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ARCHAEOLOGICAL MATERIAL

CERAMIC WORKSHOPS IN DACIA MEDITERRANEA (LATE THIRD – EARLY SEVENTH CENTURY AD)

Dedicated to my Mother, on the occasion of her 70th birthday

Abstract: Dacia Mediterranea was established after the division of the first Dacia to the South of the Danube in the 280s. The town of Serdica became the capital of the province while other urban settlements in the latter's territory which are known from the sources were Naissus, Remesiana, Germania, Pautalia and Bargala. In the 530s the town of Bargala had already been relocated to the territory of the neighbouring Macedonia Secunda, while the newly founded Iustiniana Prima was at least initially incorporated within Inner Dacia.

In the late third and the fourth century most of the ceramic workshops known to date were situated in or near rural settlements. A second period of archaeologically attested increased activity of the local production centres occurred between the second half of the fifth and the early seventh century, when ceramic manufacture was practised predominantly in urban contexts and less frequently in fortified non-urban sites. For now, there is very little direct information for the local ceramic production of the late fourth and the first half of the fifth century, for which secondary evidence seems to testify.

During the period under discussion pottery production in Dacia Mediterranea seems to have been developed predominantly by private entrepreneurs, in both rural and urban contexts. The manufacture of ceramic building material, on the other hand, was in all probability developed by both personal initiative and implemented state programme. The imperial or municipal (?) officinae should be sought within or in the vicinities of the local towns, as both the direct and the secondary data imply. The evidence gathered and analysed suggests that these workshops were often engaged in supplying major or minor construction projects, for example renovation or erection of fortifications, public buildings and Christian churches.

Keywords: *Ceramic workshops, Dacia Mediterranea, pottery and tile production, Late Roman economy*

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INTRODUCTION

The province of *Dacia Mediterranea* was established after the division of the first Dacia, lying to the South of the Danube (*Dacia Aureliana*, organised by Emperor Aurelian) into two separate administrative territories. According to an inscription this occurred in AD 283¹. However, the initial division may have been short-lived, supposedly being re-arranged

¹ FILOW 1912, 234-239; VELKOV 1977, 62, note 175.

by Diocletian, only to have its final layout established in the course of the later fourth century². Most likely between AD 314 and AD 324 the province was included in the Diocese of Moesia, later to remain within the Diocese of Dacia after the latter was split³. Again in the course of the fourth century, the diocese in question was included in the Prefecture of *Illyricum*, which was finally divided into *Illyricum Occidentale* (formed by the Diocese of Pannonia) and *Illyricum Orientale* (comprising the dioceses of Dacia and Macedonia) most likely around AD 395⁴.

The town of *Serdica* (nowadays Sofia, Bulgaria) became the capital of the province, while other urban settlements within the latter's territory which are known from the sources were *Naissus*, *Remesiana*, *Germania*, *Pautalia* and *Bargala*. In the 530s the town of *Bargala* had already been relocated to the territory of the neighbouring province of *Macedonia Secunda*, while the newly founded *Iustiniana Prima* (nowadays Caričin Grad, Serbia) was at least initially incorporated within *Dacia Mediterranea*⁵.

The territory of the province comprised parts of the modern states of Bulgaria, Serbia and North Macedonia, and included important Roman and Late Roman roads – in the first instance a section of the *Via Diagonalis* (between the road station *Sarmatae* and the *Succi* pass), also sections of the roads from *Serdica* through *Pautalia* to *Stobi*; from *Serdica* to *Oescus*; from *Naissus* through *Scupi* to *Lissus*, again from *Naissus* through *Timacum Minus* to *Ratiaria*, and also along the *Strymon* valley to *Macedonia*⁶.

During the late third and the fourth century most of the ceramic workshops known until now were situated in or near rural settlements and less so in urban contexts. A second period of archaeologically attested increased activity of the local production centres occurred between the second half of the fifth and the early seventh century, when the manufacture of fired clay items has been practised predominantly in urban contexts and less frequently in fortified non-urban sites. For now, there is very little direct information for the local ceramic production of the late fourth and the first half of the fifth century, for which secondary evidence seems to testify.

This contribution aims to present and analyse the direct archaeological information for local ceramic workshops in Inner Dacia during the Late Antique period, supplemented by the available indirect archaeological, archaeometric and epigraphic evidence on the subject. Furthermore, its goal is to determine the scope of the local ceramic production along with possible connections of the craft to other artisanal activities, practised within the province, as well as its role as part of the region's economy.

CERAMIC WORKSHOPS IN RURAL SETTLEMENTS

Mala Kopašnica

The archaeological site was located 12 km to the Southeast of the modern town of Leskovac, on a terrace descending from the East and North to the South Morava River (Figs. 1/1; 25/1). A large Roman *vicus* with adjacent necropolis, separated by a trespassing Roman road, were uncovered there, over an area of more than 20 ha⁷.

The road had two exploitation periods. A coin of Antoninus Pius was the earliest find from the first period, while the numismatic material related to the second construction period was dated to the late third and the fourth century. A ditch was found between the road and the settlement structures, probably a remnant of a wooden palisade. It was filled up in the third century, which indicates that the defensive element was in use during the first construction period of the site⁸. A total of 663 graves were unearthed within the necropolis, starting from the 1960s and until the 2010s. The first phase of use of the graveyard, when cremation has been practised, lasted from the second century to the end of the third or the beginning of the fourth century. The graves with inhumation were dated to the fourth century⁹.

Several buildings mostly dated to the third and the fourth centuries were uncovered during the excavations. The largest one was identified as a *horreum* (building 5), while another had remains of a brick-based hypocaust found *in situ*¹⁰ (Fig. 2a).

Two clusters of five kilns each were discovered between the necropolis and the buildings from the settlement. The first one comprised smaller in size installations, with circular floor plan and diameter between 0.70 and 1.30 m (Fig. 2c). Four of these had perforated floors supported by a brick built central pillar (in one case pillar/wall aided by side pilasters), while the fifth was supposedly a single-chambered facility. The five structures had common stoke pit and were most likely used for the firing of small-sized ceramic vessels and oil lamps. The entire complex was preliminary dated to the second half of the second – the first half of the third century on the ground of a single bronze coin and an assemblage of ceramic vessels found inside the combustion chamber of one of the kilns¹¹.

The second group of kilns was located to the West of the first one and comprised two large installations (2.00 and 1.80 m in diameter), two medium-sized structures (1.30 m in diameter) and a smaller one (0.80 m in diameter). All had circular floor plan and perforated floors supported by a central pillar (Fig. 2b). According to the researchers, one of the large kilns was abandoned in the course of the third century, when two of the smaller structures were built. A large amount of fragmented ceramic vessels of the same colour and texture was found among the debris inside the

² VELKOV 1977, 62, note 175; BĀJENARU 2010, 13, note 5.

³ See for instance VELKOV 1977, 61-63; GKOUTZIOUKOSTAS 2016, 93-110.

⁴ VELKOV 1977, 62-63; DUMANOV 2015, 91.

⁵ VELKOV 1977, 93-99; SNIVELY 2010, 549-550; IVANIŠEVIĆ 2016, 109-110. The town could have been relocated to the province of *Dardania* after AD 545 – see DINTCHEV 1999, 52, note. 40.

⁶ GEROV 1961, 237-244; VELKOV 1977, 98; 192-196; KATSAROVA 2005, 216-219; BAJENARU 2010, 25-32.

⁷ IVANIŠEVIĆ/STAMENKOVIĆ/JOVIĆ 2016, 47-48.

⁸ IVANIŠEVIĆ/STAMENKOVIĆ/JOVIĆ 2016, 63-67.

⁹ STAMENKOVIĆ/IVANIŠEVIĆ/PEŠIĆ 2016, 17-45.

¹⁰ IVANIŠEVIĆ/STAMENKOVIĆ/JOVIĆ 2016, 52-58.

¹¹ IVANIŠEVIĆ/STAMENKOVIĆ/JOVIĆ 2016, 59-61.



Fig. 1. Map of the Central and North-east Balkans with locations of the kiln sites in Dacia Mediterranea /with provincial and diocese borders of the 4th c. AD and abbreviated provincial names: Mc – Macedonia; Dd – Dardania; MP – Moesia Prima/Superior; DR – Dacia Ripensis; DM – Dacia Mediterranea; MS – Moesia Secunda/Inferior; Sc – Scythia; Hm – Haemimontus; Thr – Thracia; Eu – Europa; Rh – Rhodope (provincial borders after DINTCHEV 2006, 99, fig. 1; BAJENARU 2010, 231, Pl. 1; with design, additions and corrections by A. Harizanov).

other large installation. This part of the industrial complex was dated to the third century¹².

Two moulds – for terracotta figurines and sigillata vessels respectively, were found within a large pit, not far from the kilns. The pit was filled with material probably in the fourth century, judging by the coins found. Furthermore, potter's tools (dies for stamped decoration) were found during the excavations of both the necropolis and the settlement structures. Finds of iron slag and glass fragments in refuse pits supplement the identified artisanal activities within the village¹³.

Although the kilns from Mala Kopašnica were preliminary dated to the second half of the second and the

third centuries, it is possible that ceramic production has been practised at the site during the fourth century as well. For instance, the building with hypocaust, which is dated to the last third of the third century and the first half of the fourth century, could have been used not as a dwelling or a bath but rather as a pottery drying installation. Similarly arranged separate buildings or premises inside workshops were found elsewhere in the neighbouring region and the western Roman provinces and identified as facilities used for artificial drying of wheat or precisely ceramic products¹⁴. Furthermore, the rest of the settlement structures and the necropolis have been continuously utilised during the fourth century and thus there most likely was an uninterrupted local demand for pottery, used for both domestic and funeral purposes.

¹² IVANIŠEVIĆ/STAMENKOVIĆ/JOVIĆ 2016, 61-62.

¹³ IVANIŠEVIĆ/STAMENKOVIĆ/JOVIĆ 2016, 52, 58, 62.

¹⁴ See HARIZANOV 2016, 32-38 and the cited literature.



Fig. 2. Photos of ceramic kilns (1-2) and the building with hypocaust (3) from the site at Mala Kopašnica (after IVANIŠEVIĆ/STAMENKOVIĆ/JOVIĆ 2016, 55, fig. 3; 61, fig. 8; 62, fig. 9)

Poleta

The site near the modern village of Poleta, Simitli municipality, was discovered during the 1980s in the course of construction work near the Struma River (Figs. 1/2; 25/2). One lime kiln (Fig. 3b), a water fountain (Fig. 3c) and a ceramic kiln were unearthed there¹⁵ (Fig. 3a). The ceramic kiln had rectangular floor plan and internal cross-walls,

¹⁵ KULOV 2007, 132.

used as support for the perforated floor. In addition, the lower part of an opening, most likely used as a chimney, was preserved on the wall of the combustion chamber opposite to the stoking channel¹⁶.

The water facility was found 100 m to the Southeast of the ceramic kiln, in the lowest part of the studied area. Described as a water fountain, the installation was used for the capture of a nearby water spring. The construction was

¹⁶ HARIZANOV 2019, 620-621.

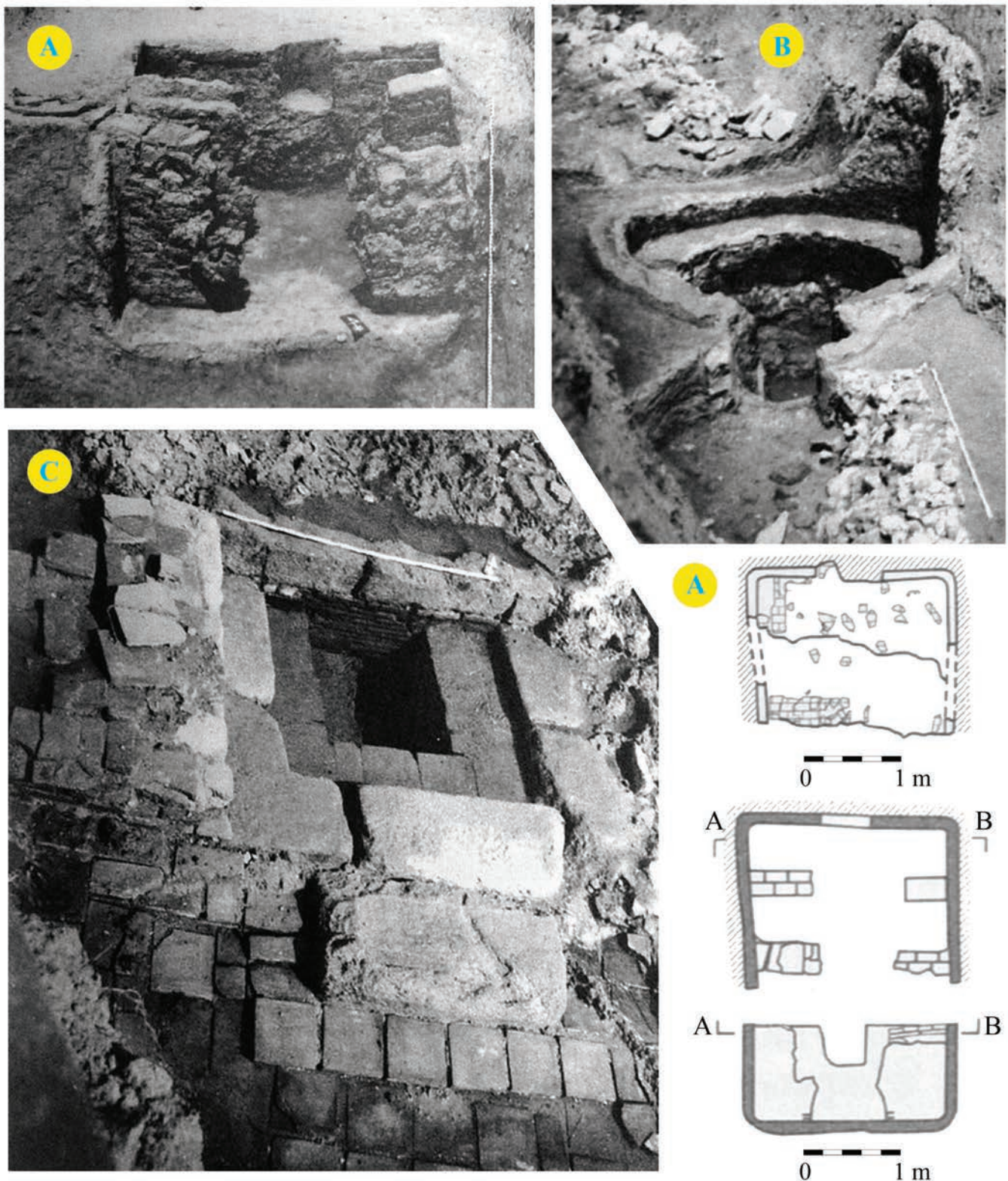


Fig. 3. Photos and drawings of the installations from the site at Poletto: 1) the ceramic kiln; 2) the lime kiln; 3) the water fountain (after KULOV 2007, 133-135, figs. 3, 4, 5 and 7; with additions and corrections by A. Harizanov).

solid, made of bricks and stones with mortar bonding. The water came through an arched opening fashioned in the stone wall built to support the northern slope of the terrain. Beneath it, there was a small two-step basin, surrounded by brick pavement. Other features of the installation included a ceramic pipeline and another small shaft, used according to the excavator for draining the water during cleaning and

repairs¹⁷. It seems very likely that the water capture was constructed in relation to the developed artisanal activities (or vice versa), given that water was needed both for lime and ceramic production. Furthermore, it is also possible that some of the features of the water facility could have been

¹⁷ KULOV 2007, 137.

used in the process of initial clay preparation (breaking, purification, moistening, mixing and/or maturing)¹⁸.

