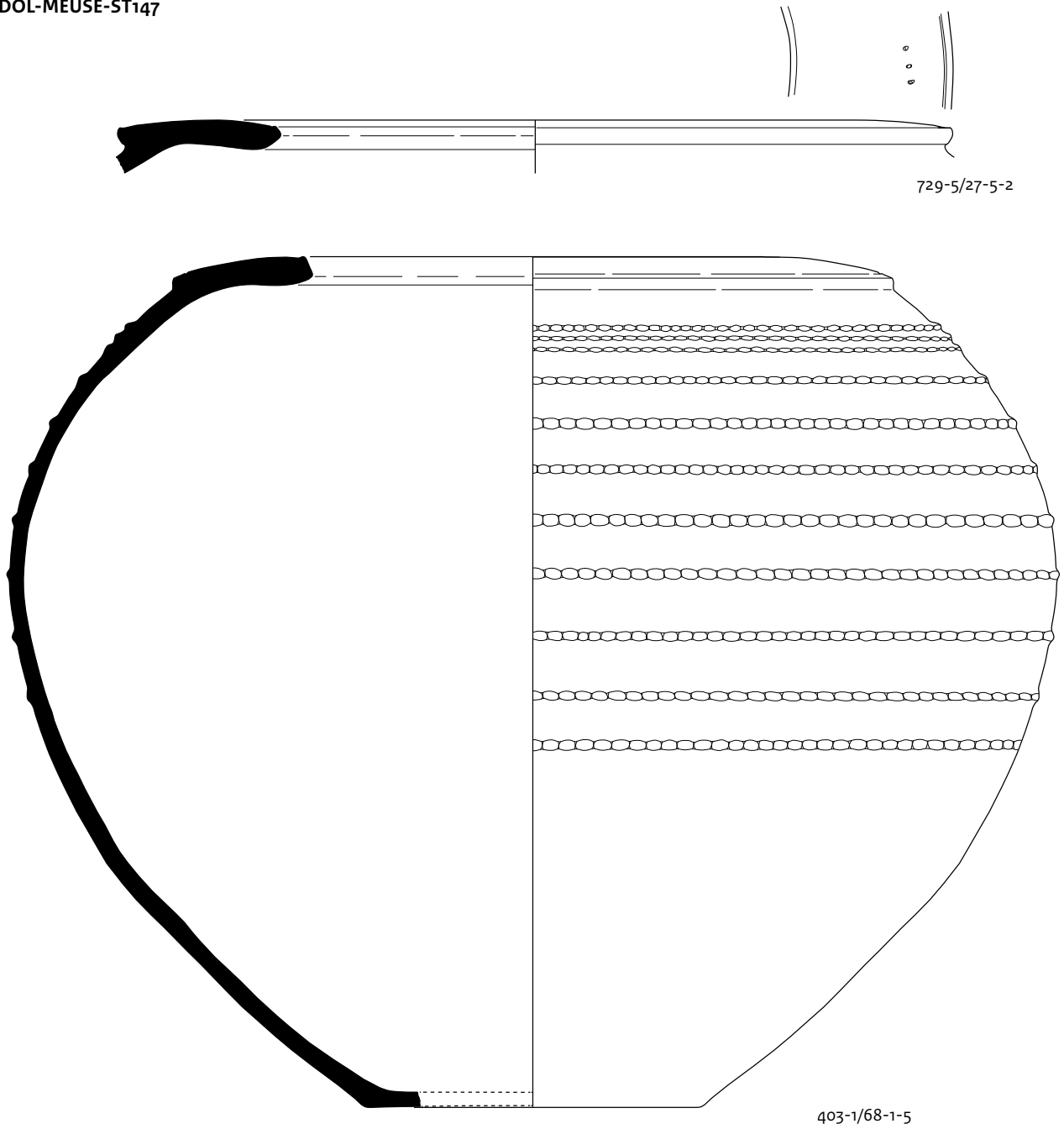


Fig. 23.45 Voerendaal-Ten Hove. Meuse-region dolia. Item 729-5 scale 1:4, 403-1 scale 1:5. (source: F. Horbach & H.A. Hiddink)

### 23.3.5 Rhineland and Rhineland/Eifel

A heterogeneous group of fabrics from many different production centres along the Rhine, and from the later second century in the Eifel region, is labelled 'Rhineland' and 'Rhineland/Eifel' (Table 23.17; 23.46). In Voerendaal, this group is very small. Only one beaker of colour-coated ware from Köln has been collected (Niederbieber 30). The reduced coarse ware from the Rhineland (a fabric that can be regarded as the successor to the Rhineland Granular Grey Ware and dating between c. AD 70 and 120) is represented by only one MNI, a jar Niederbieber 87b. The oxidized coarse ware consists of a lid Niederbieber 120a, two jars Niederbieber 89/Stuart 203 and a mortarium Vanvinckenroye 337. The younger 'Rhineland/Eifel' fabric consists of a lid Niederbieber 120a, a bowl Stuart 210, four jars Niederbieber 89/Stuart 203 and a plate Stuart 218.

### 23.3.6 Eifel and Lower Moselle regions

A total of 42 MNI were imported from the Eifel or the Lower Mosel region (Table 23.18; Fig. 23.46-47). The vessel types presented in Table 23.18 mainly date to the third century AD, but the production of many types persisted well into the fourth century. For the coarse ware, the vessel

types are typical of the Niederbieber horizon but are still present in the Alzey horizon. The Mayen and Urmitzer wares have a long production period, but the distribution peak for the Urmitzer ware can be situated in the third century, and in the fourth and fifth century AD for the Mayen ware.<sup>2135</sup> It is difficult to date the Urmitz ware accurately. Traditionally, it was dated between c. AD 190 and 260 based on its presence in Niederbieber and its absence in Alzey. It has become clear, however, that production continued into the fourth century AD.<sup>2136</sup> In some settlements (such as Tongeren and Voorburg-Arentsburg) the Urmitz pottery is abundantly present in the third century, while in other sites (such as the fort of Oudenburg) the peak can be situated in the late third century. Interesting for Oudenburg is the fact that the Urmitz pottery from the Late Roman period follows the Late Roman Alzey typology (Alzey 29, Alzey 34), while the Middle Roman pottery from Urmitz follows the Niederbieber typology (Niederbieber 89, 103, 111, 104).<sup>2137</sup> Therefore, all Urmitz pottery which fits in the Niederbieber typology is listed in table 23.18, except for the specimens from Late Roman contexts. The small amphorae Niederbieber 67 and 70 can also be dated to the third century, although a date in the fourth century cannot be excluded.<sup>2138</sup> The Pompeian red plate Niederbieber 53 is a typical third-century plate

<sup>2135</sup> See Brulet 2010 on the chronology of the Mayen and Urmitz ware in general.

<sup>2136</sup> Vanderhoeven *et al.* 2017, 118 for Tongeren; Van Kerckhove 2014b (Voorburg-Arentsburg) on the abundance of Urmitzer pottery in layers dating to the first three quarters of the third century. Vanhoutte 2018, 238 with further references (Oudenburg). The Urmitz pottery in Oudenburg is present in layers from c. 220 to 330 AD, with a peak between c. 260-295.

<sup>2137</sup> Vanhoutte 2018, 2398

<sup>2138</sup> Small amphorae from the Lower Mosel region are found in Niederbieber (Oelmann 1914), but (red-coated) variants are also present in Holzhausen (Pferdehirt 1976), Gellep (Pirling & Siepen 2006) and Trier (Hussong & Cüppers 1972). Similar small amphorae Niederbieber 69, 74, 75 and 43, 47, 51 (red-coated and marbled) were in Forum Hadriani/Voorburg, in layers dating to the second and third quarter of the third century AD (Van Kerckhove 2014b, 341, fig. II-1.22; 348, II-1.33).

**Table 23.17. Voerendaal-Ten Hove. Pottery from the Rhineland- and Rhineland/Eifel-region.**

Pottery category	Fabric	Shape	Vessel type	MNI
CC-Rhineland	Rhineland	BE	NB 30	1
CW OX-Rhineland	Rhineland	JA	NB 89/ST 203	2
CW OX-Rhineland	Rhineland/Eifel	JA	NB 89/ST 203	4
CW REDU-Rhineland	Rhineland	JA	-	0
CW REDU-Rhineland	Rhineland	JA	Hofheim 87B	1
CW OX-Rhineland	Rhineland/Eifel	BO	ST 210	1
CW OX-Rhineland	Rhineland/Eifel	L	NB 120a	1
CW OX-Rhineland	Rhineland	L	NB 120a	1
CW OX-Rhineland	Rhineland/Eifel	D	ST 218	1
MOR-Rhineland-M	Rhineland	MOR	VV 337/Brunsting 37	2
<b>Total</b>				<b>14</b>

that we know so well from third-century contexts, where it features alongside Urmitzer ware, the above-mentioned small amphorae and

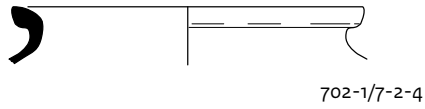
the black-slipped beakers Niederbieber 33 from Trier.<sup>2139</sup>

**Table 23.18. Voerendaal-Ten Hove. Pottery from the Eifel- and Lower Moselle-region.**

Pottery category	Fabric	Vessel shape	Vessel type	MNI
PRW	Lower Moselle	P	NB 53	0
REG AMF	Lower Moselle	A	NB 67	1
CC	Lower Moselle	A (small)	NB 70	1
BLSL	Trier	BE	NB 33	7
BLSL	Trier	BOT	Trier 8	0
CW OX	Eifel	JA	-	1
CW OX	Eifel	JA	NB 88	1
CW OX	Eifel	JA	NB 89	4
CW OX	Eifel	BO	NB 103	3
CW OX	Eifel	BO	ST 210	1
CW OX	Eifel	L	NB 120a	7
CW OX	Eifel	D	NB 40	1
CW OX	Eifel	JU	NB 98	1
CW OX	Mayen	D	like ST 216	1
MOR	Mayen	M	VV 337	1
CW OX	Urmitz	JA	NB 89/ST 203	6
CW OX	Urmitz	JA (with ear)	NB 94	1
CW OX	Urmitz	BO	NB 104/ST 211	2
CW OX	Urmitz	L	NB 120a	1
CW OX	Urmitz	D	NB 113	2
CW OX	Urmitz	D	NB 40	1
CW OX	Urmitz	JU	NB 97	1
<b>Total</b>				<b>44</b>

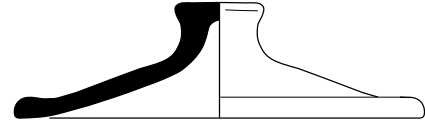
<sup>2139</sup> Van Kerckhove 2014b.

CW REDU-RHINEL/EIFEL-HOFH87b



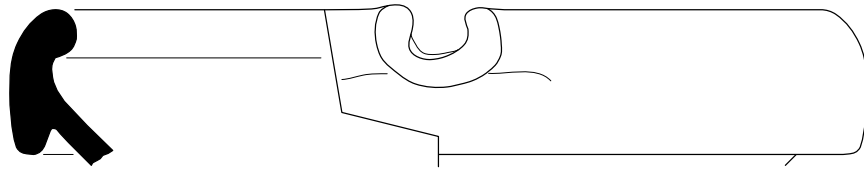
702-1/7-2-4

CW OX-RHINEL/EIFEL-HOFH87b



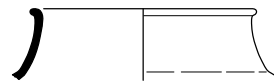
781-1/100-1-7

MOR-RHINEL/EIFEL-VV337/BRU37



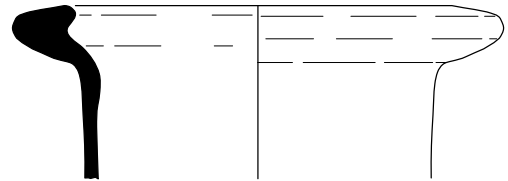
95-2-9/10998

BLSL-TRIER-NB33



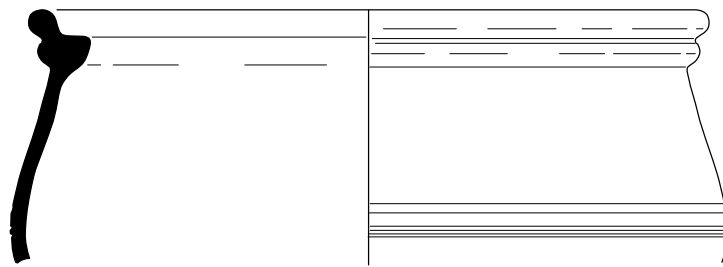
302-8/100-1-1

SM-LOWMOS-NB68



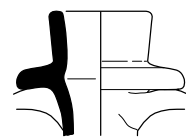
609-1/10-2-20

BLSL-TRIER-NB33



314-2/114-2-9

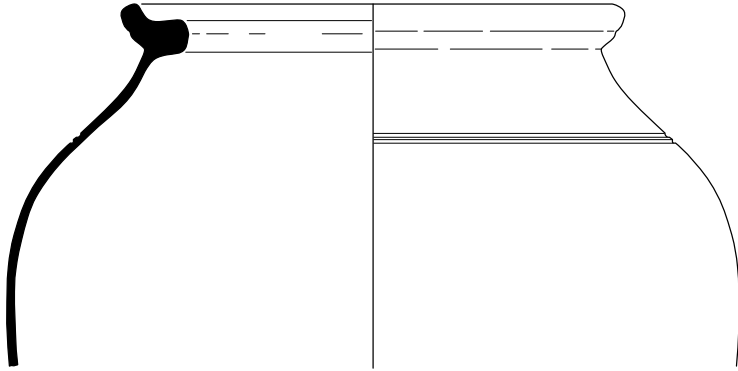
SM-LOWMOS-NB70



16-3-7/2411

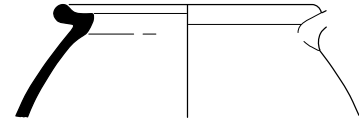
Fig. 23.46 Voerendaal-Ten Hove. Pottery from the Rhineland/Eifel and Lower Moselle-region. Scale 1:3.

CW-URMITZ-NB89

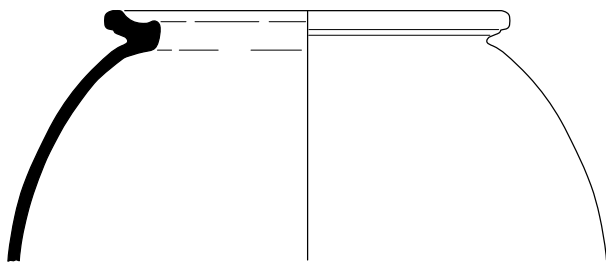


319-3/110-2-1

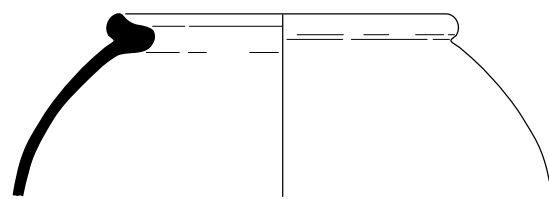
CW-URMITZ-NB94



757-5/108-2-7

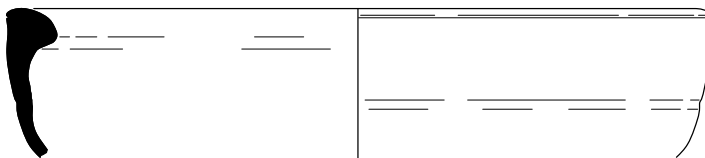


757-6/108-2-7



757-31/109-2-5

CW-URMITZ-NB 104

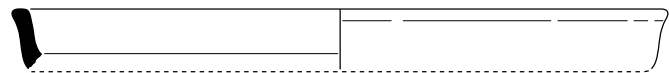


770-12/23-3-9

CW-URMITZ-NBa 113



412-10/79-1-5



302-15/100-1-1

Fig. 23.47 Voerendaal-Ten Hove. Pottery from Urmitz (Eifel). Scale 1:3.



### 23.3.7 Northern France

Pottery from northern France (Cambrai region, Bavay region, fabric 'savoneuse' from the latter) is only represented by 11 MNI (Table 23.19; Fig. 23.48). The only mica-dusted beaker from Voerendaal was in fact produced in the Bavay region, in the period between c. AD 70 and 150. The same goes for the terra nigra bowl and the terra rubra beaker. Two reduced-ware jars with an everted rim (one from the Cambrai region and labelled as the local type M1) could possibly be interpreted as transport vessels.<sup>2140</sup> Indeed, many of these northern French jars found in Dutch contexts have resin on their rim.<sup>2141</sup> This is also the case with the jar from the Cambrai region. A large fragment of a 'planetary vase' depicting the head of Mercury has been collected. In Famars, they can be dated between c. AD 260 and 270/320.<sup>2142</sup> In Bavay, they are usually dated to the late first and second century AD, although a complete specimen was found in the youngest phase of the cemetery of 'Fache des Près Aulnoys' (c. AD 150-230).<sup>2143</sup> These vases often show burning traces or intentional breakage, pointing to their ritual use.<sup>2144</sup> Only four mortaria were imported from Bavay. The mortarium Vanvinckenroye 351 can be dated to the late second and third century, while the Vanvinckenroye 349 dates to the late first and second century AD.<sup>2145</sup>

### 23.3.8 Other provenances

Some of the terra nigra not produced in Heerlen may derive from northern France, but a provenance from other regions is also possible (Fig. 23.49). Handmade cork urns (*Halterner Kochtöpfe, kurkurnen*) can be interpreted as cooking jars that were transported for their contents (Fig. 23.49). An important group of these early cork urns were imported from the Condroz region (Belgian Meuse region) to early military forts along the Rhine.<sup>2146</sup> The cork urns from Voerendaal (6 MNI in total) have a fabric that lacks the typical calcite inclusions from the Condroz region. However, they are all handmade and three of them fit into Early Roman typologies (Vanvinckenroye 31/Haltern 91A/Holwerda 94c: 94-4-1/10533; 382/11-1-1/1060; 95-2-19/14466). According to Vanvinckenroye, they (rarely) persisted in Tongeren until the early Flavian period.<sup>2147</sup>

The 'problem' with these early cork urns is that their rim shape is highly variable. This is particularly obvious for the many variants that fit into the types Haltern 91a and Haltern 91b.<sup>2148</sup> Various fabrics have been attested in the Early Roman forts. Apart from the 'Condroz' fabric, atypical fabric from the region around Trier can also be identified.<sup>2149</sup> Indeed, cork urns with a shell temper are described for the *oppida* (such as the Titelberg) in the area of the Treveri.<sup>2150</sup> We should be aware that these jars go back to

<sup>2140</sup> Blondiau *et al.* 2001.

<sup>2141</sup> Van Kerckhove in prep.

<sup>2142</sup> Oral communication S. Willems (INRAP).

<sup>2143</sup> Flahaut 2014, 709-710 on face pots in general and the early phase of planetary vases; Loricant & Deru 2009, 237-238.

<sup>2144</sup> Some specimens even contained horse bones (Flahaut 2014, 716).

<sup>2145</sup> Vanvinckenroye 1991, 74.

<sup>2146</sup> Lepot 2014, 110-112, 168-171.

<sup>2147</sup> Vanvinckenroye 1991, 18.

<sup>2148</sup> Ritterling 1901, 161-162, pl. 36, no. 27-41; Loeschcke 1909, 294-300, fig. 48 (type 91).

<sup>2149</sup> Lepot 2014, 169.

<sup>2150</sup> Lepot 2014, 169 with further reference to Metzler *et al.* 1999, 334.

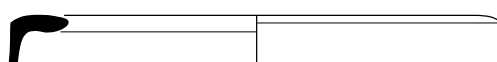
**Table 23.19. Voerendaal-Ten Hove. The pottery from northern France**

Pottery category	Fabric	Vessel shape	Vessel type	MNI
mica-dusted	'savoneuse'	JA	DOR2, 22.4	1
SM	Bavay	'planetary vase'	-	1
SM	'savoneuse'	cork urn	-	1
CW REDU	Cambrai	JA(r)	Blondiau M1	1
CW REDU	Noord-Frankrijk	JA	ST 201A	1
TN	'savoneuse'	BO	Deru B28/HBW52	1
TR	'savoneuse'	BE	Deru P12.1/HBW31	1
MOR	Bavay	M	-	1
MOR	Bavay	M	VV 349	2
MOR	Bavay	M	VV 351	1
<b>Total</b>				<b>11</b>

## MICA DUSTED-SAVONEUSE



702-13/7-2-4

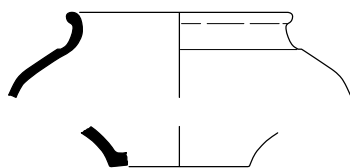


647-2/115-3-1

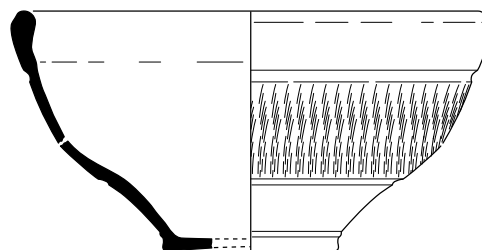
## PLANETARY VASE-BAVAY



1895-12.40-41/11365

CW REDU-CAMBRAI-BLON<sup>1</sup>

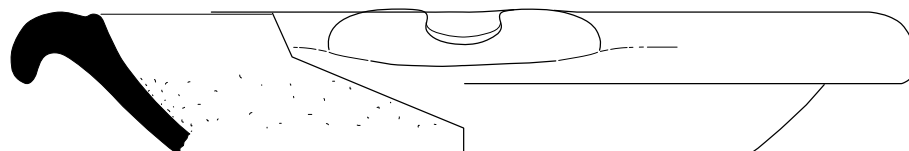
317-6/13-3-37,38,39

TN-NFRA-HBW<sup>2</sup>

27-2-2,8/4866

CW REDU-NFRA-ST<sup>201a</sup>

27-2-3/4893

MOR-BAVAY-VV<sup>349</sup>

20-1-80/3158

Fig. 23.48 Voerendaal-Ten Hove. Different kinds of pottery from Northern France. Scale 1:3.

the final La Tène period, when the production of cooking wares with a refractory temper became characteristic of the 'oppida culture'.<sup>2151</sup> This temper consists of calcite (Condroz), shell inclusions (as just described from the Trier area), marble (region of the Norici, near

Magdalensberg), mica and granite (Central Gaul).<sup>2152</sup> In her thesis, Martin divides this early type into PIIIa (which corresponds to 11-1-1/13312 and 94-4-1/10533 from Voerendaal) and type PIIIb (which corresponds to 95-2-19/14466).<sup>2153</sup> Both sub-types occur from the final phase of the

<sup>2151</sup> Lepot 2014, 110-111.

<sup>2152</sup> Lepot 2014, 110-111.

<sup>2153</sup> Martin 2017, 272; cf. fig. 21.4.

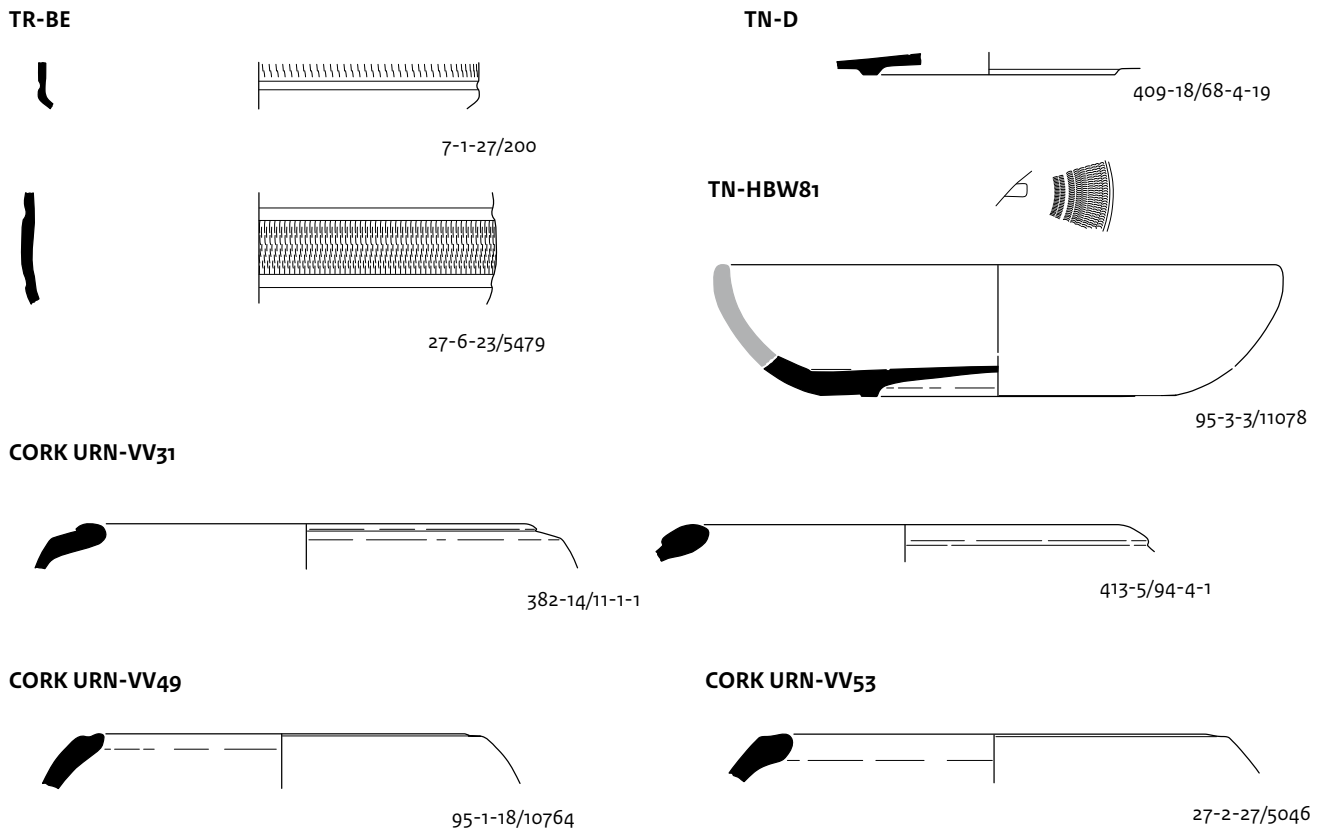


Fig. 23.49 Voerendaal-Ten Hove. Terra nigra and cork urns ('Halterner Kochtöpfe') from different sources. Scale 1:3.

La Tène period, but are more typical of the Roman era. The type PIIIa is abundantly present in Augustan to Neronian contexts, while the type PIIIb even persisted into the second century AD.<sup>2154</sup> As mentioned above, these three early jars from Voerendaal lack the characteristic refractory temper. Based on their shape, they are most likely pre-Claudian. However, it is not certain that this applies to Voerendaal, because pre-Claudian pottery seems to be absent. As described above, these vessels could be dated to the Late Iron Age (see Chapter 51), and strictly speaking, they could even date after c. AD 40. The other three cork urns can be dated from c. AD 70 onwards until well into the second century: Vanvinckenroye 49 (95-1-18/10764), 50-52 (16-6-19/2692) and 53 (27-2-27/5046).<sup>2155</sup> The Vanvinckenroye cork urn 50-52 is very similar to the jar JA7-9 in Heerlen reduced coarse ware.

Pottery from the Hesbaya region, consisting of white wares imitating Meuse products and of red-fired pottery from Tongeren, is very rare in Voerendaal. The white-firing Hesbaya products

consist of a mortarium Vanvinckenroye 352 and one of the 353-type, both dating from the third century AD (Fig. 23.50). One dolium is produced in a fabric that could even be Heerlen ware. Eight sherds from Voerendaal have a Tongeren fabric, four of which have a white colour coating. Both coarse ware and smooth-walled sherds with a white coat from Tongeren can usually be attributed to honey pots.<sup>2156</sup> One rim belongs to a so-called 'Tongeren beaker' TON7/Vanvinckenroye 526-527, dating between the end of the second century and c. AD 270 (Fig. 23.50).<sup>2157</sup>

The so-called T<sub>2</sub> pottery, of which we still do not know the provenance, is only represented by a single wall sherd, which is decorated with incised grooves and wavy lines.<sup>2158</sup>

Low Lands Ware 1, produced in or near the coastal area of the Netherlands, probably near Bergen op Zoom,<sup>2159</sup> is also very rare at Voerendaal-Ten Hove. Of the so-called Scheldt valley amphorae, which are abundant in large parts of the Netherlands (the river area and sandy soils) and Belgium, only one small wall

<sup>2154</sup> Martin 2017, 276-280.

<sup>2155</sup> Vanvinckenroye 1991, 22.

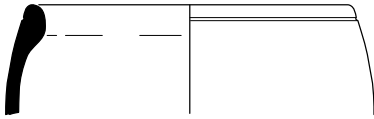
<sup>2156</sup> Van Kerckhove 2014a, 335-336, fig. 15.21 on smooth-walled honey pots from Tongeren in Hoogeloon; Van Kerckhove 2014a, 358, fig. 15.33

<sup>2157</sup> Vanvinckenroye 1991, 120.

<sup>2158</sup> Van Kerckhove 2014a, 341-345.

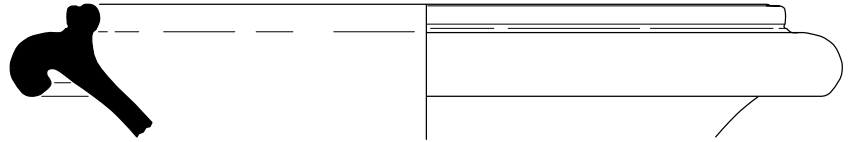
<sup>2159</sup> De Clercq & Degryse 2008.

## CW-TONGEREN-TON7



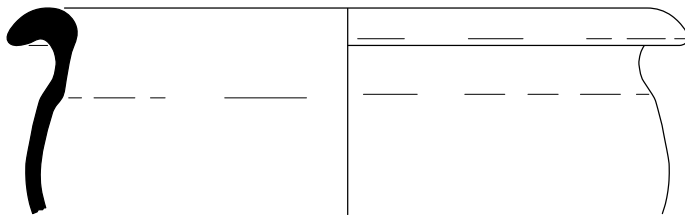
68-1-5/6874

## MOR-HESBAYE-MORVV353

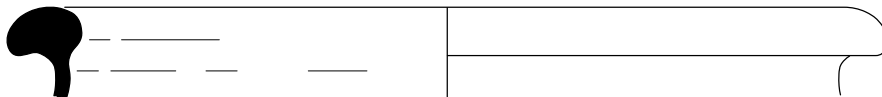


27-4-5/5318

## LLW1-HBG140-142



9-1-1/552

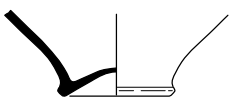
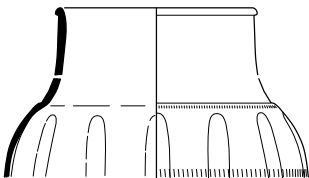


752-3/102-1-7

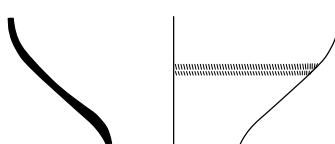
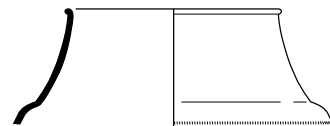
## BLSL-ARGONNES-NB33



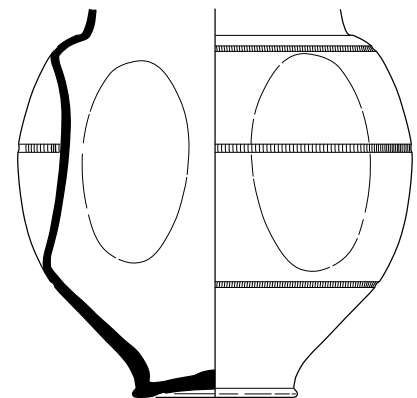
740-10/79-2-6



10-2-8/783



740-11/79-2-6



401-1/20-3-97

Fig. 23.50 Voerendaal-Ten Hove. Pottery from other provenances. Hesbaye/Tongeren, coarse Low Lands Ware and black-slipped beakers from the Argonnes. Scale 1:3.

sherd was found at Voerendaal.<sup>2160</sup> Only five rims of large jars Holwerda BG 140-142 have been found (Fig. 23.50). These transport and storage vessels can be dated from the second half of the second century onwards.<sup>2161</sup> They are very common in third-century contexts but probably persisted in the fourth century AD. The rims from Voerendaal, however, are not particularly heavy

(an argument for a younger date), which makes a dating in the third century most probable.

A final group consists of black-slipped beakers of the Argonne (France). These third-century beakers have a dull olive-green slip and a grey fabric. In Voerendaal, they are represented by 7 MNI (Fig. 23.50).

<sup>2160</sup> See section 24.2.5.

<sup>2161</sup> Van Kerckhove 2014a, 338-339 with further references.

### 23.4 Chronology

This section discusses the chronology of the Ten Hove site during the Early and Middle Roman period, mainly on the basis of the pottery discussed in this chapter and with a focus on the start and end dates. All the arguments and literature references have already been mentioned in the section above. Where possible, several pottery complexes that are characteristic of a specific pottery phase are presented.

For the chronology of the pottery from the villa of Voerendaal we largely depend on our knowledge of the regional productions. As we will demonstrate in section 23.5 below, the Voerendaal assemblage shows a consumption pattern involving pottery that was largely produced in the region, instead of relying solely or mainly on products from further afield. This applies first and foremost to the less luxurious wares, but even to finer beakers (colour-coated, terra nigra). Of course, supra-regional classes of pottery (terra sigillata, amphorae) are still present everywhere.

This pattern can be found in the Heerlen region – including Coriovallum, Heerlen-Trilandis and Kerkrade-Holzkuil – and eastwards into Germany: in the villas on the Aldenhovener Platte and in the Hambacher Forst, the region of Jülich and Soller. This means that, for the chronology, we can rely far less on imports than we are accustomed to for settlements in both the *civitas Tungrorum* and *Batavorum*. As we have seen in the previous section, most of the pottery consists of Heerlen ware. As this production has recently been studied in detail, we will mainly use the Heerlen ware for the chronology of Voerendaal.

To start with, however, we should mention the cork urns discussed in the last section, which theoretically allow for occupation or activities at the very beginning of the first century AD. Also quite early are for example ‘girth beakers’ HBW 9, which are essentially pre-Claudian in date. The original database listed two possible fragments of such beakers. However, a rim fragment was not found in its find bag but is probably a rim that cannot be ascribed to a particular type of beaker.<sup>2162</sup> Another rim from the same find number is from

a beaker, albeit another type.<sup>2163</sup> The second fragment listed in the original database does not seem to belong to a girth beaker because the wall is steep rather than concave and it has hatched decoration (7-1-27/200; Fig. 23.49).<sup>2164</sup> Therefore, these fragments are not relevant for dating. Regarding the terra sigillata, it is significant that no Italic sigillata was found at Ten Hove and that the earliest vessels are Claudian-Neronian, dating to c. AD 40/50-70.<sup>2165</sup>

Like the sigillata, the first vessel types in Heerlen ware from Voerendaal can also be dated between c. AD 50 and 70.<sup>2166</sup> They imitate vessel types that are abundantly present in the Claudian-Neronian Hofheim I horizon. In Voerendaal, the earliest types consist of colour-coated beakers BE1, 2 and 4, a cup CU1, terra rubra beaker BE27, thin-walled beaker BE21, the earliest versions of pots P1 (imitating Hofheim 81A), flagon FL2 and two-handled flagons TWFL10. Except for two colour-coated beakers BE4 (332-1 and 102-2-1/8810) and the cup CU1 (99-1-16/8400), all vessels were collected in the cellar pit in building 409 or surrounding trenches 68, 69, 95 and 96.

As argued in the sections above, the Heerlen reduced coarse ware can be dated to the same period. We can mention jars JA7, the jug JU6a (imitating Hofheim 89 jugs), but particularly jars JA4a (imitating Hofheim 87a jars). These reduced wares were not found in cellar pit 409 but mainly in other contexts. It seems that the earliest pottery phase (c. AD 50-70) in Voerendaal is only represented by a small amount of pottery. Another argument for the majority of the pottery consumption in Voerendaal dating after c. AD 70 is the lack of the pre-Flavian imports that have been attested in large quantities in Heerlen-Thermenterrein. On that site, the pre-Flavian period was characterized by imports from Lyon, Aoste and Köln, and by Rhineland Granular Grey Ware, Pompeian red ware plates, etc. These are completely absent in Voerendaal, at least partially for chronological reasons.<sup>2167</sup>

From c. AD 70 onwards, we see huge quantities of pottery in Voerendaal. This is consistent with the true start of Heerlen production. The colour-coated coarse ware can probably be dated between c. 70 and AD 100/120. It consists of jars JA4a, but especially JA4b,

<sup>2162</sup> Find 302-00/11-1-18/1077

<sup>2163</sup> Find 302-18/11-1-18/11657, ‘poudreuse’ beaker Deru P1-12.

<sup>2164</sup> Possibly a beaker similar to Weert-Kampershoek Noord 451-1 (Hiddink 2014h, 319, fig. 15.50).

<sup>2165</sup> Chapter 22.

<sup>2166</sup> As stated before, the production at Heerlen started probably around c. AD 50, by analogy with Tongeren and Köln (for the latter: when the production really took off). The earliest production phase at Tongeren is characterized by culinary wares fired in a reduced atmosphere; by c. AD 70 the bulk of the pottery was oxidized (and smoked). In Heerlen, we see the same trend, except for the smoking.

<sup>2167</sup> If the Voerendaal site started before c. AD 50, we would expect a large number of these imports as the Heerlen ware simply did not exist yet in this period.

and of bowls BO1 with a flat rim. Some pots P1 are also made in colour-coated coarse ware. Absent specimens in this technique are lid-seated jars JA2 and matching lids L1. The production material from Heerlen shows that these two types were produced from c. AD 120 onwards. This confirms that the colour-coated coarse ware was not produced after c. AD 120. Again, the context where we find most sherds belonging to this pottery phase (c. AD 70-120) is cellar 409. The youngest sherds from cellar 409 date around AD 120/130. These consist of lids in Heerlen oxidized coarse ware and in NOOR1 ware. Also dating to the first quarter of the second century are the jars JA1 (in both NOOR1 and Heerlen ware) and the flagon FL3a.

This large quantity of pottery persisted well into the second and the early third century, although there is evidence for pottery consumption until well into the third century. It is true that the pottery becomes more difficult to date from the late second century onwards. The main reason is that many vessel types were produced at different production sites over a long period. This was especially the case for coarse ware fitting into the Niederbieber horizon, such as jars Niederbieber 89, bowls 104 and lids 120. Moreover, it is difficult to distinguish the 'late' Heerlen fabric from the Eifel fabrics (see above). It is therefore hard to establish the end of the Heerlen production. The youngest kilns contained pottery from the first quarter or quarters of the third century, but it is certainly possible that the Heerlen ware was still being produced later. This means that we cannot use the late Heerlen fabric variant as a way to date the youngest pottery phase.

We encounter the same problem for the Urmitz ware (see above). This coarse ware from the Neuwieder Becken region was exported in the third century and the first half of the fourth century, especially to sites with a military connection. The Eifel ware in general dates from the later second century onwards but persisted well into the third century AD. The two-handled flagons/small amphorae Niederbieber 67 and 70 from the Mosel region and the Pompeian red ware plate Niederbieber 53 are well-known from assemblages dating to the third century (Forum Hadriani, Holzhausen, Niederbieber),

but they also occur in younger assemblages. In the third century, black-slipped beakers from the Argonne and Trier were consumed in Voerendaal. Unfortunately, they cannot be dated very precisely. The same goes for the white-firing (often smoked) dishes and beakers from the Meuse region. Most of these types can be dated from the end of the second century onwards but they persisted well into the third century. The beakers Vanvinckenroye 487 and 526-527 can be dated between c. AD 200 and 270. The beaker Vanvinckenroye 528, of which only one MNI was collected, can be dated to the second half of the third century. These vessel types can be regarded as the youngest Middle Roman representatives in Voerendaal. A good argument for the villa site in its heyday (period 3) ending around c. AD 270 is the low proportion of these 'late' fabrics. When we compare Middle Roman fabrics (Heerlen, Soller, NOOR1 ware, northern France, Meuse region) with the fabrics that occur from the late second century onwards (Heerlen/Eifel, Eifel/Lower Mosel region, Argonne), we see that the 'late' fabrics are conspicuously outnumbered. Indeed, this number can be attributed in particular to the first quarter of the third century. There seems to have been a certain degree of pottery consumption in the later third century, but only in small amounts.

An interesting parallel for this youngest occupation phase is the pottery found in a pit, possibly a ritual deposition, in the villa of Kerkrade-Winckelen.<sup>2168</sup> The pottery from this site has not been analysed, but a photograph of this assemblage depicts a bowl Niederbieber 103, two jugs 98, a flagon 62, a colour-coated beaker 30, a mortarium with vertical flange, a terra sigillata bowl Dragendorff 40, as well as a motto beaker from Trier with the text VIVAS. These black-slipped motto beakers only occurred after c. AD 255. Based on the short neck and the other vessels, this complex should not be dated after c. AD 275.<sup>2169</sup>

Two assemblages that can be dated to the third century come from ditch 302 and basin 319. Both must have been filled after the bath and the main building fell into ruin. Although both contained quite a large amount of pottery, this provides only a terminus post quem of c. AD 200, mainly based on the presence of black-slipped

<sup>2168</sup> Wiepking 1997, 18, fig. 10.

<sup>2169</sup> See also Van Kerckhove 2014b, 335 for a parallel, in Forum Hadriani, of a motto beaker dating to the third quarter of the third century AD.

beakers from Trier and the Argonne. However, wall sherds from Urmitz pottery are also present in both contexts; in principle, they could belong to the late third century, although this is not certain.<sup>2170</sup> Neither in these contexts nor in other contexts/find numbers at Ten Hove black-slipped motto beakers (from c. AD 255) were attested. The same holds true for coarse ware from the Eifel region belonging to the Alzey typology. Quite a few jars HEERL-J2c were collected from basin 319 (6 MNI) and ditch 302 (1 MNI). They can be interpreted as the transition type from Niederbieber 89 to Alzey 27, possibly dating around the middle of the third century AD.

### 23.5 Exchange networks

The pottery assemblage from Voerendaal is dominated by Heerlen ware, produced only 5 km away. The NOOR1 ware, probably produced in the Düren region – some 50 km to the southeast – makes up 25% of all coarse wares and 15% of the entire pottery assemblage (based on MNI). About 7% of the Voerendaal pottery assemblage consists of Soller ware, which also came from the Düren region. We have argued earlier that these three productions are very closely related to one another. They share the same vessel types and specific techniques. It is striking, however, that these three wares dominate the pottery assemblage in the region from Heerlen to western Germany (the Aldenhovener Platte). We see the same pattern in sites such as Heerlen-Thermenterrein, Trilandis, Kerkrade-Holzkuil and the villas on the Aldenhovener Platte.<sup>2171</sup> It is tempting to think that the small amount of pottery imported from distant regions is a sign for a lower social status of the inhabitants of these sites. We would like to argue that this is certainly not the case. It is clear that many rural sites in the region produced surplus in the form of grain. The inhabitants of these sites were dependent for their pottery on town or *vici* that produced ceramics. Lepot has demonstrated the same pattern for the rural countryside around Tongeren in the *civitas Tungrorum*. She sees that, here too, the villas in the surrounding regions bought their pottery in Tongeren, and therefore the majority of the

coarse ware consists of Tongeren coarse ware. She emphasizes the strong cohesion between Tongeren and its hinterland, and the administrative and economic role of the city as a trigger for the way in which pottery was consumed and traded in the region.<sup>2172</sup> At Voerendaal, Trilandis and Kerkrade-Holzkuil too, we see the same products being consumed as in the *vicus* of Heerlen.<sup>2173</sup> We notice a difference from the rural sites in the *civitas Tungrorum*, however. Whereas much of the fine wares and mortaria were imported into this region from outside, notwithstanding the existence of local/regional production of these wares, the region around Heerlen only consumed products from this *vicus* and the region stretching to the Aldenhovener Platte.

Things had changed by the end of the second century AD, and especially in the third century. Black-slipped wares were imported from Trier and the Argonne. Some of the fine wares were imported from the Meuse region. For the coarse wares, we see an increase in imports from the Eifel region. These changes in the pottery assemblage of Voerendaal reflect the situation in the *vicus* Coriovallum. Here too, we notice that the quality of the Heerlen production declined rapidly. The production as a whole persisted in the first quarter and perhaps even until the middle of the third century, although the latter is not at all certain. Whereas the inhabitants could rely on regional products in the period between c. AD 70 and 175/200, they were dependent on imports from other regions in the third century. The same pattern is also described by Martens for production and consumption in the *vicus* of Tienen.<sup>2174</sup> The increase in imports therefore relates more to the political situation than to a higher social status of the inhabitants at that time. This coherence in the Middle Roman pottery spectrum in the region around Heerlen applies not only to the pottery's provenance, but also to its function (see below).

### 23.6 Functions of the pottery

A final research theme for the pottery concerns its function, and therefore the status of the villa site of Voerendaal in comparison with other sites in the region. The function of pottery at

<sup>2170</sup> See also section 26.3.8-4.3.

<sup>2171</sup> Although fabric analysis has not been carried out for Kerkrade, Heerlen-Trilandis and the Aldenhovener Platte, we can deduce this from the photographs (including NOOR1 ware and colour-coated coarse wares from Heerlen, Jülich or Soller), and from the drawings (where the vessel types fit into the Heerlen typology, and that of Jülich, NOOR1 ware and Soller).

<sup>2172</sup> Lepot 2014, 167.

<sup>2173</sup> For Heerlen-Thermenterrein, we argued in the sections above that the local ware, as well as the NOOR1 ware and Soller ware, dominated the spectrum.

<sup>2174</sup> Martens 2012.

Voerendaal is compared with that of contemporary sites in the region that have been fully analysed.<sup>2175</sup> The villa of Kerkrade-Holzkuil has a total MNI of only 668 because of the high fragmentation of the pottery.<sup>2176</sup> The pottery from the rural non-villa site of Heerlen-Trilandis consists of 772 MNI.<sup>2177</sup> The pottery from the villa of Hoogeloon comprises 2828 MNI; it is also used as a comparison, despite its location in the *civitas Tungrorum* (in present day Noord-Brabant), as it is one of the few villa sites in the southern Netherlands that has been analysed in detail.<sup>2178</sup>

If we compare the pottery categories of these sites (Table 23.20), the proportion is quite similar at first glance. Kerkrade-Holzkuil has a higher percentage of Samian ware, but particularly of colour-coated ware, while

Voerendaal and Trilandis have a higher number of mortaria. Before interpreting these data, we will discuss the function of several vessel shapes and categories, after which we will compare the sites on the basis of their function.

### 23.6.1 Tableware

The tableware (or fine ware) consists of Samian ware, mica-dusted ware, terra rubra, terra nigra, colour-coated ware and black-slipped pottery. The smooth-walled dishes and beakers (from the Meuse region) can also be considered tableware. These pottery categories and shapes consist of beakers and dishes used for drinking and eating. They reflect a Roman-style consumption of food and drinks. The number of tablewares collected

**Table 23.20. Voerendaal-Ten Hove. Proportion of the pottery categories, based on MNI (%) for the villa of Voerendaal, the villa of Kerkrade-Holzkuil, the non-villa site Heerlen-Trilandis and the villa of Hoogeloon.**

Site	Voerendaal	Kerkrade	Heerlen	Hoogeloon
<b>MNI</b>	2176	668	772	2828
<b>Pottery category</b>	<b>MNI (%)</b>	<b>MNI (%)</b>	<b>MNI (%)</b>	<b>MNI (%)</b>
Thin-walled pottery	0.1	0.0	0.0	0.1
Samian ware	5.8	7.5	3.4	6.9
Terra rubra	0.6	0.0	0.0	1.9
Terra nigra	1.0	0.1	2.6	0.7
Mica-dusted pottery	0.1	0.0	0.0	0.1
Colour-coated	6.5	16.0	6.5	9.1
Black-slipped wares	1.0	0.6	0.4	0.6
Smooth-walled	5.1	5.0	8.2	9.9
Red-coated wares	0.1	0.0	0.0	0.0
Pompeian red ware	0.1	0.3	0.0	0.5
Regional amphorae	0.5	0.7	0.5	2.6
Coarse wares	55.9	54.0	56.5	48.0
Cork urns	0.3	0.3	0.2	0.5
Mortaria	17.9	10.3	15.5	10.9
Dolia	3.6	3.6	5.3	4.7
Amphorae	1.7	0.1	0.8	1.3
Varia	0.1	0.3	0.0	0.4
Salt containers	0.0	0.0	0.0	1.5
Indet.	0.0	0.0	0.4	0.3
<b>Total</b>	<b>100.4</b>	<b>98.8</b>	<b>100.3</b>	<b>100.0</b>

<sup>2175</sup> The villa of Maasbracht is not taken into account because only the cellar has been studied in detail. Moreover, its fill dates after c. AD 175, which is only a small portion of the total occupation period of Voerendaal. The MNI of the terra sigillata and amphorae has been calculated on basis of the rims.

<sup>2176</sup> Wiepking 2005, 177-219.

<sup>2177</sup> Van der Linden 2014, 149-201.

<sup>2178</sup> Van Kerckhove 2014a, 297-405.



at Ten Hove is high in terms of the MNI (with more only at Hoogeloon, nearly double the amount), but quite low in percentage terms (see below). Compared with Hoogeloon, the low numbers of smooth-walled dishes and beakers stand out. This could be partly the result of other trade networks – Hoogeloon being supplied with more pottery from Tienen and Tongeren – although a series of smooth-walled dishes is present at Holzkuil. Tableware that is notably scarce at Trilandis and Holzkuil are black-slipped beakers, well represented at both Ten Hove and Hoogeloon. This could have been due to the chronology and/or formation processes.

### 23.6.2 Kitchen ware

Kitchen ware, used for food preparation, consists of thin-walled pottery (the variant from Voerendaal), a major part of the coarse ware and a large proportion of the mortaria. The thin-walled pottery from Voerendaal, imitating beakers Hofheim 81A, was produced in a coarse ware, sometimes decorated with circles (the pot P1 in Heerlen ware) and often has traces of soot, which points to a function as a cooking jar. This is also the case for the Heerlen, Soller and NOOR1 coarse wares, and the Pompeian red plate Niederbieber 53.

A great deal of attention has been given to the study of the mortaria found at Voerendaal (Fig. 23.51). The function of mortaria is indeed very diverse, as has been pointed out for the mortaria of Hoogeloon. There are indications of a use as a mixing bowl, for creaming milk, or for pharmaceutical or cosmetic purposes.<sup>2179</sup> Many of the mortaria in Voerendaal have traces of soot (on 76 of 389 MNI), which is also attested for Heerlen-Trilandis, Heerlen-Thermenterrein and the *civitas Tungrorum*.<sup>2180</sup> A first possible scenario is that the herbs crushed in them with the added oil were poured into cooking vessels already on the fire, thereby bringing soot onto the mortaria in the process.<sup>2181</sup> A second option is a function as a light source. In Heerlen, many mortaria bear the marks of quite intense burning (both the inside and the outside). This would have been particularly helpful in the dark baths.<sup>2182</sup> Burning traces like these are absent in Voerendaal, however. Another clue to the specific function of

some of the mortaria is the presence of grinding grit on the inside. A problem is that only a part of the profile is usually preserved and that grit could be present at the bottom. This means that the presence of grit could not be established for a large proportion of the mortaria. Most mortaria, however, do contain grit. The grit can consist of very large particles as well as finer ones. Some fabrics have quite a rough feel of their own, which makes the addition of grit unnecessary. A small proportion of the smooth mortaria have no grit whatsoever, and a smaller diameter. Twelve of these mortaria were collected in Voerendaal. They all have a vertical flange. Most of them were produced in Heerlen; only three MNI were produced in Soller. Seven of these mortaria were collected in trench 95-96. Their diameter varies from 15 to 34 cm.

### 23.6.3 Transport and storage vessels

Transport vessels consist of reduced coarse ware from northern France and jars in Low Lands Ware 1, cork urns, dolia and regional amphorae. Their function as transport containers can be deduced from their shape, resin traces on the rim, and graffiti of capacity measures on their rim or shoulder. The larger vessels have also been used for storage. For most of these vessels, we can only guess what their content must have been.

The North-French jars M1 often have resin on their rim (as is the case with one example in Voerendaal), and sometimes there are still traces of soot visible. Other containers with resin on the rim are cork urns (*Halterner Kochtöpfe*). It has been discussed above that these jars, which were used in large quantities as cooking vessels in the Condroz regions, were transported to early military camps along the Rhine. Although the cork urns from Voerendaal do not have the typical Condroz fabric (in Voerendaal mainly with burnt-away chalk inclusions), most of them have the characteristic resin on the rim. We can conclude that both the jar M1 and the cork urns were used as cooking jars in their region of provenance, but that they were used as transport containers for pâté and terrines. The cork urn with 30 thrush breasts from Nijmegen (Kops Plateau) underlines this hypothesis.<sup>2183</sup>

The large vessels Holwerda BG 140-142 in reduced Low Lands Ware 1 and the reduced T2

<sup>2179</sup> Van Kerckhove 2014a, 366 with further references.

<sup>2180</sup> Van der Linden 2014, 172-173; Lepot 2014, 229.

<sup>2181</sup> Van Kerckhove 2020a, 44; Lepot 2014, 229.

<sup>2182</sup> Van Kerckhove 2020a, 44.

<sup>2183</sup> Lauwerier 1995, 7-12.



Fig. 23.51 Voerendaal-Ten Hove. Special features of mortaria. No. 1-5 scale 1:2, 6-8 scale 1:5, 9 scale 1:3. (source: D.S. Habermehl)  
1-2 no grit; 3 fine grit; 4 medium grit; 5 coarse grit; 6 soot both on in- and outside; 7 on outside; 8 outside of flange; 9 spout of a mortarium.

pottery often have graffiti to indicate capacity measures.<sup>2184</sup> Moreover, these vessels lack traces of soot, confirming their function for the transport of food. The exact contents are not known.

Dolia and regional amphorae were often produced in the same regions. Moreover, as mentioned in the discussion on the Heerlen dolia, both sometimes have bands on the belly, possibly imitating ropes that were used to prevent breakage during transport.<sup>2185</sup> They were

primarily used for the regional transport of foods and drinks. For regional amphorae, the transport of wine and beer is assumed (see below), while for dolia the transport of grain is assumed on the basis of parallels from southern Gaul.<sup>2186</sup>

However, a study of these shapes in relation to their provenance, chronology, traces of wear and use, and a chemical/botanical analysis of the contents remains would be an essential step forward. Indeed, the few graffiti on dolia that

<sup>2184</sup> Van Kerckhove 2014a, 341-345.

<sup>2185</sup> Section 23.3.1.

<sup>2186</sup> Lepot 2014, 227, with further reference to Garcia 1987.

have been studied point to fish sauce as the contents of these specific vessels. It should be noted that the fabric has not been studied and therefore we do not know the provenance of these dolia. We should also bear in mind that we have no barrels or sacks for the transport of wine and grain in the archaeological record. Remnants of wine barrels that were reused for the construction of water pits are sometimes found, but they only reflect a small proportion of the barrels circulating in Roman times.

We see the production of so-called Scheldt valley amphorae and dolia in Low Lands Ware 1. Although it is clear that the amphorae are widely distributed,<sup>2187</sup> we should bear in mind that the same could have been true for the dolia of this region.<sup>2188</sup> For the Scheldt valley amphorae, beer is named as the possible contents for transport.<sup>2189</sup> Unfortunately, the distribution of the Low Lands Ware 1 dolia cannot be deduced from publications, as their fabric is very rarely studied. Both Scheldt valley amphorae and dolia in Low Lands Ware 1 are missing in Voerendaal. This is consistent with other sites in the region. We see the same pattern for the regional amphorae and the dolia from the Meuse region. Both have bands on their belly and they occur at the same consumption sites, dating from the second century onwards. At Hoogeloon, as well as in the Betuwe region, both vessel shapes from the Belgian Meuse region are found in large quantities. Lepot points to the fact that the regional amphorae from the Meuse valley are often found in graves, together with drinking beakers, suggesting that they must have contained wine.<sup>2190</sup> At the villa of Voerendaal, dolia are present in relatively small numbers and regional amphorae in negligible quantities. Dolia and regional amphorae from the Rhineland are only present in small quantities at rural sites in the *civitates* of the Tungri and the Batavi. In the latter, dolia were popular in the first century, after which they were quickly replaced by dolia from the Meuse region. Regional amphorae, however, do not seem to have been popular at all. We can deduce this from the fact that they are seldom found at Dutch consumption sites, but they are not numerous in the Köln typology either. However, flagons and two-handled flagons from Köln with traces of soot are often

attested at Dutch consumption sites (the port of Forum Hadriani, Heerlen-Thermenterrein). Lepot also supports this hypothesis of flagons being used to transport wine, based on several ancient depictions.<sup>2191</sup>

In Heerlen too, regional amphorae were rarely produced. And in Voerendaal, they only make up a limited proportion of the spectrum. In fact, regional amphorae (in general and in all fabrics) are scarcely represented not only in Voerendaal, but in the whole region. This could mean that drinks were transported to the region in other containers, but certainly not from the Scheldt valley or the Meuse region. Flagons in Heerlen ware never have traces of resin (in neither Heerlen-Thermenterrein, nor Voerendaal). Dolia, on the other hand, were produced in large quantities in Heerlen.<sup>2192</sup> Dolia make up a relatively small proportion of the pottery spectrum in Voerendaal. Most of the dolia consist of Heerlen products, but imports from the Meuse region have also been found. The quantities of dolia are very similar for all sites. Lepot also notes a very low number of dolia for the villas in the *civitas Tungrorum*.<sup>2193</sup> In Voerendaal, several dolia have been found that are more or less complete. One complete dolium (68-1-5/6787) from the Meuse valley was found in trench 68, against the inside of the north wall of building 403.

Like mortaria and flagons, honey pots were introduced by the legions who were stationed in camps (such as Oberaden and Haltern) during the reign of Augustus.<sup>2194</sup> They can be interpreted as transport containers for the transport of delicacies, such as honey.<sup>2195</sup> They were produced in Köln, Tongeren, the Meuse region and Heerlen. In fact, the many honey pots from Voerendaal were all produced in Heerlen. The only site where we have similar quantities of honey pots is the villa of Hoogeloon.

#### 23.6.4 The pottery of Voerendaal in comparison with some other sites

Table 23.21 presents an overview of all categories/shapes/fabrics for each pottery function. We classified the pottery following the logic explained in the previous section. If a shape appeared to be unknown, it was not included in

<sup>2187</sup> Many of the Scheldt valley amphorae may have been produced in the Antwerp region or in the north of France, which could only be established on the basis of proper fabric analyses.

<sup>2188</sup> Van Kerckhove 2011b, 157 (Eersel-Kerkebogten), but also in the Betuwe region.

<sup>2189</sup> Van der Werff *et al.* 1997.

<sup>2190</sup> Lepot 2014, 225-226.

<sup>2191</sup> Lepot 2014, 226.

<sup>2192</sup> Based on our findings from the kilns and Heerlen-Thermenterrein.

<sup>2193</sup> Lepot 2014, 227.

<sup>2194</sup> Zandstra & Polak 2012, 148.

<sup>2195</sup> Capacity measures are regularly incised on the shoulder; the inscription *urceus et mel p(ondo) XXVII* gave the honey pot its name (CIL 13.10008, 44).

**Table 23.21 Voerendaal-Ten Hove. Overview of the pottery functions for each site, indicating which categories, fabrics or shapes are used.**

Site/Category	Voerendaal	Heerlen	Kerkrade	Hoogeloon
<i>Table ware</i>				
Thin-walled	3	0	0	1
Terra nigra	22	20	6	19
Terra rubra	13	0	0	51
Samian ware	126	26	50	183
Mica-dusted ware	1	0	0	3
Colour-coated	141	50	108	240
Black-slipped	21	3	4	16
Smooth-walled plates	12	2	20	119
Smooth-walled beaker	4	0	0	43
Varia	0	0	0	3
<b>Subtotal</b>	<b>343</b>	<b>101</b>	<b>188</b>	<b>678</b>
<i>Pouring</i>				
flagon	47	22	14	61
two-handled flagon	17	7	0	13
<b>Subtotal</b>	<b>64</b>	<b>29</b>	<b>14</b>	<b>74</b>
<i>Kitchen ware</i>				
Coarse ware	1210	436	361	992
Pompeian red ware	1	0	2	13
Coarse thin-walled	1	0	0	0
Mortaria	389	120	70	288
<b>Subtotal</b>	<b>1601</b>	<b>556</b>	<b>433</b>	<b>1293</b>
<i>Transport/storage</i>				
Regional amphorae	10	4	5	52
Dolia	79	41	24	124
Amphorae	36	6	1	35
Briquetage	0	0	0	2
Cork urns	6	0	2	12
Low Lands Ware 1	5	0	0	147
North France	2	0	0	88
T2	0	0	0	38
Honey pot	30	0	0	5
<b>Subtotal</b>	<b>168</b>	<b>51</b>	<b>32</b>	<b>503</b>
<b>Total</b>	<b>2176</b>	<b>737</b>	<b>667</b>	<b>2548</b>

the table. This might cause slight differences in the numbers of sherds compared with the previous table. We labelled the coarse ware from Heerlen, Jülich/Soller, NOOR<sub>1</sub> ware as kitchen ware, whereas we designated T2 pottery, Low Lands Ware 1 and northern French pottery as

transport vessels. It should be noted that fabric analysis was not part of the pottery studies of Trilandis and Holzkuil. Low Lands Ware 1 is reported in the Holzkuil publication; 35 sherds of Scheldt valley amphorae are mentioned (but their MNI is not quantified). The reduced

Low Lands Ware 1 seems to be absent in both Trilandis and Holzkuil. The T2 and northern French pottery is not mentioned, but we can assume that neither were widely used at these sites (by analogy with Voerendaal).

Table 23.22 shows the proportions (in %, based on MNI) of the pottery functions at the different sites. The villa sites of Kerkrade and Hoogeloon have a high amount of tableware, whereas the numbers are much lower for Voerendaal and Trilandis. For the kitchen wares too, Voerendaal and Trilandis are very comparable. The numbers of transport and storage vessels are very similar in the Heerlen region (Voerendaal, Trilandis, Kerkrade), but much higher in Hoogeloon. The number of pouring vessels (flagons) is very limited at all sites.

Apart from the amount of tableware, all three sites in the Heerlen region share the high quantity of kitchen ware and a limited number of transport and storage vessels. The provenance study also showed us that this region (stretching from Heerlen to the western part of Germany, at the Aldenhovener Platte) has a very uniform pottery spectrum, consisting of NOOR1 ware and Heerlen, Jülich and/or Soller ware. It is highly possible that the low number of transport and storage vessels is related to the packaging material used for transport in this region. We can think here of sacks to transport grain, or barrels to transport beer or wine. We should bear in mind that the regional amphorae (which are often assumed to have contained wine or beer) were scarcely produced in the region. The low number of transport vessels also confirms that this region was very self-reliant. Indeed, the number of small, imported transport containers from other regions (northern French jars, Low Lands Ware 1, T2 pottery, but also regional amphorae) is very limited.

It is tempting to associate the rather low number of tablewares at Voerendaal (compared to the villas of Kerkrade and Hoogeloon) with the villa's low status. We do not believe that this is the case, however. On the contrary, the pottery shows the villa to be a highly functional production unit, focusing on its core business: the production of grain. The dimensions of the main building, the outbuildings and the *horreum* suggest that many people must have worked at the villa site. This also implies that there were many mouths to feed. The kitchen ware reflects this.

### 23.7 Conclusions

The first signs of the consumption of wheel-turned pottery at the villa site of Voerendaal-Ten Hove can be dated to around c. AD 50. They mainly consist of Heerlen pottery imitating vessel types that are current in the Hofheim I horizon. The true beginnings occurred from c. AD 70 onwards and continued until the first quarter of the third century. This is consistent with the peak of the Heerlen production. Not surprisingly, most pottery was made in this small town. However, about a quarter of the coarse ware from Voerendaal consists of NOOR1 ware. This fabric was probably produced in the region of Düren (Germany), the same region in which the Soller ware was produced. This fabric makes up a consistent proportion of the pottery assemblage. After the second quarter of the third century, the number of imports increased in Voerendaal. More and more coarse wares were imported from the Eifel region, whereas the tablewares were imported from Trier, the Argonne and the Meuse region. The amount of pottery from this period seems to be lower than in the previous period. The same pattern can be

**Table 23.22. Voerendaal-Ten Hove. Comparison of the functional groups (MNI %).**

Site/Category	Voerendaal-Ten Hove	Heerlen-Trilandis	Kerkrade-Holzkuil	Hoogeloon-Kerkackers
Table ware	16	14	28	27
Pouring	3	4	2	3
Kitchen	74	75	65	51
Transport/storage	8	7	5	20

noticed for the region from Heerlen to the Aldenhovener Platte, in the west of Germany. The production sites in this region delivered very similar products and techniques, and the consumption patterns there are very comparable: a low number of imports and a large amount of NOOR1 ware, Jülich/Soller/Heerlen ware.

As for the pottery function, the above-mentioned region also shows comparable patterns. Transport and storage vessels are poorly represented, while (regionally produced) kitchen ware is very well represented. Therefore, it could be tempting to assume that this was a poorly Romanized area. However, we should bear in mind that the production sites (and mainly Heerlen) reveal the production of vessel types and shapes that reflect Roman eating and drinking habits. Moreover, with many parallels in Hofheim, these habits were customary at a very early stage (from c. AD 50). The same pottery spectrum was also used at the rural sites in the region, not only at villas but also at a post-built

site like Heerlen-Trilandis. The high percentages of mortaria in this region are very striking in this regard. Mortaria are considered to be newly introduced forms that again point to a Roman way of preparing food. Recent research suggests that mortaria were used for many other purposes (see above). In Voerendaal, however, the many traces of soot on the flange suggests that their contents were poured into another (cooking) vessel, standing over the fire. Mortaria are indeed one of the most-produced shapes in Heerlen, and they were consumed in high quantities in its hinterland. The low number of imported small transport vessels (from northern France, Tongeren, in Low Lands Ware 1 and T2 fabric), and the very limited number of regional amphorae and imported dolia confirm that this region was very self-reliant. The pottery assemblage of Voerendaal reflects the function of the villa site as a large enterprise where a large number of people worked and where there were many mouths to feed.



# 24 The amphorae

Joost van den Berg

## 24.1 Introduction

Roman amphorae are the big pottery containers of the ancient world. They were used primarily to transport liquid foodstuffs, such as olive oil, wine, fish sauce or locally produced products. By analysing fabrics and forms, we can gain an insight into the chronology of a site, its role in the long- and short-distance trade network and the socio-economic and cultural character of the inhabitants of a site. This contribution deals with the amphora fragments that were found at the site of the Roman villa of Voerendaal during different excavation campaigns.

To gain an understanding of this type of pottery at Voerendaal we look at two things: fabric and typology. The study of the pottery fabric will shed light on the origin of amphorae. In some cases this can be very specific, such as a city, but more often only a global indication of origin can be given, such as a region or province. This knowledge in turn provides additional information about the chronology and contents of amphorae. The second key concept is typology. This is study of the form on the basis of diagnostic characteristics, such as the rim, handles, base and sometimes even the shape of the body. Typology tells us about subjects such as chronology, contents and origin. Different international reference books are used for the classification of amphorae typologies, depending on Dutch and international conventions. For the Mediterranean amphorae we will often refer to the first genuine amphora typology made by Dressel in 1899. For some forms of amphorae, better typologies are available, for example Laubenheimer's Gauloise typology, Beltrán's typology of Spanish amphorae or site-specific typologies for Lyonese amphorae, etc.<sup>2196</sup> Regional amphorae are classified using, for example, Hanut's publication on the Meuse valley, Van der Werff *et al.* on Scheldt valley amphorae, Van Kerckhove and Boreel on the production at Heerlen,<sup>2197</sup> as well as more generic typologies such as those from Oelmann's classification of Niederbieber or Haalebos' classification of Nijmegen-Hatert.<sup>2198</sup>

The sherds are quantified in order to analyse fabrics and typology. The primary method of quantification involves counting the fragments,

subdividing them into rims, handles, body and base fragments, and noting the weight.

In addition, information is collected about the 'Estimated Vessel Equivalent' (EVE), based on the remaining rim percentages.<sup>2199</sup> An EVE gives us the absolute minimum number of examples for each type. A count is also made of the Minimum (MinNI) and Maximum (MaxNI) Number of Individuals associated with each find number. The number of examples can be identified by fitting them together or examining the fabric. Unfortunately, because fitting fragments can be problematic with vessels such as big amphorae, this does not suffice as the only method of counting. Although less certain, a count by fabric is ultimately more useful. Therefore, we apply a minimum number (MinNI) for an inclusive count that focuses on similarities (i.e. lumping) and a maximum number (MaxNI) for a sceptical count that focuses on differences (i.e. splitting).<sup>2200</sup>

The study of the amphorae from Voerendaal concerns all the amphora fragments from the excavations of 1985-1987. It also includes the fragments collected in 1892/93, 1929 and 1947-1950, held at the Museum of Antiquities at Leiden, and a handful of fragments from the 2005 investigation near the Steinweg. In total, 1,734 fragments were studied, with a total weight of 164.5 kg. That is about 8% of the pottery from this site in terms of the number of sherds and about 22% of the weight. Each production region and associated typologies will be discussed below. There is a special focus on the ten amphorae stamps that were collected, nine of which go with the Baetican Dressel 20 olive oil amphorae and one with a Gaulish wine amphora. The stamps are also included in the catalogue of stamps, as this is the most efficient method of condensing information and references in a structured and concise fashion.

Before addressing the material from Voerendaal, it is good to establish a framework for amphorae found at villas. What can we expect? What does the spectrum of amphora fabrics and types imported by the inhabitants of Roman villas in the northern provinces look like? And in particular, how does the villa of Voerendaal relate to this? Some answers to this question are offered by Ehlig's comparative study of amphorae found around Mainz,

<sup>2196</sup> Dressel 1899; Laubenheimer 1985; Beltrán 1970; Dangréaux *et al.* 1992; Desbat 2003.

<sup>2197</sup> Hanut 2001; Van der Werff *et al.* 1997; Van Kerckhove & Boreel 2014, respectively. The regional amphorae are also discussed in chapter 23, but are discussed here again to gain a complete picture of the full range of amphorae.

<sup>2198</sup> Oelmann 1914; Haalebos 1990.

<sup>2199</sup> See Orton *et al.* 1993, 170-173.

<sup>2200</sup> See Orton *et al.* 1993, 172.



Table 24.1. Voerendaal-Ten Hove. Summary of the amphorae according to origin and type.

Origin/fabric	Type	N_r	N_b	N_b/s	N_h	N	MNI	MaxNI	EVE	Wt (g)
Baetica (Guadalquivir)	Dressel 20	19	995	7	26	1044	249	278	763	139165
	Dressel 20/23	-	1	-	-	1	1	1	-	168
	Dressel 23	-	-	1	-	1	1	1	-	360
Baetica (S.-S. coast)	-	-	7	-	2	9	4	5	-	615
	Beltràn II	-	3	-	-	3	1	3	-	832
	Beltràn II?	-	1	-	-	1	1	1	-	65
Baetica (Cadíz)	-	-	2	-	-	2	2	2	-	96
	Dressel 7-11	-	-	-	3	3	1	1	-	139
	Beltràn II	-	3	-	-	3	1	1	-	580
	Beltràn II?	-	2	-	-	2	2	2	-	337
Baetica (Marismas)	-	-	2	-	-	2	2	2	-	260
	Beltràn IIA2	1	1	-	-	2	1	1	10	123
	Beltràn II?	-	3	-	-	3	1	1	-	210
Gallia Narbonensis	-	-	40	-	-	41	21	23	-	662
	Gauloise 4	17	104	-	9	130	16	17	404	6391
	Gauloise amph.	-	308	3	19	327	94	120	-	10026
	Dressel 9 sim.	1	0	-	-	1	1	1	12	48
Gallia Narb. (Marseille)	-	-	7	-	-	7	3	3	-	173
	Gauloise 4	2	-	-	-	2	2	2	8	46
	Gauloise amph.	-	2	-	-	2	2	2	-	37
Gallia Lugd. (Lyon)	-	-	9	-	1	9	5	5	-	160
	Lyon 2?	-	7	-	-	7	2	3	-	244
	Lyon 3/4	-	6	-	-	6	3	4	-	240
	Lyon 3	-	1	-	-	1	1	1	-	50

which includes four villas, and by Nicolas' study on the rural sites of southern Belgium.

