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Trade Goods or Trader's Household?

The Distribution of Carolingian Pottery from the Rhineland in Northern Europe

ABSTRACT

The production of yellow earthenware began along the Vorgebirge near Cologne in Germany in the 7th century. Here kilns and waster pits have been excavated, indicating a large increase in pottery production during the 9th century. The potter's workshops produced wheel-thrown vessels not only for the local markets but to serve the needs of the much larger area of today's Netherlands. Here Badorf and Walberberg wares can be considered as trade goods in their own right. Research on the distribution of Carolingian objects in the Netherlands was able to identify areas with distinguishable tastes and needs for the different vessel forms produced in the Vorgebirge region. But Badorf and Walberberg wares can be found in major trading places around the North Sea and the Baltic. The small quantities of Badorf and Walberberg wares present as well as their inability to reach inland and rural sites, can be interpreted as the area of activity of traders from the Frisian trade centres.

KEYWORDS

Carolingian pottery / Badorf ware / trade / Reliefbandamphora / pottery workshop / container

Roman Origins of Rhenish Pottery Production in the Vorgebirge Region

Wheel-thrown pottery from the Carolingian period has long been recognised at all major trading settlements along the North Sea coast. L. J. F. Janssen was probably the first to publish some fragments of what was later known as »Badorf ware« alongside other finds from his 1842 excavations at Dorestad (Janssen 1842). The exact origin of this kind of pottery, most commonly labelled as »Frankish« or »Rhenish«, was unknown until well into the 20th century.

With the excavations of F. Fremersdorf from the Wallraf-Richartz-Museum in Cologne during the 1920s and 1930s, kilns producing this kind of pottery were discovered in villages west of Brühl. When he published a short note about his discoveries in 1932 (Fremersdorf 1932, 231), the village's name »Badorf« was coined for the entire pottery group. However, these 9th century kilns are not the earliest evidence for pottery production in the Vorgebirge area; pottery production has a long tradition in the region between Bonn and Cologne, going back to Roman times. Since then, Tertiary clays, which could be easily extracted along the western and eastern slopes of a ridge called the Vorgebirge were used for making ceramic vessels.

Several small Roman period pottery workshops have been excavated in recent years. One of the more

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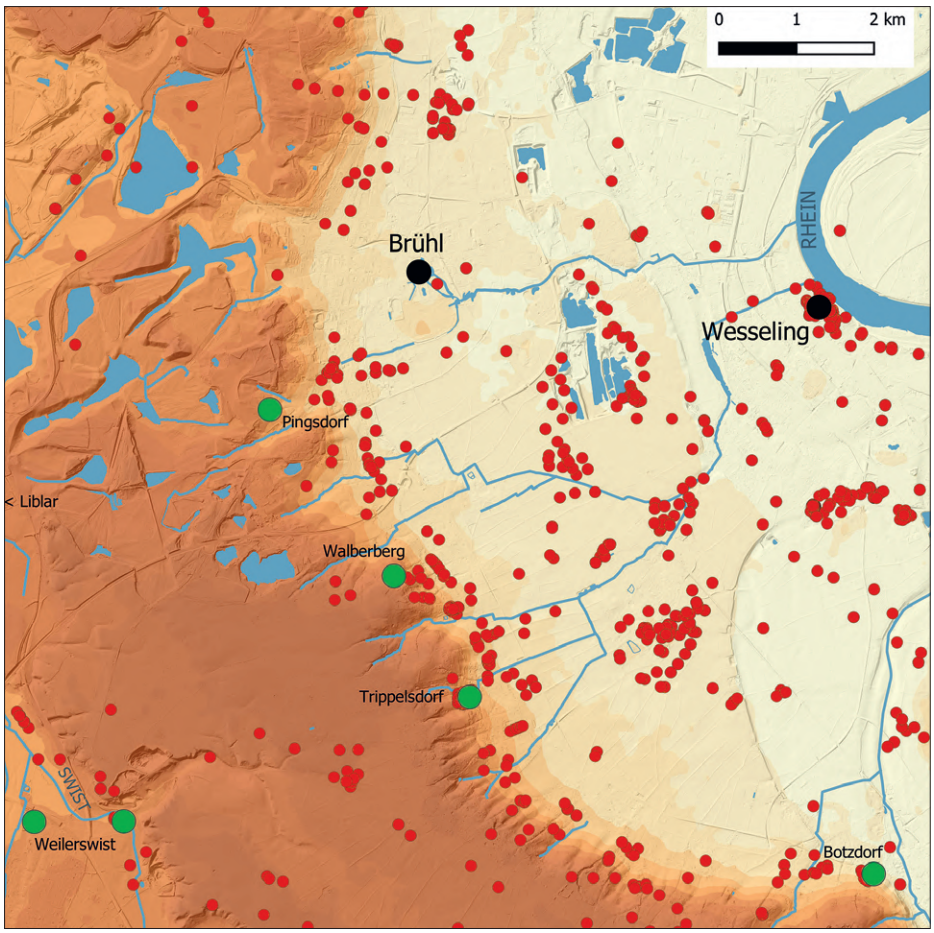

Fig. 1 Roman period find spots (●) in the Vorgebirge area. Kiln sites and pottery workshops (●) can be found on the slopes of the Vorgebirge. – (Map C. Keller, based on data from BODEON, DGM1 [Geobasis NRW]; rivers, streams and lakes based on DLM200 [Geobasis NRW]).