According to I. Kulov, the ceramic kiln was used for the production of ceramic building material¹⁹. However, his hypothesis was based mostly on the layout of the kiln's combustion chamber, since no production waste was mentioned. Given that kilns of rectangular floor plan were used for both pottery and tile manufacture²⁰, it could be assumed that the large quantity of fragmented and discarded ceramic vessels found near the three installations²¹ and outside their usual household context was likewise part of the workshop's repertoire²². It is possible that latter included also terracotta vaulting tubes²³.

Three of the seven coins found during the research were recognised. They were minted in the reigns of Septimius Severus, Gordian III and Claudius II. In concordance with their dating, the site's exploitation was placed in the time from the end of the second century until some point in the third century²⁴, around the end of its third quarter²⁵ or the end of the century.

Pokrovnik

The site near the modern village of Pokrovnik, Blagoevgrad municipality, was excavated during construction work for the Struma highway in 2017 and 2018 (Figs. 1/3; 25/3). The discovered ancient structures were situated within a large villa complex and a *vicus* situated to the North of it. The two settlements were separated by a tomb complex, located in a stone-walled enclosure²⁶.

Eighteen thermal installations were discovered among the ruins of the villa and the *vicus* (Fig. 4). At least ten of these were used as ceramic kilns, with possibly one or two more. Four kilns (nos. 3-4; 7; 10) were found near or within the villa complex (two of circular and two with quadrangular floor plan), with the rest (six of quadrangular plan, nos. 13-18) being discovered among the structures from the presumed *vicus*²⁷.

Most of the kilns from the *vicus* were probably used for the production of ceramic building material, while for a few there is also a possibility for involvement in pottery manufacture. Two or three of the villa kilns were also designed for brick and tile production, with the rest being most likely used in pottery manufacture, including reduced fired vessels. Loom weights with traces of multi-firing and mostly with tipped tops, discovered inside some of the tile kilns in both parts of the archaeological site, have been almost certainly used as stacking supports for the fired ceramic building materials²⁸.

¹⁸ HARIZANOV 2020a, 116.

¹⁹ KULOV 2007, 134-135.

²⁰ HARIZANOV 2019, 118-122.

²¹ KULOV 2007, 136-139, Figs. 9-11.

²² HARIZANOV 2020a, 116.

²³ HARIZANOV 2021, 135-136.

²⁴ KULOV 2007, 132; 139-140.

²⁵ HARIZANOV 2020a, 116.

²⁶ DIMITROV 2019, 1-16.

²⁷ HARIZANOV 2020a, 110.

²⁸ HARIZANOV 2020a, 111.

The villa complex had two construction periods. The first one occurred in the third century, when a villa of modest size existed on the spot. In the second construction period, between the end of the third and the mid-fifth century, the complex was enlarged and encompassed more than forty premises and four yards. The buildings and facilities, situated within the *vicus*, were in use since the second half of the second or the early third century. A second construction period occurred there during the fourth century, after which the structures were probably abandoned²⁹.

Most of the discovered kilns were in use during the third and the fourth century, while some could have been built as early as the second half of the second century. An archaeomagnetic dating of three of the structures have provided terminal dates for their use in the second half of the third century (ca. AD 252 – 290). The first of these three kilns was found beneath stone walls of the second villa complex and was probably in use during the first construction period of the site. The second and the third installations were located within the *vicus* and, in concordance with the latest dating, were likewise used during its first construction period. Given that the lifecycle of ceramic kilns could span from several years to several decades, the earliest possible dates for the construction of the three installations might be set in the first half of the third century³⁰.

Moshtanets

In 2017 another Late Roman site was discovered on the road bed of Struma Highway, near the modern day village of Moshtanets, just several kilometres to the South of the one at Pokrovnik (Fig. 1.4; 25.4). The rescue excavations revealed a previously unstudied Roman and Late Roman rural settlement with adjacent necropolis. Several buildings were unearthed within the southern part of the site (Sector I), with several more found in its central zone (Sector II). The latter have been separated from the nearby necropolis (Sector III) by a stone wall, supposedly erected for the purpose. The buildings and facilities in Sector I were dated between the third and the third quarter of the fourth century, the ones from Sector II – to the fourth – first half of the fifth century. *Terminus post quem* for the use of the necropolis is a coin of Nerva found in one of the graves, while its terminal date has been set close to the mid-fourth century³¹.

A two-chambered ceramic kiln was found in Sector I, situated in a relatively flat terrain near a rising slope to the West, where the first cluster of buildings was excavated. It was dug partly into a layer of brownish soil, with low concentration of ceramic material, and partially into a yellowish sterile stratum. The combustion chamber was sunken, with close to circular floor plan. A central pillar of rectangular plan, erected of clay-bonded stones and fragmented bricks, was used as support of the perforated floor. The latter was made of stones, fragmented bricks and tiles, bonded and covered in clay. The stoking channel and the stoke pit were found to the East of the combustion chamber, dug into the sloping terrain³² (Figs. 5-7).

²⁹ DIMITROV/RAYCHEVA/RUSEV 2019, 381; DIMITROV 2019, 9-10.

³⁰ HARIZANOV 2020a, 111.

³¹ GROZANOVA/HRISTOVA/FILIPOVA 2018, 379-380.

³² HARIZANOV 2021, 130.

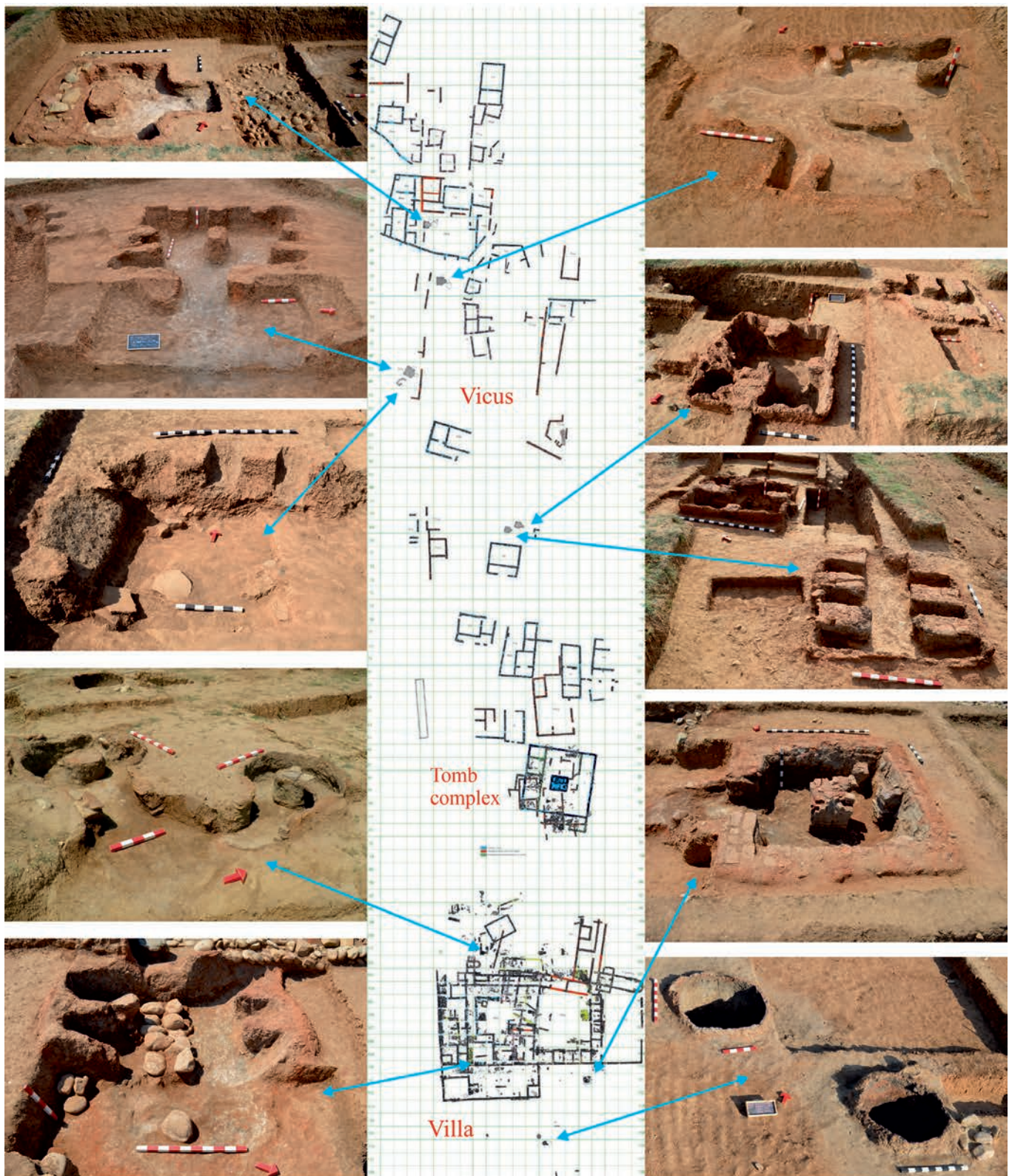


Fig. 4. General plan of the Roman complex at Pokrovnik and photos of the ceramic kilns and possible smelting furnaces (bottom right) from the villa and the vicus (site plan after DIMITROV/RAYCHEVA/RUSEV 2019, 381, fig. 1; photos by Z. Dimitrov and his archaeological team).

The described installation was most likely used for the production of both household items and terracotta vaulting tubes. A batch of almost entirely preserved tubes of two varieties was found deposited into a pit inside a building situated to the West of the kiln (Figs. 7-8). Apart from this deposit, several stray finds of almost entirely preserved and

fragmented tubes (including production waste), discovered in the same sector as the kiln and the assemblage, were viewed as additional proof for the local origin of these items³³.

³³ HARIZANOV 2021. 131.



Fig. 5. The ceramic kiln from the site at Moshtanets: initial stage of research (after HARIZANOV 2021, 140, fig. 5).

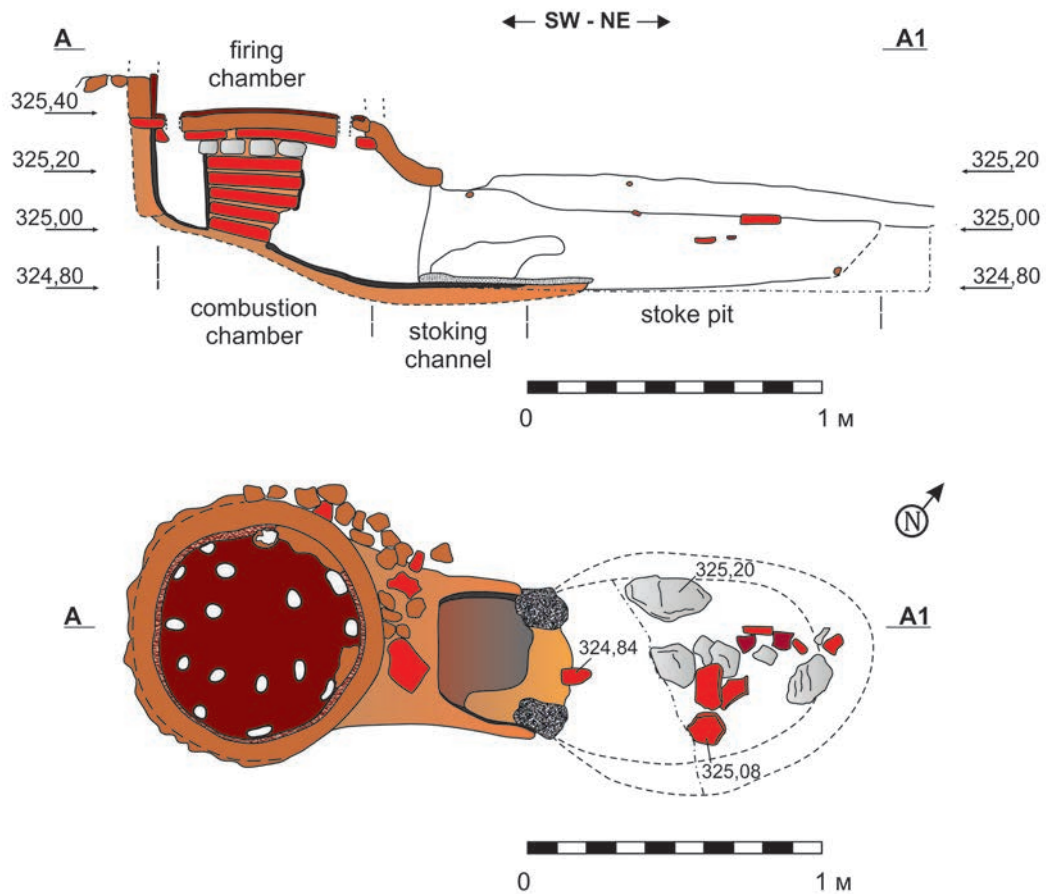


Fig. 6. The ceramic kiln from the site at Moshtanets – plan and cross-section (after HARIZANOV 2021, 133, fig. 3).



Fig. 7. The ceramic kiln and the tube assemblage from the site at Moshtanets (after HARIZANOV 2021, 141-142, figs. 5-8).

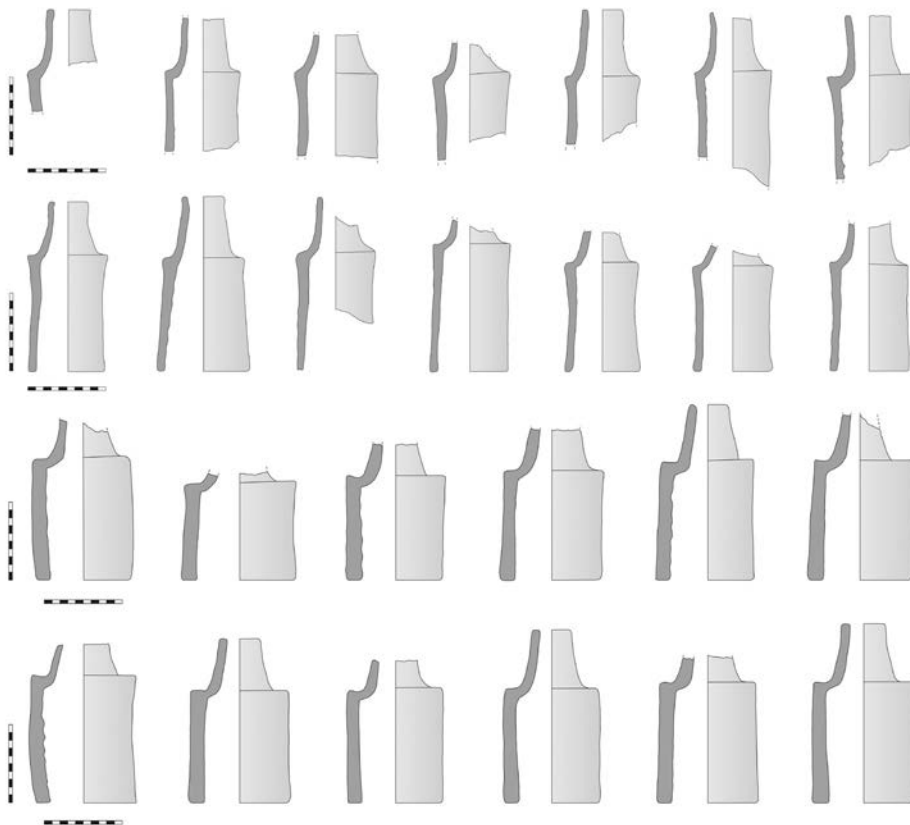


Fig. 8. The Moshtanets vaulting tubes: drawings of type I (bottom) and type II (top) (after HARIZANOV 2021, 143, figs. 11 and 13).

The potters who used the kiln and produced the vaulting tubes were most likely active during the last quarter of the third and the first quarter / half of the fourth century. An archaeomagnetic study on samples from the kiln have placed the last firing of the installation between AD 286 and AD 334, which corresponds with the archaeological dating of the materials from this part of the site³⁴.