Other than that, there are a number of excavation reports that offer some valuable insights, such as the well-published villa at Hoogeloo-Kerkackers and the villas of Kerkrade-Holzkuil and Maasbracht.

If we look at these publications, one issue becomes very clear: villa excavations generally do not yield many amphora fragments. A typical example is the villa of Kerkrade-Holzkuil, where only 1.1% of the pottery recovered are from amphorae (including 'mid-sized ones), which amounts to 144 fragments.<sup>2201</sup> An equally small percentage of amphorae was collected at the villa at Maasbracht.<sup>2202</sup> This pattern of relatively few amphora fragments is not unique to the Netherlands. Ehmig's villa studies around Mainz and those by Nicolas in Belgium mention numbers ranging from fewer than a hundred to just a few hundred fragments per site.<sup>2203</sup> In contrast, the villa at Hoogeloo-Kerkackers provided us with a sizable sample of amphora sherds, some 2,347 fragments of amphorae and

1,193 of 'mid-sized amphorae', which is about 12% of the pottery studied.<sup>2204</sup>

The sites and publications above do not provide samples large enough for an exhaustive quantitative comparison. Amphorae are big vessels and a single example can break into hundreds of fragments. We would therefore need a large sample to ensure that the data are representative. We can, however, attempt to distil some general trends. What seems to be constant at each site is the presence of three sorts of amphorae: the Dressel 20 olive oil amphorae from *Baetica*, the Gauloise 4 wine amphorae from *Gallia Narbonensis* and the regionally produced amphorae. The Dressel 20 is the most common type at some villas, such as Boussu-en-Fagne-Tchafour, and at others it is the Gauloise 4, such as Hoogeloo-Kerkackers and Hummetroth-Haselburg.<sup>2205</sup> At most villas, however, the most notable group are the regional amphorae, which are represented in significant numbers in most cases. At villas such as Niedereschbach-Taunengraben, Philippeville-Neuville and Vironval-Bruyères they are even the dominant amphorae.<sup>2206</sup>

<sup>2201</sup> Wieping 2005, 186-188, tab. 6.8.

<sup>2202</sup> Van den Brink 2017, 46.

<sup>2203</sup> Ehmig 2002; Nicolas 2011.

<sup>2204</sup> Van Kerckhove, 381-389, tab. 15.1, 15.28, 15.29.

<sup>2205</sup> Ehmig 2007, 42.

<sup>2206</sup> Ehmig *loc.cit.*; Nicolas 2011, 68, 75.

Origin/fabric	Type	N_r	N_b	N_b/s	N_h	N	MNI	MaxNI	EVE	Wt (g)
Eastern Aegean	Dressel 2-5?	-	1	-	-	1	1	1	-	4
	Cam. 184?	-	1	-	-	1	1	1	-	17
Italia (Calabria)	Keay 52?	-	5	-	-	5	4	4	-	107
Cilicia	LRA1	-	2	-	2	4	3	3	-	255
Regional	-	-	4	-	-	4	3	3	-	47
Reg. (Heerlen)	HEERL-A1	5	49	-	2	56	6	6	79	1262
Reg. (Tongeren)	Mosan	-	1	-	1	2	2	2	-	64
Reg. (Meuse-valley)	-	-	4	-	-	4	3	4	-	89
	Mosan	-	13	-	1	14	4	12	-	501
	Mosan 1	3	1	-	-	4	4	4	130	189
	Mosan 1?	-	-	1	-	1	1	1	-	87
	Mosan 2?	-	-	-	2	2	2	2	-	174
	Mosan 3	1	-	-	-	1	1	1	7	19
	Mosan 3?	-	7	-	4	11	4	4	-	258
Reg. (Meuse, N.Gaul)	Mosan	-	1	-	-	1	1	1	-	30
Reg. (Northern Gaul)	Cam. 165	2	-	-	-	2	1	1	-	8
	Niederb. 74/75	-	1	-	1	2	1	1	-	149
Reg. (Rhineland)	-	-	6	-	-	6	5	5	-	94
Reg. (Soller)	Soller-amphora	1	2	-	-	2	1	1	38	31
Reg. (Lower-Moselle)	Verm. 84A	1	-	-	-	1	1	1	21	123
Reg. (Scheldt-valley)	-	-	1	-	-	1	1	1	-	11
<b>Total</b>		<b>53</b>	<b>1603</b>	<b>12</b>	<b>73</b>	<b>1734</b>	<b>467</b>	<b>539</b>	<b>1472</b>	<b>164546</b>

(N\_r, b, s/b, h = rim, body, spike/base, handle fragments; N = number of fragments; MaxNI; maximum number of individuals).

Other types of amphorae generally make up only a small percentage. At some villas, such as Bad-Kreuznach, Niederurselm, Boussu-en-Fagne-Tchafour and Vironval-Bruyères, Kerkrade-Holzkuil and Hoogeloo-Kerkackers, fragments have been found of Spanish fish-sauce amphorae.<sup>2207</sup> Amphorae with wine from Italy, Greece or elsewhere in the Mediterranean other than Gaul are encountered only rarely. And where they do occur, it is at sites that either have a particularly early starting date for a villa or those continuing into late antiquity. It is also undeniable that a very opulent villa, like the one at Bad Kreuznach, shows a particularly diverse amphora spectrum.<sup>2208</sup>

## 24.2 The amphorae

In all, 1,734 fragments with a total weight of 164.5 kg were studied for this contribution (Table 24.1). This section will discuss a number of different sorts of amphorae, roughly subdivided on the basis of origin and context (Fig. 24.1).

First to be addressed is the largest group, the Baetican olive oil amphorae, and second the fish-sauce amphorae from the same Roman province. Next, the Gaulish fish-sauce amphorae will be addressed, followed by a review of the second largest group: the various Gaulish wine amphorae and a few examples from Greece. After that, we will look at the regional amphorae. Lastly, a somewhat remarkable group of Late Roman amphorae will be discussed. Examples of most of the main types found at Ten Hove are shown in Figure 24.1; a map with some of the production places and regions (river valleys) is provided in Figure 24.2.

### 24.2.1 Olive oil amphorae from Baetica

#### *General. Types*

The most common Mediterranean amphora on sites in the Netherlands is the Dressel 20 (Fig. 24.1). This is an olive oil amphora from the southern Spanish Guadalquivir valley in the Roman province of *Baetica* (Fig. 24.2). Olive oil was produced there on an industrial scale and

<sup>2207</sup> Ehmig *loc.cit.* (Bad Kreuznach; Niederselm); Nicolas 2011, 58 (Boussu-en-Fagne); 68, 75 (Vironval); Wiepking *loc.cit.* (Kerkrade); Van Kerckhove *loc.cit.* (Hoogeloo).

<sup>2208</sup> Ehmig 2007, 42.

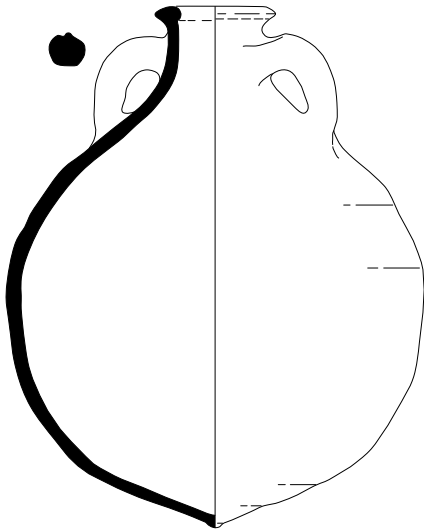
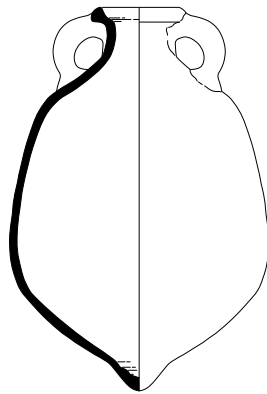
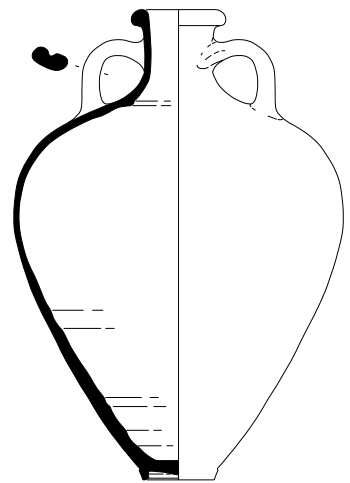
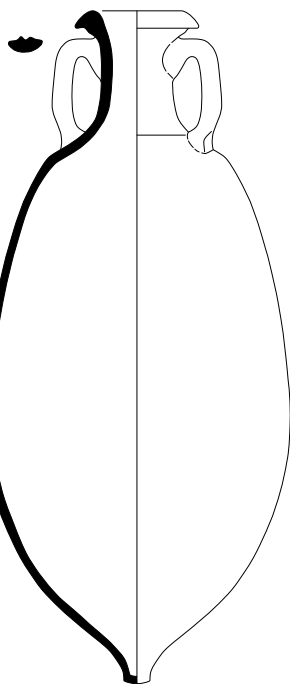
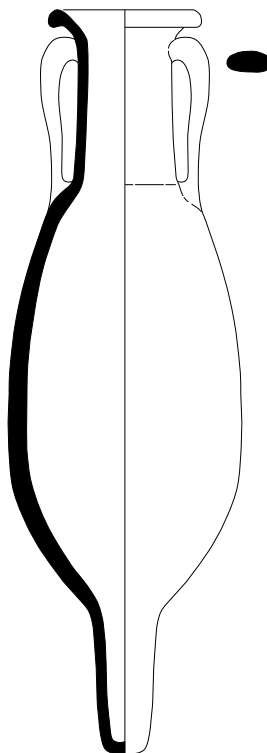
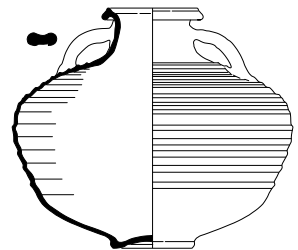
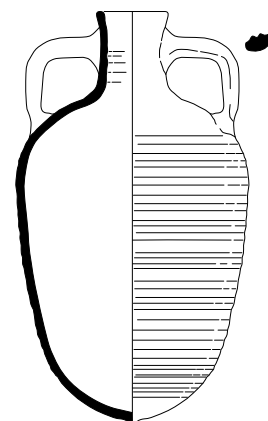
**DRESSEL 20****DRESSEL 23****GAULOISE 4****DRESSEL gsim****BELTRÁN IIA****MEUSE-VALLEY AMPHORA****LATE ROMAN AMPHORA 1**

Fig. 24.1 Examples of the major amphora types found at Voerendaal-Ten Hove. Scale 1:10. (source: modified after Martin-Kilcher 1987, pl. 45; Tyers 1999, fig. 52; 57; Hiddink 2005d, fig. 44; García Vargas et al. 2016, fig. 2; Haalebos 1990, fig. 72, 4; <https://archaeologydataservice.ac.uk>)



Fig. 24.2 The most important areas (river valleys) and places where amphorae found at Voerendaal were produced.

transported en masse to virtually every part of the Roman empire. Olive oil was hugely important to the Romans and occupied a significant place in the Roman world. It provided the Romans in the north with valuable calories and nutrients. This advantage should not be underestimated in an ancient world where people often had to contend with hunger and famine. Olive oil was also part of the Mediterranean identity and it provided the ‘Romans’ in the north with some comforts and a lifestyle that was an integral part of many cultures around the Mediterranean basin. Alternatively, olive oil was used in Roman bathing and sporting practices and rituals.<sup>2209</sup> Furthermore, oil was a basis for many non-food products, such as perfumes.<sup>2210</sup> In other words, olive oil was an intrinsic part of Roman life.

The type of olive oil amphora produced in *Baetica* during the Principate was the Dressel 20.<sup>2211</sup> Throughout the first, second and third centuries the Dressel 20 slowly developed from a genuine globular amphora with a round or sickle-shaped rim to one with a bag-shaped body and triangular rim. Although this process was slow, and not the same for each *figlina* or workshop, it does provide a means to roughly date individual examples. That being said, amphorae were practical and functional objects, and thus less affected by developments in fashion that make other types of pottery easily datable. After the crisis of the third century, olive oil production in *Baetica* declined and a new version of amphora appeared, the Dressel 23 (Fig. 24.1). This smaller amphora is representative of the latter third to the sixth century. They are,

<sup>2209</sup> See for example M. Aur., *Med.* 8.24.

<sup>2210</sup> See for example Petron., *Sat.* 21.

<sup>2211</sup> Two related forms are the Oberaden 83 and Haltern 71. They are representative of the Augustan and Tiberian period and were not encountered at Voerendaal.

however, comparatively rare in later Roman contexts on the northern frontier.

The excavation at Voerendaal yielded 1,044 fragments, weighing 139.2 kg, of Dressel 20 olive oil amphorae from southern Spain (Fig. 24.3-5). This includes 19 rim fragments from 18 separate amphorae. In addition, nine stamps were collected, as well as several graffiti and possibly an illegible *titulus pictus* (painted inscription).<sup>2212</sup> The earliest Dressel 20 rim is find number 409-6/68-4-18. It consists of a rounded rim, with a concave inner side, with a clear groove. The example conforms to Berni's *Forma II* (Nero-Vespasianus) or Martin-Kilcher's *Profilgruppe C* (AD 50-70),<sup>2213</sup> placing its production during the reign of Nero. This example seems to be an exception, however, as the rest of the Dressel 20 amphorae date to the second or third century AD. This includes 2 examples from the Trajanic-Hadrianic period, 4 rims from the Antonine period and 5 rims, including the best-preserved examples, that date to the third century.<sup>2214</sup>

One of the youngest Dressel 20 fragments on this site carries a stamp that reads FLFBCOLO (cat. 5; see below).<sup>2215</sup> It has a round, triangular and slightly undercut rim, a straight inner side without a distinct groove, large handles that are attached to the rim and loop around the body, and a body type that is distinctly pear-shaped. These are all characteristics that go with a well-established version of the third-century Dressel 20 of the second quarter of that century. Another comparatively late example comes from the collection of the RMO (1932-11.12/13037). The rim of this example was missing, but the handles and neck remain. Here, we also see the short handles that are partly attached to the rim and an indication of a fairly bag-shaped body. This latter feature is somewhat masked by the fact that it is a comparatively large amphora, making it look more pear-shaped than the FLFBCOLO example. It is in particular the raised shoulder, at the attachment of the handle, that makes it look like an intrinsically late model.

#### Stamps

Dressel 20 amphorae were occasionally stamped, as in the instance just mentioned. The potter, working at the *figinae*, used an implement, a *signaculum*, to put the workshop's mark

somewhere on the amphorae. Stamps are usually found on the handle, although rarely on the rim or body as well. A stamp represents the amphora manufacturer, but may also relate to the oil's producer, if that producer made their own amphorae. Stamps do not represent merchants or owners, as those names were added later in the form of *tituli picti* (painted inscriptions).

The study of stamps can provide additional dating information, as well as insights into the consumption site and its relationship to the wider region and its connection to a long-distance trade and/or transport network. The study of these stamps also provides data on the economy of Roman *Baetica* and its relationship to a long-distance trade and/or transport network. It is also important to consider stamps as an artistic expression, designed to convey the identity of a particular *figlina*, or rather of its owner, thus giving us an insight into the social and cultural lives of Roman entrepreneurs in *Baetica*.

Nine of the ten stamps found at Voerendaal go with Baetican Dressel 20 olive oil amphorae (Fig. 24.11). Of these, four are present in the material from the ROB excavations and the other five are in the RMO collection.

The earliest stamp found at Voerendaal (Section 24.5, cat. 9) was also the hardest to decipher. In this case the potter pressed the *signaculum* too deeply into the clay, presumably because it was not dry enough. That left almost no impression of the letter, with just remnants showing on the sides. The stamp reads PASSERAR and most likely has to be read as *Passeraria*. This producer is known from two production sites: Casa del Guardia o Llano and, some 700 m to the west of that site, Umbría de Moratalla. It is assumed that both sites were part of one estate, with the name *Passeraria*.<sup>2216</sup> A stamp from this producer is known from the Flavian *canabae* at Nijmegen, although it is more likely that the one from Voerendaal dates to the early second century. In north-western Europe, amphorae from this producer were found on the *limes* (Xanten, Nijmegen, Rottweil) and several sites in England and Wales (Caerhûn, Chester, London and Winchester).<sup>2217</sup>

The stamps apco (Section 24.5, cat. 6) and aps (cat. 7) go with workshops that belong to the

<sup>2212</sup> On the graffiti and *titulus pictus*, see also section 29.2.

<sup>2213</sup> Berni 2008, 60; Martin-Kilcher 1987, 54, appendix 1.

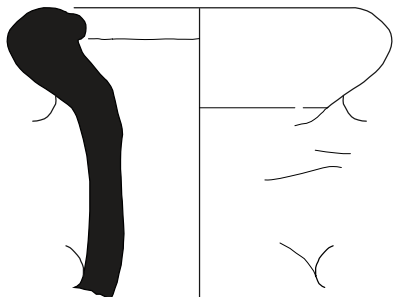
<sup>2214</sup> Martin-Kilcher 1987, 54, appendix 1, *Profilgruppe E*, F and G; Berni 2008, 61, *Forma III*, IV and V.

<sup>2215</sup> The 'cat.' numbers refer to the catalogue of stamps at the end of this contribution.

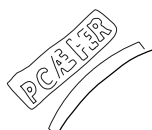
<sup>2216</sup> Berni 2008, 179, 465.

<sup>2217</sup> Remesal 1986, 185, no. 209; 2018, 349, no. 122; 1997, 147, no. 260; Berni 2017, 252, no. 144; Callender 1965, 201, no. 1287; Étienne & Mayet 2004, 223, no. 935.

## Dressel 20, Neronian/early-Flavian

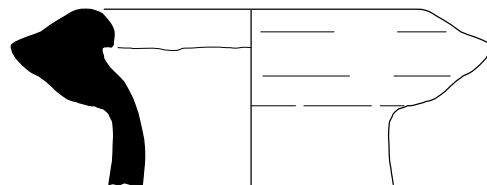


409-6/68-4-18

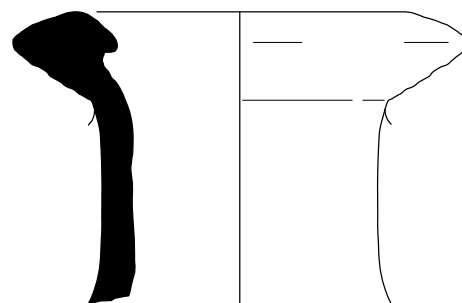


1953-2.1/13035

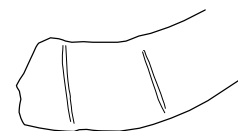
## Dressel 20, Flavian-Traianic



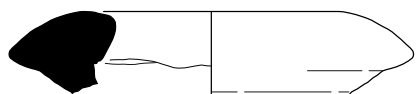
312-1/106-2-7



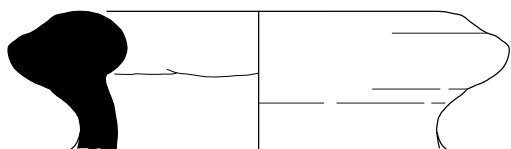
13-1-18/1323



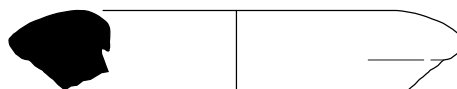
## Dressel 20, Antonine



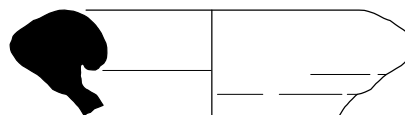
95-1-18/10786



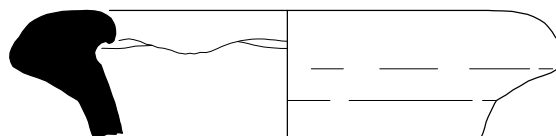
27-3-16/12988



107-1-16/9410



719-3/20-3-32



13-1-17/1315

Fig. 24.3 Voerendaal-Ten Hove. Fragments of olive oil amphorae Dressel 20. Scale 1:3. (source: J. van den Berg & H.A. Hiddink)

## Dressel 20, 3rd century

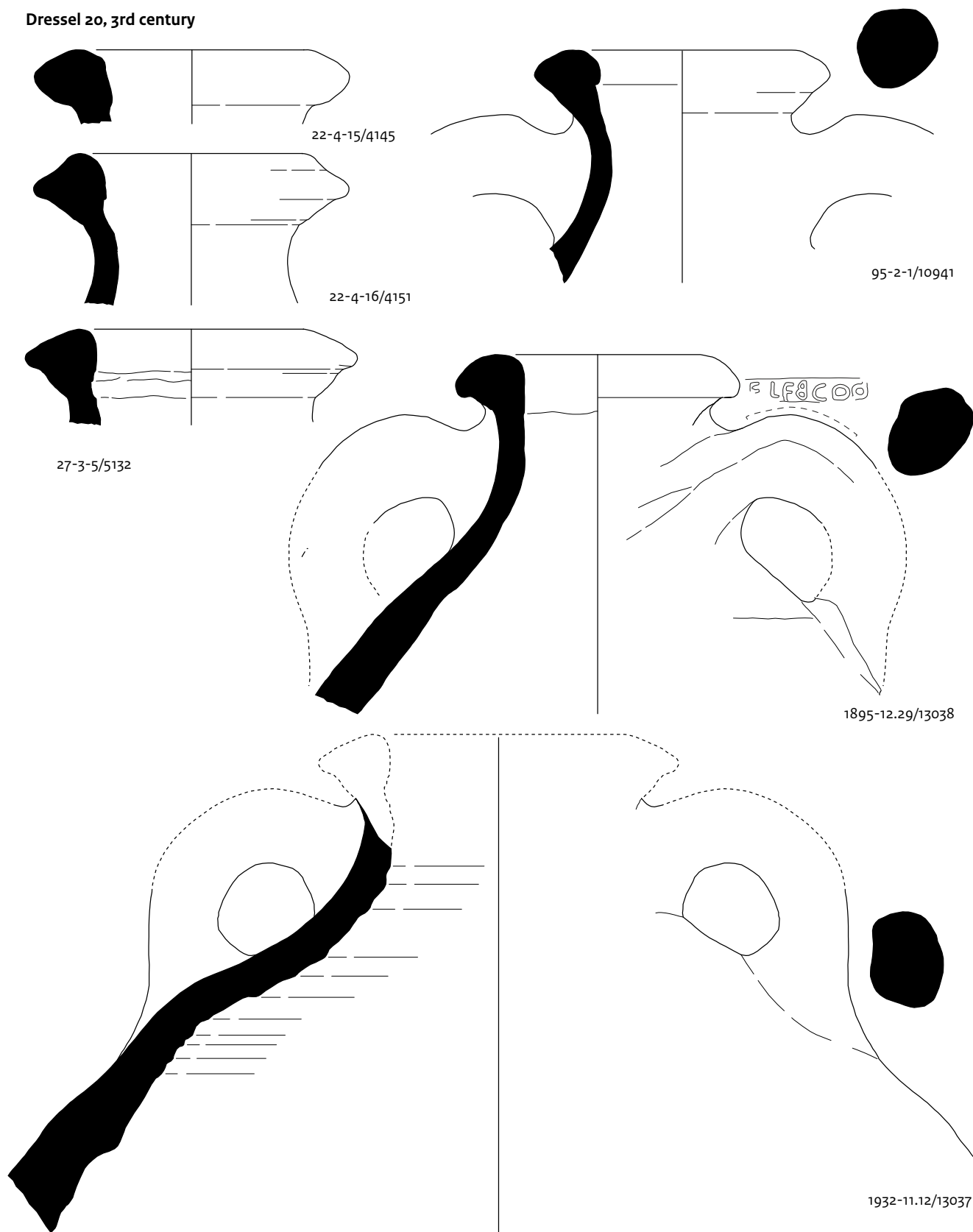


Fig. 24.4 Voerendaal-Ten Hove. Fragments of olive oil amphorae Dressel 20, cont. Scale 1:3. (source: J. van den Berg & H.A. Hiddink)

## Dressel 20

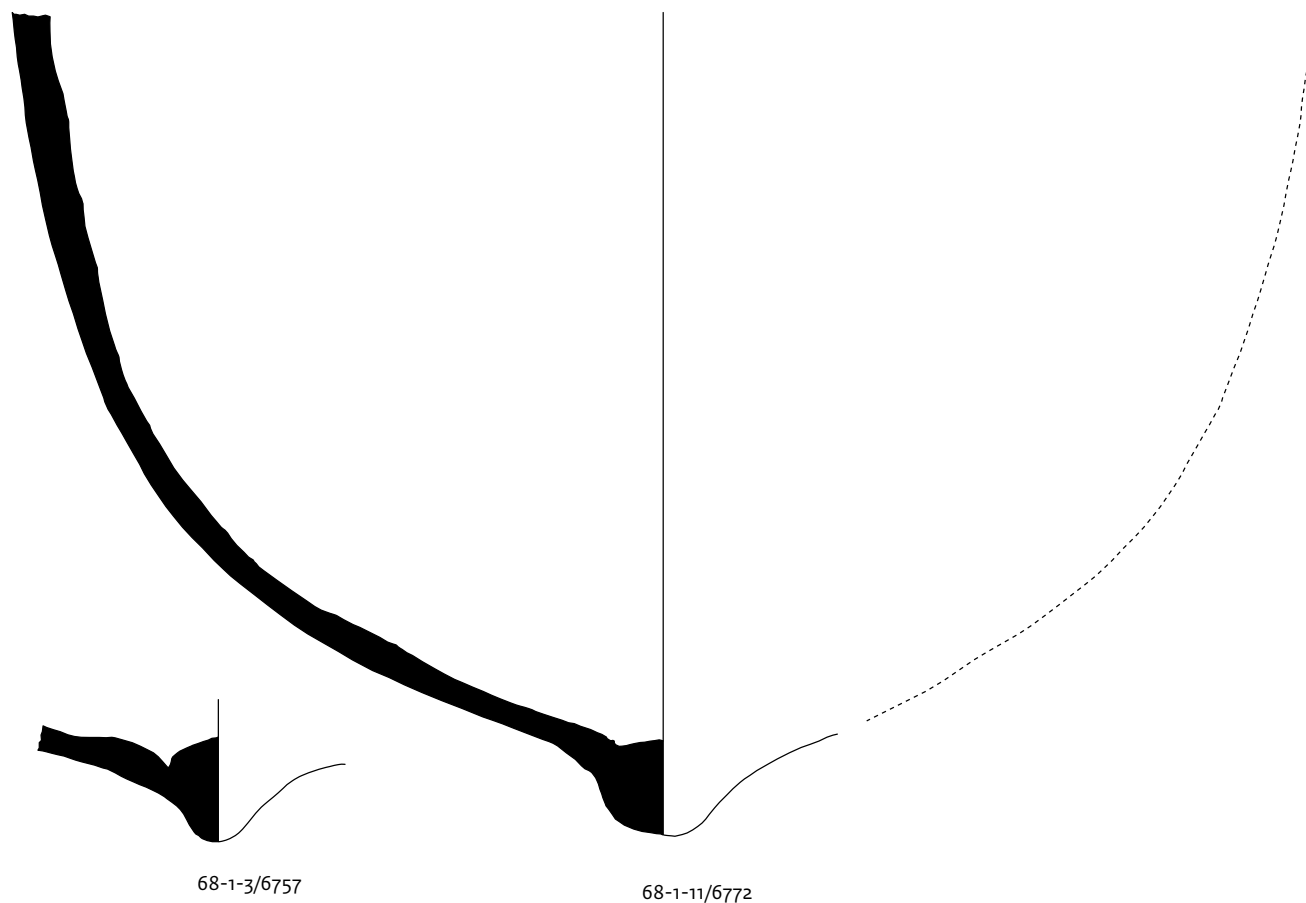


Fig. 24.5 Voerendaal-Ten Hove. Bases of olive oil amphorae Dressel 20, cont. Scale 1:3. (source: J. van den Berg & H.A. Hiddink)

same producer. This seems to be an individual who had many different workshops, each of which – as demonstrated by Berni – used a different stamp.<sup>2218</sup> We do not have his full name, but he used the abbreviation for the *tria nomina* M. I( ) A( ), usually followed by the P for *portus* and the first letter or letters of another *cognomen*, presumably the foreman or person in charge of that particular workshop. The *praenomen* and *nomen gentile* are regularly omitted on these stamps, leaving just the *cognomen*, the p for *portus* and a *cognomen* that goes with a particular ‘foreman’. In this case we have two stamps from the same firm, but with two different ‘foremen’ overseeing the work: <M. I( )> A( ) P(ortus) Co( ) and <M. I( )> A( ) P(ortus) S( ). A stamp from this very same producer was found at the baths at Heerlen, with the potter using the full abbreviation: m·i·a·p·c.<sup>2219</sup> In nearby Tongeren, in the northeast cemetery, an example that reads oc{amphora}p[a] (apco in retro) was found.<sup>2220</sup>

What is noteworthy about the style of the stamps used by these potters is the use of decorative symbols, in both cases the depiction of a little amphora and the APS also with a depiction of the *ramus palmae* (palm branch).

A very uncommon stamp was found at Voerendaal-Ten Hove. It is extremely vague, as it was placed on clay that was already too dry. The stamp simply reads *probi* (cat. 10). Shortly after World War II, unstamped amphora ears were often simply discarded, and therefore the excavator must have observed the stamp. It is unusual because only one other example is known, namely from Mainz.<sup>2221</sup> This is probably a smaller *figlinae*, run by an individual who did not go by a *tria nomina*, but by a single name.

Another poorly legible stamp reads PCAE HER (cat. 2). Here too, the cartouche clearly shows the locations of the stamp, but the letters are nearly faded. PCAE HER is another abbreviation of *tria nomina*, albeit a creative one

<sup>2218</sup> Berni 2008, 198.

<sup>2219</sup> Van den Berg 2018, 37, fig. 5h.

<sup>2220</sup> *Vidimus* (Gallo-Romeins Museum Tongeren, 76.B.253).

<sup>2221</sup> Ehmig 2003, no.154.



- <sup>2222</sup> To avoid problems when processing the text, ligatures are indicated by underlining instead of the correct convention of placing arches over the characters.
- <sup>2223</sup> Mayer 2016, 339, no. 15; Remesal 1997, 105, no. 81; Ehmig 2007, T.53.207; Laubenheimer & Marlière 2010, 176, no. 100.
- <sup>2224</sup> Van den Berg 2014, 713, no. 29; Van Kerckhove 2014, 386, fig. 15.49, item 44-52.
- <sup>2225</sup> *Vidimus* (Gallo-Romeins Museum Tongeren, 7645); Remesal 2018, 345-346, no. 111; Ehmig 2003, no. 181; 2007, T.7.363, T.14.1528, T.28.1466, T.36.822; Mayer 2016, 344, no. 35; Remesal 1997, 141-142, no. 232.
- <sup>2226</sup> Berni 2008, 322; Étienne & Mayet 2004, 204, no. 850.
- <sup>2227</sup> Dressel 1899, 2658; Remesal 1994, 147-148, no. 224; 2001, 209-211, no. 437; 2010, 171, no. 318.
- <sup>2228</sup> *CIL* 15.2658a (in Esquiliis; in hortis Torlonia); Bertoldi 2011, 156, fig. 3.3 (in via marmorata).
- <sup>2229</sup> Étienne & Mayet 2004, 19-20, no. 49.
- <sup>2230</sup> There is a series of C-A-P stamps from the Claudian period found at Xanten (Remesal 2018, 310, no. 6), Lyon (Étienne & Mayet 2004, 19-20, no. 49.) and Vienne (Helly *et al.* 1986, 128, fig. 7.28).
- <sup>2231</sup> *CIL* 15.3253; Remesal 2001, 218, no. 455; Remesal 2010, 188-189, no. 353.
- <sup>2232</sup> Chic 1985, 38, no. 331; Bourgeon 2018, 313-314.
- <sup>2233</sup> Jacques 1990, 895.
- <sup>2234</sup> *CIL* 15.2832.
- <sup>2235</sup> Berni 2008, 163.
- <sup>2236</sup> Many thanks to O. Bourgeon for sharing her research and hypothesis on the FLFB<sup>CO</sup>LO and related stamps.
- <sup>2237</sup> Bourgeon 2018, 313-314.
- <sup>2238</sup> Berni 2008, 163; Bourgeon 2018, 313-314.
- <sup>2239</sup> *Vidimus* (GDB Maastricht; 1981.MAVP16-118, 2-0A-11).
- <sup>2240</sup> The same stamp on Monte Testaccio was interpreted by Remesal as LFDCOL (2014, 431, no. 1036a).

using ligatures (two or more letters merged into a single symbol).<sup>2222</sup> It refers to P. Cae( ) Her( ), who evidently had a workshop in La Mayena near Lora del Río around the reign of Hadrian. It is not a particularly common stamp, but it has turned up at a number of sites in Germany (Köln, Koblenz, Mainz, Hedelbergen) and France (Amiens).<sup>2223</sup>

The stamp [s-]n-r-p (cat. 8) originates from the large amphorae production site at La Catria. This stamp dates to the middle of the second century and can be found on many sites in north-western Europe. In the Netherlands a stamp from this producer was found at Vechten and an SNR stamp was found at the Roman villa of Hoogeloon-Kerkackers.<sup>2224</sup> In Belgium it was found at Tongeren and in Germany at Xanten, Mainz, Nida-Heddernheim, Dieburg, Gross-Gerau, Köln, Saalburg, Köngen and Rottweil.<sup>2225</sup> Berni interprets the snrp stamps as S(exti) Anni R(uffi, -ufini) P(ortus), while Étienne and Mayer interpret it as S. N( ) R(ufi) P(ortus).<sup>2226</sup>

Most Baetican amphorae stamps were made using a technique whereby essentially the background, the negative space, is impressed, thus leaving the letters and/or symbols in relief and a cartouche created by the implement as an impression. This is not the case with the c[ap] stamp (cat. 1). Here the letters, including a rectangular frame, are impressed and thus no cartouche is created by the shape of the implement itself. Only the first letter of this stamp remains, but the impression technique, in combination with the style and size of the letters as well as a distinct frame, is very distinct and can therefore only represent a version of the CAP stamp. This firm seems to have been fairly large, with several different workshops near Almodóvar del Río, whose primary market seems to have been Rome itself, judging by numerous examples found on Monte Testaccio,<sup>2227</sup> elsewhere in Rome,<sup>2228</sup> and in Ostia.<sup>2229</sup> Due to the exceptionally accurate dating of the layers at Monte Testaccio, we can conclude that this producer was active in the period AD 214-224. The example from Voerendaal is the first known example that does not appear to have been intended for Rome.<sup>2230</sup>

Another remarkably vague stamp was found in 1947-1953. It reads in Greek and in retro υοιδ

(diony) (cat. 4). Here too, one cannot help but be amazed by the fact that this stamp was seen by the excavator, although perhaps conditions were somehow favourable at that time – the fragment still moist while freshly excavated? – or the pottery has simply degraded since then. The diony is somewhat exceptional for a number of reasons. First of all, it is written in Greek and refers to a distinctly Greek name: Diony(sí, -sia). The second reason is the location of the stamp, namely on the handle. Examples from Rome show that diony always put the stamp somewhere on the body, not on the handle. The third is exceptional for the same reason that the cap stamp stands out; it is only known from Rome.<sup>2231</sup> The date of this stamp is quite similar to the cap stamp, namely between AD 216-224.

The last Baetican stamp to be discussed here is the already mentioned FLFB<sup>CO</sup>LO (cat. 5). It is the only stamp from the Voerendaal villa found on a reasonably complete upper part of an amphora, rather than just a handle fragment. Only four examples of this stamp are known to date: two from its production site in Alcotrista,<sup>2232</sup> one from Rodez in France,<sup>2233</sup> and one from Rome.<sup>2234</sup> Berni interprets the stamps as a combination of the term *figlinae* followed by the *tria nomina* and name of a particular region (Colobraría): (ex) F(iglinas) L. F(abius) B(albus) Colo(braris).<sup>2235</sup> Bourgeon recently proposed a new theory, based on recent field surveys.<sup>2236</sup> She argues that this stamp refers to two members of the Fabii family, one with the *cognomen* L(uc...) and another with the *cognomen* Bal(bi). In this interpretation the *praenomen* is omitted in the abbreviation and we find the names of <L> F(abii) L(uc...) (et) <L> F(abii) B(albi) (ex figlina) Colo(braria).<sup>2237</sup> Research in Italy and Spain has not been able to provide a date for these products, although a third-century date was already obvious from the style of the stamp and its location on Monte Testaccio.<sup>2238</sup> This is where the example from Voerendaal sheds new light, namely a date in the second quarter of the third century. Interestingly, another stamp from this workshop may have been found in Zuid-Limburg, at Maastricht-O.L.V. plein. It reads lfbc<sup>ol</sup>,<sup>2239</sup> and so should presumably also be read as L. F(abii) B(albi) (ex figlina) Col(obraría).<sup>2240</sup>

### Graffiti

Three fragments of Baetican amphorae were marked with graffiti.<sup>2241</sup> It is first of all noteworthy that this is a relatively low number, given the more than 130 kg worth of Dressel 20 fragments, suggesting that secondary use played little part on this site.

By far the most interesting graffiti is find number 27-2-5/4309 (Fig. 29.2). This is an *ante cocturam* graffiti, meaning that it was placed before the vessel was fired. In most cases this is either a name, presumably a foreman, or a calendar date. In this case the interpretation is difficult for a number of reasons: only three letters or parts thereof remain; it is unclear in which direction it was written and what is up or down because the back of the sherd fragment was damaged. Therefore, it is uncertain which letters might be there, let alone what they say. In short, unfortunately, too little of this graffiti remains to make a convincing argument for a reading.

The site yielded an additional two *post cocturam* graffiti. These are inscriptions carved in later and generally referring to the names of numbers (volumes). On 27-3-17/5246 we see a unit of measurement: XII or 12 (Fig. 29.2).<sup>2242</sup> If this refers to *modii* (8.75 litres), then this amphora had a volume of 105 litres. As this seems large for a Dressel 20, it is more likely that we are missing a part of the graffiti. The first – missing part – gives the *modii* and the second, in this case 12, the *sextarii*. A *sextarius* is one sixteenth of a *modius*, thus about 0.546 litres. On 107-1-16/9410 the mark was placed on the rim; this is generally the secondary, smaller unit of measurement: 2 *sextarii*.<sup>2243</sup> Item 27-2-2/4868 might show the remains of a substantial *titulus pictus*, but it is not legible because only some lines or drips of paint are visible (not illustrated).

#### 24.2.2 Fish-sauce amphorae from the southern Spanish coast

Southern Spain also produced large quantities of fish sauce, a condiment made from fermented fish and popular in Mediterranean cuisine. Spanish fish sauce was an important ingredient in the diet of the first Romans on the Germanic frontier and fish-sauce amphorae in the Augustan *castella* make up a significant portion of

the imports. However, as more and more people integrated into the empire, fish sauce became less important in the north. By the Flavian period Spanish fish-sauce amphorae made up only a small percentage and by the mid-second century they disappeared almost entirely. To some degree other production sites, perhaps on the North Sea coast, would have taken over the supply of fish sauce and other fish-based products. There is some evidence for this in the form of inscriptions on altars referring to *negotiatores allecarii* found at *Ganuenta* near Colijnsplaat,<sup>2244</sup> on graffiti on dolia referring to *allec* or *garum* found in Aardenburg and Nederweert,<sup>2245</sup> some archaeozoological evidence,<sup>2246</sup> as well as a find of a dolium at Valkenburg, which may have been used for fish-sauce production.<sup>2247</sup> It is, however, possible that fish sauce was simply not as popular in the northern provinces as it was around the Mediterranean.

A large production area for fish sauce developed around the Strait of Gibraltar. This is essentially a natural fish trap, which allowed fishing and processing on an industrial scale. There are many known production sites around the Strait of Gibraltar. Only 30 fragments of Spanish fish-sauce amphorae have been identified from Voerendaal, but despite this limited number there are surprising numbers of fabrics. Most recognizable is the buff fabric with the beige, nearly green-cream or pistachio-green surface, which was made in Cadíz.<sup>2248</sup> The excavation also yielded examples from the Marismas (*Lacus Ligustinus*),<sup>2249</sup> which are a little more buff and contain more sedimentary material deposited by the Guadalquivir. There are also some fabrics that for now can only be assigned to the general southern Spanish coast, possibly to production sites such as Huelva, Malaga,<sup>2250</sup> and Molvizar,<sup>2251</sup> but definitely not Cadíz or Marismas.

Unfortunately, few diagnostic fragments have been encountered. Judging by the handles, at least one earlier type is present, presumably a Dressel 7-11 variant made at Cadíz. Versions of the Dressel 7-11 are dominant at pre-Flavian sites but were replaced by later models, such as the Beltrán II, by the Flavian period (Fig. 24.1).<sup>2252</sup> Therefore, this example is Flavian at the latest.

<sup>2241</sup> Cf. section 29.2.

<sup>2242</sup> The apparent V following the number is not intentional and is the result of post-depositional processes.

<sup>2243</sup> Van der Werff, 1989, *passim*.

<sup>2244</sup> *Allec* is a type of fish paste that is more a sediment or by-product of the production of *muria* or *garum* (actual fish sauce). It is, however, difficult to say what the term *allec* meant within the context of production on the North Sea coast. Stuart & Bogaers 1971, 70, no. 22; 2001, 75-76, no. A 34, pl. 28; AE 1973, 375; 2001, 1460; 2003, 1228; Curtis 1988, 207; Van Neer *et al.* 2010, 178; Manuel 2013, 106.

<sup>2245</sup> Bogaers 1971, 40; Hupperetz 1990, 16-17.

<sup>2246</sup> Van Neer *et al.* 2005, 177-179; 2010, 175-185.

<sup>2247</sup> Bult & Hallewas 1987, 14; Van Enckevort 2012, 58-59.

<sup>2248</sup> Tomber & Dore 1998, 87 (CAD AM).

<sup>2249</sup> Carreras Montfort 2000, 419-426.

<sup>2250</sup> Lagóstena 2007, 281-285.

<sup>2251</sup> Gener *et al.* 1993, *passim*.

<sup>2252</sup> Van der Werff 1984, 362; Martin-Kilcher 1994, 399-400.

The rest of the collection seems to consist of versions of the Beltrán II.<sup>2253</sup> In one case a more specific determination can be made, as it concerns a rim. This is the rim of an amphora with a big mouth 24 cm in diameter and a distinctly funnel-shaped neck (Fig. 24.6). This matches the Beltrán IIA and in particular the Beltrán IIAz version, which dates to the first half of the second century AD.

### 24.2.3 Fish-sauce amphorae from Gaul

Southern Gaul was another production area for fish-sauce amphorae. From the Augustan period onwards, various southern Spanish amphora types were imitated there, in particular the Dressel 9 (Fig. 24.1), although these quickly developed into derivative types that are specific to southern Gaul. In particular Lyon, where a workshop is known at La Muette, produced a large number of these amphorae. The earliest of the Lyonese fish-sauce amphorae is the Lyon 3a, which started in the Augustan period and was replaced towards the middle of the first century by the Lyon 3b. This amphora was produced until the first half of the second century. A flat-based fish-sauce amphora, referred to as the Lyon 4, was also produced at Lyon.<sup>2254</sup>

Lyon was the largest producer of this amphorae, but was not the only site to have had workshops. Others are so far known in the Provence at Velaux,<sup>2255</sup> Arles,<sup>2256</sup> Frejus,<sup>2257</sup> as well as at Chartres on the Loire, in the northern part of Gaul.<sup>2258</sup> Fish-sauce amphorae from these production sites are referred to as Dressel 9, Dressel 10 or Dressel 7-11 similis. Just outside Gaul, at Empuries in north-eastern Spain, there was also a production site for a form referred to as Dressel 8 Ampuritana.<sup>2259</sup> This production was small and the distribution of these amphorae was fairly localized. However, because a stamped example turned up in Heerlen,<sup>2260</sup> it would therefore be unsurprising if they were also present at Voerendaal.

There is ample evidence for the contents of Gaulish fish-sauce amphorae in the form of *tituli picti*, but it presents a somewhat complicated picture. Firstly, there are painted inscriptions that refer to various types of fish sauces: *garum*, *muria* and *liquamen*.<sup>2261</sup> Secondly, not all the fish sauce

carried in Gaulish fish-sauce amphorae was made in Gaul itself, as some *tituli picti* refer to *Garum Hispanum* and *Muria Hispana*,<sup>2262</sup> showing that at least some contained repackaged Spanish fish sauce. Most *tituli picti* do indicate some kind of fish product for these amphorae, but there are always exceptions. In the case of this amphora, it is an inscription from Bonn, interpreted and translated by Ehmig as (*Aqua*) *Mul(sa) | Stillic(idium) | exc(ellens)*: mead, from rainwater, excellent quality.<sup>2263</sup>

At Voerendaal 23 fragments were encountered from amphorae in the fabric from Lyon itself. However, only six of those fragments were sufficiently diagnostic to be associated with two Lyonese fish-sauce amphorae. One case concerns a fragment of a neck of either a Lyon 3 or a Lyon 4. The other case concerns a fragment that is part of a hollow spike and thus part of the Lyon 3. Neither amphora is precisely datable as such, but should date to before the middle of the second century AD.

The site yielded one rim fragment of a Gaulish fish-sauce amphora. It concerns a Dressel 9 similis (Fig. 24.6). The fabric does not indicate that this one comes from Lyon, and production at Frejus, Empuries and Chartres can be excluded for the same reason. The clay is actually remarkably similar to the numerous Gauloise 4 amphorae that are regularly found on sites in the Netherlands. Therefore, it is entirely plausible that the example from Voerendaal came from the production site at Velaux or Arles.<sup>2264</sup> The date range for these productions is the same as for the Lyon 3; however, the typology suggests that they are somewhat later rather than earlier within this chronology.

### 24.2.4 Gallic wine amphorae

Wine was produced in virtually all the parts of the empire with a suitable climate, although not every region developed an industry that allowed the large-scale export of wine. In the Early Roman period wine was exported to the north from all over the empire, particularly Italy, Greece, Spain and Gaul. From the mid-first century onwards, however, southern Gaul became the main supplier of wine to the northern parts of the empire, causing the

<sup>2253</sup> In Dutch archaeology, still commonly referred to as the Pélichet 46.

<sup>2254</sup> Dangréaux *et al.* 1992, 38; Martin-Kilcher 1994, 414-416, Abb.183; Desbat 2003, 47.

<sup>2255</sup> Laubenheimer 1985, 124-127, 318; Laubenheimer & Schmitt 2009, 84.

<sup>2256</sup> Bigot *et al.* 2019, 403.

<sup>2257</sup> Martin-Kilcher 1994, 415-416.

<sup>2258</sup> Sellès 2001, 143.

<sup>2259</sup> Tremoleda Trilla 2000, 126-128.

<sup>2260</sup> Van den Berg 2013, 11-13; 2018, 35.

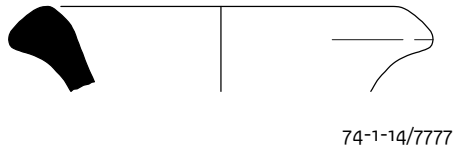
<sup>2261</sup> Martin-Kilcher 1994, 417-427.

<sup>2262</sup> Martin-Kilcher *loc. cit.*

<sup>2263</sup> Ehmig 2008, *passim*.

<sup>2264</sup> See above.

## Dressel 9 sim.



## Beltrán IIA2

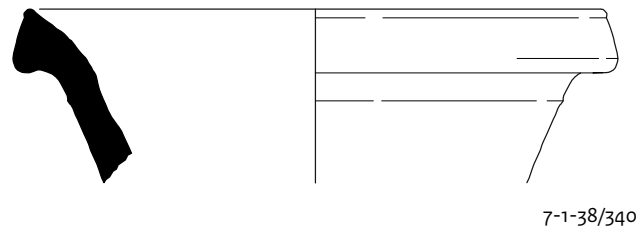


Fig. 24.6 Voerendaal-Ten Hove. Rim fragments of the fish sauce amphora Beltrán IIA2 from Southern Spain and a Dressel 9 similis from Gallia Narbonensis. Scale 1:3. (source: J. van den Berg & H.A. Hiddink)

amphorae from other parts of the empire to virtually disappear from the markets, with wine only being imported for the very wealthy. The main amphora of *Gallia Narbonensis* during the Principate was the Gauloise 4 (Fig. 24.1). While the form continued well into the third century, a decline in the export of Gauloise amphorae is noticeable from the end of the second century onwards.<sup>2265</sup>

At Voerendaal, Gaulish flat-based amphorae make up between about a third (in N and EVE) of the amphorae spectrum. Most fragments are in a soft, sandy, buff-beige fabric, only generally attributable to the production in *Gallia Narbonensis*. A small number of fragments consist of a mica-rich fabric, which was made around Marseille.<sup>2266</sup> The diagnostic fragments show the presence of only the Gauloise 4 and no indication of other types (Fig. 24.7). When found in relatively small fragments, amphorae of this type are difficult to date. However, there seem to be representatives from the latter half of the first century onwards, such as the Gauloise 4 with a comparatively long neck (409-5/68-4-18; Fig. 24.7),<sup>2267</sup> as well as a fragment from Marseille.<sup>2268</sup> The latest examples are of a version with a short neck and handles attached just below the rim (27-2-8/4929; 95-1-4/10653; Fig. 24.7).<sup>2269</sup> The contextual information sheds no light on the end date of the younger examples, but at August the form seems to have continued into the second half of the third century AD.<sup>2270</sup>

In 1947-1950 a stamped handle of a Gauloise amphora was found at the Voerendaal villa (1953-2.5/13036; cat. 3; Fig. 24.11). Due to the softness and sandiness of the fabric its stamp is entirely smudged, but a complete stamp could

be reconstructed following an examination of the remaining relief of the letters. It reads T.CR.VIT (cat. 3), which is clearly an abbreviation of a *tria nomina*: T. Cr( ) Vit( ). Gauloise amphorae are rarely stamped, particularly compared to the Dressel 20. Luckily, a number of these stamps are known, especially at Arles in southern France.<sup>2271</sup> Some of the first examples were found in the early 1990s, in a deposition on a river bank outside the city, possibly intended as reinforcement, although a shipwreck cannot be ruled out.<sup>2272</sup> Since then, more examples have been discovered in shipwrecks in the Rhône near Arles.<sup>2273</sup> An example was also found during excavations of the Arles circus.<sup>2274</sup> Recent physicochemical analysis confirmed that they were produced locally.<sup>2275</sup> One shipwreck on which this stamp was found, the Arles-Rhône 3, is dated to the late first to early second century AD.<sup>2276</sup>

Another major player in the Gaulish wine trade was Lyon. The most common wine amphora produced there was the Lyon 2, which – if fragmentary – can be difficult to distinguish from the Lyonese fish-sauce amphorae. At Voerendaal seven fragments display the distinctly cylindrical body shape of the wine amphorae from Lyon, suggesting that we are dealing with the Lyon 2 from the first century AD.

Not all the Mediterranean wine amphorae at Voerendaal are from Gaul. For instance, item 9-1-41/642 may belong to an Aegean Dressel 2-5 of the first century. The production from the island of Kos is famous and therefore these amphorae are occasionally referred to as ‘Koan Amphorae’. Fabrics of amphorae from the Aegean can be difficult to distinguish from the

<sup>2265</sup> Martin-Kilcher 1994, 361.

<sup>2266</sup> Laubenheimer & Schmitt 2009, 95.

<sup>2267</sup> Martin-Kilcher 1994, 360-361, fig. 136.

<sup>2268</sup> Laubenheimer & Schmitt 2009, 95.

<sup>2269</sup> Like the Niederbieber 76 (Oelmann 1914, 64-65).

<sup>2270</sup> Martin-Kilcher 1994, 361

<sup>2271</sup> Corbeel *et al.* 2013, 402-405. Many thanks to G. Duperron (CNRS) for sharing his research on this subject.

<sup>2272</sup> Long 1994, 52-54, fig. 11;

Corbeel *et al.* 2013, 402-405.

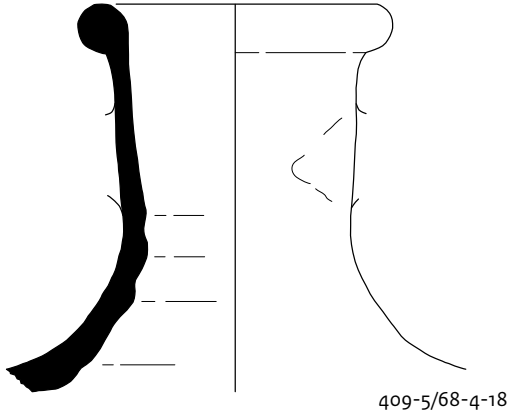
<sup>2273</sup> Corbeel *et al.* 2013, 402-405.

<sup>2274</sup> Long 1994, 52; Corbeel *et al.* 2013, 402-405.

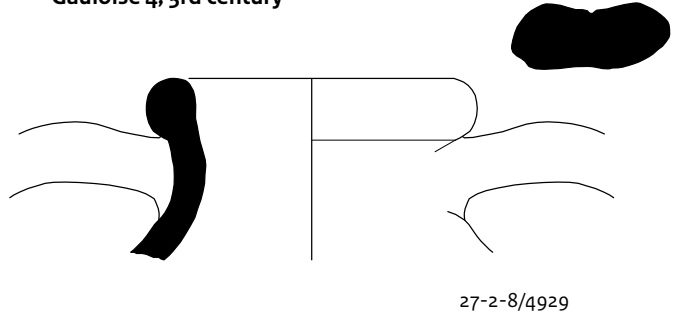
<sup>2275</sup> Bigot *et al.* 2019, 402.

<sup>2276</sup> Corbeel *et al.* 2013, 425.

Gauloise 4, later 1st century



Gauloise 4, 3rd century



Gauloise 4, 2nd century

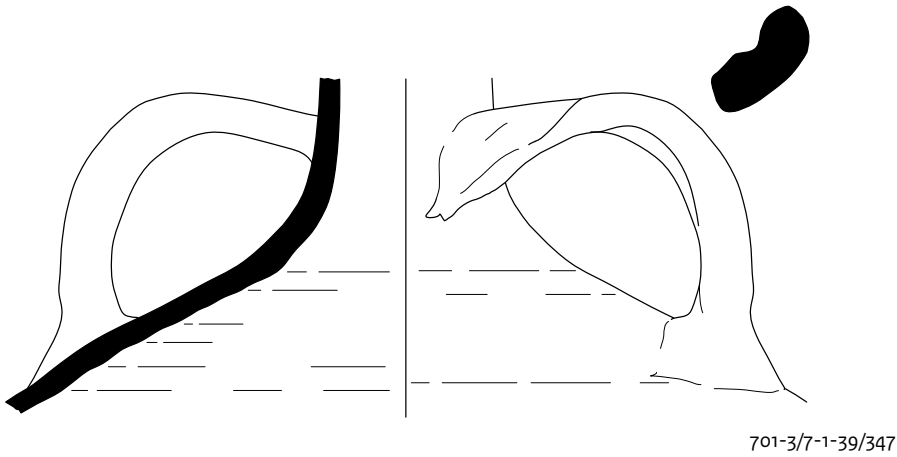
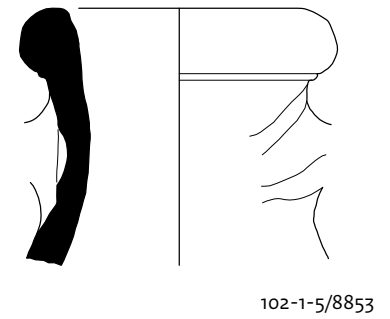
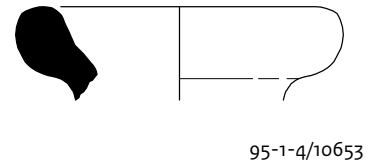
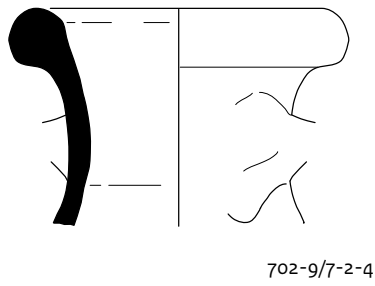
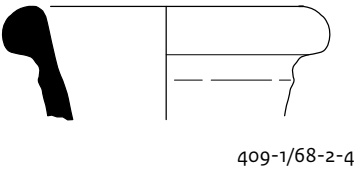
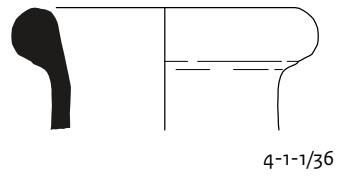


Fig. 24.7 Voerendaal-Ten Hove. Rim fragments from the Gauloise 4 from Gallia Narbonensis. Scale 1:3. (source: J. van den Berg & H.A. Hiddink)

Gaulish ones, but are generally better made in a harder fabric. Another non-Gallic example is 68-1-8/14910, which shows the characteristics of Rhodian amphorae, particularly those made opposite the island itself in the Rhodian *Peraea*. Rhodian amphorae are generally classified as Camulodunum 184 and were most common in the Augustan to Claudian periods, although a Neronian date would not be implausible.<sup>2277</sup>

#### 24.2.5 Regional amphorae

Not all amphorae in Voerendaal are from the Mediterranean; some were made much closer by. The category of regional amphorae range from locally made amphorae to examples made in neighbouring *civitates*. At least four general regions could be identified here: the 'local' amphorae made in and around the Meuse valley, and amphorae from the Rhineland, the Moselle valley and the Scheldt valley (Fig. 24.2). It is noteworthy that the regional amphorae only make up a very small fraction of the total number of amphora sherds: some 6.6%

Most of the regional amphorae come from the Meuse valley (Fig. 24.1). For Voerendaal, this was the closest amphora-producing region. Despite the small number of sherds, quite a few production sites could be identified. A large number of these fragments could be identified as REGAMF-HEERL-A1, made at Heerlen.<sup>2278</sup> One fabric may relate to the pottery production at Tongeren,<sup>2279</sup> while another was made in a fabric that bore a number of similarities to products from Bavay.<sup>2280</sup> Also present at Voerendaal are fabrics possibly from Braives and Tienen.<sup>2281</sup> Other fabrics could only be identified generically as Meuse valley and were therefore produced on sites along the Meuse between Bavay and Heerlen.

Most diagnostic fragments displayed the characteristics of the Mosan 1/Haalebos 8052 or its equivalent made in Heerlen (Fig. 24.8). The form tends to be identified as a small or mid-sized amphora because complete examples are mostly known from cemeteries. However, in this type of context we see the smaller variant that was intended or suitable for use at the table. Most fragmentary remains show the larger examples, which would have been similar in size

if not larger than their contemporary Mediterranean counterparts.<sup>2282</sup> Some fragments may relate to a different type of Meuse valley amphora, namely the thick-walled Mosan III.<sup>2283</sup> These particular fragments were made in a fabric that had many similarities to those made at Braives. Noteworthy here is an example of a rim of a Camulodunum 165 from northern Gaul, in extremely poor condition. This type stands for a mid-sized or small amphora that seems to be a precursor of the Meuse valley amphorae, particularly the Mosan I.<sup>2284</sup>

It is not known what was transported in Meuse valley amphorae. Most of these forms do not show any obvious typological analogies with contemporary Mediterranean counterparts. In fact, the typology and use of decorative features (elaborate rim, ridges and grooves) seems to be unique to the Meuse valley. This suggests contents that were distinctive for this region, most likely an alcohol-based drink. A clue might be the fabric, in particular of the Mosan I/Haalebos 8052, which is often, although not always, made in a rather fine, dense and smooth fabric. This may have been because these amphorae contained beer, a liquid that does not react well to sandy fabrics. This is hypothetical, however. Other contents such as mead, fruit-based liqueur or something else entirely is equally possible.<sup>2285</sup> The Mosan III may be a more generic form of amphora, possibly related to the Dressel 20 similis/Gauloise 14. Interestingly, it is proposed that the Dressel 20 similis was also used for beer, based on residue analyses of some examples from Waldürn.<sup>2286</sup> However, it is also possible that this type of amphorae, as typologically similar to the Baetican olive oil amphora, contained locally produced oil (perhaps from walnuts).<sup>2287</sup>

Among the finds were seven fragments that relate to the production of amphorae in the Rhineland. Unfortunately, these are only body fragments that display no characteristics that could indicate a pottery type. One fragment was made at the big production centre at Soller,<sup>2288</sup> near Köln, while the others are closer to the fabrics made at Xanten.<sup>2289</sup> Here too, it is difficult to say what these particular amphorae may have contained. Some may simply have been used for the redistribution of lower-tier Gallic wine,

<sup>2277</sup> Peacock 1977d, 267–269 (fabric 2); Sealey 1985, 55; Van den Berg 2012, 216.

<sup>2278</sup> Fabric identified by J. van Kerckhove. Van Kerckhove & Boreel 2014, 260, fig. 8.

<sup>2279</sup> A production of Gauloise 15 (Geerts *et al.* 2016, 345), Vanvinckenroye 313/Ton 27 (Vilvorder *et al.* 2010, 246, fig. 7.27) and a variant of the Mosan 1/Haalebos 8052 (vidimus, 79.N.456).

<sup>2280</sup> Van den Berg 2017a, 156–159.

<sup>2281</sup> Massart 1983, 168–170, fig. 10–15; Van den Berg 2017a, 156–159 (Braives); Martens 2012, 127–128 (Tienen).

<sup>2282</sup> Carreras & van den Berg 2017, 368.

<sup>2283</sup> Hanut 2001, 25–26, fig. 3.1.

<sup>2284</sup> Van den Berg 2017a, 157.

<sup>2285</sup> Van den Berg 2017a, 156–159.

<sup>2286</sup> Schallmayer 1992, 74; Ehmig 2001, 41; 2007, 70–71.

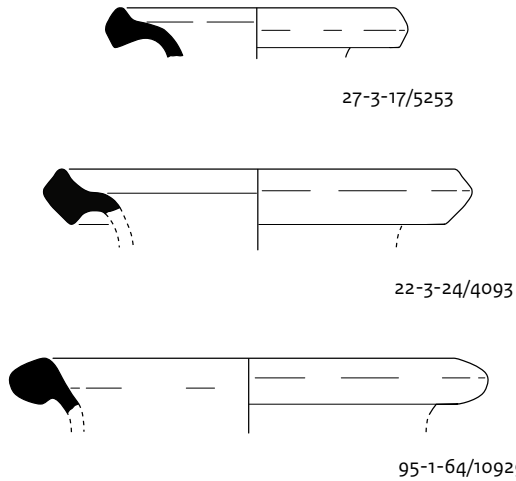
<sup>2287</sup> Baudoux 1996, 110–112.

<sup>2288</sup> Fabric identification by J. van Kerckhove. The typology of these examples displays analogies with the Haalebos 8052 or Mosan 1. This form, however, is distinctly part of the production in and around the Meuse valley. It may concern a version of a Soller amphora, such as the ones documented in Haupt 1984, 445–446, pl. 184, no. 10–13.

<sup>2289</sup> Cfr. MO-MAGR2 (Willems 2005, 46).



## Mosan 1/Haalebos 8052



## Lower Moselle

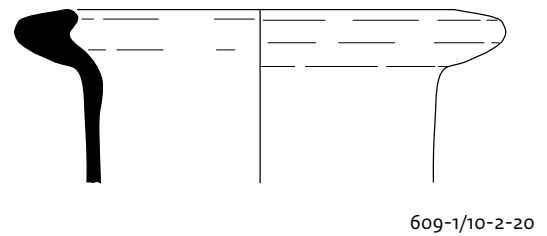


Fig. 24.8 Voerendaal-Ten Hove. Rimfragments of regional amphorae. Scale 1:3.

imported in barrels into the major ports on the Rhine, such as Xanten or Köln, as these types are straightforward copies of Gaulish amphorae or a derivative thereof.<sup>2290</sup> There are some indications of different contents. A Niederbieber 68 from Krefeld carries a graffito that refers to beer,<sup>2291</sup> while a Soller amphora from Bonn contained a residue indicating that it was once filled with (sour) milk.<sup>2292</sup>

A single fragment of an amphora made in the Lower Moselle valley was found in hearth 609 (609-1/10-2-20; Fig. 24.8).<sup>2293</sup> The form in question seems at first glance to be a variant of the Niederbieber 74/75, although the shape of the rim may indicate that it is a precursor to that form, much closer to the Vermeulen 84A. That shape may very well be pre-Flavian, Flavian or from the first half of the second century.<sup>2294</sup>

The last regional fabric to be addressed here is a single fragment of an amphora from the Scheldt valley (409-83/68-4-4). It is a body fragment of only 11 g, which is not associated with any other finds. The particular fragment shows no diagnostic characteristics of a particular type, although the fabric is likely from a Group 1, 2 or 3 Scheldt valley amphora rather than, for example, a Gauloise 13. As the name implies, these amphorae were produced on sites along the Scheldt,<sup>2295</sup> while a specific production site is known at Dourges (Nord-Pas-de-Calais,

France) in the southern reaches of the river basin.<sup>2296</sup> The earliest Scheldt valley amphorae in the eastern part the Netherlands date to the Flavian period, but large-scale imports do not seem to have started until after c. AD 100. Examples of these amphorae have been found as far east and southeast as Nijmegen, Xanten, Köln and Tongeren,<sup>2297</sup> and in Heerlen as well,<sup>2298</sup> which means that Voerendaal lay on the edge of the area of diffusion. The contents of the Scheldt valley amphorae are uncertain. Van der Werff's Group 2 and 3 look like containers for alcoholic drinks and indeed an argument is made for them to have contained beer.<sup>2299</sup> It is, perhaps, more likely that they were used as containers for transhipped wine, supplied via the Atlantic route.<sup>2300</sup> Van der Werff's Group 1 amphorae are different. They have a distinct sickle-shaped rim and a relatively large mouth and neck.<sup>2301</sup> These tend to be characteristics of fish-sauce amphorae, and fish sauce seems to be a fairly plausible contents for amphorae made near the North Sea coast. Archaeological data from Nijmegen might support that hypothesis. Here we see that the decline of southern Spanish amphorae coincided with the rise of Group 1 Scheldt valley amphorae during a relatively short period towards the end of the Flavian era and beginning of the second century.<sup>2302</sup>

<sup>2290</sup> Van den Berg 2017b, 180-181.

<sup>2291</sup> Höpken 2014, 181-182; Bridger 2017, 202, no. 46; 2018, 216.

<sup>2292</sup> Höpken 2014, *loc. cit.*

<sup>2293</sup> Fabric identification by J. van Kerckhove.

<sup>2294</sup> Vermeulen 1932, 100-101, fig. 15; Van den Berg 2017b, 172-172; Liesen 2019, 331, fig. 2.7-8.

<sup>2295</sup> Van der Werff *et al.* 1997, fig. 2; De Clerq & Degryse 2007, 454-456.

<sup>2296</sup> Thuillier 2001, 127-132; 2004, 22-25.

<sup>2297</sup> Van der Werff *et al.* 1997, fig. 1; Hanut 2001, fig. 7; Schmitz 2014, fig. 33-34.

<sup>2298</sup> Geerts 2018, 27.

<sup>2299</sup> Van der Werff *et al.* 1997, 7-9.

<sup>2300</sup> Schmitz 2014, 347-353.

<sup>2301</sup> Van der Werff *et al.* 1997, 6; Schmitz 2014, 327-335.

<sup>2302</sup> Van den Berg in prep. (BLAN project Wd6).

#### 24.2.6 Late Roman amphorae

The story of amphorae in the Netherlands generally ends after the crisis of the third century AD. This is different at Voerendaal. Here, a number of amphorae date to the Late Roman period and represent an entirely different phase of occupation.

The first Late Roman amphora is find number 22-4-16/4151 (Fig. 24.9). This is a base fragment of a Dressel 23 (Fig. 24.1). Unlike the Dressel 20, its predecessor, which has a basal knob or small spike, its base is gently rounded. More important, however, is the fact that it does not show a globular body proper, but something much more ovoid and thus narrower and smaller. The fabric also differs from the rest of the Dressel 20s found at this site, being a buff-red, with a greyish core, although unmistakably made in the Guadalquivir valley. Without a rim it is difficult to give an example date or period for this base fragment. It is unlikely to be a third-century variant, like the miniaturized version of the Dressel 20 (*parva*) or the Tejarillo 1, both of which are present in the shipwreck Cabrera 3 that sank off Majorca in c. AD 257.<sup>2303</sup> The Dressel 23 is also absent in the *castella* along the *limes*. Even on Monte Testaccio, which was closed around AD 271, these amphorae are missing.<sup>2304</sup> The latter event may in some way relate to the decline and disappearance of the larger Dressel 20 and the evolution of smaller varieties (particularly the Dressel 20 *parva*) that evolved into the Dressel 23 a generation or so later. The Dressel 23 is attested at Augst after AD 270/280 and until the late fourth or early fifth century AD.<sup>2305</sup> Examples from the later fifth and early sixth century AD do exist,<sup>2306</sup> although they are rare and increasingly confined to the Iberian peninsula.

Near Voerendaal there are only a handful of known sites where Dressel 23 amphorae were found. Most notable must be Köln. Here, somewhere between 400 and 1200 amphorae were used in the construction of the vaults of St Gereon's Basilica in the mid-fourth century.<sup>2307</sup> In the cemetery of Krefeld-Gellep a Dressel 23 was found in a grave dated between the first half and middle of the fourth century.<sup>2308</sup> This type is also attested at Xanten.<sup>2309</sup> In *Belgica* examples have been found at Bavay and Braives.<sup>2310</sup> Nicolas

reports a possible example of a Dressel 23 at the Roman villa of Treignes-Viroinval.<sup>2311</sup>

However, the Dressel 23 discussed above is not the only Late Roman amphora at Voerendaal and certainly not the most exotic one to be found on this site. The excavation also yielded four fragments, from three different contexts, of the neck and handles of a 'Late Roman amphora 1' (LRA1; 770-1/23-3-9/16-2-3/16-2-29; Fig. 24.9).<sup>2312</sup> The handles of the amphora are attached at slightly different heights, but both extend relatively far outwards. Unfortunately, the rim is missing, but it would have been attached fairly close to the remaining neck. The profile of the handle is round, with a hint of a groove running over the top.

The LRA1 is unusual, not only because of its date, ranging from the fourth to the seventh century AD,<sup>2313</sup> which places it firmly in late antiquity, but also because of its origin. The LRA1 comes from the Eastern Roman or rather Byzantine empire. It was produced in Cilicia, around Tarsus and several coastal sites in southern Turkey, bordering the north-eastern corner of the Mediterranean. Production could have extended into Syria, around Seleukia and Antioch.<sup>2314</sup> Production is also attested on the island of Cyprus, although this did not seem to start till the sixth and seventh centuries.<sup>2315</sup> A small-scale production is also known at Kos in Greece, also in the sixth and seventh centuries.<sup>2316</sup>

The date of our example from Voerendaal is difficult to establish, as there is no rim and no body. The remaining characteristics, such as the form of the handles and curvature of the neck, point to a date around the early fifth century.<sup>2317</sup> The context confirms that this find is Late Roman, with a terminus post quem for the pit provided by two coins of the Theodosian dynasty (AD 389-395 and 388-402).<sup>2318</sup> The date implies that these examples come from Cilicia or Syria, rather than the later production at Cyprus or Greece.

It is assumed that the primary contents of the LRA1 were wine. The main argument for this is the evidence for pitch lining on the inside of the amphorae, which was used to make them waterproof and to flavour the wine, a lining not used for oil.<sup>2319</sup> There is, however, evidence that some LRA1 were used to transport olive oil.<sup>2320</sup> In this light, a use as containers for preserved

<sup>2303</sup> Berni & Moros 2012, 194-195; Bourgeon 2017, 522.

<sup>2304</sup> Berni & Moros 2012, 195.

<sup>2305</sup> Martin-Kilcher 1987, 58.

<sup>2306</sup> Bernal & Bonifey 2010, 107; Berni & Moros 2012, 195-196; Bourgeon 2017, 517-518.

<sup>2307</sup> González 2010, 110-111.

<sup>2308</sup> Pirling & Siepen 2006, 170 (Gellep 443).

<sup>2309</sup> Carreras & De Soto 2018, 29, fig. 4/7; Liesen 2019, 531.

<sup>2310</sup> Laubenheimer & Marlière 2010, 68 (Bavay); Monsieur 2015, 199 (Braives).

<sup>2311</sup> Nicolas 2011, 75.