Fig. 2 Updraught kiln at the Roman villa site at Bornheim-Botzdorf. – (Photo W. S. van de Graaf Archäologie).

interesting ones was discovered in an archaeological watching brief during pipeline construction east of Weilerswist (Ulbert 2010). Almost next to the Swist stream, several storage pits for clay, a circular updraught kiln and the foundation of a potter's wheel were excavated. Evidence for another two potter's wheels were excavated at nearby Erftstadt-Liblar. Two square pits were used to house the flywheel, while the axle was fixed in a deeper pit right in the centre.

This situation on the western slope of the Vorgebirge corresponds well with sites along the eastern slopes (**fig. 1**). At Bornheim-Botzdorf, a pottery workshop was established during the 1st century AD in a local farmstead, which had developed from late Iron Age origins. The remains of a potter's wheel pit as well as two well-preserved updraught kilns were excavated in 2002 (**fig. 2**) (Ulbert 2003; on the potter's wheel: Ulbert 2010, 20–21). All these workshops were operating at a local level, producing a wheel-thrown earthenware during the 1st century AD. During the 2nd to 4th centuries, pottery production seems to have been concentrated in the larger settlements, such as the *vici* in Bonn and Wesseling or the *Colonia Claudia Ara Agrippinensium*/Cologne.

Other sites in the region provide evidence that pottery production might have continued well into the 4th century (Joachim 1973, 417–418). At present, there is no evidence for pottery production along the Vorgebirge during the 5th and early 6th centuries. This is probably due to a lack of archaeological

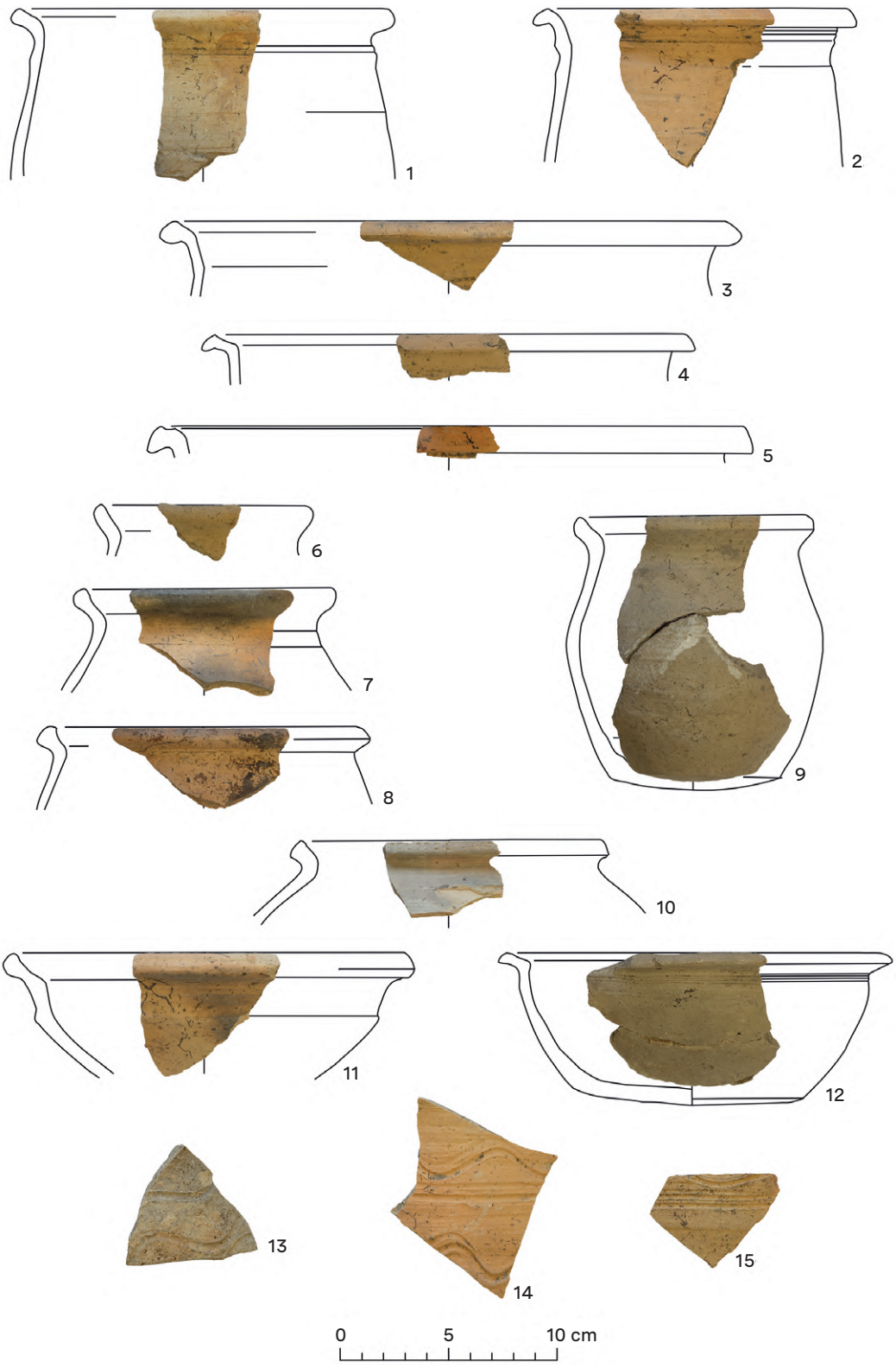

Fig. 3 Merovingian pottery from a kiln in Bornheim-Sechten. – (Photos and drawings C. Keller). – Scale 1:3.