Breznik

The archaeological site was discovered some 2 km to the South of the modern town of Breznik within a zone of a modern gold mining concession (Figs. 1/5; 25/5). During the salvage excavations in 2016 and 2017 remains of a Roman rural settlement were found, comprising three stone-walled buildings, a possible shed and three ceramic kilns. According to the researchers, they were part of the industrial section of a villa complex, supposedly located to the Southeast of the studied area³⁵.

The three ceramic kilns had quadrangular floor plan. Kiln no. 2 was situated in the eastern part of the site, near the stone wall of a possible large shed. The combustion chamber, the stoking channel and the stoke pit were dug into the bedrock. The walls of the chamber, the two central supporting pillars and the remains of the perforated floor were all built of mud bricks and clay³⁶. The entrance to the stoke pit has been dug deliberately on its southern side, most likely for preserving the stoking channel of undesirable cold air flows (Fig. 9).

The other two installations (nos. 1 and 3) were found to the West of the first one. Kiln no. 1 was built after kiln no. 3 was abandoned, with the southern section of the latter's lower chamber being reused as a part of the stoke pit of the former. Kiln no. 1 was also positioned on top of the bedrock. The lower chamber and the preserved tongue wall with side pilasters, used as support for the perforated floor, were built of full-sized bricks and clay. Kiln no. 3 was only partially preserved as well. The combustion chamber had been positioned upon the bedrock. In its centre two central supporting walls were situated, only one of which was found *in situ*. The preserved kiln parts were built of full-sized bricks and clay³⁷ (Fig. 10).

Several connected pits, cut into the bedrock, were found within building no. 2, together with a pit filled with purified clay (Fig. 10). They were probably part of an installation or installations, used in the initial treatment of the raw clay³⁸.

The three installations described were most probably used for the production of tiles, bricks and loom weights³⁹. No secure data for pottery manufacture has been found until now. However, considering the presence of clay processing installations of limited size⁴⁰, the manufacture of smaller

amounts of pottery vessels for local use along with the loom weights mentioned seems a plausible suggestion. These ceramic items could have been also fired in the discovered kilns, simultaneously or interchangeably with the bricks and tiles produced there.

Two construction periods, the second with two phases, were identified on the site. The first period lasted from the second half of the second century until the 260s. The second period occurred between the 260s or 270s and the third quarter of the fourth century. A date in the 310s or the 320s has been set as a margin of the two construction phases⁴¹. The installations in building no. 2 and kiln no. 2 were most likely used during the first construction period. Kiln no. 3 was probably in operation in the course of the first phase of the second construction period, while kiln no. 1 was exploited in the second phase of the latter⁴².

Golemo Buchino

The Late Roman village near the modern day Golemo Buchino is located in a pass of the Lyulin Mountain, less than 20 km to the West-Southwest of the Roman town of *Serdica* (Figs. 1/6; 25/6). It was excavated in relation to the construction of the Lyulin Highway in 2005-2008 and comprised several buildings, two sheds and eight kilns⁴³.

The eastern part of the settlement was the most thoroughly studied during the archaeological research, with six buildings, two sheds and eight kilns discovered there (Fig. 11). The kilns were grouped in two clusters, one at the western side of this sector and second at its south-eastern end. The first group comprised two kilns (nos. 6 and 7), situated near two of the buildings (G and H). The installations had semi-sunken firing chambers, circular floor plans and central supporting pillars (Fig. 12). According to the discovered pottery in this zone (the largest quantity found inside the chamber of kiln no. 6), they were used for the manufacture of coarse table and kitchen wares – mostly cooking pots, bowls and lids, with smaller quantities of pitchers/table *amphorae* and jugs (Fig. 13). It seems plausible for at least one of the two buildings located nearby to have been used as a workshop and/or a dwelling for the potters⁴⁴.

The second cluster of kilns included the other six installations. Kiln no. 1 had quadrangular floor plan with the rest having circular ones. Kilns nos. 1 and 2 had common stoke pit and for that reason the stoking channel of kiln no. 2 had been oriented towards the South (Figs. 14-15). The other five installations had stoking channels following the natural slope to the East (Fig. 16). Apart from kiln no. 4, which had no support for the perforated floor, kilns nos. 1, 2,

facilities could have required much more time, so it seems plausible to suggest that this could have been done in another place, undiscovered during the archaeological research.

⁴¹ PAUNOVA 2018, 438.

⁴² PAUNOVA 2018, 436; HARIZANOV 2020a, 117. The types of building materials used for the erection of the three kilns can be viewed as an additional confirmation for the presented chronology, given that the earliest structure has been built of mud bricks, while the other two were constructed with fired bricks, which were as it seems already available within the settlement.

⁴³ BOYANOV 2014, 77-78; HARIZANOV 2019, 144; HARIZANOV 2020b, 330.

⁴⁴ HARIZANOV 2019, 145; 432-436.

³⁴ HARIZANOV 2021, 130-132.

³⁵ PAUNOVA/TRENDAFILOVA 2017, 510-513; PAUNOVA 2018, 435-438.

³⁶ HARIZANOV 2020a, 116.

³⁷ HARIZANOV 2020a, 116.

³⁸ HARIZANOV 2020a, 116. I would like to thank the Dig Director of the site, Vasilka Paunova (Regional Historical museum Pernik), for the additional information on the matter.

³⁹ PAUNOVA 2018, 438.

⁴⁰ Purifying enough clay for the production of bricks and tiles in these



Fig. 9. Kiln no. 2 from the site at Breznik (after HARIZANOV 2020a, 141, fig. 16).

3, 5 and 8 had central pillars maintaining this construction element⁴⁵. The five installations were used for the production of tiles (kiln no. 1 along with kiln no. 2 (?)), coarse kitchen and table wares – again mostly cooking pots, with smaller quantities of bowls and lids (Fig. 17). Kiln no. 4 had more solid construction of the combustion chamber, including a tile covered floor, which might be an indication for a different use, likely related to another craft⁴⁶ (Fig. 18).

A large tripartite building, located to the North of the six kilns, could have been used as both potters' dwelling and a workshop. It comprised a large room to the West (a dwelling?), two small premises in the middle and a shed (working space?) to the East. The small premises were most likely used as a storeroom (the northern one) and a potter's installation (the southern one). Initially described as a domestic oven⁴⁷, the latter had rectangular floor plan (2.10 x 2.70 m) and additionally fired mud brick (or clay lined) walls. Seven cooking pots with lids, seven loom weights and

a dug in *pithos* were found inside it⁴⁸. Its possible use has been related to clay mixing and maturing or to the drying of clay-formed items⁴⁹. The presence of a dug in *pithos* could be viewed as a second period of use of this space of the building, bearing in mind that such a vessel could have been placed neither within the supposed oven nor in a clay/ceramic processing installation.

The rest of the buildings, located between the two clusters of kilns, could have been used as dwellings and/or for other artisanal activities⁵⁰. It is not impossible, apart from their use as lodgings, for these structures to have been employed in certain stages of ceramic manufacture as well. The two sheds might have been used for storing wood and fired or still unfinished (subjected to natural drying) clay-made items⁵¹.

⁴⁵ HARIZANOV 2019, 144; 418-431; 437-439.

⁴⁶ HARIZANOV 2020b, 331.

⁴⁷ BOYANOV 2014, 81.

⁴⁸ BOYANOV 2014, 81.

⁴⁹ HARIZANOV 2019, 144.

⁵⁰ BOYANOV 2014, 79-80.

⁵¹ HARIZANOV 2019, 145.

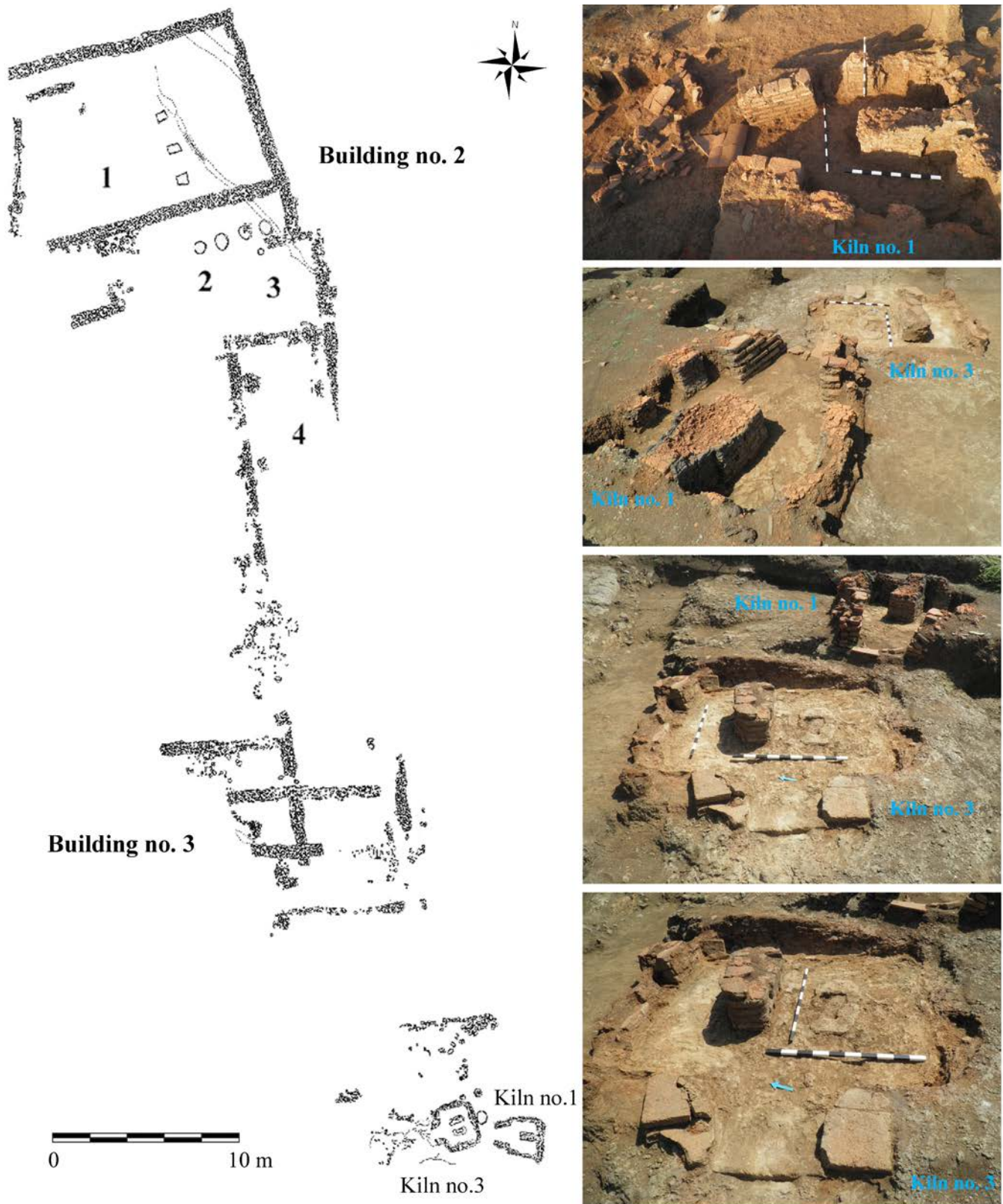


Fig. 10. General plan of the western part of the site at Breznik and kilns nos. 1 and 3 (after HARIZANOV 2020a, 142, fig. 17).

The entire settlement has been dated to the fourth century⁵². The lack of destruction debris within the excavated area of the site indicates that it was abandoned by the inhabitants, most likely due to the instability in the region during the Gothic wars of the 370s⁵³ or slightly later.

⁵² BOYANOV 2014, 87.

⁵³ HARIZANOV 2019, 149.

Dragovishtitsa

An architectural complex, identified as living quarters of a rural estate, was discovered during rescue excavations near the village of Dragovishtica in 2015, some 18 km to the North-Northwest of Roman *Serdica* (Figs. 1/7; 25/7). According to the researchers, the site was occupied from

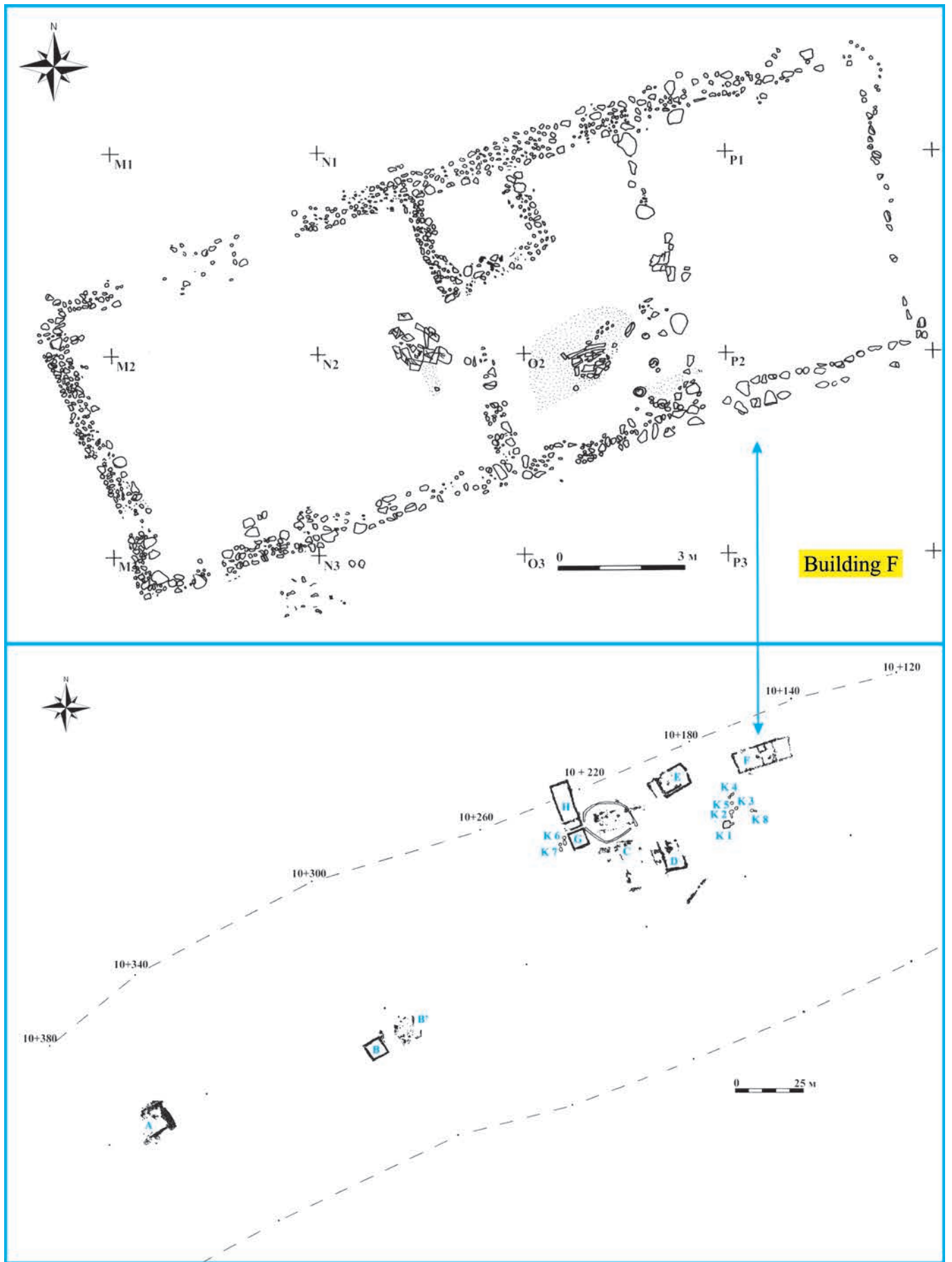


Fig. 11. General plan of the archaeological site at Golemo Buchino (bottom) and building F (top) (after BOYANOV 2014, 90-91, figs. 2-3; additions by A. Harizanov).