<sup>2312</sup> Originally Bengazi LR amphorae 1/Carthage RL amphorae 1 (after Riley 1979; Riley 1981). In north-western Europe, also referred to as the 'British Bii' (Thomas 1959, 92-93), 'Keay LIII' (Keay 1984, 270-278) and 'Peacock & Williams class 44' (Peacock & Williams 1986, 185).

<sup>2313</sup> Reynolds 2005, 565; Bezczycki 2013, 159 (type 52).

<sup>2314</sup> Empereur & Picon 1989, 263-238, fig. 18-19; Reynolds 2005, 565-566; Williams 2012, 35-38; Leidwanger 2014, 897-898.

<sup>2315</sup> Demesticha 2003, 471-472; Reynolds 2005, 565-566; Williams 2012, 35-38; Leidwanger 2014, 897-898.

<sup>2316</sup> Diamanti 2010, 1.

<sup>2317</sup> Reynolds 2005, 591, Pl. 4; Arthur 1998, 164, fig. 5.

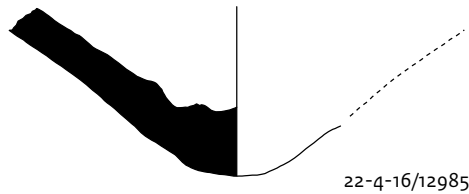
<sup>2318</sup> Cf. Chapter 19; of course, it is always possible that some finds predate the pit/coins.

<sup>2319</sup> Van Doorninck 1989, 252; Arthur 1998, 164; Decker 2001, 78-80; Bezczycki 2013, 159 (type 52).

<sup>2320</sup> Decker 2001, 78-80.



## Dressel 23



## Late Roman Amphora 1

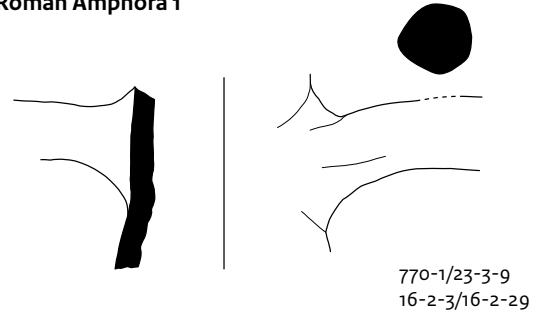


Fig. 24.9 Voerendaal-Ten Hove. Base fragment of a Dressel 23 and neck of the LRA1 amphora. Scale 1:3. (source: J. van den Berg & H.A. Hiddink)

fruits (grapes, olives) in liquids such as wine, *defrutum* or oil cannot be ruled out. A use as a genuine multi-purpose container is thus possible. Ultimately, the LRA1 was around for a long time and made at production sites in the eastern Mediterranean. As it stands, our example from Voerendaal from around the beginning of the fifth century most likely contained Cilician wine.

The LRA1 is a rare occurrence on the north-western European mainland, although quite a few sites with LRA1 have been found in south-western England and at various sites in Ireland.<sup>2321</sup> At present, a few sites are known in north-western Europe, such as Île Lavrec (Île-de-Bréhat) in Brittany (France), Augst in Switzerland and at the Roman villa of Bad Kreuznach in Germany.<sup>2322</sup>

Five sherds were found in an atypical fabric in four different contexts. This fabric was (light) brown and had some black inclusions. These inclusions are similar to the ones found in Campanian (Black sand) amphorae 1 (CAM AM 1),<sup>2323</sup> but not quite as numerous. The fabric shows some resemblance to reference samples of the Camulodunum 176 and in particular to samples taken from Calabrian amphorae, again without the same intensity of black inclusions. Therefore, we hypothesize that their fragments are from one (or more) vessels made in southern Italy.

In terms of the date the associated finds suggest a Late Roman date. One fragment was not found with datable pottery (13-1-23/1354), but the other two were found in a layer that contained Late Roman pottery (95-1-55/10896; 95-1-56/10903). It concerns an Argonne sigillata dish and bowl Chenet 304 and 320, a late terra nigra bowl (somewhat similar to Chenet 320) and an coarse ware plate Alzey 34.<sup>2324</sup> This suggests that

our Italian amphorae belong to the later fourth or fifth century, potentially contemporary with the LRA1 and/or the Dressel 23 described above.

None of the fragments offer any typological clues that reveal the form. However, the fabric and date do give at least two options. If fragments go with amphorae that date to the late third/early fourth century AD, they might still belong to mid-Roman Campanian amphorae.<sup>2325</sup> The fabric of the examples from Voerendaal is not convincingly Campanian, but Arthur and Williams refer to a fabric with a suggested origin in Calabria.<sup>2326</sup> If the fragments are indeed of later date, they might belong to the Keay 52, which was made in southern Calabria from the mid-fourth to the seventh century AD. The description given of examples made at the known kilns in Pellaro (Fiumerella), on the Ionian sea opposite Sicily, does not mention the black inclusions.<sup>2327</sup> Therefore those production sites should be sought closer to Campania. Without additional information about the form, the typology of what goes with these fragments remains, at best, an educated guess.

### 24.3 Analyses

The primary means of analysing pottery is quantification. As this can be problematic for large and heavy vessels such as amphorae, different methods of quantification have been used (Table 24.1; Fig. 24.10A-B). The graph shows a number of issues that were considered during the analysis of this complex. The most biased number is the weight, which is primarily caused by the comparatively good conservation of the Dressel 20 fragments. Also noteworthy is the fact

<sup>2321</sup> Thomas 1959, 108; Peacock & Williams 1986, 186; Doyle 2009, 19-20; Kelly 2010, 58-62.

<sup>2322</sup> Querre & Giot 1985, *passim*. (Île Lavrec); Martin-Kilcher 1994, 441-442 (Augst); Ehmig 2007, 42, 335 (Bad Kreuznach).

<sup>2323</sup> Tomber & Dore 1998, 88-89.

<sup>2324</sup> Cf. Chapter 25 and 26.

<sup>2325</sup> Arthur & Williams 1992, 253.

<sup>2326</sup> Arthur & Williams 1992, 258 (fabric D).

<sup>2327</sup> Gassner 2011.

that Ten Hove yielded comparatively few rim fragments. Other than that, the quantification based on N, MinNI, MaxNI and EVE seems fairly comparable, with perhaps the regional amphorae being the exception. Here we see a comparatively high number of rim fragments (also translated into EVE) in relation to N. The most likely cause of this is that the body fragments of regional amphorae are difficult to distinguish from, for example, smooth ware or dolia.<sup>2328</sup>

In terms of amphorae the villa at Voerendaal in some ways looks like a typological site of the mid-Roman period and in other ways deviates from the pattern of expectation. What is particularly noteworthy is the sheer amount of material, which seems much larger than at any of the other published villas (see above, Section 24.1), except perhaps for the villa at Hoogeloon-Kerkackers. These observations are analysed further in the sections below, which address the large number of Dressel 20 fragments and stamps, the not insubstantial presence of Gallic wine amphorae, the somewhat more unusual instances of Spanish and Lyonnese fish-sauce amphorae, the presence of a small, albeit diverse, percentage of regional amphorae, and lastly, the entirely surprising occurrence of Late Roman amphorae.

### 24.3.1 The import of olive oil

Olive oil amphorae are found at nearly all Roman sites, not just the urban or military centres. Even villas and other rural sites had access to these types of amphorae. Of the amphora fragments studied, a little less than two-thirds are from Baetican Dressel 20 amphorae, encompassing about 52% in terms of EVE, only 35% of the rim fragments and about 85% of the total weight (Fig. 24.10). In terms of fragmentation the Dressel 20s are the best preserved, with an average weight per fragment of 133 g. On the basis of MinNI and MaxNI we can conclude that, of each individual amphora, some 3.8 to 4.2 fragments of 505.6 and 558.9 g were preserved per context. This implies a relatively high degree of conservation, suggesting that Dressel 20 amphorae may be overrepresented for various reasons.

At Voerendaal the earliest datable olive oil amphora corresponds with the reign of Nero.

This one stands out, however, as little other material is convincingly pre- or early Flavian.<sup>2329</sup> The typologies of the Dressel 20s show examples that date from the early second century to at least the second quarter of the third century. The stamps tell the same story: six are early second century to Antonine (cat. 2, 6-10) and three date to the first half of the third century (cat. 1, 4, 5). This suggests that the villa was at best supplied sporadically in the second quarter of the first century and continuously from c. AD 100 to the 230s/240s.

It is noteworthy that the third century is comparatively well represented, both in terms of typology and stamps. The study of the amphora stamps at nearby Heerlen showed only a single third-century example out of 21 in total. Elsewhere, it is observed that Dressel 20s from the third century are not quite as common as those from the first and particularly second century AD.<sup>2330</sup> At Voerendaal the problems surrounding the export of oil in the third century may be evident in a unique way, as all three third-century stamps are primarily known from the supply of Rome itself, rather than the provinces, suggesting some kind of interference in the regular trade patterns. Obviously, with such small numbers this may be purely coincidental. The fact that the inhabitants of Voerendaal were able to procure oil in the third century is therefore an indication of the continued importance of this villa complex.

### 24.3.2 The import of Gallic wine

At Voerendaal about one third of the fragments and EVE are from Gaulish wine amphorae. In terms of weight the Gaulish amphorae represent a little more than 10%. The average weight of a Gauloise amphora sherd on this site is 44.6 g and the MinNI and MaxNI show about 1.7 fragments of 74.3 g per individual item. It should be noted here that Gauloise amphorae are made from a fairly light, sandy fabric, which is reflected in the weight but which may also have affected the preservation of the pottery.

The Gauloise amphorae mirror the chronology of the Dressel 20s. Some examples may belong to the first century AD, but most are from the second. Here too, there are a number of

<sup>2328</sup> In fact, not much attention was paid to the body fragments of these groups, the focus being on the vessels/fabrics whose types/form types could be identified (cf. Section 23.1.2).

<sup>2329</sup> However, it has to be noted that pre-Flavian finds are also rare in other pottery groups (cf. Chapter 22 and 23).

<sup>2330</sup> Martin-Kilcher 1987, 189; Van den Berg 2014, 700-701, 703; Mayer 2016, 318-320, tab. 2; Remesal 2018, 387-410, fig. 3.

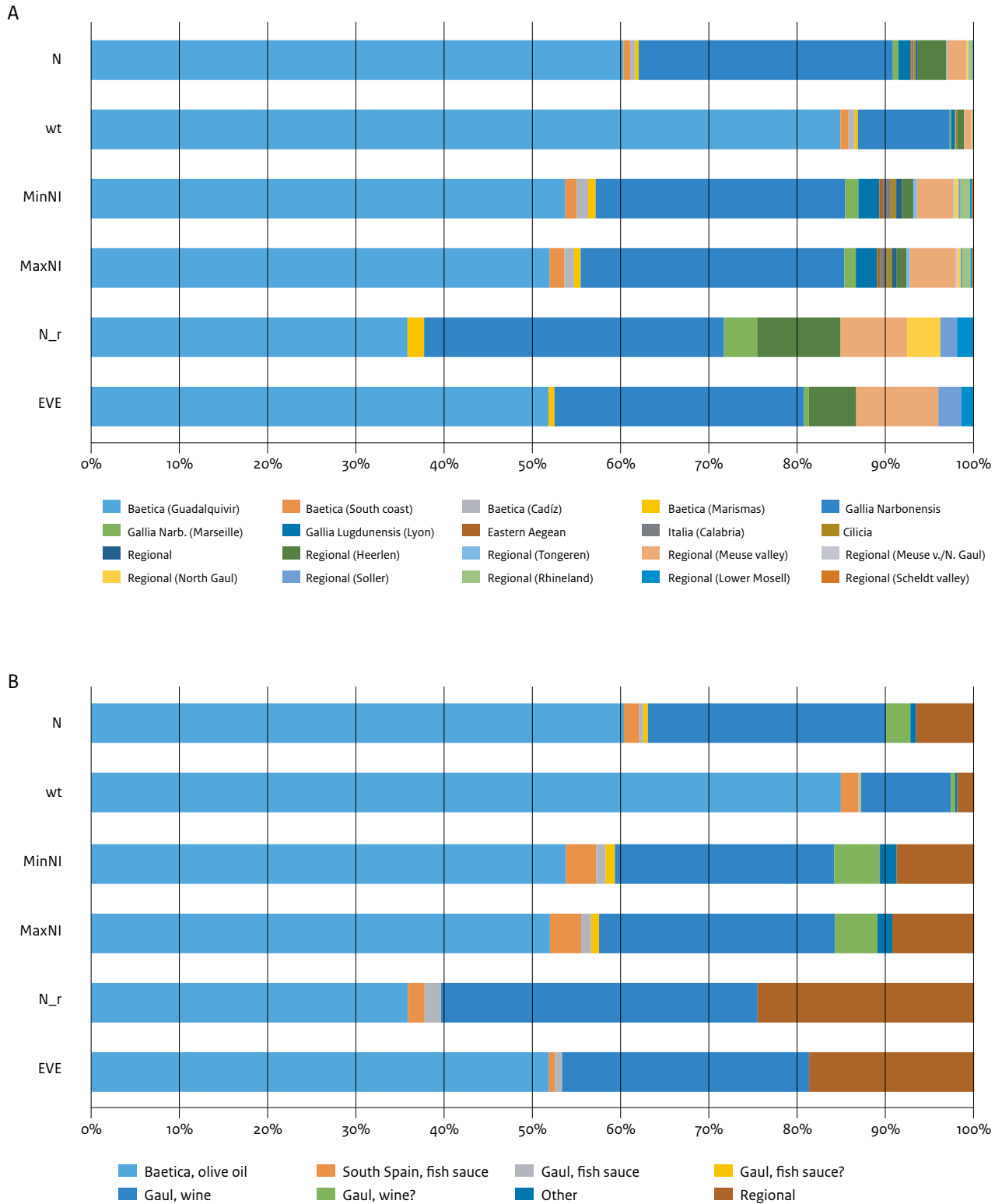


Fig. 24.10 Voerendaal-Ten Hove. The proportion of different types of amphorae for different methods of quantification. (source: J. van den Berg & H.A. Hiddink)  
 A amphorae from different production regions; B amphorae per generic primary region-content.

examples from the third century. While this may seem like regular import, it is important to note that Gauloise amphorae may represent something else in different periods. In the pre-Flavian period more expensive wines came from Italy and Greece, and while Gallic wine did have its place in the market, it was not considered the best. From the Flavian period onwards the markets shifted. Italian and Greek wines disappeared almost entirely from the north, while Gaulish wine – or wine amphorae – almost gained a monopoly in the amphorae-borne wine trade with the Mediterranean. For a while there was virtually no competition, until the regional amphorae arrived on the market in large numbers. While these contained local contents or transhipped (cheaper) wine, the wine shipped in Gauloise amphorae now came to represent the upper level of the market, the better wines. Thus, while Gauloise amphorae are entirely normal for any Roman site in the second century, the presence of these types in the third century should be considered more significant.

#### 24.3.3 The import of fish sauce

Fish sauce was imported from southern Spain, southern Gaul and Lyon. The fragments of fish-sauce amphorae from these regions make up about 2% of the spectrum in terms of fragments, EVE and weight. Their conservation is fairly poor in comparison to the Dressel 20 amphorae, with 95.6 g per fragment and between 147.8 and 177.4 g per individual per context. The small percentage is due in part to the fact that Mediterranean fish-sauce amphorae were comparatively early and, at least in the north-western provinces, they were already on a significant decline by the time the villa at Voerendaal started. Although Mediterranean fish-sauce amphorae are less common after the first century, they may have been at least partly replaced by products from the North Sea coast, which might explain the presence of a Scheldt valley amphora. However, the variation in fabrics in particular supports the notion that fish-sauce amphorae are underrepresented in the sample studied. While they only make up a small percentage of the sherds, they are a significant discovery. Fish sauce was a very popular product

in Mediterranean culture, but was not always readily adopted by the local population of the conquered areas. Therefore, fish sauce, more so than wine or olive oil, is an indication of the presence of Mediterranean people or at least of people who had adopted a Mediterranean lifestyle.

#### 24.3.4 The import of regional amphorae

At Voerendaal, regional amphorae were imported from a myriad of regions, ranging from the nearby city of Heerlen to various places along the Meuse, the Rhineland (e.g. Soller) and the Lower Moselle valley. Despite the large number of fabrics, representing many production sites, the regional amphorae make up only a small percentage of the amphora spectrum, consisting of about 6.6% of the fragments and a mere 2% of the weight (Fig. 24.10). The percentage is even overrepresented due to a single example of an amphora from Heerlen, with 46 fragments weighing 971 g. This represents about 40% and 30% respectively of the sherds and weight of all the regional amphorae. Excluding this find, the regional amphorae form one of the most fragmented groups, with an average weight of 31 g per sherd and about 1.3/1.7 fragments or 44.2-54.1 g per individual specimen. While this degree of fragmentation is not very different from that of the Gauloise amphorae, the poor conservation of regional amphorae, in conjunction with the variation in fabrics/provenance, might indicate that this group is underrepresented within the sample studied (partly due to the less thorough analysis of wall fragments of 'thick-walled' pottery, including mortaria and dolia).

The regional amphorae at Voerendaal are the only category that do not properly fit the expected pattern for pottery at a villa site. As a rule, regional amphorae are found at every site and in considerable numbers. What could be the cause of this? A number of hypotheses could explain the situation:

- The initial hypothesis relates to chronology. Regional amphorae were introduced comparatively slowly and did not become particularly common until the middle of the second century AD. Thus, if the hey-day of our villa fell in the Flavian period and early second century,

for example, or if there was a bias towards this time period, that could result in a low percentage of regional amphorae. However, the study of the other amphorae at Voerendaal shows a regular import from the early second century onwards, with a potential bias in the third century, which makes the absence of large numbers of regional amphorae even more puzzling.

- The absence of regional amphorae might relate to the socio-economic makeup of the population at the villa. Perhaps this consisted for a large part of 'genuine Romans' who had no taste for local products and who were rich enough to import wine from Gaul. This is a simple explanation and also a quite unlikely one. A comparison with other villas shows that local amphorae show up in significant numbers, even on sites displaying considerable wealth. This makes sense, as a villa was not just a home for the very wealthy, but was also inhabited by the less well-off, labourers and slaves.
- Another possible explanation could be as follows: What if Voerendaal was not a consumption site for products imported in regional amphorae, but rather a production site for whatever these amphorae contained? There would be no need to import regional amphorae if their contents were already available. However, regional amphorae – from Heerlen – would have been needed to pack these contents, resulting in some breakage and therefore sherds remaining at the site.
- What if the underlying assumption, or rather observation, that the regional amphorae make up a small percentage is wrong, or cannot be taken at face value? In other words, is the sample unrepresentative, with the percentage of local amphorae only appearing low because other forms are overrepresented. Some arguments can be made for that. We do see that the Dressel 20 in particular is present in large numbers, with large and heavy fragments and often many fragments per context and per individual specimen. In stark contrast, the fragments of regional amphorae are small, fragmented and dispersed, despite indications of a larger number of individual amphorae, shown by the number of different fabrics.

The difference in fragmentation cannot simply be explained away by the fact that regional amphorae are smaller; anyway, at least some of them are quite large. The Mosan III, for example, would have rivalled the size of the Dressel 20 and generated just as many fragments.

### 24.3.5 Late Roman amphorae

The Late Roman amphorae at Voerendaal are not associated with the villa complex, but rather with the post-built settlement that came after. In the Netherlands, amphorae do not form part of Late Roman pottery assemblages, although they are found at Late Roman sites in Britain and Ireland. The examples at these sites are from the later fifth and sixth century, after the downfall of the Western Roman Empire. As these sites seem to show a predominance of wares from the eastern Mediterranean rather than the former Western Roman Empire, it is argued that Britain and Ireland had direct trade links with the Eastern Roman Empire. However, the complexities of the pottery assemblages at these sites are still not completely understood.<sup>2331</sup>

In contrast to Britain and Ireland, the Late Roman amphorae at Voerendaal seem to date around the beginning of the fifth century. At that time Voerendaal was still part, at least nominally, of the Western Roman Empire and trade links still existed, although they were not quite as prevalent as during the mid-Roman period. This is evident at Köln, which was still able to import large numbers of Spanish olive oil amphorae.<sup>2332</sup> Even a Late Roman villa like Bad-Kreuznach still provides evidence of a fairly extensive trade network.<sup>2333</sup> This presents a very different situation than the later fifth and sixth century, after the collapse of the Western empire, when Byzantine merchants had to sail all the way to north-western Europe to obtain what they needed, presumably things such as rare metals (e.g. tin, zinc).

The Dressel 23, the LRA1 and a possible Italian Late Roman amphora may simply be explained as objects that reached the north via a trade network. However, the inhabitants of Voerendaal at the time do not show the hallmarks of rich Gallo-Romans inhabiting an expansive villa, but rather of local 'Franks' living near the ruins of a former monumental building. They may have got

<sup>2331</sup> Doyle 2009, 21-22.

<sup>2332</sup> González 2010, 110-111.

<sup>2333</sup> Ehmig 2007, 42.

their hands on a few amphorae through secondary trade or possibly through raiding or military actions. An alternative explanation is the presence at Voerendaal of soldiers or barbarian auxiliaries once stationed near the Danube, where Late Roman amphorae were more prevalent. Whatever the explanation, Voerendaal stands out from other Late Roman sites in the Netherlands.

#### 24.3.6 Comparison

In many ways the amphora spectrum of Voerendaal is similar to that at other villa sites in the northern reaches of the Roman empire. There are Dressel 20, Gauloise 4 and regional amphorae, as well as the occasional fish-sauce amphora. What is noteworthy here and what sets Voerendaal apart is the quantity of material. It is not a site with a handful of sherds, or even a few hundred sherds, but rather 1,734 fragments with a total weight of about 165 kg. Although this quantity is still negligible compared to a Roman military or urban context, it is in the range to be expected for a site with a less dense population. Voerendaal shows a slightly more diverse spectrum of imports, with amphorae not just from Gaul, but Lyon as well, and various connections with the surrounding production areas in the Meuse valley, as well as the Rhine, Moselle and Scheldt valleys. Besides that, the presence of Late Roman amphorae displays an aspect of (post-)Roman life that is not all that evident elsewhere.

In terms of what was and was not found, it is the scarcity of regional amphorae in particular that sets Voerendaal apart from other villas or indeed any type of Roman context in the Netherlands. Many amphorae were also found at Hoogeloon-Kerkackers, but a large proportion of the material there consists of regional amphorae. In addition to these regional amphorae, excavations at Hoogeloon yielded many Gauloise 4 amphorae and comparably few Dressel 20s. Therefore, this was apparently a villa with a different character than Voerendaal.

Perhaps a more analogous amphora spectrum can be found at Treignes-Bruyères. Here, Nicolas records that the ratio of Dressel 20

and Gauloise 4 is balanced in terms of fragments, although the former is the most common amphora in terms of weight. Also similar is the small percentage of fish-sauce amphorae and a possible Dressel 23.<sup>2334</sup> Here too, it is the local amphorae that set the spectrum at this villa apart from Voerendaal, as more than half of the fragments and a quarter of the weight belong to regional amphorae. Apart from this, the spectrum at this site is quite similar to Voerendaal.

More telling, perhaps, is what Voerendaal is not. It does not display the same pattern as the villas at Kerkrade-Holzkuil or Maasbracht, where very few amphorae were found. It also differs from the villas of Niederursel-Krautgartenweg and Niedereschbach-Taunengraben, which are described by Ehmig as having a 'strong agrarian function' (*stark landwirtschaftliche Funktion*). Here too, there are low numbers of amphora fragments, with a focus on local wares. Neither is the pattern of a rural context reflected, such as Lanaken-Smeermaas,<sup>2335</sup> Nistelrode-Zwarte Molen,<sup>2336</sup> or Oerle-Zuid-Zilverackers.<sup>2337</sup> Considerable numbers of amphora fragments have been found at some of these sites, but mainly due to the presence of regional amphorae. In terms of volume and spectrum, an urban context of the second or third century represents a much closer analogy to Voerendaal, such as the amphorae from Insula 15 at Xanten,<sup>2338</sup> the ones found at Tongeren-Beukenbergweg or O.L.V.-basiliek,<sup>2339</sup> or those of the mid-Roman city of Nijmegen/Ulpia Noviomagus.<sup>2340</sup> Here the regional amphorae do not appear as dominant, mostly because there is also a larger presence of Mediterranean amphorae. We also see larger volumes of amphorae here.

To conclude, we can say that Roman villas tend to vary considerably when it comes to the number of amphorae and the ratios of fabrics and types. This makes it difficult to characterize Voerendaal within that framework. In terms of its amphorae, however, it does seem that Voerendaal looks much more like a Roman city or wealthier villa than a rural settlement or lower-tier *villa rustica*. The consumption pattern here is most likely a reflection of a relatively wealthy villa, with perhaps a fairly urbanized population.

<sup>2334</sup> Nicolas 2011, 75.

<sup>2335</sup> Pauwels & Creemers 2006, 103.

<sup>2336</sup> Van Enckevort 2007, 277-284.

<sup>2337</sup> Hendriks 2012, 193-195.

<sup>2338</sup> Carreras 2006, 37, table 5. This research conducted by Spanish specialists does not account for the full spectrum of local amphorae, as little was known about that at the time.

<sup>2339</sup> Geerts 2014, 237-239; Verhoeven *et al.* 2013, 146-156.

<sup>2340</sup> Van den Berg in prep. (BLAN project Wd6).

## 24.4 Conclusion

Excavations at the villa of Voerendaal yielded a comparatively large sample of amphorae. This sample was not just large, but quite diverse for a predominately mid-Roman context. It showed that the inhabitants used olive oil, a staple of Roman life, throughout the existence of the villa complex and even in the Late Roman period. It is noteworthy that quite a few Dressel 20 stamps were found for this type of context, which shows a similar chronology of stable import from the later Flavian period until well into the third century. The stamps also show the diverse ways in which olive oil amphora manufacturers identified themselves.

The site also yielded a few fish-sauce amphorae. Fish sauce is a particularly Mediterranean commodity, although it was imported from more than one region: southern Spain, southern Gaul and Lyon. Fish-sauce amphorae are not common at villa or rural sites and tend to be rare overall during the second and third centuries, which emphasizes the special nature of the consumption of fish sauce at this site.

Wine was imported primarily from *Galla Narbonensis*, although a few fragments show the presence of Greek amphorae from the pre-Flavian phase of the villa. The Gauloise 4 was the standard wine amphora of the mid-Roman period, but tended to be more common in the

second than in the third century. A very special feature at this site is the presence of a rare example of a stamp. The T.CR.VII stamp proves that this amphora was imported from Arles.

The low percentage of regional amphorae is unusual. In most cases, in particular in villas or rural contexts, they make up the lion's share of the amphora spectrum. Most regional amphorae at Voerendaal came from nearby production sites, such as Heerlen, or other sites in the Meuse valley. A few examples show a more extensive intraregional network, with amphorae arriving here from the Rhineland, Soller, the Lower Moselle and the Scheldt valley.

Even more unusual was the presence of amphorae from the Late Roman period: in this case not only late amphorae, such as the Dressel 23, but also quite exotic ones from Cilicia in the Eastern or Byzantine empire, as well as from southern Italy.

Comparing the amphora spectrum at Voerendaal is problematic for now due to the limited availability of properly studied and published villa complexes in the region. As it stands, Voerendaal shows a particularly large and diverse amphora spectrum, with a strikingly low percentage of regional amphorae. This differs from the general pattern for villas and more closely resembles what can be expected at a mid-Roman urban context like Xanten or Tongeren.

## 24.5 Catalogue of stamps

The stamps listed in this catalogue are illustrated in Figure 24.11.

### 01.- CAP

Place of production: primarily Cortijo del Temple, Este,<sup>2341</sup> but also El Rodriguillo,<sup>2342</sup> and possible El Sotillo (at locations Almodóvar del Río, Spain).<sup>2343</sup>

Date: Found in contexts dated to AD 214, 216, 217, 216-223, 223 and 220-224 on Monte Testaccio (Rome, Italy).<sup>2344</sup>

#### (a) c[ap]

Reading: Cap( )<sup>2345</sup> or C. A( ) P( )<sup>2346</sup>

Stamp: *in ansa*, Dressel 20; litt. *cavis*.

Collection: ROB 68-1-3/6757; PDB Heerlen.

Citation: *vidimus*; unpublished.

Comment: poorly visible stamp, only the C and part of the cartouche remains. The rest has broken off. The shape of the handle is consistent with a third-century chronology.

<sup>2341</sup> Ponsich 1979, 192-198, no. 73, fig. 76.

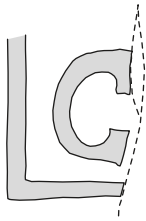
<sup>2342</sup> Chic 1985, 12, no. 91; Berni 2008, 495-499.

<sup>2343</sup> Étienne & Mayet 2004, 210, no. 870; Berni 2008, 505-508.

<sup>2344</sup> Dressel 1899, 2658; Remesal 1994, 147-148, no. 224; 2001, 209-211, no. 437; 2010, 171, no. 318.

<sup>2345</sup> Berni 2008, 562, no. 251.

<sup>2346</sup> Étienne & Mayet 2004, 19-20, no. 49.



1. 68-1-3/6757



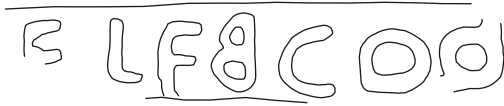
2. 1953-2.1/13034



3. 1953-2.5/13036



4. 1953-2.5/13031



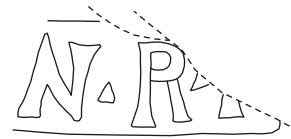
5. 1895-12.29/13038



6. 79-0-0/7986



7. 1932-11.12/13038



8. 314-1/114-2-9



9. 95-1-6/10691



10. 1953-2.1/13035

Fig. 24.11 Voerendaal-Ten Hove. The amphora stamps; first numbers referring to the catalogue. Scale 1:1. (source: J. van den Berg & H.A. Hiddink)

## 02.- PCAEHER

Place of production: La Mayena (Lora del Río, Spain).<sup>2347</sup>

Date: Flavian-Trajanic at Mainz (D/RP);<sup>2348</sup> c. AD 145 on Monte Testaccio (Rome, Italy).<sup>2349</sup> The typology of the example from Voerendaal shows relatively long handles, although not quite as long as Berni's Forma III, but also longer than Forma IV, suggesting a transitional model to be dated around the reign of Hadrian.

### (a) PCAEHER<sup>2350</sup>

Reading: P. Cae() Her()

Stamp: *in ansa*, Dressel 20; litt. *extantibus*.

Collection: 1953-2.1/13034; RMO Leiden.

Citation: *vidimus*; unpublished.

Comment: barely legible. The P and parts of the C, AE and HE are visible to the eye, the rest by touch/rubbing paper.

<sup>2347</sup> Chic 1985, 61, no. 547; Berni 2008, 362-364.

<sup>2348</sup> Remesal 1997, 105, no. 81.

<sup>2349</sup> Remesal 2003, 314, no. 872.

<sup>2350</sup> As noted earlier, to avoid problems during the processing of the text, ligatures are indicated by underlining instead of the correct convention of placing arches over the characters.



## 03.- TCRVIT

Place of production: Arles (France).<sup>2351</sup>

Date: found on the late first/early second century shipwreck Arles-Rhône 3.<sup>2352</sup>

## (a) T.CR.VIT

Reading: T. Cr( ) Vit( ), possibly T. Cr(assius, -asius, -assus, -axsius, -ispus) Vit(alis).<sup>2353</sup>

Stamp: *in ansa*, Gauloise (Gauloise 4?); litt. *extantibus(?)*.

Collection: 1953-2.5/13036; RMO Leiden.

Citation: *vidimus*; unpublished.

Comment: nearly faded due to the softness and sandiness of the fabric. Drawn on the basis of the remaining relief, rather than visible letters.

## 04.- DIONY

Place of production: unknown; however, there is an epigraphic reference found on Monte Testaccio (Rome, Italy) to a *figlinae dionysi* near Cordoba during the consulship of Commodus and Lateranus (AD 154).<sup>2354</sup> It is unclear if this is the same workshop reference on these much younger stamps.

Date: found in contexts dated to 216, 217 and 220-224 on Monte Testaccio (Rome, Italy).<sup>2355</sup>

## (a) υνοιδ (diony)

Reading: Diony(sī, -sia)

Stamp: *in ansa*, Dressel 20; litt. *extantibus, retro*.

Collection: 1953-2.5/13031; RMO Leiden.

Citation: *vidimus*; unpublished.

Comment: extremely vague. Only the O is somewhat visible to the eye, the rest only by touch and drawing using rubbing paper. Possibly collected and preserved in 1932 because the stamp was more visible at that time. Size of the frame and typography consistent with examples from Testaccio.

## 05.- FLFBCOLO

Place of production: Alcotrista (Écija, Spain).<sup>2356</sup>

Date: based on the typology of the example from Voerendaal, c. AD 220s-240s.

## (a) FLFBCOLO

Reading: <L> F(abbi) L(uc...) (et) <L> F(abii) Bal(bi) (ex figlina) Colo(braria);<sup>2357</sup> or: (ex) F(iglinas) L. F(abius) B(albus) Colo(braris)<sup>2358</sup>

Stamp: *in ansa*, Dressel 20; litt. *extantibus*.

Collection: 1895-12.99/13038; RMO Leiden.

Citation: *vidimus*; unpublished.

Comment: the stamp is somewhat unclear around the edges, resulting in the previous interpretation as SLEBCOS (unpublished find drawings; inventory book RMO). The first F is only partially printed. The L is clear, but the F is unclear at the bottom. The B (in retro), C and O are clear. The last letter is difficult to interpret. At first glance it seems to be just an O, but on further inspection there seem to be edges that suggest that this is a ligature of the LO.

## 06.- APCO

Place of production: La María (Lora del Río, Spain).<sup>2359</sup>

Date: Berni favours a date between the Flavian and Antonine periods based on the typology of an example from Split (Croatia), published by Cambi, with a stamp that reads OC{amphora}PA (retro: APCO).<sup>2360</sup> Étienne and Mayet consider this to be a different *figlinae* and opt for a much later date, based on an example that does read APCO, recorded by Funari at *Verulamium* (St. Albans, England) in a context dated to AD 220-255.<sup>2361</sup> Given the stylistic similarities between the

<sup>2351</sup> Long 1994, 52-54; Bigot *et al.* 2019, 402.

<sup>2352</sup> Corbeel 2013, 402-405, 425.

<sup>2353</sup> Corbeel 2013, 402-405.

<sup>2354</sup> *CIL* 15.4300, 4302, 4301; Berni 2008, 174.

<sup>2355</sup> Remesal 2001, 218, no. 455; 2010, 188-189, no. 353.

<sup>2356</sup> Chic 1985, 38, no. 331; Jacques 1990, 895; Bourgeon 2018, 313-314.

<sup>2357</sup> Bourgeon 2018, 313-314.

<sup>2358</sup> Berni 2008, 163.

<sup>2359</sup> Ponsich 1974, 86, no. 29.

<sup>2360</sup> Cambi 1983, 372-373, no. 4, fig. 6 (right), 8, 17; Berni 2008, 368.

<sup>2361</sup> Funari 1999, 152, no. 23; Étienne & Mayet 2004, 214, no. 884.

OC{amphora}PA from Split and the APCO stamps, it seems likely that there is a relationship between the two and that the example from *Verulamium* is residual and thus earlier. The typology of the example from Voerendaal does not quite match the elongated handles of the Flavian types but is much closer to the typologies of the Antonine period.

(a) ap{amphora}co

Reading: <M. I(> A( ) P(ortus) Co( )<sup>2362</sup>

Stamp: *in ansa*, Dressel 20.

Collection: 79-0-0/7986; PDB Heerlen.

Citation: *vidimus*; unpublished.

Comment: the letters on this stamp are legible, but the symbol in the middle is partially faded.

As with Ehmgig's example from Mainz or Callender's example from Strasbourg,<sup>2363</sup> it looks like a small capital E with a large dot. It is, however, more likely a representation of an amphora lying on its side.

07.- APS

Place of production: unknown. There is no direct evidence for the production of the APS stamp or related stamps (APSO, MIAPS). However, other *figlinae* of this producer, represented by stamps such as APCO, APCO, APH and APM, are all located near Lora del Río (Spain).<sup>2364</sup>

Date: Martin-Kilcher records a context date of AD 90-130 at Augst for a much simpler variant of the APS stamp.<sup>2365</sup> Étienne & Mayet, however, favour a Flavian-Trajanic date for the same variant at Romain-en-Gal (France).<sup>2366</sup> The typology of the example from Voerendaal is more consistent with Martin-Kilcher's date range.

(a) |A . {ramus palmae} P . {amphora} S . |

Reading: <M. I(> A( ) P(ortus) S(o...)<sup>2367</sup>

Stamp: *in ansa*, Dressel 20.

Collection: 1932-11.12/13032; RMO Leiden.

Citation: *vidimus*; unpublished.

Comment: the stamps consist of three letters, APS. Before the A there is an elongated dot; between the A and P is a more intricate representation of a palm branch also representing a dot; between the P and S is a dot underneath the P, followed by a decorative symbol of an amphora; and after the S is another dot. The letters are surrounded by a thin-lined cartouche, with only the S above that line. The stamp is surrounded by a second cartouche created by the edges of the *signaculum*.

08.- SNRP

Place of production: La Catria (Lora del Río, Spain).<sup>2368</sup>

Date: found on Monte Testaccio (Rome, Italy),<sup>2369</sup> in contexts dated to AD 149, 154,<sup>2370</sup> and 153-161.<sup>2371</sup>

(a) [s-]n·r·p

Reading: S(exti) N( ) R(uffi) P(ortus)

Stamp: *in ansa*, Dressel 20.

Collection: 314-1/114-2-9/10143; PDB Heerlen.

Citation: *vidimus*; unpublished.

Comment: the handle is broken off just before the N and part of the P is missing. Otherwise, the stamp is in very good condition, showing letters in a relatively high relief and hard fabric.

09.- PASSERAR

Place of production: Casa del Guardia o Llano (Posedas, Spain),<sup>2372</sup> or Umbría de Moratalla (Posedas, Spain).<sup>2373</sup>

<sup>2362</sup> Berni 2008, 197-199.

<sup>2363</sup> Ehmgig 2003, no.144.1; Callender 1965, 285, fig. 3.37.

<sup>2364</sup> Berni 2008, 197-199.

<sup>2365</sup> Martin-Kilcher 1987, 125-126, ST 88.

<sup>2366</sup> Étienne & Mayet 2004, 3221, no. 925.

<sup>2367</sup> Berni 2008, 197-199.

<sup>2368</sup> Remesal 1978, 107, no. 46; Chic 1985, 66, no. 596; Berni 2008, 322.

<sup>2369</sup> *CIL* 15.30461.

<sup>2370</sup> *CIL* 15.4257, 4294. There is also a *titulus pictus* associated with an amphora from this workshop from Monte Testaccio with a reference to Sextus Fadius Secundus (*CIL* 15.3873). He was an important citizen of Narbonne of whom an inscription remains on what may have been part of his statue in the *forum*. This inscription dates to AD 149. See Callender 1965, 251, no.1641.

<sup>2371</sup> Remesal 1999, 41, no. 23.

<sup>2372</sup> Ponsich 1979, 163, no. 36; Chic 1985, no.173-174; Berni 2008, 466-468.

<sup>2373</sup> Ponsich 1979, 228, no. 236; Berni 2008, 464-466.

Date: an example from the *canabae legionis* at Nijmegen suggests an early Flavian date.<sup>2374</sup> The argument for this date is based on a nearly complete amphora from Orti dei Torlonia in Rome with a related stamp that reads *passerari*.<sup>2375</sup> The typology here dates to the reign of Nero or Vespasian. But as the *canabae* at Nijmegen did not start until AD 69/70, the date was determined to be early Flavian. Márquez and Molina simply prefer a Flavian-Trajanic date for their example from Alicante,<sup>2376</sup> as does Olmer with her example from Autun,<sup>2377</sup> while Barthélemy-Sylvand gives a Late Flavian date for his example, Saint-Marcel,<sup>2378</sup> and Almeida a Trajanic date in Rome.<sup>2379</sup> An intriguing *titulus pictus* from Monte Testaccio, dated to the Antonine period, may refer to *figl(inae) Pas[seraria]*.<sup>2380</sup> Remesal gives a completely different chronology at Xanten, namely third century. This argument is based on an unspecified example from Monte Testaccio.<sup>2381</sup> The *passerari* stamp from Rome may represent an early phase of this particular workshop. The typology of the example from Voerendaal, however, is more in line with what Callender already suggested in 1965: late first or early second century.<sup>2382</sup> A third-century date for this workshop seems unlikely.

(a) PASSERAR

Reading: *Passeraria*

Stamp: *in ansa*, Dressel 20.

Collection: 95-1-6/10691; PDB Heerlen.

Citation: *vidimus*; unpublished.

Comment: very deep impression of the *signaculum*, but almost no lettering visible. Only the P and the lower part of the AR are still in relief. Part of the clay with the lower part of the AR was pushed down. The stamp is slightly elongated due to the manner of the impression, making this version of the *PASSERAR* stamp slightly longer than other known examples.

10.- PROBI

Place of production: unknown; Guadalquivir valley, Spain.

Date: based on the typology of the handle, between the beginning and middle of the second century AD.

(a) probi

Reading: *Probus*

Stamp: *in ansa*, Dressel 20.

Collection: 1953-2.1/13035; RMO Leiden.

Citation: *vidimus*; unpublished.

Comment: extremely vague. Only the P and O are just visible, the rest of the letters can only be felt by touch and made visible by rubbing paper. Possibly collected and kept in 1947-1950 because the stamp was more clearly visible at that time, the sherd being still moist. Size and typography are consistent with the examples from Mainz,<sup>2383</sup> so much so that it may even be the same *signaculum*. The manner in which the stamp from Mainz was set is also similar, suggesting that it may have been placed by the same hands.

<sup>2374</sup> Remesal 1986, 185, no. 209;

Berni 2017, 252, no.144.

<sup>2375</sup> Rodríguez Almeida 1977, 229, fig. 20.2.

<sup>2376</sup> Márquez & Molina 2005, 282, no. 250.

<sup>2377</sup> Olmer 1997, no. 765.

<sup>2378</sup> Barthélemy-Sylvand 2008, 663, fig. 4.28.

<sup>2379</sup> Rodríguez Almeida 1977, 236-237.

<sup>2380</sup> Rodríguez Almeida 1994, 102, no.155; Berni 2008, 467.

<sup>2381</sup> Remesal 2018, 349, no. 122.

<sup>2382</sup> Callender 1965, 201, no. 1287

<sup>2383</sup> Ehmig 2003, no. 154.

# 25 Late Roman Argonne sigillata

Henk Hiddink

## 25.1 Introduction

In the late 1980s most sherds of Late Roman terra sigillata from the Argonne area (north-eastern France) were separated from the other sigillata and some roller stamps were identified in the database. The identification of some sherds was checked in 2020;<sup>2384</sup> after that, 171 sherds from 119 records (4,742 g) remained (Table 25.1). No attempt was made at an exact determination of the MNI, mainly because of the small size of many (rim) fragments (preventing a precise measurement of the diameter/EVE). Only a rough estimate is given. The different types found at Ten Hove are discussed in the next Section 25.2, while the roller-stamp decorations will be dealt with in section 25.3.

## 25.2 Types of Late Roman sigillata

The only cup identified at Ten Hove is a Chenet 302,<sup>2385</sup> very similar to its predecessor Dragendorff 40, but with a slightly inverted rim (Fig. 25.1). Some 15% of the Argonne sigillata fragments belong to dishes, of which three types are identifiable, the Chenet 304, 309b and 313 (Fig. 25.1). The first has a short vertical rim, the second has a slightly thickened onset of the rim and the third has a broad horizontal rim (our example with roller-stamp decoration; Fig. 25.4).<sup>2386</sup>

Over 60% of the fragments (and weight) belong to bowls. The vast majority of the fragments can be identified as, or very likely belonging to, the decorated Chenet 320 bowl, inspired by the Dragendorff 37.<sup>2387</sup> Figures 25.2

**Table 25.1. Voerendaal-Ten Hove. Quantitative data on the late Roman Argonne sigillata.**

Form/type	MNI ca. (rims)	N	%	Wt (g)	% Wt
<i>Cups</i>					
Chenet 302	1	1	0.6	10	0.2
<i>Dish</i>					
Chenet 304	5	16	9.3	441	9.3
Chenet 309b	1	1	0.6	65	1.4
Chenet 313	1	2	1.2	65	1.4
-	0	6	3.5	113	2.4
<i>Bowls</i>					
Chenet 319?	1	1	0.6	32	0.7
Chenet 320	30	78	45.6	2368	49.9
Chenet 320var	1	1	0.6	17	0.4
Chenet 321?	1	1	0.6	9	0.2
-o	0	5	2.9	38	0.8
<i>Collared bowls</i>					
Chenet 324	4	19	11.1	541	11.4
<i>Mortarium</i>					
Chenet 328(-330)	7	8	4.7	201	4.2
-	0	8	4.7	185	3.9
<i>Flagons</i>					
Chenet 345	1	1	0.6	176	3.7
-	0	13	7.6	270	5.7
Indet.	0	10	5.8	211	4.4
<b>Total</b>	<b>53</b>	<b>171</b>	<b>100.0</b>	<b>4742</b>	<b>100.0</b>

<sup>2384</sup> These sherds with an uncertain identification were studied by Ester van der Linden.

<sup>2385</sup> Chenet 1941, 59, pl. 12.

<sup>2386</sup> Chenet 1941, 59-64, pl. 12

<sup>2387</sup> Chenet 1941, 69-72, pl. 14.

and 25.3 show that this type comes in various sizes. The only piece worth special attention is 101-1-1/12967, a small coarse bowl in a grey fabric with a light brown surface. This bowl is made in an 'imitation sigillata' from the second half of the fifth century AD. Besides the Chenet 320, type 324 is quite well represented (Fig. 25.3). This collared bowl is the successor to the collared bowl Dragendorff 44.<sup>2388</sup> The vague remains of a painted letter E are visible on the outside of 68-2-39/6281 (Fig. 25.3). Painted mottos and floral motifs are frequently found on Argonne bowls and flagons.<sup>2389</sup>

The mortaria in Argonne sigillata are similar to the Middle Roman type Dragendorff 45 (Fig. 25.3). All examples from Voerendaal represented by rims are classified as Chenet 328, but some may belong to type 329 or 330; the part with the pouring hole (329)/spout in the shape of an animal's head (330) is simply missing.<sup>2390</sup>

The single identifiable flagon type is Chenet 345,<sup>2391</sup> other flagons or jugs are represented only by wall sherds. Flagon 321-2 has a small format because it is a grave find (Fig. 25.1). No traces of painted decoration were observed.

The flagon from grave 321 has an 'angular' form similar to that of some flagons from Niederbieber.<sup>2392</sup> It was found in the Voerendaal grave together with a coarse-walled jug Niederbieber 96, a 'Middle Roman' type in a fabric from the same period (Heerlen?). In sigillata, the flagon type seems to belong to the first half of the fourth century AD, as Willems noted in his publication of the grave.<sup>2393</sup>

A number of other types in undecorated sigillata from Ten Hove were also made early in the Late Roman period. This is suggested not only by the similarity to Dragendorff types, but especially by their occurrence in the assemblage associated with the first construction phase of the Kaiserthermen at Trier, dated c. AD 320.<sup>2394</sup> Most types were made throughout the fourth century (and beyond). The absence of roller-stamp decoration in Kaiserthermen phase I is an important argument for its dating after c. AD 320 (see below).

### 25.3 Roller-stamp decorations

Forty-three sherds of Late Roman terra sigillata have a roller-stamp decoration (Fig. 25.4-5). At the start of the project in 2019, 16 sherds listed in the database were missing, but fortunately most of these were rediscovered after some months, 100 km north of Voerendaal, in Nijmegen.<sup>2395</sup> Only one fragment still appears to be missing (20-1-62; Table 25.2, no. 27), although it may in reality be identical to material with a somewhat similar find number.<sup>2396</sup> Four stamp fragments are very small or illegible and are therefore not illustrated (Table 25.2, no. 25-26, 28-29). It is possible that some are part of other stamps.

All stamps are on bowls Chenet 320 (as far as can be observed), the only exception being 716-7/19-2-2 on a dish Chenet 313. Some stamps are represented by sherds from different find numbers, but most of these belong to the same vessel. The stamp UC 35/75 is found on 634-2 and 728-1 (Table 25.2, no. 7a-b) and although at first sight these appear to be different vessels on the basis of the rim thickness, it is very likely that they belong to a single bowl. Sherds of 502-3 (8a-c) were collected under different find numbers, but they are all from the same bowl in a single sunken hut. Fragments 17a and b also belong to a single vessel and the same probably holds true for 18a and b. Stamp 9 is identical to 10, but one was applied the other way round or 'upside down', and so they must come from different bowls.

The stamps illustrated were drawn with the help of rubbings and/or photographs, the high parts (cut out in the roller-stamp) represented in white and the low in grey (Fig. 25.4 and 25.5). A comparison of the drawings with the stamps in Chenet's publication (incorporating stamps collected by Unverzagt, hence the UC numbers) enabled half of the stamps to be identified.<sup>2397</sup> Some of the drawings of vague stamps were slightly modified afterwards. A couple of stamps were identified by Wim Dijkman. The remainder bear only some similarity to known stamps, indicated by ≈ preceding the UC number in the table. In many publications stamps are classified according to Hübener's system with eight groups.<sup>2398</sup> This is also done in Table 25.2, but UC

<sup>2388</sup> Chenet 1941, 73-75, pl. 14-15.

<sup>2389</sup> Photographs of this type of decoration e.g. in Brulet *et al.* 2010, 225.

<sup>2390</sup> Chenet 1941, 76-79, pl. 15-16.

<sup>2391</sup> Chenet 1941, 97-98, pl. 20.

<sup>2392</sup> Oelmann 1914, fig. 27, form 2 (body shape), 11-12 (rim).

<sup>2393</sup> Willems 1989, 148; no. 5-6. Vanvinckenroye (1984, 152, fig. 5, no. 12) has already suggested that the production of the type was mainly confined to the first half of the fourth century AD.

<sup>2394</sup> Hussong & Cüppers 1972, pl. 1; 4; cf. Brulet 1990, 63; Brulet *et al.* 2010, 258-259.

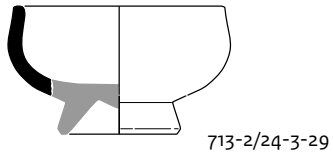
<sup>2395</sup> Some copies of rubbings kept by Wim Dijkman (curator Centre Céramique, Maastricht) suggested that the sigillata had been studied at some time in the past by the late Jan Thijssen (cf. section 2.3.3). Harry van Enckevort (archaeologist Municipality of Nijmegen) was able to locate a small box with the missing sherds from Thijssen's estate.

<sup>2396</sup> Like 20-1-61, 63.

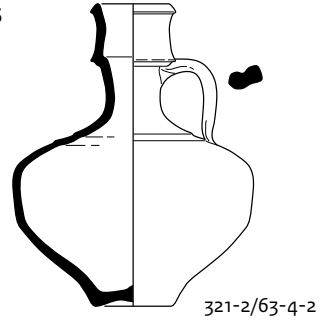
<sup>2397</sup> Chenet 1941; Unverzagt 1919.

<sup>2398</sup> Hübener 1968.

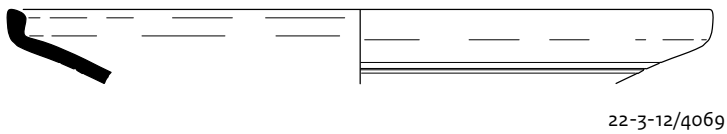
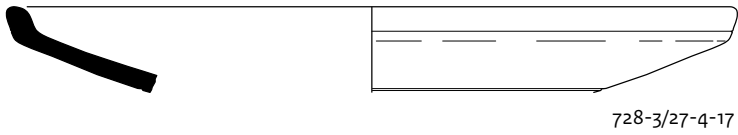
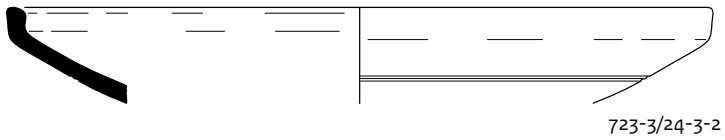
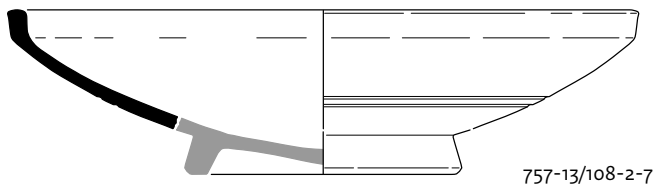
CHENET 302



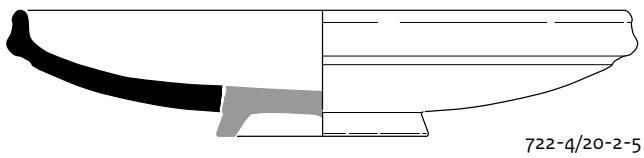
CHENET 345



CHENET 304



CHENET 309



CHENET 313

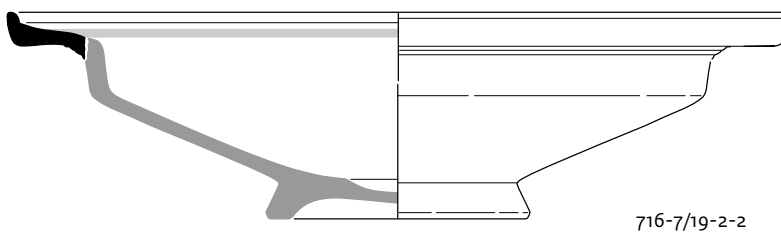


Fig. 25.1 Voerendaal-Ten Hove. Types in Argonne sigillata: cup, dishes and flagon. Scale 1:3. (source: H.A. Hiddink & F. Horbach)

**CHENET 320**

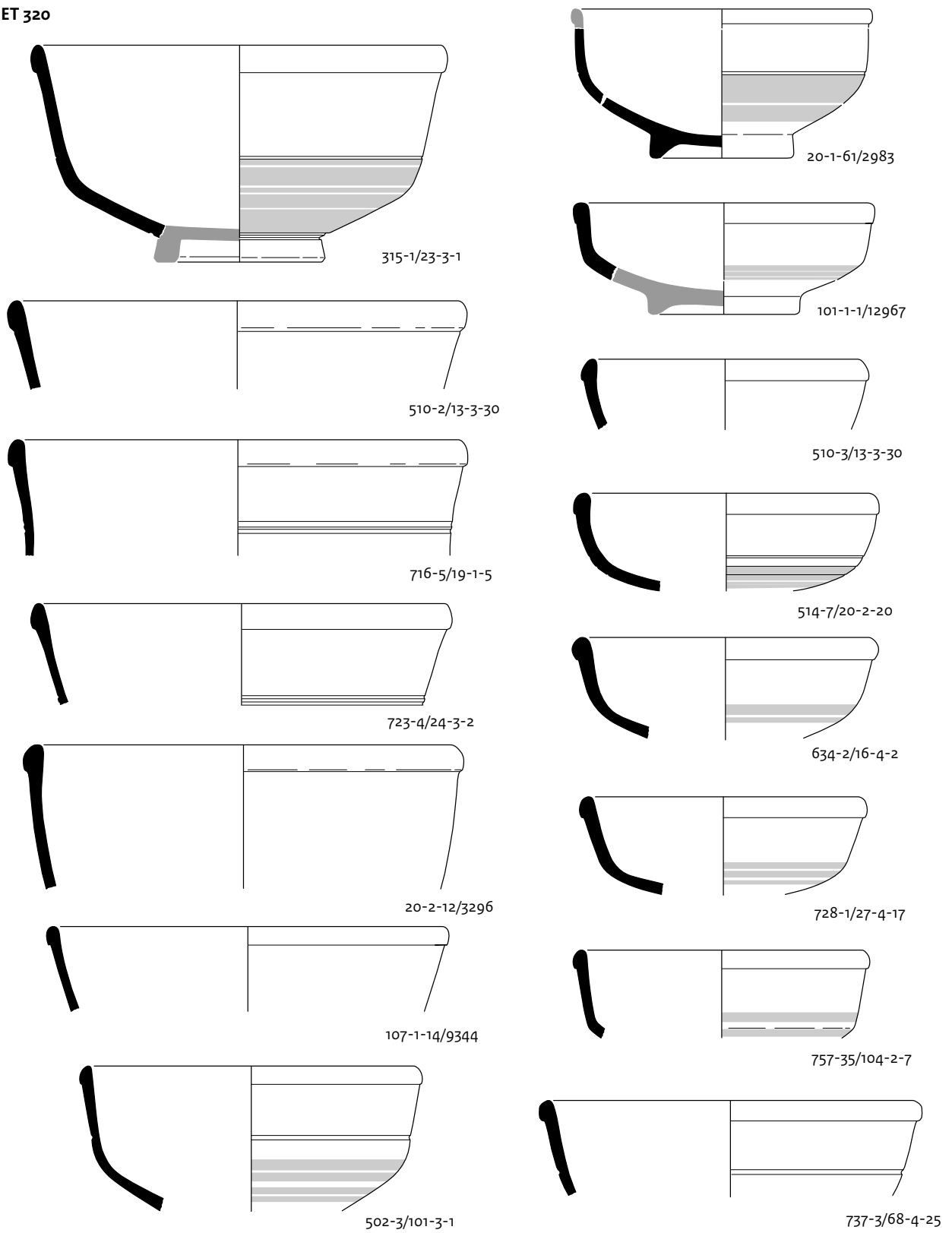
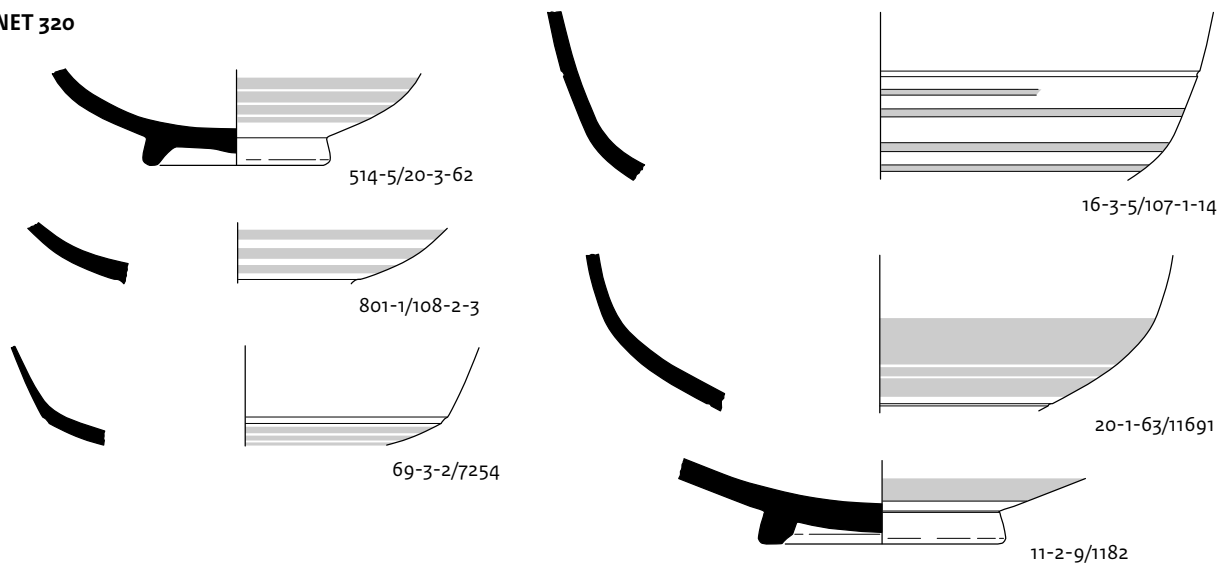
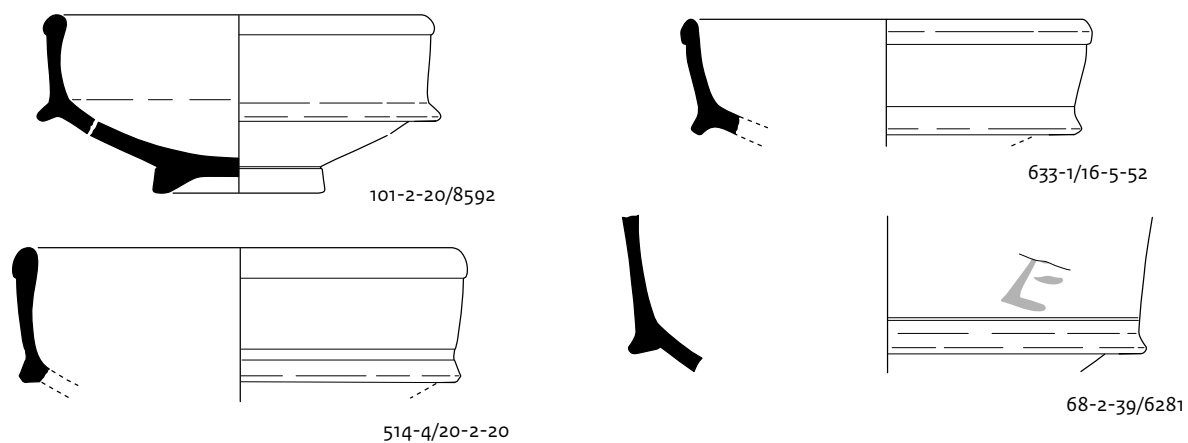


Fig. 25.2 Voerendaal-Ten Hove. Types in Argonne sigillata: bowls Chenet 320. Scale 1:3.

## CHENET 320



## CHENET 324



## CHENET 328

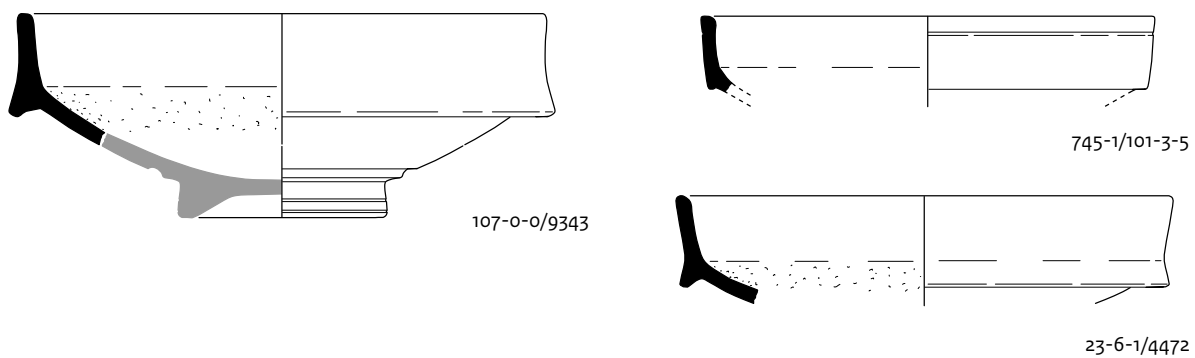


Fig. 25.3 Voerendaal-Ten Hove. Types in Argonne sigillata: bowls and mortaria. Scale 1:3.



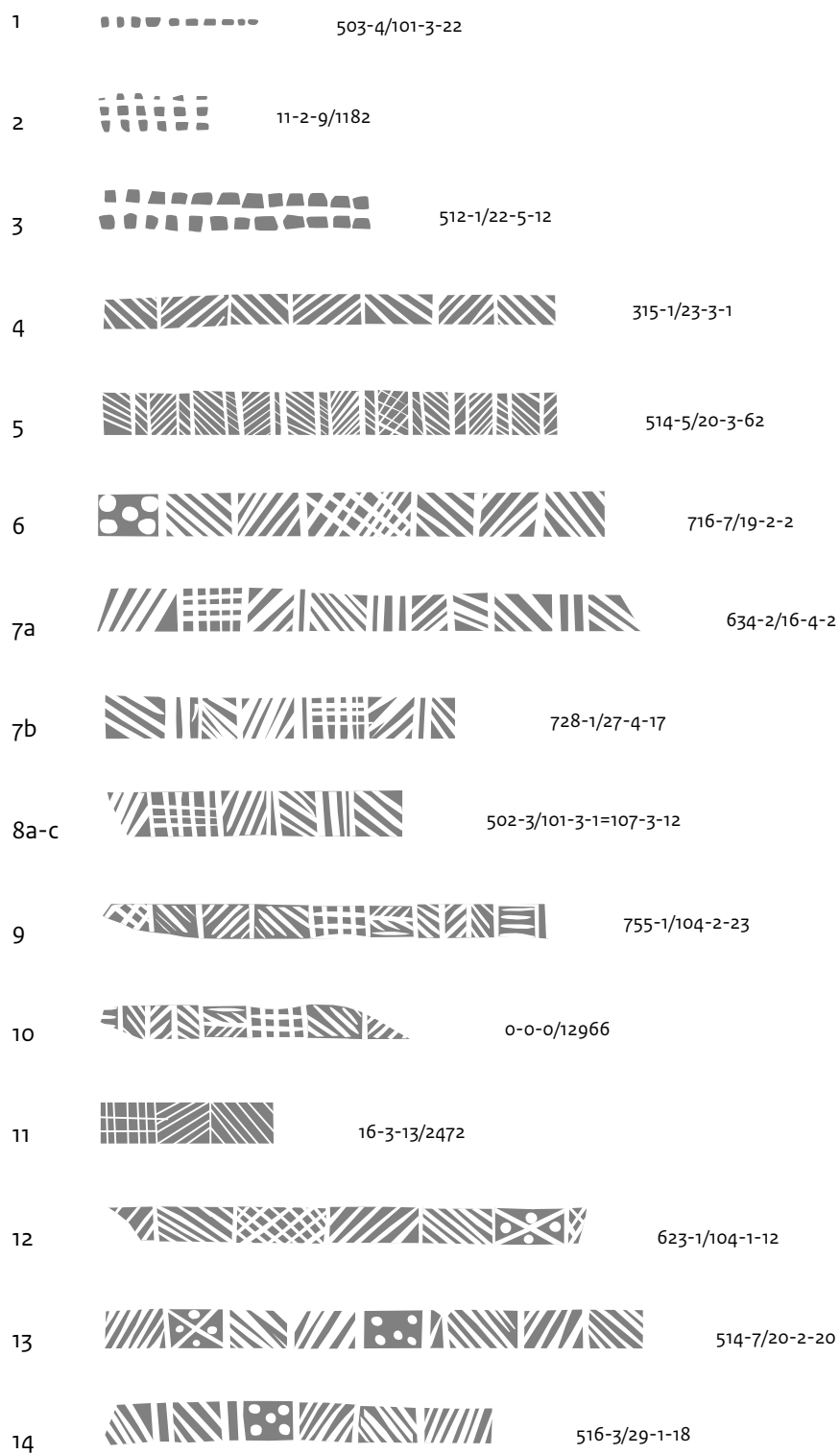


Fig. 25.4 Voerendaal-Ten Hove. Roller-stamp decorations on Argonne sigillata. Scale 1:1.

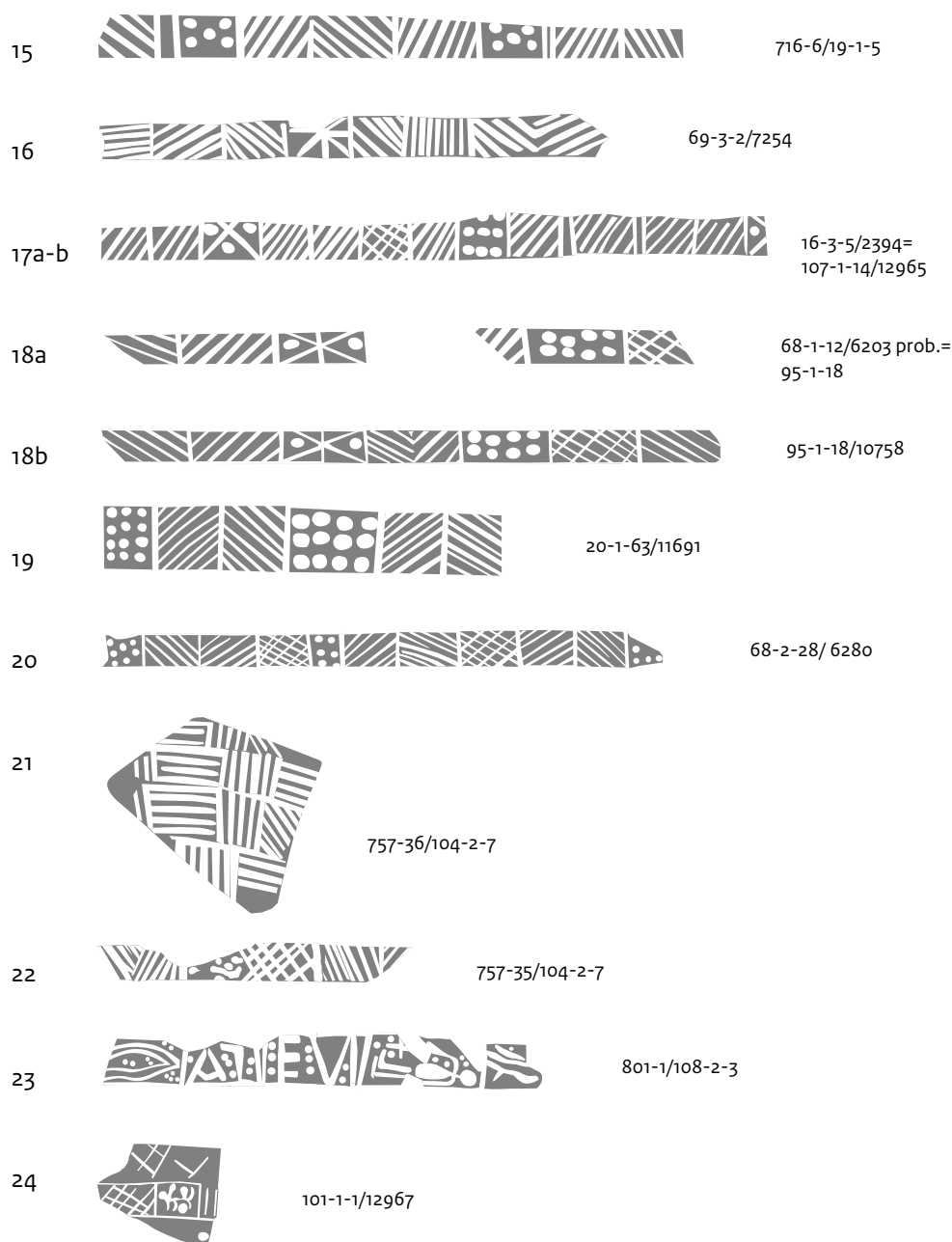


Fig. 25.5 Voerendaal-Ten Hove. Roller-stamp decorations on Argonne sigillata, cont. Scale 1:1.

numbers not explicitly mentioned by Hübener are placed in parentheses. The dates for each of the eight groups as proposed by Hübener were modified by different authors.<sup>2399</sup> Unfortunately, a new classification system with many new stamps still remains unpublished.<sup>2400</sup> Wim Dijkman, as one of the researchers involved in this project, kindly provided the dates given in our table.<sup>2401</sup>

Regarding the chronology of the stamps, we observe that all groups are present, except for group 1 (stamps with *ovolo*). Although group 1 is considered to be the earliest, this provides no accurate date for the arrival of the first Argonne sigillata at Ten Hove. The production of decorated sigillata probably began c. AD 320, in practice the same as the date IVb(-c) of some of our stamps (Fig. 25.6). If a 'short chronology'

<sup>2399</sup> E.g. Dijkman 1992, 151, fig. 19 (focus on group 8, Christian symbols).

<sup>2400</sup> Bakker *et al.* 1996. The corpus presently consists of over 1000 different stamps from 75,000 vessels (Bakker 2014, 135, no. 3).

<sup>2401</sup> The references in the table only provide some parallels that we came across in publications.

Table 25.2. Voerendaal-Ten Hove. The roller-stamped decorations on Argonne sigillata.

