AN EARLY BYZANTINE CERAMIC WORKSHOP ON THE SITE OF *SCAMNUM TRIBUNORUM* IN *NOVAE (MOESIA SECUNDA)*

Alexander HARIZANOV[*]

Cuvinte-cheie: *Moesia Secunda, Novae, perioada bizantină timpurie, ateliere ceramice, producție ceramică*

Keywords: *Moesia Secunda, Novae, Early Byzantine period, ceramic workshop, pottery production.*

Rezumat: *Castrul legionar și orașul antic târziu Novae au fost locuite între mijlocul secolului I și începutul secolului al VII-lea p.Chr. La sfârșitul secolului al III-lea și în prima jumătate a secolului al IV-lea p.Chr. așezarea a fost transformată treptat dintr-un sit strict militar, cu o așezare civilă adiacentă, într-un oraș cu garnizoană militară. În același timp, zona fortificată a fost extinsă spre est, întinzându-se pe zone ale canabaelor anterioare, în timp ce structura sa internă a fost supusă unor modificări extinse. Situl* scamnum tribunorum *din Novae este unul dintre sectoarele cele mai bine studiate ale sitului arheologic. Cercetările intense din ultimele decenii au scos la iveală dovezi privind dezvoltarea sa, de la cea mai veche perioadă de construcție din pământ și lemn până la sfârșitul Antichității Târzii. Prezenta contribuție analizează un grup de cuptoare bizantine timpurii, inedite până în acest moment, descoperit în partea de nord-vest a acestui sector, în timpul campaniilor arheologice din sezoanele 2006 și 2007.*

Abstract: *The Roman legionary fortress and Late Antique town of Novae was inhabited between the mid–1*st *c. and the early 7*th *c. AD. During the late 3*rd *c. and the first half of the 4*th *c. AD. the settlement was gradually transformed from a strictly military site with an adjacent civilian settlement to a town with military garrison. At the same time its fortified area was enlarged to the east, spreading over parts of the earlier* canabae, *while its internal structure was subjected to extensive alterations. The area of the* scamnum tribunorum *in Novae is one of the most thoroughly studied sectors of the archaeological site. The intensive research over recent decades has produced evidence for its development from the earliest earth and timber construction period to the end of Late Antiquity. The present contribution explores an Early Byzantine kiln site, unpublished until now in detail, discovered in the north-western part of this sector during the 2006 and 2007 archaeological seasons.*

[*] Alexander HARIZANOV: Department of Classical Archaeology, National Archaeological Institute with Museum, Bulgarian Academy of Sciences, Sofia; e-mail: a_harizanov@abv.bg.

Introduction

The legionary camp at *Novae* was established a few years before the middle of the 1st c. AD. by *Legio VIII Augusta*. After the civil war of AD. 69 there was a change in the military units stationed along the Danubian limes. *Legio I Italica* was transferred to *Novae* and remained there until the end of Antiquity[1]. In the course of the Late Roman and the Early Byzantine periods the settlement was part of the province of *Moesia Secunda*, within the Diocese of *Thracia*[2] (**Fig. 1**).

During the late 3rd c. and the first half of the 4th c. AD. *Novae* was gradually transformed from a strictly military site with an adjacent civilian settlement to a Late Antique town with a military garrison[3]. At the same time its fortified area was enlarged to the east, spreading over parts of the earlier *canabae*, while its internal structure was also subjected to extensive alterations[4] (**Fig. 2**). During the course of the 5th c. AD., the bishop became the most prominent figure in the town[5]. The shift in power towards the post of the highest-ranked Christian priest in the area is best illustrated by the development of the large episcopal complex in *Novae*, situated over the late period baths and immediately to the west of the old *principia*[6]. According to the most recent findings, the old legion headquarters were still in use during the second half of the 4th c. AD. and until the 430s, when their space was shared with a presumed town's square (*forum civile*). In the late 5th and the 6th c. AD. the area was repurposed and afterwards accommodated smaller civic buildings and a market square[7].