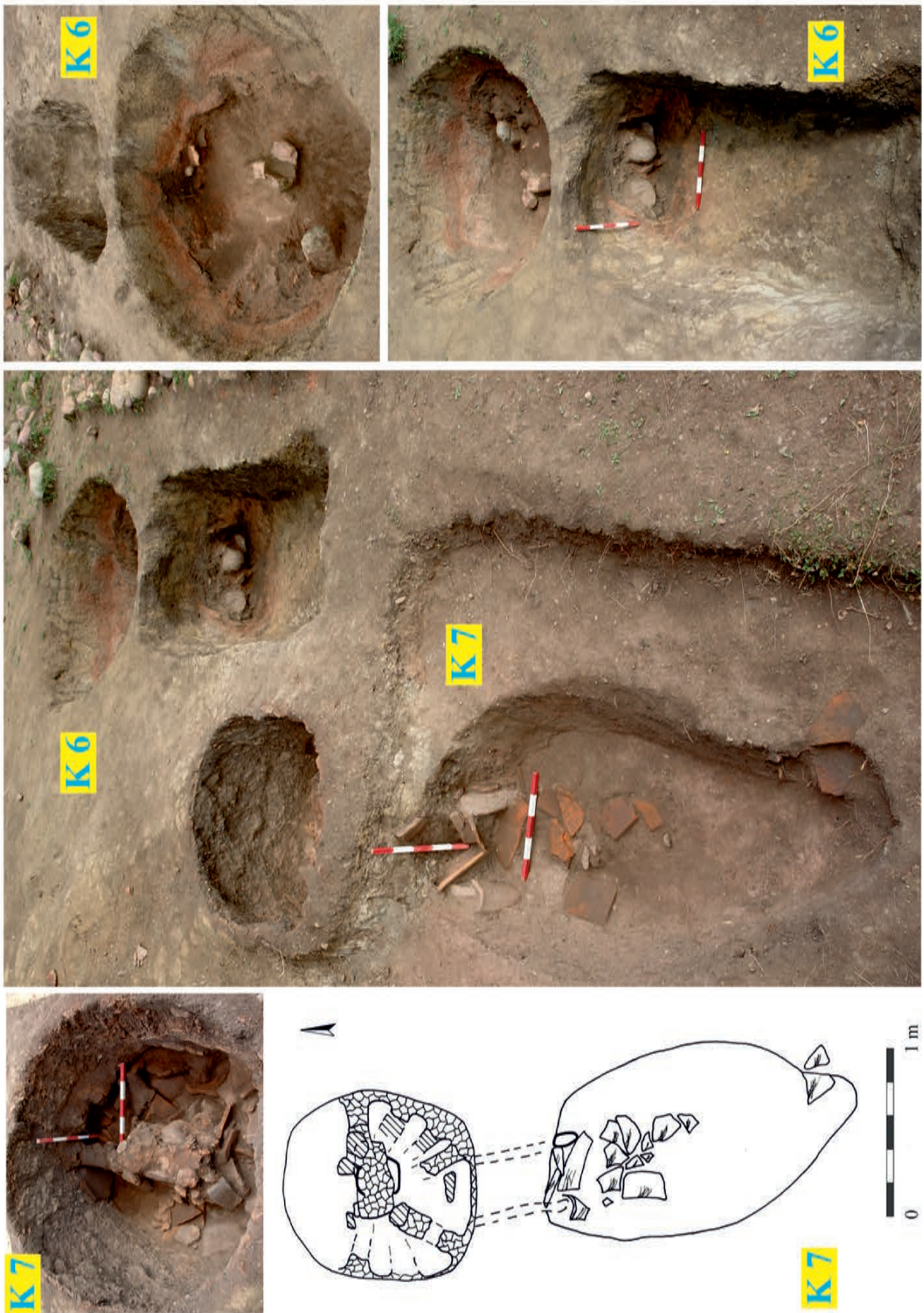


Fig. 12. Kiln no. 6 (K6) and kiln no. 7 (K7) from the site at Golemo Buchino (after HARIZANOV 2019, 434, figs. 2-3; HARIZANOV 2020b, 347, fig. 15).

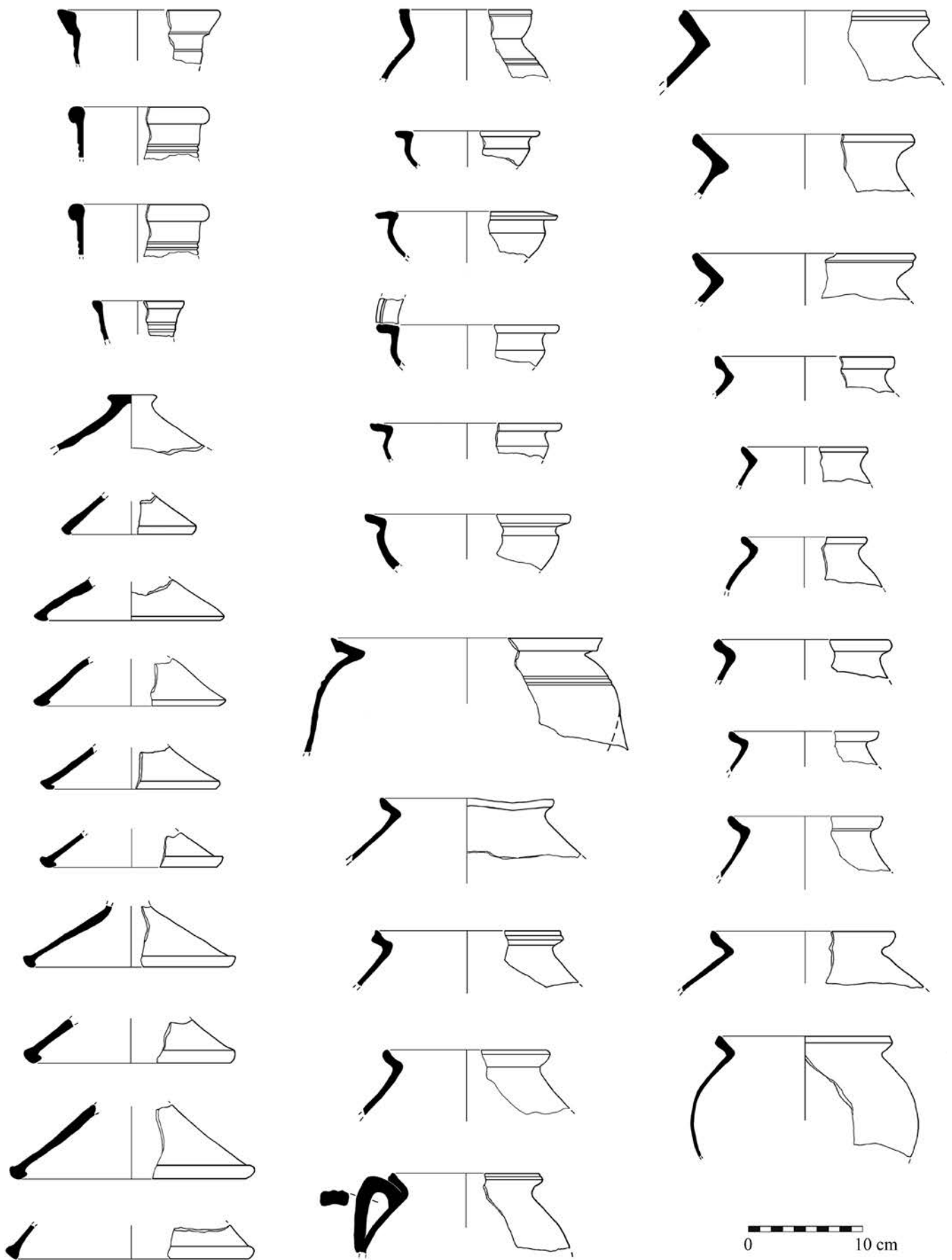


Fig. 13. Pottery from the western group of kilns (nos. 6 and 7) at the site at Golemo Buchino (after HARIZANOV 2019, 433, fig. 1; V. Handzhiyska, A. Harizanov).



Fig. 14. Kilns nos. 1 (K1) and 2 (K2) from the site at Golemo Buchino (after HARIZANOV 2019, 421-422, figs. 3-4; 423-424, figs. 2-4).

the second half of the third until the beginning of the fifth century⁵⁴.

One ceramic kiln of a rectangular floor plan was found near the uncovered building⁵⁵. The installation

probably served for the firing of ceramic building material and was most likely used during the initial construction of the estate⁵⁶.

⁵⁴ HRISTOV/TANEVA 2016, 539-542.

⁵⁵ HRISTOV/TANEVA 2016, 539-542.

⁵⁶ HARIZANOV 2020a, 111.

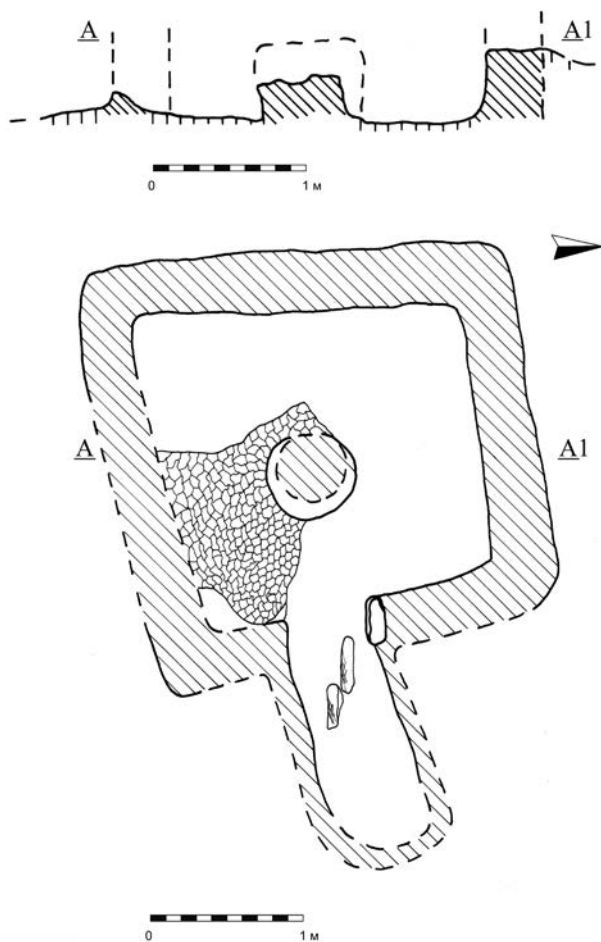


Fig. 15. Plan and cross-section of kiln no. 1 from the site at Golemo Buchino (after BOYANOV 2014, 92, fig. 5; HARIZANOV 2019, 419-420, figs. 1-2).

Late Antique mausoleum in Lozenets neighbourhood, Sofia

A ceramic kiln was found about 3 km to the South of the fortified area of Roman *Serdica*, in the modern neighbourhood of Lozenets (Figs. 1/8; 25/8). The installation had semi-sunken firing chamber of rectangular floor plan (internal dimensions 2.25 x 2.50), with the perforated floor carried by four pairs of cross-arches resting upon a tongue wall, situated opposite the stoking channel⁵⁷ (Fig. 19). The kiln was unearthed near a Late Antique mausoleum and was most likely used for the manufacture of the ceramic building materials needed for the latter's erection. Traces of fired bricks were found on the upper side of the perforated floor. In concordance with the initial dating of the burial complex, the installation was dated to the mid-fourth century⁵⁸. According to a more recent dating of the mausoleum, the latter has been used between the last quarter of the fourth century and the 440s⁵⁹, which in turn places the erection of the kiln at the beginning of the same period⁶⁰.

Recent excavations of the area around and near the mausoleum proved that it was located within a larger

⁵⁷ KOZAREV 2004, 87-90; HARIZANOV 2019, 659-660.
⁵⁸ KOZAREV 2004, 89.
⁵⁹ IVANOV 2008, 157.
⁶⁰ HARIZANOV 2019, 659.

necropolis, most likely dating back to the first half of the fourth century⁶¹. This newly acquired data could be considered as a further proof for the suggested affiliation of the mausoleum building with a Late Roman villa, presumably to be found not far away⁶², which in turn could include the site in the group of the rural settlement workshops. It is also possible that the kiln in question served not only the memorial complex but rather the entire necropolis⁶³. Furthermore, it could likewise be hypothesised that it wasn't the only installation of this kind in the area during this period, given the abundance of good local clay (personal observations), along with a nearby water source and the need of not only building material but grave offerings as well⁶⁴. The presence of a ceramic atelier of later date in the same zone could also be mentioned as an additional argument for such an assumption⁶⁵.

**CERAMIC WORKSHOPS IN URBAN CONTEXT
Sofia (*Serdica*)**

The direct archaeological evidence for active Late Antique ceramic workshops within or near *Serdica* (Figs. 1; 25), the capital of *Dacia Mediterranea*, is still scarce. A partially preserved ceramic kiln of quadrangular floor plan has been discovered during rescue excavation near the outer face of the eastern fortification wall of the town. Dated to the sixth century, it was most likely used for the firing of ceramic building material, probably in relation to a construction project initiated by the state or the municipal authorities⁶⁶.

More could be said about the indirect evidence for the production of pottery and ceramic building material in the vicinities of *Serdica*. Several bricks with inscriptions containing a number of tiles produced and their date of manufacture, found in downtown Sofia and near the modern neighbourhood of Kubratovo (previous Kumanovo)⁶⁷, have been viewed as an indication for the presence of a probably state or municipally operated *officina*, in all likelihood located precisely at the said place (Fig. 25.10). Furthermore, other bricks with written upon them personal names and numbers of tiles again found in the modern centre of the city were related to owners of private workshops⁶⁸. In addition, bricks with stamped monograms, found within or near the fortifications of *Serdica*, with parallels to similar finds from *Constantinopolis*, were also considered as state ordered imperial or municipal production⁶⁹.

A number of almost identical wheel-made oil lamps (Kuzmanov types XL and XLI), discovered during

⁶¹ IVANOV/HARIZANOV 2021, 919-922; MESHEKOV/STANEV 2021, 915-918.
⁶² See IVANOV 2008, 155-156.
⁶³ Most of the newly discovered graves had tiles or bricks used in their constructions – see IVANOV/HARIZANOV 2021, 919-922; MESHEKOV/STANEV 2021, 915-918.
⁶⁴ For the connections between pottery production and funeral rituals, see for instance the data gathered for *Moesia Superior* in CVJETICANIN 2020: 415-420. For urban and rural Roman and Late Roman kilns sites located within or next to necropoleis from the territory of modern Bulgaria, see HARIZANOV 2019: 123-125; 174-176.
⁶⁵ See below the information for the workshop within the Early Christian complex, excavated in the same modern neighbourhood of Sofia.
⁶⁶ DINTCHEV/GATEV 1999, 55-56; HARIZANOV 2020b, 330; 335.
⁶⁷ BESHEVLIEV 1952, 31-32; 60; VELKOV 1977, 159-160.
⁶⁸ HARIZANOV 2020b, 334-335.
⁶⁹ HARIZANOV 2020b, 329-330; 335.