No.	Item	Find no.	Id	Form	Grp	Stamp	Date	References
1	503-4	101-3-22	8598	320	-2	≈UC 157, 252	IVb-c	context IVc or later
2	-	11-2-9	1182	320	-2	≈UC 304	IVb-c	
3	512-1	22-5-12	4208	320	-2	≈UC 158/305	IVb-c	context IVb/c?
4	315-1	23-3-1	4407	320	-3	≈UC 11, 12	IVb-c	Bakker 2002, 119
5	514-5	20-3-62	3503	320	3	UC 19/20	IVd	Bakker 2014/15, 204, no. 14; 215, no. 67
6	716-7	19-2-2	2851	313	5	UC 108/109	IVd-Va	Bayard 1990, fig. 6; Bakker 2002, 121; 2014/15, 212, no. 45; 222, no. 100
7a	634-2/	16-4-2/	2549	320	-4	UC 35/75	IVd-Va	Bakker 2002, 120
7b	728-1	27-4-17	5384					
8a	502-3	101-3-1	8652	320	-4	UC 35/75	IVd-Va	
8b	502-3	107-3-12	9352					
8c	502-3	107-2-10	9467					
9	755-1	104-2-23	8984	320	-4	UC 82	IVd-Va	Bayard 1990, fig. 6; Bakker 1986, 98, cat. 7; 2002, 120; 2014, 157, no. 15; 2014/15, 208, no. 24
10	-	0-0-0	12966	320	-4	UC 82	IVd-Va	
11	-	16-3-13	2472	320	-4	?	IVd-Va	
12	623-1	104-1-12	8981	320	5	UC113	IVd-Va	Bakker 2002, 120; 2014/15, 215, no. 58
13	514-7	20-2-20	3320	320	5	UC 195	IVd-Va	Bakker 2002, 121
14	516-3	29-1-18	10322	320	-5	UC 351	IVd-Va	Bakker 2002, 121
15	716-6	19-1-5	11690	320	-5	UC 351	IVd-Va	
16	-	69-3-2	7254	320	-5	NS 1142	IVd-Va	Vanderhoeven 1979, fig. 4.50
17a	-	16-3-5	2394	320	6	UC 106	IVd-Va	Bayard 1990, fig. 6
17b		107-1-14	12965					
18a	-	68-1-12	6203	320	-6	UC 102/112	IVd-Va	Bakker 2002, 123
18b	-	95-1-18	10758	320	-6	UC 102/112	IVd-Va	
19	-	20-1-63	11691	320	-6	UC 319	IVd-Va	Bakker 2014/15, 219, no. 84
20	-	68-2-28	6280	320	6	UC 117	IVd-Va	Bakker (2002, 122); 2014, 160, no. 34
21	757-36	104-2-7	12969	320	-4	≈UC 29, 30	VA	Bayard 1990, fig. 6; Bakker 2014, no. 11
22	757-35	104-2-7	8982	320	-7	?	VA	
23	801-1	108-2-3	9775	320	8	UC 186	VA	Bayard 1990, fig. 8; Dijkman 1992, 131-135, fig. 2-3, no. 8-9, 18, 26
24	-	101-1-1	12967	-320	-		VB	
25	-	20-1-1	2884	320	(3?)			
26	-	20-1-61	2983	320				
27	-	20-1-62	3005	320	(6?)			
28	790	95-2-18	11029	320				
29	757	104-3-4	8985	320	(4?)			

Grp group according to Hübener 1968.

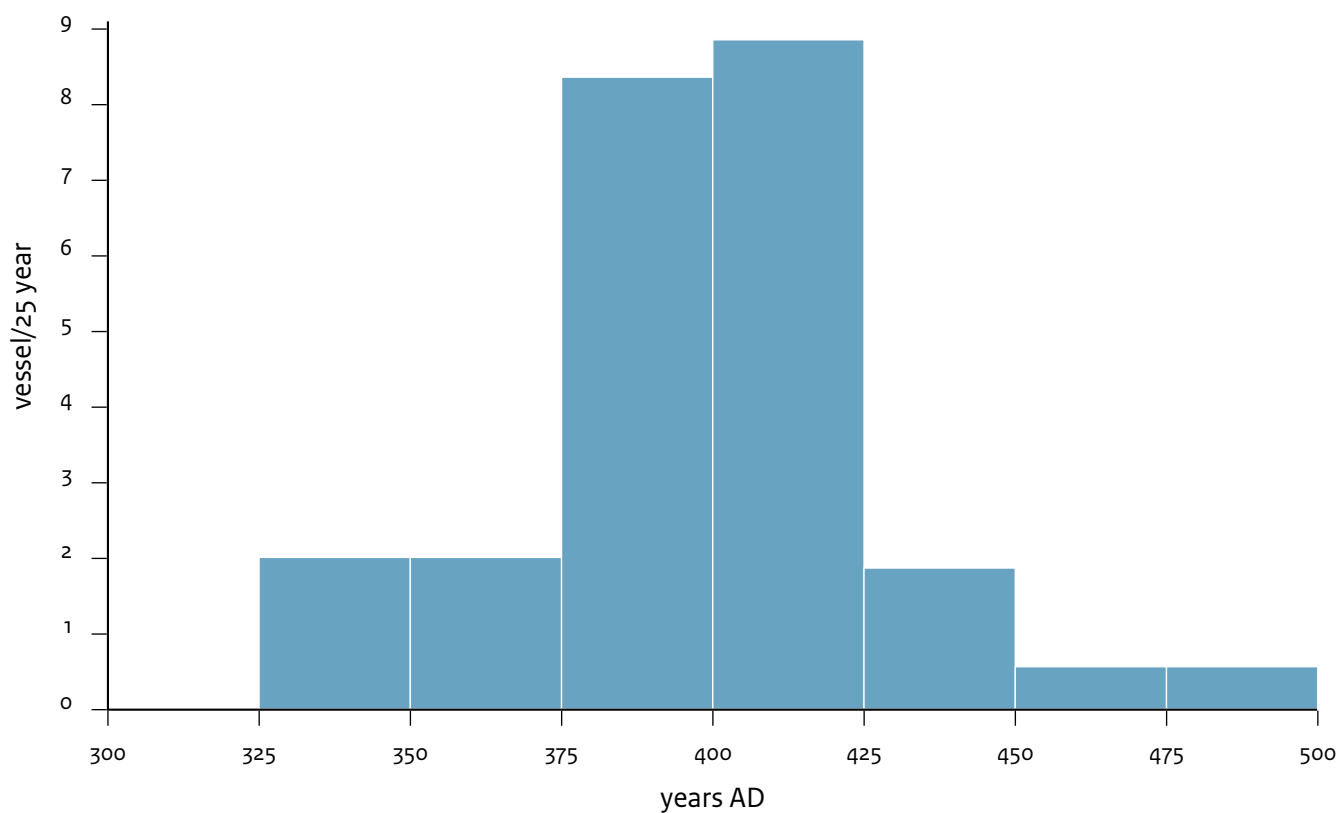


Fig. 25.6 Voerendaal-Ten Hove. Chronological distribution of the roller-stamp decorations.

is preferred, even a start of imports towards the middle of the fourth century is possible. In any event, it is clear that most decorated sigillata was produced at the end of the fourth and beginning of the fifth century AD. Some of the stamped vessels may have been used after this period.

Three stamps were certainly made in the first half of the fifth century. Stamp 24 (101-1-1/12967; Fig. 25.4) is even a product of the second half of the fifth century. The stamp itself is vague, but the 'imitation sigillata' fabric and form of the bowl provide the date.



# 26 The Late Roman pottery

Joep Hendriks

## 26.1 Introduction

For more than three decades little was known about the Late Roman find complex of Voerendaal-Ten Hove, although its importance and potential for the study of late antiquity in the Meuse valley and the adjacent Rhineland was beyond doubt.<sup>2402</sup> When considering the ceramics analysis, we can expect that the Voerendaal complex will provide ample information not only on the chronology and consumption of pottery at the (villa) site itself, but also for the analysis of rural (villa) sites in the region between Köln and Tongeren. This is because of the size of the ceramic assemblage, as well as the duration of habitation and possible continuity between the late third and late sixth century AD. The analysis of the ceramics complex is also of great importance for Dutch archaeology in a broader perspective. Although several Late Roman rural sites have been excavated in the southern part of the Netherlands and most of them have been published since the beginning of the twenty-first century,<sup>2403</sup> there is still no good overview available of the pottery spectrum at Late Roman and Early Merovingian sites. Besides the site of Voerendaal-Ten Hove there are still several large-scale excavations from the past century that have been awaiting definite analysis and publication for many years.<sup>2404</sup>

This contribution is confined to the pottery that dates roughly between the late third century and the beginning of the sixth century AD, with a focus on the Late Roman ceramics from the fourth and fifth century (excluding the terra sigillata and amphorae).<sup>2405</sup> Our analysis of the pottery from this period attempts in the first instance to provide a better understanding of the chronology of the site. This bears on the question of (dis)continuity of habitation, whether and to what extent the villa was inhabited from the late third century onwards. Pottery is one of the few categories of material culture that can shed some light on the chronology of the site during the transition from the Roman to the Merovingian period.

Besides the continuity question the pottery analysis will focus on the provenance of the various wares and fabrics present in the assemblage. Although an in-depth contextual

analysis of the Late Roman structures has not been carried out, some attention has been paid to the functional aspects of pottery consumption. Altogether, analysing the Voerendaal find complex more than 30 years after the last major excavations has also had many advantages. For instance, ceramic analysis has since disclosed the important nearby production site of Heerlen,<sup>2406</sup> and new insights have been gained into foot bowls in late terra nigra and fine reduced ware.<sup>2407</sup> Most important is the gradual infiltration into Dutch archaeology of a new understanding of the nature and chronology of two of the most dominant pottery production sites for the period mid-third to early sixth century AD. In the first instance, this concerns the apparent continuation of the production site of Urmitz-Weißenthurm during the first half of the fourth century and its significance for the date of the 'Niederbieber horizon'.<sup>2408</sup> Secondly, and at least as important, is the research carried out at the production site of Mayen, and parallel to this the revision, already established some decades ago, of the 'Alzey horizon'.<sup>2409</sup>

Although the analysis of the Late Roman find complex has certainly benefited from these developments, it is still difficult to identify the latest or post-Roman pottery of the fifth century and its possible continuation into the sixth century AD. The transition between late antiquity and the early Merovingian period remains quite obscure, especially because of the limited availability of type sites for inter-site analysis. As mentioned earlier, one of the main reasons for this is that some of the most important sites of the fifth and (early) sixth century in the south of the Netherlands – such as the older excavations at Gennep and Maastricht – have still not been properly analysed and published. In addition, it is a known fact that the degree of rural habitation in the loess belt area between Köln and Tongeren declined very rapidly from the beginning of the fifth century onwards.<sup>2410</sup> It is therefore still difficult to create a clear picture of the pottery spectrum in this period without the help of well-dated contexts and sites.

For the presentation of the Late Roman pottery from Voerendaal-Ten Hove a distinction has been made into three, more or less

<sup>2402</sup> Cf. Van Ossel 1992, 363-365; Willems 1992; Lenz 2005, 404-405, fig. 6, no. 15.

<sup>2403</sup> See Van Enckevort *et al.* 2017, 75-148.

<sup>2404</sup> The most important (partially) unpublished Late Roman and/or early Merovingian sites comprise: Maastricht-Pandhof O.L.V.-Kerk/Mabro, Nijmegen-Kelfkensbos (for now, see Bloemers *et al.* 2016), Gennep-Stamelberg (for now, see Verhoeven 2003) and Cuijk-castellum. Fortunately, Wijk bij Duurstede-De Geer was published recently, although after this contribution was written (Heeren 2021).

<sup>2405</sup> Cf. Chapter 22 (terra sigillata) and 24 (amphorae).

<sup>2406</sup> Van Kerckhove 2014; Van Kerckhove 2020 (cf. Chapter 23).

<sup>2407</sup> Van Thienen *et al.* 2018.

<sup>2408</sup> See Kiessel 2008; Heising 2010, 64-67; Friedrich 2015; Heeren 2016, 199-203.

<sup>2409</sup> See Kiessel 2007; Hunold 2015; Grunwald 2016.

<sup>2410</sup> See Lenz 2001.

chronologically distinct groups (see below). This makes it possible – based on the pottery analysis – to define an unequivocal Late Roman habitation phase at the site, dating to the last third of the fourth century and the first third of the fifth century AD. In addition, two smaller pottery assemblages have been discerned that could date either to the Late Roman period, or to a previous or subsequent habitation phase. Therefore, two transitional phases have been defined, dating a) ‘around AD 300’, and b) to the second and final thirds of the fifth century. Although the pottery assemblages from these transitional phases (partly) could belong to the Middle Roman period on the one hand or the Early Merovingian period (from the sixth century onwards) on the other, they are approached below as belonging to two independent phases or horizons.

## 26.2 Selection and methods

In order to characterize the pace of habitation and to identify possible phases of continuity/discontinuity between the end of the third and the beginning of the sixth century AD, all the (presumed) Late Roman and Merovingian pottery has been selected for detailed analysis. Most helpful for the first selection of the material have been the determinations by the late Jan Thijssen, which were carried out during the find-processing phase immediately after the excavation campaigns of 1985-1987. Based on his provisional analysis and an updated inventory of the material present, a first estimation of the Late Roman and Early Medieval pottery could be made: 787 sherds (some 24 kg) and 454 sherds (about 16 kg) respectively. For the present phase

of analysis this selection of Late Roman and Merovingian pottery (excluding the late terra sigillata and amphorae) has been scanned and divided into two separate assemblages by the author and Maurice Janssen.<sup>2411</sup> During the actual pottery analysis process in the spring/summer of 2020, several Middle Roman and Merovingian pottery fragments (dating most probably before c. AD 280 or after c. AD 500) were shifted from the Late Roman complex to the chronologically adjacent ceramic assemblages and vice versa. In the end, the selection of ‘Late Roman’ pottery presented here – without the late terra sigillata and some amphora fragments – comprises 878 fragments, with a weight of more than 26 kg (Table 26.1).<sup>2412</sup>

The scan of the first selection of (presumed) Late Roman and Merovingian pottery showed that the ceramic material probably dates to several chronological horizons. The earliest period concerns pottery that could belong to the outgoing third century or the first third of the fourth century (c. AD 280-335), which overlaps only very slightly with the youngest component of the Middle Roman pottery assemblage. The presence of some specific fabrics and types has led to the definition of this ‘first transitional phase’, consisting of 220 fragments of at least 14 items (Section 26.4).

A second horizon covers the period between c. AD 365 and 435. It represents the majority of the Late Roman pottery, with 510 fragments of at least 113 items, about 70% of the total assemblage (Section 26.5). Establishing the end of this second ‘Late Roman pottery phase’ is difficult. It is quite complex to assign some specific fabrics and types to either the middle or end of the fifth century, or to the beginning of the sixth century and later (being genuine

**Table 26.1. Voerendaal-Ten Hove. Overview of the analysed Late Roman pottery and the division in three chronological groups.**

Period	N	MNI	N_r(ims)	MNI_r(rims)	EVE	Wt (g)
C. 280-335	220	25	34	14	5	4847
C. 365-435	510	261	145	113	18	17208
C. 435/450-500	148	85	33	25	4	4562
<b>Total</b>	<b>878</b>	<b>371</b>	<b>212</b>	<b>152</b>	<b>26</b>	<b>26617</b>

<sup>2411</sup> See next chapter (27).

<sup>2412</sup> The weight is based on H.A. Hiddink’s measurements for the find processing in preparation for the present post-excavation analysis.

Merovingian). In discussion with Maurice Janssen and by looking at some of the sunken-floored hut contexts (e.g. 501, 504 and 511), we have made a division between the ceramic material that most probably still dates before or just after c. AD 450 and the more convincing (younger) Merovingian fabrics and types dating after c. AD 500.<sup>2413</sup> This has led to the definition of a 'second transitional phase' or group, consisting of 148 fragments of at least 25 items (Section 26.6). As with the pottery from the first transitional phase, it is possible that there is an overlap between the material from the second transitional phase and the obvious Merovingian pottery.

The method of determination was the same for both handmade and wheel-thrown fragments. An attempt has been made to identify all fragments without making a distinction between recognizable rim, wall, handle and bottom fragments on the one hand and a residual group of debris on the other. A fragment has always been assigned to a category or ware, with the same production method and its own repertoire of vessel forms, and then to a fabric, with the same clay composition, mineral tempering and technique.<sup>2414</sup> When assigning the fragments to fabrics, we constantly attempted to link up with reference publications (see below). In the case of the handmade pottery, this has led to the use of broad fabric groups, in which the baking atmosphere and tempering are the main classification criteria. For the wheel-thrown pottery, it proved possible to identify several specific fabrics; otherwise, the (presumed) region of production has been the main classification criterion. All fragments were inspected macroscopically by means of a binocular with a maximum magnification of 45x. Subsequently, the recognizable (rim) fragments were always attributed to a vessel form and in many cases to a vessel type. A limited number of reference works have been used for this.<sup>2415</sup> A large selection of mostly rim fragments has been drawn. Although no specialist fabric analyses were carried out, a selection of Late Roman fabrics has been documented in detail photographically to accompany the fabric descriptions and for future reference (see next section; Appendices XIV and XVI).

The quantification of the analysed pottery was performed for five variables, but not all of them are included in the tables. In the first instance, all the fragments were counted (N), whereby sherds with old fractures were counted separately and those with a recent fracture counting as one. The total number of rim fragments (N<sub>r</sub>), as part of N, is also mentioned for comparison with two other units derived from rim fragments. Secondly, the minimum number of individuals was determined on the basis of all fragments (MNI) and of rim fragments only (MNI<sub>r</sub>). Non-fitting fragments are counted as one individual item if they plausibly belong to the same vessel on the basis of the fabric and general appearance. Associated fragments of items spread over different features or layers were also looked for to obtain the lowest possible estimate of the MNI. Finally, for each rim fragment, the residual percentage was determined in relation to a complete rim (=100%). Adding up the percentages of all rims fragments per ware or fabric group and dividing this by 100 provided the estimated vessel equivalent (eve<sub>r</sub>). To gain information on the degree of conservation of the Late Roman pottery, the brokenness (N/eve<sub>r</sub>) and completeness (eve<sub>r</sub>/MinAE<sub>r</sub>) were also determined.<sup>2416</sup> Lastly, as mentioned above, the weight of the fragments was only recorded when the initial selection was made. It was not recorded again during the detailed analysis.

### 26.3 Fabrics and wares

Many of the most common Late Roman wares are present within the pottery complex of Voerendaal-Ten Hove, although some are only represented by small numbers. A short overview of these groups is presented in the following sections, although this does not comprise the complete functional Late Roman pottery spectrum, since the terra sigillata (fine tableware) and amphorae (transport and storage ware) have already been covered in previous chapters. A further functional grouping of these wares has therefore been omitted.

<sup>2413</sup> See the next chapter (27).

<sup>2414</sup> Basically, the same method was followed as Van Kerckhove 2006, 105 (with further references). Specialist analysis, such as petrographic and chemical analysis, can help determine the place of production or region of origin. See also Brulet *et al.* 2001, 112-115.

<sup>2415</sup> This concerns the following publications, with the site name in parentheses: Oelmann 1914 (Niederbieber); Unverzagt 1916 (Alzey); Chenet 1941 (Argonne); Holwerda 1941 (Nijmegen); Pirling 1966; 1974 (Krefeld-Gellep); Van Es 1967 (Wijster); Hussong & Cüppers 1972 (Trier-Kaiserthermen); Brulet 1990; Schotten 1991 (Gennep-Stamelberg); Vanvinckenroye 1991 (Tongeren); Redknap 1999 (Mayen).

<sup>2416</sup> Orton *et al.* 1993, 171-173 and 178-179.



### 26.3.1 Handmade ware

The re-introduction of handmade ware in the south-east of the Netherlands is a well-known phenomenon of the Late Roman period. At least 200 years after the local tradition of handmade pottery had been abandoned in favour of wheel-thrown vessels, it again became part of household paraphernalia. Most of the vessels can be seen as crockery for everyday use, but fine tableware such as foot beakers was also made. Although handmade pottery was present at many Late Roman rural settlement sites in the Meuse valley and the adjacent sandy regions of Limburg and North Brabant, there is still no current overview of the chronology, variety of fabrics and vessel forms at sites south of the *limes*. The best-documented example is still the site of Gennep-Stamelberg, although the preliminary study of the handmade pottery only comprises a portion of the entire find complex.<sup>2417</sup> The characteristics of the handmade pottery from Gennep, as well as that from sites such as Neerharen-Rekem, Holtum-Noord, Neerharen-Wijnaerden, Horst-Hoogveld Oost, Cuijk-Heeswijkse Kampen and Cuijk-De Nielt, strongly confirm the assumption that the origin of these ceramics has to be sought north and east of the Rhine.<sup>2418</sup>

It is still hard to say whether the handmade vessels, not only in Voerendaal-Ten Hove but also at the other sites along the Meuse, were produced locally after an initial phase involving imports. According to previous analyses, handmade ware is mostly present in reduced fabrics with several kinds of temper, varying from fine/coarse sand (quartz grains), clay pellets and pottery grit (grog) to stone grit (broken quartz or granite), organic material and chalk/calcite material (carbonate, bone or shell grit). One of the few petrographic analyses of Late Roman handmade pottery – unfortunately not including sites from the Meuse valley or southern Netherlands – showed that the ‘Germanic’ pottery of sites in, for instance, Belgium appeared to be mostly produced with local clays.<sup>2419</sup> This means that the fabrics show only little or no resemblance to those from sites north of the Rhine in the eastern Netherlands (e.g. Bennekom, Ede-Veldhuizen, Oud-Leusden

and Colmschate) or in northern Germany (e.g. the Elbe-Weser area).

The most common arguments for assigning a Germanic origin to this handmade pottery from the southern Netherlands relate to stylistic parallels in vessel forms and decorative motifs. On the one hand, there seem to be some clear representatives of the *rhein-weser-germanische Keramik* (RWG) in, for example, Neerharen-Rekem and the Cuijk area. Vessels from these southern settlements resemble in style and decoration the pottery tradition that dominated the ceramic spectrum during the middle and Late Roman period in the Dutch coversand areas north of the Rhine (Gelderland, Overijssel, southern part of Drenthe) and the adjacent regions in Germany (Westfalen, southern part of Niedersachsen).<sup>2420</sup> Although Taayke’s typology, established for the settlements in the Ede region (Ede-Bennekom, Veldhuizen and Op den Berg), often used in addition to the typology of Von Uslar, it is quite unclear to what extent the *rhein-weser-germanische Formenkreis* is really applicable to pottery from southern sites, especially dating to the late fourth and fifth centuries.<sup>2421</sup>

On the other hand, from the third century onwards, the ‘northern’ pottery style of the *nordseeküstennahe Keramik* (NKN) – dominant in the north-eastern part of the Netherlands (eastern Friesland, Groningen) and the adjacent part of Niedersachsen – seems to have influenced not only the handmade ware at sites in Drenthe, Overijssel and Gelderland, but also some of the sites south of the Rhine.<sup>2422</sup> Especially in Gennep, Neer and Holtum the handmade pottery mostly lacks decoration patterns and is often tempered with quartz grit. The vessel forms present in these settlements resemble this northern style, whose influence on the RWG pottery during late antiquity is still best documented for the site of Wijster, rather than the RWG style from the alleged heartland of the Salian Franks.<sup>2423</sup>

Without comparative ceramic analyses, it is still not so self-evident to assign Late Roman handmade pottery from the Meuse valley to Germanic roots if this is only based on stylistic parallels with ceramics from sites beyond the Rhine, whether the Ede/Colmschate area or the

<sup>2417</sup> Schotten 1991; Verhoeven 2003, 116-120.

<sup>2418</sup> See De Boe 1986 (Neerharen-Rekem); Schotten 2010 (Holtum-Noord); Hendriks 2021 (Neerharen-Wijnaerden); Reigersman-van Lidth de Jeude 2002, 21 (Horst-Hoogveld Oost); Ball & Heirbaut 2005, 41-42; Reigersman-Van Lidth De Jeude & Vanderhoeven 2009, 115-117 and Van Kerckhove 2018, 71-76 (all Cuijk-Heeswijkse Kampen); Van Kerckhove & Magnée 2017, 283-287 (Cuijk-De Nielt).

<sup>2419</sup> De Paepe & Van Impe 1991, 168-171.

<sup>2420</sup> Taayke 1999; 2006.

<sup>2421</sup> Cf. Taayke 2003, 8-9; Taayke 2013, 197.

<sup>2422</sup> Taayke 1999; Taayke 2006, 209-210.

<sup>2423</sup> Cf. Schotten & Groenewoudt 1997, 19-20; but against Verhoeven 2003, 117-119. It should be noted that Wijster seems to be situated at the transition between the areas dominated by RWG and NKN pottery. Von Uslar (1977, 134-135) speaks for the adjacent area in western Germany for pottery from the *Gruppe im nördlichen Nordwestdeutschland*. See also Van Es 1967, 533-539; Taayke 2006, 206, fig. 4 (no. 72).

site of Wijster. Moreover, since the chronological development of the fourth- and early fifth-century pottery at these Germanic sites is still poorly understood, it seems impossible to date handmade pottery independently at Late Roman sites south of the Rhine, especially when the earliest contexts where handmade ware re-occurred (Horst and Cuijk-Heeswijkse Kampen) can probably be dated to the middle of the third century AD.<sup>2424</sup> Handmade ware from Late Roman contexts should therefore always be analysed in combination with the accompanying wheel-thrown pottery.

### 26.3.2 Cork ware

A special category of partially handmade pottery, of which only the upper part of the body and rim have been wheel-thrown, is the ‘cork urn’ (*kurkurn* or *Korkware*).<sup>2425</sup> These vessels are characterized by a typical porous fabric, which is the result of the chemical weathering of the white calcite particles that was used as a temper. In the Early and Middle Roman period (mainly the first century), cork ware can be considered a regular import commodity, which was initially found mainly in military and urban contexts. In addition to the cork urn or *Halturner Kochtopf*, the most well-known representative with its inward-curved rim, the form spectrum comprises slightly closed jars and bowls with an S-profile. An analysis of the origin of the cork ware as a product that presumably contained specific foods points towards the Belgian Condroz and the Ardennes. Its earliest presence in northern Gaul and Germany could be attested here.<sup>2426</sup> Furthermore, recent research has indicated that most of the calcite temper (usually referred to as calcite grains, bone or shell grit) was carbonate, which can take the form of calcite.<sup>2427</sup> It appears that the origin of this material should be sought west of the Meuse in the south of Belgium and the adjacent region of northern France, in the Entre-Sambre-et-Meuse region.

Unlike the well-documented cork ware of the Early and Middle Roman periods, little is known about their existence during the fourth and fifth centuries. In both Germanic and Roman contexts (i.e. on both sides of the *limes*) handmade pottery has been found with porous

fabrics, in which some kind of weathering has left small voids in the wall surface and paste.<sup>2428</sup> Although it is not evident what kind of organic or non-plastic material was used, these fabrics clearly differ from the group with calcite (or carbonate) tempering. Whether or not there is a link in production and distribution to the earlier cork ware, the fabric of the late cork vessels, such as the ones found in Voerendaal-Ten Hove, is quite similar (Appendix XVI, fig. 1). This could indicate the same provenance: somewhere south of the Belgian valley of the Meuse. However, the Late Roman or early Merovingian cork ware seems to consist of a different spectrum of forms, not only open pots with a turned-over rim (see below) but also imitations of coarse ware vessels such as the jar Alzey 27, with a crescent-shaped rim.<sup>2429</sup>

### 26.3.3 Black-slipped ware

Alongside the late terra sigillata, black-coloured beakers with a matte glossy slip were an important part of fine tableware during the beginning of late antiquity in the northern Gaulish and Germanic provinces.<sup>2430</sup> The beakers with their high neck and globular shape derive directly from the *Qualitätsware* of the first three quarters of the third century. Their production continued from the late third century onwards, but now in a less fine fabric and with a less glossy surface. The connection with the late sigillata production seems obvious since the provenance of the beakers found in the Meuse valley and adjacent regions is in either the Argonne or Trier.<sup>2431</sup> A certain portion of the beakers were still decorated with white paint and sometimes bore a motto. Altogether, the ware group was in production until the middle of the fourth century (c. AD 355), after which their role as tableware ended.<sup>2432</sup>

### 26.3.4 Red-painted ware

Unlike the colour-coated plates that can be regarded as fine tableware and which disappeared in the beginning of the third century, a group of large plates with a slightly oblique and rather thick wall remained in use during the third century and first half of the

<sup>2424</sup> Van Kerckhove 2018, 72-73.

<sup>2425</sup> Holwerda 1941, 75-77; Mittag 1999.

<sup>2426</sup> Lepot & Vilvorder 2015.

<sup>2427</sup> Venant 2016, 435-436.

<sup>2428</sup> Cf. Schotten 1991, 52 (fabrics 5 and 6); Reigersman-van Lidth de Jeude & Vanderhoeven 2009, 115-116, fig. 7.13; Hendriks 2021, 80ff.

<sup>2429</sup> De Koning 2005, 46-47, fig. 61. Although present in Gennep as well, there is no information available as yet about the cork vessel forms here (Heidinga & Offenberg 1992, 98).

<sup>2430</sup> Symonds 1992, 63-69; Pirling & Siepen 2006, 87-92 (fabric C4).

<sup>2431</sup> Vilvorder 2010.

<sup>2432</sup> Cf. Hussong & Cüppers 1972, 73-74.

fourth century. Although different fabrics can be discerned, the common feature of these plates is that they were covered with a matte red or reddish brown engobe or were painted. They clearly stand in the tradition of the Pompeian red plates that were produced in Italy and Gaul from the first to early third century.<sup>2433</sup> Many of these younger plates also show traces of burning at the outside rim and bottom, which underpins the assumption that the plates were mostly used as cooking ware.<sup>2434</sup> Within the pottery assemblage of the late third century onwards, a clear distinction can be made between plates with more or less the same form but manufactured in two different fabrics. Firstly, we can distinguish the 'rot bemalte' plates, with a fine reddish brown paste, from the third and the beginning of the fourth century (the Niederbieber horizon).<sup>2435</sup> They seem to have been produced in the Neuwied Basin or the Lower Moselle area (e.g. Karden). Secondly, there is a group of red-painted plates with a light red paste, an ochre-coloured outer wall and a dark red-brown engobe at the inside, dating to the first half and middle of the fourth century.<sup>2436</sup> The provenance is not quite clear, but it could be Trier and the Upper Rhine area.

### 26.3.5 Late terra nigra

Terra nigra is normally understood to be fine tableware of high quality, hard-fired, thin-walled with a shiny black or dark grey surface. A wide spectrum of forms was in use, especially in the first and early second century AD. Regarding the Late Roman fine reduced ware, with its diverse white, grey or brown fabrics and a matte, shiny or dull surface, it is understandable that this category has often been described in the past as terra nigra-like.<sup>2437</sup> A far better name would actually be 'fine reduced ware', analogous to the French *céramique fine sombre/ réductrice*. However, in line with the present research tradition, the fine reduced (foot) bowls and other tableware with a certain degree of smooth finish, polishing or transparent coating, will be named 'late' terra nigra.<sup>2438</sup>

The most important group of late terra nigra are the foot bowls of the Chenet 342, Gellep 273 or Gellep 131 types (and variants; Appendix XIV,

fig. 1). Much attention has already been paid to this specific group of tableware in the literature, in which two questions always play a central role: do the different (sub)types reflect a chronological development and does this vessel, or vessel shape, have a provincial-Roman or a Germanic origin and/or provenance? Since the research history has already been summarized elsewhere,<sup>2439</sup> some comments on the different fabrics and types will suffice here.

For instance, recent research has underpinned the existing assumption that the provenance of Gellep 273 foot bowls, with a clearly pronounced foot, should be located in the Westphalian Hellweg region on the east side of the Rhine, south of its tributary the Lippe.<sup>2440</sup> It has been proven possible, not only through specialist analyses, but also by macroscopic observation – e.g. within the settlements of Wijk bij Duurstede-De Geer and Neer-Wijnaerden – to discern the typical Hellweg fabric with its very fine greyish white to white paste and light or dark grey surface.<sup>2441</sup> Moreover, the foot bowl Gellep 273 tends to date somewhat earlier, from the middle of the fourth century onwards, than the less uniform group of the Chenet 342 type. Foot bowls of this latter type can be characterized by their small and mostly hollow (but sometimes solid) foot and outward-curving rim. There is strong variation not only in the shape but also the fabrics in which this type was manufactured: the matrix can be both fine and rather coarse, with a mostly light/dark greyish or brownish colour. Except for the alleged production in the Argonne, there are still no good clues about other regions and locations where this type was produced, other than somewhere within the provinces of *Germania secunda* or *Belgica secunda*.<sup>2442</sup>

Based on both settlement and burial finds the Chenet 342 foot bowls can be dated to the second half of the fourth and first half of the fifth century AD. Although not well documented, a further development of the Chenet 342 into bowls with a more Z-shaped profile and a sloping rather than convex shoulder seems to have taken place before the middle of the fifth century. Whereas the fabric increasingly became that of fine reduced ware rather than terra nigra, these foot bowls are normally grouped as the

<sup>2433</sup> Peacock 1977.

<sup>2434</sup> Pirling & Siepen 2006, 124.

<sup>2435</sup> Oelmann 1914, 53-54; Pirling & Siepen 2006, 123-124 (fabric D10).

<sup>2436</sup> Unverzagt 1916, 21-22; Pirling & Siepen 2006, 101-102 (fabric D3).

<sup>2437</sup> This label may be justified if the ware in question also includes products that were presumably manufactured outside the empire and can be seen as imitations of the actual/original terra nigra. Cf. Van Es 1967, 158-168; Erdrich 1998; Hermsen 2007, 125-131.

<sup>2438</sup> Cf. Willems 1981, 164-165; Pirling & Siepen 2006, 174-191; Heeren in prep.

<sup>2439</sup> Hegewisch 2013, 154-164; Van Thienen *et al.* 2017, 87-89.

<sup>2440</sup> Van Thienen *et al.* 2017, 95-102. See also Pirling & Siepen 2006, 189.

<sup>2441</sup> Hendriks 2021, 96ff.; Heeren in prep.

<sup>2442</sup> Van Thienen *et al.* 90-92. Similar foot bowls found (and supposedly produced) in Germanic settlements, such as the site of Deventer-Colmschate, differ significantly with the 'southern' specimens of the Chenet 342 type which are considered here. Cf. Hermsen 2007, 125-131.

'Frankish' Gellep 131 type. Of this the Gellep 131b seems to have been concentrated in the first half and around the middle of the fifth century and the Gellep 131a mainly in early Merovingian burial contexts during the second half of the fifth and the beginning of the sixth century AD.<sup>2443</sup>

In addition to the group of late terra nigra foot bowls, another group of fine reduced tableware should be mentioned briefly. It concerns a group of fabrics that seem to be related to the *braune Nigra* (brown nigra), which originally comprised wide bowls with a slight S-profile that were produced in terra nigra-like fabrics with a brownish exterior and an orange or pale brown-coloured matrix.<sup>2444</sup> The distribution is mostly restricted to the Upper Rhine region, dating to the middle of the third and middle of the fourth century AD. Despite the resemblance in fabric to the German finds, some of the forms that are present in Voerendaal-Ten Hove have more similarities to material from the south of Belgium (see below).

A last, small group of fine reduced ceramics resembles some of the mid-Roman terra nigra wares, but the few forms present here differ significantly from 'normal' Roman forms. Although the bottle-like forms – including one with a roulette stamp impression – and their fabrics are in some way very reminiscent of Merovingian fine reduced ware, this group has been described as being possibly Late Roman.

### 26.3.6 Fine ware

Fine oxidized ware, which consists of white, brown or orange jugs with one or two handles (sometimes painted or marbled as well), is normally quite rare in Late Roman rural contexts in the southern Netherlands. Produced on the Middle or Upper Rhine, these containers were mostly used as table or storage ware and only occur in low numbers in the cemeteries of Maastricht and Nijmegen; their date is roughly confined to the first half of the fourth century AD.<sup>2445</sup> Much less is known about the fine reduced ware at late antique Dutch sites, of which Voerendaal-Ten Hove might be one. This fine sandy and greyish tableware stems from several production sites in northern Gaul,<sup>2446</sup> and although the extent to which they were imported

into the Meuse valley is not clear, their presence there cannot be ruled out in advance.

### 26.3.7 Mortaria

The mortarium appears to have undergone a severe decline in popularity as a utensil from the late third century onwards. Although it still remained in use during the Late Roman period, it was much less common in rural settlements than in the preceding three centuries. This will certainly have been related to the general decline in pottery workshops in northern Gaul and the Rhineland, but also to a (partial) change in the population composition, resulting in the introduction of new eating habits. Late antique mortaria were produced in the Eifel region (e.g. Mayen) and the adjacent Lower Moselle,<sup>2447</sup> but it cannot be ruled out that specimens in divergent fabrics stem from elsewhere, maybe the Rhineland or Meuse valley.

### 26.3.8 Coarse ware

Together with the late terra sigillata, coarse ware was continuously produced and distributed on a relatively large scale during late antiquity. This makes it difficult to define this category as a whole chronologically, with the spectrum of forms once again only slightly changing after AD 300 and in the course of the fifth century. The multitude of pottery workshops in *Gallia Belgica* and the *Germaniae* that made coarse ware for cooking, storage and transport for both local and (supra-)regional markets were already in decline around the middle of the third century. Only a few workshops remained in production from the late third century onwards, of which Weißenthurm, Speicher and Mayen are the most well-known.<sup>2448</sup> Attention will be paid below to some new insights into the production sites and regions that are relevant for the assemblage of Voerendaal-Ten Hove.

#### *Middle Rhineland*

Coarse ware from the Middle Rhine region (between Mainz and Bonn), which is tempered with quartz-rich sand and has a laminated matrix, dominated the pottery spectrum in the Rhineland along the *limes* from the late second

<sup>2443</sup> Pirling 1966, 128-130 and *Typentafel* 11 (type 131a/b). See also Halpaap 1983, 303; Schotten 1991, 92-93; Seillier 1994; Steures 2013, 301-302.

<sup>2444</sup> Bernhard 1984/1985; Jäger & Gross 2019, 117-118.

<sup>2445</sup> Kars 2011, 180-181 (Maastricht); Steures 2013, 294-300 (Nijmegen).

<sup>2446</sup> Bayard 1994; Tuffreau-Libre & Jacques 1995.

<sup>2447</sup> Cf. Brulet 2010, 408; Heeren in prep.

<sup>2448</sup> For a general overview, see Brulet 2010.

century AD. The most important production site was the *vicus* of Urmitz-Weißenthurm, located on the left bank of the Rhine near Andernach, although the finds from production sites at Bonn, Koblenz and possibly Andernach reveal that coarse ware in 'Urmitz ware' was also manufactured and imitated at several other places in the region (Appendix XIV, fig. 2). Recent research has shown that even with the help of chemical analysis it is still difficult to ascribe with certainty ceramics in this 'Urmitz ware' to the production site of Weißenthurm itself.<sup>2449</sup> However, because of the close resemblance of the Voerendaal ceramics in this fabric to ceramic samples from Weißenthurm itself, Section 26.5 will consistently refer to the name of the production site. The end date of this major workshop has long been more or less equated with that of the occupation of the *castellum* of Niederbieber (c. AD 190-260), one of the westernmost forts of the *Obergermanische limes*.<sup>2450</sup> There is however ample evidence that the production of Weißenthurm continued after the upheavals of AD 260-275 and that at least a limited range of vessel types was still being manufactured during the first half of the fourth century (possibly until c. AD 355).<sup>2451</sup> It must be clear that the revised date for the production of Weißenthurm also has important implications for the traditional concept of the Niederbieber horizon and the possibility of dating ceramic complexes to the last quarter of the third century or even later. For now, it is too early to determine the extent to which these younger products were distributed further afield outside the Rhineland, for instance as far as the Meuse valley. However, a swift inventory of the 'Urmitz' coarse ware in the burial contexts of Krefeld-Gellep and Nijmegen shows that several Niederbieber types did survive into the first half of the fourth century and that most of these vessels were probably produced in Weißenthurm.<sup>2452</sup>

#### *Eifel region*

Imports from the Eifel region dominate the coarse ware spectrum at almost every Late Roman site in the Rhineland, Meuse valley and adjacent areas. In particular, vessels from the *vicus* of Mayen, located in the eastern part of the Volcanic Eifel region some 20 km of the Rhine,

are easily recognizable with their relatively hard fabric and hackly matrix, due to the mineral-rich tempering (Appendix XIV, fig. 2-8).

Although Redknap had already presented an exhaustive study on the Late Roman and Early Medieval pottery production of Mayen,<sup>2453</sup> recent research by the Römisch-Germanisches Zentralmuseum (RGZM) has confirmed some existing assumptions and led to important new insights. Firstly, it is clear that, although the earliest workshops started to produce in the second century, the supra-regional export of Mayen ware did not start until after c. AD 360.<sup>2454</sup> The upheavals in the Lower Moselle region around c. AD 355 had presumably put an end to the Weißenthurm workshops, which stimulated the production in Mayen to take over its export position some years later. Not surprisingly, this development coincides somewhat with the adjustment of the Alzey horizon, the pottery from this *castellum* still being the most-used typology for Mayen coarse ware. It was established some decades ago that the original date of Alzey, c. AD 330-410, had to be adjusted to c. AD 370-425/455.<sup>2455</sup> Older Late Roman pottery from Alzey appears to derive from the *vicus*, which is dated between AD 300-355. It is these contexts that are characterized by the presence of 'Urmitz ware', most probably from the *vicus* of Weißenthurm.

Secondly, new insights were gained through a study of the kiln contexts and the chemical analyses of both kiln finds and burial gifts. This has led to the conclusion that a) the 'Roman' Mayen MR fabric from the 'Auf der Eich' area had been in production from at least the second to the end of the fifth century AD, and b) the workshops for the 'Merovingian' Mayen MD fabric at the 'Siegfriedstraße' had already started to produce from c. AD 360 onwards.<sup>2456</sup> The impact for Dutch sites of the fact that both Mayen fabric groups can occur simultaneously will first be examined for the complex of Voerendaal-Ten Hove.

#### *Rhineland/Eifel region*

Little is known as yet about the existence of pottery workshops in the Rhineland and Eifel regions other than the above-mentioned production sites, which could have been

<sup>2449</sup> Friedrich in prep.

<sup>2450</sup> Oelmann 1914; Heising 2010.

<sup>2451</sup> Bakker 1996, 221-222 (already presented in 1984). See also Kiessel 2008; Friedrich 2012; in prep.; Grunwald 2016, 46-47.

<sup>2452</sup> Heeren 2016, 200-203; Cf. Pirling & Siepen 2006 (Krefeld-Gellep); Steures 2013 (Nijmegen). Friedrich (in prep.) confirms, on the basis of chemical analyses, the Weißenthurm origin of some of the Nijmegen specimens.

<sup>2453</sup> Redknap 1999.

<sup>2454</sup> Grunwald 2012, 112; 2016, 345-348. Cf. Redknap 1999, 61-62.

<sup>2455</sup> Hunold 2015.

<sup>2456</sup> Grunwald 2016.

responsible for the additional supply of ceramics. Although not all of the coarse ware found at late antique rural settlements can be attributed to these well-known fabrics of the Middle Rhineland (at first) or Eifel region (later on), as is the case, for instance, in the adjacent loess area of the Aldenhovener Platte or Hambacher Forst,<sup>2457</sup> we are far from knowing where the small group of remaining fabrics were manufactured. These fabrics can be characterized by the use of quartz sand, rock fragments and other minerals as a tempering agent, but they do not match the fabrics of Weißenthurm and Mayen (or Speicher).

There is of course a possibility that some of the ‘remaining’ oxidized coarse ware from the late third and (early) fourth century consists of the – barely investigated – youngest production phases of Heerlen, Jülich or Köln. Since these settlements remained inhabited after the middle of the third century, it is conceivable that some of the then still existing workshops played a role in the regional pottery supply.

#### *Meuse valley/Rhineland*

Although there is even less evidence for the presence of ceramics production in the Meuse valley during late antiquity and the beginning of the Merovingian period, the pottery assemblages in this region – especially from the early or mid-fifth century onwards – often consists of reduced or weakly oxidized coarse wares, tempered with fine quartz or mica grains (Appendix XIV, fig. 2). They tend to form a proportionally larger share of these assemblages towards the end of the fifth century AD. Vessels manufactured in these fabrics sometimes imitated the standard types of Eifel coarse ware found at settlement sites in Holtum and Neer,<sup>2458</sup> among others, but also in Herstal.<sup>2459</sup> There are however no clear indications of the provenance of the vessels, but the (broader) Meuse valley and the adjacent part of the Rhineland seem the most logical areas.

### **26.4 Transitional phase 1. Late third century/first third of the fourth century**

The definition of the first transitional phase, with pottery dating between c. AD 280 and 335, is the result not only of the presence of vessel types that can be dated to this very period (in partial co-occurrence with the Argonne sigillata, presented in the previous chapter), but also of reasoning based on rather circumstantial evidence. With regard to the latter, two things played an important role in defining this phase. Firstly, this is the extended date of the Niederbieber horizon and the production of the Weißenthurm workshops into the first half of the fourth century, as mentioned above. Secondly, with this knowledge in mind, it is possible to allow some vessel types to date beyond c. AD 270, especially the two coarse ware jugs present in graves 320 and 321 (Fig. 23.25).<sup>2460</sup> These burials show that there must have been some habitation around the start of the fourth century. However, no other features containing pottery (and other finds) are present at Ten Hove that provide evidence of activities in this period.

When considering the pottery of transitional phase 1 (Table 26.2), it is important to be aware that it comprised a selection of the youngest possible specimens of the ‘Middle Roman’ pottery discussed in Chapter 53, in combination with the supposed oldest specimens of the Late Roman pottery. The complex of 220 fragments presented here can therefore be regarded as a minimum selection, since it is still possible that more of the Middle Roman pottery that is not analysed in detail belongs to this transitional phase. Moreover, the above-mentioned assumption that imports of coarse ware from Mayen had not been present at the majority of Dutch late antique sites before the middle of the fourth century, together with the sparse presence of fourth-century black slipped ware and the apparent absence of Late Roman fine oxidized ware from, for example, Köln, substantiate the composition of this rather small ceramics complex dating roughly around or just after AD 300.

<sup>2457</sup> Lenz 1999, 17 (Aldenhovener Platte); Brüggler 2009, 142-149 (Hambach 132).

<sup>2458</sup> Hendriks 2021, 104ff.

<sup>2459</sup> Lensen & Van Ossel 1984, 42-47 (Herstal-Pre Wigy).

<sup>2460</sup> See sections 13.1, 23.3.1 and 42.3. Van Kerckhove believes that the jugs have Heerlen fabrics, although the tempering of coarse sand of 320-1 does not seem typical of that location.



**Table 26.2. Voerendaal-Ten Hove. Overview of the pottery, dating to the late third and first third of the fourth century AD.**

Ware group	Fabric	Form	Type	N	MNI	MNI_r(ims)
Cork ware	fine reduced (regional?)	jar	VV 480	24	1	1
Black slipped	Gellep C4 (Trier)	beaker	-	1	1	-
		beaker	Gellep 58-62	14	2	2
Red painted	Gellep D10 (Lower Mosel?)	plate	-	1	1	-
		plate	NB 53a	2	1	-
	Gellep D3 (Lower Mosel?)	plate	Gellep 69	1	1	1
Coarse oxidized	middle Rhinel. (Weissenthurm)	-	-	1	1	-
		bowl	NB 104	2	1	1
		jar	-	5	-	-
		jar	Alzey 27	3	1	1
		jar	Gellep 106	6	1	1
		jar	NB 89	22	1	1
		jug	-	2	1	-
		plate	-	3	1	-
		plate	NB 113	10	2	2
		Rhineland/Eifel region	bowl	NB 104 cf.	1	1
	Rhineland/Eifel region	jug	NB 96	116	2	2
		-	-	2	2	-
		-	-	2	2	-
Coarse reduced	middle Rhinel. (Weissenthurm)	-	-	2	2	-
		Rhineland/Eifel region	jar	Gellep 106	1	1
<b>Total</b>				<b>220</b>	<b>25</b>	<b>14</b>

#### 26.4.1 Cork ware

One of the vessels that is ascribed to the group of late cork ware has a notable grey-brown porous surface and a considerably soft fabric. In contrast to the vessels described in Section 26.5.2 below, with the typical porous 'cork urn/kurkurn' fabric, the matrix of this fabric is rather compact without the voids originally filled with inclusions of calcite/carbonate. It seems more likely that pottery grit was used as a temper, maybe in combination with iron pellets present in the clay itself. This wheel-thrown jar has a relatively high shoulder and somewhat inward-curved neck with a rounded rim (16-3-7/2425; Fig. 26.1). Comparable vessels have been found in Tongeren, where the jar Vanvinckenroye 480 also has a porous fabric; it dates from the third quarter of the third century AD.<sup>2461</sup>

#### 26.4.2 Black-slipped and red-painted wares

Only a handful of sherds stem from tableware and probable cooking ware that is covered with a coloured, matte slip or engobe (Table 26.2). Three items were produced in a rather coarse fabric with a black slip and (light) orange fabric, most probably in Trier. Only one of the items could be reconstructed (757-20/108-2-7; Fig. 26.1), but it is most likely that they can all be grouped in the Gellep 58-62 type, which is the fourth-century successor to the high-quality beakers from the third century.<sup>2462</sup> Traces of white paint have not been observed on the sherds, which suggests that these were plain beakers.

The quite large plate Niederbieber 53, with a rather thick wall and a red-brown slip at the inner surface, represents one of the ceramic

<sup>2461</sup> Vanvinckenroye 1991, 112-113, pl. 52 (type 480).

<sup>2462</sup> Symonds 1992, 65-67 (Group 61, form 1); Pirling & Siepen 2006, 87-91.

categories that can be dated either in the first half of the third century or in the later third/early fourth century AD.<sup>2463</sup> Therefore, the few sherds of two plates with the fine reddish brown fabric of the Lower Moselle region (cf. Gellep D10 fabric) are considered to possibly date to the decades around AD 300.

Two sherds contain traces of a greyish brown to red-coloured engobe, of which the rim fragment in a dark brownish fabric stems from a Gellep 69 plate.<sup>2464</sup> The form of this red-painted plate is a continuation of the Gellep 48-49 type and is similar to plates from the Trier-Kaiserthermen excavations: the types Trier I, 37a (*S-Keramik*) and Trier II, 56a (*Kellergang-keramik*).<sup>2465</sup> The distinction between the red-painted plates from the third and those of the fourth century can be made on the basis of the colour of the fabric; the younger specimens were normally made in a brownish clay (cf. Gellep D3 fabric). Its production, established in Trier among other locations, dates from the same period as the black-slipped beakers: the first half of the fourth century AD.

Although the presence of the specimens of the pottery group discussed here may have coincided in the decades directly after AD 300, there is a possibility that the black-slipped ware and the later red-painted fabric belong to the (early) phase of 'Late Roman wares' (Section 26.6).

#### 26.4.3 Coarse ware

As mentioned above, the advancing study of the Middle Rhineland workshop of Urmitz-Weißenhurm in combination with the ceramics analysis of, for instance, the site assemblage of Alzey have led to a broader interpretation of a selection of coarse ware vessel types from the Niederbieber horizon.<sup>2466</sup> There are two main reasons to suggest that the vessels in what used to be called 'Urmitz ware' at Ten Hove could belong to the first transitional phase. Firstly, although not impossible, the group would be somewhat 'out of place' if belonging to the late second and third century AD. The coarse ware assemblage of that period largely consists of products of the workshops at Heerlen, which is logical in the light of their close proximity.

Secondly, the few Weißenthurm vessels present at Voerendaal comprise in part the very types (Niederbieber 96 and 113) that seem to have still been in production during the second half of the third century, even up to the middle of the fourth century. Moreover, some other forms in the Weißenthurm fabric are evidently late specimens of the Niederbieber types 89, 94 and 104. Taken all together, this should substantiate the dating of this fabric group, with the total sum of 56 fragments of at least 11 items, to the late third or early fourth century.

The Weißenthurm products are all manufactured in (mostly) oxidizing fabrics with a laminated matrix, in which fine white and red, rounded quartz is visible (757-6/109-2-5; Appendix XIV, fig. 2; XVI, fig. 1).<sup>2467</sup> The bowl Niederbieber 104 with its inward-curved and thickened rim is a good example of a relatively late specimen of this vessel type (770-12/23-3-9; Fig. 26.1). The plate Niederbieber 113 with a slightly curved but diagonal wall only appeared in the course of the first half of the third century and was quite popular during the late third century and first half of the fourth century (412-7/79-1-5; Fig. 26.1).<sup>2468</sup> Only one specimen of the iconic jar Niederbieber 89, with its heart-shaped rim profile, is present in the assemblage (757-6/109-2-5; Fig. 26.1), as well as a specimen of its successor with a crescent-shaped rim profile, an early example of the jar Alzey 27 (757-31/109-2-5; Fig. 26.1).<sup>2469</sup> To conclude, we should mention the jar Gellep 106 with a handle and also a crescent-shaped rim profile (757-5/108-2-7/9830), which represents a later variant of the jar Niederbieber 94 (757-5/108-2-7; Fig. 26.1).<sup>2470</sup> A date in the second half of the third or first half of the fourth century is most likely.

Not all of the coarse pottery ascribed to the first transitional phase stems from the Middle Rhine region. An example is a bowl with an angular, thickened rim profile, more or less related to the Niederbieber 104 bowl (716-1/19-1-5; Fig. 26.1). It has a light yellowish fabric with rounded quartz-rich sand; hence a provenance in the Rhineland seems most likely. The identification of the Niederbieber 96 jugs from the above-mentioned graves is even less straightforward (Fig. 13.5; 23.25). These jugs were made in an oxidized fabric that was identified as

<sup>2463</sup> Heeren 2016, 200. However, Heeren compares the Gellep 67/69 types to the Niederbieber 53 type, whereas plates of the Gellep 48 type are a far better match – in form, fabric and date – for the 'rot bemalte' ware of the Niederbieber horizon (cf. Pirling & Siepen 2006, 123-124).

<sup>2464</sup> Pirling & Siepen 2006, 102 (type 69).

<sup>2465</sup> Hussong & Cüppers 1972, 17, table 3 (type 37a) and 51, table 11 (type 56a).

<sup>2466</sup> Friedrich 2012; Hunold 2015; Friedrich in prep. See also Heeren 2016, 201-203.

<sup>2467</sup> Cf. Stamm 1962, 91-92; Willems 2005, 88-89; Brulet 2010, 403-406.

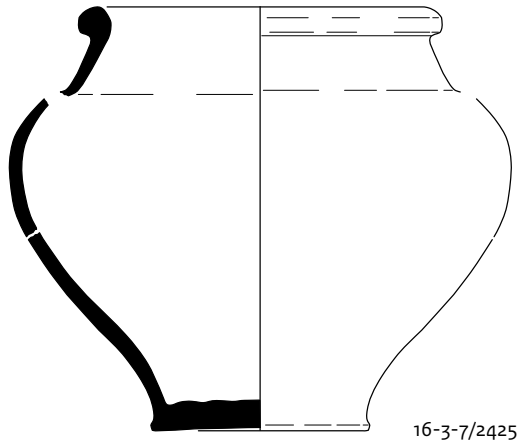
<sup>2468</sup> Pirling & Siepen 2006, 233-236 (types 511 and 128).

<sup>2469</sup> Cf. Bakker 1996, 228-230, fig. 4; Brulet 2010, 415-418.

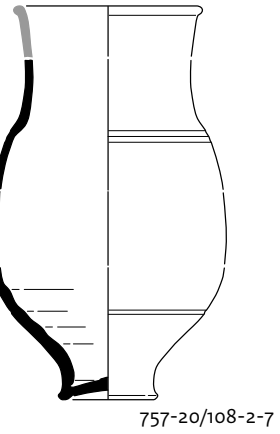
<sup>2470</sup> Pirling & Siepen 2006, 197-198 (type 106).



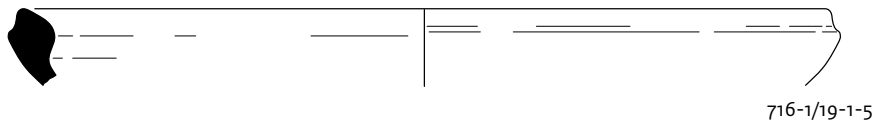
**CORK WARE, fine**



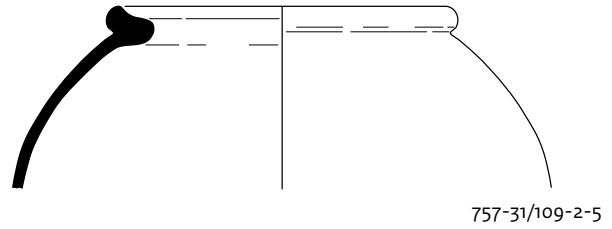
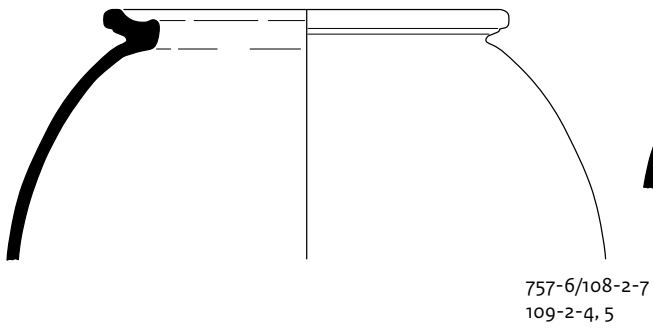
**BLACK-SLIPPED, Trier**



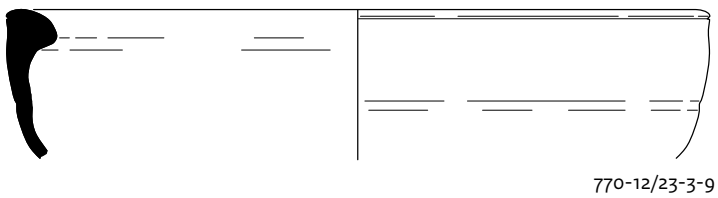
**RHINELAND/EIFEL, NB 104var**



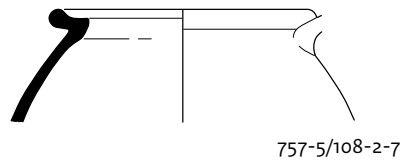
**WEIBENTHURM, NB 89/ALZEY 27**



**NB 104**



**NB 94/GELLEP 106**



**NB 113**

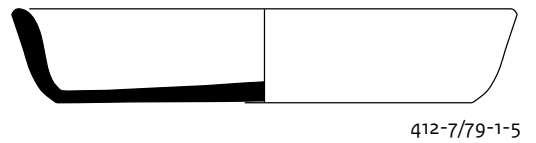


Fig. 26.1 Voerendaal-Ten Hove. Selection of pottery from the later third-early fourth century AD. Scale 1:3.

a third-century Heerlen product.<sup>2471</sup> In light of the relatively late date of the graves the presence of Heerlen products would be remarkable. There is as yet no proof of pottery production in Heerlen at the end of the third century AD.<sup>2472</sup> If there was no such production, the jugs could either be very old pieces still suitable as grave goods or derive from a workshop (or workshops) in the Rhineland or Eifel. In the cemetery of Krefeld-Gellep, the Gellep 66 and 67 types are considered to derive from the Niederbieber 96 jug, but it is noted that, like the Voerendaal specimens, they do not have the Weißenthurm fabric.<sup>2473</sup> According to the dates of the graves with these jugs, they can be dated to the first half of the fourth century AD.

### 26.5 Late Roman wares. Last third of fourth/first third of fifth century

As will be argued below, the majority of the Late Roman pottery most likely stems from a single habitation phase that dates somewhere between

AD 365 and 435 (or a little later). The analysed selection consists of 510 sherds from approximately 261 vessels (excluding the late terra sigillata and late amphorae) or about 685 sherds from fewer than 390 items, when considering the complete assemblage (Fig. 26.2; Table 26.3). It is a relatively small quantity when compared with the pottery assemblage of the Early and Middle Roman period. Given the many thousands of sherds – well over 2,000 MNI from the first 200-250 years of habitation – the late antique assemblage is quite small for the suggested habitation phase of at most 70-odd years (cf. Fig. 5.8). This can be interpreted in different ways: habitation was less intensive than in the previous period; the duration of the Late Roman habitation phase was significantly shorter than assumed by the present dating; or the surviving pottery is not representative of this habitation phase, due to taphonomic processes or the fact that this phase was not excavated to its full extent (part of the settlement is situated south of the Steinweg).

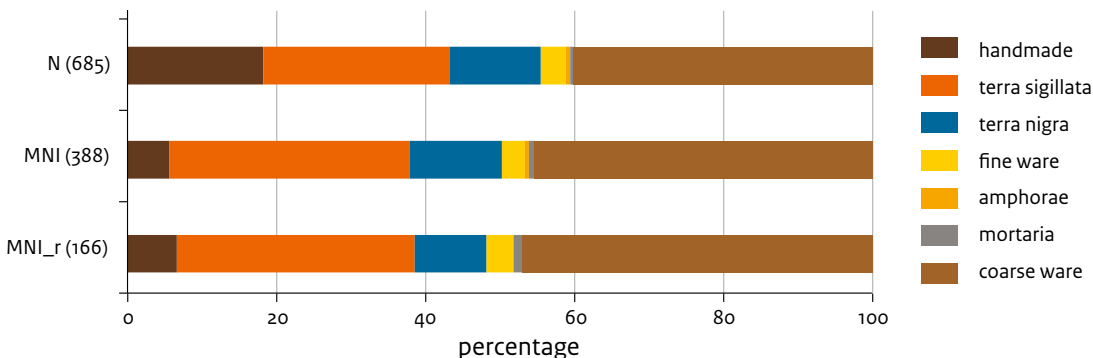


Fig. 26.2 Voerendaal-Ten Hove. Graphic representation of the wares ratios of the Late Roman ceramics assemblage. (source: J. Hendriks & H.A. Hiddink)

**Table 26.3. Voerendaal-Ten Hove. Overview of the pottery, dating from the mid-fourth to mid-fifth century.**

Ware group	N	MNI	N_r(ims)	MNI_r(ims)	EVE	Brokenness	Completeness
Handmade ware	125	22	17	11	1.62	77	0.15
Terra nigra	84	48	21	16	2.49	34	0.16
Fine ware	23	12	6	6	0.59	39	0.10
Mortaria	3	3	2	2	0.15	20	0.08
Coarse ware	275	176	99	78	13.16	21	0.17
<b>Total</b>	<b>510</b>	<b>261</b>	<b>145</b>	<b>113</b>	<b>18.01</b>	<b>28</b>	<b>0.16</b>

<sup>2471</sup> Section 23.3.1.

<sup>2472</sup> Cf. Van Kerckhove & Boreel 2014; Van Kerckhove 2019, 19-31.

<sup>2473</sup> Pirling & Siepen 2006, 205-206 (types 66 and 67).

The quantification of the different ware groups can shed some light on the composition of the Late Roman ceramics assemblage and any possible differences in fragmentation (Table 26.3). If the EVEs are used as a base, the overall fragmentation does not seem very high, although there is a significant difference between the handmade ware and the coarse ware (which could be easily explained by the apparent hardness of the *Eifelkeramik*). On the other hand, the completeness based on the existing rim proportions is not very high, which is in accordance with what we should expect from a normal habitation assemblage, without distinct closed contexts. Moreover, the number of rim fragments within the assemblage seems to be proportionally high (more than 25% of the total number of sherds), which could mean either that not all of the wall fragments have been determined as Late Roman, or that some preference was exercised when the ceramics were collected in the field.

### 26.5.1 Handmade ware

Only a small selection of the total assemblage of handmade pottery from Voerendaal-Ten Hove, less than ten percent of all the fragments, could be determined as (probable) Late Roman. Although the total number of 125 sherds comprises a considerable proportion (more than 20 percent) of the analysed late antique assemblage, they belong to only a minimum estimate of 22 vessels (or 11, based on rim sherds). The ratio of fabric groups or vessel types does not therefore seem very significant (Table 26.4). The collection of late handmade ware consists of large jars, some smaller bowls and one large plate (Fig. 26.3). Good parallels with the present vessels have not been easy to identify, but in several cases the settlement site of Wijster still seems to be the best reference.

Most of the vessels were manufactured in reduced, greyish brown or dark grey fabrics, quite identical to those tempered with fine, rounded quartz sand. The most enigmatic item in this sandy fabric is an open, carinated bowl with two rows of light indents at the transition of

**Table 26.4. Voerendaal-Ten Hove. Summary of the Late Roman handmade ware.**

Ware group	Fabric	Form	Type	N	MNI	MNI_r(ims)	
Handmade reduced	quartz sand, fine	-	-	8	5	-	
		bowl	Wijster ID / N. Drenthe K4c	15	1	1	
		jar	Wijster IVA	42	1	1	
			jar	Wijster IVF / N. Drenthe G7a	35	1	1
	quartz sand, coarse	-	-	1	1	1	
		jar/bowl	Wijster IVF / N. Drenthe G7a	2	1	1	
		stone grit, quartz	-	-	3	3	-
			bowl	Wijster IVH	6	1	1
			jar	Wijster VII B2	1	1	1
	pottery grit	-	-	1	1	-	
plate		unknown	1	1	1		
slate		-	-	1	1	-	
Handmade ox./red.	quartz sand, fine	jar	Wijster IVH	1	1	1	
		bowl	-	1	1	1	
		jar	Wijster VII B1	6	1	1	
	calcite/carbonate	-	-	1	1	-	
<b>Total</b>				<b>125</b>	<b>22</b>	<b>11</b>	

the belly to the shoulder (315-2/23-3-1/4404; Fig. 26.3; Appendix XVI, fig. 1). Although it is not certain that the bowl had a small foot, with its smoothed and slightly outward-curved shoulder/neck it fits well into the group of funnel cups of the Wijster ID type. Especially in the northern provinces of Groningen and Drenthe, these Wijster ID bowls often occurred in fourth- and fifth-century contexts.<sup>2474</sup> The only other fragment of a bowl with a decoration of indents on the belly is unfortunately too small to also identify this as a funnel cup (757-25/105-1-20; Fig. 26.3). Judging from the finish of both bowls, it seems that they are the only specimens of handmade pottery intended as tableware.

The other vessels in a sandy fabric can best be described as 'necked bowls' of the Wijster IV type. Since there is a large (chronological) variety among the different subtypes, it is hard to place this vessel type culturally. The rim-neck fragments of a large jar Wijster IVA with outward curved rim (723-9/24-3-2; Fig. 26.3) and a small bowl Wijster IVH (16-1-3/2153; Fig. 26.3) are small and typologically rather insignificant. Much easier to place are two Wijster IVF jars with a wide mouth and a long, slightly curved neck, the larger of which is tempered with fine sand (315-3/23-3-1; Fig. 26.3) and the smaller with coarse sand (723-8/24-3-2; Fig. 26.3). Jars (or bowls) of this are common at northern sites of the fourth and fifth centuries.<sup>2475</sup>

Large, slightly closed jars ('neckless bowls' according to the Wijster typology) seem to be rather underrepresented in the assemblage, in comparison to the site of Gennep-Stamelberg for instance, where Gennep 2 jars are quite dominant.<sup>2476</sup> The most pronounced example for Voerendaal-Ten Hove is a specimen of the jar Wijster VIIB2 with a thickened rim, tempered with sand and stone grit (104-1-1/9025; Fig. 26.3). And again, this rim-neck fragment is somewhat rare, so it is hard to say much about the cultural association of the vessel type. The same probably goes for the only complete handmade profile, of a shallow, necked bowl Wijster IVH with a slight S-curved profile and outstanding rim (107-1-14/9568; Fig. 26.3).<sup>2477</sup> Although this vessel has parallels with examples of the Gennep 4 bowls, it cannot be seen as chronologically significant for the Late Roman period.<sup>2478</sup>

The most interesting aspect of this specimen, however, is the use of broken quartz as stone grit tempering (up to 1 mm), which is clearly visible, both at fractures and the outer surface. Another notable vessel is the dark grey to black-coloured large plate with a vertical neck, tempered with pottery grit (237-1/105-1-17; Fig. 26.3). Since large, wide plates, especially those with a neck like the specimen from building 237, tend to be very scarce in late antique assemblages, its date in this period is not completely certain.

The interpretation of the small assemblage of handmade ware, especially in relation to the considerably larger number of wheel-thrown wares, is not particularly straightforward. Based on the most significant vessel types and the variety of tempering, it is clear that the handmade ware from Ten Hove fits rather well with what we know of Late Roman handmade pottery assemblages in the Meuse valley and its direct surroundings.<sup>2479</sup> Since it is difficult to pinpoint these handmade wares with chronological precision to the fourth or fifth century, we should consider the possibility that handmade wares in late antique settlements south of the Rhine could predate the bulk of the Late Roman imported wares.<sup>2480</sup> There are however enough indications, such as the co-occurrence of handmade and wheel-thrown wares in several Late Roman contexts (e.g. pit 315 and 723), but also the presence of the Wijster ID bowl and Wijster IVF jar, that confirm the date of the assemblage as a whole: the late fourth and first half of the fifth century AD.

When considering the provenance of the late handmade ware, it is important to mention the apparent scarcity of rim and wall decorations. The presence of a row of indents (made by a finger) on the widest part of the wall or belly is especially characteristic of the RWG pottery from the (central and) eastern Netherlands during the fourth and at least part of the fifth century.<sup>2481</sup> The only specimens with wall decorations are two bowls, one of which is a clear example of a funnel cup, a vessel type that ultimately combines stylistic traits of both RWG and NKN pottery styles.<sup>2482</sup> The use of several fabrics with different sorts of tempering might also be an indication that the handmade assemblage of Voerendaal-Ten Hove is rather

<sup>2474</sup> Van Es 1967, 204-207, fig. 104-106 (note the decoration of e.g. no. 225, 1, 6) and 298-300. See also Taayke 1995, 38-39, fig. 28 and 61 (type K4c); Nieuwhof 2008, 280-282, fig. 14.11 (e.g. no. 971). A somewhat similar fragment was found in the Late Roman settlement at Geldrop-Genoehuis (Bazelmans 1991, fig. 49).

<sup>2475</sup> Van Es 1967, 249-251, fig. 140-141 and 309-310. See also Taayke 1995, 28-29, fig. 17.6-11 and 58 (type G7d); Nieuwhof 2008, 280-282, fig. 14.8 (e.g. no. 2098).

<sup>2476</sup> Cf. Schotten 1991, 59-61.

<sup>2477</sup> This vessel appears quite wide in relation to its height, but the measurement of the diameter seems reliable.

<sup>2478</sup> Van Es 1967, 311; Schotten 1991, 41, fig. 15 (no. 35 and 362) and 71.

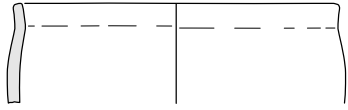
<sup>2479</sup> For the best documented settlement sites so far, see Schotten 1991 (Gennep-Stamelberg); Van Kerckhove & Magnée 2017 (Cuijk-De Nielt); Hendriks 2021 (Neer-Wijnaerden).

<sup>2480</sup> Cf. Van Kerckhove & Magnée 2017, 285.

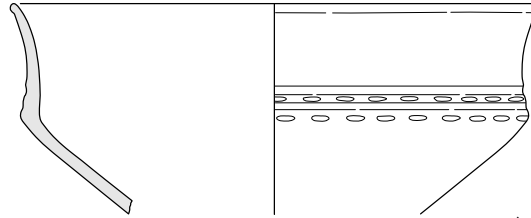
<sup>2481</sup> Taayke 2006, 209.

<sup>2482</sup> Taayke 1996, 179-181.