The site of the *scamnum tribunorum* in *Novae* is one of its most thoroughly studied sectors. The intensive research conducted there in recent decades has produced evidence for its development from the earliest earth and timber construction period to the end of Late Antiquity. The first changes of both the purpose and structure of the area happened after a devastation in the second half of the 3rd c. AD. Following a thorough levelling of the terrain of the earlier *scamnum*, two public buildings were erected, most likely in the course of the late 3rd and/or the early 4th c. AD. The southern building existed until the late 4th c. AD. when several artisanal establishments were set within its ruins. These workshops were abandoned around the middle of the 5th c. AD. The northern premises were succeeded by another large building in the second half of the 4th c. AD., which stretched partially over the remains of the old military hospital in sector IV as well. This construction existed until the end of the 4th or the first half of the 5th c. AD. During the second half of the 5th and the 6th c. AD. two Christian basilicas were built consecutively there, one on top of another[8] (**Fig. 3**, **4**).

[1] GENČEVA 2002, p. 6–12, 59–69.

[2] VELKOV 1977, p. 99–106.

[3] The presumed *municipium* at *Novae* is still debatable (see for instance DINTCHEV 2015, p. 581–591), while the current archaeological data does not signify to town-related changes in the intramural architecture of the military camp during the late 2nd and the first half of the 3rd c. AD. (see for instance GENCHEVA *et alii* 2011, p. 276–278; LEMKE 2015, p. 90–97; DINTCHEV 2015, p. 581–583).

[4] See for instance LEMKE 2015, p. 90–97.

[5] For the increasing role and status of the bishops during the 5th and the 6th c. AD., including references to *Novae* see for instance DINTCHEV 2018, p. 362–365.

[6] BIERNACKI 2013, p. 31–54.

[7] LEMKE 2015, p. 91–92.

[8] GENČEVA 2003, p. 21–37; GENČEVA 2006, p. 45–51; GENCHEVA *et alii* 2011, p. 276–278.

The first remains of artisanal activities on the site of the *scamnum* date to the late 4th c.-early 5th c. AD., when a ceramic atelier, and also glass, metal and bone working ateliers were in operation there. The four ceramic kilns discovered had been dug within the remains of the southern early 4th c. AD. public building, and were used for the production of domestic pottery[9]. As mentioned above, the described installations were abandoned around the middle of the 5th c. AD[10] (**Fig. 4.W1**).

The present contribution explores a previously unpublished in detail kiln site, discovered to the north-west of the abovementioned structures, in the same sector (X, sq. 108), during the 2006 and 2007 archaeological campaigns in *Novae*[11] (**Fig. 4.W2**).

The second "*scamnum*" kiln site

The kiln site in question was discovered within the remains of a latrine from the period of the Roman *scamnum*, located in the north-western section of the Bulgarian part[12] of Sector X[13]. Two kilns of similar planning were excavated there, with the first one's firing chamber being reused as a stoke pit for the second installation (**Fig. 5**).

Kiln no. 1 was the first one built on that spot. Preserved *in situ* were the combustion and firing chambers, the support for the perforated floor and the stoking channel (**Fig. 6–10; table 1**). The entire structure had been dug into a layer of yellowish earth, used during a previous period for the levelling of the surrounding terrain, which was until then naturally sloping to the north[14].

The combustion (lower) chamber had an almost circular plan. The eastern wall was erected using fragments of bricks and small stones (reuse of an older structure?), while the western wall was built partially of larger stones. The other parts of the chamber walls were formed with a plaster made of clay.

A tongue-wall, built of clay and fragmented bricks was placed opposite the stoking channel and used as support for the perforated floor (**Fig. 8–10**). Only small

[9] GENČEVA 1999, p. 95–99; HARIZANOV 2019a, p. 177, 637–641.

[10] GENČEVA 2006, p. 45–51.

[11] The kiln site has been briefly described only in the annual reports for the archaeological discoveries in Bulgaria (GENCHEVA *et alii* 2007, p. 265–266; GENCHEVA *et alii* 2008, p. 340–341; SARNOWSKI *et alii* 2009, p. 420–421; GENCHEVA 2010, p. 312–313) and later included in a dissertation, dedicated to the Roman and Late Antique ceramic kilns in the territory of modern Bulgaria, published as a book in 2019 (HARIZANOV 2019a, p. 645–649). I would like to express my gratitude to the kilns' researcher and leader of the Bulgarian archaeological team in *Novae*, dr. Evgenia Gencheva (Assoc. Prof., NAIM-BAS), who presented me with the documentation from the excavations along with the opportunity to publish my interpretation of the excavated structures.

[12] Sector X was divided to "Bulgarian" and "Polish" sections, in accordance with the area of research of the Bulgarian and the Polish archaeological teams. For detailed description of the studied sectors in *Novae* and their nomenclature, see for instance DYCZEK 2008, p. 31–70.