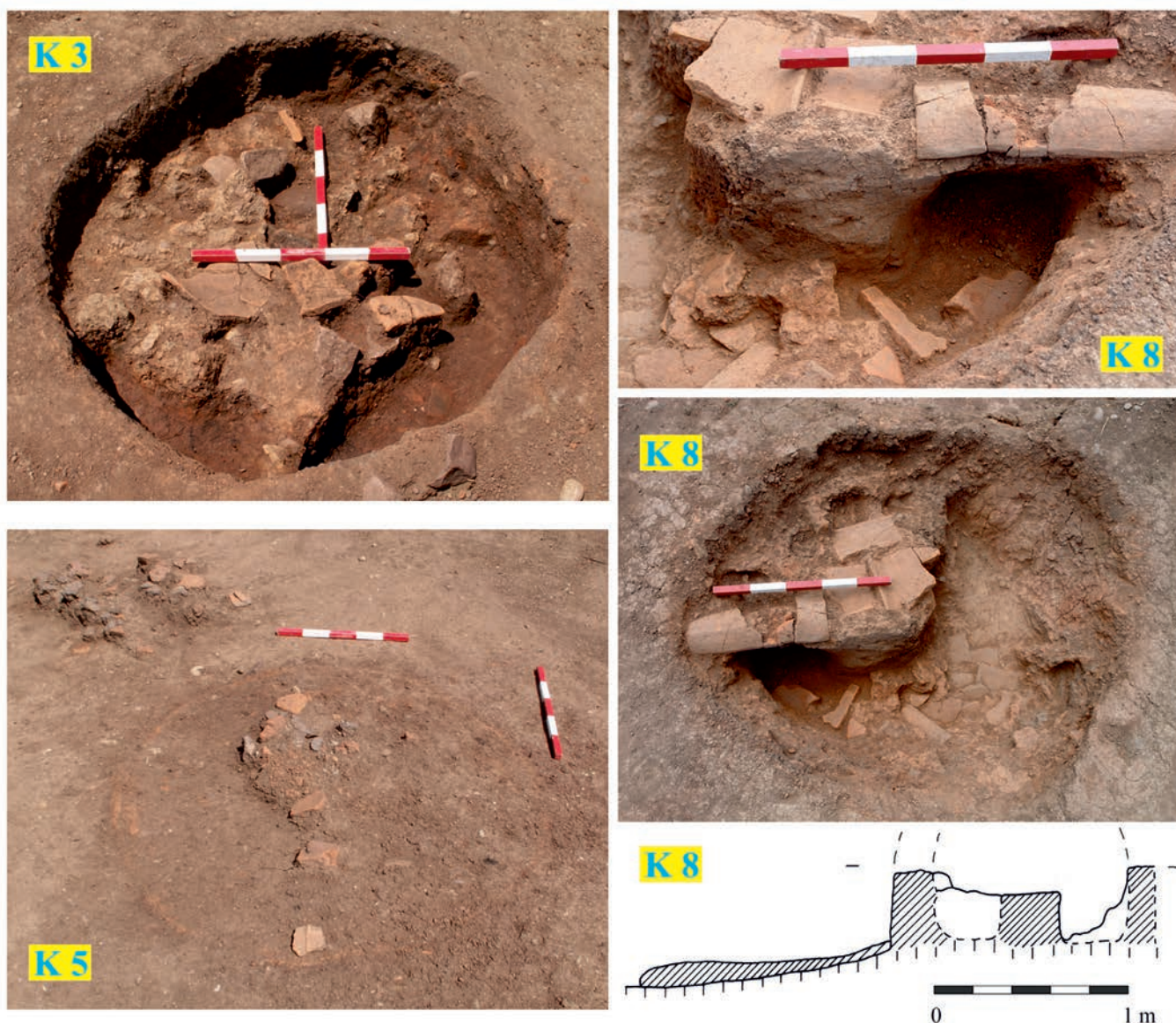


Fig. 16. Kilns nos. 3 (K3), 5 (K5) and 8 (K8) from the site at Golemo Buchino (photos by I. Lozanov, I. Boyanov; drawing after HARIZANOV 2019, 439, fig. 2).

excavations in different parts of Sofia, have been supposedly also produced by a *Serdica* workshop or workshops between the third and the fifth centuries⁷⁰.

Kyustendil (*Pautalia*)

Viewed as a major centre of production of the so-called Macedonian terra sigillata⁷¹, *Pautalia* (Figs. 1; 25) has yet to reveal the true scope of its relation to the potter's craft. Three ceramic kilns were found so far within the eastern part of the initial fortified area of the Roman and Late Antique town (Fig. 20.1-3). The one published in detail had rectangular floor plan (internal dimensions 1.90 x 2.10 m) with the perforated floor being supported by cross-walls, in that case detached from the walls of the combustion chamber⁷² (Fig. 20.1). The installation was supposedly used during the second half of the fifth and the beginning of the

sixth century at the latest for the firing of ceramic building material, along with the rest of the kilns discovered in that part of the settlement. Their exploitation has been related to the construction of a fortification wall dividing the western and eastern sides of *Pautalia*, leaving the installations in a newly organised extramural suburb of the Late Antique town, with the latter having its fortified area reduced at that time⁷³. However, the lack of production waste mentioned impedes the secure identification of the range of products manufactured in the related workshop⁷⁴.

A satellite fortress was built on the Hisarlaka hill to the South of the fortified area of the Roman and Late Antique town, most likely in the course of the fourth century. During the fifth and the sixth century the inhabitants of this part of the town's agglomeration were employed in different

⁷⁰ STANCHEVA/GRIGOROVA 1976, 209-237; KUZMANOV 1992, 46-47.

⁷¹ STAIKOVA 1991, 275-284.

⁷² KATSAROVA 2003, 105-111; HARIZANOV 2019, 173; 485-487.

⁷³ KATSAROVA 2003, 106-107; KATSAROVA 2005, 82-83; 147-149.

⁷⁴ HARIZANOV 2019, 173; 485.

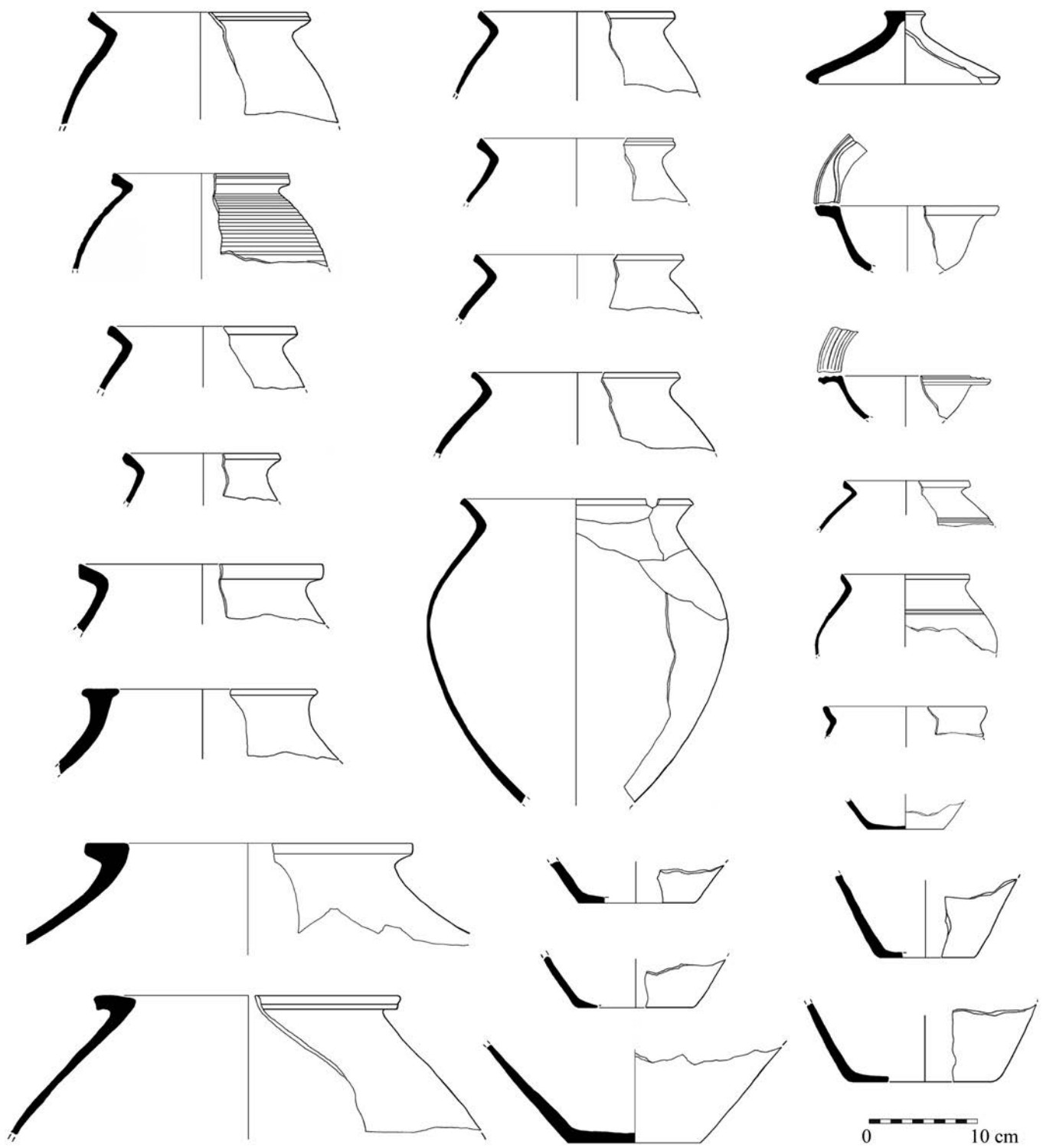


Fig. 17. Pottery from the eastern cluster of kilns (nos. 1-5, 8) at the site at Golemo Buchino (after HARIZANOV 2019, 421, fig. 5; 427, fig. 3; 429, fig. 2).

artisanal activities, including brickmaking as evidenced by the discovery of a die, presumably used for brick stamps⁷⁵.

Caričin Grad (*Iustiniana Prima*)

The archaeological site of Caričin Grad (Figs. 1; 25), associated by most scientists with the Early Byzantine town of *Iustiniana Prima* known from the sources, was supposedly

built by Emperor Justinian I in the 530s near his birthplace with the purpose of being a seat for the archbishop and the Praetorian prefect of *Illyricum*⁷⁶. Apart from a ‘Citadel’, ‘Upper’ and ‘Lower town’, and unfortified suburbs to the South of the latter, the town also had zones for artisanal activities in the vicinities of its populated areas. Three

⁷⁵ VELKOV 1977, 159; KATSAROVA 2005, 134-135.

⁷⁶ STAMENKOVIĆ 2013, 41; IVANIŠEVIĆ 2016, 109; DINTCHEV 2018, 368-369.



Fig. 18. Kiln no. 4 from the site at Golemo Buchino (after HARIZANOV 2020b, 346, fig. 13; I. Lozanov, I. Boyanov).

ceramic kilns were discovered on separate locations along the banks of the Svinjarica River, to West of its fortifications⁷⁷.

One of those kilns was unearthed in 1976 and fully excavated in 1996 (Fig. 21). Mostly brick-built, it had semi-sunken firing chamber of rectangular floor plan (internal dimensions 5.54 x 4.60 m) and solid perforated floor carried by ten pairs of cross-arches resting upon a supporting wall, erected along the E-W axis of the combustion chamber. The installation had two parallel, vaulted stoking channels with openings oriented towards the East, facing the river. The

⁷⁷ JEREMIĆ 2010, 75; IVANIŠEVIĆ 2016, 119.

adjacent stoke pit was partially paved with bricks, with the rest of its bottom being found covered with a layer of fired earth. It was most likely used for the production of ceramic building material⁷⁸.

Apart from the installations, identified as tile kilns (but without production waste mentioned), chemical analyses on samples from wheel thrown glazed and common wares, as well as hand-made pottery, found during the excavations in the intramural zone of Caričin Grad, have provided evidence for a probable local origin of these pottery

⁷⁸ JEREMIĆ 2010, 75-80.

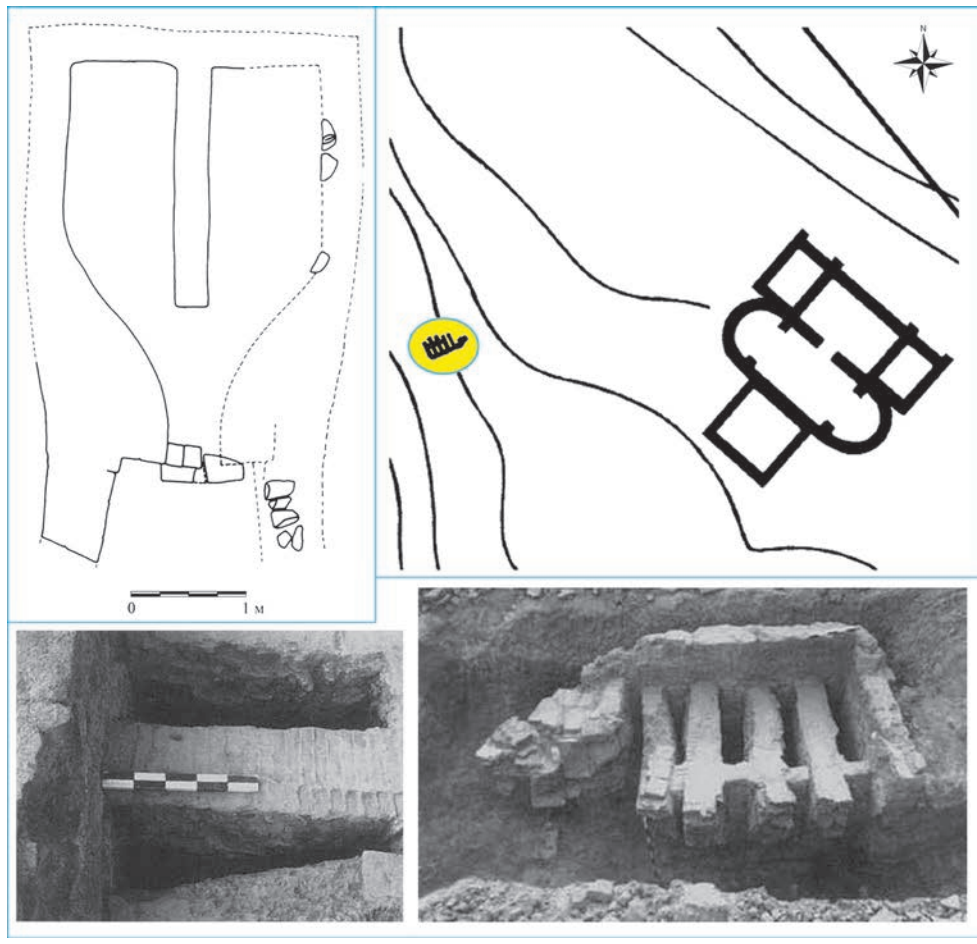


Fig. 19. The ceramic kiln near the mausoleum in Lozenets neighbourhood, Sofia: location, plan of the combustion chamber and photos of the kiln and the perforated floor (after KOZAREV 2004, 87-89, figs. 1-4; additions and design by A. Harizanov).