**QUARTZ SAND, Fine**



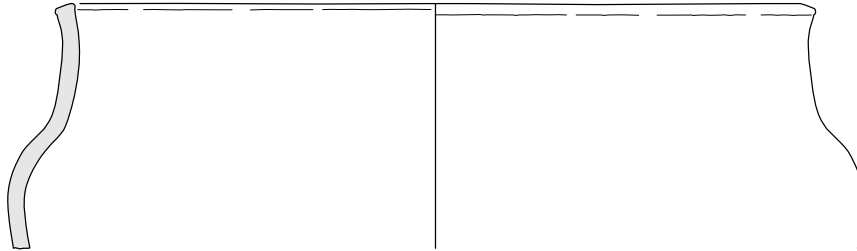
16-1-3/2153



315-2/23-3-1

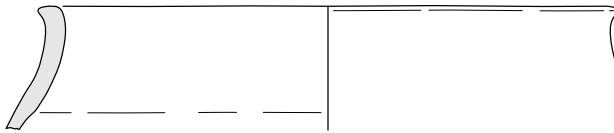


723-9/24-3-2



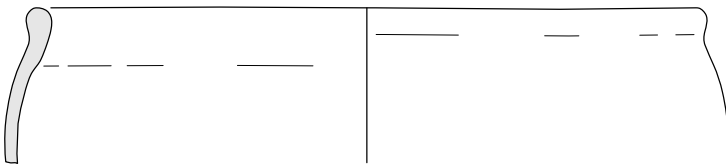
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**QUARTZ SAND, Coarse**

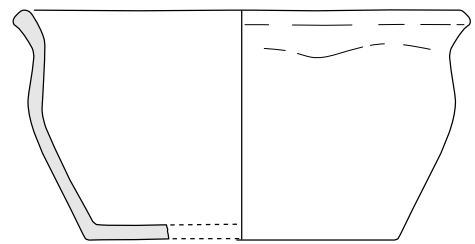


723-8/24-3-2

**QUARTZ GRIT**

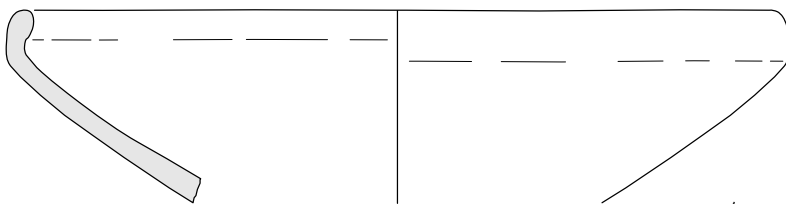


104-1-1/9025



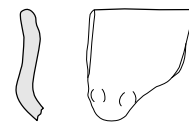
107-1-14/9568

**CHAMOTTE**



237-1/15-1-17

**COMPACT-FINE**



757-25/105-1-20

Fig. 26.3 Voerendaal-Ten Hove. Late Roman handmade pottery. Scale 1:3.

heterogenous, although it is obvious that the overall northern 'Germanic' influence is quite strong. The absence of the typical porous and organic-tempered fabrics in favour of more mineral-tempered fabrics could also point to preferences in pottery making that should be sought further north than the heartland of the RWG pottery style: the region of Drenthe. There are in this respect some striking parallels with the well-known site of Gennep-Stamelberg.<sup>2483</sup> However, this is explicitly not to say that the small selection of handmade ware can be classified as 'Saxon'.

Until more detailed research has been carried out into the nature of the handmade wares found at rural settlements south of the *limes*, it is still very tricky to use only the few well-documented sites for the cultural and chronological interpretation of this ceramics category. Several factors could have played a role in the way that handmade ware was re-introduced in the south after a period of absence and during a time when there were considerable movements of people (but also goods and ideas). For instance, it is possible that this small assemblage of vessels consists of the earliest crockery that had been in use just after the middle of the fourth century, the period in which the Late Roman post-built settlement was founded. The vessels could have been partly imported from the north and partly manufactured in the settlement itself. And the inhabitants could have made an (almost) complete switch to imported wheel-thrown wares within one generation. However, it is also possible that handmade vessels (e.g. containing foodstuff) were brought to Voerendaal little by little during the late fourth and early fifth century, some from neighbouring settlements and some from further afield. In this case, handmade pottery could simply have been additional to wheel-thrown vessels, for special purposes or occasions.

### 26.5.2 Late terra nigra and fine wares

In addition to the rather large number of late terra sigillata (171 sherds from at least 53 vessels, based on the rims), the group of fine tableware consists mostly of bowls, a single jug and

possibly two bottles in terra nigra and fine (smooth-walled) wares (Table 26.5; Fig. 26.4-5). Within the assemblage at Voerendaal-Ten Hove several fabrics have been grouped based on their general characteristics.

#### *Fine grey hard/compact nigra*

The first one is a fairly heterogeneous group that comprises both fine and hard fabrics with a light grey or greyish fabric and compact matrix. The most distinctive item is a relatively complete bowl with a wide foot and stand ring, globular body and slight S-profile (757-19/108-2-7; Fig. 26.4; Appendix XVI, fig. 1). Two sorts of decorations are present at the exterior of the dark grey to black polished body and shoulder: two separate bands of rouletting and consecutive arches with small incisions. There is some similarity to the 'Middle Roman' Holwerda BW55 bowl, of which two – possibly Late Roman – specimens are present in a coarser fabric (items 723-7/24-3-2 and 757-17/104-2-7; see below).<sup>2484</sup> The same goes for the well-known Late Roman foot bowls, although the fabric of this particular specimen – white to light grey, fairly hard and very fine – strongly resembles the 'Hellweg fabric' of the foot bowl Gellep 273 (Appendix XIV, fig. 1).<sup>2485</sup> This could point us in the direction of the wheel-thrown pottery production in Germania east of the Rhine, which includes several examples of terra nigra-like bowls, with and without wall decorations, that were manufactured from the third century onwards and which seem to have been influenced by both Roman and indigenous pottery styles.<sup>2486</sup>

Such foot bowls, related to the Chenet 342 type, are present in the assemblage (757-23/108-2-7, 757-16/104-2-7, 108-1-5/9783; Fig. 26.4). Most have a grey to light grey, hard or compact fabric. Since these specimens are far from complete, it is difficult to compare their form and fabric with specimens from other sites. Only one item has clearly visible rouletting bands at the exterior, and the base fragments show a (more or less) hollow foot with no or only a slight elevation. To conclude, it is hard to accurately pinpoint the provenance and date of this group of (foot) bowls. For now, a date in the later fourth and early fifth century seems most logical.

<sup>2483</sup> Cf. Schotten 1991; Schotten & Groenewoudt 1997.

<sup>2484</sup> Holwerda 1941, 48-49 and plate 11-12 (no. 546-583). Cf. Deru 1996, 74-75 (type B21-22).

<sup>2485</sup> Hendriks 2021, 96ff.; Heeren in prep. For macroscopic descriptions, see also Agricola *et al.* 2012, 212-213; Van Thienen *et al.* 2018, 95.

<sup>2486</sup> Cf. Hegewisch 2013, 145-164.

Table 26.5. Voerendaal-Ten Hove. Overview of the Late Roman terra nigra and fines wares.

Ware group	Fabric	Form	Type	N	MNI	MNI_r(ims)
Terra nigra	fine/hard	-	-	2	2	-
		bowl	-	6	5	1
		bowl	HBW 55 cf.	1	1	1
		bowl	decorated	12	1	1
		footed bowl	Chenet 342 cf.	10	7	2
	quartz, grey/brown	-	-	7	7	-
		bowl	-	8	1	1
		bowl	Chenet 320 cf.	1	1	1
		bowl	HBW 52 cf.	3	3	3
		bowl/jar	-	1	1	-
		footed bowl	Chenet 342 cf.	2	2	-
	quartz, orange	-	-	5	5	-
		jug	Alzey 18 cf.	3	1	1
		bowl	-	10	4	-
		bowl	incised rim	1	1	1
		bowl	Chenet 320 cf.	1	1	1
		bowl	HBW 52 cf.	1	1	1
		footed bowl	Chenet 342 cf.	3	1	1
Terra nigra (LROM?)	fine/hard	bottle	-	1	1	1
		bottle	decorated	6	2	-
Fine ware	oxidized, engobe	jar	-	2	1	-
	reduced	-	-	1	1	-
		bowl	-	3	3	1
		bowl	incised rim	2	2	2
		bowl	HBW 55 cf.	13	3	2
	other	-	-	1	1	-
		jar with ear	unknown type	1	1	1
<b>Total</b>				<b>107</b>	<b>60</b>	<b>22</b>

And except for the decorated bowl in a possible Hellweg fabric, there is no specific reason to presume a Germanic origin for the other bowls in this group of nigra wares.

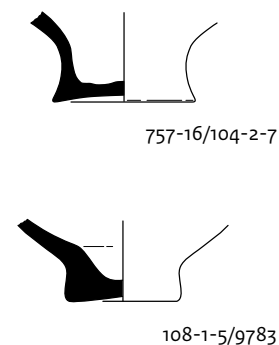
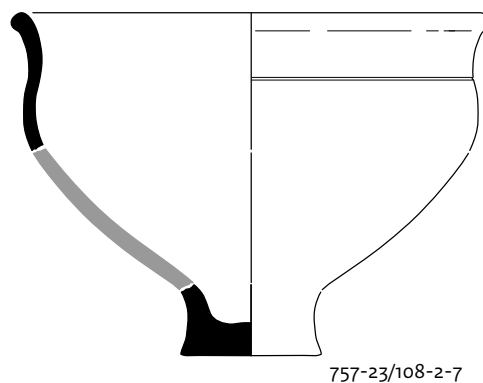
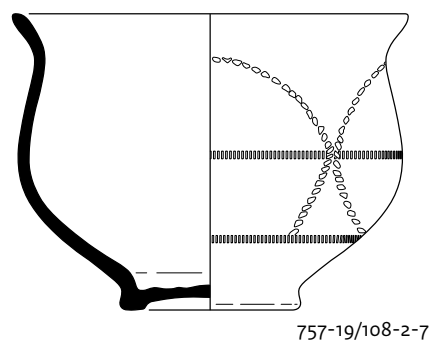
#### *Quartz-rich, grey-brown and orange nigra*

Besides this heterogenous group of fine fabrics with a (light) grey-coloured matrix, two other groups of terra nigra-like fabrics can be discerned, which have in common a smoothed – but not polished or coated – (brownish) grey exterior and a quartz-rich matrix. Although these

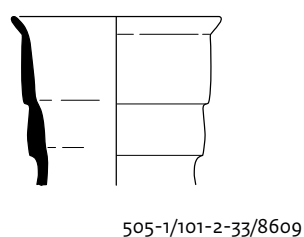
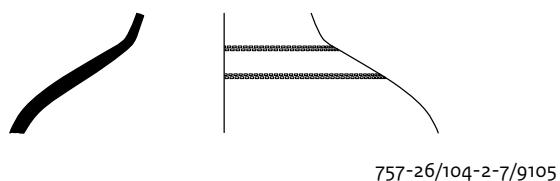
products do not actually fit into the original definition of (late) terra nigra and could be also be regarded (reduced) fine ware, they bear a certain resemblance in fabric to the groups of late terra nigra and *braune Nigra* that occurred in the Upper Rhine region from the middle of the third century onwards.<sup>2487</sup> In fact, these wares from *Germania prima* also consist of fabrics that were not entirely fired in a reduced atmosphere, but in a (slightly) oxidized atmosphere and subsequently smoked. However, these *braune Nigra* products seem to have been displaced by

<sup>2487</sup> Cf. Bernard 1984/1985; Steidl 2000, 76-80; Jäger & Gross 2019, 114-118. See also Unverzagt 1916, 25-29.

## TERRA NIGRA, Fine hard (light grey)



## TERRA NIGRA, Late Roman?



## REDUCED FINE WARE

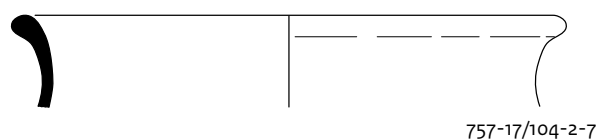
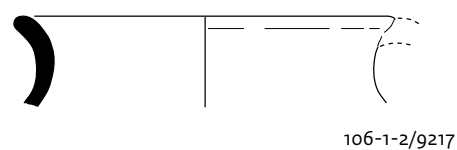
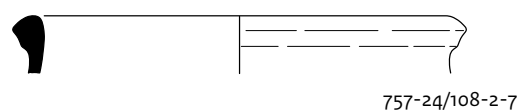
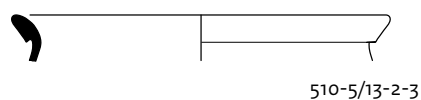
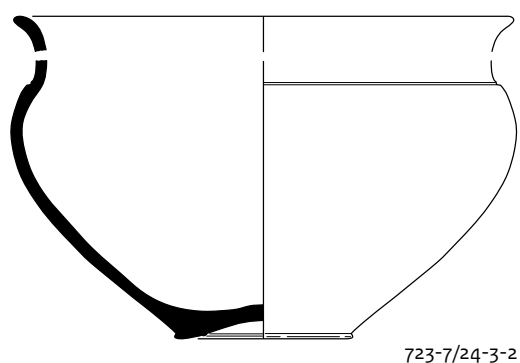


Fig. 26.4 Voerendaal-Ten Hove. Terra nigra from the Late Roman period (upper row), possibly this period (middle row) and reduced fine ware (bottom row). Scale 1:3. (source: H.A. Hiddink & F. Horbach)

reduced (*graue Nigra*) products around or just after the middle of the fourth century.<sup>2488</sup>

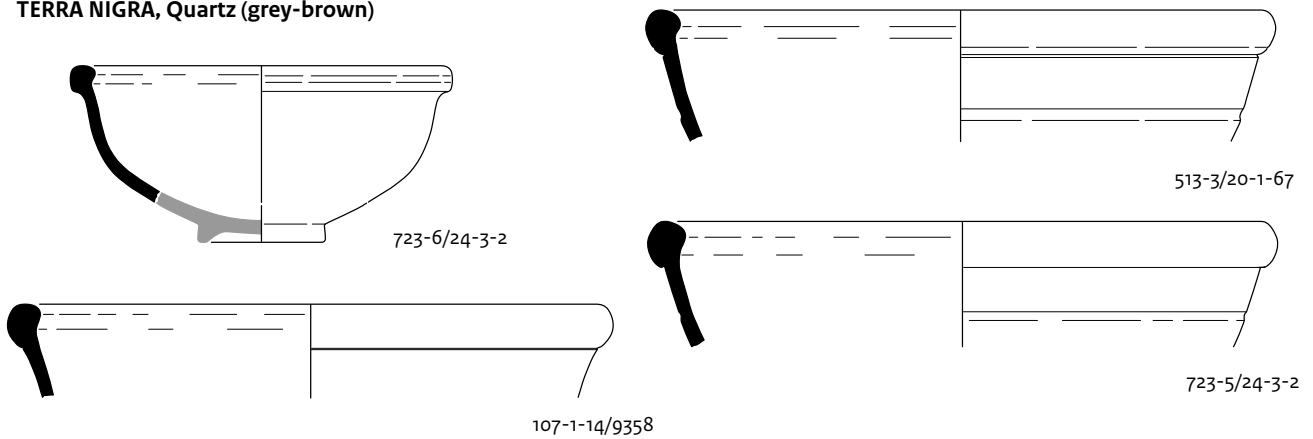
The first group of quartz-rich terra nigra at Voerendaal-Ten Hove mostly comprises (dark) grey bowls with a brownish or greyish fabric

(Fig. 26.5, top; Table 26.5). The shape of the bowls is not typical of late terra nigra tableware, but they bear a resemblance to the Argonne sigillata bowl Chenet 320 and the Middle Roman Holwerda BW 52b, because of the thickened

<sup>2488</sup> Steidl 2000, 76-78.



## TERRA NIGRA, Quartz (grey-brown)



## TERRA NIGRA, Quartz (orange)

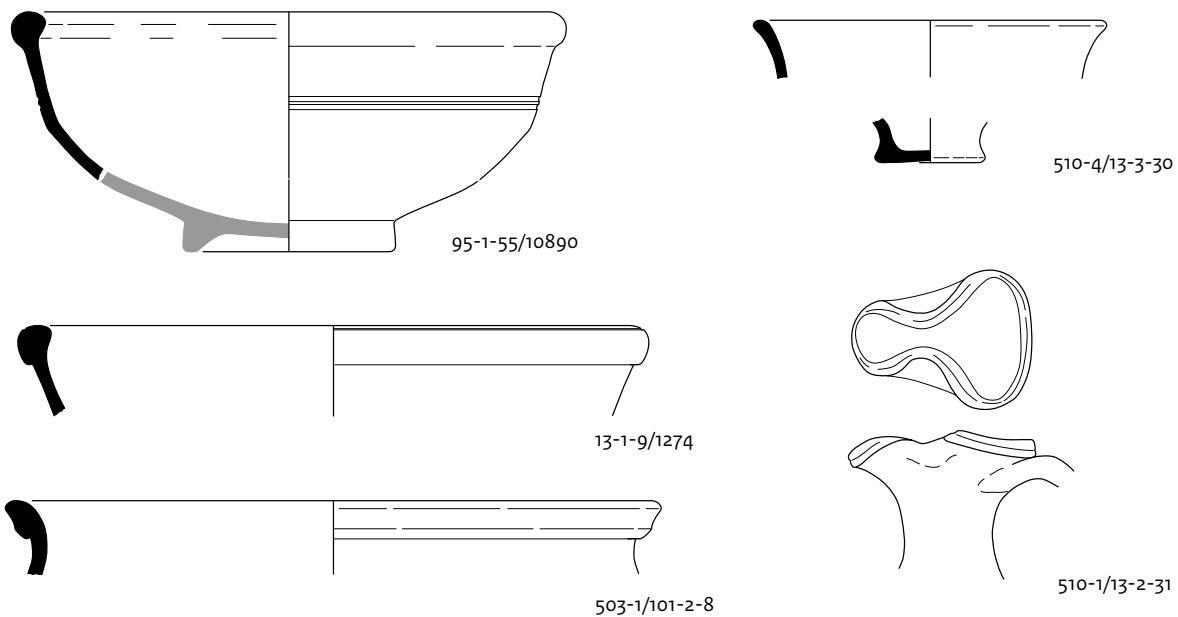


Fig. 26.5 Voerendaal-Ten Hove. Late Roman quartz-rich terra nigra. Scale 1:3.

rim.<sup>2489</sup> Instead of a roulette decoration, the latter bowls have grooves at the upper wall surface.

Whereas this first quartz-rich group was manufactured in a more or less reduced atmosphere, the second group has a clearly (brownish) orange matrix. After an initial oxidized firing, the final phase must have involved a weak reduced atmosphere, leaving a brownish grey exterior (95-1-55/10890; Appendix XIV, fig. 1; XVI, fig. 1). The matrix of this

fabric is very compact and has abundant very fine quartz sand, with only a few larger inclusions (e.g. rounded quartz up to 1 mm). This very fine quartz also appears to be visible at the wall surface, although there could be some very fine mica present as well. This fabric group partly consists of the same vessel types as the grey variant mentioned above. There is also a foot bowl Chenet 342 (510-4/13-3-30), a larger bowl with an incised rim (503-1/101-2-8) and the upper part of a jug with a squeezed spout, similar to the

<sup>2489</sup> Holwerda 1941, 47 and plate 11 (no. 535); Cf. Deru 1996, 78-79 (type B30).

jug Alzey 18 (normally made in red-painted ware; 510-1/13-2-31; Fig. 26.5).

It seems clear that both fabric groups are variants from a single production site that is quite difficult to locate, based on the fabrics and vessel types. Apart from the apparent similarities to the nigra fabrics of the region between Mainz and Worms, there is – unlike the few specimens of late colour-coated wares at Voerendaal – no reason within this assemblage to consider an earlier date than suggested for the terra nigra discussed earlier. Since the German provinces have not provided any form parallels for the bowls with a thickened rim in particular, we should perhaps look more to the southwest for related terra nigra or reduced wares. For instance, some of the dark bowls with a band-shaped rim (*'écuelle à bord en bandeau'*) at the late antique site of Fagnolle-La Tonne de Bière in the Belgian province of Namur are quite similar in form, with a beige fabric.<sup>2490</sup> In addition, reduced wares from Reims dating to the later horizons of its production (late third century onwards) comprise bowls that also imitate the sigillata bowls Dragendorff 37 and Chenet 320.<sup>2491</sup>

#### *Other terra nigra-like/fine reduced wares*

The middle row of Figure 26.4 shows two somewhat enigmatic objects. Item 757-26 seems to be part of a bottle rather than – if held the other way round – a foot bowl, based on the diameter and the inner surface. Parallels are not known to us and the roller-stamped small rectangles are not known to us from Late Roman contexts. However, there are no parallels either for Early Medieval bottles in this fabric and with a similar decoration. Nor are (Late) Roman parallels known for item 505-1/101-2-33/8609, whose diameter in combination with the height is reminiscent of the neck of a bottle – but never quite as articulated – or some kind of beaker. Beakers with a somewhat similar form are known from the Merovingian period, although these generally have a thicker wall and lip, as well as more (and rounded) ribs.<sup>2492</sup>

As said, it is not always easy to describe the clear difference between the late terra nigra and the (reduced) fine ware. Within the assemblage of Voerendaal-Ten Hove a small selection of fine

reduced ware with a (light) grey and sandy fabric has been identified that is quite similar to fine variants of North Gaulish reduced ware.<sup>2493</sup>

Firstly, this comprises fragments of at least two bowls of the above-mentioned 'Middle Roman' type Holwerda BW55, of which item 723-7/24-3-2 has been included here because 10 sherds were found in a pit with other fragments of Late Roman pottery, although it is not certain whether it is from this period or is Middle Roman (Fig. 26.4, bottom row). The same goes more or less for item 757-17/104-2-7, which coincided in context 757 with a large quantity of other Late Roman pottery. Two other bowls with an incised rim also belong to this rather sandy fabric group (510-5/13-2-3; 757-24/108-2-7; Fig. 26.4). In addition, another item in fine ware should be mentioned, although it is not clear whether the fragment was originally reduced or oxidized due to secondary firing. This is the upper part of a jar, possibly with a handle, in a rather smooth fabric (106-1-2/9217; Fig. 26.4, lower right).

#### **26.5.3 Mortaria**

During late antiquity the mortarium or mortar, the typical Roman vessel for grinding and preparing food, only played a minor role within the pottery assemblage. In Voerendaal-Ten Hove just three items can be assigned to this period (Table 26.6).<sup>2494</sup> Two mortars were manufactured in the Eifel region, most probably in Mayen, judging by their hard, greyish brown to yellow fabrics. It is difficult, however, to classify these items with the well-defined Mayen MR or MD fabrics (see below). The first item has the characteristic diagonal rim of the Brulet H33 type (20-1-84/3207; Fig. 26.6), whose only parallels are known from the Meuse valley, in Herstal (B) to the south and Neer to the north.<sup>2495</sup> The other item has a hammer-like rim profile, which is typical of the more regular Late Roman mortars Alzey 31/Trier III (16-3-8/2433).<sup>2496</sup> Both types date roughly to the late fourth and first half of the fifth century, although their distribution and function has never been analysed to a greater extent. Based on its presence in pit 723, a fragment of a third mortar is also classified as Late Roman. It has a pinkish, oxidized fabric and is possibly from the Moselle region.

<sup>2490</sup> Paridaens *et al.* 2011, 146-147, pl. 7 (items 12 and 13).

<sup>2491</sup> Cf. Deru 2014, 152 (no. 12-15) and 265 (Reims J27 and J29/30).

<sup>2492</sup> Legoux *et al.* 2009, 48, type LPV 398; For examples, see Kars 2011, 194, fig. 6; Theuws & Kars 2017, 448 and 561 (Maastricht-Vrijthof and Pandhof); Theuws & Van Haperen 2012, 102-104 (Bergeijk-Fazantlaan).

<sup>2493</sup> E.g. Tomber & Dore 1998, 74 (NOG RE) and plate 54.

<sup>2494</sup> It is possible that other Late Roman items, present with only wall or base fragments present, have been grouped with the mid-Roman pottery. If these are not made of *Eifelkeramik*, it is hard to distinguish them from the older specimens.

<sup>2495</sup> Brulet 1990, 60 and plate 16 (type H33); Hendriks 2021, 102-103, fig. 8.7.

<sup>2496</sup> Hussong & Cüppers 1972, 78-79 (type 41) and fig. 37 (especially no. 4-5); Cf. Redknap 1999, 168 and 171 (type R40).

**Table 26.6. Voerendaal-Ten Hove. Overview of the Late Roman mortaria.**

Ware group	Fabric	Form	Type	N	MNI	MNI_r(ims)
Mortaria	Eifel region (Mayen)	mortarium	Alzey 31	1	1	1
		mortarium	Brulet H33	1	1	1
	oxidized	mortarium	-	1	1	-
<b>Total</b>				<b>3</b>	<b>3</b>	<b>2</b>

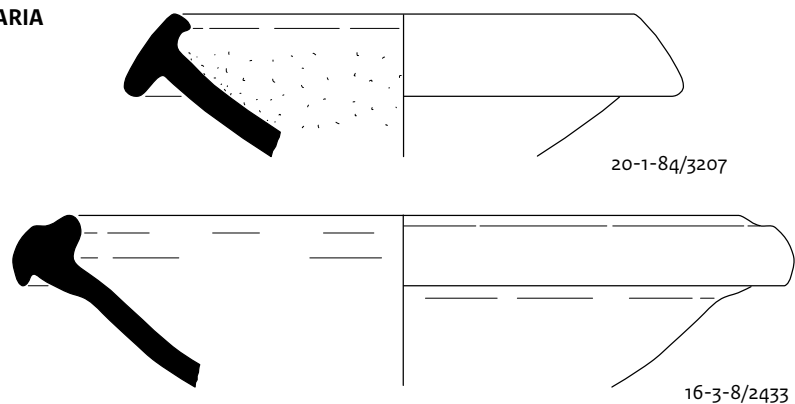
**MORTARIA**

Fig. 26.6 Voerendaal-Ten Hove. Two Late Roman mortaria. Scale 1:3.

**26.5.4 Coarse ware**

The largest ware group of Late Roman pottery at Voerendaal-Ten Hove is coarse ware, which consists of a varied collection of vessels, mostly hard-fired and tempered with volcanic or sedimentary minerals. The spectrum of vessel shapes covers mainly jars, bowls, plates and one-handed jugs that must have been used for their suitability for preparing, storing and transporting foodstuffs. Because of the absence of clearly defined Late Roman contexts no further attempt has been made to subdivide the presented coarse ware into late fourth- or early fifth-century horizons. For now, both fabrics and types are considered to belong to a more or less contemporaneous complex, of which only the begin and end date will be discussed in more detail below.

*Fabrics and provenance*

Given the provenance of the fabric groups present in the Voerendaal assemblage (Table 26.7), it is obvious that only a minority of the pottery could have been obtained from the near vicinity, within a perimeter of approximately

35 km. Moreover, fourth- and fifth-century workshops seem to be absent in this area, which means that most of the coarse ware was imported over distances of more than 50 km. The workshops of the main supplier of coarse ware, Mayen in the Vulkaneifel, were situated as far as 135 km from Voerendaal. Although there is hardly any research dedicated to the possibility that not only empty vessels but also foodstuffs were imported from the Mayen region, it is not unlikely that much of the crockery was purchased for its – unknown – contents.

Since over 80% of the coarse ware consists of vessels from the Eifel region (Fig. 26.7; Table 26.7.), this group received the most attention during the analysis. This was prompted not only by their numerical preponderance, but also the fact that these vessels – more so than for all the other fabric groups present in the assemblage – were more likely to be traced back to their production site of Mayen, and maybe even to a specific workshop. The above-mentioned research into the development of the pottery production of the vicus of Mayen will hopefully improve the chronology of the ceramic horizons of the fourth and fifth century in the

**Table 26.7. Voerendaal-Ten Hove. Overview of the fabric groups of the Late Roman coarse ware.**

Fabric	N	MNI	MNI_r(ims)
Eifel region (Mayen)	223	143	64
- Mayen MR	100	59	25
- Mayen MD	112	75	36
- Mayen MR/MD	11	9	3
Rhineland/Eifel region	19	15	7
Meuse valley/Rhineland	12	8	4
Regional (Meuse valley?)	16	5	1
Other	5	5	2
<b>Total</b>	<b>275</b>	<b>176</b>	<b>78</b>

near future. Therefore, an attempt has been made to classify the Mayen fabrics in more detail than usual, based on macroscopic analysis.

One of the most important insights into the production site of Mayen is the observation that, of the fabrics from c. AD 360 onwards defined by Redknap, the Mayen MR fabric was in (continued) production and that the production of the ‘Merovingian’ Mayen MD fabric also began.<sup>2497</sup> It was already known that the potters of the two principal quarters with workshops in Mayen, Auf der Eich and Siegfriedstraße, used two distinctive clay sources. Further research into the kiln contents and misfires from these workshops, as well as the chemical analysis of this material and Roman grave goods, made it possible to identify different phases and variants within the Mayen MR and MD fabrics.<sup>2498</sup> Since both fabrics were in production during the later fourth and fifth century, it is unsurprising that they are almost equally well represented in the Voerendaal assemblage (Table 26.7; Appendix XIV, fig. 2-4).

Concerning the Mayen MR fabrics of the Auf der Eich area, it is clear that an ‘early MR fabric’ was produced in kilns at the Am Sonnenhang site between the second century and (at least) the mid-fourth century AD. This fabric – characterized by its yellow to brown and greyish colour – might be represented by the Alzey 27 jar in structure 757 (Appendix XIV, fig. 3; 757-1/8/108-2-7). A rather harder fabric, which can be understood as the ‘late MR fabric’, was produced at the Frankenstraße site from the mid-fourth

century to the late fifth century. The colour palette of this product is much wider and with a multi-layered matrix; it varies from ochre and brown to red and (dark) grey, often with a greyish green to grey core. Examples of this fabric comprise some jars Alzey 27 (226-1/107-3-30) and a jar Niederbieber 89 (Appendix XIV, fig. 3; 15-1-1/2058). Both fabric variants are characterized by a laminar texture of the matrix and consist of feldspar sand as the main constituent for tempering, together with a wide range of sedimentary particles. However, the typical dark-coloured particles (e.g. augite), as part of these quartz and feldspar-rich sands, seem to be of sedimentary rather than volcanic origin.<sup>2499</sup>

When the *vicus* of Mayen began to increase production around AD 360, the potters’ quarter of the Siegfriedstraße also came into use. Using a different clay from the Auf der Eich workshops, they started to produce equally hard-fired coarse ware with feldspar or quartz sand as the main tempering constituent. The matrix of these Mayen MD fabrics is, however, much more homogenous and slightly more compact.<sup>2500</sup> From the late fourth to the early sixth century, an ‘early MD fabric’ variant can be identified. Although it was manufactured in both oxidized and reduced atmospheres, the light colour of these vessels – ranging from reddish orange and pink to brownish red – predominates (Appendix XIV, fig. 4; 513-1/20-1-67). After AD 500/510, the Mayen production was completely concentrated in the Siegfriedstraße quarter and a slightly less hard-fired ‘middle MD

<sup>2497</sup> Grunwald 2016. Cf. Redknap 1999, 57-72.

<sup>2498</sup> Pers. comm. L. Grunwald (Oct. 2020) on the definition and subdivision of the MR and MD wares; see also Grunwald 2012, 114-121; Xu & Hofmeister 2012, 161-166.

<sup>2499</sup> Xu & Hofmeister 2012, 167-169. Cf. Willems 2005, 90-91; Brulet 2010, 421-422.

<sup>2500</sup> Xu & Hofmeister 2012, 162.

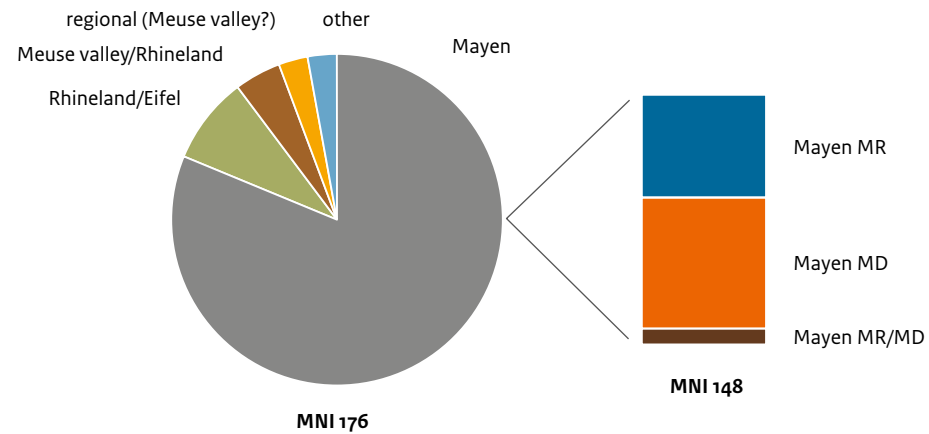


Fig. 26.7 Voerendaal-Ten Hove. Graphic representation of the ratios of fabric groups of the Late Roman coarse ware. (source: J. Hendriks & H.A. Hiddink)

fabric' came into use. This would become the well-known Merovingian Mayen MD fabric of the sixth and seventh century AD.<sup>2501</sup>

Not all of the hard-fired coarse ware represented in vessel types of the Alzey horizon can be easily ascribed to the Mayen production and, in particular, vessels with a laminar texture of the matrix and quartz-rich or sandstone tempered fabric could also have originated from the Eifel region, or from a workshop somewhere in the adjacent Rhineland. If (sub)rounded/angular sand was used as the main tempering constituent, a provenance from a workshop between the Meuse valley and the Rhineland is considered the most plausible. As said, it is still very difficult to pinpoint the origin of these wares with any certainty. The same goes for the fabric group of which several specimens have so far been found at rural settlements in the Meuse valley. We are far from knowing where the production location of this possible regional ware should be sought.

#### Coarse ware vessel types

In addition to the provenance of the Late Roman coarse ware, there is also much to say about the different vessel types that are represented in the assemblage of Voerendaal-Ten Hove (Table 26.8). In particular, the typo-chronological ordering of the main vessel types from the Eifel region has a long tradition, dating back to the first half of the twentieth century. Although many examples of such typological overviews have been published, with ample attention to the

differences in fabrics, there is still considerable uncertainty about the pace at which specific vessel types were developed in relation to their production sites. As mentioned above, new insights can only be gained through ongoing research, such as that of the RGZM into the sites of Mayen and Weißenthurm, and being constantly aware that fabric analysis strengthens the typological ordering of ceramics.

With approximately 30 specimens, the jar Alzey 27 with a crescent-shaped rim can be considered the most popular vessel in the late antique settlement. Whereas many attempts have been made in the past to arrange the development of the rim shape into chronological order, the Voerendaal specimens provide only limited clues for a further dating.<sup>2502</sup> Of most interest, however, is the presence of the already-mentioned jar Niederbieber 89, with a clear heart-shaped profile in the late Mayen MR fabric of the 'Frankenstraße' (15-1-1/2058; Fig. 26.8, top left). Although this rim shape ultimately dated until the beginning of the fourth century, it must be dated here to the middle of that century or later. Regarding the jars Alzey 27 in the Mayen MR fabric, it is striking that only a few items have a somewhat hammer-like rim profile (23-2-6/4373, 69-2-5/7320, 107-2-3/9455; Fig. 26.8). Normally, these heavy hammer-like profiles are dated to the middle of the fourth century,<sup>2503</sup> but our specimens are clearly much more rounded and therefore probably a little later. The same goes for most of the other rims in both Mayen MR and MD fabrics, and also the

<sup>2501</sup> Grunwald 2016, 355-356.

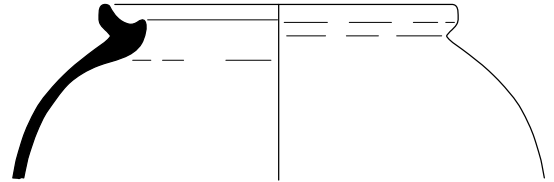
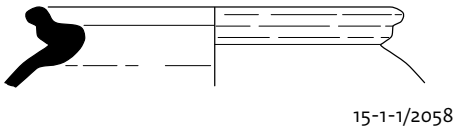
<sup>2502</sup> The most relevant overviews of the chronological development of the Niederbieber 89/Alzey 27 are considered to be those of Bakker (1996, 229-230) and Steidl (2000, 85-89). Brulet's overview (2010, 415 and 418), based on that of Gilles (1985, 96 and table 46), seems to date variants somewhat too early.

<sup>2503</sup> Bakker 1996, 230, fig. 4 (no. 5-8); Steidl 2000, 86,-87, Gruppe 2; Brulet 2010, 415 (D-G).

Table 26.8. Voerendaal-Ten Hove. Overview of the Late Roman coarse ware.

Ware group	Fabric	Form	Type	N	MNI	MNI_r(ims)		
Coarse oxidized	Eifel region (Mayen)	-	-	47	45	-		
		amphora	Mayen R19	1	1	1		
		bowl	Alzey 28	29	15	15		
		bowl	Alzey 29	5	5	5		
		bowl	NB 104	1	1	1		
		bowl	Trier III, 40a	1	1	1		
		bowl/jar	-	1	1	1		
		dolium	profiled shoulder	2	1	1		
		jar	-	8	6	-		
		jar	Alzey 27	41	13	13		
		jug	-	4	4	-		
		jug	Alzey 30	25	8	7		
		plate	-	1	1	-		
		plate	Alzey 34	5	3	3		
		Rhineland/Eifel region	-	-	6	5	-	
			bowl	-	1	1	-	
			bowl	Alzey 28 cf.	1	1	1	
			bowl/jar	-	1	1	1	
			jar	Alzey 27	1	1	1	
			jug	-	1	1	1	
			plate	-	1	1	-	
			plate	Alzey 29	5	2	2	
			Meuse valley/Rhineland	-	-	1	1	-
				bowl	NB 104 cf.	1	1	1
		jar		-	6	2	1	
		jar		Alzey 30	1	1	1	
regional (Meuse valley?)	jar	-		1	1	-		
other	-	-	1	1	-			
	plate	-	1	1	1			
Coarse reduced	Eifel region (Mayen)	-	-	21	17	-		
		bowl	Alzey 28	1	1	1		
		cheese strainer	FG1a	1	1	1		
		jar	-	11	4	-		
		jar	Alzey 27	14	11	10		
		jar	NB 89	1	1	1		
		jug	Alzey 30	1	1	1		
		plate	Alzey 29	2	2	2		
		Rhineland/Eifel region	-	-	1	1	-	
			bowl	Trier III, 40a	1	1	1	
			jar	-	1	1	-	
		Meuse valley/Rhineland	-	-	1	1	-	
			bowl	Alzey 29	1	1	1	
			jar	-	1	1	-	
		regional (Meuse valley?)	-	-	5	2	-	
			jar	-	2	1	-	
			jar	Alzey 33 cf.	8	1	1	
		other	-	-	2	2	-	
			jar	Alzey 27	1	1	1	
		<b>Total</b>				<b>275</b>	<b>176</b>	<b>78</b>

CW MAYEN MR, NB 89



CW MAYEN MR, AL 27

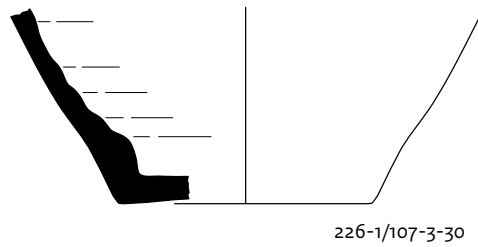
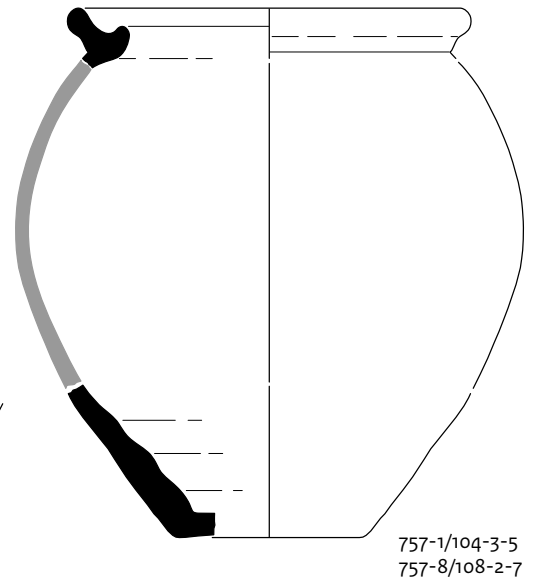
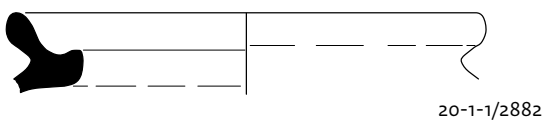
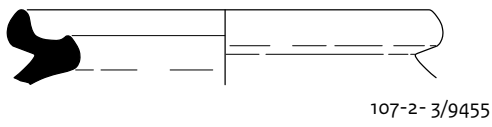
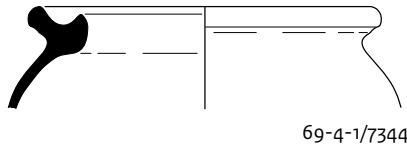
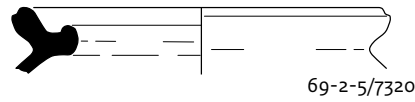
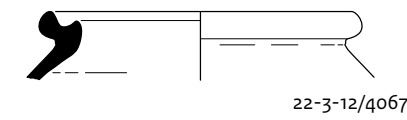
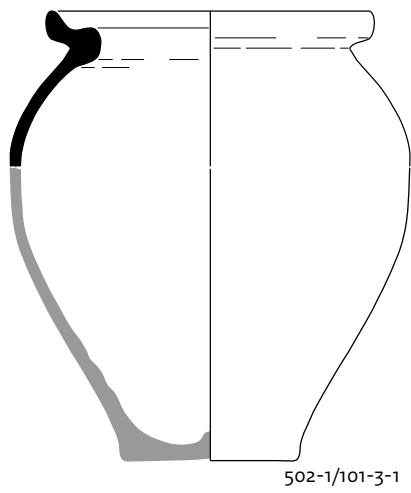


Fig. 26.8 Voerendaal-Ten Hove. Coarse walled jars Niederbieber 89 and Alzey 27 in Eifel/Mayen MD fabric. Scale 1:3.

specimen in a Rhineland/Eifel fabric (108-2-10/9857; Fig. 26.9). A date in the last quarter of the fourth and the first quarter of the fifth century seems most probable, although some of the items in the Mayen MD fabric could also date up to AD 450 or even a little later (e.g. 770-2/23-3-9; Fig. 26.9).<sup>2504</sup> Unfortunately, no complete vessels have been retrieved from the excavated contexts. There is, however, an interesting difference to observe in the shape of the base fragment of the jars in the Mayen MR fabric, with their steep wall (226-1/107-3-30 and 757-1/8/104-3-5; Fig. 26.8), and the single base fragment of a jar in the Mayen MD fabric, with its rounded transition from the base to the wall (95-1-1/10631; Fig. 26.9).

Almost 20 specimens of the bowl Alzey 28, with its outward-curved and inside thickened rim, are present in the assemblage (Fig. 26.10). Again, there is one bowl Niederbieber 104 present in the Mayen MR fabric, which can be considered the typological predecessor of the Late Roman bowl. It is unclear whether the bowl with a quite vertical wall in a (sub)angular quartz sand fabric should be considered an early or a rather late item within the selection (107-2-1/9488; Fig. 26.10, bottom). Although only three bowls Alzey 28 were made in the Mayen MR fabric and all the others in the Mayen MD fabric, there seems to be no significant difference in the overall shape of the rim profile. The dominance of the Mayen MD fabric is striking, however, and certainly something to be looked into more detail in the future. Based on the rim profiles these Alzey 28 bowls can be dated only roughly to the second half of the fourth and the first quarter of the fifth century AD.<sup>2505</sup>

The bowl/deep plate Alzey 29 with an inward-curved and slightly thickened rim can be considered the stylistic successor to the mid-Roman plate Niederbieber 111 (Fig. 26.11). Considering the 10 specimens of the present selection, the items in the Mayen MR fabric have a somewhat smaller and rounder thickening of the rim (514-2/20-3-64/3513 and 13-2-46/1535; Fig. 26.11, top). This could indicate a rather early date, somewhere in the middle of the fourth century. The specimens in the Mayen MD fabric fit much more into the style of the Alzey 29 of the last quarter of the fourth and first half of the

fifth century.<sup>2506</sup> The same goes for the bowl in a quartz-rich and sandstone-tempered fabric from the Rhineland or Eifel region, which might even date to the beginning of the fifth century (768-1/15-2-19; Fig. 26.11, bottom). The other bowl from this fabric group has a slightly angular rim thickening (716-2/19-1-5; Fig. 26.11).

The three specimens of the plate Alzey 34 with an inward-bent rim were all manufactured in the Mayen MD fabric (791-1/95-2-22/11063, 20-2-12/11637; Fig. 26.11). Unlike the other Late Roman bowls and deep plates within the assemblage, the plate Alzey 34 appears to be confined to a date in the third quarter of the fourth century.<sup>2507</sup> This relatively early date compared with the much longer use date of most of the other Late Roman coarse ware could explain its small number in the assemblage.

A vessel type that is much less common in Late Roman contexts is the Trier III 40a bowl with an inner lid groove, represented in both the Mayen MD fabric and in a reduced, rather sandy fabric, most probably from the Rhineland or Eifel region (95-1-18/10788; 95-1-19/10842; Fig. 26.11). Since this type of bowl is present not only in the context of the *Umbaukeramik* of the *Kaiserthermen* at Trier but also, among others, in the *burgi* of Goch-Asperden and Echternach-Pfarrhügel, a date in the late fourth/early fifth century seems most plausible.<sup>2508</sup>

The one-handled Alzey 30/Gellep 105 jar or jug is the most numerous representative of the remaining coarse ware vessel types. Also classified as this type are a kind of flagon (757-4/108-2-7) and either a jar or flagon (757-3; Fig. 26.12, Mayen MD).<sup>2509</sup> Except for one reduced specimen, all the jugs have been executed in oxidized Mayen MR and MD fabrics (Fig. 26.12). The differences between the separate items mainly relate to the shape of the rim and the form of the neck. Because of these variations it is hard to discern true morphological developments through time. For our jugs with a slightly thickened rim (757-38/108-2-7; 222-1/95-1-48; 16-4-5/2557; Fig. 26.12) a date in the last quarter of the fourth or the first half of the fifth century seems most logical.<sup>2510</sup>

Finally, some other rare forms should be mentioned. A selection of three vessels produced in Mayen ware stands out because of their

<sup>2504</sup> Cf. Bakker 1981b, 335-338; Grunwald 2016, 350-352.

<sup>2505</sup> Bakker 1981b 335 and 341-342; 1996, 230-231, fig. 5 (no. 4-6); Brulet 2010, 416 and 418 (based on Gilles 1985, 97 and table 46).

<sup>2506</sup> Bakker 1981b, 335 and 344-345; 1996, 230 and 232, fig. 6 (no. 5-7); Brulet 2010, 417-418 (based on Gilles 1985, 97-98 and table 47).

<sup>2507</sup> Bakker 1996, 230 and 323, fig. 6 (no. 3-4); Brulet 2010, 417-418 (based on Gilles 1985, 97-98 and plate 47).

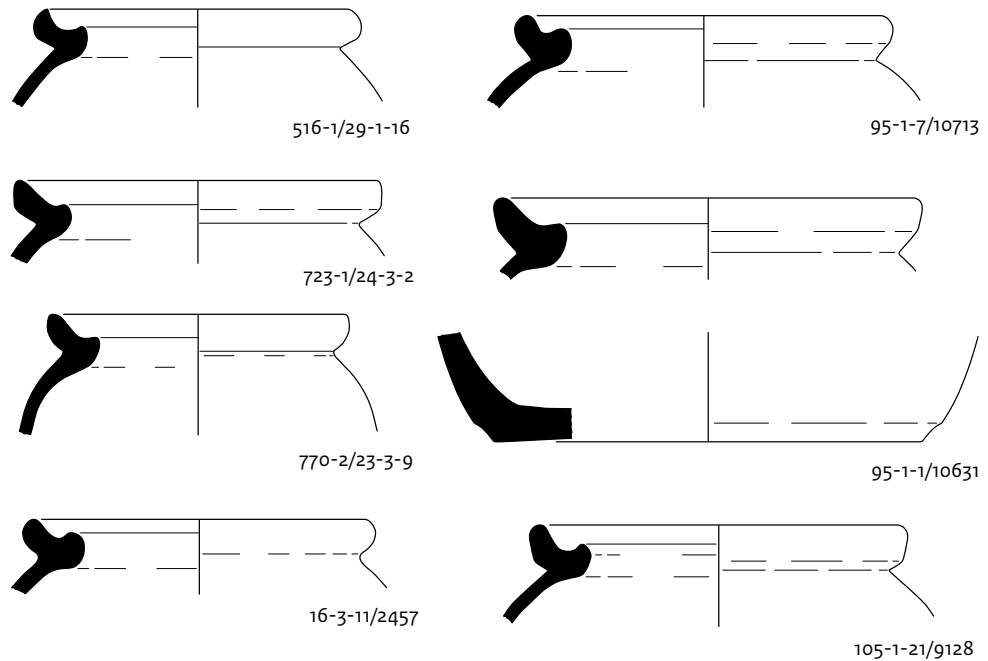
<sup>2508</sup> Hussong & Cüppers 1972, 78-79. Cf. Hinz & Hömberg 1968, 183 and 185, fig. 9 (no. 11); Bakker 1981b, 335 and 340-341, fig. 247 (no. 54).

<sup>2509</sup> On flagon-like specimens, see Unverzagt 1916, 35, fig. 22, no. 12.

<sup>2510</sup> Brulet 2010, 417-418, type H.



## CW MAYEN MD, AL 27



## CW RHINELAND/EIFEL, AL 27

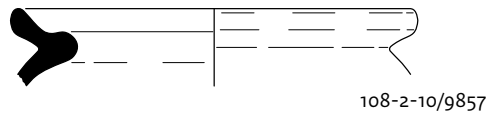


Fig. 26.9 Voerendaal-Ten Hove. Coarse walled jars Alzey 27 in Eifel/Mayen MR and Rhineland/Eifel fabric. Scale 1:3.

divergent forms and probably special function. Firstly, this is the two-handled amphora Mayen R19 in a rather dark, possibly secondarily fired fabric (70-5-2/7586; Fig. 26.12). Other finds of similar amphorae in Mayen ware reveal that this vessel is not an exception, but rather a regular product of the *Eifelkeramik*.<sup>2511</sup> Based on a grave find in Krefeld-Gellep and other parallels, a date in the middle of the fourth century can be suggested. The second item is a cheese strainer in reduced Mayen ware (768-2/15-2-19; Fig. 26.12; Appendix XVI, fig. 2). The specimen present at Ten Hove can be ascribed to the FG1a type, which was the most common form in Gaul and its surrounding provinces throughout the Roman period.<sup>2512</sup> Parallels have been found, for example, at the mid-Roman villa site of Hambach 77/264,<sup>2513</sup> as well as in Late Roman contexts, such as the *burgus* of Moers-Asberg and the 'Germanic' site of Saint-Ouen-du-Breuil.<sup>2514</sup>

According to the last two contexts, a date around the end of the fourth or the beginning of the fifth century fits well with that of the present assemblage. The same can be said for the last remarkable item in Mayen ware, the large, heavy dolium-like vessel with a strongly profiled shoulder and inward-curved neck (757-10/109-2-5; Fig. 26.12; Appendix XVI, fig. 2). Two parallels for this beige-to-brown-coloured vessel have been found in the *burgus* of Goch-Asperden,<sup>2515</sup> and probably also in that of Lahnstein-Niederlahnstein.<sup>2516</sup> It is quite conceivable that these vessels did indeed function as dolia, large storage and transport vessels containing foodstuff from the Eifel region.

The last two items that should be mentioned were possibly produced closer to Voerendaal-Ten Hove. Based on the presence of rounded quartz as the main tempering constituent, an origin for these vessels is

<sup>2511</sup> Redknap 1999, 160-161. Cf. Pirling & Siepen 2006, 208 (type 280).

<sup>2512</sup> Ferdière & Séguier 2020.

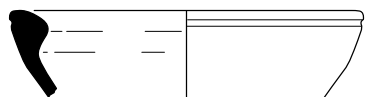
<sup>2513</sup> Rech 1980, 472, fig. 9.2 (Hambach 77/264);

<sup>2514</sup> Krause 1974, 132-133, fig. 9, no. 9; 154, no. 100 (Moers-Asberg); González *et al.* 2006, 304-305, fig. 12, no. 7 (Saint-Quentin-du-Breuil).

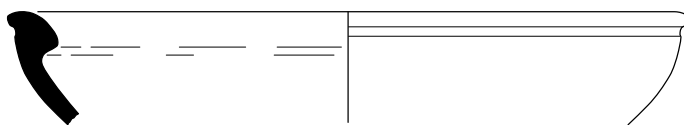
<sup>2515</sup> Hinz & Hömberg 1968, 183 and 185, fig. 9, 12-13).

<sup>2516</sup> Bakker 2014b, 86-87, fig. 20, no. 74. This vessel has been identified here as an Alzey 33 jar, but has far more similarities with the dolia of Ten Hove.

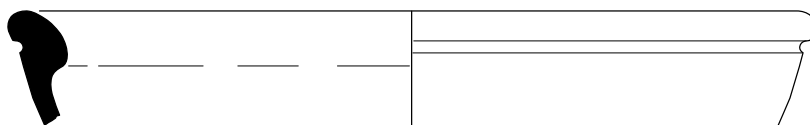
## CW MAYEN MR, AL 28



723-2/24-3-2

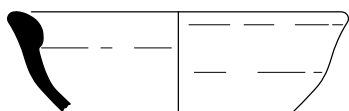


27-3-3/5126

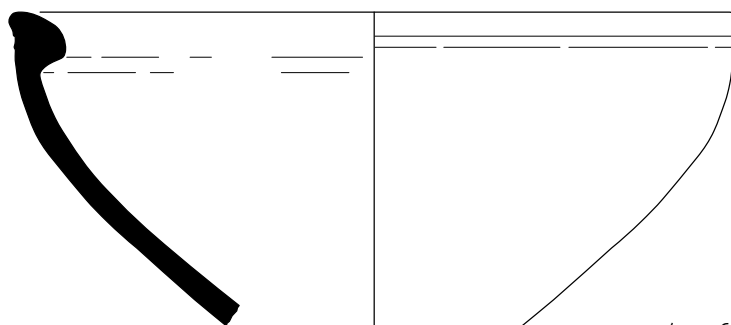


770-5/23-3-9

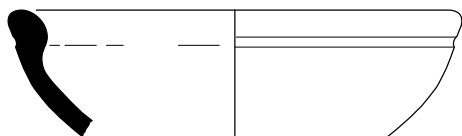
## CW MAYEN MD, AL 28



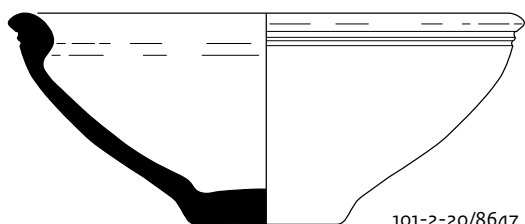
757-2/108-2-7



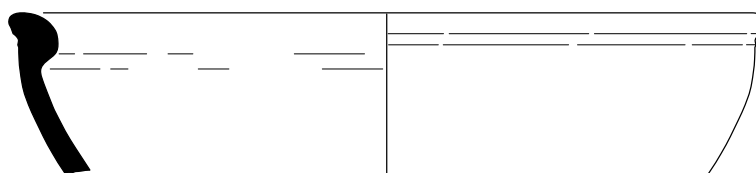
513-1/20-1-67



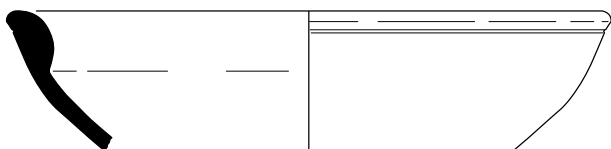
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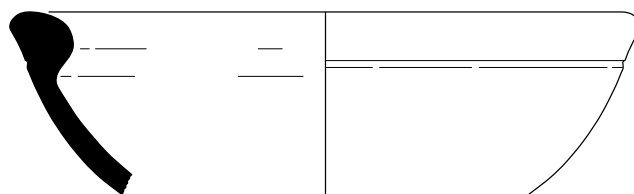
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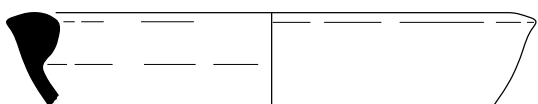
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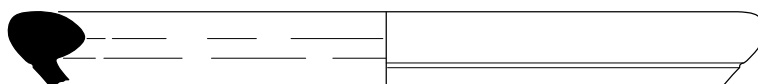
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513-2/20-1-67

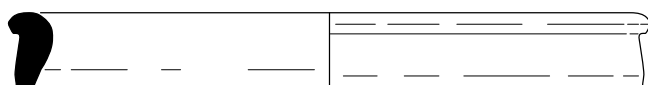


27-4-7/5349



107-2-3/9456

## CW RHEINLAND/EIFEL, AL 28var



107-2-1/9488

Fig. 26.10 Voerendaal-Ten Hove. Coarse walled bowls Alzey 28 in different fabrics. Scale 1:3.

**CW MAYEN MR, AL 29**



514-2/20-3-64

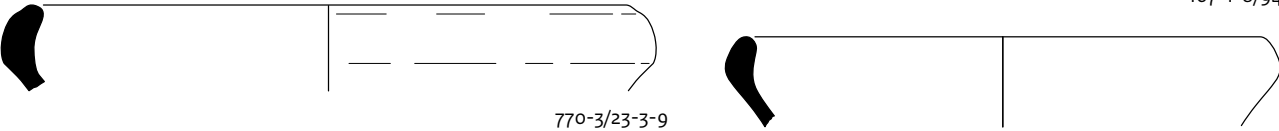
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**CW MAYEN MD, AL 29**



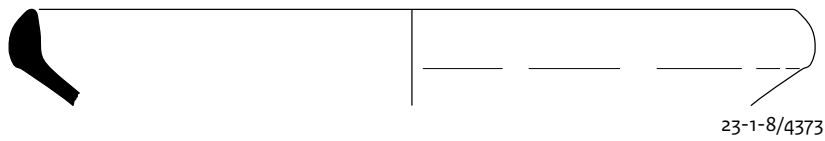
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107-1-8/9477



770-3/23-3-9

107-2-1/9486



23-1-8/4373

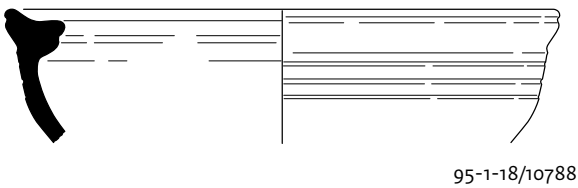
**CW MAYEN MD, AL 34**



791-1/95-2-22

20-2-12/11637

**CW MAYEN MD, Trier III 40a**



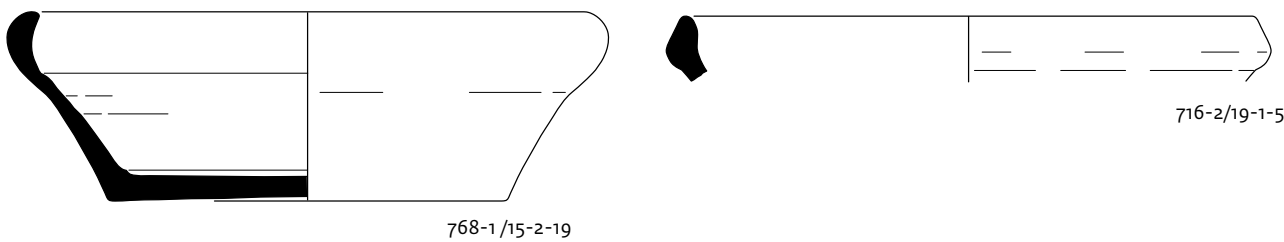
95-1-18/10788

**CW RHINELAND/EIFEL, Trier III 40a**



95-1-19/10842

**CW RHINELAND/EIFEL, AL 29**

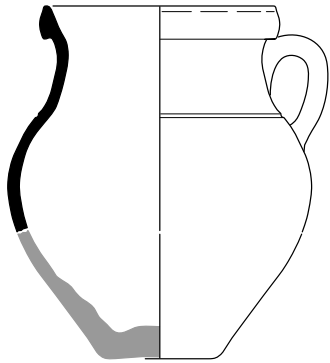


768-1/15-2-19

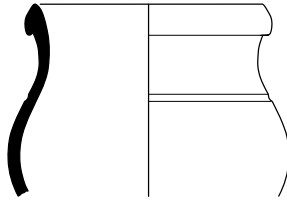
716-2/19-1-5

Fig. 26.11 Voerendaal-Ten Hove. Coarse walled bowls Alzey 29, plates Alzey 34 and Trier III, 40a bowls in different fabrics. Scale 1:3. (source: H.A. Hiddink & F. Horbach)

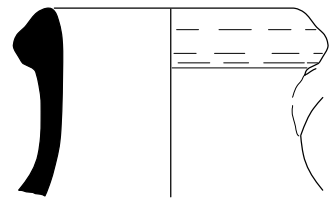
**CW MAYEN MR, AL 30**



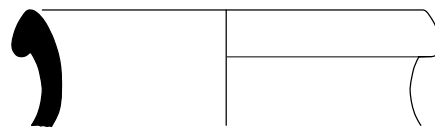
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222-1/95-1-48

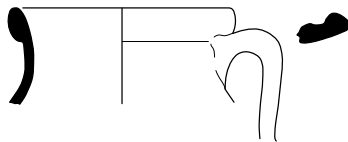


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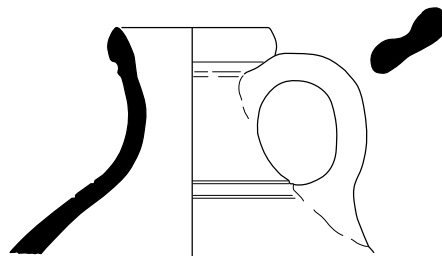


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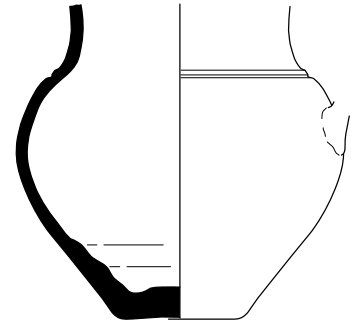
**CW MAYEN MD, AL 30**



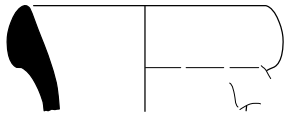
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757-4/108-2-7

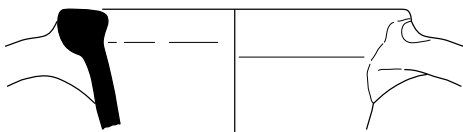


514-3/20-3-62

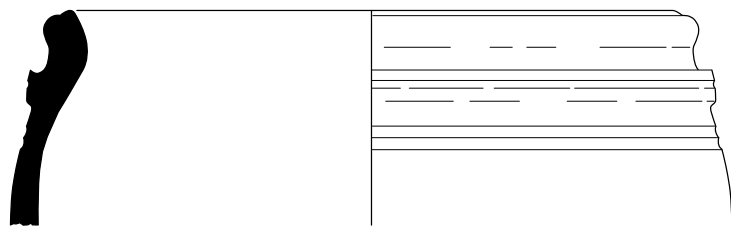


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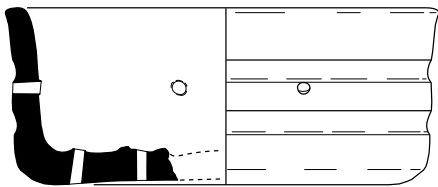
**CW MAYEN MR/MD, various forms**



70-5-2/7586

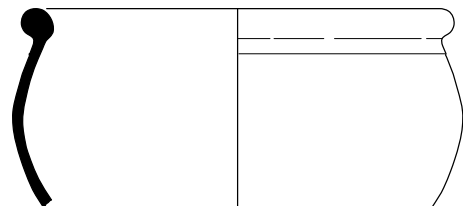


757-10/109-2-5



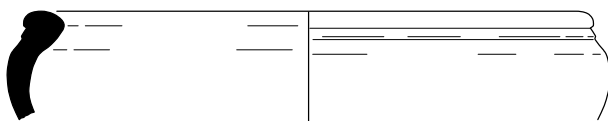
768-2 /15-2-19

**REGIONAL, Meuse Valley?**



771-1/23-5-20

**MEUSE VALLEY/RHINELAND**



95-1-5/10686

Fig. 26.12 Voerendaal-Ten Hove. Coarse walled jugs Alzey 30 and other forms in different fabrics. Scale 1:3.

proposed in the Meuse valley or adjacent Rhineland. The oxidized specimen has an inward-curved shoulder and slightly thickened rim, which is incised at the exterior (95-1-5/10686; Fig. 26.12, bottom right). It bears some resemblance to the bowls Niederbieber 104. The other bowl is made of a reduced fabric with fine, rounded and well-sorted quartz sand. In some way, it seems to be an imitation of the fifth-century jar Alzey 33 (771-/23-5-20; Fig. 26.12; Appendix XIV, fig. 2). This find is of particular interest because of the fact that imitations of Alzey 27 jars and Alzey 28 bowls, among others, have been found in the same fabric at several rural sites in the Meuse valley, all dating to the first quarter of the fifth century AD.<sup>2517</sup> The concentration of this fabric group in the Dutch Meuse valley and the new find at Voerendaal-Ten Hove might indicate a – hitherto unknown – regional pottery workshop.

## 26.6 Transitional phase 2. Mid-fifth to early sixth century

As explained above, a considerable amount of pottery cannot be definitely determined as being either Late Roman or Merovingian. The selection of 148 fragments and at least 25 items (judging by rim sherds) can be considered an estimation of the ceramics spectrum at Voerendaal-Ten Hove that dates from just before or around the mid-fifth century to the first quarter of the sixth century (Table 26.9). Most decisive for the composition of this assemblage are the already-mentioned sunken hut contexts 501, 504 and 511. Since Late Roman (coarse) ware and obviously Merovingian items are largely absent in these contexts, there clearly must have been a habitation phase in between, in which more regionally based products were in use rather than the known imports from either the Eifel region or the Meuse valley. Although especially the cork ware group and the single item of terra nigra have strong parallels with Late Roman wares, there are almost no indications that the start of this second transitional phase was directly subsequent to the first third of the fifth century; a date somewhere around the middle of the fifth seems more plausible.

Furthermore, the character of the coarse ware is even more strongly reminiscent of Early Merovingian wares, although well-defined contexts from the later fifth and early sixth century in the region of Zuid-Limburg have still not been published.

### 26.6.1 Cork ware

The small assemblage of Late Roman or early Merovingian cork ware, almost entirely from sunken hut 504, is a rather interesting group of vessels that will eventually need further study of its nature and origin (Table 26.9; Fig. 26.13; Appendix XVI, fig. 1). As mentioned above, these typical vessels were manufactured in apparently the same porous fabric as the well-known jars from the Early and Middle Roman period. Although the finishing is not entirely the same, the proportion of handmade and wheel-thrown specimens is more or less equal in this later period. As is the case with most of the vessels, the original tempering of calcite/carbonate has eroded from the wall surface, leaving greyish brown sherds with rounded and subangular voids (Appendix XIV, fig. 1). Only in a fresh break are the white calcitic inclusions clearly visible.

The most common vessel form in Voerendaal-Ten Hove is a jar with a wide mouth and a slightly or firmly outward-curved rim (504-2, 3 and 5; Fig. 26.13). A fifth specimen seems to have had a somewhat more S-shaped profile, although only an outward-folded rim-neck fragment is present (504-4/101-1-6; Fig. 26.13). The S-shape of the profile is much better reflected in the considerably smaller jar with two grooves at the neck and belly (504-6/101-1-6; Fig. 26.13). One item, a large globular bowl or jar of which only the base fragments have survived is manufactured in a different fabric (504-8/101-1-2; Fig. 26.13). It has a grey fabric with angular voids at the wall surface and without any traces of calcite/carbonate in the compact matrix. It is unclear what kind of inclusions have been burnt away or eroded. The fabric and the rather dark and compact matrix have much in common with the porous handmade fabrics that have been recorded in several ‘Germanic’ contexts, both north and south of the *limes*.<sup>2518</sup>

<sup>2517</sup> Hendriks 2011, 88-90; 2014, 87-88 (both Borgharen-Pasestraat); 2021, 108-109, fig. 8.9, no. 6 (Neer-Wijnaerden); Tichelman 2012, 88-92 (Holtum-Noord).

<sup>2518</sup> Cf. Hendriks 2021, 90-91.

**Table 26.9. Voerendaal-Ten Hove. Overview of the pottery, (probably) dating to the mid/late fifth century or early sixth century.**

Ware group	Fabric	Form	Type	N	MNI	MNI_r(ims)	
Cork ware	calcite/carbonate	-	-	22	7	-	
		jar	S-shaped	2	2	2	
		jar	-	3	2	-	
		jar	wide mouth	8	4	4	
		fine reduced (regional?)	bowl/jar	-	4	1	-
Terra nigra		footed bowl	Gellep 131	2	1	1	
Coarse oxidized	Eifel region (Mayen)	jar	Mayen A4	26	1	1	
	Meuse valley/Rhineland	-	-	5	5	-	
		bowl	Mayen A63 cf.	4	2	2	
		bowl/jar	-	1	1	1	
		jar	-	1	1	-	
Coarse reduced	black-dark grey	-	-	21	18	-	
		bowl	Mayen A7	2	1	1	
		bowl	weak S-profile	1	1	1	
		jar	-	6	5	3	
		jar	narrow mouth	1	1	1	
		globular jar	-	1	1	1	
		wide jar	-	1	1	1	
		grey-brown	-	-	25	19	-
		bowl	Mayen A7	1	1	1	
		jar	-	6	5	-	
	globular jar	-	2	2	2		
		wide jar	-	2	2	2	
		jug	Gellep 155	1	1	1	
<b>Total</b>				<b>148</b>	<b>85</b>	<b>25</b>	

Cork ware is also present at other Late Roman and early Merovingian rural settlements in the south of the Netherlands (see Section 26.3.2), such as Alphen-Kerkackers, Gennep-Stamelberg and Neer-Wijnaerden. Based on the contexts within these settlements the general impression of the date of this ware group is fifth century,<sup>2519</sup> but future research can hopefully clarify whether this date can be specified more precisely. The best parallels for the Voerendaal assemblage, however, have been found at the site of Herstal-Pré Wigy, in the Meuse valley directly north of Liège.<sup>2520</sup> At this supposed Roman villa site a group of typical cork ware of

assumed local production has been found, mainly comprised of large vessels with a wide mouth and a short, outward-curved rim. According to Van Ossel, the vessels should date to the Merovingian period, but since a much more substantial amount of pottery from the later fourth and fifth century has been found at the site, an earlier date cannot be completely ruled out. Indications of this local production have not been substantiated and until further notice it seems logical that these cork ware vessels are of a similar (presumed) origin to their predecessors from the regions south and west of the Meuse.

<sup>2519</sup> Heidinga & Offenbergh 1992, 98; De Koning 2005, 77.

<sup>2520</sup> Lenssen & Van Ossel 1984, 45, 47, fig. 21 (no. 147-152).

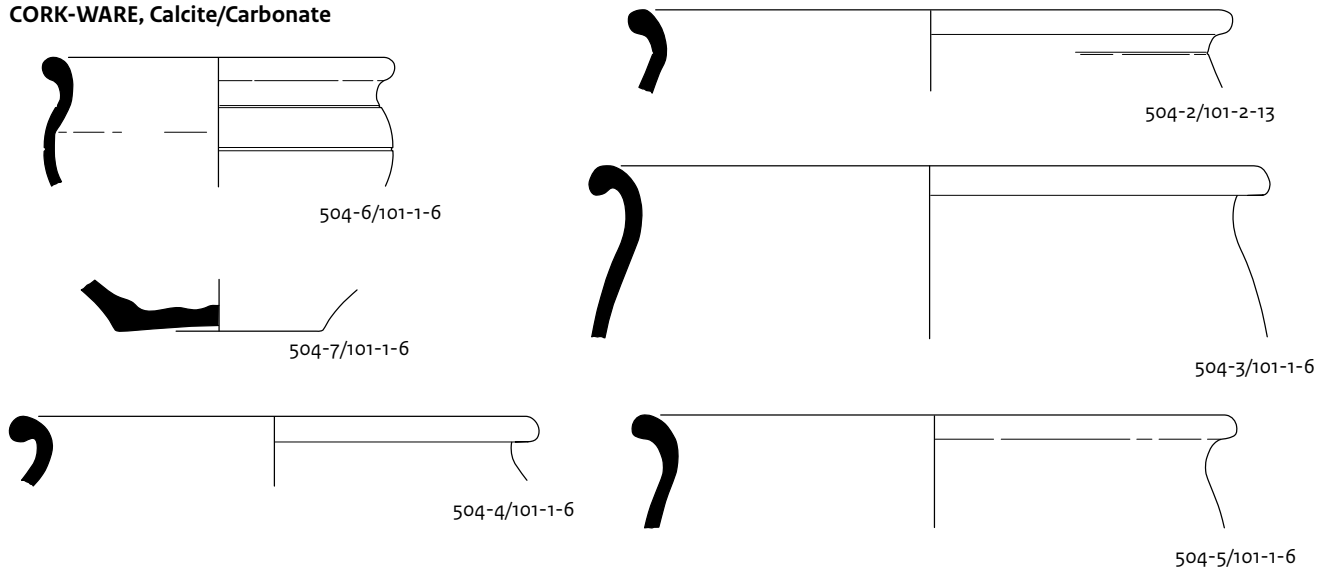
**CORK-WARE, Calcite/Carbonate****CORK-WARE, Fine/regional?**

Fig. 26.13 Voerendaal-Ten Hove. Late Roman cork ware. Scale 1:3.