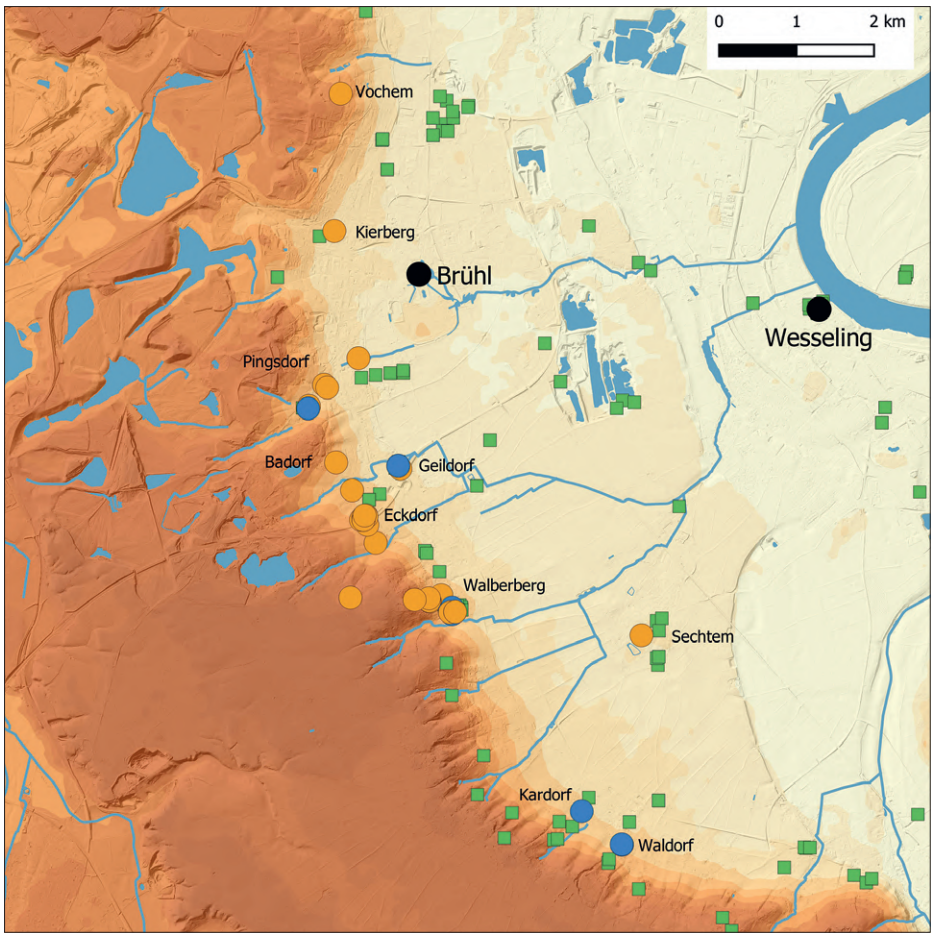

Fig. 4 Early medieval find spots (■) in the Vorgebirge area. Merovingian (●) and Carolingian (●) kiln sites and pottery workshops can only be found on the eastern slope. – (Map C. Keller, based on data from BODEON, DGM1 [Geobasis NRW]; rivers, streams and lakes based on DLM200 [Geobasis NRW]).

fieldwork, as the construction of the kilns as well as the shape of the different coarse ware vessel forms continue from the late Roman to the Merovingian period (Keller 1998; Gross 1996).

Carolingian Pottery Production

Evidence for early medieval pottery production in the Vorgebirge region can be found from the later 6th century onwards. The earliest proof comes from Bornheim-Kardorf, where pottery, including some wasters and kiln fragments, was collected on a building site in 1984/1985 (Müssemeier 2012, 470–471 no. 81). The remains of a pottery kiln were observed during construction work in Bornheim-Sechtem in 1967 (Janssen 1975b, 178 no. BN 159; 1975a, pl. 60, 13–16, 61, 1–5; Müssemeier 2012, 460 no. 72). There, only a small quantity of pottery was collected, which can be dated mainly to the 7th century (**fig. 3**). In two localities in nearby Bornheim-Waldorf, pits containing wasters, kiln fragments and ashes were excavated, but no kiln remains were observed (Müssemeier 2012, 467–470 nos 79–80). The pottery can be dated to the late 7th/early 8th century and marks the transition from the Merovingian to the Carolingian period. At that time, pottery production at Bornheim-Walberberg had begun in two different locations (Rech et al. 1989, 309–315; Schneider 2019).

During the 8th and 9th century Carolingian period, the production of pottery increased along the Vorgebirge, spreading north along the outcrops of Tertiary clays (**fig. 4**). Usually, workshops can be identified by clusters of kilns and waster pits (Keller 2007); however, unlike for the Roman period, no remains of workshops, such as houses, footings for potter's wheels or clay preparation pits have been excavated. Several inhumation graves, which were excavated in the pottery production area at Brühl-Eckdorf and can be considered as contemporary with the pottery production (Janssen 1987, 84–93), confirm the spatial proximity of potter's kilns, workshops, residential buildings and cemeteries.