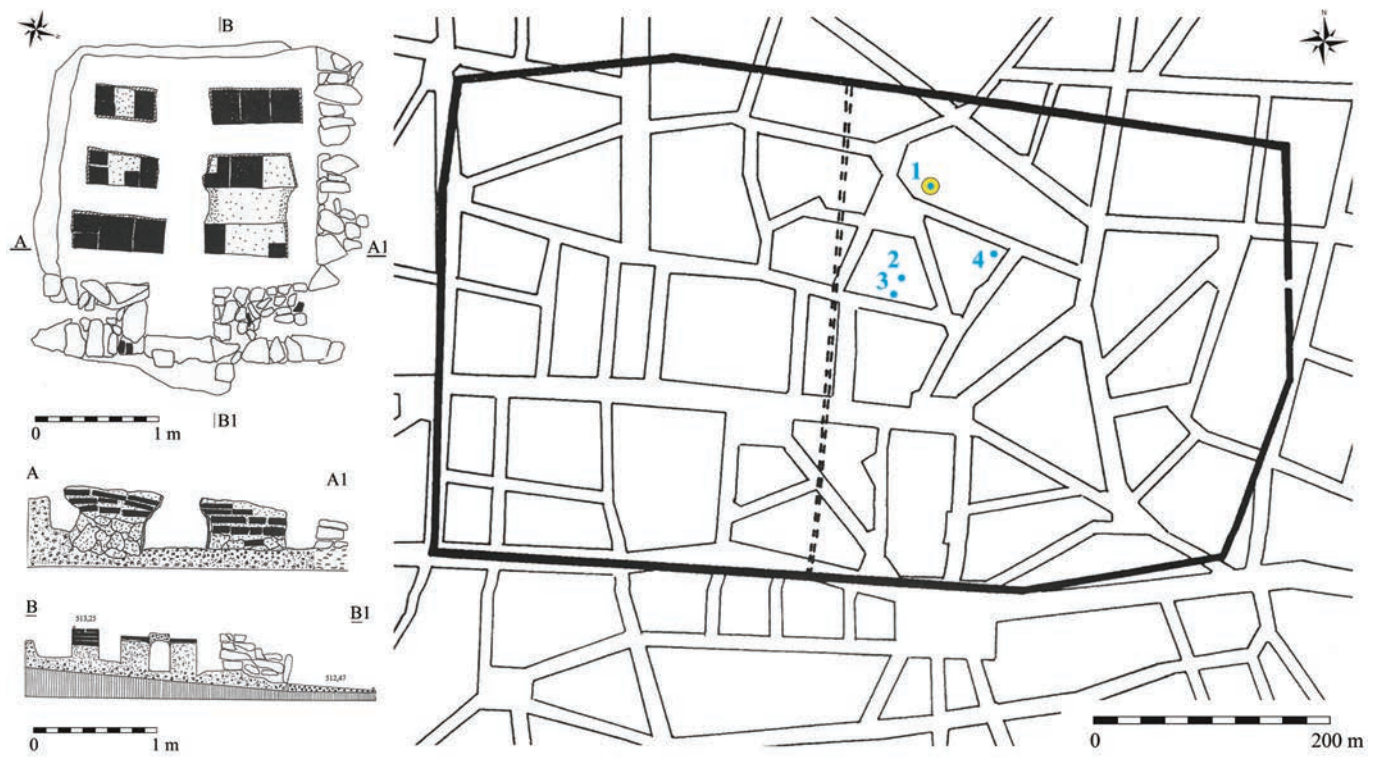


Fig. 20. The described ceramic kiln from Pautalia (left) and locations of firing installations (1-3 kilns and 4) a furnace) within the Roman and Late Antique town (after KATSAROVA 2003, 110-111, figs. 2a-2c; KATSAROVA 2005, 147, fig. 64; additions and design by A. Harizanov).

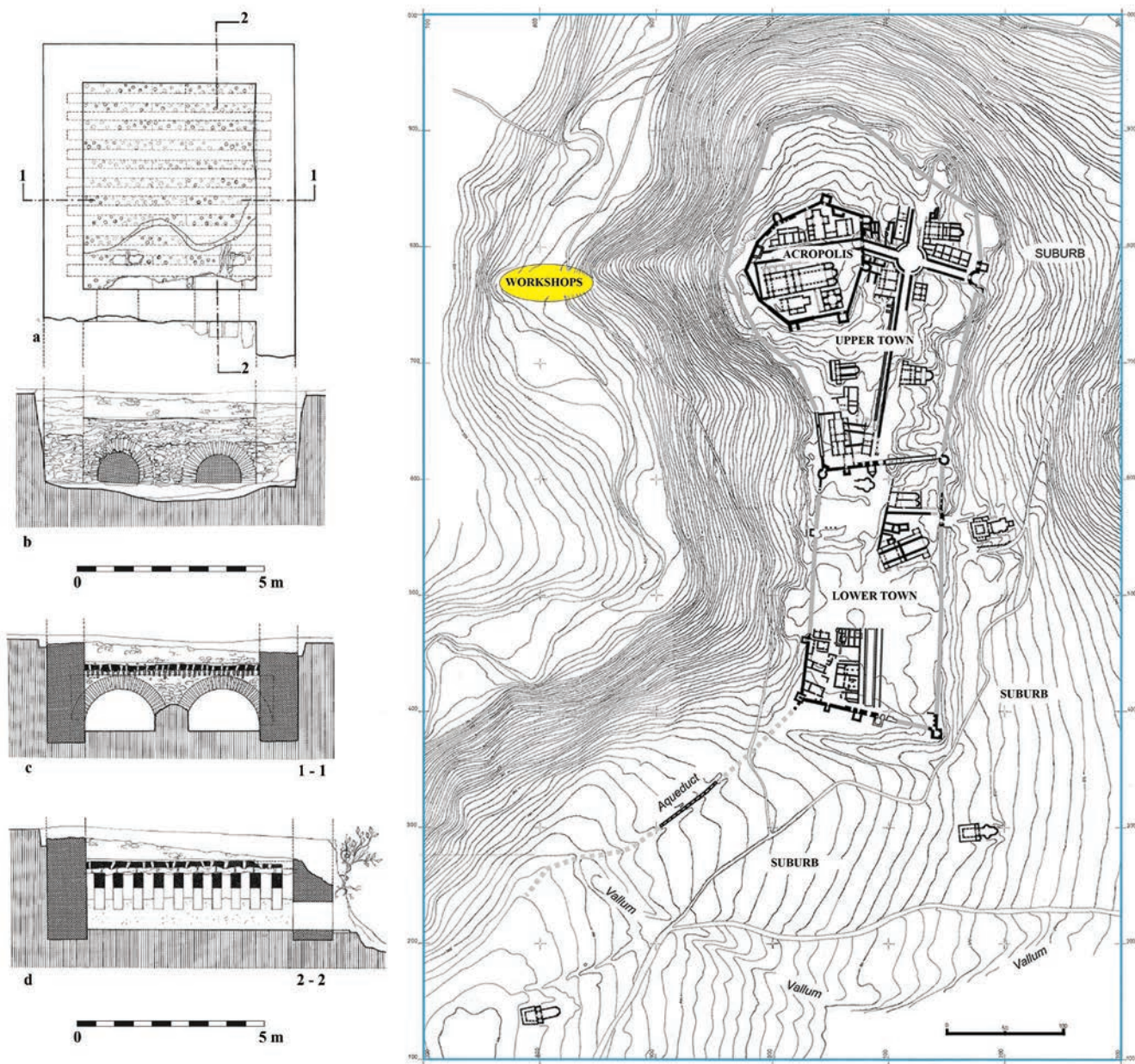


Fig. 21. The ceramic kiln from Caričin Grad (kiln drawing after JEREMIĆ 2010, 77, fig. I, 36; general plan after IVANIŠEVIĆ/STAMENKOVIĆ/GREIFF 2010, 40, fig. 1).

groups⁷⁹, to a certain extent confirming previously laid assumptions⁸⁰. According to the researchers who studied the issue, the place or places of manufacture of the local pottery vessels and oil lamps should be sought on the banks of Svinjarica River, close to the tile kilns mentioned⁸¹.

Given the present dating of the occupation of *Iustiniana Prima* during Late Antiquity, namely from the 530s until the 610s, this chronological period is also to be supposed for the function of the local ceramic workshops. The analysis of the pottery groups used in the last decades of the sixth and the early seventh century, when the town's architecture and general layout underwent significant changes, indicates that a major part of the clay-formed items were hand-made and along with the wheel thrown vessels

of that time were fired in lower temperatures⁸². Therefore, it could be suggested that the potters from that period used kilns of smaller size and simpler design⁸³, most likely located closer to their dwellings, similar to other artisanal facilities, found within the inhabited area⁸⁴. It could likewise be hypothesised that the large rectangular kilns discovered along the Svinjarica River might have been at least initially utilised for the production of both ceramic building material and wheel-formed pottery⁸⁵.

⁷⁹ DAMJANOVIĆ et alii 2014, 156-172.

⁸⁰ See CVJETIČANIN 2006, 110 for the local glazed wares.

⁸¹ BJELAJAĆ 1990, 184; DAMJANOVIĆ et alii 2014, 170.

⁸² BJELAJAĆ 1990, 161-165; DAMJANOVIĆ et alii 2014, 167-170; IVANIŠEVIĆ 2016, 124-126.

⁸³ For single-chambered kilns and other types of installations of simpler design, used for ceramic production within a temperature range similar to that of the mentioned pottery finds, see for instance CUOMO DI CAPRIO 2007, 505-507.

⁸⁴ See IVANIŠEVIĆ 2016, 123-124.

⁸⁵ For the complex purpose of large ceramic kilns from the Late Antique period in the neighbouring territory of Bulgaria, as well as for examples

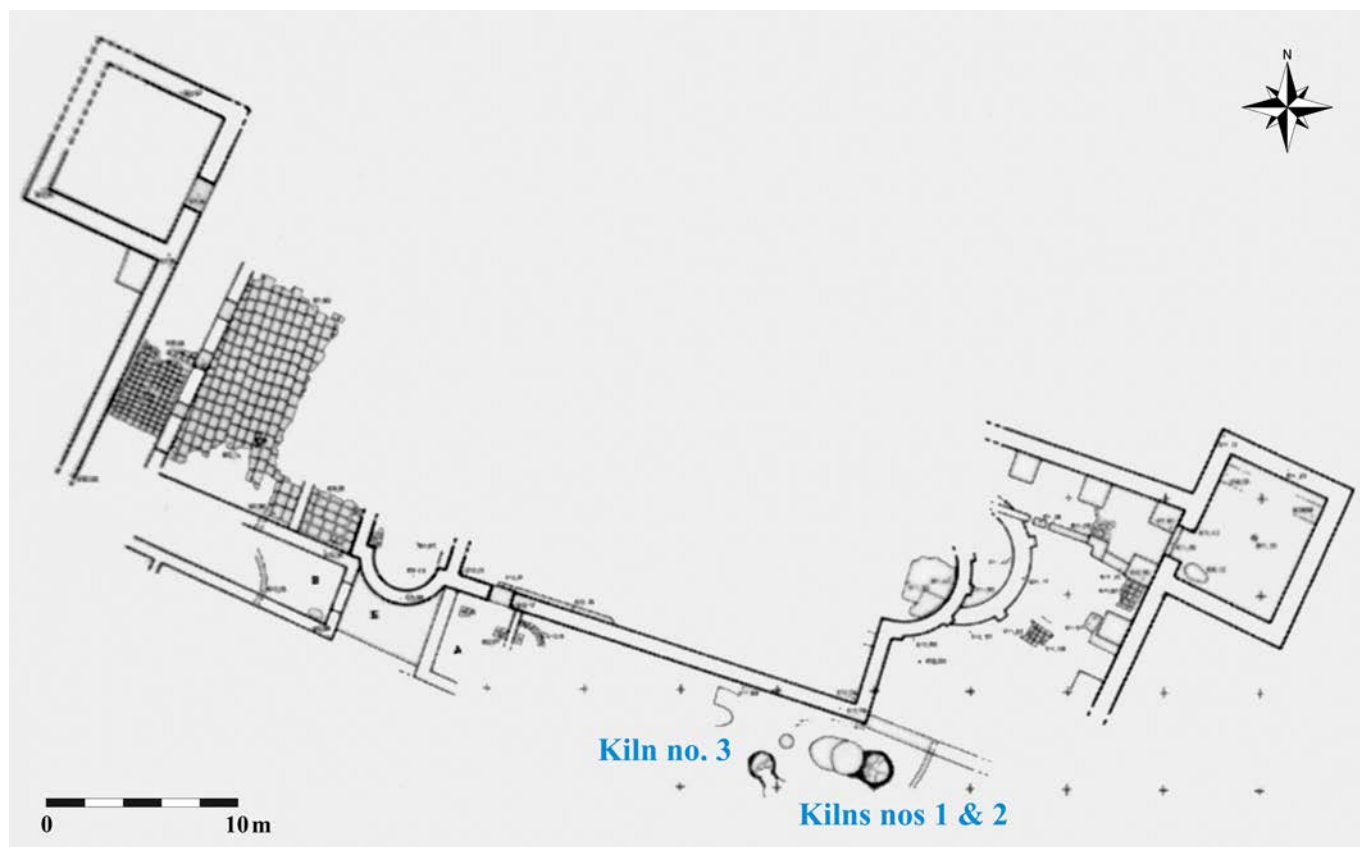


Fig. 22. The ceramic kilns within the Christian complex in Lozenets neighbourhood, Sofia (after HARIZANOV 2020b, 348, fig. 16).

CERAMIC WORKSHOPS IN FORTIFIED NON-URBAN SITES

Lozenets neighbourhood, Sofia

A fortified Christian complex was discovered not far from the said Late Antique mausoleum again in the Lozenets neighbourhood, Sofia (Figs. 1/9; 25/9). Remains of a Christian church from the second quarter of the fourth – the first decade of the fifth century was the earliest structure on the spot. A large architectural complex was built after the abandonment of the first church, including a three-nave basilica with an atrium to the West, enclosure walls with porticoes and additional premises facing an inner courtyard, two corner towers (at the north-eastern and north-western corner) and rooms situated in a courtyard to the South of the Christian building (Fig. 22). Three construction phases were distinguished by the excavators, with the basilica being active in the first two, namely in the fifth – the first quarter of the sixth century. During the last phase, which lasted from the third or the last quarter of the sixth century to the 620s, a ceramic workshop was set up within the space to the South of the basilica, at a time when the latter was supposedly already out of use⁸⁶. The architectural complex was identified as a bishop's residence⁸⁷ or as a monastery⁸⁸.

Four ceramic kilns were unearthed during the excavations. The first one had a rectangular combustion

from the rest of the Empire, see HARIZANOV 2019, 86-121, and the cited there literature.

⁸⁶ DASKALOV/GORYANOVA 2009a, 151-153.

⁸⁷ DASKALOV/GORYANOVA 2009a, 161; DASKALOV/GORYANOVA 2009b, 135.

⁸⁸ DINTCHEV 2006, 48.

chamber and support for the perforated floor in the shape of two pairs of cross-arches resting upon a tongue wall, situated opposite the stoking channel (Fig. 23a). It was most likely used for the firing of ceramic building materials when constructing the architectural complex in the fifth century⁸⁹.

The rest of the kilns were part of the ceramic workshop mentioned. Kilns nos. 1 and 2 were built on top of one another (Fig. 23b). Both had circular combustion chambers with the perforated floor resting solely on the walls of the latter, as no traces of additional support have been found. Kiln no. 3 was situated about 1.5 m away from the other installations. Again with circular floor plan, it had a brick built central supporting pillar and a perforated floor made of pre-fabricated ceramic bars⁹⁰.

The stoke pits of these kilns were found filled with production waste and discarded pottery, including coarse and glazed wares (cooking pots, jugs, lids and lesser quantities of bowls and dishes) which were most likely produced on the spot⁹¹.

The lack of secure data about the functioning of the basilica in the last phase of the site's occupation could indicate that during that period the complex has been used only as a potters' workshop and dwelling (as was the researchers supposition). However, given that due to modern urbanisation in the neighbourhood the archaeologists didn't have the opportunity to study the entire area with

⁸⁹ HARIZANOV 2019, 661-662; HARIZANOV 2020b, 333.

⁹⁰ DASKALOV/GORYANOVA 2009b, 132-133; HARIZANOV 2019, 663-665.

⁹¹ DASKALOV/GORYANOVA 2009b, 133.



Fig. 23. The tile kiln (a) and kiln no. 2 (b) from the Christian complex in Lozenets neighbourhood, Sofia (after HARIZANOV 2019, 662, fig. 1; DASKALOV/GORYANOVA 2009b, 131, fig. 6).

architectural remains, it is not impossible for the church to have been still in use at the time of setting the ceramic workshop. Furthermore, if we assume the identification as a monastery as more plausible, the latter could have had a developed ceramic production as part of its economic activities⁹².

DISCUSSION

Chronological and territorial distribution

Most of the earliest securely attested ceramic workshops were situated in open rural settlements, located in the valleys of the South Morava and Struma rivers, namely those at Mala Kopašnica (*vicus*), Poleto (*vicus?*), Pokrovnik (*villa* and *vicus*), Moshtanets (*vicus*). The ones at Breznik (*vicus/villa?*) and Dragovishtitsa (*villa*) were also situated in a relatively flat, open terrain close to a water source and with a Roman road running nearby. The sites mentioned were established during the second or the third century at the latest. The complex at Dragovishtitsa is the only one erected in the second half of the third century, while the *vicus* at Golemo Buchino, Lyulin Mountain, was established in the course of the fourth century. The kilns and other workshop facilities found in these settlements were used from the second half of the second century until the 370s or the end of the fourth century at the latest. The ceramic kiln found near the mausoleum in the Lozenets neighbourhood, Sofia, is the only one most likely used in the last quarter of the fourth and the first decades of the fifth century.