**26.6.2 Terra nigra**

Two rim fragments of a bowl Gellep 131 of late terra nigra are the first clue that pottery was used at Voerendaal after the first third of the fifth century. It probably concerns a later variant of the foot bowl Chenet 342, which is known from early Merovingian contexts, especially burials dating to the second half of the fifth or early sixth century.<sup>2521</sup>

**26.6.3 Coarse ware**

About 75% of the ceramics from the second transitional phase consist of coarse ware, in total 107 sherds from at least 18 specimens, based on the rims (Table 26.9). Since only one fifth of this assemblage has been fired in an oxidized atmosphere it is not surprising, as mentioned above, that imported coarse ware from the Eifel region is conspicuously absent in this phase.

Only one nearly complete jar Mayen A4 in the oxidized Mayen MD fabric is present (711-1/13-1-27, Fig. 26.14; Appendix XVI, fig. 2). The vessel, with its rather clumsy crescent-shaped rim, is an obvious younger successor to the jar Alzey 27 and dates most probably to the late fifth or the beginning of the sixth century (Fig. 26.14).<sup>2522</sup> Moreover, the form of the rim differs clearly from the younger jars with a more rudimentary crescent shape in the later sixth- and seventh-century assemblage at Ten Hove.<sup>2523</sup> Among the few specimens in an oxidized sandy fabric, produced in either the Rhineland or the Meuse valley, there are two bowls with a slight S-shaped profile, similar to the Mayen A63 bowls (735-1/52-1-6; 107-1-14; Fig. 26.14; Appendix XVI, fig. 1).<sup>2524</sup> Although no direct parallels to these forms are known, the fabric's resemblance to the reduced grey sandy fabric mentioned below is the reason why these bowls have been classified in this phase.

<sup>2521</sup> Gross 1996, 584-586.

<sup>2522</sup> Cf. Gross 1992, 425-426; Steidl 2000, 89, Gruppe 6; Grunwald 2016, 354-355, fig. 11 (no. 3); De Koning *et al.* 2020, 104, 107, fig. 5.2 (types MWIA3-4).

<sup>2523</sup> See section 27.5.2.

<sup>2524</sup> Redknap 1999, 210-211, fig. 43. In Mayen, these bowls were produced in the MD fabric, but they date relatively late in the seventh and early eighth century AD.

The reduced coarse ware in this later fifth- or early sixth-century context assemblage has been divided more and less equally into two fabric groups (Table 26.9; Fig. 26.14; Appendix XIV, fig. 5). In general, the reduced vessels in these groups have been mostly manufactured in fabrics with (sub)rounded and badly sorted sand as the tempering agent. On the one hand, there is a group of fabrics with a black or darkish grey colour at the wall surface and fresh break. Although the provenance of this group is still unclear, there is some resemblance to vessels in an equally black and ill-sorted sandy fabric found at the site of Maastricht-Witmakerstraat.<sup>2525</sup> These fragments, found in a posthole and waste pit, seem to coincide with the ceramics from the fill of a sunken hut, which contained handmade vessels with quartz grit and calcite tempering, all dating to the fifth century. At Ten Hove, some of the rim fragments in this 'black' group belong to jars with either a globular shape (757-21/108-2-1; Fig. 26.14), a typically wide mouth (105-1-4/9183; Fig. 26.14) or just a narrow mouth (101-1-1/8637). In addition, two bowls are present in this group, one of which has a rather faint S-shaped profile (504-1/101-1-6) and the other a thickened rim like the bowl Mayen A7 (501-1/6/107-1-2 and 713-5/13-1-2; Fig. 26.14), which is the younger successor to the bowl Alzey 29.

On the other hand, the reduced coarse ware consists of a group of fabrics with a grey wall surface and a greyish brown fresh break (Table 26.9; Appendix XIV, fig. 5). The ill-sorted sandy fabric and brownish tints are an important difference when these specimens are compared with the reduced Merovingian coarse ware of Voerendaal-Ten Hove. As with the 'black' group, it is not yet known where these 'grey' ceramics were produced; however, overall similarities of the latter group with the Merovingian coarse ware in the assemblage and its supposed provenance from Maastricht hint in that direction or somewhere else in the Meuse valley.<sup>2526</sup> Again, most of the rims of this 'grey' group belong to jars, either with a globular shape (511-1/16-5-2, 39 and 511-3/16-5-39; Fig. 26.14) or with a wide mouth and barrel shape (69-3-2/7335 and 107-1-8/9479; Fig. 26.14). Furthermore, the Mayen A7 bowl is a slightly

slimmer version of the same type in the 'black' group (713-5/13-1-2; Fig. 26.14). Although this bowl type is well known in sixth-century contexts, such as the sunken huts at the site of Köln-Heumarkt, its gradual development from the older Alzey 29 bowl can be clearly followed in contexts of the second half of the fifth century AD.<sup>2527</sup> The last item that should be mentioned is the rim fragment, with a small, rounded lip, of a jug Gellep 155, which can be understood as the Early Merovingian successor to the Late Roman jug Alzey 30 (712-2/27-2-40; Fig. 26.14).

## 26.7 Site comparison

In order to interpret the composition and dating of the fourth- and fifth-century ceramics assemblage of Voerendaal-Ten Hove in more detail, it is useful to compare it with other, more and less contemporaneous complexes in the Meuse valley and Rhineland, and adjacent regions. Because of the absence of well-defined contexts at Ten Hove for pottery that can be ascribed to one of the phases identified, no elaborate quantitative comparison has been made. There are, however, ample studies tackling the problem of dating find complexes that cover the late antique to Early Medieval transition. These studies, such as Lenz's chronological survey of sites in the greater Rhine area in order to comprehend the settlement history of the Aldenhovener Platte,<sup>2528</sup> provide a good framework to understand the proposed dating of the assemblage of Ten Hove. In addition, the qualitative analysis in this section will simply focus on the fine tablewares and on the coarse utility wares. The late terra sigillata and Late Roman amphorae, which are presented in chapter 25 and 24, have been left out of the analysis below.

### 26.7.1 Transitional phase 1

To start with, there is the question of the supposed first transitional phase in the decades 'around AD 300'. Besides the well-known cemetery of Krefeld-Gellep and possibly the cemetery complexes of Nijmegen, there are hardly any sites known or published with an

<sup>2525</sup> Panhuysen *et al.* 1990, 224-225 (Maastricht-Witmakerstraat) and observations by Maurice Janssen.

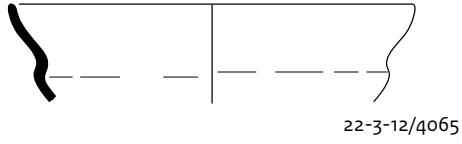
<sup>2526</sup> Section 27.5.

<sup>2527</sup> Kempken 2001, 709-710, fig. 5 (no. 1, Stelle 4028), 720-721, fig. 14 (no. 2 and 4, Stelle 3872); See also Bakker 1996, 230, 232, fig. 6 (no. 7-9).

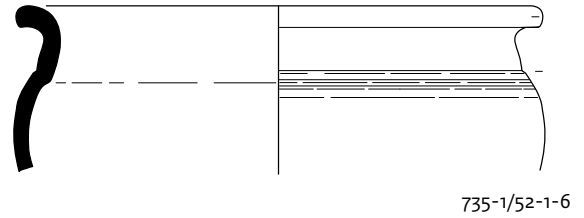
<sup>2528</sup> Lenz 1999, 48-56.



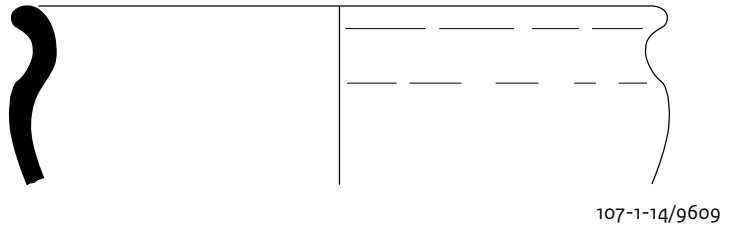
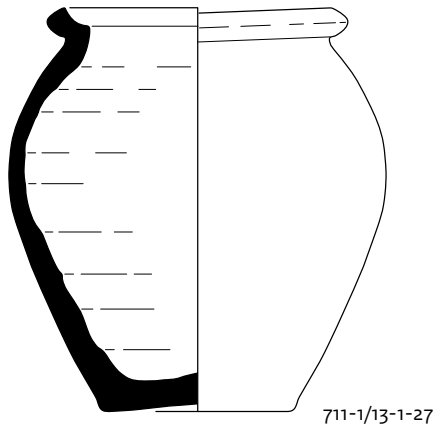
**TN/FINE REDUCED**



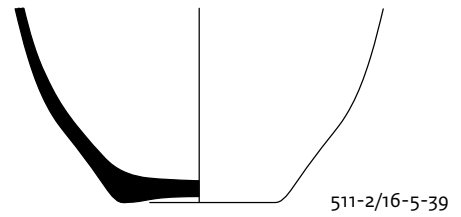
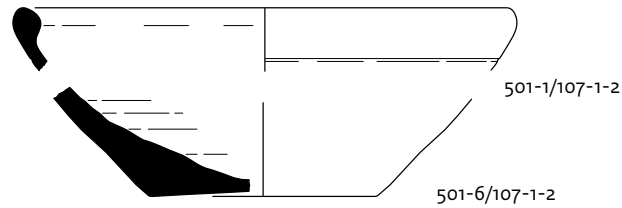
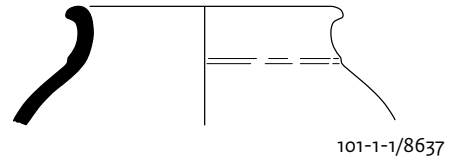
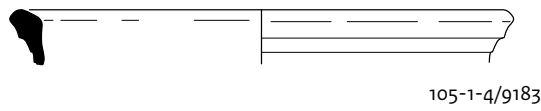
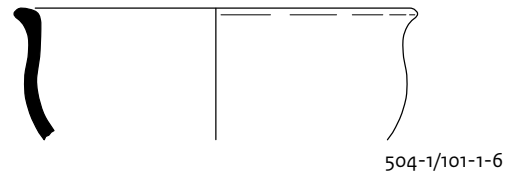
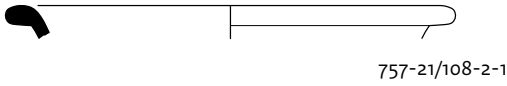
**CW oxidised**



**CW Mayen MD**



**CW reduced, black-dark grey**



**CW reduced, grey-brown**

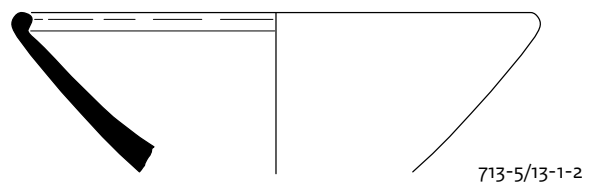
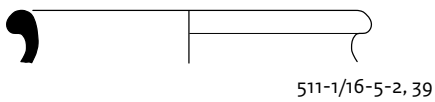
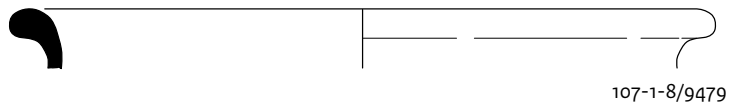
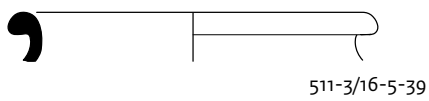
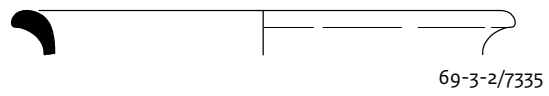
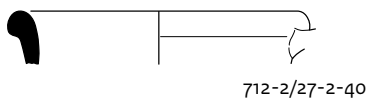


Fig. 26.14 Voerendaal-Ten Hove. Pottery from the mid/late fifth-early sixth century AD. Scale 1:3.

ongoing continuity and well-defined chronology from the second half of the third to the first half of the fourth century. Apart from the historical background of this period, the above-mentioned methodological problem concerning the date of the Niederbieber horizon can be partly regarded as the basis (see Section 26.1). In this respect, the villa site of Hambach 132 provides a good comparison for understanding the chronology of the site of Voerendaal-Ten Hove.<sup>2529</sup> Although the mixed cremation and inhumation cemetery near the eastern settlement ditch of Hambach 132 started in the second half of the third century and continued into the first half of the fifth century, there are once again hardly any well-dated settlement contexts for the phases around AD 300. Similar vessel types to those in the Ten Hove assemblage, such as red-painted plates (Niederbieber 53), black-slipped beakers (Niederbieber 33) and vessels in the later 'Urmitz' ware (jars Niederbieber 89/Alzey 27, bowls Niederbieber 104 and plates Niederbieber 113/Gellep 128) are however present at Hambach 132.<sup>2530</sup> The higher quantity of these vessels there, as well as the presence of fine wares (e.g. the jugs Gellep 72 and 80) from the first half of the fourth century, point to a (virtually) continuous habitation between c. AD 270 and 335.<sup>2531</sup> The same most probably goes for the rural settlement of Wijk bij Duurstede-De Horden, in the Dutch central river area. This is one of the few sites at the lower Rhine *limes* where pottery is present from the Middle Rhine and Moselle production sites that can be dated to these thirty-odd years before and after AD 300.<sup>2532</sup> This leads to the observation that this first transitional phase of Ten Hove is only sparsely represented in comparison to the subsequent phases and that – although it is hard to tell the extent to which the late terra sigillata should be dated exclusively before AD 350 – specific wares and types, such as the fine ware jugs from Köln and the Moselle region and black-slipped beakers from Trier, should be present in much higher quantities for a serious habitation phase in the first half of the fourth century. Whether this means a definite end of the (villa) habitation phase around AD 310 or AD 330 is hard to tell, but there are far too few indications to extend this habitation phase to the middle of the fourth century.

### 26.7.2 Late Roman phase

The start of the main late antique habitation period of Voerendaal-Ten Hove can be approached by comparing the Late Roman assemblage with other fourth-century contexts, of which those from Late Roman military installations appear to have been quite well dated. In addition, the well-known villa of Echternach provides an interesting complex to compare with Ten Hove. In this respect, it is important to state that there is a clear division in the composition of ceramic complexes from sites that already existed around AD 300 or had been installed during the Constantinian period, between c. AD 310 and 340, and sites that started at the beginning of the Valentinian period, between c. AD 365 and 380. Some examples of the first category of sites are the late antique fortification at the Valkhof plateau in Nijmegen,<sup>2533</sup> the *burgus* of Heumensoord (directly south of Nijmegen), and that of Goudsberg (to the southwest of Voerendaal).<sup>2534</sup> A comparison of the Late Roman Ten Hove assemblage with that of Nijmegen-Valkhof, for instance, which presumably started in the second quarter of the fourth century, clearly shows that the latter contains – apart from a multitude of late terra sigillata and coarse ware – a significant portion of black-slipped beakers Gellep 59-62 and marbled ware jugs Gellep 71-72. The same impression can be obtained from the ceramics spectrum of both *burgi*, starting around AD 310-320, which also included some fragments of red-painted ware (probably from plates). And even the ceramics complex of the villa of Echternach, which had been largely rebuilt after late third-century destruction, consists of these categories of fine ware, although with very few items.<sup>2535</sup> As already mentioned above in the discussion of the first transitional phase, the scarcity of these fine coloured wares at Ten Hove is striking.

In addition, it is important to point out the considerable proportion of coarse 'Urmitz' or 'Speicher' ware at these sites with an obvious Constantinian start or phase. In particular, the assemblages of the *burgi* of Heumensoord and Goudsberg,<sup>2536</sup> and that of the villa of Echternach,<sup>2537</sup> contain the youngest variants of

<sup>2529</sup> Brüggler 2009.

<sup>2530</sup> Brüggler 2009, 130-162.

<sup>2531</sup> Brüggler (2009, 202) believes that there was a hiatus of no more than a single generation at the end of the third century.

<sup>2532</sup> Heeren in press. See for instance the relatively large number of Niederbieber 112 and 113 coarse ware plates.

<sup>2533</sup> Bloemers *et al.* 2016; Erdrich 2016, with appendix 14 ('Traces of use on Late Roman pottery').

<sup>2534</sup> Langeveld 2002, 140-147 and appendix I (Heumensoord), 148-154 and appendix II (Goudsberg).

<sup>2535</sup> Bakker 1981a, 247-249.

<sup>2536</sup> Langeveld 2002, appendix I (no. 41-46) and II (no. 36-39).

<sup>2537</sup> Bakker 1981a, 249-251.

jars Niederbieber 89 and the succeeding Alzey 27 in these fabrics in rather large quantities. Unlike the assemblage of Ten Hove, the jars at these sites include above all many examples of the somewhat heavy or hammer-like profiles, which tend to date around the middle of the fourth century.<sup>2538</sup> The jars Alzey 27 with crescent-shaped rims, mostly manufactured in 'Mayen' ware – which make up the vast majority of the coarse ware vessels at Ten Hove – seem to be only present at sites with a Valentinian phase or start. Good examples of this development can be found not only at the *burgus* of Heumensoord and the villa of Echternach, but also at the *burgus* of Goch-Asperden,<sup>2539</sup> as well as the *burgus* Echternach-Pfarrhügel.<sup>2540</sup> In fact, the best parallels for the jars Alzey 27 – and the bowls 28 – of Ten Hove can be found in the ceramic complexes of the riverine *burgi* of Niederlahnstein and Biblis-Zullenstein on the Middle Rhein, both erected around AD 369/370 and containing coarse ware that has solely been manufactured in the 'Mayen' fabric.<sup>2541</sup> To conclude, these observations about the nature of the fine and coarse ware from Ten Hove should lend further support to the proposed starting date of the Late Roman phase around AD 365 or a little later.

It is then interesting to look at two other ceramic groups that belong to the Late Roman phase: the handmade and terra nigra/reduced fine wares, with less and a little more than 10% of the complete assemblage respectively (Fig. 26.2). It is true of most of the above-mentioned sites, especially the military installations, that both groups are present but only in very low quantities. The same can be said about the ceramics spectrum of the villa of Hambach 132.<sup>2542</sup> Proportionately, the role of these groups within the assemblage – and therefore most probably in the late antique household as well – is more in line with other rural settlements in the Meuse valley, such as Holtum-Noord, Neer-Wijnaerden and possibly Gennep-Stamelberg (see Section 26.5.1 and 26.5.3). As stated above, it is hard to interpret the exact provenance of handmade ware – whether or not it had been made locally – since there are only a few clues for pinpointing the stylistic roots in, for instance, the eastern/northern

Netherlands or the adjacent part of Westphalia. And the composition of the terra nigra and fine reduced wares is even more puzzling; really good examples of the well-known Chenet 342 or Gellep 273 bowls are almost entirely absent in Ten Hove. For now, we can only guess whether these wares can be regarded as imports from northern Gaul, the German Rhineland or even production sites beyond the *limes*.

The presence of these wares in a ceramics complex dating to the last third of the fourth century and the first third of the fifth century fits quite well into the existing picture of rural settlements in the southern Netherlands.<sup>2543</sup> To establish the end date of the Late Roman phase, it is more useful, however, to compare our assemblage with that of sites with a post-AD 400 occupation phase. In this respect, Lenz's inventory of late antique vessel types in a gazetteer of sites from the Rhineland and beyond is quite illustrative.<sup>2544</sup> It is precisely the absence of two vessel types, the late sigillata plate Alzey 9/11 and the coarse jar Alzey 32/33, in ceramic assemblages that are rather similar to that of Ten Hove, for instance the villa of Echternach and the *burgus* of Goch-Asperden, which point to an end date around AD 420 or 430. In fact, the same goes for the youngest Late Roman sites of the nearby loess area of the Aldenhovener Platte.<sup>2545</sup> Not only this wide-mouthed jar with a ridge on the shoulder of the type Alzey 32/33, mostly produced in the 'Mayen' fabric, but also the terra sigillata imitating red-painted (*rotgestrichene*) ware, can be seen as index or guide fossils for assemblages that date after the first quarter/third of the fifth century.<sup>2546</sup> The jar Alzey 32/33, for instance, is rather prominent at the *burgi* of Moers-Asberg and Echternach-Pfarrhügel, as well as in an 'early Frankish' pit in Duisburg-Beekstraße, all of which date until the middle of the fifth century or somewhat later.<sup>2547</sup> By then, the Late Roman habitation phase of Ten Hove had apparently already ended, or at least the extensive use of imports from the Eifel region had come to an end. Judging by the scarce examples of settlement sites in the Meuse valley with Alzey 32/33 jars, such as Neer-Wijnaerden,<sup>2548</sup> but also based on unpublished data from Gennep-Stamelberg and Maastricht-Church of Our Lady, the first assumption seems more obvious.

<sup>2538</sup> Cf. Bakker 1996, 229-230, fig. 4 (no. 5-8); Steidl 2000, 86-87, fig. 11 (Gruppe 2).

<sup>2539</sup> Hinz & Hömberg 1968, 181-183, fig. 8 (no. 1-40). The originally assumed starting date of AD 369 has recently been adjusted to AD 340/350. See Bakker 2014a, 149-150; Brüggler 2014, 79.

<sup>2540</sup> Bakker 1981b, 335-338, fig. 245.

<sup>2541</sup> Bakker 2014, 75-76, 126-128.

<sup>2542</sup> Brüggler 2009, 135-136 (Ware 1.2.2) and 134-135 (Ware 4.2).

<sup>2543</sup> Cf. Van Enckevort *et al.* 2017, 206-212; Heeren in press.

<sup>2544</sup> Lenz 1999, 48-61, in particular fig. 6.

<sup>2545</sup> Lenz 1999, 63-64.

<sup>2546</sup> Bakker 1996. See also Bakker 2014b, 146-149.

<sup>2547</sup> Krause 1974, 145, 157, fig. 11 (Moers); Bakker 1981b, 335, 338-340, fig. 246 (Echternach); Krause 1992, 107-108, fig. 11 (no. 5, 13) and 12 (no. 2-5) (Duisburg).

<sup>2548</sup> Hendriks 2020, 108-109.

### 26.7.3 Transitional phase 2

Although it is clear that the youngest Late Roman pottery from around AD 450 is absent at Ten Hove, it is difficult to pinpoint the time of habitation to which a rather indefinite group of pottery – which seems to date between the middle of the fifth and the first quarter of the sixth century – belongs. As explained in the next chapter, there are no well-dated settlement contexts from this period in the Meuse and Rhine region, which makes it hard to understand in detail the transition from the Late Roman to Early Merovingian period in terms of ceramics consumption. Therefore, we can only refer to some sites in the (broader) region of Ten Hove, to gain an impression of more and less contemporaneous contexts, without them being largely similar to the assemblage of this second transitional phase.

An interesting issue is the assumed presence of ‘Germanic’ handmade wares at sites dating around the middle of the fifth century or later. This does not seem to be the case at Ten Hove, since the few handmade pots in our assemblage do not resemble the later developments of the handmade ceramics in the north of the Netherlands. Unfortunately, not enough is currently known about the fifth-century development of the RWG ceramics of the eastern Netherlands and the adjacent area in Germany; there is however no resemblance to the ‘Hessens-Schortens’ ware, dating from the sixth century onwards.<sup>2549</sup> The same goes for the rather rough-walled handmade ware from the ‘early Frankish’ pit context of Duisburg-Beekstraße; these pots and bowls are clearly different from the Ten Hove specimens.<sup>2550</sup> One category of handmade vessels that is actually assigned to this second transitional phase is the typical group of cork ware vessels. As mentioned, these wares are present at other sites in the Netherlands (e.g. Alphen and Gennep) that date to the fifth and sixth centuries. It is the direct parallel with the cork vessels at the site of Herstal-Pre Wigy that provides the clue that this kind of pottery should be correctly dated to the second half of the fifth century (or even later). This could even mean that the sunken hut context of Maastricht-Witmakerstraat,

where handmade wares in porous and calcite-tempered fabrics were also found – as well as a sigillata plate Alzey 9/11 – should not be dated earlier than the second third of the fifth century AD.<sup>2551</sup>

Other clues for habitation during this period can be found in the – piecemeal – presence of fine reduced ware that is commonly found in the earliest Merovingian cemeteries: not only some items of the Gellep 131 footed bowl in the presented assemblage, but also at least one fragment of an early biconical pot had been found during earlier excavations at the villa site (1953-2.12/11425; Fig. 27.2).<sup>2552</sup> Their underrepresentation at settlement sites is a well-established phenomenon that can be illustrated by the few finds of footed bowls in the Early Frankish pit at Duisburg-Beekstraße,<sup>2553</sup> or fragments of an early biconical pot in sunken hut 3871 at Köln-Heumarkt.<sup>2554</sup> Nevertheless, there seems to be a general absence of early Merovingian reduced fine wares at Ten Hove.

Considering the coarse ware, which makes up by far the largest proportion of the assembly from this second transitional phase, it is interesting to note that only a few imports from the Eifel region appear to have arrived at Ten Hove after the first third of the fifth century, such as the nearly complete jar with a crescent-shaped rim (711-1/13-1-27, Fig. 26.14). If there was a serious habitation phase in the first half of the sixth century, a much larger share of early Merovingian globular coarse ware jars (*Wölbantöpfe*) should have been found in the oxidized fabrics of the Rhineland or Eifel region. This is clear when we compare the Ten Hove assemblage with some of the scarce (early) sixth-century sites at Aldenhovener Platte, such as those of Alsdorf-Hoengen and Aldenhoven,<sup>2555</sup> and also the Rhenish site of Meerbusch-Strümp, near Neuss.<sup>2556</sup> Good parallels for the far better-represented reduced coarse ware, present in black- and grey-coloured fabrics, seem hard to find. One reason for this could be the local or regional basis – in the Meuse valley – of the ceramics supply from the mid-fifth century onwards. This could mean that the settlers at Ten Hove shifted their focus from markets in the east to markets in the west and south. And for now, it is

<sup>2549</sup> Nieuwhof 2013, 61;

Verhoeven 2015, 500-502.

<sup>2550</sup> Krause 1992, 129-133, 150-151, fig. 14 and 15.

<sup>2551</sup> Cf. Panhuysen *et al.* 1990.

<sup>2552</sup> Cf. section 27.4.2.

<sup>2553</sup> Krause 1992, 129, 149, fig. 13 (no. 1-2).

<sup>2554</sup> Kempken 2001, 717, 719, fig. 13 (no. 7).

<sup>2555</sup> Lenz 1999, 51-53, fig. 5.

<sup>2556</sup> Maagh 2017, 84-91, fig. 1.

impossible to date these reduced coarse wares more precisely than somewhere between AD 450 and 525 (or even later).

## 26.8 Conclusion

The late antique ceramics assemblage from Ten Hove, dating roughly to the fourth and fifth centuries, can be regarded as rather important, not only for defining the chronology of the site after the heyday of the villa habitation, but also for further study of the Late Roman and early Merovingian settlement dynamics in the Meuse valley and adjacent Rhineland. As shown, it has been possible to integrate relatively new insights concerning the major production sites of coarse ware during this period (Weißenthurm, Mayen) into the analysis of the assemblage. This has enabled a well-reasoned chronology, which distinguishes two (presumed or transitional) phases of habitation at the beginning and the end of this late antique period between c. AD 300 and 500, which cannot be characterized in great detail. This stands in contrast to the more substantial habitation period in between.

The assemblage from the first transitional phase around AD 300 incorporates vessels that were quite common in both urban and military contexts at the beginning of the Dominate, but their quantity at Ten Hove reveals that they must have been used during a phase in which daily life at the villa site had already been reduced to a lower level. Apart from this, the ratio of fine tableware and coarse utility ware is heavily in favour of the latter, which is unexpected for a 'normal' villa household. Given the lack of well-defined contexts, it makes little sense to try to explain this. What can be said is that the late third- and early fourth-century pottery (excluding the terra sigillata) was mostly imported from the Middle Rhine and the Lower Mosel regions. The most obvious place to obtain these vessels must have been the nearby *vicus* of Coriovallum, based, for example, on the corresponding ceramics assemblage of the baths complex and its nearby housing complex.<sup>2557</sup> This is an argument for the residents of the villa

still being integrated into the (recovered) provincial Roman economy around c. AD 300.

Matters are less clear concerning the ceramics that could date either earlier or later in the fourth century. This observation is to a certain extent applicable to the Argonne sigillata, which represents a significant portion of the Late Roman tableware (see also Chapter 25). For now, the scarcity of colour-coated and black-slipped wares will be interpreted as confirmation of the start of the substantial Late Roman habitation phase after the middle of the fourth century. The introduction of terra nigra foot bowls as late antique tableware at several sites in the Meuse valley and Rhineland at this very time more or less coincided with the end of the production of the black-slipped beakers. This should most probably not be understood as a replacement of the latter by a new kind of tableware. The foot bowls are entirely absent at most of the urban and military sites in the Lower and Upper Rhineland. Their presence at mostly rural sites seems to fit into another eating and drinking framework.<sup>2558</sup> In this respect, it is only logical that some handmade vessels resembling a northern 'Germanic' tradition have also been found. Although it is far from certain, based on this observation, to deduce the whereabouts of the first generation of settlers at the abandoned villa site at the end of the fourth century, it is striking that the character of the 'Late Roman' assemblage, roughly dating between AD 465/475 and 425/435, largely coincides with that of other (newly-established) rural sites in the Meuse valley, such as Gennep, Neer and Holtum.

However, an examination of the large amount of coarse ware from Mayen shows that the Ten Hove assemblage is also quite similar to that of several Late Roman *burgi*, not only between the Meuse and Rhine, but also further south. These coarse wares represent the 'normal' crockery for cooking, serving and storage in the decades around AD 400. It is not until other Late Roman complexes, such as that of Gennep-Stamelberg and Maastricht-Church of Our Lady, as well as Neerharen-Rekem and Baelen-Nereth, are published to their full extent that we will hopefully be able to say more about the composition of the Late Roman rural ceramics

<sup>2557</sup> Cf. Van Kerckhove 2020.

<sup>2558</sup> Cf. Heidinga & Offenberg 1992, 95-96.

assemblages, whether they clearly represent, for example, Germanic immigrants or *foederati* on the one hand or more locally based squatters or farmers on the other.

While it is difficult to grasp the pace of Late Roman habitation in the decades before and after AD 400 (are we looking at the ceramics assemblage of one or two generations?), it is even harder to establish the end of this phase and find a chronological solution for supposedly younger cork ware and reduced coarse wares. For now, the absence of the late terra sigillata plate Alzey 9/11 and the coarse ware jar Alzey 32/33 will be interpreted as marking the end of the 'Late Roman' phase. As the ceramics ascribed

to the second transitional phase hardly fit in known assemblages from the Rhineland and Meuse valley, their date between AD 450 and 525 is hypothetical for the moment. They apparently reflect a new habitation phase of early Merovingian settlers, whose sights were clearly less focused on the Rhineland and beyond, judging by the virtually complete absence of imports from the Eifel region. Their focus probably switched to the west, where sites such as Maastricht and Huy had gained importance as markets for the distribution of pottery but also – or rather – as an effect of elites manifesting themselves in the Meuse valley.



# 27 The Merovingian pottery

Maurice Janssen

## 27.1 Introduction

This chapter deals with the Merovingian ceramics retrieved during the excavations at Voerendaal-Ten Hove. The selection of material presented for study consisted primarily of ceramics identified as (possibly) Merovingian during sorting and a first analysis in the 1980s.<sup>2559</sup> Secondly, fragments of possible Merovingian date identified by the specialist on Late Roman pottery were later added to this selection (while non-Medieval sherds were removed).<sup>2560</sup>

The ceramics have been described in a thoroughly consistent manner, noting information on fabric, morphology, decoration and traces of the object's use-life. The main division, which is also used to organize the following text, is formed by the separation of fine (Section 27.4) and coarse wares (Section 27.5). For the fine wares, there is a textual description of fabrics, morphological types and decorative patterns. The same scheme will be followed for the coarse wares. Prompted mainly by the near absence of decorated coarse wares, however, there is no section on decorative patterns. The chronological and spatial distribution are addressed in Section 27.6, with some concluding remarks in Section 27.7. These sections will be preceded by a discussion of the theoretical and methodological framework facilitating the examination of the Merovingian ceramics in the region surrounding Voerendaal.

## 27.2 Theoretical and methodological framework

For the region under review, little work has been done to build up a regional chronology to which the finds from the Voerendaal assemblage can be compared. The main typo-chronologies for mainland north-western Europe concern the Lower (German) Rhineland, including the northern Eifel low mountain range (S and FAG), and northern France, between the English Channel and the Loire (LPV).<sup>2561</sup> Material from the Maastricht region has hitherto not been the subject of a thorough chronological classification for the Merovingian period, as holds true for the

material from the territories of modern-day Belgium and the Netherlands in general. Because the Voerendaal assemblage contains a considerable number of ceramics types (as a percentage of the Early Medieval ceramic finds) that should be considered regional, the current state of knowledge presents as a problem: dating these ceramic finds is not reliably possible on the basis of the aforementioned typo-chronologies alone. To this end, a solution has been considered, which we will discuss in more detail below.

First, we should consider the level of exchange that ceramic productions were exposed to. During the Late Roman period, ceramics were still exchanged on a relatively large scale via existing exchange networks, with exchange becoming more regionalized from around the mid-fifth century AD onwards.<sup>2562</sup> At the first stage of this process in which more localized productions emerged, morphologically identical overall shapes and details might still have been the norm, although we should assume that this morphological uniformity changed rapidly to less uniform productions or (supra-)regional clusters of production.<sup>2563</sup> It is not known how these clusters changed throughout the Merovingian or Carolingian period – note that there were tendencies towards more rather than less uniformity between different regions of the Merovingian and Carolingian world at different points of time – possibly confined by the production output, production mode or social constraints, for which only limited data is available.

Thus, for the era under review, a conclusion might be that comparing ceramic finds involving a large spatial distance will be more problematic given the time elapsed since the reduction in exchange between the specific areas. Such a model fits well with examples such as the proposed regional decorative variation for the Merovingian fine wares,<sup>2564</sup> the large intra-production variation in coarse ware rim types – as noted, for example, in Maastricht-Wyck – and probably the difficulty of dating Alzey 27-type rim sherds from the mid-fifth to early sixth century AD. In summary, it is the intra-regional comparison of morphological characteristics and fabric analysis that facilitates the dating and interpretation of the ceramic objects, rather than

<sup>2559</sup> By the late Jan Thijssen.

<sup>2560</sup> A problematic but small group consists of terra nigra, with forms and decorations for which neither Late Roman nor Early Medieval parallels could be found. These vessels are discussed in section 26.5.3 and illustrated in fig. 26.4.

<sup>2561</sup> Siegmund 1998 (S); Müssemeier *et al.* 2003 ('Franken AG' or FAG); see also Nieveler & Siegmund 1999 (not used here for typological or chronological purposes); Legoux, Périn & Vallet 2009 (LPV).

<sup>2562</sup> See for example Van Wersch 2011/1, 386; 2016, 135-136; Janssen 2019c, 167.

<sup>2563</sup> For example Giertz 2006; Dijkman 1992.

<sup>2564</sup> See 57.5.3.



a comparison with existing typochronologies for more distant regions.

Siegmund and the *Franken Arbeitsgemeinschaft* (FAG) have shown that assemblages of grave goods occur in similar patterns throughout the Rhineland, which borders on the Maastricht and Meuse valley regions. These recurring patterns have been assigned date ranges, by which individual assemblages can be compared and included in the chronological reference framework. According to Nieveler and Siegmund, male belt sets lend themselves best to supra-regional synchronization.<sup>2565</sup> Since our aim is to provide a chronological reference framework for the ceramics, an attempt is made to date closed contexts in the Meuse valley region that contain useful references for the assemblage at hand independently of the ceramic furnishings. Thus, objects that have a greater potential than ceramics for dating to the same period, notwithstanding a larger spatial difference between them (i.e. belt sets, fibulae, weapons), have been used to date these closed contexts (which are, without exception, graves). Using ceramics-independent reference dating thus gives greater validity to the application of the FAG chronological framework for this specific region. For this effort to succeed, some assumptions have been made, since region-specific types of disc brooches occur as well as axe shapes that have nonetheless been equated with their Rhenish counterparts. Using this method, a FAG chronology-dependent chronological reference framework can be set up for Merovingian ceramics, which is used to argue for the date ranges provided in the text below for the Voerendaal finds.

The main area of reference used in this study to set up this chronological framework is the broader Meuse valley region (hereafter referred to as the Meuse valley region). It consists of several subregions: the upper part of the lower Meuse valley (i.e. the Maastricht region), the Hesbaye region (around Tongres), the Middle Meuse valley (with the towns of Namur, Huy and Liège), the Condroz and northern Ardennes regions (with the large cemetery of Hamoir and the Abbey at Stavelot) and the region east of Maastricht, between the Roer and Meuse (with the town and *palatium* at

Aachen), in historical times by and large referred to as the lands of *Overmaas* or *Outremeuse*.

The most important reference works for this region are Line van Wersch's invaluable dissertation, which presents large amounts of data on ceramics from different sites in this region, Renate Plum's overview of sites in the Aachen region and Frank Siegmund's overview of the Heinsberg region (to the north of Aachen), the publication of the cemeteries at Sittard, Stein and Obbicht by Miriam Kars, Frans Theuws and Maaïke de Haas and the extensive publication of the cemetery at Maastricht-Vrijthof by Frans Theuws and Mirjam Kars.<sup>2566</sup> A fair number of other sites in this region will be referenced throughout the text, the closest of which is the unpublished cemetery of Heerlerheide, some 6 km north of Voerendaal. Apart from the regions studied in the main typochronologies and the Meuse valley region, sporadic reference will also be made to cemeteries further down the Meuse, in the sandy Campine region and the Dutch river area. The sites that are referred to most in this chapter are shown in Figure 27.1 and 27.4.

Apart from geographical constraints, the reference framework contains several lacunae. The first problem arises with the early Merovingian period, i.e. the fifth century and first quarter of the sixth century, since few graves are present or accessible.<sup>2567</sup> The second problem arises for the second half of the seventh century onwards because furnished burials contained few ceramic containers in this period, or, alternatively, the ceramic containers that belong to this period are unaccompanied by other datable furnishings. Here, a hiatus seems to have formed earlier than in the Rhineland, where the practice of furnished burial continued well into the eighth century AD at least at some cemeteries. A third problem concerns the coarse ware ceramics.

Although coarse ware cooking pots represent the overwhelming majority of objects in settlement contexts, only 20 coarse ware objects can be counted for the entire collection of referenced cemeteries in the Meuse valley region. Of these, a mere ten can actually be contextually dated independently of the ceramic furnishings.

In addition to a reference framework provided solely by grave goods, there are some

<sup>2565</sup> Nieveler & Siegmund 1999, 6.

<sup>2566</sup> Van Wersch 2011; Plum 2003; Siegmund 1998; Kars *et al.* 2016; Theuws & Kars 2017.

<sup>2567</sup> A problem that also presents itself in the Lower Rhineland (Nieveler & Siegmund 1999, 16). A Meuse valley cemetery containing burials from this period is Huy-St. Victor (Van Wersch 2011/2, 264-266).

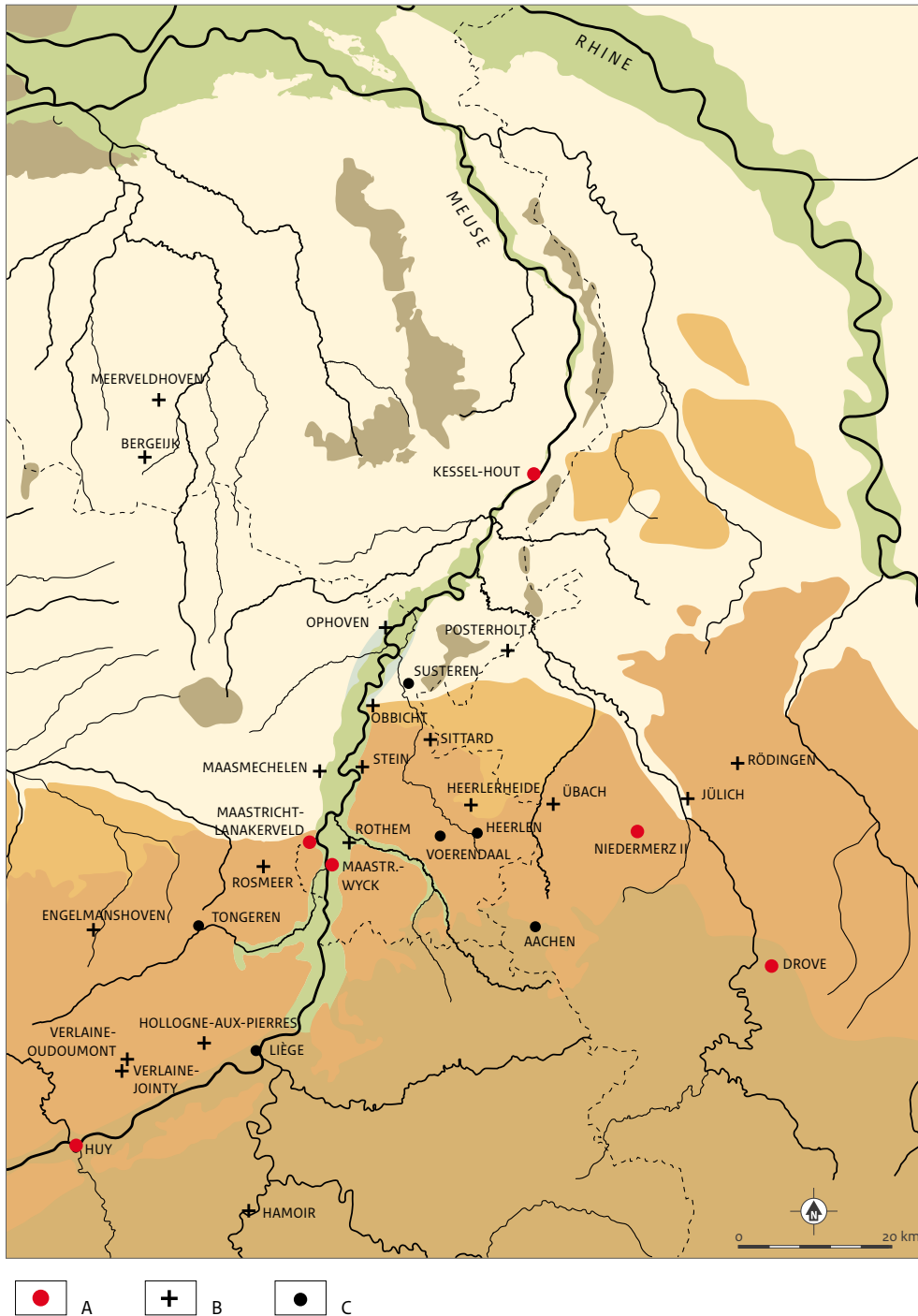


Fig. 27.1 The location of production locations, cemeteries and other sites mentioned. (source: M. Janssen & H.A. Hiddink)  
A pottery production; B cemetery; C other sites for reference.

other types of contexts that are helpful. For the settlements from the Merovingian period, the nearest examples that are published in a useful way include Huy-ISI and Huy-Pétite in the Meuse valley region and (to a lesser degree) Meerbusch-Strümp and especially Walberberg in the Rhineland.<sup>2568</sup> A notable unpublished settlement is the Maastricht-Witmakerstraat site, which contains deposits preliminarily dated to the decades around AD 400 as well as Merovingian features.<sup>2569</sup> Furthermore, there are a number of production sites in the vicinity, which with one exception have been published to some degree. It concerns the production sites at Huy-Batta, Huy-St. Jacques, Huy-Rue des Augustins, Huy-Rue du Vieux-Pont, Maastricht-Derlon, Maastricht-Wyck, Maastricht-Lanakerveld, Kessel-Hout, Niedermerz II and Drove.<sup>2570</sup>

The above-mentioned sites can be used to define our lacunae more precisely. With the Maastricht-Derlon site, the typological gap is filled for at least the first half of the fifth century. However, none of the sites mentioned provide for the second half of the fifth century, nor for the first quarter of the sixth century AD. For the coarse ware ceramics, this gap continues up until the mid-sixth century, when the first of the truly Merovingian productions are known from the region surrounding Voerendaal. The coarse wares can be compared to settlement and production refuse until somewhere in the second half of the seventh century. From that moment on, production sites in our region are no longer known. The settlements at Huy-ISI and Ruelle des Coucous show very moderate numbers of ceramics from the following period. Here, the Köln-Heumarkt excavations and some reasonably comparable early material from the Dorestad emporium fill parts of the typological gap. Although fragments can occasionally be placed within the Huy, Köln and Dorestad frameworks, it remains unknown to what extent these reference sites provide an actual reference for the bulk of the coarse and fine ware ceramics used in the Meuse valley region during the later seventh and eighth century.<sup>2571</sup>

Above, we have sketched the typological reference framework of sites and individual contexts that can form a starting point for the

analysis of ceramics in our region, more specifically the Voerendaal material. It represents different types of contexts and its possibilities and lacunae are clear. A theoretical debate that is not touched upon is the time it takes an object to go from production, through use-life, to deposition in a grave and hence the comparability of the dates obtained through a chronological framework designed for the dating of graves and the actual dating of production sites and settlement sites. It should be borne in mind that objects selected for deposition in a grave are part of a conscious cycle of selection. One of the most convincing ceramic-related arguments for this statement is the near absence of coarse ware objects in the Lower Rhineland burials during FAG phases 6-8 (AD 580/90-670/80), although the settlement material consists almost exclusively of coarse ware objects.<sup>2572</sup> Thus, the co-buried objects were considered more proper for ceremonial use than objects that were not used in the burial ritual, for reasons that we will not attempt to clarify here.<sup>2573</sup> Notably, the proposed considerations may lead to the interment of already old objects, the Merovingian 'Altstücke', which are certainly not an exception.<sup>2574</sup> However, since the comparisons are based upon a larger number of examples, we might expect to recognize outliers – i.e. ensembles present in graves in which objects of an obviously different date can be identified. It is also true that the exercise of dating the burial ensemble only has repercussions for the rather refined chronology of the fine wares and that the coarse wares dates follow a less refined framework consisting of the dating of (mostly) settlement contexts. As a result of the comparison, possible differences in the chronology (or rather, chronologies) will probably end up being negligible, since – with the exception of burials – the date ranges of analysed contexts increase given the presence of coarse ware objects. While settlement and burial contexts both represent the removal of ceramic objects from circulation, we need to be cautious about dating the production contexts using the same chronology, since these stand at the beginning of the ceramics use-life trajectory. For the purpose at hand, and because of the lack of any sharply dated contexts to back up this

<sup>2568</sup> Van Wersch 2011/2, 276-309; Docquier & Bit 1986; Maagh 2017; Müssemeier & Schneider 2012.

<sup>2569</sup> Material present at the municipal archaeological depot under excavation code 89.MAWT.12-14. Dates kindly provided by Wim Dijkman.

<sup>2570</sup> Van Wersch 2011/2, 204-231; Van Wersch 2011/2, 232-252; Willems 1977a; Willems 1977b; Dijkman 1992; Van Wersch 2011/2, 624-721, Van Wersch 2006, Dijkman 1993 and Panhuysen *et al.* 1992; Van Wersch 2011/2, 722-735 and Hemminga 2009; Hupperetz 1999; Plum 2003, 154-155; pers. comm. U. Müssemeier 8 July 2020 (NW 2012/0081); other sites containing possible ceramic production refuse include Maastricht-Lage Kanaaldijk (Dijkman 2016) and Maastricht-Houtstraat.

<sup>2571</sup> See also Theuws 2007.

<sup>2572</sup> Siegmund 1998, 135-136.

<sup>2573</sup> See Kars 2011 for a thorough overview of the subject.

<sup>2574</sup> Kars 2011, 71-74; Janssen 2019a, 69.

<sup>2575</sup> An opportunity to review such material from the Drove kiln waster deposit was kindly provided by Ulrike Müssemeier. Photographs of the production site at Huy-St. Jacques have been kindly made available by Line van Wersch.

<sup>2576</sup> These three sherds will not be used in the statistics.

<sup>2577</sup> Obviously, the incomplete biconical pots could include spouted pots with an identical base shape to that of biconical pots. Compare for example Siegmund 1998, 133.

assumption, it will be assumed that ceramics tended to have short use-lives as they are prone to breakage and that, as a result, the production sites might be near contemporaneous or up to two decades earlier than the correspondingly dated grave gift and settlement ensembles.

As already noted, apart from morphology and decorations, which can be compared relatively easily using published contexts, another line of inquiry involves the fabrics. Reference probes of the production sites at Maastricht – Derlon, Wyck and Lanakerveld – have been used, as well as reference probes of several settlement sites, which allow some degree of macroscopic comparison of the Voerendaal material with the regional occurrence of these fabrics. Apart from the actual probes themselves, reference material has been photographed and other researchers' photographs have been employed to compare the material at hand with that of other sites.<sup>2575</sup> For all objects of diagnostic shape, the fabric has been described, either grouped with other objects of similar to identical fabric or individually, where similar fabrics are absent from the studied material.

### 27.3 An overview of the ensemble

This study covers a total of 172 objects or items; another 31 have been analysed but were rejected as being outside the scope of this study. The total sherd count amounts to 358 fragments (6,844 g), which can be divided into 138 Early Medieval sherds (5,099 g) and 220 (6,844 g) that are either Late Roman or Early Medieval. Of the 172 objects, 24 can be classified as Merovingian fine ware and 147 as coarse ware (14 and 86% respectively). No objects of coarse ware were found in cemetery trenches 11 and 17, and only nine of fine ware. Three of these were still (almost) complete. The remaining objects of fine ware and all the coarse ware were found in the southern part of the excavation, along the Steinweg. Some of the objects from this area are also relatively well preserved. A jar (711-1/13-1-17) was nearly complete, some 75% of a bowl (733-4/46-2-3) was present, the body of a small bottle (27-3-3/5128) was present, as well as some 15-25% of

two biconical pots (52-1-3/10435; 1953-2.12/11425).

### 27.4 Merovingian fine ware ceramics

This chapter describes the Merovingian fine ware ceramic objects. Objects with highly informative characteristics and objects that are nearly complete will generally be dealt with separately in a catalogue-like manner, while less complete or informative objects will only occasionally be referred to. Of the studied ceramics, 24 objects – consisting of 75 sherds in total – have been grouped among the Merovingian fine wares. A further three sherds belonging to two heavily weathered and fragmented objects have been grouped among the fine wares in general, being either from the Roman or Merovingian period.<sup>2576</sup> Eleven specimens of the fine ware objects can be readily characterized by overall shape: nine objects are biconical pots, one is a bowl and one a jug. The other 13 objects cannot be reconstructed to a precise shape: these include closed shapes (which might represent pots, jugs, etc.) and fully indeterminable shapes.<sup>2577</sup> Macroscopic categorization of the fabrics shows that at least 13 of the 24 objects have a Meuse valley provenance. No provenance could be obtained for the other objects. Of the objects with a Meuse valley provenance, 11 are in a fabric identical or near-identical to fragments found in the kiln waster deposits of Maastricht-Lanakerveld and Maastricht-Wyck Céramiqueterrein.<sup>2578</sup> These 11 objects are thus assumed to have a Maastricht provenance.<sup>2579</sup>

#### 27.4.1 Fabrics

The Merovingian fine ware fabrics have been grouped into five categories. The main criterion are macroscopically observable inclusions in the clay matrix. No further classification of technical subgroups has been made. All fabrics are shown in Appendix XV.

##### *Maastricht group MSF1*

Only two objects belong to this M(aa)S(trich) F(ine) group; both are biconical pots.

One (52-1-3/10435) has been fired in a reducing

<sup>2578</sup> For the Lanakerveld kiln waster deposit, consisting of 248 fragments from at least 46 individual vessels: Van Wersch 2011/2, 722-735 and Hemminga 2009. For the Wyck-Céramiqueterrein kiln waster deposits, consisting of some 19,000 fragments from a minimum of 1053 individual vessels: Van Wersch 2006; 2011/2, 624-721; Dijkman 1993; Panhuysen *et al.* 1992.

<sup>2579</sup> Line van Wersch studied fragments from both kiln waster deposits at the level of the technical group (coarse and fine wares further divided according to surface treatment) and subsequently carried out petrographic and chemical analyses of the different groups. For both deposits, she concludes (intra-deposit) that the clays used are very uniform and that the ensemble does in fact reflect the production at the site (Van Wersch 2011/2, 720-721, 735). Notwithstanding the homogenous appearance and chemical composition of the individual groups, it is not possible at present to identify single imported or residual fragments among the enormous number of sherds present. For the purpose of this study, it is assumed that the carefully selected samples used for comparison reflect the spectrum of fabrics produced at the specific location and do not accidentally belong to fragments of non-local origin. No petrographic or chemical analyses have been carried out to verify this assumption.

atmosphere, resulting in a light grey appearance, while the other (106-1-6/9236) has been fired in an oxidizing atmosphere, resulting in a brick-red appearance. The fabric is very fine, containing some well-rounded, sand-sized grains (1-5 %) smaller than 0.5 mm, which have mostly coloured dark brown to black in an oxidized environment. Clay pellets of up to 3.0 mm can be identified. Exact parallels for the oxidized variant are known from the Maastricht-Lanakerveld kiln waster deposit, a specific example being find 278-16.<sup>2580</sup>

#### *Maastricht group MSF2*

Seven objects have been included in this group, four of which belong with certainty to the biconical pots, while the shape of the other three objects could not be determined. All of the objects in this group have been fired in an overall reducing atmosphere, although an occasional brownish tinge suggests some oxidization for a couple of them. Although the fabrics of the individual vessels show some variation, the group as a whole has a very homogenous appearance. The fabric is fine, containing 5 to 10% of sub-angular to sub-rounded sand-sized particles of up to 2.0 mm, which are mostly dark grey to black, but also include white to red quartz sand. Clay pellets of up to 3.0 mm can be identified, as well as occasional small chalk fossils or cavities with plant-like characteristics. For one of the more complete vessels in this group (find 383-27/11-1-91/1149), an identical fabric has been discerned among the Lanakerveld waster sherds, a specific example being 278-2.<sup>2581</sup> Several other fragments show a very similar fabric. The most divergent example (find 20-1-61/2985), which has been grouped with the others, has a greater porosity than the other sherds. It is, however, very reminiscent of the rest of this group in all other respects.

#### *Maastricht group MSF3*

Two objects with fabrics identical to those occurring in the Maastricht-Wyck kiln waster deposits have been grouped together. Both have a highly divergent appearance and only the fabric of the more complete jug will be described here (259-1/52-2-21/10465). The fabric is sub-coarse, slightly porous, containing small amounts of

quartz sand up to 0.5 mm and about 5% of well-rounded, highly spherical clay pellets up to 4.0 mm in diameter.

#### *Meuse valley non-specific*

Two objects with fabrics somewhat resembling Maastricht groups 1 and 3 have been identified (383-16/11-1-111/1162 and 17-1-1/2726 respectively). However, the macroscopic similarity is not convincing enough to ascribe these objects to the Maastricht production; they may have originated from elsewhere.

#### *Other fabrics*

A number of production sites and homogenous groups can be identified in the region around Voerendaal. None of the studied objects can be ascribed to the Drove production, the buff-cored wares from Sittard, Obbicht, Stein and Posterholt, or the Maasmechelen-Ophoven group of reduced fine wares. No reference material from the Niedermerz II production site has been reviewed, as a result of which the presence of this material within the assemblage cannot be ruled out.

The diverse 'other fabrics' group of unknown provenance consists mostly of fragments without parallels within the studied material or from other sites. The assemblage is too small to discern individual groups among this material without the aid of samples from other production locations. Also grouped with these fragments are a complete biconical pot (381-9/11-1-69), of which the fabric could only be observed on the surface but not on the core, as well as a published fragment from the 1947-1950 excavations (1953-2.12/11425), which we have not seen.<sup>2582</sup>

### **27.4.2 Typological classification**

For the purpose of a morphological description of the fine ware vessels present, precedence has been given to a typological approach over a description of isolated morphological characteristics. To enable a comparison with other regions, all types have been classified using the Lower Rhineland (FAG; S) and northern France typologies (LPV).<sup>2583</sup> However, these can only be used with reasonable accuracy for archaeologically

<sup>2580</sup> Hemminga 2009, fig. 7.17, no. 278; Van Wersch 2011/2, fig. 755, no. 4.

<sup>2581</sup> Not depicted in Hemminga 2009 but probably in Van Wersch 2011/2, fig. 759 or 760 (although it is not clear which specific drawing corresponds to this fragment).

<sup>2582</sup> Braat 1953, fig. 12, no. 67.

<sup>2583</sup> Cf. section 27.2.

complete vessels. For incomplete vessels, therefore, a type has been assigned, based where possible on parallels that are as close as possible to the specific vessel. It should be noted that the typologies combine morphological characteristics with decorative elements and that the chronological relevance of these combinations to the Meuse valley region has not been tested.

Because of the lack of a typology for Meuse valley ceramics, this study gives an overview of the types that could be linked directly to the Meuse valley production. To this end, the typological criteria of the different typologies have been maintained, exceptions being the jug 'KAN MSL.1' and the bowl 'SHA MSL.1', which have been given new typological definitions. It goes without saying that the very few fine ware objects excavated at Voerendaal do not give a representative picture of the Meuse valley production. Nonetheless, this overview does give us a new entry into the material and adds to our knowledge about the material from cemeteries and production sites.

An overview of the types present among the Meuse valley fabrics and those of unknown provenance is presented in Table 27.1. The sections below give arguments for the dating of the specific type in the Meuse valley region. A description of the typological criteria is not provided for each type: these descriptions can be found in the publications on the typologies used. All typological attributions are displayed visually in Figure 27.2.

#### *Biconical pot KWT FAG 1A/LPV 386*

A fragment of a pot belonging to this type was found in a trial trench dug by Braat (1953-2.12/11425; Fig. 27.2). The type definition for KWT (*Knickwandtopf*) FAG 1A is closely related to pattern NS.5, but does not exactly overlap.<sup>2584</sup> In the Hesbaye and Meuse valley cemeteries, this morphological type occurs rarely, in Verlaine-Oudoumont (grave 57, FAG phase 3-4; 131/3-4; 148/3) and Verlaine-Jointy (58/3).<sup>2585</sup> Biconical pots of this type should thus be considered a rare type among Hesbaye and Meuse valley finds. A date corresponding to the Lower Rhineland and northern France chronologies is assumed.

#### *Biconical pot KWT FAG 2B/LPV 390*

This type is represented by a stray find from the cemetery (11-0-0/1200; Fig. 27.2). The KWT FAG 2B is a decoration-dependent type definition, corresponding to pattern NS.3. This type occurs simultaneously in the Lower Rhineland and northern France during FAG phase 4-6 or LPV MA2-MR2. As will be argued in the next section for the Meuse valley/Maastricht region, this type may have ceased to circulate earlier than in the Lower Rhineland or northern France. Grave inventories and other known findspots could point to an end of circulation around AD 580/590, the beginning of FAG phase 6.

**Table 27.1. Voerendaal-Ten Hove. Types in Merovingian fine ware with provenance (MV Meuse valley) and date according to three chronologies;**

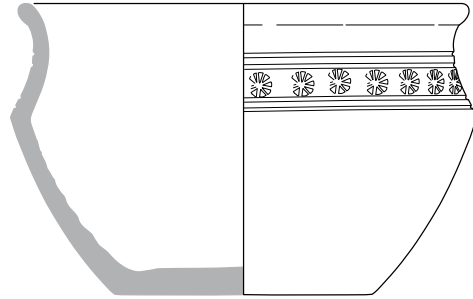
Find	Form/type	Provenance	Lower Rhine (FAG/S)*	Northern France	Meuse valley (type)
1953-2.12/11425	KWT FAG 1A/LPV 386	-	460/480-510/525	460/480-520/530	460/480-510/525
381-9/11-1-69	KWT FAG 5C/LPV 396	-	610/620-670/680	600/610-700/710	585/610-640/680
383-16/11-1-111	KWT S2.42/LPV 392	MV	580/590-610 (S)	560/70-660/670	580/90-640/650
383-27/11-1-91	KWT FAG 3A	MV	510/525-610/620	-	560/80-580/610
11-0-0/1200	KWT FAG 2B/LPV 390	MV	510/525-610/620	520/30-630/640	510/25-580/590
17-1-1/2726	SHA MSL1/S2.21/31	MV	460/580-580/690	-	565-610/620
259-1/52-2-21	KAN MSL.1/S4.4	MV	610-640 (S)	-	565-670/680
52-1-3/10435	KWT FAG 5B/LPV 390	MV	510/525-610/620	520/30-630/640	565-610/630

(S) date cf. Siegmund 1998. KWT *Knickwandtopf*; SHA *schaal*, dish; KAN jug.

<sup>2584</sup> For the patterns mentioned, see section 27.4.3 below.

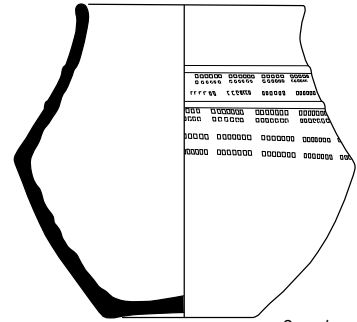
<sup>2585</sup> Destexhe 2000, 92, 147-148, 162; 2003, 102.

**KWT FAG 1a/LPV 386**



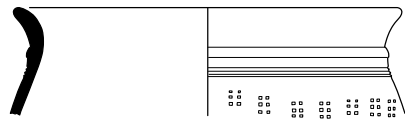
(1953-2.12/11425)

**KWT FAG 5c/LPV 396**



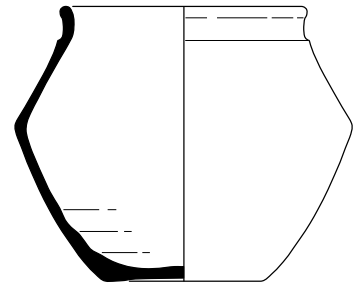
381-9/11-1-69

**KWT FAG 2b/LPV 390**



11-0-0/1200

**KWT S 2.42**



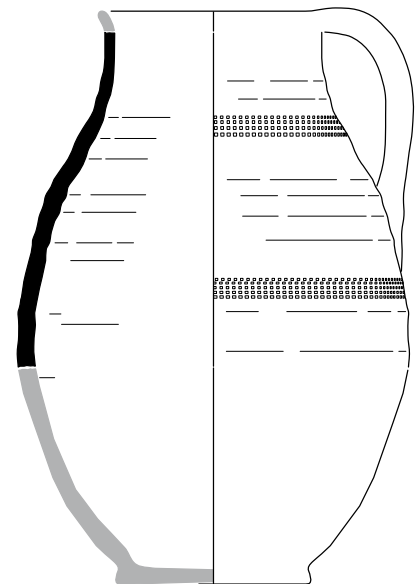
383-16/11-1-111

**KWT FAG 3a**



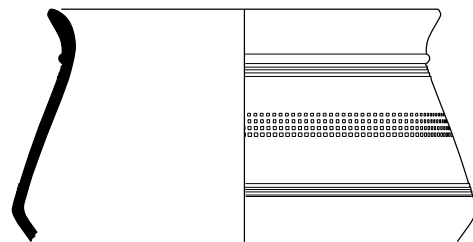
383-27/11-1-91

**KAN MSL1/KWT S 4.4**



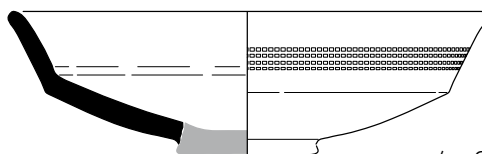
259-1/52-1-21

**KWT FAG 5b/LPV 390**



52-1-3/10435

**SHA MSL1/S 2.21/31**



17-1-1/2726

Fig. 27.2 Voerendaal-Ten Hove. Vessels in Merovingian fine wares. Scale 1:3. (source: H.A. Hiddink & F. Horbach, FAG1a after Van Es 1964, 74)



*Biconical pot KWT FAG 3A*

One of the pots from grave 383 belongs to this type (383-27/11-1-91; Fig. 27.2). The KWT FAG 3A type is a decoration-dependent type definition and is related to pattern NS.1. The latter constitutes a specific subset of the patterns classified under KWT FAG 3A (which also has specific morphological characteristics). This type definition has no defined typological counterpart in the northern France typochronology. In the Lower Rhineland, it occurs through FAG phase 4-6, with an emphasis on phase 4 and 5.<sup>2586</sup> No attempt has been made in this study to review all Meuse valley occurrences that fit the KWT FAG 3A type definition.

*Biconical pot KWT FAG 5B/LPV 390*

A fragment of a biconical pot of this type is a stray find from trench 52 (52-1-3/10435; Fig. 27.2; Appendix XVI, fig. 3). The KWT FAG 5B is a decoration-dependent type definition and is related to pattern MSL.2. Pattern MSL.2 constitutes a specific subset of the patterns classified under KWT FAG 5B (note that the KWT FAG 5B also has morphological characteristics). Using the typology for northern France, this object would classify as a LPV 390 type. In the Lower Rhineland, it occurs through FAG phase 5-7 (AD 565-640/50), while in northern France a date in the phases MA2-MR1 (AD 520/30-630/40) would be assigned, with the occurrence during MA2 (AD 520/30-560/70) being sporadic.<sup>2587</sup> No attempt has been made in this study to review all Meuse valley occurrences that fit the KWT FAG 5B type definition.

*Biconical pot KWT FAG 5C/LPV 396*

This type is represented by the complete pot from a grave (381-9/11-1-69; Fig. 27.2; Appendix XVI, fig. 3). The KWT FAG 5C is a decoration-dependent type definition and is related to pattern NS.4. Pattern NS.4 constitutes a specific subset of the patterns classified under KWT FAG 5C (note that the KWT FAG 5C also has morphological characteristics). Using the typology for northern France, this object would classify as a LPV 396 type. In the Lower Rhineland, it occurs through FAG phase 7-8 (AD 610/20-670/80), while in northern France a date in the phases MR1-MR3 (AD 600/10-700/10)

would be assigned.<sup>2588</sup> No attempt has been made in this study to review all Meuse valley occurrences that fit the KWT FAG 5C type definition.

*Biconical pot KWT S2.42/LPV 392*

The second pot from grave 383 belongs to this type (383-16/11-1-111; Fig. 27.2; Appendix XVI, fig. 3). The KWT S2.42 is a decoration-dependent type definition and is related to pattern NS.2. Pattern NS.2 occurs on biconical pots of both KWT S2.42 and S2.43 type. Using the typology for northern France, this object would most easily classify as a LPV 392 type, although its neck is not very elongated.<sup>2589</sup> In the Lower Rhineland, it occurs during Siegmund phase 7 (AD 585-610), while in northern France a date range in the phases MA3-MR2 (560/70-660/70) would be assigned, with the occurrence during MA3 (560/70-600/10) being sporadic.<sup>2590</sup> As will be argued in the next section, for the Meuse valley/Maastricht region, this type can be ascribed to FAG phase 6 and 7, or AD 580/90-640/50, corresponding to Maastricht phases F-G, with some possible later occurrences.

*Jug RAN MSL.1/KWT S4.4*

This jug fragment was found in a feature of small building 259 (259-1/52-2-21; Fig. 27.2; Appendix XVI, fig. 3). The KWT S4.4 type is defined as being of biconical base shape with the additional presence of a footplate, handle and pouring lip and having a smoothed surface.<sup>2591</sup> In the Voerendaal example, none of these additional parts have been preserved, nor does it have a smoothed surface. However, this type of jug is the only type for which at least some parallels for the Voerendaal example are known, the closest parallel being the Meerveldhoven grave 24 find, which can be dated to FAG phase 7-8 (AD 610-670/80).<sup>2592</sup> It seldom occurs in the Lower Rhineland and is ascribed there to Siegmund phase 8 (AD 610-640). Other regional occurrences are known from Borgharen (found in the vicinity of, and possibly originating from, grave 4/1995, datable to FAG 5-7, AD 565-640/50), Stein-Groote Bongerd grave 41, Maastricht-Vrijthof 228 stray find and Hamoir grave 122 (which has no footplate), datable to FAG phase 5-6 (AD 565-610/20) based on the

<sup>2586</sup> Müssemeier *et al.* 2003, 59, 104.

<sup>2587</sup> Müssemeier *et al.* 2003, 61, 105; Legoux *et al.* 2009, 22, 47, 57.

<sup>2588</sup> Müssemeier *et al.* 2003, 61, 107; Legoux *et al.* 2009, 22, 47, 57.

<sup>2589</sup> Legoux *et al.* 2009, 22, 47.

<sup>2590</sup> Siegmund 1998, 130; Legoux *et al.* 2009, 22, 47, 57.

<sup>2591</sup> Siegmund 1998, 132.

<sup>2592</sup> Verwers 1978, 280-281.



other grave goods.<sup>2593</sup> For the Meuse valley region, it seems reasonable to widen the type definition used in the Lower Rhineland to include all trefoil jugs of a biconical type. Jugs KAN MSL.1 occur in the period between AD 565 and 670/80. While the examples are sparse, it is not possible at present to narrow or widen this date range.

#### *Bowl* SHA MSL.1/S2.21/31

This fragment is a stray find from the cemetery (17-1-1/2726; Fig. 27.2; Appendix XVI, fig. 3). The SHA S2.31 type is defined as being of carinated bowl shape with the addition of a footring and an non-thickened rim and having an overall red-painted surface (*rotgestrichen*).<sup>2594</sup> The SHA S2.21 type is morphologically similar but has a base plate instead of a footring and a smoothed surface instead of being red-painted. Neither of these definitions take into account morphologically similar bowls in fabrics with an engobe, nor do they provide a usable definition for the difference between footrings and base plates.<sup>2595</sup>

A morphological definition that fits the Meuse valley material better and can also be used for less than complete objects includes both base plates and footrings and does not distinguish fabric type any more specifically than fine ware. For the type definition of SHA MSL.1, the upper part of the wall (the part of the wall belonging to segment 2) is straight, the rim is non-thickened and stands out at an angle of about 40 to 80° in relation to the horizontal plane. The lower part of the wall (belonging to segment 1) is straight to almost straight. A sharply defined carinated transition between the lower and upper segment is present. No indentation of the diameter is present just above or at this transition. No roulette stamps are present below the carination. The width to height ratio equals or is greater than 2.5.<sup>2596</sup>

In the northern Ardennes, Hesbaye and Meuse regions, bowls that fit this type definition are present at the cemeteries of Rosmeer, Maastricht-Vrijthof, Rothem, Obbicht, Hollogne-aux-Pierres, Verlaine-Jointy, Verlaine-Oudoumont and Hamoir. They also occur in the kiln waster deposits of Huy-Batta.<sup>2597</sup> The Rosmeer grave 8 example cannot be dated directly, based on additional furnishings with a

high potential for accurate dating.<sup>2598</sup> However, a biconical pot with decoration pattern NS.1 is present in this grave. Based on this presence, the grave is likely to date from the period AD 565-610/20.<sup>2599</sup> Rosmeer grave 39 cannot be dated independently of the ceramic furnishing; grave 50, however, dates to FAG phase 5-6 (AD 565-610/20) based among other things on the lance.<sup>2600</sup> The find from Maastricht-Vrijthof grave 75 borders on the type definition because of a somewhat irregular transition at the carination; grave 75 has been dated to AD 565-610;<sup>2601</sup> grave 279 has been dated to AD 460/80-580/90, but cannot be dated independently of the pottery.<sup>2602</sup> In Rothem, this type occurs three times, in graves 8, 13 and 27, none of which can be dated independently of the pottery.<sup>2603</sup> Obbicht grave 24 cannot be dated independently of the pottery, while a date between AD 565-640/50 is suggested for grave 49.<sup>2604</sup> In Hollogne-aux-Pierres, this type occurs a single time, in grave 8, which can be dated to FAG phase 5-6 (AD 565-610/20).<sup>2605</sup> In Verlaine-Jointy, this type occurs once, in grave 196, which cannot be dated independently of the pottery.<sup>2606</sup> In Verlaine-Oudoumont, however, it is a common type, with a specimen in grave 38 and 162 (FAG phase 4-5), 157 (phase 5), 53, 73, 107, 121, 139 and 143 (phase 5-6). In Hamoir, it occurs in grave 73 (FAG phase 5-6) and grave 205.