Fig. 5 Finds from F. Fremersdorf's 1931 excavation at Steingasse 96 in Brühl-Badorf. – (Photos C. Keller; drawing 1 after Lung 1955, fig. 5, 1; 2–3 C. Keller). – Scale 1:3.

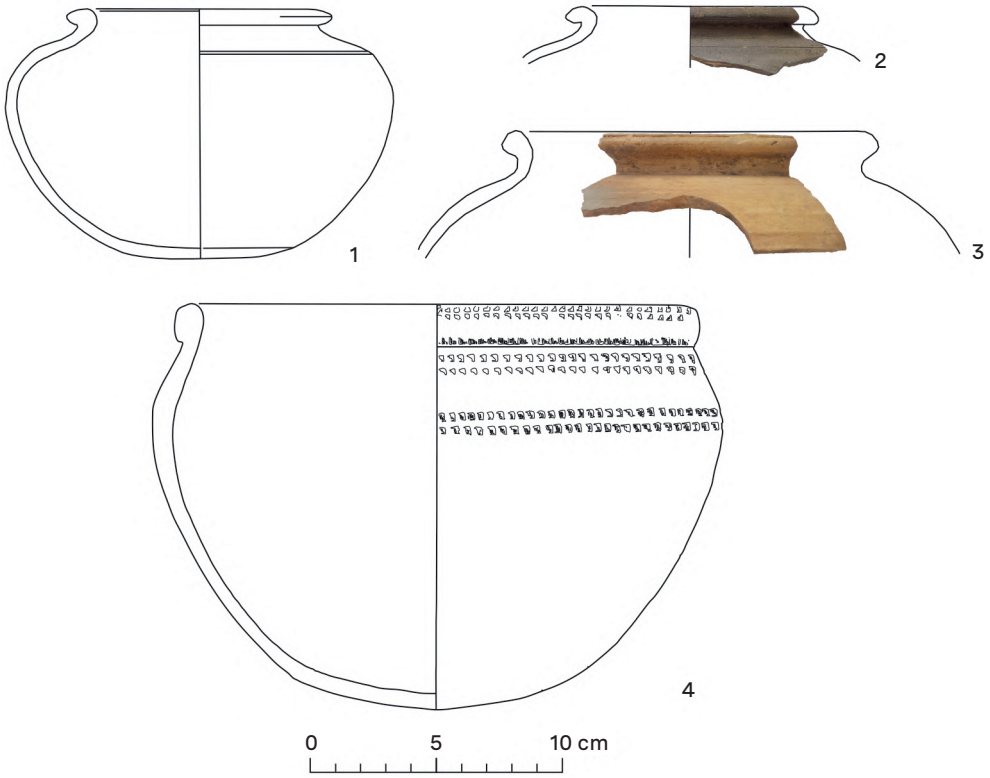

Fig. 6 Finds from F. Fremersdorf's 1932/1933 excavation at »An den Steinen 18« in Brühl-Badorf. – (Photos C. Keller; drawing 1 after Lung 1955, fig. 5, 2; 2–3 C. Keller; 4 after Lung 1955, fig. 7, 1). – Scale 1:3.

The first of the production sites to be discovered was a kiln at Brühl-Badorf (Fremersdorf 1932, 231; Lung 1955). Here, large numbers of wasters of a light-coloured wheel-thrown pottery with lentil-shaped bases and roller-stamped decoration, later called Badorf ware, were discovered. Due to several exchanges between different museums in Cologne and losses during the Second World War, only a small number of these finds are currently available for research (**figs 5-6**). Most sherds from the two kilns can be dated to the 9th century, but fragments of Reliefbandamphorae with finger and fingernail impressions (**fig. 5, 4-6**) indicate earlier production activities near the site.

From the 1950s onwards, several other workshop areas were excavated, mainly in Bornheim-Walberberg and Brühl-Eckdorf (Böhner 1955/1956; Janssen 1987; Rech et al. 1989). In more recent years, due to research on finds in the LVR-LandesMuseum storerooms as well as new excavations, it became evident that Carolingian pottery production also spread further north, which can be verified in Brühl-Pingsdorf, -Kierberg and -Vochem (Graßkamp 2007; Keller 2012; 2021) In 2022, the first evidence for 9th century pottery production within the city of Frechen was discovered when the remains of a kiln and sherds of a very white variant of Badorf ware were excavated (Holtschneider/Keller in prep.).

Trade and Distribution

Suitable and easily accessible resources, such as clay and firewood, can be seen as one of several reasons why potteries developed and flourished in the Vorgebirge region from the later Merovingian period onwards. Another reason is the close proximity to the city of Cologne, which was, even during the early Middle Ages, the largest settlement in the region, functioning both as an ecclesiastical and secular administrative centre (see Höltken, this volume). It was also an important port en route down the River Rhine, where cargoes were transferred from smaller boats that could navigate the treacherous rapids of the Upper Rhine to larger vessels suitable for the Lower Rhine and its estuary. Several of these flat bottom boats have been excavated, for example, in Utrecht, Krefeld-Gellep or Kalkar-Niedermörmter (Kröger 2014). These large barges as well as the Utrecht-type boats, which were adapted for both inland and maritime voyages, were developed in the Carolingian period, when the growing economy and trade demanded larger vessels (Van de Moortel 2011, 101).