The rest of the direct archaeological evidence mentioned, namely for *Pautalia*, *Serdica* and *Iustiniana Prima*,

⁹² HARIZANOV 2019, 188; HARIZANOV 2020b, 333. For the increasing role of the bishops in governing the Balkan cities they resided in during the fifth and the sixth centuries, see DINTCHEV 2018, 362-364. For their engagement in the local economy, including the *annona* supplies, see for instance PEACOCK/WILLIAMS 1986, 58-59. For a supposed organisation and/or supervision of ceramic production, see the case of *Novae* in *Moesia Secunda* – BIERNACKI/KLENINA 2015, 373-381.

testify for activity of the urban ceramic workshops from the second half of the fifth century onwards.

The only fortified non-urban site with developed production is the complex in the Lozenets neighbourhood, for which there is the option of it being a monastery or a bishop's residence. However, as already said, the ceramic workshop supposedly functioned after the Christian buildings were abandoned, so its settlement affiliation remains unclear.

If we consider also the kiln sites of insecure dating, along with the secondary data for local ceramic production coming from both archaeological and archaeometric pottery analyses as well as some epigraphic finds, certain adjustments to the chronology and scale of the manufacture of ceramic items within the province could be made. In addition to the rustic sites mentioned, ceramics were most likely produced at yet other settlements, for example in the presumed unfortified village on the Krakra hill near the Struma River in the modern town of Pernik (Fig. 25.11). The ceramic items discovered and most likely locally manufactured comprised red and grey-black common wares (pots, bowls, *mortaria*, censers, lids, cups, etc.), stamped grey, black or red colour coated fine wares (plates, bowls, pitchers, jugs, cups), glazed wares (including *mortaria*, pitchers and jugs), oil lamps with or without surface treatments and loom weights⁹³. According to T. Cvjetićanin, the glazed pottery found there was almost certainly manufactured on the spot⁹⁴.

Ceramic production was in all probability practised also at the artisan's centre at Arbanas Mahala, near the modern town of Radomir, again located close to the Struma River (Fig. 25.14). The complex included buildings, refuse pits and remains of manufacturing installations, all situated within a stone wall enclosure. According to the numerous finds, the main economic activity was bone and horn

⁹³ LJUBENOVA 1981, 120-157; 195; GERASIMOVA-TOMOVA 1981, 207-215.

⁹⁴ CVJETIĆANIN 2006, 128-129

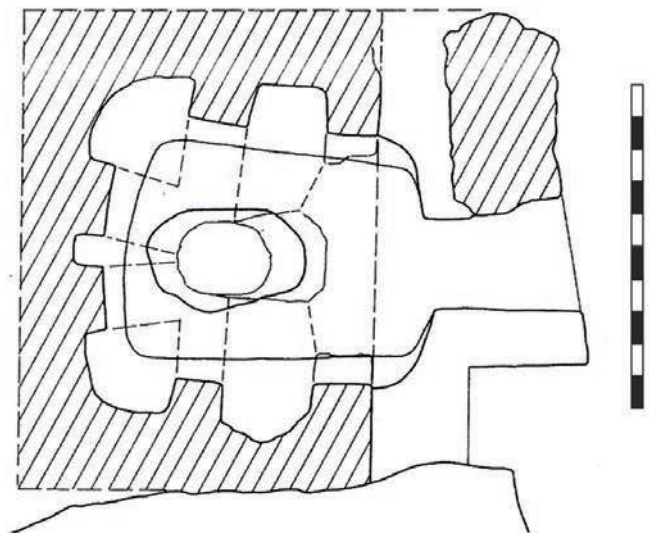


Fig. 24. The ceramic kiln from Kratovo, North Macedonia (after LILČIK 1996, T. 4-5, Sl. 8-9; additions by A. Harizanov).

working, supplemented by the production of bronze costume elements, jewellery and lead hand mirrors. A number of ceramic lamps and one ceramic model, used for the shaping of lamp moulds, were among the discovered finds, with the latter being viewed as a proof of their local origin. A circular kiln with an internal ledge separating the upper from the lower chamber was also found within the enclosed area. However, its identification was impeded due to the lack of production waste and other diagnostic finds. According to the researcher, the site functioned as a trade centre near a road station and was in operation during the Roman period. Remains of stone-walled buildings along with coin finds and pottery discovered, proved its continuous habitation in the Late Roman and Early Byzantine periods⁹⁵, when the nature of the settlement could have been different. The uncovered production installation could have been used either as a pottery kiln or a lime kiln⁹⁶. Another issue is with the latter's dating. Most of the lamps discovered and presented, which were considered a definite part of the related workshop's production repertoire⁹⁷, could be placed predominantly in the late second and the third century, while some of the shapes could be dated to the fourth century as well⁹⁸.

A ceramic kiln, excavated in the modern town of Kratovo, North Macedonia, was also located near a supposed Roman rural settlement, dated with coins to the third and the fourth century⁹⁹ (Figs. 24; 25/15). However, there is no secure dating of the kiln's functional period. It was supposedly used for the firing of ceramic building material (again without actual production waste mentioned)¹⁰⁰.

⁹⁵ LYUBENOVA 1985, 26-37.

⁹⁶ See HARIZANOV 2019, 97-98 and the cited literature, for similar type of ceramic kilns. For lime kilns of such design, see for instance KULOV 2007, 132-134.

⁹⁷ See LYUBENOVA 1985, 34-35, figs. 20-22.

⁹⁸ See similar shapes in Kuzmanov's types XXI (Loeschke type VIII), XXII, XXIII, XXVI (Loeschke type X) – KUZMANOV 1992, 22-37.

⁹⁹ LILČIK 1996, 28; Figs. 4-5; KOCO et al. 1996, 186.

¹⁰⁰ LILČIK 1996, 28. For kilns of similar size and internal arrangement, used for both pottery and tile production, see for instance HARIZANOV 2019, 101-103; 113-114, and the cited there literature.

Despite the significant amount of evidence gathered (historical, archaeological, epigraphic) concerning large scale construction projects developed during the Late Roman

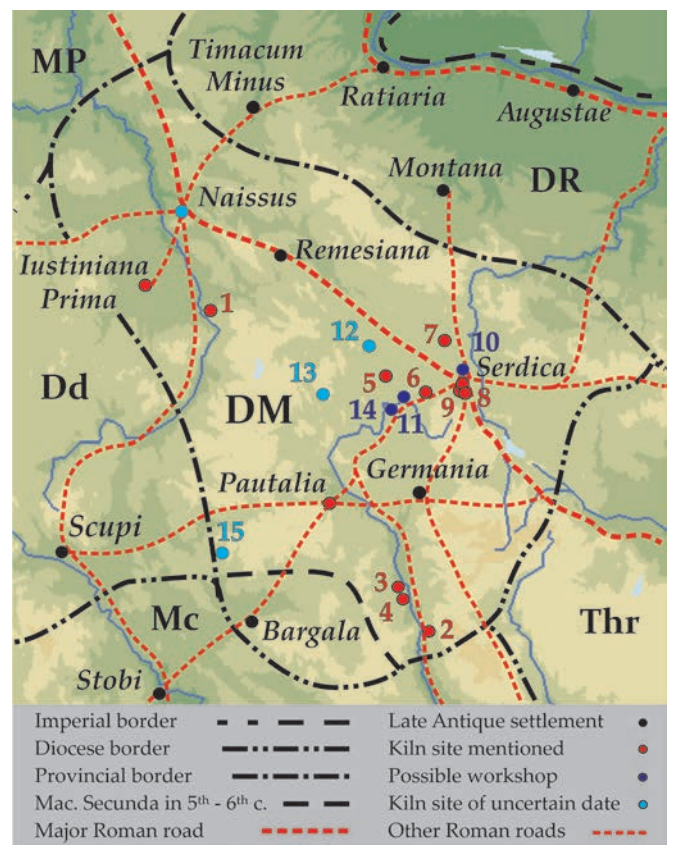


Fig. 25. Map of Dacia Mediterranea with locations of the identified ceramic production centres, possible workshops and kiln sites of uncertain date (author A. Harizanov; roads after GEROV 1961; VELKOV 1977; KATSAROVA 2005; BAJENARU 2010).

and Early Byzantine periods in the towns of the province,

including fortifications, public and private buildings, Christian churches, tomb architecture etc.¹⁰¹, there still isn't sufficient archaeological data for the true scope of the urban ceramic production in *Dacia Mediterranea*¹⁰². However, the available information for some of the sites in question allows assumptions to be made. For instance, *Serdica* could have had both potteries and tile workshops within or in the immediate vicinities of its inhabited area already in operation during the late third and the fourth century¹⁰³. This was at a time when there was also significant metalworking in the central zone of the Late Roman town, recently related to the activities of state operated factories for military equipment rather than to the Imperial mint known from the sources¹⁰⁴.

Similarly to *Serdica*, there is a reliable hypothesis for the production of glazed pottery in or near the town of *Naissus* again during the fourth century¹⁰⁵ (Fig. 25), when there were active metalworking ateliers producing silver vessels and jewellery¹⁰⁶ as well as the state operated factory for arms and armour recorded in *Notitia Dignitatum*¹⁰⁷. Furthermore, the architectural projects developed in *Naissus* and the closely located *Mediana* during that period¹⁰⁸, which required great amounts of ceramic building materials, were most likely also supplied by local workshops.

In addition to the data presented for ceramic production in or near fortified non-urban settlements, two more kiln sites should be mentioned. The first one is located about 1.5 km to the North of the modern village of Garlo, Breznik municipality, in the Pusto garlo locality (Fig. 25.12). Several kilns were found there near the slope of a hill, on top of which a Late Antique fortress was located. The installations were supposedly used for the firing of both pottery and ceramic building materials, the latter being needed for the erection of the nearby fortifications¹⁰⁹.

The second site was found about 0.7 km to the West of the village of Odranitsa, Pernik district, during a road reconstruction (Fig. 25.13). The ceramic kiln was again described as being used for both pottery and tile manufacture, likely to satisfy the needs of the inhabitants of a nearby fortified settlement¹¹⁰.

Production repertoire

The ceramic workshops described were involved in the production of most of the pottery classes and types of ceramic building material used in the region during the Late Antique period¹¹¹. A major exclusion is the transport

¹⁰¹ See for instance VELKOV 1977, 93-98, 201-232; BAJENARU 2010, 32-40; DINTCHEV 2018, 357-370.

¹⁰² To a large extent owed to the intense modern urbanisation above the ruins of most of the Roman towns.

¹⁰³ See STANCHEVA/GRIGOROVA 1976, 221; HARIZANOV 2020b, 334-335.

¹⁰⁴ See CHOLAKOVA 2020, 155-167. For the Imperial mint active during the last third of the third and the first decades of the fourth century, see MOUCHMOV 1926, 25-44.

¹⁰⁵ CVJETIČANIN 2006, 127.

¹⁰⁶ See POPOVIĆ 2013, 162-172.

¹⁰⁷ VELKOV 1977, 137-139.

¹⁰⁸ See VASIĆ 2013, 91-93, 99-101.

¹⁰⁹ MITOVA-DZHONOVA 1983, 58-60.

¹¹⁰ MITOVA-DZHONOVA 1983, 120.

¹¹¹ For imported Late Antique pottery in the region, see for instance BIKIĆ/IVANIŠEVIĆ 2012: 41-49; KABARCHIEVA 2013, 389-434; ONCHEVSKA

amphorae, which as containers of both military and civic supplies¹¹² remained primarily imported items¹¹³.

The two major classes of domestic pottery produced during the period were the common coarse wares and glazed wares. As already stated, no secure information for the local production of Macedonian Terra sigillata (or Macedonian Grey ware) has been published until now¹¹⁴. Direct evidence is lacking also for the manufacture of burnished pottery, supposedly produced for rather than by the Barbarian newcomers in the region¹¹⁵. Common table and/or kitchen coarse wares, fired in oxidised or reduced atmospheres (thus with surfaces coloured in red, beige, brown, red-brown, grey, grey-black, etc.) were produced at Mala Kopašnica, Pokrovnik, Golemo Buchino (Figs. 13, 17), Lozenets and also most likely at Poletto, Moshtanets (?), *Iustiniana Prima*, Pernik (?). Glazed pottery was produced at Lozenets and in all probability at *Naissus* (?), *Iustiniana Prima* (?) and Pernik (?). In addition, the workshops at Mala Kopašnica were engaged in the production of red slip tableware, local terra sigillata and terracotta figurines, but presumably only up to some point in the third century.

Oil lamps with or without surface treatments were produced again at Mala Kopašnica (red slipped) and probably also at *Serdica* (red slipped, glazed?), Pernik (without surface treatment, red slipped and glazed?) and Arbanas Mahala near Radomir (red slipped).

The manufacture of ceramic building materials is the most thoroughly documented within the province, however generally due to the frequent identification of large installations of quadrangular or near quadrangular floor plan with tile kilns, more often than not without a cited discovery of actual production waste or other remains of the fired ceramic items¹¹⁶. Nevertheless, bricks, tiles and in some cases tubular construction elements and other varieties of clay-formed building materials seem to have been produced at most of the kiln sites described, excluding Mala Kopašnica for which there is no data published until now. The majority of the manufactured items were most likely used for construction projects in the immediate vicinity of the workshops. Up to a certain distance, but again in proximity to their place of origin, the products of the Moshtanets atelier (vaulting tubes, fig. 8) could have been traded, as well as a share of that of the Pokrovnik and Breznik workshops.

Ceramic production and the economy of *Dacia Mediterranea*

A major economic activity in *Dacia Mediterranea* and the neighbouring provinces of *Dardania*, *Moesia Prima* and *Dacia Ripensis* during the Late Roman period was mining and metalworking. Although developed in the Roman period, the

TODOROVSKA 2016, 385-394.

¹¹² See for instance PEACOCK/WILLIAMS 1986, 54-66; KARAGIORGU 2001, 149-156; BONIFAY 2017, 327-351.

¹¹³ KUZMANOV 1985, 55-57; BIKIĆ/IVANIŠEVIĆ 2012, 41-49; ONCHEVSKA TODOROVSKA 2016, 388.

¹¹⁴ ONCHEVSKA TODOROVSKA 2016, 388.

¹¹⁵ See KUZMANOV 1985, 56; VAGALINSKI 2011, 485-489.

¹¹⁶ For the difficulties in proper identification of the varieties of ceramic items fired inside the kilns of the Roman and Late Antique periods, see for instance HARIZANOV 2019, 121-122; 208-209.

region's mining districts gained special importance after the abandonment of *Dacia* to the North of the Danube¹¹⁷. This is also confirmed by the historical sources. According to the *Notitia Dignitatum*, there was a special imperial official (*comes metallorum per Illyricum*), responsible for the region's metal production. Furthermore, the same historical document contains information for the state operated workshops for arms and armour within the Empire, three of which were set up in the Diocese of *Dacia*, more precisely in *Ratiaria (Dacia Ripensis)*, *Horreum Margi (Moesia Prima)* and *Naissus*¹¹⁸. Again in *Naissus*, there were workshops for jewellery and silver vessels, supplying demands for imperial *donativa*, along with other metal tableware produced¹¹⁹. Moreover, a state mint operated for several decades in *Serdica* during the last third of the third and the early fourth century, while the newly gathered archaeological information points toward a supposed military oriented production within the town's centre, soon after it became capital of *Dacia Mediterranea*, in all probability also organised by the state. Ecclesiastical silver reliquaries were likewise presumably manufactured by the town's artisans¹²⁰. A workshop or workshops for metal costume elements existed in *Iustiniana Prima*, as testified by the moulds discovered there, while smelting furnaces were registered in its extramural area, on the banks of *Caričina River*¹²¹.