To summarize, the redefinition of this morphological type and the subsequent typological assessment of related grave inventories has resulted in a sharp chronological range in which this type can be dated – the period between AD 565 and 610/20.

#### 27.4.3 Decorative patterns

Apart from classifying the material by macroscopic fabric classification and typological description, the ceramics can also be classified by studying the decorative patterns. These patterns show a spatio-chronological significance and thus help to date the ensemble as well as provide information on the spatial relationships that the people living at Voerendaal were engaged in. The chronological aspect has already been noted in the Lower Rhineland and northern France typochronologies; the spatial aspect, however,

<sup>2593</sup> Dijkman 2003, 214, 227; Aarts 2009, 83, 104.

<sup>2594</sup> Siegmund 1998, 155-156; Müssemeier *et al.* 2003, 67-68. SHA is the code for *schaal*, which means (large) dish/bowl.

<sup>2595</sup> Compare for example the SHA S2.21 and 2.31 type attributions in Theuws & Kars 2017.

<sup>2596</sup> This type definition corresponds to type B-A(b) in Janssen 2011. Some examples with very limited height (occurring in Ophoven-Hooge Kamp grave 2/1973 and Hamoir grave 21) could be considered to be of a different type.

<sup>2597</sup> Van Wersch 2011/2, 207.

<sup>2598</sup> Roosens *et al.* 1976, pl. 1.

<sup>2599</sup> An argumentation for the pattern NS.1 dating can be found in the next section.

<sup>2600</sup> Roosens *et al.* 1976, pl. 10 and 13.

<sup>2601</sup> Theuws & Kars 2017, 441.

<sup>2602</sup> Theuws & Kars 2017, 523.

<sup>2603</sup> Braat 1956, 72-73.

<sup>2604</sup> Kars *et al.* 2016, 410, 436-437.

<sup>2605</sup> Alénus-Lecerf & Dradon 1967, 31.

<sup>2606</sup> Destexhe 2003, 209-210.

has hitherto received limited attention. What attention has been given to this aspect focuses solely on (nigh-)identical stamps.<sup>2607</sup> In this section, we demonstrate – for the few objects available – that decorative pattern analyses might help to identify production-distribution patterns of known and unknown production sites.

Table 27.2 gives an overview of the different decorative instances of Merovingian fine wares from the Voerendaal excavations, those with both a Meuse valley and an unknown provenance. The different patterns and stamps will be described and reviewed here. An overview of the different decorative patterns is shown in Figure 27.3. The overall shape attributions in relation to fabric groups and provenance can be found for all 24 Merovingian fine ware objects in Table 27.3.

*Pattern NS.1 (383-27/11-1-91/1149)*

A non-specific pattern, which does not point to a specific region. It consists of a zone with horizontal grooves at the top of the second segment, followed by an undecorated zone stretching towards the maximum diameter at the centre of the object. A second zone with horizontal grooves may be present just above the maximum diameter. The pattern occurs in the northern tip of the Lower Rhineland as well as in the Hesbaye and Maastricht regions and the northern Ardennes. This pattern is reviewed here in combination with a type definition for

biconical pots. Finds with an identical pattern occur in the northern Lower Rhineland at Altkalkar, Elten, Emmerich and Wyler.<sup>2608</sup>

A second cluster of finds with this specific pattern occurs in the Hesbaye and Maastricht regions, at Rödingen, Jülich, Merzenich I, Lindern, Sittard-Kemperkoul, Maastricht-Vrijthof, Maastricht-Wyck, Rosmeer, Engelmanshoven, Folx-les-Caves, Verlaine-Jointy, Verlaine-Oudoumont and Hamoir. In this second cluster, some objects can be dated contextually or have already been described and dated in their respective primary publications. The Jülich example is a stray find, as is the Lindern one.<sup>2609</sup> The Merzenich I and Rödingen examples cannot be contextually dated because of the scarcity of complementary grave goods.<sup>2610</sup> Sittard-Kemperkoul 29-2-1 has been dated to the AD 510/25-580/90 date range, but was associated with objects of a later date.<sup>2611</sup> The Maastricht-Vrijthof examples occur in graves 110 and 230, as well as without a context. Grave 110 has been dated to Maastricht phase E-G (AD 565-640/50), while grave 230 is assigned a phase D-E date, namely AD 510/20-580/90.<sup>2612</sup> The most recent object in this grave postdates AD 565, however, based only on the LPV typochronology for northern France.<sup>2613</sup> In Rosmeer, two objects with this decorative pattern have been recorded, in grave 8 and 10.<sup>2614</sup> Only grave 10 can be dated, to FAG phase 5 or 6, with 5 being more probable based on the spearhead and buckle. The Engelmanshoven

**Table 27.2. Voerendaal-Ten Hove. Decorative patterns on Merovingian fine wares.**

Find	Pattern	Lower Rhine date (FAG)	Northern France date	Meuse valley date (pattern)
383-27/11-1-91/1149	NS.1	510/525-610/620	none	560/580-610/620(-650)
383-16/11-1-111/1162	NS.2	580/590-ca. 710	600/610-700/710	580/590-640/650 (KWT S2.42)
-/11-0-0/1200	NS.3	510/525-610/620	520/530-630/640	510/525-580/90
-/17-1-1/2726	MSL.1	none	none	not defined
-/20-1-61/2985	stamp MSL.2	none	none	mainly 510/525-580/590
-/52-1-3/10435	MSL.2	none	none	565/590-610/630
259-1/52-2-21/10465	MSL.3	none	none	610-670/680 (object)
381-9/11-1-69/1130	NS.4	565-670/680	520/530-630/640	not defined
1953-2.12/11425	NS.5	460/480-510/25	460/480-520/530	not defined

For Meuse valley dates marked with 'object date', a date for the corresponding object(s) from the Voerendaal excavations are given, because of the lack of other (datable) examples.

<sup>2607</sup> For example Siegmund 1998, 134-135; Kars & Theuws 2016, 306-308; Müssemeier 2012, 227-230; Legoux 2016; Janssen 2019a, 63.

<sup>2608</sup> Siegmund 1998, pl. 56, 62, 70, 219.

<sup>2609</sup> Pöppelmann 2010, pl. 93 (isolated find F5); Siegmund 1998, pl. 105; Piepers 1989, 589.

<sup>2610</sup> Plum 2003, pl. 90 (grave 39); Janssen 1993, pl. 111 (grave 577) and 131 (grave 8/1981).

<sup>2611</sup> Kars 2016, 234; Kars *et al.* 2016, 344-345 (grave 29, find 29-2-1).

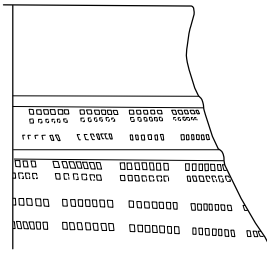
<sup>2612</sup> Theuws & Kars 2017, 463-466, 505-507, 564.

<sup>2613</sup> Theuws & Kars 2017, 505-507, find 230-I.

<sup>2614</sup> Roosens *et al.* 1976, pl. 1 and 4.

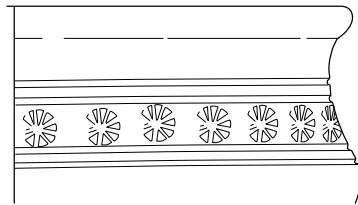
non-region specific / unknown provenance

**patt. NS.4**



381-9/11-1-69

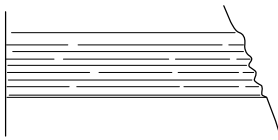
**patt. NS.5**



(1953-2.12/11425)

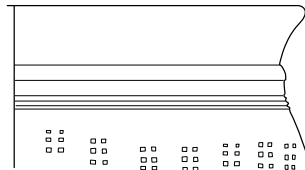
non-region specific / Meuse-valley provenance

**patt. NS.1**



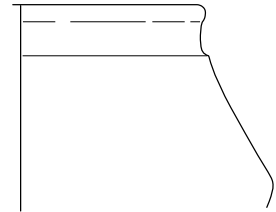
383-27/11-1-91

**patt. NS.3**



11-0-0/1200

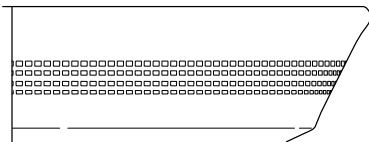
**patt. NS.2**



383-16/11-1-111

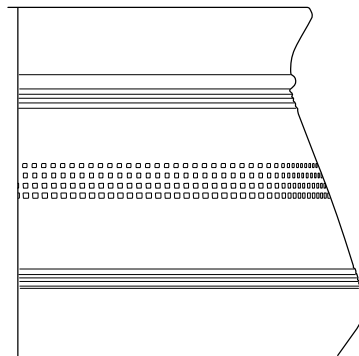
Meuse valley specific/provenance

**patt. MSL.1**



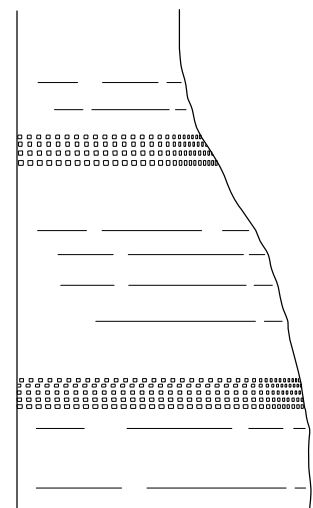
17-1-1/2726

**patt. MSL.2**



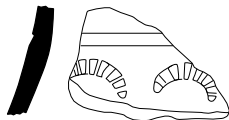
52-1-3/10435

**patt. MSL.3**



259-1/52-1-21

**stamp MSL.2**



20-1-61/2985

Fig. 27.3 Voerendaal-Ten Hove. Decorative patterns on Merovingian fine wares (cf. fig. 27.4) by pattern and provenance. Scale 1:2.

**Table 27.3. Voerendaal-Ten Hove. Number of fine ware Merovingian objects by overall shape and provenance / fabric type.**

Provenance	Biconical pot (KWT)	Bowl (SHA)	Jug (KAN)	Closed shape	Indet.	Total
Maastricht MSF1	2	-	-	-	-	2
Maastricht MSF2	4	-	-	1	2	7
Maastricht MSF3	-	-	1	-	1	2
Meuse valley nonspecific	1	1	-	-	-	2
<b>Total Meuse valley</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>13</b>
unknown	2	-	-	7	2	11
<b>Total shape</b>	<b>9</b>	<b>1</b>	<b>1</b>	<b>8</b>	<b>5</b>	<b>24</b>

example has been recorded in grave 1,<sup>2615</sup> dated to AD 565-610/20 according to the FAG typo-chronology.<sup>2616</sup> In Folx-les-Caves, this pattern occurs twice, in grave 9 and 16.<sup>2617</sup> Grave 16 can be dated to FAG phase 5-6, based on the metal grave inventory in general and the belt fitting in particular. In Verlaine-Jointy, this type occurs in grave 55 (FAG phase 4-6), 119 (5 or later), 155 (possibly phase 8, limited material present) and 195 (undated).<sup>2618</sup> In Verlaine-Oudoumont, it occurs only in undated grave 45.<sup>2619</sup> The grave goods from Hamoir grave 134 correspond best to FAG phase 6-7, based on the belt fittings and a first assessment of the fibula.<sup>2620</sup> Apart from these consumption contexts, all of which are cemeteries, an object with this decorative pattern is present in the Maastricht-Wyck kiln waster deposits.<sup>2621</sup>

Summing up, no good arguments can be made for a Meuse valley occurrence of this decoration pattern before AD 565. This type seems to have occurred mostly through to FAG phase 6 (until AD 610/620), with some possible later occurrences.

*Pattern NS.2 (383-16/11-1-111/1162)*

A non-specific pattern, consisting of an absence of decoration that is type-specific for KWT S2.42/LPV 396, with a ridge dividing the neck from the body. This pattern is reviewed here in combination with a type definition for biconical pots of the KWT S2.42 type.

This type occurs simultaneously in the cemeteries of the Lower Rhineland and northern France from about AD 580, continuing until the first decade of the eighth century AD.<sup>2622</sup> It is

present in the Maastricht-Wyck kiln waster deposits on objects of type KWT S2.42, but is absent in the Maastricht-Lanakerveld kiln waster deposit.<sup>2623</sup> For the Maastricht-Vrijthof cemeteries, this decorative type occurs until Maastricht phase H (AD 640/50-670/80) at the latest, although only a single occurrence in combination with KWT S2.42 is noted in grave 19, for which an end date in Maastricht phase G (AD 610/20-640/50) is postulated.<sup>2624</sup>

In addition to the already mentioned findspots and the find lists for the Lower Rhineland, this pattern is present, in combination with a KWT S2.42 typological definition, in several Hesbaye cemeteries: Braives grave 39 (FAG phase 6-7) and 85 (possibly 5-8, few grave goods), Engelmanshoven grave 54 (not datable), Folx-les-Caves grave 25 (phase 5-7/Maastricht F-G), Rosmeer grave 5 and 7 (6 or 7, possibly early 7), 36 (6 or 7), 71 and 72 (6-7), Verlaine-Oudoumont grave 27 and 64 (7-8), Verlaine-Jointy (grave 106), Rothem grave 5 and 12, Stein-Groote Bongerd grave 22 (AD 565-610/20), 64 (phase 3-8 or AD 640/650-670/80), Sittard-Kemperkoul grave 71 (AD 580/90-640/50) and Obbicht-Oude Molen grave 40A (AD 565-670/80).<sup>2625</sup>

All in all, for the Meuse valley/Maastricht region, this pattern – reviewed here in combination with the KWT S2.42 typological definition – can be ascribed to FAG phase 6 and 7 or AD 580/90-640/50, corresponding to Maastricht phase F-G. Two possible later examples could be the finds from Stein-Groote Bongerd grave 64 and Rothem grave 12.

<sup>2615</sup> Schaetzen & Vanderhoeven 1954, 4-7; Vanderhoeven 1977, 8, 31, pl. 1 (dated here to the second half of the sixth century).

<sup>2616</sup> For this correspondence, an equation of the Meuse valley type of glass beaker present in this grave with the Rhenish type Gla 8C has been assumed.

<sup>2617</sup> Alénus 1963, 20, 30.

<sup>2618</sup> Destexhe 2003, 100, 148, 182-183, 209.

<sup>2619</sup> Destexhe 2000, 77-78.

<sup>2620</sup> Alénus-Lecerf 1975, pl. 39.

<sup>2621</sup> Van Wersch 2011/2, 634 or 868 depending on the version.

<sup>2622</sup> Müssemeier *et al.* 2003, 59; Siegmund 1998, 130; Legoux *et al.* 2009, 47, 57.

<sup>2623</sup> It also seems to be absent from the mostly seventh-century stray finds from the Ophoven-Hooge cemetery Kamp (awaiting analysis) and the kiln waster deposit at Drove from the first half of the seventh century (not published as yet).

<sup>2624</sup> Theuws & Kars 2017, 306-307, 423.

<sup>2625</sup> Brule & Moureau 1979, pl. 7 and 13; Vanderhoeven 1977, pl. 14; Alénus 1963, 40; Roosens *et al.* 1976, pl. 1, 2, 10, 16-18; Destexhe 2000, 62-63, 93-95; 2003, 140-141; Braat 1956, 71, 74-76; Kars *et al.* 2016, 372-373, 429, 460-462, 490-491.

<sup>2626</sup> Vanderhoeven 1977, pl. 10; Alénus-Lecerf & Dradon 1967, 45; Claassen & Heymans 1974, 184; Roosens *et al.* 1976, pl. 3; Kars *et al.* 2016, 466-467; Destexhe 2000, 237-238, 250-251.

<sup>2627</sup> Müsseseimer *et al.* 2003, 61; Legoux *et al.* 2009, 46-47, 57.

<sup>2628</sup> Siegmund 1998, 126-127, 131; Müsseseimer *et al.* 2003, 61.

<sup>2629</sup> It thus differs from apparently similar patterns where the line of stamps is framed between two registers of horizontal lines, or where the line of stamps is an isolated line without further framing (as is known from the Heerlerheide cemetery, object C1043, Janssen 2019b, cover).

<sup>2630</sup> Destexhe 2000, 92, 162; 2003, 103, 242, 248-249.

<sup>2631</sup> For the Rhineland, the closest find by far might be from Rödigen grave 463 (Janssen 1993); however, this find has not been compared in this study.

<sup>2632</sup> Hulst 1995, fig. 3 (find 94.MALK.13, 3-AA-1/2, no. 12); Dijkman & Keijers 2020, 125; Janssen 1993, pl. 26 (grave 70); Destexhe 2000, 98 (grave 70), 205 (grave 199).

<sup>2633</sup> Müsseseimer 2012, 227-230.

<sup>2634</sup> For one possible example of this stamp in the Maastricht-Wyck-Céramiqueterrein kiln waster deposits, Van Wersch 2011/2, 644 or 878, depending on the version.

<sup>2635</sup> For Bieslanderweg, the finds in question are 494 and 509 (feature 56 and 252 respectively; Keijers 2020, appendix 4). Feature 56 has a calibrated 14C-date in the Middle Iron age (Keijers 2020, 38; residual material?), while 252 is not dated more precisely than Merovingian. The site was possibly abandoned from the seventh century onwards (Keijers 2020, 59-61; 193).

#### *Pattern NS.3 (11-0-0/1200)*

A non-specific pattern, consisting of single stamps of rectangular blocks framed within one or two registers of horizontal lines. This pattern type occurs simultaneously in the Lower Rhineland and northern France during FAG phase 4-6 or LPV MA2-MR2. Three minuscule fragments of this type occur in the Maastricht-Wyck kiln waster deposits. These might be viewed as residual material. This pattern is reviewed here in combination with a type definition for biconical pots. In the Meuse valley/Hesbaye region, objects with this decorative pattern occur in the cemeteries of Engelmanshoven grave 31 (FAG phase 5), Hollogne-aux-Pierres grave 16, Ophoven grave 4/1973, Rosmeer grave 9 (FAG phase 5), Stein-Groote Bongerd grave 30 (AD 565-610/20) and Verlaine-Oudoumont grave 235 (phase 4) and grave 251 (5?).<sup>2626</sup> For the Meuse valley/Maastricht region, this type may have ceased to circulate earlier than is the case in the Lower Rhineland or northern France. Present grave inventories and other known findspots could point to an end of circulation around AD 580/590 or the beginning of FAG phase 6.

#### *Pattern NS.4 (381-9/11-1-69/1130)*

A non-specific pattern, consisting of multiple lined roulette stamps combined with horizontal ridges. This pattern occurs earlier in northern France than it does in the Lower Rhineland. Also, it ceased to circulate earlier in northern France, as summarized in Table 27.2.<sup>2627</sup> This pattern is reviewed here in combination with a type definition for biconical pots. In the Rhineland, a distinction is made between different types of roulette stamps. Multi-lined roulette stamps, as occurring in this pattern, are lumped together with other types of roulette stamps into a 'late group', which is dated from Siegmund phase 7 to the end of the deposition of biconical pots in graves, or they are incorporated by the Franken AG into the type definition of KWT 5B and 5C, which date from FAG phase 5 to 8.<sup>2628</sup> No attempt has been made in this study to identify multi-lined roulette stamps on the drawings of ceramics in the published Hesbaye and Meuse valley cemeteries. A date corresponding to Siegmund and Franken AG is assumed.

#### *Pattern NS.5 (1953-2.12/11425)*

A non-specific pattern, consisting of a line of singular rosette stamps, beneath a horizontal line or framed between two horizontal lines.<sup>2629</sup> This pattern type occurs simultaneously in the Lower Rhineland and northern France during FAG phase 3 or LPV PM-MA1. This pattern is reviewed here in combination with a type definition for biconical pots. In the Hesbaye and Meuse valley cemeteries, this pattern occurs rarely: in Verlaine-Oudoumont grave 62 and 148 (FAG phase 3) and Verlaine-Jointy grave 58 (phase 3), 238 and 246 (3-4).<sup>2630</sup> Biconical pots with this type of decoration should thus be considered a rare type among Hesbaye and Meuse valley finds.<sup>2631</sup> A date corresponding to the Lower Rhineland and northern France chronologies is assumed.

#### *Stamp MSL.2 (20-1-61/2985)*

A specific crescent-shaped stamp, consisting of individual rectangular impressions. This type of stamp is known from the Maastricht-Lage Kanaaldijk excavations, the Maastricht-Bieslanderweg settlement, as well as the Rödigen and Verlaine-Oudoumont cemeteries.<sup>2632</sup> The dating of these finds is possible through a preliminary examination of the grave good assemblages of Oudoumont grave 199, which corresponds to FAG phase 5-6, based on the fibulae and earrings. For the Lage Kanaaldijk find, consisting of multiple rows of two different stamps (one of which is the crescent-shaped stamp MSL.2), separated by horizontal lines, a date could be argued that is comparable to that of similar complex decorations containing single stamps of the 'Möwen' (seagull) type in Bonn, corresponding to FAG phase 5-6.<sup>2633</sup> However, this type of stamp does not occur in the Maastricht-Wyck kiln waster deposit of 19,000 sherds, making a date for the production side of the ceramic use-life in FAG phase 6 rather improbable.<sup>2634</sup> None of the Bieslanderweg and Lage Kanaaldijk finds have been contextually dated with any precision.<sup>2635</sup> The fragment under discussion might date, as does possibly the Oudoumont grave 70 example, from an earlier phase, most likely FAG phase 4, although phase 3 cannot be ruled out at present. Taken together, these stamps occur from the FAG phases just mentioned, through to

phase 6. For now, no arguments can be made for an ongoing production use of this stamp during the latter phase. This means that the main occurrence of the MSL.2 stamp was during the period AD 510/25-580/90, with some possible earlier and later examples. The Rödigen grave 70 grave goods fit well into this suggested date range. Similar but not identical crescent-shaped stamps occur in Dormagen, for instance.<sup>2636</sup>

*Pattern MSL.1 (17-1-1/2726)*

A specific Meuse valley pattern consisting, from top to bottom, of an empty register, followed by a multi-lined roulette and then a second empty register, all occurring on the uppermost segment of the vessel, which is reviewed here in combination with a type definition for carinated bowls.

Instances of this type are unknown beyond the Meuse valley and seldom occur within the Meuse valley sphere. Examples are known from the Verlaine-Jointy cemetery grave 101 and Obbicht grave 24.<sup>2637</sup> Both occurrences cannot be precisely dated contextually because of the scarcity and unspecific character of complementary furnishings. A third example is known from the Maastricht-Vrijthof cemetery in grave 110. This specific object had been assigned a Maastricht phase C-E (AD 460/80-580/90) date, although the grave inventory as a whole has been dated to Maastricht phase E-G (565-640/50).<sup>2638</sup>

This type has not been observed in the Rhineland and has not been incorporated into the typology for northern France.<sup>2639</sup> Following Siegmund's criteria for different types of roulette stamps, a Rhineland date post AD 580/90 or 610 can be obtained for this type of decoration.<sup>2640</sup> Legoux, Périn and Vallet, however, note the occurrence of multi-lined roulette stamps in northern France during the MA1 phase (AD 470/80-520/30).<sup>2641</sup> No date range for this decorative type within the Meuse valley is given here because of the scarcity of known parallels and the discrepancy between the Rhineland and northern France dates of specific elements within this type.

*Pattern MSL.2 (52-1-3/10435)*

A specific Meuse valley pattern, consisting from top to bottom of five zones above the carination

and below the rim, which are symmetrical with reference to the third zone or register: a zone with horizontal grooves at the top of the second segment, followed by an undecorated zone and then a multi-lined roulette stamp with square impressions, and again followed by an undecorated zone. A second zone with horizontal grooves is present just above the maximum diameter. This specific pattern is reviewed here in combination with a type definition for biconical pots. This pattern can be distinguished from other comparable patterns that might not, for example, contain the empty registers or which substitute the square multi-lined roulette with triangular or rectangular multi-lined rouletting. Pattern MSL.2 has a different spatial distribution than the variations mentioned (Fig. 27.4).

This decorative pattern occurs at or in the following sites/contexts: Engelmanshoven (stray find), Rosmeer grave 7 (FAG phase 6-7, probably early phase 7, AD 580/590-650), Opgrimbie (stray find), Verlaine-Oudoumont grave 48 (without other grave goods), Borgharen grave 3/1995 (phase 5-6, AD 565-610/20), Rothem grave 11, Übach (stray find) and Merzenich I grave 40 (phase 5-6, AD 565-610/20).<sup>2642</sup> Another example could be a find from Rothem grave 36, although there is little empty space between the registers of horizontal grooves and the multi-lined square roulette stamp.<sup>2643</sup> From a type definition point of view, the Rothem grave 36 example could therefore more readily be considered a more common type that excludes the empty zones, as opposed to the MSL.2 pattern. Apart from the mentioned contexts, this type occurs within the city of Maastricht and is known from several contexts within the Sint-Servaas and Vrijthof excavations. At the latter site it concerns find 1169.1 from context 448 (c. later sixth-first half to mid-seventh century) and grave 78 (object-specific dating to Maastricht phase E-F, AD 565-610/20).<sup>2644</sup> A further example possibly belonging to the defined type is the vessel from Vrijthof grave 287.

Although limited in number, all the dated contexts show a uniform date range and it therefore seems to lie between 565/90 and 610/30. Figure 27.4 shows that Maastricht is located centrally within the spatial distribution of this decorative type, which corresponds well with

<sup>2636</sup> Siegmund 1998, pl. 62.

<sup>2637</sup> Destexhe 2003, 136; Kars *et al.* 2016, 163.

<sup>2638</sup> Theuws & Kars 2017, 463-466.

<sup>2639</sup> For a specific overview of consulted publications, see section 27.2 above.

<sup>2640</sup> Siegmund (1998, 126) mentions the first occurrence of multi-lined roulette stamps in the Lower Rhineland in conjunction with three-partite belt fittings, which, depending on whether referring to his own or the revised Franken AG chronology, corresponds to 610 or 580/90 respectively.

<sup>2641</sup> Legoux *et al.* 2009, 49-57.

<sup>2642</sup> Heymans 1977, pl. 6; Roosens *et al.* 1976, pl. 2; Heymans 1977, pl. 27; Aarts 2009, 83, 99; Dijkman 2003, 226; Braat 1956, 72; Aarts 2009, 12, 27; Siegmund 1998, pl. 215; Plum 2003, pl. 91.

<sup>2643</sup> Braat 1956, 73.

<sup>2644</sup> Theuws & Kars 2017, 124, 442.



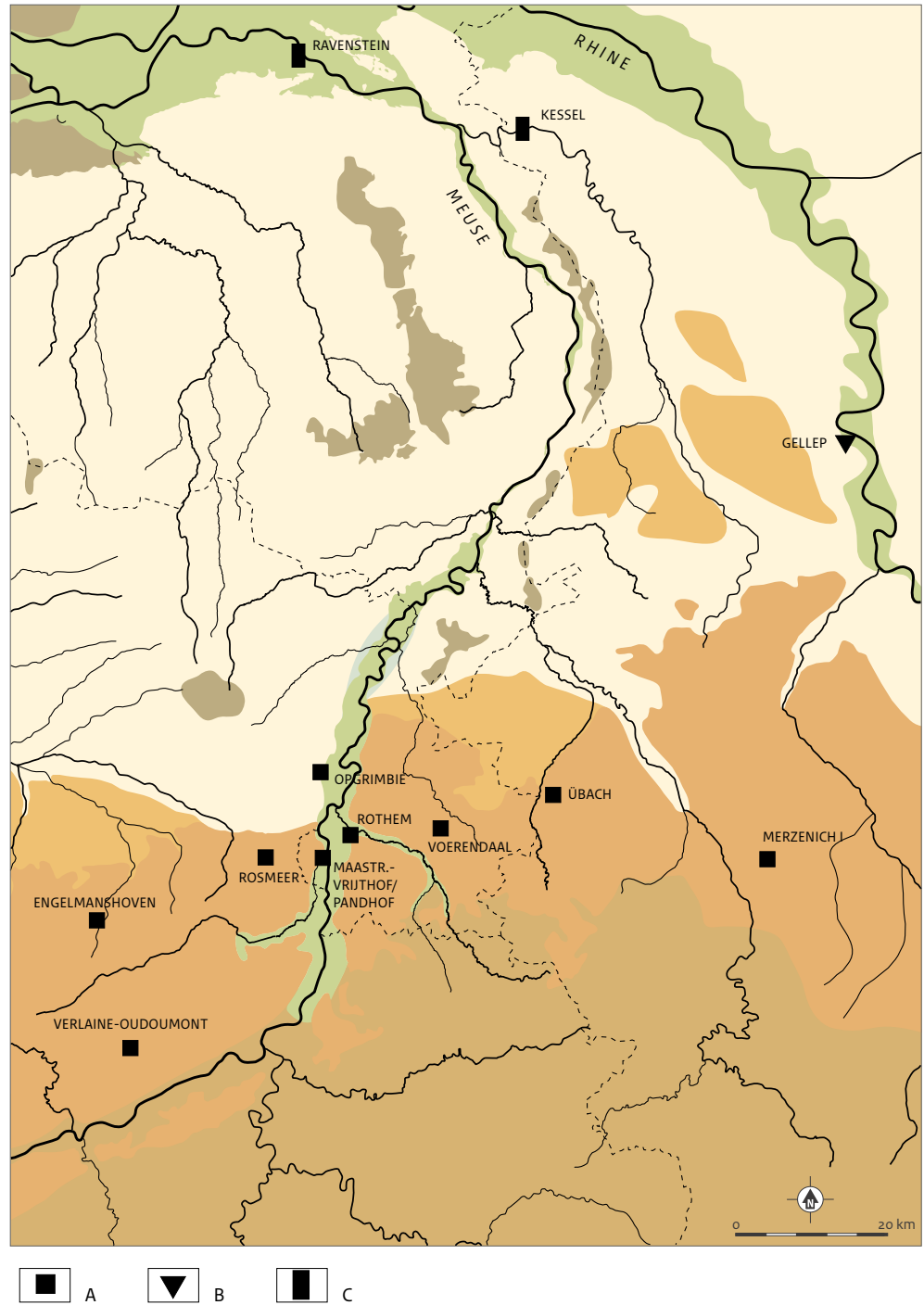


Fig. 27.4 The distribution of the decorative pattern MSL.2 and two variants. (source: M. Janssen & H.A. Hiddink)  
 A pattern MSL.2 (square roulette impressions); B pattern GLP.1 (triangular roulette impressions); C pattern NRS.1 (rectangular roulette impressions).

the ascription of the fabric of the Voerendaal example to Maastricht group 1. However, this type does not occur (unambiguously) in any of the Maastricht production contexts, nor is it known from any other production site.

*Pattern MSL.3 (259-1/52-2-21/10465)*

A specific Meuse valley pattern consisting of multi-lined roulette stamps alternating with undecorated zones, which is reviewed here in combination with a type definition for jugs KAN MSL.1/KWT S4.4.<sup>2645</sup> This decorative pattern is also known from the Meerveldhoven grave 24 find (FAG phase 7-8, AD 610-670/80) and once from the northern Ardennes in Hamoir grave 250, albeit on a different jug type.<sup>2646</sup> To summarize, a very limited number of comparable objects are known, and it is therefore hardly possible to date this pattern type in combination with the type definition for jugs KAN MSL.1/KWT S4.4 type. Based on the Meerveldhoven find, it seems to occur somewhere between AD 610-670/80, but we do not know whether it also occurs before or after this period.

## 27.5 Merovingian coarse ware ceramics

This section describes the Merovingian coarse ware ceramics. Objects with highly informative characteristics and objects that are almost (archaeologically) complete will be dealt with in a catalogue-like manner, while less complete or informative objects will only occasionally be referred to. Unlike the last section, which dealt with Merovingian fine ware ceramics, no section on decorations is presented here. This is because only two coarse ware decorated objects are present. The decorations of a carinated bowl (733-4/46-2-3; Fig. 27.5; Appendix XVI, Fig. 3) and an ovoid pot (20-1-61/2986; Fig. 27.6) are described with the objects themselves in the section on typological classification. Because the coarse ware sherds tend to be less informative regarding the dating of the sherds than is the case for the fine wares, some chronological overlap exists with the Late Roman material discussed in Chapter 26. One overarching group of material, referred to before and during the research process as ‘the black group’

(referencing the overall colour of the sherds), was presented there, although it could overlap with the Merovingian date range.<sup>2647</sup> Occasional references to objects belonging to this overarching group will nonetheless be made in the following text.

### 27.5.1 Fabrics

The Merovingian coarse ware fabrics have been grouped into ten categories, based solely on macroscopically observable inclusions in the clay matrix. No further subdivision into technical subgroups has been made. All assigned Merovingian coarse ware fabrics are shown in Appendix XV; an overview of the numbers per fabric and vessel type is given in Table 27.4.

*Mayen fabrics*

The Mayen wares for the Merovingian period have been categorized using the classification method presented by Redknapp.<sup>2648</sup> In stark contrast to the comparatively large number of Late Roman sherds, only three Mayen-provenance objects can possibly be dated to the Merovingian period (711-1/13-1-27; 514-8/20-3-59 and 20-1-61/2989). All three Merovingian objects belong to the Mayen MD-type wares.

Some other Mayen provenance objects straddle the boundary between the Late Roman and Merovingian periods. However, none of these sherds have typological characteristics to date them more precisely within the fourth to early sixth century AD.<sup>2649</sup> Sherds of Mayen provenance wares with a sharply defined date range after the second quarter of the sixth century are not present at the site, corresponding to the lack of Mayen imports in the Meuse valley from the same period up until the mid-seventh century AD.<sup>2650</sup>

*Maastricht group MSR1*

Unlike the fine ware ceramics, where half of the objects have a Maastricht provenance, only five fragments amongst the coarse wares have a fabric comparable to the Maastricht probes in terms of inclusions, density of inclusions, etc. Only fragment 27-2-42/5103 belongs to the first group. The fabric contains approximately 5% of ill-sorted angular to sub-angular sand grains of

<sup>2645</sup> This decorative pattern is known from other (non-jug) types in Northern France, see for example Legoux *et al.* (2009) type 388 and 390, as well as Rhineland jars (S-kru-2.22) dating to the late seventh/first half of the eighth century, see for example Müssemeier *et al.* (2003). In the Rhineland, it occurs on biconical pots as well and sparsely on jugs of other types (Siegmond 1998).

<sup>2646</sup> Verwers 1978, 280-281; Alénus-Lecerf 1975, pl. 63.

<sup>2647</sup> No instances of this group are known from any of the cemeteries and settlements used as reference sites here (cf. section 27.2), with the possible exception of one unverified occurrence at the Stein-Groote Bongerd cemetery (Kars *et al.* 2016, 223). Furthermore, no examples of this group are known to the author for any of the referenced sites in general, with the exception of Maastricht-Witmakersstraat (see section 27.5.2, rims of type 9e).

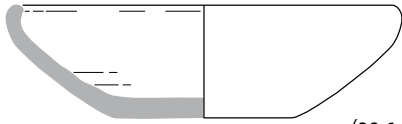
<sup>2648</sup> Redknapp 1999.

<sup>2649</sup> These objects are discussed in Chapter 26 and do not form part of the selection of Merovingian pottery studied here.

<sup>2650</sup> Van Wersch 2011/1, 355, 386; 2016, 135-136.

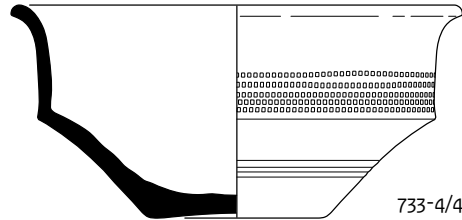


SHA S 1.11



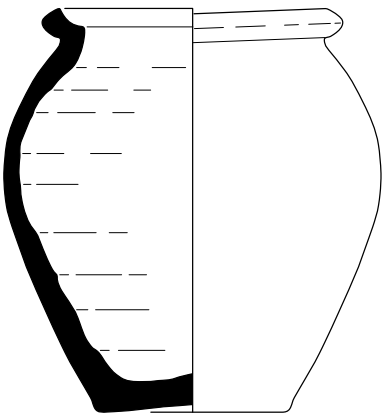
(20-1-61/2989)

SHA S 2.42



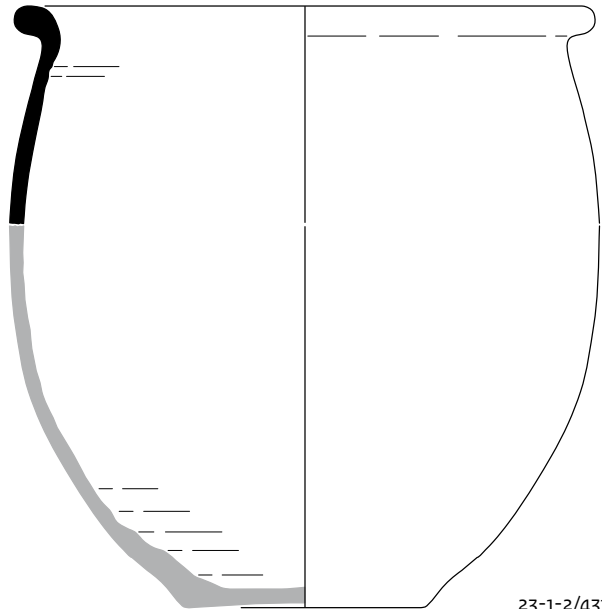
733-4/46-2-3

ALZEY 27



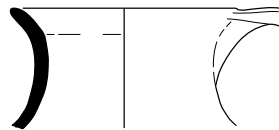
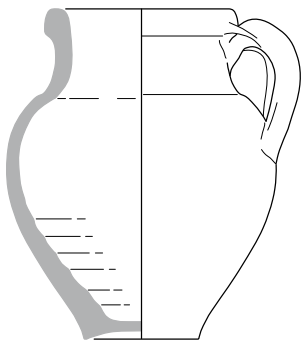
711-1/13-1-27

WWT



23-1-2/4314

KRU S 1.2/ALZEY 30



94-2-1/10477

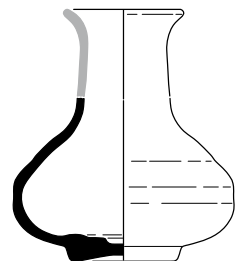


712-2/27-2-40



13-1-24/1361

BOTTLE



27-3-3/5128

Fig. 27.5 Voerendaal-Ten Hove. Vessel types/shapes in Merovingian coarse ware. Scale 1:3. (source: H.A. Hiddink & F. Horbach, S1.11 and KRU S1.2 after Pirling 1966, Typentafel 13, no. 154 and 168)

up to 3.0 mm in size, which (as quartz rich sand) have coloured white, dark reddish brown and dark grey in a reduced environment. A good match for the object's fabric is known from the Maastricht-Wyck kiln waster deposits, a specific example being find 1-VA4-95 from kiln 1.

#### *Maastricht group MSR2*

The second Maastricht-provenance group is attested for four Voerendaal fragments (108-1-4/9855, 94-2-1/10477, 94-3-2/10493 and 94-4-6/10589). The fabric contains five or possibly up to ten percent of well-sorted, rounded quartz rich sand of up to 1.0 mm, as well as larger, angular to sub-angular fragments that are dark grey in colour in a reduced environment and up to 2.0 mm in size. These larger fragments can be most easily identified where they protrude through the surface, although they are more easily recognizable and brownish in the only oxidized sherd belonging to this fabric (94-4-6/10589). A good match for this fabric is known from the Maastricht-Wyck kiln waster deposits, a specific example being find 1-VA4-6 from kiln 1.

#### *Unknown provenance group UPR1*

This fabric includes 24 objects at Voerendaal, but its provenance is unknown. It is characterized by a denser tempering than the Maastricht R2 fabric and, although the quartzitic sand fraction is comparable, coarser and more angular inclusions occur. There is a presence of 5 to 10% of angular black particles of up to 2.0 mm, which protrude through the surface (schists?).<sup>2651</sup> The resemblance of this fabric to the Maastricht R2 fabric could point to a Maastricht region provenance, which could not be attested, however, by macroscopic observation alone.

#### *Unknown provenance group UPR2*

This fabric occurs on 17 objects and is very reminiscent of UPR1 and MSR2, containing fewer and finer black particles as described for UPR1 and being slightly softer and more porous. It contains sporadic occurrences of yellowish cretaceous rock fragments of up to 1.0 mm in size, possibly pointing to a provenance in the Maastricht region.

#### *Unknown provenance group UPR3*

A gritty fabric, with around 15% of ill-sorted rounded and angular fragments of diverse colour of up to 2.0 mm, with isolated occurrences of larger quartz grit fragments of up to 3.0 mm. It occurs only once in the Voerendaal ensemble (13-1-24/1361).

#### *Unknown provenance group UPR4*

Very coarse fabric containing approximately 30% of ill-sorted, motley, sub-rounded through to angular sand, up to 4.0 mm in size. This fabric has been observed once (733-4/46-2-3/11322, same vessel as 46-2-1/11316). The tempering seems to vary throughout this vessel, the bottom part containing more gritty particles (on both the inside and outside).

#### *Unknown provenance group UPR5*

Heterogeneous group of coarse to semi-coarse smoked wares. The objects have a fairly bright fabric, buff or light grey, and a smoked surface that extends several millimetres inwards. This group consists of two objects only (23-1-7/4332 and 24-1-17/4598).

#### *Unknown provenance group UPR6*

Very densely tempered sub-coarse fabric, containing 30% or more of colourless to dark grey sand particles no larger than 0.5 mm. Occasional occurrence of larger quartzite grit particles below 2.0 mm and round or oval plant-like cavities. This fabric occurs only once in the Voerendaal ensemble (27-3-3/5128). The fabric might be similar or identical to one of the Drove finds, although it is also an exception among the finds from this site.<sup>2652</sup>

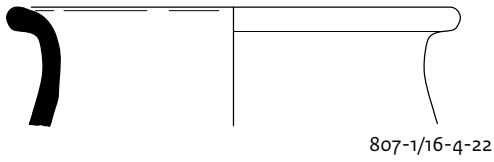
#### *Other fabrics*

There is a large variation in fabrics among the other sherds. Some could be classified as belonging to one of the above-mentioned groups, but no definite match could be obtained macroscopically. All fabrics of sharply datable fragments have been described above, and this heterogeneous classification of 'other fabrics' does not contain any groups with a significant number of fragments. Notably, fragments with a fabric akin to the Maastricht-Derlon coarse ware production, dated to the second quarter of the

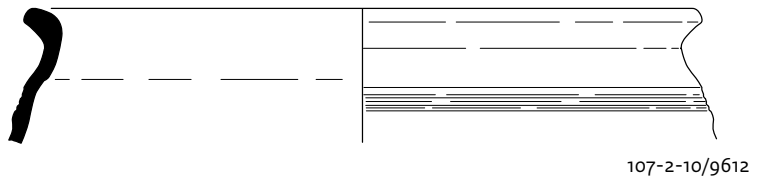
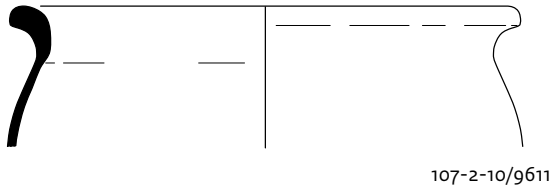
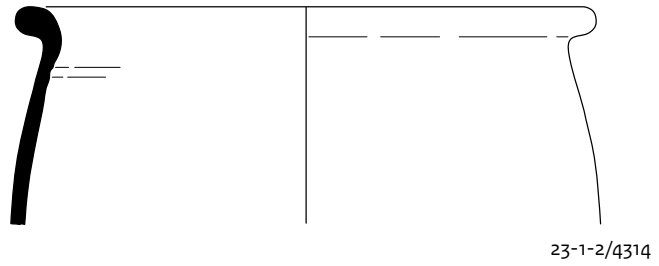
<sup>2651</sup> This has not been verified.

<sup>2652</sup> NW 2012/0081, St. 1-1-51.

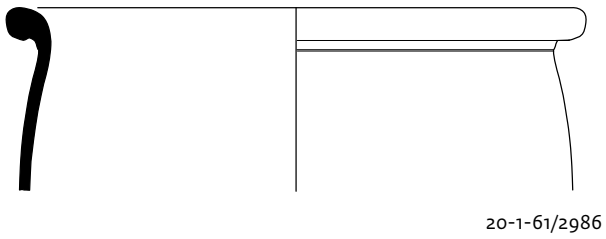
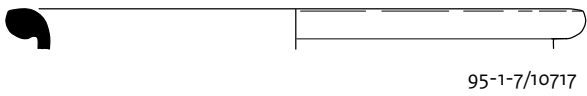
rim 2a



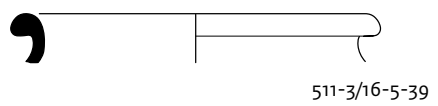
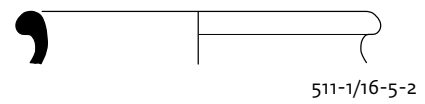
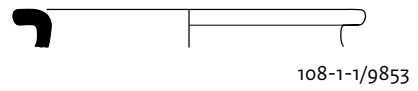
rim 3c



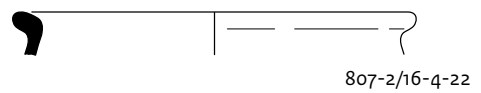
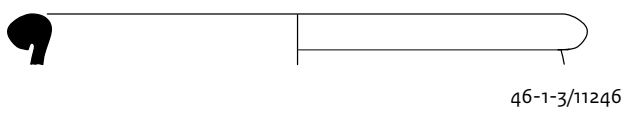
rim 5b



rim 5e



rim 5d



rim 5f

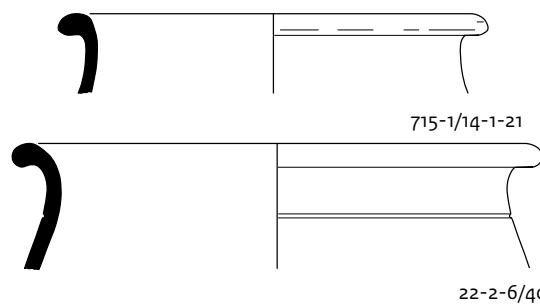


Fig. 27.6 Voerendaal-Ten Hove. Examples of rim types of Merovingian coarse ovoid and globular pots. Scale 1:3.

**Table 27.4. Voerendaal-Ten Hove. Number of coarse ware Merovingian objects by overall shape and provenance / fabric type.**

Shape Provenance/ fabric	Bowl	W IX	Other WWT	Jar, jug, bottle	Indet	Total subgroup	Total group
Mayen	1				1		2
Maastricht MSR1			1			1	
Maastricht MSR 2			2	1	1	4	
<b>Meuse valley total</b>			<b>3</b>	<b>1</b>	<b>1</b>		<b>5</b>
Unknown UPR1		1	8		16	25	
Unknown UPR2			3		14	17	
Unknown UPR3				1		1	
Unknown UPR4	1					1	
Unknown UPR5			2			2	
Unknown UPR6				1		1	
<b>Unknown total</b>	<b>1</b>	<b>1</b>	<b>12</b>	<b>2</b>	<b>30</b>		<b>46</b>
Other			12	1	79		94
<b>Total shape</b>	<b>2</b>	<b>1</b>	<b>28</b>	<b>4</b>	<b>111</b>		<b>147</b>

The fragments described as 'indet' comprise a group of objects from which only wall and base sherds were retrieved and that probably represent additional pots of 'Wölbwand'-type (WWT), but may include a few jugs or other shapes.

fifth century, do not occur.<sup>2653</sup> Some objects show a 'Brunssum-Schinveld-like' temper – ill-sorted, coarse, multi-coloured sand – in conjunction with a clay matrix that is blackish brown in colour, soft and porous, probably owing to the use of unripened clay with a high organic content (most of these in 733-1/2/46-1-2/11243). These objects could be related to group UPR4.

### 27.5.2 Typological classification

For the purpose of a morphological description of the coarse ware vessels present, precedence has been given to a typological approach over a description of isolated morphological characteristics, for all objects with the exception of the ovoid and globular pots. To enable a comparison with other regions, all types have been classified using the Lower Rhineland and northern France typologies, with the exception of the globular and ovoid pots.<sup>2654</sup> Because of their irregular appearance in cemeteries, most globular and ovoid pot developments are not covered by the main burial chronologies, as mentioned in Section 27.2. The sections

dealing with globular and ovoid pots, collectively referred to as 'Wölbwand-type' pots, focus instead on the isolated morphological characteristics of the pots.

#### *Carinated bowl SHA S2.42*

Only one coarse ware carinated bowl is present among the studied finds (733-4/46-2-3/11322 = 46-2-1/11316; Fig. 27.5; Appendix XVI, fig. 3). Its upper segment is decorated with multi-lined, rectangular roulette stamps. For the morphological type and decoration combined, no parallels are known from the Meuse valley, Lower Rhineland, northern France or the Dutch river area and the sandy soils of the MDS area.<sup>2655</sup> From a solely morphological perspective, this type occurs rarely in the vicinity of Voerendaal, in the cemeteries of Verlaine-Jointy grave 73 (FAG 5: 565-580/90) and Übach (stray find).<sup>2656</sup> In the Lower Rhineland, bowls of this type occur during phase 5-9 (AD 565-710).<sup>2657</sup> Given the lack of known parallels, this object cannot be more sharply dated than the date range given for the Lower Rhineland.

<sup>2653</sup> Dijkman 1992.

<sup>2654</sup> Siegmund 1998; Nieveler & Siegmund 1999; Müssemeier *et al.* 2003; Legoux *et al.* 2009.

<sup>2655</sup> Instances may occur but have not been found in any of the reference works used.

<sup>2656</sup> Destexhe 2003, 115-117; Siegmund 1998, pl. 216.

<sup>2657</sup> Müssemeier *et al.* 2003, 68.

*Bowl SHA S1.11*

A single rim fragment of another type of coarse ware bowl has been recovered (20-1-61/2989; for the type, see Fig 27.5).<sup>2658</sup> Bowls of this type are almost absent in the Meuse valley cemeteries; a single occurrence is known from Verlainé-Oudoumont grave 147, which might date to FAG phase 5 or 6 (565-610/20).<sup>2659</sup> According to the Franken AG, this type occurs in Rhineland cemeteries in phase 3-5 (460/80-580/90).<sup>2660</sup> Given the deficiency of known parallels, this object could not be more sharply dated than the date range given for the Lower Rhineland.

*Ovoid pots Alzey 27*

A characteristic type of the Late Roman period, the coarse ware pot Alzey 27 was still being produced in the early Merovingian period. Among the finds from Voerendaal, there are some fragments possibly belonging to the latter period, although this is not entirely certain. Item 108-2-10/9857 in a Rhineland/Eifel fabric is an example (Fig. 26.9). Find 711-1/13-1-27, a jar with a Brulet type L rim, is more likely to be Early Medieval.<sup>2661</sup> According to Brulet, this rim type dates from the third quarter of the fourth century onwards. Production probably started later, with our jar dating to either the second half of the fifth century (cf. Chapter 26, first transitional

period) or the sixth century AD.<sup>2662</sup> Because of the possible date in the Late Roman period, the jar is included in Figure 27.5 but not in 27.8.

*Ovoid and globular pots of 'Wölbwand' type*

All fragments that belong to closed shapes – other than the Alzey 27 or various jugs – have been grouped into this category (Fig. 27.5-6). As a result, a slight overrepresentation of wall and base fragments may occur in relation to the number of rim sherds.

All examples at Voerendaal have been recovered in a fragmented and incomplete state. A distinction within the group between ovoid-shaped and more globular forms, as has been done for the Maastricht-Vrijthof, Sittard-Kemperkoul, Obbicht-Oude Molen and Stein-Groote Bongerd cemeteries, does not therefore make sense for the material at hand. Accordingly, emphasis has been placed upon morphological characteristics that might help to define the date range in which vessels with that particular morphological characteristic have circulated. Morphological characteristics that have been considered are the shape of the lower segment wall, the base and the rim. Table 27.5 provides an overview of the characteristics and date ranges mentioned in the text.

A description of the lower segment wall shape has proven useful in defining the date range of

**Table 27.5. Voerendaal-Ten Hove. Characteristics of course ware ovoid and globular pots and their dates.**

Characteristics	Date (years AD)
Steep upper wall	670/680-750 (Rhineland date)
Flat base	until 775/850 (Giertz 1996)
Flat base, protrusion	Merovingian / early Carolingian
Rim 2a	Merovingian / Carolingian
Rim 3c	Roman / Merovingian
Rim 5b	Merovingian / eighth century
Rim 5b, grooves	600-800
Rim 5d	510/580-600/650
Rim 5e	500/550-650/800
Rim 5f	580/620-710
Rim 7b	Merovingian
Rim 9e	390/410-960
Rim 9f	500-700

<sup>2658</sup> While only a fragment of the rim has been preserved, no distinction can be made between the Pirling 168 or 172 types (Pirling 1966, *Typentafel* 13-14), that have been grouped together by Siegmund into the bowl/dish SHA S1.11 (1998, 154).

<sup>2659</sup> Destexhe 2000, 160-161; the given dating is based solely on the occurrence of a glass bowl gla S1.5.

<sup>2660</sup> Müssemeier *et al.* 2003, 67.

<sup>2661</sup> Brulet 2010, 415-418.

<sup>2662</sup> Janssen 2019a, 59-61; for examples in Baden-Württemberg: Gross 1992.

coarse ware pots of the *Wölbwand* type (WWT).<sup>2663</sup> However, the material under review is too fragmented and incomplete in most instances to determine the wall shape of the pots the sherds were part of. For the Trier region and the Lower Rhineland, concave-convex or 'S-shaped' profiles below the maximum diameter of the vessel have been regarded as relatively early (late fifth-first quarter/first half of the sixth century). For the Meuse valley region, this wall shape certainly occurred during the early Merovingian period. However, as the Maastricht-Vrijthof grave 36 example or Huy-Pétite find 29 show, these wall shapes seem likely to have (still?) occurred in the Meuse valley during the seventh century.<sup>2664</sup> This corresponds to the date range of the LPV types 404 and 405, which exhibited this specific wall shape throughout the Merovingian period, from the middle of the fifth up until the early eighth century.<sup>2665</sup> During the seventh century, *Wölbwand*-type vessels were made in which the lower (convex) segment connects with the base at an angle greater than about 130° (with respect to the horizontal plane). In this case, the overall shape of the objects is more globular than is the case for earlier (or even contemporary) examples. At Voerendaal, only two objects fit into this category with certainty (23-1-7/4332 and 24-1-17/4598). As this short overview shows, the absence of a meaningful chronological framework for the region, makes it impossible at present to date any of the fragments more accurately based on the lower segment wall shape, with the exception of the fragments just mentioned.

The upper segment wall shape provides some pointers for identifying objects of the Dorestad W IX type, which are steep-walled and correspond to some degree to the WWT S2.2x types. One object that is probably of the Dorestad W IX-type is present (807-1/16-4-22/11798). In accordance with the Lower Rhineland and Dorestad typologies it most probably dates to the last decades of the seventh or the first half of the eighth century.<sup>2666</sup> For the lower Rhineland chronology, the shape of the base has also been a key factor in dividing *Wölbwand*-type pots into an early and a late component.<sup>2667</sup> Most notably, lenticular bases are

a characteristic occurring in the Rhineland from c. AD 670 onwards. None of the Voerendaal fragments show lenticular bases: all are flat. Flat bases are known for the Meuse valley up until Huy-Ruelle des Coucous phase IIb (late eighth-first half of the ninth century).<sup>2668</sup> Some of these flat bases show a protrusion, making it somewhat wider than the place where it connects with the wall (733-5/46-2-1/11315, 68-1-2/6217, 68-1-1/6851). These bases are somewhat reminiscent of the footplates occurring on some fine ware objects during the seventh century and of protruding bases of eighth-century Carolingian grey wares, although the Voerendaal examples are formed much more carelessly than is usually the case for the fine and Carolingian grey ware objects. They are not known (as yet) from any of the Huy, Drove, Maastricht-Wyck or Lanakerveld kiln waster deposits (although they may occur nonetheless); they might occur in Kessel and certainly do occur in the kiln waster deposit of Niedermerz II.<sup>2669</sup> This kind of finishing is also known from the Verlaine-Oudoumont cemetery on two *Wölbwand*-type pots from graves 82 and 129, both dating to FAG phase 4 or 5 (AD 510-580/90).<sup>2670</sup> As also noted for the lower segment wall shapes, the absence of a meaningful chronological framework for the reference region makes it impossible at present to more accurately date any of the fragments solely on the base shape.

Another line of inquiry, and theoretically the most promising, is an analysis of the rim shapes. As can be noted for the production contexts of Kessel-Hout, Drove, Maastricht-Wyck, Lanakerveld, Huy-Batta, Huy-St. Jacques and Huy-Rue des Augustins, there is a large intra-production rim shape variation and the transition between different classifiable rim shapes is fluent.<sup>2671</sup> With only ten contextually datable objects in the referenced cemeteries in the Meuse valley region, comparison possibilities with respect to the cemeteries are sparse. For the Lower Rhineland chronologies it has been attested that deposition of coarse ware ovoid and globular pots in cemeteries is rare, especially during FAG phase 6-8 (AD 580/90-670/80). Therefore, the Lower Rhineland typology is not suitable for dating this settlement context

<sup>2663</sup> Siegmund 1998, 136-137; Böhner 1958, 53-56.

<sup>2664</sup> Theuws & Kars 2017, 427; Docquier & Bit 1986, 60; Obviously, the sparse number of contextually datable coarse ware examples in the region under review for which the shape of the lower wall segment is published does not permit any conclusions at all. Both mentioned examples might be Merovingian 'Altstücke' (old/antique pieces) in their respective contexts. However, given the lack of examples and hence the inability to form a rigid chronological framework for these characteristics, these two objects could suggest that the Lower Rhineland and Trier region chronological references are not applicable.

<sup>2665</sup> Legoux *et al.* 2009, 48 and 57.

<sup>2666</sup> Müsseseimer *et al.* 2003, 64; De Koning 2012, 175.

<sup>2667</sup> Siegmund 1998, 136-143.

<sup>2668</sup> Giertz 1996, 39.

<sup>2669</sup> Hupperetz 1999, 12; Plum 2003, pl. 154.

<sup>2670</sup> Destexhe 2000, 109 and 146.

<sup>2671</sup> Hupperetz 1999, 12; NW 2012/0081; Van Wersch 2011/2, 661-713; 727-729; 217-220; 236-239; Willems 1977a, 137-139.

material. Each of the rim shapes present will be discussed below. The different rim types can be found in Figure 27.6-7. As already hinted, these isolated instances or 'types' should be regarded as part of a broad spectrum of rim shape variance. Different parts of this spectrum occur simultaneously in different conjunctions throughout the discussed period, whereas some labelled parts of the rim shape variance spectrum that have been emphasized here might prove to be more easily perceived as a coherent group.

#### *Rim shape 2a*

This shape occurs only once in the Voerendaal ensemble (Fig. 27.6). It is a simple, non-thickened, outward-folded rim. The maximum diameter of the rim is reached at the upper edge. It is known from the production sites of Maastricht-Wyck, Maastricht-Lanakerveld, Huy-Batta, Huy-St. Jacques, Huy-Rue des Augustins and Drove.<sup>2672</sup> It is an unspecific type that occurs morphologically during the Merovingian period and also the Carolingian period, as attested at Köln-Heumarkt, where it is known as rim type R17.<sup>2673</sup> To summarize, finds of this type cannot be dated using morphological rim-type characteristics alone.

#### *Rim shape 3c*

This occurs four times among the coarse ware ovoid or globular pots of the Voerendaal ensemble (Fig. 27.6). It is a thickened, outward-folded rim, with some variations in the angle at which it is folded. It is known from the production sites of Maastricht-Wyck and Lanakerveld, Huy-Batta, Huy-St. Jacques and Huy-Rue des Augustins.<sup>2674</sup> It is an unspecific type, a form made during both the Roman and the Merovingian periods.<sup>2675</sup> It seems to be absent in Carolingian contexts of the Meuse-Rhine region. To summarize, finds of this type cannot be dated using morphological rim-type characteristics alone.

#### *Rim shape 5b*

This is found three times in the Voerendaal ensemble (Fig. 27.6). It is an outward folded, rolled type, which forms a morphological continuum with other rim shapes of the number 5 series. One of the examples is decorated with a

double groove just below the rim, without a bulge in between (20-1-61/2986). These rim shapes are known for ovoid pots in all Merovingian Meuse valley production contexts, with the exception of Niedermerz II. The latest known occurrence is the Huy-ISI settlement, where it occurs in the first Carolingian deposits that have been dated to the eighth century.<sup>2676</sup> This example is decorated with grooves just below the rim, like find 20-1-61/2986, as are several examples from the Huy-Pétite settlement, which date to the seventh century.<sup>2677</sup> Summarizing, sherds of this type can at present be dated no more precisely than from the Merovingian period proper into the eighth century. However, in combination with grooves below the rim, a date in the seventh and probably eighth century seems plausible.

#### *Rim shape 5d*

Rim 5d occurs only once in the Voerendaal ensemble (Fig. 27.6). These rim shapes are known from the kiln waster deposits of Huy-Batta, Maastricht-Wyck and, further afield, Kardorf.<sup>2678</sup> It is present at the settlement sites of Huy-ISI (single occurrence) and Huy-Pétite (single occurrence).<sup>2679</sup> This rim shape is part of a continuum of outward-folded rims that leave either more or less space between the folded edge and the upper wall. The particular 5d shape fits well into the second half of the sixth to the turn of the seventh century. Caution should be taken, however, as there is a chronological hiatus between the deposits of the second quarter of the fifth century at Maastricht-Derlon and the later sixth-century ones at Huy-Batta and Maastricht-Wyck.

#### *Rim shape 5e*

This shape occurs eight times in the Voerendaal ensemble (Fig. 27.6). It is known from the Meuse valley kiln waster deposits of Maastricht-Wyck and Lanakerveld, as well as Huy-Batta.<sup>2680</sup> Although it is absent in the published Carolingian Meuse valley deposits, as well as the deposits from the later seventh century; it occurs at Köln-Heumarkt until the end of the eighth century, where it is known as rim type R3a.<sup>2681</sup> Summarizing, for the moment there are no good arguments to date rim sherds with this particular

<sup>2672</sup> Van Wersch 2011/2, 664-697; 727-728; 217-219; 236; Willems 1977a, 139; NW 2012/0081.

<sup>2673</sup> Höltken 2003, 528.

<sup>2674</sup> Van Wersch 2011/2, 692-693; 727; 217-219; 236; Willems 1977a, 137.

<sup>2675</sup> As for example in cooking pots VV 463, 466 and 467 (Vanvinckenroye 1991, 108-109); Höltken 2003, 528.

<sup>2676</sup> Van Wersch 2011/2, 300-303; it should be noted that it is not known whether this particular sherd might be residual. A lack of (published) eighth-century contexts for the Meuse valley makes it difficult to ascertain whether this type is common in that period. For this debate, see Theuvs 2007.

<sup>2677</sup> Docquier & Bit 1986.

<sup>2678</sup> Van Wersch 2011/2, 218-219; 662-668; 679-693; Müssemeier & Schneider 2012, 197.

<sup>2679</sup> Van Wersch 2011/2, 299; Docquier & Bit 1986, 62.

<sup>2680</sup> Van Wersch 2011/2, 662-693; 727; 219.

<sup>2681</sup> Höltken 2003, 518, 525 and 528.

shape any more precisely than to somewhere in the Merovingian period, probably from the (second half? of the) sixth until the late eighth century.

#### *Rim shape 5f*

Rim 5f is found only once among the coarse ware ovoid pots (Fig. 27.6). It is a more horizontal example of the continuum mentioned for the 5d/e rim shapes. Parallels are known from Huy-Rue des Augustins, Huy-Batta and Huy-St. Jacques and it is absent in the other production sites in the Meuse valley.<sup>2682</sup> It is not present in the Carolingian deposits of the Meuse valley region or Köln-Heumarkt.<sup>2683</sup> Based on this observation, it is probable that this type postdates the end of the sixth century and belongs to the seventh century in general.

#### *Rim shape 7b*

There are seven examples of this rim type in Voerendaal (Fig. 27.7). It is a more angular example of rim shape variants 5b and 5e. This rim shape has not been recorded at Kessel-Hout, Huy-St. Jacques, Huy-Batta or Huy-Rue des Augustins. No good, definite examples are known from Maastricht-Wyck or Lanakerveld, although isolated instances could be of this type. It does not occur at the settlements of Huy-Pétite or Huy-ISI. However, it is present in two Meuse valley region graves, Verlaine-Oudoumont grave 82 (FAG phase 4-5, AD 510/25-580/90) and Maastricht-Vrijthof grave 36 (possibly phase 7-8, AD 610/20-670/80).<sup>2684</sup> Also, it is the only coarse ware rim type known from the Niedermerz II kiln waster deposit, which can only be dated with difficulty but which could arguably belong to the second or third quarter of the sixth century, based on the isolated stamp decorations.<sup>2685</sup> Summarizing, for the moment there are no good arguments to date rim sherds with this particular shape any more precisely than to somewhere in the Merovingian period.<sup>2686</sup>

#### *Rim shape 9e*

Rim shape 9e is represented by eight finds (Fig. 27.7). It is known from the production contexts of Drove, Maastricht-Wyck and Maastricht-Lanakerveld. From Maastricht-Wyck

it is clear that this rim type is part of a contemporaneous continuum of rim shapes, a large portion of which tend towards an early sickle shape. It is remarkable that only a small proportion of this continuum is present at the Voerendaal site. Known instances of this type include Maastricht-Witmakersstraat, where it occurs in a black, coarse quartz grit-tempered fabric corresponding to handmade wares that have been contextually dated to the decades around AD 400: the rim sherd itself has also been dated to that time span.<sup>2687</sup> Another example is found in the cemetery of Verlaine-Oudoumont, grave 177 (FAG phase 5, AD 565-580/90). At the settlement of Huy-ISI, it occurs in the first Merovingian settlement phase of that site, dated to the first half of the seventh century.<sup>2688</sup> For the second half of the seventh and first half of the eighth century, no examples are known from the Meuse valley region. The lack of examples from the second half of the seventh century in particular seems to suggest that this rim type was not in vogue during this period. Then, from the second half of the eighth century or the first half of the ninth, it occurs again at Huy-Ruelle des Coucous.<sup>2689</sup> At Köln-Heumarkt, where this type goes by the name of R11/R12, it became more common from AD 825 to the middle of the tenth century, although it did not disappear altogether from Merovingian times onwards.<sup>2690</sup> Summarizing, finds of this type cannot be dated using morphological rim-type characteristics alone.

#### *Rim shape 9f*

This rim is represented once in the Voerendaal ensemble (Fig. 27.7). It is known only from the Huy-Batta production site.<sup>2691</sup> It may date to the sixth or seventh century AD.

#### *Various forms*

Two coarse ware rim sherds could derive from jars kru S1.2/Alzey 30 (rim type 5b; Fig. 27.5). Although the attribution of find 712-2/27-2-40/5100 to this type is not certain, given the small size of the sherd, the attribution of find 13-1-24/1361 is solid. It has a long neck and below the neck the attachment of the upper body shows a stark bending outwards of the wall. Jars of this type are unknown from the Meuse valley production sites, settlements and

<sup>2682</sup> Willems 1977a, 137-138; Van Wersch 2011/2, 218; 236.

<sup>2683</sup> Giertz 1996; Van Wersch 2011/2, 300-302; Höltken 2003.

<sup>2684</sup> Destexhe 2000, 109; Theuvs & Kars 2017, 427.

<sup>2685</sup> Plum 2003, pl. 154.

Obviously, the Rhineland dating for isolated stamp-decorated objects contradicts Meuse valley dates for, for example, the Lanakerveld kiln waster deposit, which contains isolated stamp decorations but has been dated to the seventh century, cf. Van Wersch 2011/2, 725 and 735.

<sup>2686</sup> For the region under review.

<sup>2687</sup> 89.MAWT.12-14, find 1-5-19; caution with the use of this date is in order as this excavation has not been examined in any detail and, as far as can be determined, no contextual dating of this sherd has been obtained.

<sup>2688</sup> Van Wersch 2011/2, 291-293, 302.

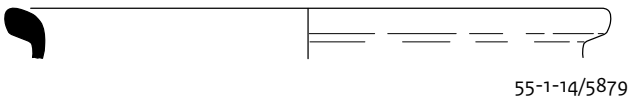
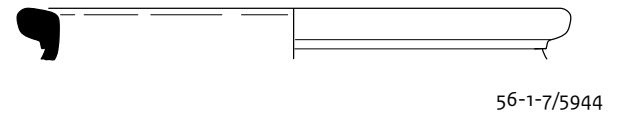
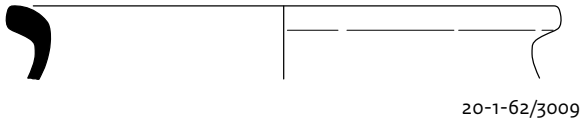
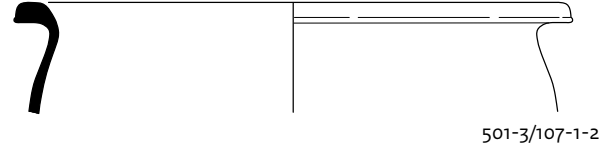
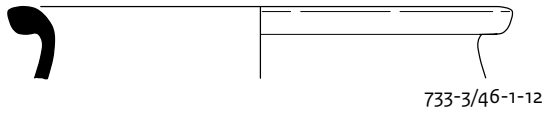
<sup>2689</sup> Giertz 1996, fig. 2, no. 15

<sup>2690</sup> Höltken 2003, 518, 528.

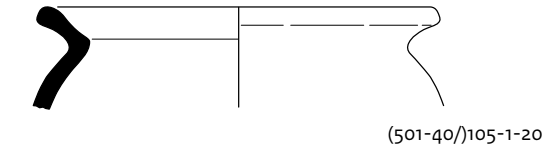
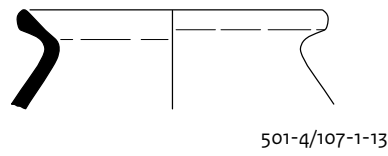
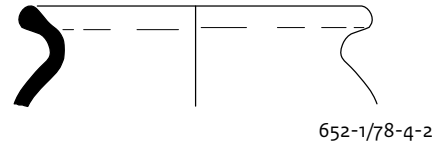
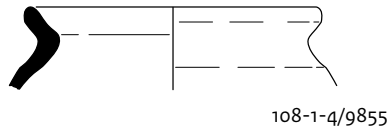
<sup>2691</sup> Van Wersch 2011/2, 218.