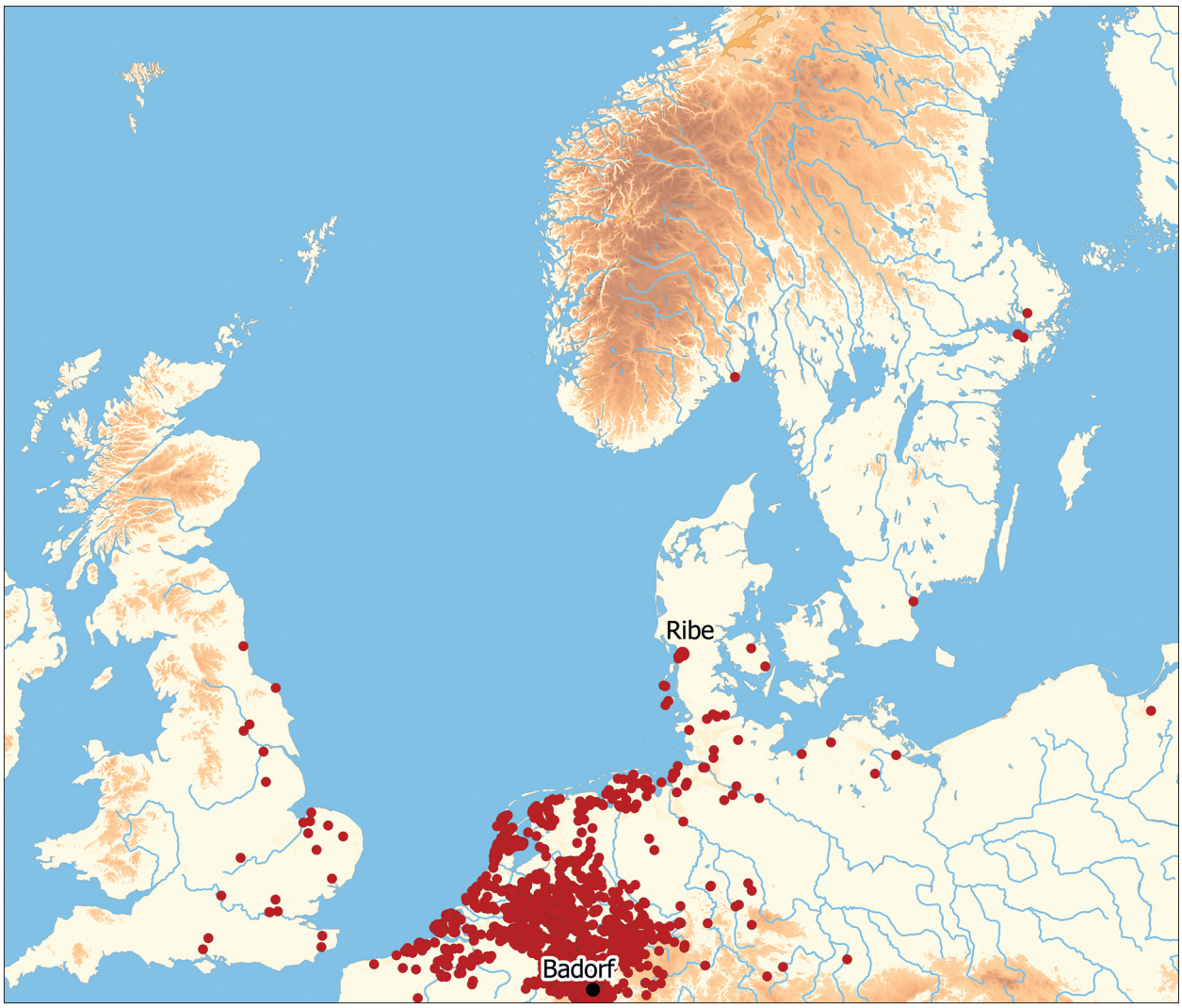

Fig. 7 Distribution of Badorf ware during the 8th and 9th centuries. For references to individual sites, see Additional Data Files. – (Map C. Keller; base map derived from the European Digital Elevation Model [EU-DEM], version 1.1 and Natural Earth. Free vector and raster map data @ naturalearthdata.com).

According to Wandalbert of Prüm, even potters relied on boats for trading their pottery. He describes in one of the legends and miracles of St Goar, written in AD 840–850, the fate of some potters travelling upstream to sell their products directly to potential customers (Wandalbert von Prüm, 52–53, cap. 21). As they, unlike their female passenger, failed to pray at the shrine of St Goar, their boat hit a rock in the rapids upstream of the village of St. Goar. Only the son of the pious woman was miraculously saved by St Goar, who was the patron saint of innkeepers and potters. The disaster resulted in the loss of both boat and cargo and the drowning of the impious potters. It is interesting to see that, according to Wandalbert, potters were trading their wares on their own behalf (McCormick 2001, 658).