Metalworking on a smaller scale is archaeologically attested in several of the abovementioned sites with developed ceramic manufacture. Apart from the said activities in *Serdica*, *Iustiniana Prima* and *Naissus* (where however ceramic kilns are still to be found), remains from various stages of metal processing and working were discovered at *Mala Kopašnica*¹²², *Pokrovnik*¹²³, *Moshtanets*¹²⁴, *Arbanas Mahala*¹²⁵. The related crafts were practiced most likely also at *Pernik*¹²⁶, *Golemo Buchino*¹²⁷ and especially *Pautalia*¹²⁸.

Other crafts developed in *Dacia Mediterranea* and attested by archaeological discoveries within the sites under discussion are lime production, manufacture of glass objects (vessels, window glass, *tesserae* etc.), bone and horn working, textile production.

Lime was certainly produced at the site near *Poleto* and likely at *Pokrovnik*¹²⁹. This material was definitely in demand in all of the larger settlements mentioned, especially in the towns of the province, where mortar bonded constructions were predominant. However, no urban lime kiln from these sites is known for the moment.

Working of bone and horn has been again almost certainly practised in many if not all of the settlements

¹¹⁷ PETKOVIĆ 2009, 187-196.

¹¹⁸ VELKOV 1977, 137-139; FLHB I, 238.

¹¹⁹ POPOVIĆ 2013, 162-172; DUMANOV 2012, 421.

¹²⁰ DUMANOV, 2012, 421

¹²¹ IVANIŠEVIĆ 2016, 123;

¹²² IVANIŠEVIĆ/STAMENKOVIĆ/JOVIĆ 2016, 52-53; 68.

¹²³ DIMITROV/RAYCHEVA/RUSEV 2018, 375.

¹²⁴ GROZĐANOVA/HRISTOVA/FILIPOVA 2018, 379.

¹²⁵ LYUBENOVA 1985, 28-29.

¹²⁶ LJUBENOVA 1981, 166-181; 195.

¹²⁷ BOYANOV 2014, 80.

¹²⁸ KATSAROVA 2005, 137; 233-236.

¹²⁹ Personal observations during the author's participation in the archaeological research of the site in 2017 and 2018.

mentioned. However, the published data so far points toward active workshops in *Arbanas Mahala*¹³⁰ and *Iustiniana Prima*¹³¹.

According to the available evidence, textile manufacture could be proposed for sites such as the ones at *Breznik*¹³², *Pernik*¹³³, *Iustiniana Prima*¹³⁴, again having in mind that the craft was most likely practised on a various scale in almost all of these settlements.

For now, glass production has been securely attested in *Serdica* (in the second half of the third century)¹³⁵, with some certainty in *Iustiniana Prima* (in the sixth century)¹³⁶ and most likely at *Mala Kopašnica* (late third – first half of the fourth century) as well¹³⁷.

The information gathered thus far points toward the simultaneous practice of two or more crafts within the settlements discussed, most likely both due to insufficient supply of imported products, as well as to the availability of raw materials and technical knowledge. During the late third and the fourth centuries these artisanal activities were developed in both rural and urban contexts, while in the time after the beginning - and more so the middle of - the fifth century, when the majority of the rural sites were already abandoned, the bulk of ceramic workshops are to be found in or near the local towns. For now, less well documented is the crafts' development within the fortified non-urban sites.

The available data also indicates that at some of the sites described, one of the artisanal activities had leading economic role. Ceramic production seems to be the major craft practised at *Pokrovnik*, *Mala Kopašnica*, *Breznik*, *Golemo Buchino*, the *Lozenets* complex. At the present state of research, it is difficult to identify the scope of the artisanal activities developed within the towns of *Serdica*, *Naissus* and *Pautalia*. Nonetheless, the archaeological and historical evidence point toward predominance of metalworking in the first two and probably *Pautalia* as well¹³⁸. The data for *Iustiniana Prima* is indicative of small to medium scale practise of most of the crafts, again with prevalence of trade oriented metalworking and in that case also bone and horn working¹³⁹. The ceramic building material produced there was most likely directed towards the construction projects of the town itself, although further on it could have been

¹³⁰ LYUBENOVA 1985, 26-37.

¹³¹ IVANIŠEVIĆ 2016, 123-124.

¹³² Taking into account the loom weights supposedly locally produced.

¹³³ See LJUBENOVA 1981, 157, for the numerous finds of loom weights and spindle whorls within the settlement.

¹³⁴ IVANIŠEVIĆ 2016, 123.

¹³⁵ IVANOV/CHOLAKOVA/GRATUSE 2021, 207-219.

¹³⁶ IVANIŠEVIĆ/STAMENKOVIĆ/ GREIFF 2010, 39-52; IVANIŠEVIĆ 2016, 123.

¹³⁷ IVANIŠEVIĆ/STAMENKOVIĆ/JOVIĆ 2016, 53; 58; 67; STAMENKOVIĆ/ GREIFF/HARTMANN 2017, 213-221.

¹³⁸ During the Roman period the town had ateliers for bronze-working with significant output – see NENOVA-MERJĐANOVA 2002, 378-382. However, during the Late Antique period their production seems to have been more limited in both scale and outreach – KASTAROVA 2005, 233-236.

¹³⁹ IVANIŠEVIĆ 2016, 122-124.

marketed in the nearby region or used for fulfilment of other state demands (?).

Looking for possible connections among the crafts developed within the province, it is worth looking into the links between mining and metalworking on the one side and glazed pottery production on the other. While other types of fine table and kitchen wares were coated in various clay-based slips or had their surfaces polished or burnished¹⁴⁰, glazed wares were covered in substance made primarily of lead, often with added colourants provided by ferrous and copper ores¹⁴¹. As a metal, lead was usually mined together with silver, or was gathered as a by-product of silver extraction¹⁴². When needed, it was also added for the completion of the latter process¹⁴³.

It is probably not by chance that the Dacian Diocese had well documented mining regions¹⁴⁴, being among the major producers of Late Roman glazed pottery as well. Not only were silver and other metal vessels used as prototypes for some of the shapes of glazed wares¹⁴⁵, but the latter were covered with a substance that could have been a repurposed leftover of or an unused raw material for the silver extraction process¹⁴⁶. It is worth noting, that glazed wares appear to have been produced in areas with developed mining industries and imperial mints, *officinae* and/or *fabricae* present. For instance the towns of *Ratiaria (Dacia Ripensis)* and *Horreum Margi (Moesia Prima)*, which both accommodated imperial *fabricae*¹⁴⁷, were also supposed producers of glazed pottery¹⁴⁸. In this regard, the case of *Marcianopolis*, another place of imperial *fabrica*, but located within *Moesia Secunda*, is also interesting, since glazed ware was among the rarely documented pottery classes manufactured in that province¹⁴⁹. Centres with securely documented production of silver items and/or imperial mints present such as *Naissus* and *Sirmium*¹⁵⁰, were among

¹⁴⁰ For the various types of surface finish, see for instance CUOMO DI CAPRIO 2007, 305-352.

¹⁴¹ For the technology of Roman and Late Antique production of glazed pottery in general and the western provinces of the Empire and the Balkans in particular, see TITE *et alii* 1998, 241-260; WALTON/TITE 2010, 733-759.

¹⁴² For the ores used in silver extraction, see for instance CRADDOCK *et alii* 1996, 199-218.

¹⁴³ For the unavoidable use of lead in silver extraction, confirmed with evidence from the site at Rio Tinto in Spain, see CRADDOCK *et alii* 1996, 199-218; ANGULIANO *et alii* 2010, 269-276.

¹⁴⁴ For the mining regions in nowadays Serbia, covering parts of the territories of the Late Roman provinces of *Moesia Prima*, *Dacia Ripensis* and *Dacia Mediterranea*, see WERNER 1996, 219-228; PETKOVIĆ 2009, 187-196. For the Roman mining in the broader frame of Roman and Late Roman *Illyricum*, see DUŠANIĆ 2004 2004, 247-270.

¹⁴⁵ See for instance CVJETIĆANIN 2006, 202.

¹⁴⁶ For the repurposing of leftovers of primary silver extraction, see for example the case of Xanten (*Colonia Ulpia Traiana*), Germany, where such material could have been used for the production of red enamel – REHREN/KRAUS 1999, 263-272.

¹⁴⁷ VELKOV 1977, 137.

¹⁴⁸ See CVJETIĆANIN 2006, 108; 110.

¹⁴⁹ See CVJETIĆANIN 2006, 180; 193, for the production of glazed wares in *Marcianopolis* and the information about discoveries of such items in the province. See VELKOV 1977, 137-139, for the town as a centre of imperial arms and armour production, using raw materials mined in the region of nowadays Southeast Bulgaria, close to *Hadrianopolis*, where copper ores were mined (VELKOV 1965, 75-100). This fact could also be indicative, given that copper was often used as supplementary material in lead glazes production (see TITE *et alii* 1998, 241-260; CVJETIĆANIN 2006, 18).

¹⁵⁰ See again DUMANOV 2012, 405-428; POPOVIĆ 2013, 162-172. For lead and silver mining in the region of *Sirmium*, see DUŠANIĆ 2004, 250-253.

the identified manufacturers of Late Roman glazed pottery¹⁵¹ as well. In addition, the reappearance of glazed wares in the repertoire of the local workshops during the sixth century (like in those at *Iustiniana Prima* and *Lozenets* near *Serdica*) after being almost abandoned following the mid-fifth century¹⁵² could be at least partially related to the restored mining activities in the region at the same time¹⁵³.

If we accept the assumption of T. Cvjetićanin for military oriented production of this pottery class during the fourth century¹⁵⁴, could we hypothesise further that, apart from other reasons, glazed wares were manufactured at places where lead and the supplementary metals needed were either in abundance or were imported for the needs of the local silversmiths¹⁵⁵ and other state related metalworkers¹⁵⁶? And if so, was it really under some sort of state supervision and supply, given the uniformity in repertoire of forms and manufacturing technology¹⁵⁷, as again it has been already suggested¹⁵⁸? Although such a supposition clearly needs a thorough further investigation¹⁵⁹, it is a possibility worth discussing.

Judging by the historical sources, in accordance with the centralisation of government during the Late Roman period¹⁶⁰ the state made an effort to play a major role in the organisation of the most important and usually military related crafts, while at the same time at least to regulate and oversee the continuous practise of the less significant artisanal activities¹⁶¹. In this regard and in view of the data available, pottery production (apart from *annona* containers¹⁶²) should be placed among the latter. Potters were mentioned only among the craftsmen included

¹⁵¹ CVJETIĆANIN 2006, 127, 139, 179.

¹⁵² See CVJETIĆANIN 2006, 191-192.

¹⁵³ See PETKOVIĆ 2009, 194-195.

¹⁵⁴ According to T. Cvjetićanin during its first major period of distribution, in the course of the first and second third of the fourth century, it was produced mostly by and for the *limitanei*, stationed along the limes (CVJETIĆANIN 2006, 197).

¹⁵⁵ For organised import of lead needed for silver extraction, see CRADDOCK 1996, 199-218.

¹⁵⁶ See DUMANOV 2012, 421-422, for the possibility of belt set and costume elements (including such of precious metals) being manufactured within centres with imperial *fabricae* along with the necessary metal components for the military equipment produced.

¹⁵⁷ For the latter see CAPELLI/CABELLA/PIAZZA 2009, 71-82; CAPELLI/CABELLA/PIAZZA 2010, 33-38.

¹⁵⁸ CVJETIĆANIN 2006, 197.

¹⁵⁹ If we accept the presented hypothesis, along with previous assumptions on the topic, it still remains to be explained the reason or reasons for the distribution of glazed wares predominantly in the northern parts of the Empire, while there were military garrisons as well as mining and metalworking activities in the rest of its territories as well. Could the initial production and spread of this pottery group be related to the Barbarian infiltrated populations of the border provinces? But if so, why again it is not to be found in all of these regions? It seems that there is more than one reason for the development, organisation of the production and distribution of the Late Roman Glazed pottery, which however is an issue for a separate future research.

¹⁶⁰ See for instance GKOUTZIOUKOSTAS 2016, 93-95.

¹⁶¹ For examples of the organisation and practise of the various crafts developed in the dioceses of Thracia and Dacia, including pottery and tile production, see VELKOV 1977, 135-172, and the historical sources cited there.

¹⁶² For the organisation of the Imperial *annona* system during the Roman and the Late Antique period, the used containers and its functioning in the Balkans, see for instance PEACOCK/WILLIAMS 1986, 54-66; KARAGIORGU 2001, 129-166; DIAMANTI 2019, 205-216.

in Contantine's law issued in AD 337. While excluding the artisans from certain responsibilities to the state, this document ensured the continuous practise of their trade with the obligation for their family members to be trained in the same skills and carry them on¹⁶³.

Conversely, the manufacture of ceramic building material appears to have been among the more important artisanal activities, despite being again rarely mentioned, for instance in the Edict of Diocletian of AD 301, where the prices of bricks and the payment of brick makers are defined¹⁶⁴. The extensive use of bricks and tiles in state organised projects, especially during the fourth and the sixth centuries seems to have gained more attention to be paid to the craft. The continuous production of stamped bricks and tiles both along the Danubian limes and in the interior of the Balkan border provinces in the fourth century¹⁶⁵ could be viewed as a proof regarding this subject. Less evidence exists for the inner provinces, among them *Dacia Mediterranea*. Still, here once again it should be mentioned that the bricks with inscriptions from *Serdica*, together with the ones from the same town stamped with monograms, some of which similar to stamped finds from *Constantinopolis*, might testify for production under imperial or at least municipal control¹⁶⁶.

CONCLUSION

Being an intrinsic part of the Imperial economy, the manufacture of fired clay items in *Dacia Mediterranea* experienced both the positive and the negative effects of the dynamic political and economic situation in the region during Late Antiquity. Between the 280s and the 370s, together with the prosperous development of local settlement life and industry¹⁶⁷, ceramic production was likewise in progress. Pottery and ceramic building materials were manufactured in both rural and urban contexts. Between the late fourth and the mid-fifth century there was a gradual decline of the types, varieties and quantities of ceramic items fabricated. The majority of the workshops in villas and unfortified villages terminated their production, most often due to the abandonment of the whole settlements. Under Anastasius I and Justinian I, the Balkan provinces of the empire experienced their last period of stabilisation and relative prosperity¹⁶⁸. The urban settlements of Inner Dacia were the main engine of local industries at that time, which is also true for ceramic production, especially its large scale practise. Less evidence exists for artisanal activities taking place within fortified non-urban sites.

During the period under discussion pottery production in *Dacia Mediterranea* seems to have been developed predominantly by private entrepreneurs, in both rural and urban contexts, likely satisfying not only public

¹⁶³ VELKOV 1977, 148-150.

¹⁶⁴ VELKOV 1977, 158.

¹⁶⁵ VELKOV 1977, 156-161; SARNOWSKI 1985, 107-127, IVANOV 2006, 125-208.

¹⁶⁶ See discussion on the matter, with cited literature, in HARIZANOV 2020b, 334-335. For Early Byzantine bricks with monograms, with included examples from *Constantinopolis*, see for instance MANGO 1950, 19-27. For a comprehensive account on the Late Roman and Early Byzantine brick stamps from *Constantinopolis*, see BARDILL 2004.

¹⁶⁷ See for instance VELKOV 1977, 135-136; DINTCHEV 2018, 357-359.

¹⁶⁸ VELKOV 1977, 46-52.

but some state demands as well. The manufacture of ceramic building material, on the other hand, was in all probability developed by both personal initiative and implemented state programme. The imperial or municipal (?) *officinae* should be sought within or in the vicinities of the local towns, as the kiln sites found so far along with the secondary data suggest. The active period of the known workshops along with the additional data provided indicate that they were often engaged in supplying major or minor construction projects, for example renovation or erection of fortifications, public buildings and Christian churches.

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