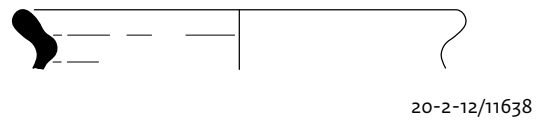
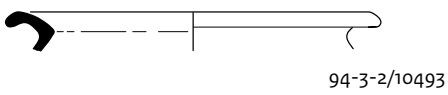
rim 7b



rim ge



rim gf



bases

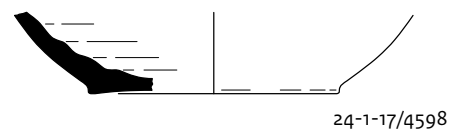
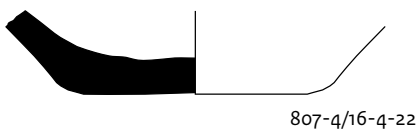
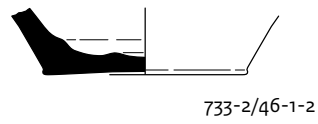
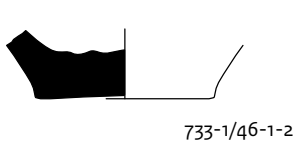


Fig. 27.7 Voerendaal-Ten Hove. Examples of rim types of Merovingian coarse ovoid and globular pots, cont.; as well as a sample of bases. Scale 1:3.

cemeteries, but have been dated in the Lower Rhineland to FAG phase 1-3 (AD 400-510/25). Because these jars could in principle date to the Late Roman period, they are not included in Table 27.7 and Figure 27.8. Within the coarse ware ensemble studied, some morphological characteristics point with certainty to the presence of jugs. Coarse ware jugs are the most common type of coarse ware ceramics that can be identified in the cemeteries. In settlement contexts, however, they are far rarer than the more common cooking pots of the *Wölbwand* type. Within the Voerendaal ensemble, one fragment shows characteristics of deriving from a jug (94-2-1/10477; Fig 27.5). As the type of jug cannot be reconstructed, it also cannot be dated properly and is not included in Figure 27.8. A single bottle has been identified in the ensemble (27-3-3/5128; Fig. 27.5; Appendix XVI, fig. 3). No parallels are known for the particular shape of the body and the shape of the neck is obviously unknown. Although mortaria in the broad sense of flanged bowls are present in both fine and coarse wares in the kiln waster deposits of Huy-Batta, Huy-Rue des Augustins, Maastricht-Wyck and Drove, as well as in the settlements of Huy-Pétite and Maastricht-Witmakersstraat and the Maastricht-Lage Kanaaldijk site, this overarching type is not known from other Merovingian settlement contexts in the vicinity of Voerendaal or from Ten Hove itself.<sup>2692</sup> It is absent altogether in the Lower Rhineland, Meuse valley, northern Ardennes and Hesbaye cemeteries.<sup>2693</sup>

## 27.6 Chronological and spatial distribution

### *Chronology*

Different vessels found at Ten Hove possibly date to what was called the 'second transitional phase' (c. AD 450-525) in the chapter on Late Roman pottery, but for most this cannot be proven.<sup>2694</sup> It concerns, for example, some vessels of 'Roman' coarse-walled types (Alzey 27, 30), *Wölbwandtopf*-like jars and pottery in fabrics of unknown provenance. A few vessels that can be dated with certainty – such as like biconical pots FAG 1A/LPV 386 show that there was

habitation at the site from at least around AD 500 onwards (Fig. 27.8). From this time on, the evidence for activity at the site is abundant up until the late seventh century. Obvious examples of eighth-century to Carolingian wares, either as Rhenish or Mosane imports, have not been identified. There appears to have been no regular and continuous habitation at the site. Two dozen vessels are included in Figure 27.8, although half of these still have a considerable date range.<sup>2695</sup> However, the vessels produced (or deposited) during a shorter period cover the entire sixth and most of the seventh century AD at least. Habitation seems to have been regular and continuous for this time span, but this is far from certain for the period after AD 700, certainly on the basis of the pottery alone.

### *Spatial distribution*

The distribution of the Early Medieval pottery is shown in Figure 27.9. Only the locations of finds, grouped by structure or find number, are given and the number of vessels, sherds and weight are ignored, to avoid giving a false impression of clusters or a concentration of activities. If the weight of Early Medieval ceramics, for instance, was expressed by the size of the dots, sunken hut 501 in trench 107 (at least 310 g), pit 711 in trench 13 (900 g, comprising just 711-1) or pit 733 in trench 46 (at least 491 g) would stand out through mere 'coincidence'.

The general distribution shows most finds in the southern part of the excavation, with the best preservation due to the accumulation of soil rather than erosion and because of the targeted search for finds.<sup>2696</sup> In this respect the distribution is similar to that of the pottery that could belong to either the (end of the) Late Roman period or the Early Middle Ages. The distribution is also more or less the same as that of the material that can be attributed with certainty to the Late Roman period. Of course, there is one Early Medieval find cluster proper, that of the finds and graves in trench 11 and 17. There is also only one other area that stands out: that of trench 46 and 52 where building 259 and pit 733 and 735 are located. No Late Roman pottery is found in this area.

No chronological subdivisions can be made in the southern strip along the Steinweg because

<sup>2692</sup> Willems 1977a, 139, pl. 4-4 and 4-5; Dijkman 1993, fig. 3-2; Van Wersch 2006, 35, fig. 6; Van Wersch 2011/2, 634; NW 2012/0081; Docquier & Bit 1986, 59, pl. 2, 16/18; 89. MAWT.12-14, find 1-5-14; Hulst 1995, fig. 3.

<sup>2693</sup> Janssen 2011, 41; 2015, 41. Occurrences in Hamoir and Oudoumont concern reutilizations of (late) Roman objects; Van Wersch 2011/2, 476 and 535.

<sup>2694</sup> Section 26.6.

<sup>2695</sup> Here the association with other finds in the grave context is ignored; cf. fig. 13.8.

<sup>2696</sup> Cf. section 5.2.

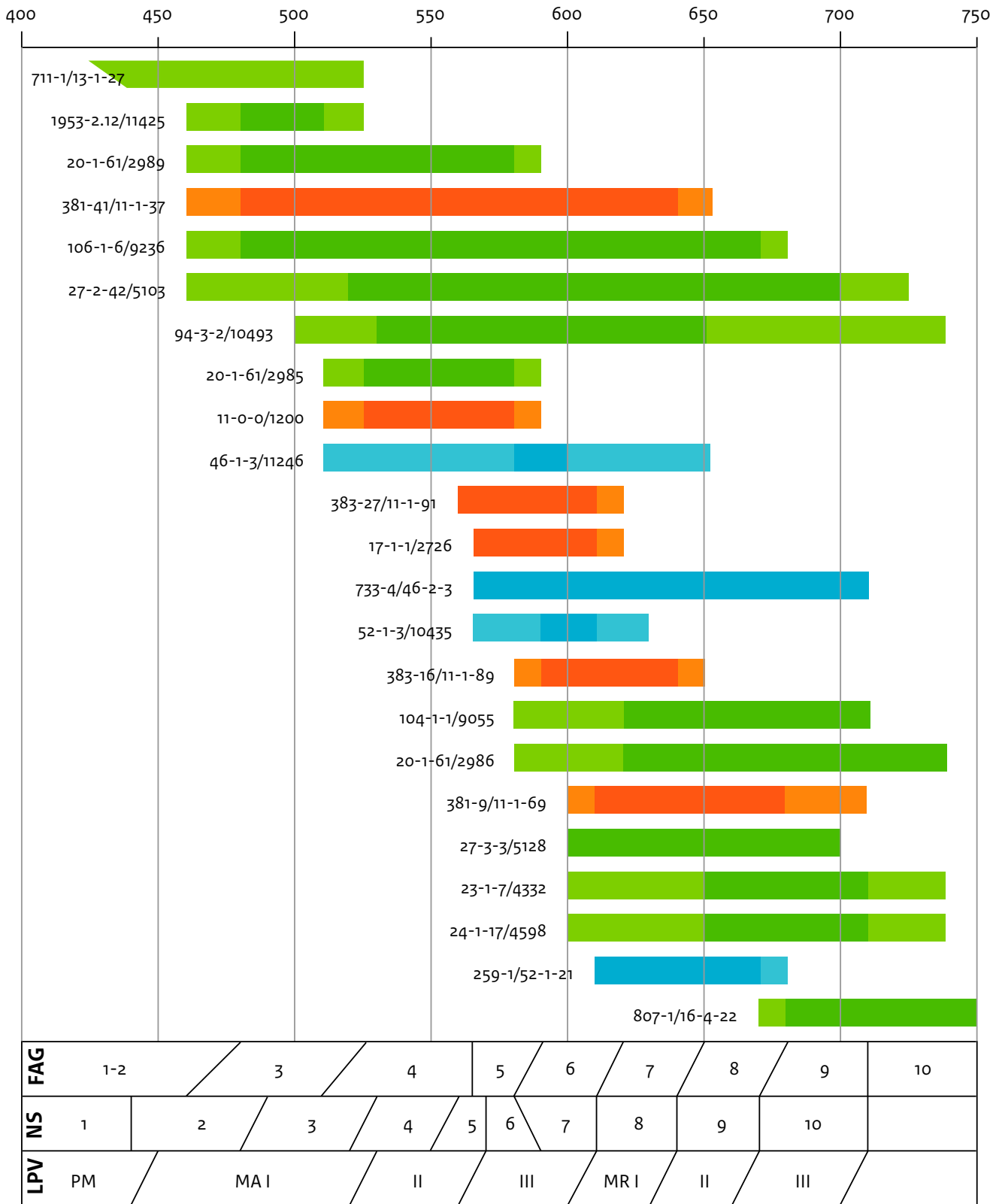


Fig. 27.8 Voerendaal-Ten Hove. The chronological ranges of the highly informative objects in table 27.6 and 7. Orange/red cemetery trench 11/17; blue finds from trench 46/52; green rest.

the number of 'precisely' dated vessels or sherds is simply too small (Table 27.6-7; Fig. 27.9).

Only a few objects can be attributed to the Early Merovingian period – with a date of AD 460/480-510/525 – and these are found both in the west (the KWT 1953-2.12 in trench 107) and the east

(jar Alzey 27 in pit 711). Although the later objects (excluding grave finds), dating after c. AD 580/590, are all found further east, except perhaps for one in trench 101,<sup>2697</sup> this is perhaps not very significant. In any case, most (possible) Early Medieval pottery was found in the east

**Table 27.6. Voerendaal-Ten Hove. Fine ware Merovingian objects with highly informative characteristics.**

Find	Form / type	Fabric	Decoration	Date (yr AD)
1953-2.12/11425	KWT FAG 1A / LPV 386	indet	pattern NS.5	460/480-510/525
381-41/11-1-37	KWT	Maastricht F2	indet	460/480-640/650
381-9/11-1-69	KWT FAG 5C / LPV 396	indet	pattern NS.4	585/610-640/680
383-27/11-1-91	KWT FAG 3A	Maastricht F2	pattern NS.1	560/580-580/610
383-16/11-1-111	KWT S2.42 / LPV 392	Meuse valley nonspec.	pattern NS.2	580/590-640/650
11-0-0/1200	KWT FAG 2B / LPV 390	Maastricht F2	pattern NS.3	510/525-580/590
17-1-1/2726	SHA MSL.1 / S2.21/31	Meuse valley nonspec.	pattern MSL.1	565-610/620
259-1/52-2-21	KAN MSL.1 / kwt S4.4	Maastricht F3	pattern MSL.3	610-670/680
52-1-3/10435	KWT FAG 5B / LPV 390	Maastricht F1	pattern MSL.2	565/590-610/30
20-1-61/2985	KWT	Maastricht F2	stamp MSL.2	510/525-580/590
106-1-6/9236	KWT	Maastricht F1	indet	460/480-670/680

**Table 27.7. Voerendaal-Ten Hove. Coarse ware Merovingian objects with highly informative characteristics.**

Find	Shape/type	Characteristics	Fabric	Object date (yr. AD)
711-1/13-1-27	ovoid pot Alzey 27	rim Brulet L	Mayen MD	(460/480)-510/25
511-3/16-5-39	glob./ovoid pot	rim 5e	UPR1	Merovingian
807-1/16-4-22	ovoid pot W IX	rim 2a, upper wall	UPR1	670/80-750
20-1-61/2986	ovoid pot	rim 5b, grooves	UPR1	580/620-800
20-1-61/2989	SHA S1.11		Mayen MD	460/480-580/90
20-1-90/3256	ovoid pot	rim 5e	UPR1	500/550-650/800
23-1-7/4332	globular pot	lower wall shape	UPR5	600/650-710/later
24-1-17/4598	globular pot	lower wall shape	UPR5	600/650-710/later
27-2-42/5103	glob./ovoid pot	rim 7b	MSR1	460/520-700/25
27-3-3/5128	bottle		UPR6	600-700
104-1-1/9055	ovoid pot	rim 5f	UPR2	580/620-710
108-1-4/9855	glob./ovoid pot	rim 9e	MSR2	Merovingian
94-2-1/10477	indet		MSR2	Merovingian
94-3-2/10493	glob./ovoid pot	rim 9f	MSR2	500-700
733-4/46-2-3, -1/11316	SHA S2.42	multi-lined rouletting	UPR4	565-710
46-1-3/11246	ovoid pot	rim 5d	UPR1	510/580-600/50

<sup>2697</sup> Beaker 505-1 in terra nigra (section 26.5.2).

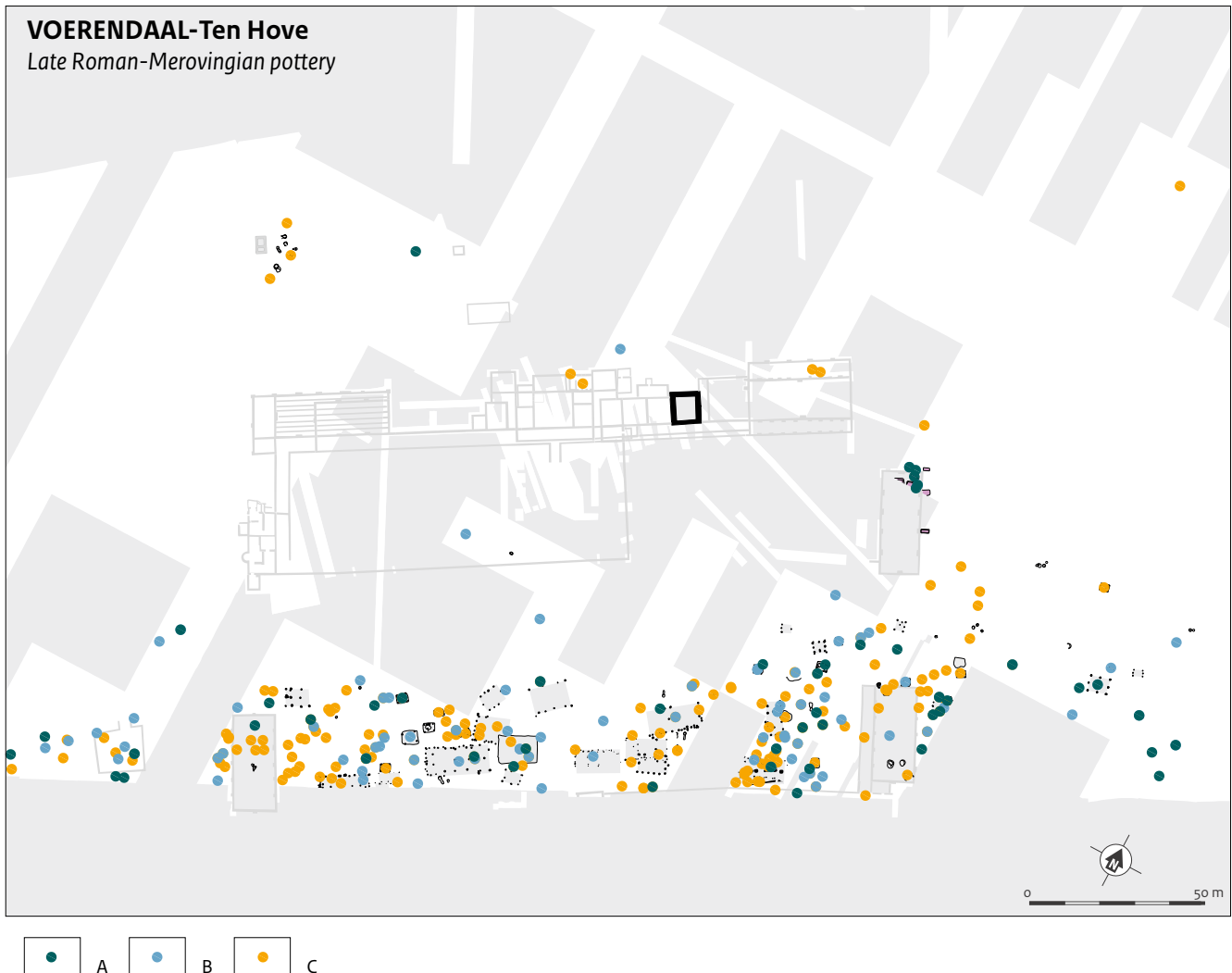


Fig. 27.9 Voerendaal-Ten Hove. Distribution of Late Roman and Merovingian pottery. Scale 1:2000.  
A Merovingian; B Late Roman or Merovingian; C Late Roman.

between trench 20 and 23, due to formation processes and the 'cluster' of features and finds in trench 46 and 52.

### 27.7 Conclusion

Among the 172 ceramic objects that form the subject of this study, there are some fragments from vessels possibly dating to the second half of the fifth century. Habitation (and burial) is attested with certainty for the sixth and better part of the seventh century AD. It is impossible to discern certain clusters of pottery and thus activities for

specific phases of the Merovingian period on the basis of the small quantities of pottery.

Some observations can be made about comparing the ensemble with other sites in the region,. It is striking that no material has been observed that is comparable to the Heerlen-Heerlerheide Merovingian cemetery only 6 km away, either morphologically or in decorative terms. The only possible exceptions are a few fine ware base fragments of unknown provenance, which could also provide a link to the Merovingian cemetery and settlement at Maasmechelen-Mottekamp and the cemetery of Ophoven, dominated by a smoked, fine,

dark grey surface fabric.<sup>2698</sup> The buff and pale yellowish pink fabrics that seem to be present in larger numbers at the Sittard, Stein, Obbicht and Posterholt cemeteries are absent in their entirety.<sup>2699</sup> For the material present at the Drove kiln waster deposit, only one probable but unverified fabric analogue (UPR6) has been observed. Although material from Niedermerz II could be present, identification was not possible because no probes had been acquired from this site. Base shapes present there have been identified among the Voerendaal material, but their provenance has not been checked.

For both fine and coarse wares, the fabrics have been analysed macroscopically. For the fine wares, the decorative patterns are also informative. To a certain extent, this provides information on the relationships maintained by the Merovingian-period inhabitants of the Roman villa at Voerendaal. For the fine ware ceramics, a Maastricht provenance is argued for 11 objects, while two other objects originated from an undisclosed location in the Meuse valley. The provenance of a further 11 objects remains unknown. All Maastricht-provenance fine ware objects that can be dated sharply date from the second quarter of the sixth up until the mid-seventh century. Therefore, it could be inferred that the Maastricht connection is focused (mainly) on the Middle Merovingian phase. However, of the sharply datable fine ware objects, only one does not originate in the Middle Merovingian phase, and this example was not available for live study (1953-2.12/11425).

We would therefore expect the coarse ware objects to shed a little light on the matter. On examination, however, a Maastricht provenance could be attested for only five (out of 148!) objects, and all five cannot be dated more precisely than to somewhere in the Merovingian period. For the coarse wares, this low number might be attributable to the fact that the Maastricht-Wyck and Maastricht-Lanakerveld fabric probes that were used date, as do their contexts, to the later sixth and early seventh century. For the coarse wares, another difference – apart from the fabric – from the Meuse valley production sites is the ratio of grey, reduced-fired coarse ware objects to the oxidizing coarse

wares, which approximates a 1:15 ratio for the Voerendaal assemblage. When compared with the Maastricht-Wyck production site, for which these numbers are known, this seems an odd value: the kiln waster deposits show a ratio of approximately 1:2.<sup>2700</sup> For the Huy-St. Jacques site, it is approximately 1:6.<sup>2701</sup> At Maastricht-Lanakerveld, the ratio is three oxidized examples for each reduced example, although the number of finds there is extremely low.<sup>2702</sup> These numbers are variable and may or may not reflect spatial or chronological preferences. Thus, there seems to be a discrepancy between the provenance of the fine ware objects, of which some 45% originated in Maastricht, and the coarse wares, only 3% of which show a Maastricht origin. The reduced coarse ware portion of the ensemble shows an overall comparable appearance, of which at least approximately 30% of the objects show the UPR1 and UPR2 fabrics, for which the provenance is not yet certain. Thin-section and chemical analyses would be useful to test the homogeneity of the groups and compare them with products from Wallonia and the Rhineland.

In summary, it has hopefully been shown that the analyses of a Merovingian-period ensemble can benefit a great deal from a thorough chronological and typological framework that clears up uncertainties and errors deriving from the use of reference frameworks for other regions without a well-argued and replicable theoretical and methodological framework. Analyses of decorative patterns have shown that several patterns show regional styles. Visualizing the distribution of these patterns may help to provide information on aspects of the exchange networks to which individual sites belonged. To this end, an analysis of the fabrics is also indispensable. The fine wares show a close tie to Maastricht, at least for the Middle Merovingian phase. This is not observable in the coarse ware objects: this part of the ensemble may, for the greater part, come from elsewhere. For the Early and Late Merovingian phase, a lack of known production sites in the vicinity further complicates the reconstruction of the exchange network for ceramics.

<sup>2698</sup> Heerlerheide is unpublished; the material resides in the Thermenmuseum Heerlen collection; De Rue 2018; Claassen & Heymans 1974.

<sup>2699</sup> Compare the ceramics in Kars *et al.* 2016 and De Haas & Theuws 2013.

<sup>2700</sup> Van Wersch 2011/2, 717.

<sup>2701</sup> Van Wersch 2011/2, 250.

<sup>2702</sup> Van Wersch 2011/2, 733.



# 28 Carolingian and later pottery

Henk Hiddink

## 28.1 Possible Carolingian pottery

No fragments of the well-known ‘globular pots’ from Mayen and Badorf (c. AD 725–900) were found at Ten Hove, although these are quite common at rural sites in the south of the Netherlands. Maurice Janssen, a specialist on Early Medieval pottery, identified two (possible) fragments of Carolingian pottery and provided the following information: one is a globular pot with a rim of type 9e (find 652-1/78-4-2; Fig. 45.17), which should be dated as post-Merovingian because of the dense, well-sorted, sand-tempered, coarse and yellow fabric.<sup>2703</sup> A second fragment with a probable date range in the eighth century AD is find 510-8/13-3-31 (Fig. 44.6). A similar piece is represented at Huy-Sous le château level 3, which contains material dating from the eighth century to the turn of the tenth century AD.<sup>2704</sup> At Huy-Ruelle de Coucou, the objects most resembling our fragment date in period IIa, which have been dated to the eighth century in general.<sup>2705</sup> It has a white fabric and a very thin black-coated surface. This fabric could be of the HUVT 6 type, which it closely resembles.<sup>2706</sup> In our opinion, however, the latter sherd could be Late Roman, although this is based on intuition and without a possible alternative identification.

## 28.2 High Medieval pottery

A small amount of pottery from the High Middle Ages (1000–1250/1300 AD) was found during the ROB excavations at Ten Hove (Table 28.1).<sup>2707</sup>

By far the majority of sherds belong to pottery in the ‘Pingsdorf tradition’, represented by a few sherds from that village, but mainly by products from the Brunssum-Schinveld area.<sup>2708</sup> Some sherds have a fairly hard fabric, resembling ‘proto-stoneware’. The only recognizable form is a globular pot (*kogelpot/Kugeltopf*) pi-kog-1 (c. AD 1100–1175).<sup>2709</sup> A few sherds are in ‘blue-grey’ ware, mostly in the ‘classical Elmpt’ variant with a white/light grey core and a blue-grey surface. Represented forms are a spouted pot and a globular pot bg-kog-2 (AD 1100–1200), which is in fact identical in shape to the pi-kog-1. Only one sherd from the Meuse area (Andenne and surroundings) was found.

Most High Medieval sherds were collected in the area along the Steinweg, and some near the top of the ridge, near Carolingian pit 736.<sup>2710</sup> We have to consider the possibility that both the pit and later finds are indicative of habitation nearby. Some of the High Medieval sherds were in fact found in pits. On the basis of their shape and colour alone, however, these pits appear to be quite young, which is confirmed by the presence of Late and/or post-Medieval pottery and coal in some features (see below). Therefore, it is more likely that both the High and Late Medieval sherds were brought to the fields with manure and ended up in the pits during the past few centuries.

## 28.3 Late and post-Medieval finds

The quantity of Late and post-Medieval pottery is somewhat larger than that from the preceding

**Table 28.1. Voerendaal-Ten Hove. Summary of the pottery from the High Middle Ages.**

Group	Subgroup	Deventer-sytem	N	Wt (g)
Blue-grey	blue-grey	BG	4	30
	Elmpt	BG(-EL)	8	180
Pingsdorf	Pingsdorf	PI	4	41
	South-Limburg	PI(-ZL)	46	387
	idem/proto-stoneware	PI(-ZL/S5)	15	128
Meuse region white	Meuse regio white	WM	1	18
Indet.			1	2
<b>Total</b>			<b>79</b>	<b>786</b>

<sup>2703</sup> On the rim shape, see the previous chapter.

<sup>2704</sup> Tilkin-Péters 1997, 339–342.

<sup>2705</sup> Giertz 1996, 39 and 62.

<sup>2706</sup> Giertz 1996, 63.

<sup>2707</sup> In the Dutch archaeological chronology, the Late Middle Ages begin in AD 1500, but it is more convenient – at least in the south of the Netherlands – to use 1250/1300 as the start because of changes in building construction and settlement locations around that time.

<sup>2708</sup> And possibly also Nieuwenhagen/Landgraaf.

<sup>2709</sup> On the Deventer system and its codes and the types mentioned here, see Bartels 1999; Bitter *et al.* 2012; Ostkamp *et al.* 2012, appendix 14.

<sup>2710</sup> Cf. section 16.4; Chapter 46.



period (Table 28.2). The groups represented include 'near stoneware' and unglazed stoneware (Siegburg jug), especially stoneware (Langerwehe, Raeren, Westerwald) and Late or post-Medieval red and white pottery. Fragments of some clay tobacco pipes, a sherd of porcelain and one made by the Société Céramique Maastricht are among the latest finds on the site. The distribution is in essence comparable to the pottery from the High Middle

Ages and often appears in the same find numbers.<sup>2711</sup> Some sherds are contamination, probably the result of bioturbation. The finds date a number of ditches (902, 902 and 905) to the Late Middle Ages or thereafter.<sup>2712</sup> Most pottery was probably brought to the site with manure. The presence of sherds in the first excavation levels, and even in the dark layer over building 403, show that most of the colluvium was deposited in the Late Middle Ages and later.

**Table 28.2. Voerendaal-Ten Hove. Summary of the pottery from the Late Middle Ages and the early modern period.**

Group/subgroup	Deventer-system	N	Wt (g)
Near-stoneware	S4	7	134
Stoneware, unglazed	S1	1	15
Stoneware, glazed	S2	98	1412
Late medieval red firing	R	9	195
Late medieval white	W	17	106
Porcelain	P	1	15
Industrial white	IW	1	25
Clay tobacco pipe	PY	4	11
<b>Total</b>		<b>138</b>	<b>1913</b>

<sup>2711</sup> Cf. section 16.4 and 28.2.

<sup>2712</sup> See section 16.4.

# 29 Epigraphic finds

Henk Hiddink

The excavations at Voerendaal have yielded 22 epigraphic finds or 'inscriptions' on pottery and roof tiles, all of them graffiti except for one painted example.<sup>2713</sup> Graffiti are single characters or short texts, mostly inscribed with a sharp implement, but also applied with a finger.

The epigraphic finds at Ten Hove can be divided into four groups according to the type of inscribed material and its location (Table 29.1; Fig. 29.1-5). Most attention will be given here to the last two groups, graffiti on pottery other than

amphorae, because together they contain three quarters of all finds.

## 29.1 Graffiti on roof tiles

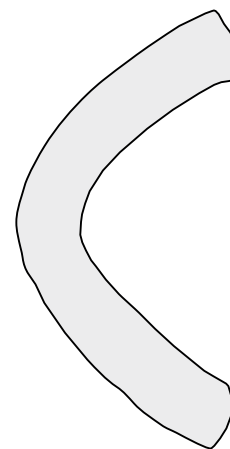
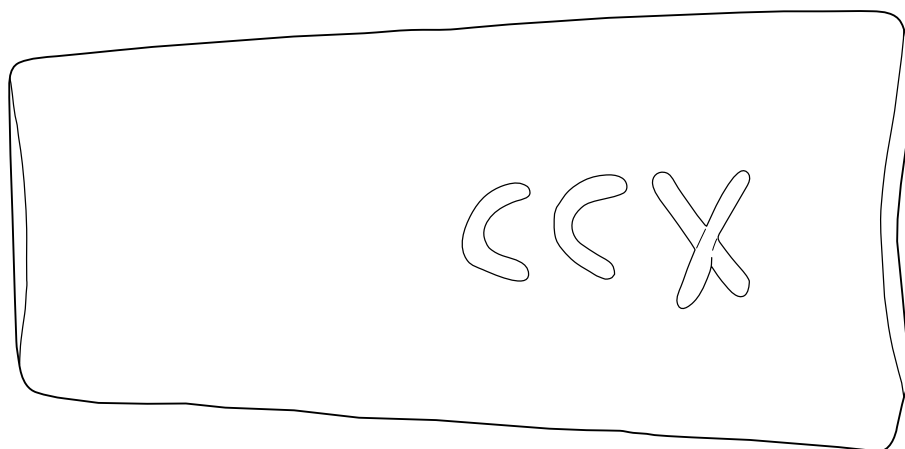
The first group consists of two graffiti *ante cocturam* (before firing) on roof tiles, applied with the tip of a finger.<sup>2714</sup> The first graffiti is on a complete *imbrex* and clearly reads CCX (16-3-7/2404; Fig. 29.1). The number 210

**Table 29.1. Voerendaal-Ten Hove. Summary of the graffiti and (date) of the objects they are on.**

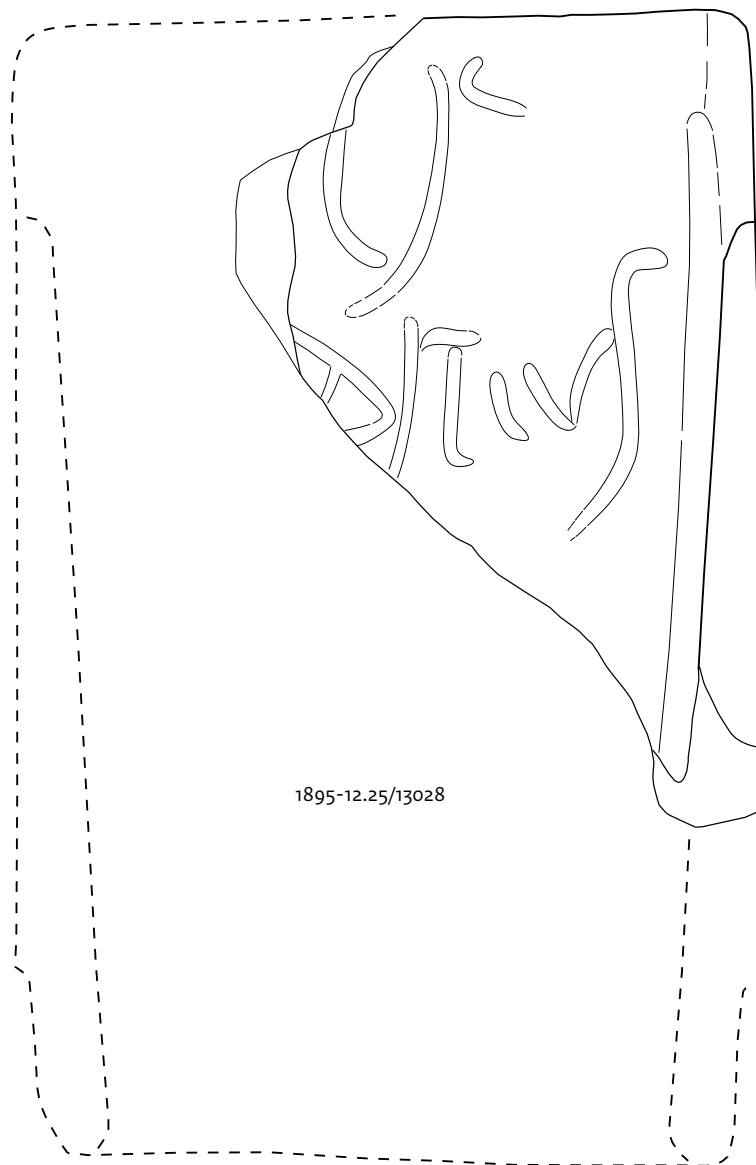
Item	Find/id number	Category, form, type	Date	Graffito	Remarks
1	<i>Roof tiles</i>				
-	16-3-7/2404	imbrex	-	CCX	ante cocturam
-	1895-12.25/13028	tegula	AD 100-150	[--]II C / [--]AITIVS	ante cocturam
2	<i>Amphorae</i>				
-	27-2-5/4903	amphora Dressel 20	-	????	ante cocturam, 3? characters with S in the middle
-	27-2-2/4868	amphora Dressel 20	AD 100-200	----	titulus pictus
-	107-1-16/9410	amphora Dressel 20	AD 100-150	[.]II (sextarii)	? modii + 2(?) sextarii
-	27-3-17/5246	amphora Dressel 20	-	XII (sextarii)	? modii + 12 sextarii; V not part of the graffiti
3	<i>Tablew. settlement</i>				
812-2	27-3-7/5184	ts dish Drag. 18/31	AD 90-120	M	
-	21-3-5/3776	ts cup Drag. 27	AD 70-120	P	
-	16-3-7/2427-28	ts bowl Drag. 37	AD 120-	X	possible graffiti
-	69-2-8/7253	ts dish Drag. 18/31	AD 120-200	[--] I I [--]	or single character
-	27-2-27/5067	ts dish Drag. 18	AD (50)-120	[--]MA[--]	
742-3	95-5-8/11211	ts dish Drag. 31	AD 140-270	[--]TVS	
-	1932-11.3/13064	ts dish Drag. 32	AD 150/160-270	?	illegible scratches/lines
812-1	27-3-7/5176	smooth-walled flagon	-	NEVALI	Ninali less likely
720-1	20-3-30/3414	smoked beaker	AD (150)-?	[--]MA[--]	possibly complete
4	<i>Temple 412</i>				
412-4	79-1-6/7939	tn bottle HBW 25var.	AD (50-)150	SIICVNDIO	two first letters fragmentary
412-3	79-1-5/7937	tn bottle HBW 25var.	AD (50-)150	SIIVIR[--]	R uncertain
412-6	79-2-8/11718	tn bottle HBW 25var.	AD (50-)150	[--]NDII IV[--]	
412-5	79-1-7/7941	tn bottle HBW 25var.	AD (50-)150	CV[--]	
412-8	79-1-4/7935	tn bottle HBW 25var.	AD (50-)150	?	graffito? not illustrated
-	79-1-1/11715	tn bottle?	-	R	R retro, A, M or N?
412-7	79-1-7/7976	smooth-walled bottle	-	X	

<sup>2713</sup> An E, painted on an Argonne sigillata bowl (68-2-39/6281), is not discussed here because it is considered part of the decoration (cf. section 25.2; fig. 25.3).

<sup>2714</sup> Cf. section 32.5.3. There are also many other marks applied with a finger *ante cocturam* on roof tiles at Ten Hove, but these signatures bear no relation to characters or words (section 32.5.1).



16-3-7/2404



1895-12.25/13028

Fig. 29.1 Voerendaal-Ten Hove. Graffiti ante cocturam on roof tiles. Scale 1:3.

probably indicates the production on a specific day of one or more moulders or workers in general. Numbers around 200, mostly slightly more, appear quite often in graffiti, for instance the number CCXXX on a *later* from Arentsburg-Voorburg.<sup>2715</sup> An example from the Holdeurn brickworks near Nijmegen mentions 214 *lateres*: *Kal(endis) luni(i)s/Quartus/laterclos/n(umero) CCXIII*. Translated, it reads: 'Quartus moulded 214 *laterculi* on the first of June'.<sup>2716</sup> Two graffiti from Holt (Wales) feature the number 200 and seven from Siscia (Croatia) mention the number 220 eight times (and 440 once, the production of two workers). For example, one inscription states a production of 220 *bipedales* each for four moulders: *Kal(endis) lulis/Severus CCXX/Fortis CCXX/Candidus CCXX/Felicio CCXX/in uno DCCCLXXX*.<sup>2717</sup> On bricks from Lauriacum (Enns, Austria), four lines of numbers written by three people total 636 (an average production of 212 per person?).<sup>2718</sup>

A second graffito, found by Habets, was written on a *tegula* (1895-12.25; Fig. 29.2). Only the end part of two lines is present. The first line seems to consist of all or part of a number – a fragmentary C or I – probably followed by F(ecit).<sup>2719</sup> In cursive writing, the two cross strokes of the (lowercase) F are often replaced by a short vertical line,<sup>2720</sup> here curved like a kind of 'c' in superscript. The original number could have been CC, CI or even CCI, close to the 210 of the *imbrex* from Voerendaal. The second line contains a name with the ending [---]A^NTIVS. The solution could be Constantius, or also Amantius, a *cognomen* found in our region. However, there may be other options.

## 29.2 Graffiti on amphorae

Four graffiti fragments were found on amphorae, all belonging to the Dressel 20 type, produced and filled with olive oil in southern Spain. All four were analysed by Joost van den Berg, but none of them are complete or legible (Fig. 29.2).<sup>2721</sup>

Only two fragments were found of a graffito *ante cocturam* on an amphora Dressel 20, only two fragments were found and therefore the text is illegible, although parts of three characters – with an S in the middle – can be deciphered

(27-2-5/4309; Fig. 29.2). It could have been a note about the number of amphorae in a specific batch (cf. below), people involved in the production process, the production date, etc.<sup>2722</sup> A painted inscription or *titulus pictus* on a second amphora is even more fragmentary and consists of no more than a few lines of characters (or just drips of paint; not illustrated). It was applied *post cocturam*, probably in Spain before shipping.<sup>2723</sup> It could have consisted of notes on the weight of the vessel and the olive oil, the people inspecting the contents, its provenance etc.

Two graffiti *post cocturam* are numbers. The first reads XII; the V behind it is probably not an intentionally applied 'character' (27-3-17/5246; Fig. 29.2). If 12 refers to a number of *modii*, the resulting 105 litres would be rather high for this type of amphora. Most likely, it referred to the number of *sextarii*, in combination with a missing number for the *modii*. The second graffito reads II, but another digit may have been present on the left (107-1-16/9410; Fig. 29.2). It most likely also referred to a number of *sextarii*, if not two then 12. The vast majority of this class of graffiti were not made when the amphorae were filled, but when they were reused.<sup>2724</sup> The fact that most graffiti refer to the contents is shown by the letters M(modii) and S(extarii), often inscribed before the numbers. However, sometimes the addition of T(esta)P(ondo) indicates that the vessel's tare weight is meant.<sup>2725</sup>

## 29.3 Initials and names on tableware

### 29.3.1 Graffiti on tableware at Voerendaal and their distribution

A third group of graffiti consists of those applied to tableware from the villa yard, for the most part on bowls and dishes of terra sigillata (Fig. 29.3).<sup>2726</sup> Only one example is found on a beaker and another on a smooth-walled flagon, nearly complete with only the neck and ear missing. One graffito consists of scratches and was perhaps not intended as text, but just as a mark.<sup>2727</sup> Three others are made up of a single character – as far as we can see – and should

<sup>2715</sup> RMO inv. no. AR 116. [https://www.rmo.nl/collectie/collectiezoeker/collectiestuk/?object=130786\(8-7-2021\)](https://www.rmo.nl/collectie/collectiezoeker/collectiestuk/?object=130786(8-7-2021))

<sup>2716</sup> Holwerda & Braat 1946, 105, pl. 34; Scholz 2012, 352, no. 24.

<sup>2717</sup> Scholz 2012, 351ff., no. 57, 64 (Holt); 16-20; 22-23 (Siscia). Other numbers are 136, 164, 189, 222, 225, 380 and 380. On the daily production of brick and tile, see also Brandl & Federhofer 2010, 59ff.

<sup>2718</sup> Janek 2017, 85.

<sup>2719</sup> Thanks to Dr S. Weiß-König for suggestions on the meaning of this graffito.

<sup>2720</sup> See Bakker & Galsterer-Kroll 1975, 19; Weiß-König 2010, 32. For a lowercase F like ours, see: The Vindolanda tablets online > the palaeographical background, fig. 10 at [http://vindolanda.csad.ox.ac.uk/tablets/TVI-4-3.shtml\(8-7-2021\)](http://vindolanda.csad.ox.ac.uk/tablets/TVI-4-3.shtml(8-7-2021)).

<sup>2721</sup> Cf. section 24.2.1.

<sup>2722</sup> See Van den Berg 2018 for finds from Heerlen.

<sup>2723</sup> However, some *tituli picti* are secondary (Martin-Kilcher 1987, 151).

<sup>2724</sup> Martin-Kilcher 1987, 152ff.; Van de Werff 1989; 2003; Weiß-König 2010, 66-71.

<sup>2725</sup> E.g. Weiß-König 2010, 64-66, table 14. The tare weight is also often given by graffiti on e.g. honey pots (2010, 61; Kaszab-Olszewski 2006, 94, no. 2).

<sup>2726</sup> For more details on the vessel fabrics and forms, see section 22.6.3.

<sup>2727</sup> Cf. a number of examples from Großsachsen (Scholz 2015, fig. 4).

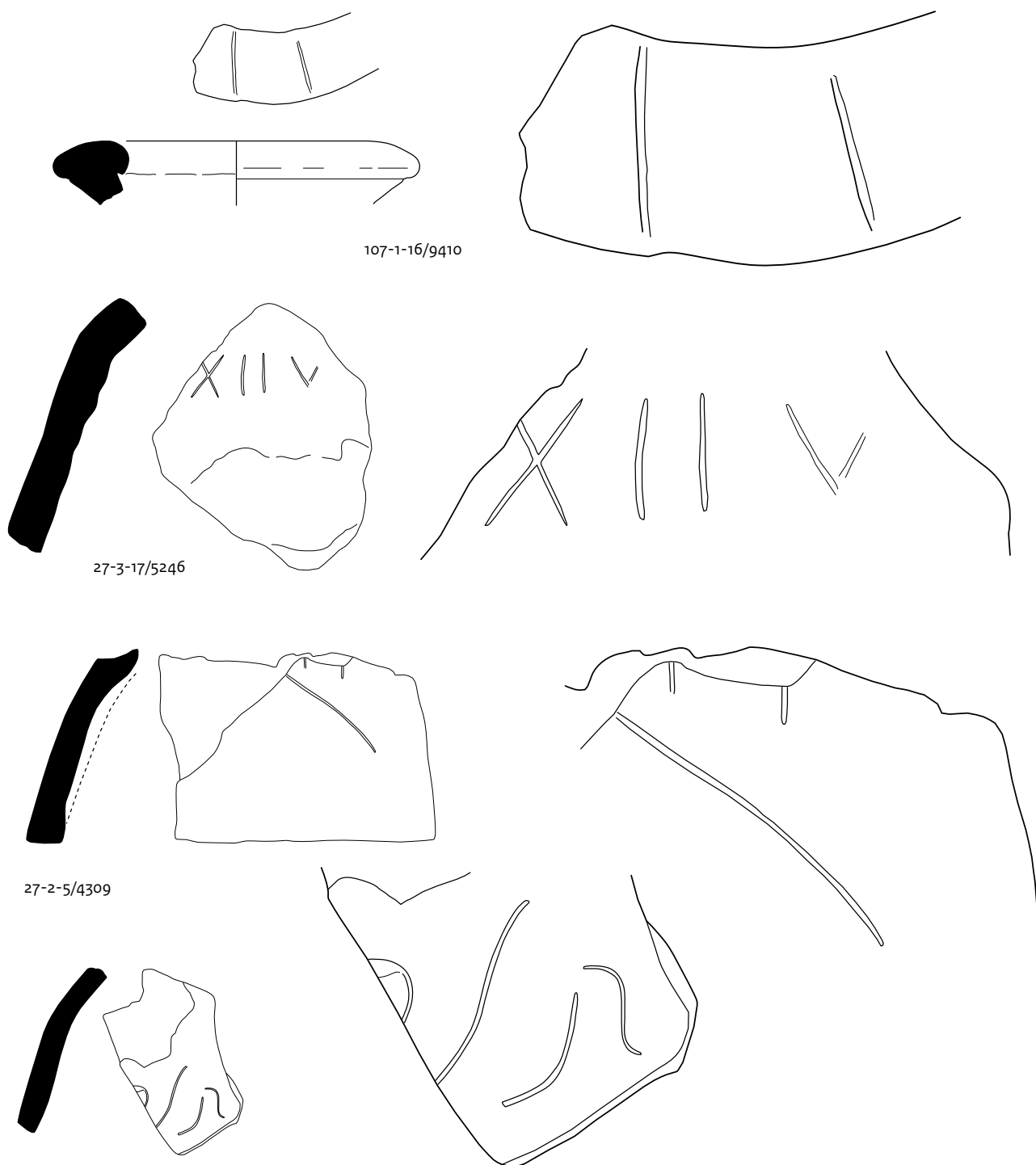


Fig. 29.2 Voerendaal-Ten Hove. Graffiti on amphorae. Scale 1:3 and 1:1.

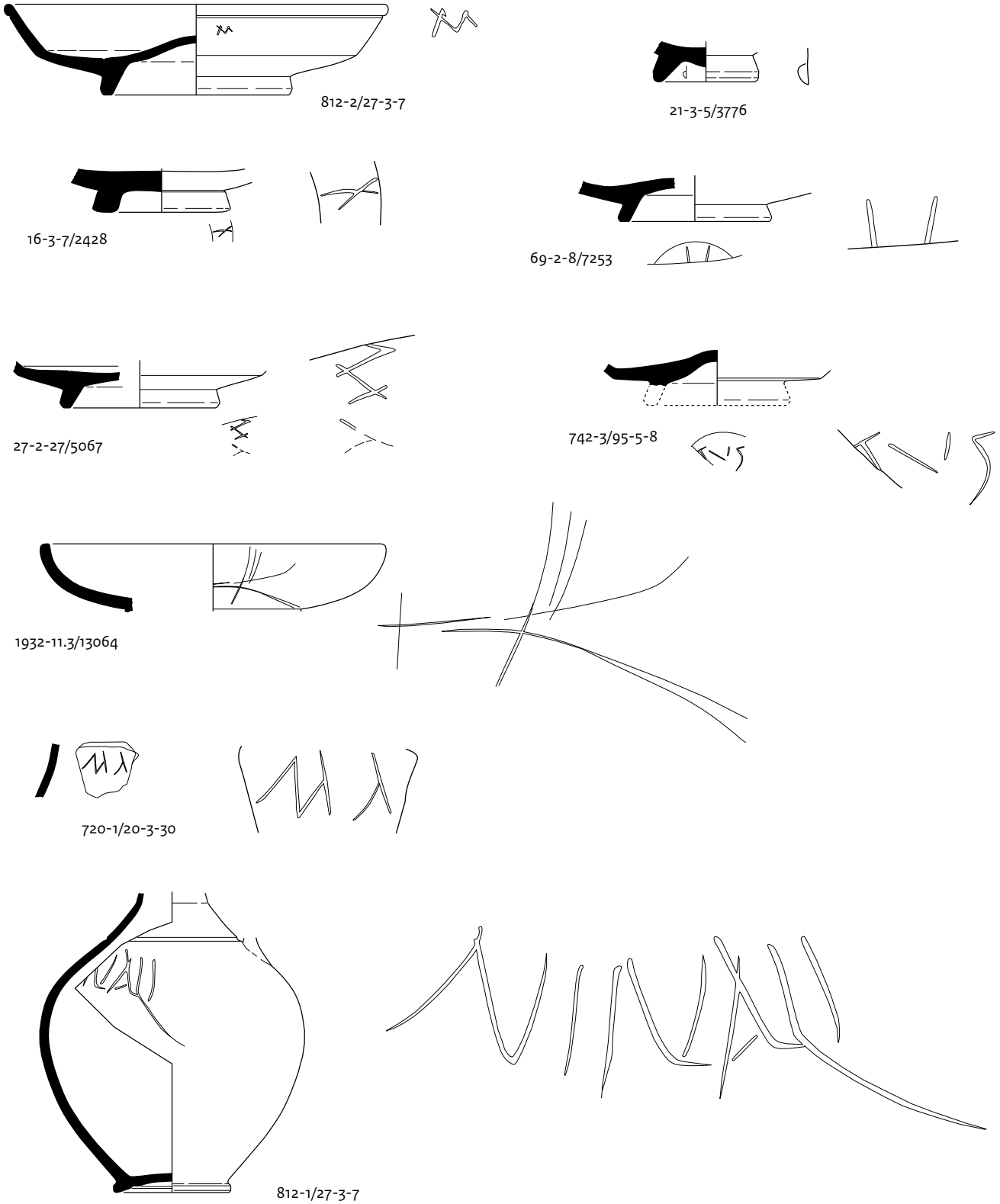


Fig. 29.3 Voerendaal-Ten Hove. Graffiti on terra sigillata, a beaker and a flagon. Scale 1:3 and 1:1. (source: H.A. Hiddink & F. Horbach)

probably be understood as initials. A single M can stand for a *praenomen* or personal name, such as Marcus, the P for Publius. There are many feasible solutions, but the inhabitants of Ten Hove would have known the meaning (see below). The remaining three graffiti contain more characters and certainly must be parts of names. The ending ...tus of the graffito on a dish Dragendorff 31 could also be part of a *praenomen*, like Titus, Quintus or one of many other possibilities. The graffito on the flagon is complete, and could be read in two ways: NINALI or NIIVALI (812-1; Fig. 29.3). Both names seem to be without parallels, but the interpretation of Nevalus in the genitive is the most likely.<sup>2728</sup> Examples of names with the ending -valus or -valos, such as Atevalus, A(?) tiovalos, Evalus and Katovalos, are seen as Latinized names of 'Celtic' origin.<sup>2729</sup>

The spatial distribution of the graffiti at Ten Hove is shown in Figure 29.4. Besides the cluster of group 4 north of the main building (see next section), a handful belonging to group 3 was collected around building 401. Both here and around building 403 to the west, relatively large quantities of pottery were collected,<sup>2730</sup> but only two graffiti were collected in the latter area. It is therefore tempting, although not statistically substantiated, to suggest that people lived in at least building 401 (as an additional function).<sup>2731</sup> However, looking at the dating of the vessels, we see that three of the five found in trench 20, 21 and 27 were made in South Gaul before AD 120. Moreover, terra sigillata dish 812-2 and smooth-walled flagon 812-1 were found in the same pit, associated with more (possibly) early pottery.<sup>2732</sup> Either the workers were supplied with old crockery, or building 251 and/or 254 were used for accommodation, rather than 401. Only beaker 720-1 could possibly date from the period in which the latter building was in use. A combined function as a (grain-processing) barn and living quarters is possible but is difficult to prove. Of course, the same holds true for building 403, with two graffiti on vessels that date to the second century (or beyond).

### 29.3.2 Interpretation

Above, the possible inhabitants of building 401 and perhaps 403 were called 'workers'. The idea that collections of several graffiti with names or initials can be explained by the presence of workers and servants at a site is inspired by finds in military camps. Quite a number of graffiti are found at many military sites, the majority being initials or names on terra sigillata bowls and dishes.<sup>2733</sup>

The explanation here must be that the men, sharing tents or barracks, marked their vessels to identify them and avoid disputes over ownership. The situation could be similar at villas, with servants, slaves and other workers sharing rooms and cooking facilities. That the absolute number of finds at Voerendaal is low in comparison with those in military settlements seems obvious: it can be explained by the different size of the 'population', a few dozen vs hundreds (or even more). At the same time, a modest number of graffiti, as at Voerendaal, contrasts with the absence of similar markings with names/initials at the vast majority of rural sites comprising only wooden buildings. This can also be easily explained: for example, the hamlets on the sandy soils of the MDS area consisted of two to three farms on average, inhabited by a similar number of nuclear families. These small groups had no need to mark personal belongings, as pottery in particular would only be used inside the house.

However, there can be more factors involved than the type of site and the number and social organization of the inhabitants. To start with, the majority of villa sites – even those excavated in recent decades – have yielded no or only a few examples.<sup>2734</sup> Some villas where a considerable number of graffiti were found illustrate that all kinds of factors can determine the number and kind of graffiti.

At Echternach-Schwarzuecht (L), the majority of the 46 graffiti were found in the northern wing of the main building, which the excavators therefore considered to be the servants' quarters (*Dienstbereich*).<sup>2735</sup> A peculiarity is the fact that only four graffiti are on terra sigillata dishes and 35 on black-slipped and colour-coated beakers (most date to period 4,

<sup>2728</sup> Information kindly provided by Dr S. Weiß-König.

<sup>2729</sup> On Atevalus, see Luján (2003, 191), who also mentions A?] τιουαλος (2003, 242) and Κατουαλος (2003, 205; cf. Verdière 1987, 189). An Atevalus is attested for Noricum by a funeral inscription from Claudium Virunum/Zollfeld from Noricum (Holzner & Weber-Hiden 2010, 193, no. 28; Hinker *et al.* 2018, 153, 202), an Attitius Atevalus on a gravestone from Hasenbach in the same province (*CIL* 3.5523). Evalus is mentioned in a funeral inscription from C.C.A.A./Köln (*CIL* 13.8422).

<sup>2730</sup> Cf. Chapter 5, fig. 5.6.

<sup>2731</sup> Another indication is the presence of fragments of at least one terracotta figurine (Chapter 30).

<sup>2732</sup> See Chapter 46.

<sup>2733</sup> A few examples of sites: Zwammerdam 91 graffiti/82 on sigillata (Haalebos 1977, 192-202); Niederbieber 62/34 (13 on colour-coated/black-slipped beakers; Bakker & Galsterer-Kröll 1975, 8; 69ff.; Vetera I with 151/c. 125 (Weiß-König 2010, 122); Haltern with 407/372 (Galsterer 1983); Velsen I 352 (Bosman 1997, 79).

<sup>2734</sup> E.g. HA 132 with apparently only one graffito on an amphora (Brüggl 2009, pl. 121, no. 8), although it should be noted that the site yielded comparatively little sigillata. Further examples: HA 412 only two graffiti on cups Drag. 27 (Kiessling 2008, 222); HA 512 four, two on jars, one on a honey pot and one on a flagon; HA 516

more or less congruent with the 'Niederbieber horizon'). The excavators' explanation is that servants were less well-off than soldiers, but this does not take account of the fact they still needed crockery to eat. There is a possibility that their bowls and dishes were made of wood, or even bronze!

Twenty-nine graffiti were discovered at the villa of Großsachsen (D/BW), for the most part (23 examples) on terra sigillata.<sup>2736</sup> All came from a rectangular basin that ran along the entire frontage of the main building (31 by 7 m) and which was filled in at the end of the second or in the early third century AD. On the basis of the initials, names and markings present, some 13-15 people are thought to be represented by the inscriptions.<sup>2737</sup>

Excavations at Biberist-Spitalhof (CH) brought 55 graffiti to light, 35 names/initials, 18 with other markings, probably also to mark personal belongings, and two with (parts of) numbers.<sup>2738</sup> Well over 75% of the first group was inscribed on terra sigillata vessels of various types, the remainder on flagons, jars and other forms. Of the examples in the second and third groups, only one was on terra sigillata. The vast majority of graffiti were found near adjacent buildings J, O and P, but the interpretation of the spatial distribution is hampered by the fact that only half of the 'pars rustica' of this large axial villa was excavated. The buildings mentioned could have been residences, but were probably workshops and/or storage facilities as well. Moreover, four other buildings yielded one graffito each, suggesting that people could have lived there too.

At Laufenburg (D/BW) only the main building of the villa was excavated; 22 examples of graffiti on pottery were found.<sup>2739</sup> Five of the inscriptions are likely potters' marks and two refer to the contents of the vessels. Of the remaining 15 graffiti, only two are on terra sigillata, and five on colour-coated and black-slipped beakers, the remainder on a dish, some jars, a mortarium and a flagon. Besides one of the terra sigillata vessels (first half of the first century), all pottery dates to the second/third century AD. Here, the diversity of pottery forms makes interpretation difficult. At least the tableware shows a kind of 'Echternach pattern', with most graffiti on beakers.

The example of Großsachsen discussed above illustrates the possibility that formation processes entirely determined the number of graffiti at a villa site. The presence of the large basin and the apparently accidental deposition of the graffiti there are important factors. At Ten Hove, the formation processes were also quite favourable. Nearly half of the examples in group 3 ended up in pits – already a stroke of luck – and the presence of colluvium is an important factor. It is obvious why the number of graffiti at most sites in the region is quite small: there was no thick earth cover for most outbuildings. However, in comparison with, say, Biberist, the number of graffiti at our site is still quite small. We would like to know how many inscriptions would have been found if the main building at both sites had been excavated in their entirety.

Besides the conclusion already drawn, namely that building 401 – or a predecessor – and possibly 403 functioned as residences apart from their other (main) functions, not much more can be said about the graffiti in group 3. The fact that most inscriptions are on terra sigillata tableware is akin to the situation both at villas such as Großsachsen and Biberist and at many military sites. However, as the examples of Echternach and Laufenburg show, inscriptions on sigillata dishes is not a general pattern for all villa sites.

For the Late Roman period at Voerendaal, the character of the settlement, consisting of perhaps only two farms, may in part explain the absence of graffiti. Obviously, the relatively small amount of pottery used has to be taken into account as it diminishes the chance of finding any inscriptions at all.

## 29.4 Graffiti associated with temple 412

*Ton Derks and Henk Hiddink*

Trench 79 at the rear of the main building yielded no fewer than seven graffiti, all but one found in the vicinity of small, rectangular building 412 (Fig. 29.4-5; Table 29.1).<sup>2740</sup> The association with the graffiti was the reason for Willems to interpret 412 as a small shrine.<sup>2741</sup> Not only is the clustering of several inscriptions remarkable, but also the pottery vessels on which they are

only one on a dish (Kaszab-Olszewski 2006, 93-96; with some examples from other sites in the region); Lürken only one 'MA' on a Drag. 27 (Müller 1981, 164, no. 3); Kerkrade-Holzkuil two times X, opposite each other on the base of Drag. 31 (Wiepking 2005, 182-183, fig. 6.6), on a flagon sherd (fig. 6.13), an amphora (fig. 6.15; *ante cocturam*) and a mortarium (fig. 6.19); Hoogeloon-Kerkackers, only one, X on base of Drag. 18/31 (Van Kerckhove 2014, fig. 15.7; item 47-10).

<sup>2735</sup> Metzler *et al.* 1981, 236-245.

<sup>2736</sup> Hagendorn 1999, 165-169.

<sup>2737</sup> Hagendorn (1999, 169) believes that this more or less equates to the group of servants/workers (*Gesinde*) at the site, also based on ideas on the relationship between the size of – this and some other – villas and their cultivated area. However, around a dozen people, besides the owner and his family, seems rather few for the servants and farm workers even at a medium-sized villa. Moreover, it is not proven that all graffiti ended up in the basin.

<sup>2738</sup> Feret & Sylvestre 2006.

<sup>2739</sup> Rothkegel 1994, 173-175.

<sup>2740</sup> Find number 79-1-1 applies to the trench in general, making a location near 412 possible. For the building itself and other finds associated with it, see section 11.3.3 and Chapter 43.

<sup>2741</sup> Willems & Kooistra 1988, 145-146.



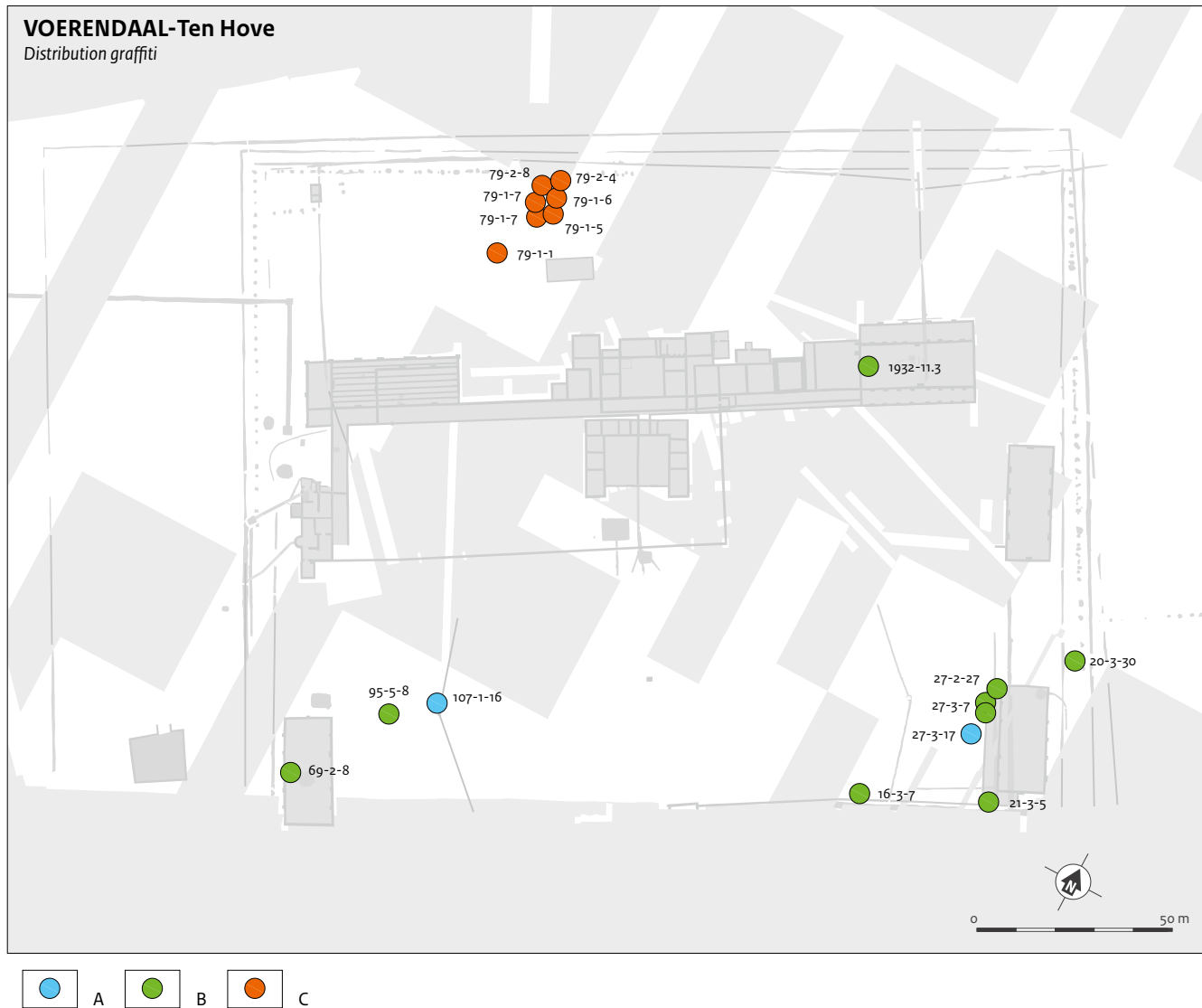


Fig. 29.4 Voerendaal-Ten Hove. Distribution of the graffiti post cocturam. A amphorae (group 2); B settlement finds (group 3); C associated with shrine 412 (group 4).

inscribed. They all seem to belong to a single form, a necked jar or bottle such as Holwerda BW25. All in all, at least 450 sherds of this form were collected in trench 79. Most are in terra nigra, sometimes with a light grey-white surface and some with a fabric not very different from smooth-walled pottery. The bottles at Voerendaal could date from the period of both the first and the second villa. They were probably made between c. 50/70 and AD 150, although a later date cannot be ruled out.

Of the six graffiti associated with the temple, one only shows part of a single character, probably an A, L or R (79-1-1/11715; Fig. 29.5).<sup>2742</sup> Another example seems to be a simple X or cross

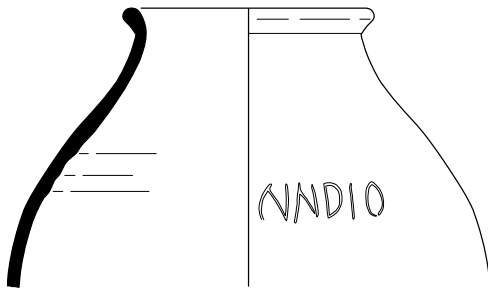
at the bottom of a bottle (412-7/79-1-7; Fig. 29.5). As such, it could belong to the graffiti in the third group discussed above. Somewhat more can be said about the following four graffiti:<sup>2743</sup>

- No. 1 [412-4/79-1-6]: *Secundio*
- No. 2 [412-3/79-1-5] *Sever[---]*
- No. 3 [412-5/79-1-7] *Cu[---]*
- No. 4 [412-6/79-2-8]: *[---nd(a)e lu[---] or [---]ndii lu[---]*

As the support of the graffiti consists of broken sherds which cannot be refitted to complete vessels, all graffiti are fragmentary. The sherds are so small that none of them preserve more than a couple of signs on one line.

<sup>2742</sup> Cf. the examples in Bakker & Galsterer-Kröll 1975, 213-14, 21, 25.

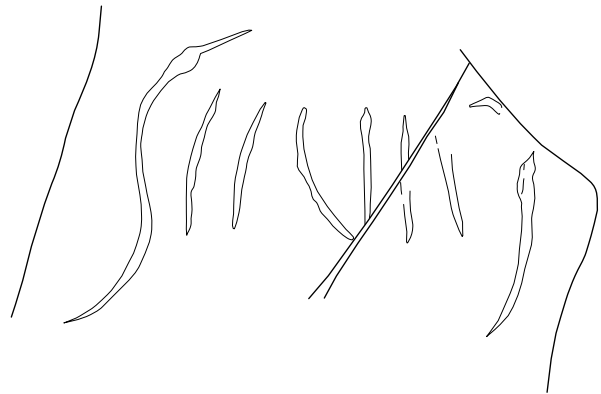
<sup>2743</sup> All four are briefly mentioned in the interim report: Willems & Kooistra 1988, 145-146. The scope of possible readings presented there is too limited and the methodology wanting. For a methodologically sound approach to the study of personal names, cf. Dondin-Payre 2001a.



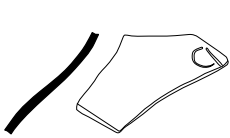
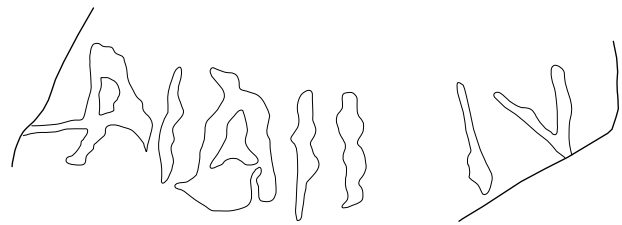
412-4/79-1-6



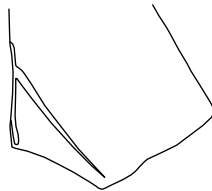
412-3/79-1-5



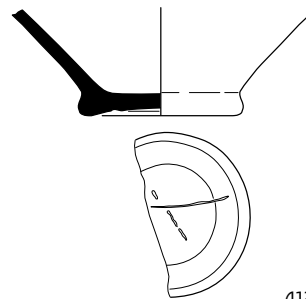
412-6/79-2-8



412-5/79-1-7



79-1-1/11715



412-7/79-1-7

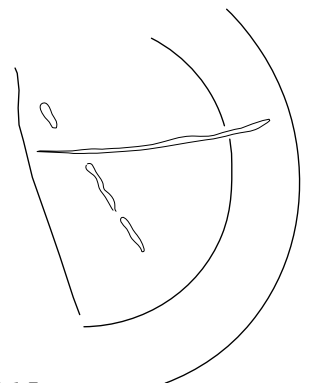


Fig. 29.5 Voerendaal-Ten Hove. Graffiti on terra nigra from the area of shrine 412. Scale 1:3 and 1:1. (source: H.A. Hiddink & F. Horbach)

<sup>2744</sup> Note the writing of the E as two vertical strokes, which remained in use much longer in graffiti than in monumental inscriptions. Similarly twice in graffito no. 2.

<sup>2745</sup> Kajanto (1965, 292) mentions 45 men, 17 slaves/freedmen and three women, but *CIL* 13 has only one example: *CIL* 13.7534 from Kreuznach: Sex Cirrius Secundio.

<sup>2746</sup> Dondin-Payre 2001b, 551 quotes a couple of examples of female Secundiones but they are clearly the exception; cf. also previous note.

<sup>2747</sup> In graffiti, as opposed to monumental inscriptions, single names dominate; this must mean that Roman citizens bearing the *tria* or *duo nomina* often left their *gens* name (as well as their *praenomen*) unmentioned when making graffiti, because of the often more intimate readership addressed by graffiti.

<sup>2748</sup> Cf. previous note.

<sup>2749</sup> A more complete and instructive example is provided by graffito from the *canabae* of the legionary camp at Nijmegen: Stuart 1966; Swinkels 2005, 257, fig. 130 (colour photo); 2009, 171-172, fig. 66 (photo); *AE* 2009, 928. For examples of theonyms in graffiti, cf. Raepsaet *et al.* 2013 and the literature cited there. Evidence for religious graffiti in the north-western provinces of the empire is not very abundant and an up-to-date inventory and analysis is a research desideratum, pace Scholz 2015. Cf. also Fauduet 2011, 114: 'Des sites culturels qui devaient peut-être faire partie d'un domaine ont livré des inscriptions votives mais, étant extérieurs à l'espace domestique, ils n'entrent pas dans le cadre de l'enquête.'

The most complete graffito (no. 1) contains a complete word, which is best understood as all or part of a personal name: Secundio.<sup>2744</sup> This may be read either as the dative form of the *gentilicium* Secundius or of the less usual *cognomen* Secundius, or alternatively as the nominative of the infrequent *cognomen* Secundio.<sup>2745</sup> Taking into account the religious context of the find – a Roman temple – the text is most plausibly a dedication or a votive inscription, in which case the named individual must have been mentioned as the acting subject. This necessarily requires a nominative, which leaves us with the only possible reading, of Secundio as *cognomen* in the nominative. The gender of the person concerned is most probably male,<sup>2746</sup> whereas his legal status has to remain indefinite: if the preserved part was preceded by a *gentilicium* now lost or if the *gens* name had been simply omitted, the dedicator was a Roman citizen.<sup>2747</sup> If, on the other hand, we assume that he simply bore the single name Secundio, he must have been a *peregrinus* or a slave.

Two of the other three graffiti similarly consist of just personal names which are likewise best understood as subjects mentioned in the nominative. Graffito no. 2 may be restored as Sever[us], Sever[inus], Sever[ianus] or the female counterparts Sever[a], Sever[ina] or Sever[iana], representing the single names of a *peregrinus* or a male or female slave, or the *cognomen* of a Roman citizen (with the *gentilicium* being lost or omitted). Less likely but not to be completely ruled out is the possibility of reading the name as part of the *gentilicium* Severius/a (followed by a lost *cognomen*) of a Roman citizen.<sup>2748</sup> Graffito no. 3 can be read as the beginning of either a *cognomen* (with the *gentilicium* again being lost or omitted) or a single name, e.g. Cupitus. Less likely is a reading of the two letters as the beginning of a *gentilicium* e.g. Curtius or Cuspius (followed by a lost *cognomen*). Neither gender nor legal status can be determined.

Finally, graffito no. 4 is the only one consisting of two words, but the reading is not straightforward. If, as in the first two graffiti, the notation II here should again be read as E, the first word ends with –e, to be taken as the phonetic spelling of the diphthong –(a)e, or the dative form of a theonym [---]nda. The second word must then be read as the beginning of the name of the dedicator. As we have argued for graffiti 2 and 3, here again the most probable interpretation is as the beginning of a *cognomen* of a Roman citizen (with the *gentilicium* being omitted) or of a simple name of a *peregrinus/a* or a male or female slave. If this reading is correct, the goddess should have had an indigenous name. Another possibility is to read the ending of the first word as the genitive form of a male personal name, indicating that the pot was someone's possession. The graffito could then refer to a previous use of the pot before it was deposited in the temple as a donation or votive gift. If we adopt this reading, the two partially preserved words are best considered parts of the *gentilicium* and *cognomen* of a male Roman citizen. Possible resolutions are manifold: for the *gentilicium* we could, for example, think of Iucundius, Secundius, Servandius or Verecundius, for the *cognomen* of Iustus, Iustinus, Iuvenalis, Iuvenis.

To sum up, the four graffiti from Voerendaal preserve fragments of personal names of individuals whose gender and legal status cannot be ascertained. One graffito (no. 4) is perhaps part of a dedication to a female deity whose name cannot be restored. It may be useful to point out that this very meagre result is to a large extent due to the very fragmentary condition of the ceramic material that served as support for the graffiti. As examples from elsewhere demonstrate, the name fragments must have been part of longer phrases or formulae, now lost, which mentioned the deity addressed as well as the type of ritual context, i.e. a simple dedication or a votive gift.<sup>2749</sup>











This report presents the results of the excavations at Voerendaal-Ten Hove, especially those conducted three decades ago by the State Service for Archaeological Investigations (ROB). A full publication of the Roman villa was long overdue because it represents only one of three Dutch examples investigated in its entirety. Moreover, the site is relevant for its Late Iron Age enclosure, post-built structures preceding the large villa and settlement remains and burials of the Late Roman and Merovingian period.

In this third part of the publication, the results are presented of the work by specialists on coins, metal finds, pottery, glass, building ceramics, painted wall-plaster, stone, iron slag, flint and data on the agricultural system.

This scientific report is intended for archaeologists, as well as for other professionals and amateur enthusiasts involved in archaeology.

The Cultural Heritage Agency of the Netherlands provides knowledge and advice to give the future a past.