The trade network, which spread from Cologne down river to Dorestad, to other trading centres in today's Netherlands and to the North Sea region, helped to distribute Rhenish pottery beyond a regional level. During the 6th and 7th centuries, Rhenish and other »Frankish« wheel-thrown pottery could already be found in large quantities in regional centres, such as Wijnaldum in western Frisia (Koning/Nieuwhof 2020). 7th century fineware and coarseware reached the coasts of northern Germany and Jutland, where they were mainly used as grave goods (Okrusch et al. 1986, 162; Majchczack 2020, 230; Croix et al. 2020).

During the 8th and especially the 9th century, the export of Rhenish pottery intensified reaching not only the Netherlands, northern Belgium and northern Germany, but also England and Scandinavia (**fig. 7**). In the southern part of the Netherlands, Rhenish wares were able to supplant regionally produced wheel-thrown wares around 730 (Kemme 2021, 140. 279). As a result, Rhenish pottery »did extend more widely and densely than any ceram-

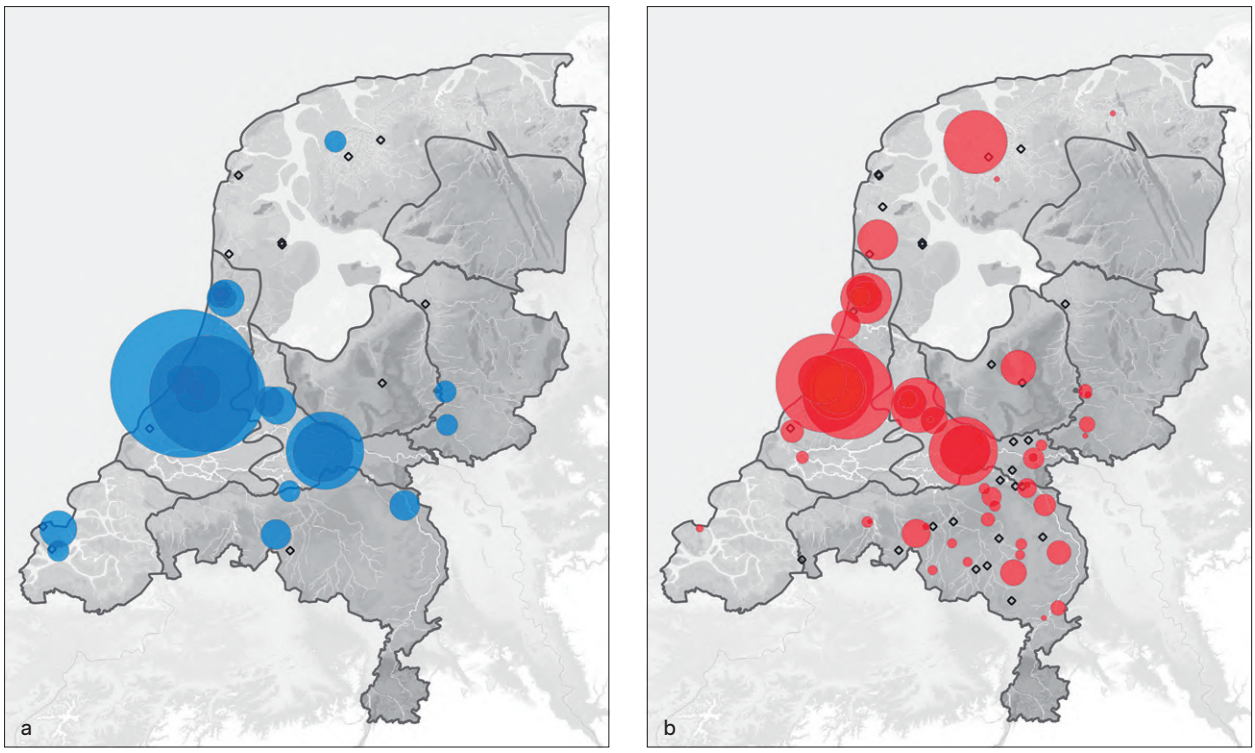

Fig. 8 Distribution of different types of Badorf ware vessels in the Netherlands: **a** Reliefbandamphorae (type WI). – **b** Globular pots (type WIII). – (After Kemme 2021, 384. 388).

ic networks in the rest of Europe, and Badorf ware has been widely found on village sites in the areas it reached, showing that peasantry had access to it« (Wickham 2005, 803).

Due to its wide distribution around the North Sea Littoral, which even reached some trading sites in the Baltic, such as Hedeby and Birka, Badorf pottery was considered as an indicator for the trade and exchange networks on the northern fringes of the Carolingian Empire and beyond (e. g. McCormick 2001, 656–661; Verhulst 2002, 103). The lack of an up-to-date distribution map with quantitative information on the proportion of Rhenish wares at site level, as well as regional and site-specific analyses of the vessel types presented, prevented a more precise analysis of differences in the distribution and range of the long-distance trade in ceramics.

In the Netherlands, W. Kemme was able to define eight regions with clearly distinguishable ceramic assemblages (Kemme 2021, 279–280 fig. 7, 3–4). These showed differences not only in the relation between handmade and wheel-thrown ceramics but also between the different vessel forms. His distribution maps and analysis show that pottery traded along the Rhine did not reach the Netherlands in a fall-off curve but had a greater presence along the stretch of river between Utrecht and Wijk bij Duursteede, then further upstream (Kemme 2021, 278–279). Other areas, such as the province of Friesland, changed from being major consumers of Rhenish imports to users of locally produced pottery during the course of the 7th century (Kemme 2021, 279). In the southern part of the Netherlands, the local production of wheel-thrown pottery was abandoned after a short period of time in favour of imported Rhenish pottery (Kemme 2021, 278–279). This is a situation that can also be observed in the Rhineland itself. For the Merovingian period there is evidence for pottery production in Zülpich (Gross 1996, 585–586), Düren-Niedermerz (Plum 2003, 71), Krefeld-Gellep (Pirling 1960) and Vettweiß-Soller (unpublished), which had no apparent successors during the 8th and 9th centuries. Only the major pottery production centres at Mayen (Redknap 1999; Grunwald 2022) and along the Vorgebirge continued through the Carolingian period and into the High Middle Ages. Only after the Carolingian period did other pottery workshops start to operate like the ones in Duisburg (Kluge-Pinsker 2001) or Bergisch Gladbach-Paffrath (unpublished).

Also, changes in the use and preference of different vessel types can be observed between different areas of the Netherlands as well as through time. In some areas of the Netherlands, globular pots from Mayen and the Vorgebirge potteries, which are usually seen as cooking pots, were not so numerous as vessels used for storing and pouring, while oth-

er areas show a preference for handmade bowls or shell-tempered wares (Kemme 2021, 284–285).

Varying numbers of Vorgebirge vessel types can be observed within the different regions of the Netherlands. The central area along the Rhine shows an increased number of Reliefbandamphorae (type WI) (Kemme 2021, 147. 384), but the sample is too small to interpret its significance (**fig. 8a**). Globular pots (type WIII; **fig. 8b**) show a much wider distribution, especially in the southern part of the Netherlands, in contrast to the jars and spouted jugs (type WIIx, WIIy) (Kemme 2021, 147. 385–388).

These observations, based on research in the Netherlands, indicate that the trade and distribution of Vorgebirge pottery did not follow a simple fall-off curve wherein pottery is more frequent closer to the source of its production. Consumer demands, based on different culinary traditions or different storage methods as well as the availability of other, often locally made, pottery influenced the trade patterns in the Netherlands. Further research is needed closer to the production sites on the Vorgebirge to see whether these different patterns of vessel preferences can be observed in the Rhineland or Westfalia.

Even without a quantitative analysis of Rhenish pottery, the distribution map of Badorf ware (**fig. 7**) supports Kemme's argument for a wider area. Badorf and Walberberg ware vessels were found in the Rhineland and Westphalia in large numbers on numerous sites, both urban and rural. They are present in most of modern-day Netherlands with a denser distribution along the Rhine and also in the coastal areas of Flanders and northwestern Germany.

For those areas we might assume that Rhenish pottery was imported as a trade item in its own right. It is interesting to see that potters on the southwestern fringes of the main distribution area tried to copy Badorf Ware vessels: At Beerse near Turnhout in Belgium, two kilns have been excavated, which were used to produce yellow earthenware (Arts/Deforce 2021; Heirbaut 2020; Vroomans 2014). Also, finds of misfired and broken Reliefbandamphorae, spouted jugs, globular and egg-shaped pots show a close resemblance to the role models from the Vorgebirge. The »Badorf-type« pottery from Beerse probably supplied the surrounding region.

The long-distance distribution of Rhenish ware is often explained by its use as a container for transporting liquid goods, mainly wine from the Rhine area (e. g. Ashby et al. 2015, 693; Dijkstra 2012, 580). Like Roman amphorae, which were widely used for transporting and storing all kinds of liquid goods, Reliefbandamphorae were often interpreted as containers. A brown slip on the inside of some of these from Dorestad was considered to be a coating to prevent leakage of liquid contents (Koning 2012, 142; Dijkstra 2012, 580). In contrast to this, W. Kemme concludes from his research into the trade and distribution of ceramics in the Carolingian Netherlands that »it is highly unlikely [that] Rhineland production was geared towards export beyond the borders of the Carolingian world, either as a commodity in itself or as a container. This raises the question of what storage vessels were intended for, if they were not produced for ›export purposes‹« (Kemme 2021, 276).

The thin walls of the vessels, their wide mouth, short neck and handles attached to the rim surface, making a tight seal impossible, support Kemme's conclusion. Instead, Reliefbandamphorae were probably used for stationary storage. Like the later »amphorae« from Elmpt, several of them would have been set into shallow pits within the floor of a pithouse for storing grain and other dry goods (Giesler 1980, 240 fig. 198). Several 9th and early 10th century sunken-featured buildings containing fragments of Reliefbandamphorae have been excavated at urban and rural settlements in the Rhineland (e. g. Rech/Sauer 1987, 155; Berthold 2015, 76). In an urban or trading site context, Reliefbandamphorae might have been used by the non-farming part of the population to store their supply of grain, peas or other dry food stuff.

In the Carolingian period, the ultimate container for transporting liquids as well as perishable goods were wooden barrels (for late medieval use see Hutchinson 1994, 92–93). Examples, often reused as well linings, have been excavated at all major trading settlements in northern Europe. The examination of barrels from Ribe, Ipswich, Dorestad and Oegstgeest-Rijnfront in particular has shown that the oak wood must have come from a geographically narrowly defined area (Doeve 2015, 88). This is thought to have been in the upper Rhineland around the Mainz and the Odenwald regions (Jansma/van Lanen 2021, 353–358), from which most of the wine imports in the North Sea area may have come (Dijkstra 2011, 308; Doeve 2015, 88–89). However, the extent to which empty barrels were traded for first use or even shipped as semi-finished products, as it is known from later times (Ossowski 2014, 257), is not certain. In the later medieval period, casks and tuns, at that time also a standard unit for measuring the capacity of ships, were even hired in the same way as modern day Intermodal Containers (Hutchinson 1994, 89–92). In any case, reused barrels as well as the remains of ship timbers indicate that the Rhine and Oude Rhijn were the major trade route from western Germany to today's Netherlands and beyond during the early Middle Ages (Jansma et al. 2017, 38).

Beyond the area of the Netherlands, eastern Flanders (Belgium) and the coastal area of Lower Saxony (Germany), the distribution pattern of Vorgebirge pottery changes. Pottery is usually found in places on or near the coast or along navigable rivers, which are often related to trade and exchange. It is only present in small numbers compared to other regional or supra-regional imports (Kemme 2021, 274).

In Scandinavia, Rhenish pottery is present at a number of sites, all of which can be considered as non-rural trading sites (Kemme 2021, 275). As in England, Rhenish pottery seems not to have been part of the inland ceramic trade (Kemme 2021, 276). This can be shown in detail in the distribution of Rhenish goods – pottery, quern stones, metal dress accessories and glass – in Denmark (Keller 2023, 62–65). This area was connected to the Carolingian Empire mainly through coastal shipping from Dorestad and the other trading centres in Frisia and the Rhine estuary. Rhenish pottery can be found only at coastal sites in southwestern Jutland as well as on the route linking Hollingstedt to the trading settlement at Hedeby. All other types of imports from the Carolingian Empire show a much wider distribution. Glass vessels and metal dress accessories have been found mainly near the coasts of both Jutland and the Danish Isles in the Baltic. Quern stones from the Mayen region even reached a substantial number of inland sites in Jutland.

These close links between Badorf ware finds and the major emporia and some smaller sites, which also show evidence of trading activity, provides the basis for a distribution model wherein Rhenish pottery reached places outside the main trade area only as the household goods of traders and mariners stopping for a period of time to conduct business (Feveile 2012, 117; Arthur/Sindbæk 2007, 308–309; Keller 2023, 65).

Outside the core distribution area, Badorf ware can therefore no longer be regarded as export goods in the true sense of the word. Rather, it must be assumed that it reached England, Denmark or Scandinavia through visiting merchants. If they stayed for days or weeks in one of these trading places, some of the pottery brought on board the ships was probably broken through everyday use and subsequently disposed of locally.

Yet it is not clear whether some pottery was exchanged within large urban-like settlements. Evidence from the excavation at the Royal Opera House site in London revealed a number of 8th century sherds from Badorf, Walberberg and Mayen within building plots used by different craftworkers (Malcolm et al. 2003, 101). Numerically, these Rhenish imports were not the most important ones at the site, as there are about four times as many northern French reduced wares present (Malcolm et al. 2003, 105). It can also be observed that Rhenish and northern French wares were not distributed evenly throughout the settlement (Blackmore 2003, 191). Instead, some buildings contained clusters of Badorf ware, whereas in others pottery from northern France was predominant.

But Lundenwic might have been a special place during the 8th century, when it saw a rapid growth in settlement size and the development of full-time craftworkers as well as secondary support industries (Malcolm et al. 2003, 101). Still, there seems to be a hiatus between the late 8th to the 10th century in the import of Rhenish wares, which can also be observed in Ipswich (Blackmore 2003, 240; Wade 1988, 96).

However, an interpretation as traders' rubbish does not diminish the significance of the imported pottery finds. Even if they are not to be addressed as trade goods, they do show the intensity of the trading activities of people who equipped their ships in the Rhine estuary harbours for their summer trading trips, and who also loaded Badorf ware as ship's equipment. The pottery thus shows long-distance trade relations in places in the North Sea and Baltic regions, which can otherwise only be proven for a few other material groups (McCormick 2001, 654). The proportion and quantity of imported pottery may be seen as an indication of the intensity of these trade contacts and the length of a visitor's stay. It becomes clear that trade was not happening exclusively via large trading centres, such as London, Hedeby, Ribe or Kaupang, but was also taking place in many smaller places and towns, presumably due to the coastal shipping that was common at the time. Whether this assumption can also apply to other pottery groups, such as Tating jugs, or can be proven by finds of Anglo-Saxon pottery in the southern and eastern North Sea region, must be verified by further research.

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Additional Data Files

Keller, map 2022: C. Keller, Distribution map of Badorf ware (Northern Europe) (2022). DOI: 10.5281/zenodo.7319313.

Keller, map 2023: C. Keller, Distribution of Badorf and Walberberg Ware in the British Isles during the 8th and 9th centuries (2023). DOI: 10.5281/zenodo.10013458.

Distribution of Badorf ware in all other areas according to the following databases: BODEON (Rhineland), ADIUVABIT (Westfalia), ARCHIS (Netherlands), CAI (Flanders).

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