[13] GENHEVA *et alii* 2007, p. 265–266; GENCHEVA *et alii* 2008, p. 340–341; SARNOWSKI *et alii* 2009, p. 420, fig. 2.

[14] GENCHEVA *et alii* 2007, p. 265. The topography and stratigraphy of the sector throughout the periods of human occupation will be described in detail in a forthcoming publication by Dr. E. Gencheva (Assoc. Prof., NAIM-BAS). I would like to thank her for providing me with this additional, still unpublished data.

parts of the latter, situated on top of the walls of the lower chamber, were found *in situ*. The uncovered ventilation openings had a diameter of c. 0.08-0.085 m.

The lower part of the firing chamber (which was found *in situ*) had larger internal diameter than the lower chamber. Its walls were arranged vertically and had also been sunk into the surrounding terrain (**Fig. 6.3**). A single post (?) hole was found on the southern side.

The stoking channel was placed on the northern side of the kiln, a little to the west of its central axis (**Fig. 6.1**, **9**). Its walls were connected with the walls of the lower and the upper chambers. It had a wider lower part made of fired clay plaster (up to 0.30 m above its floor). The narrower upper section was situated mostly above the original level of the perforated floor, and was built of horizontal layers of ceramic building materials and flat stones which were bonded and plastered with clay.

The combustion and the firing chambers were found filled with debris, consisting of ash, charcoal, fragments of ceramic building materials and broken pottery vessels (**Fig. 6**). The floor of the lower chamber was also covered with ash and charcoal. The upper chamber was filled with three layers of debris (ash, charcoal, broken pottery and fragments of ceramic building materials), each uncovered above a level of slightly fired yellowish clay. The bottom level of the latter three was situated almost immediately above the support for the perforated floor. The layer between this level and the original floor of kiln no. 1 consisted again of ash and charcoal. The upper part of the fill, situated above the top layer of debris, comprised dark brown, clayish earth mixed with a smaller amount of debris (**Fig. 6.2**).

Kiln no. 2 was discovered immediately to the south of kiln no. 1. The combustion chamber, the support for the perforated floor, the stoking channel and the stoke pit were found *in situ*. The firing chamber was also partially preserved (**Fig. 6**, **11–13**; **table 2**).

The combustion chamber had an almost circular plan and was dug into the same yellowish layer, used for the levelling of the surrounding terrain. Its walls were formed by a 10 cm thick plaster of clay (**Fig. 6.2**).

A cone-shaped tongue-wall, formed out of the natural soil, was found in the centre of the kiln pit opposite the stoking channel (**Fig. 12–13**). Together with the upper part of the walls of the combustion chamber, it was used as support for the perforated floor (**Fig. 6.4**). The latter was not preserved. Only the lower part of the firing chamber, which had been situated below the ground level, was found *in situ*. It had vertically arranged walls, covered with clay plaster (**Fig. 12–13**). Most of the plaster had fallen off probably due to erosion and the effects of the elements. The stoking channel was situated on the north side of the kiln pit and was dug out between the combustion chamber and the stoke pit. Its walls were plastered with clay. Identical to that of the combustion chamber, its floor was also inclined towards the stoke pit and was covered with a thin layer of ash and charcoal (**Fig. 6.2**). The stoke pit was placed inside the former firing chamber of kiln no. 1 (**Fig. 14**). The upper part of the bottom level of the pit was formed by a thick layer of slightly fired clayish soil lying above a layer of debris consisting of ash, charcoal, broken pottery and fragments of ceramic building materials (**Fig. 6.2)**.

Table 1. Internal dimensions of the structural components of kiln no. 1 ("*" size preserved *in situ*, "?" presumed size).

Internal dimensions Kiln no. 1 (in meters)	**Combustion chamber**	**Support**	**Perforated floor**	**Firing chamber**	**Stoking channel**	**Stoke pit**
Diameter	1.50–1.60	-	2.00–2.10?	2.00–2.10	-	?
Width	-	0.20-0.40	-	-	0.46	-
Length	-	1.24	-	-	0.58	-
Height	0.53	0.35*	-	0.90-0.95*	0.30-0.53?	?
Thickness	0.10	-	?	?	?	-

Table 2. Internal dimensions of the structural components of kiln no. 2 ("*" size preserved *in situ*, "?" presumed size).

Internal dimensions Kiln no. 2 (in meters)	**Combustion chamber**	**Support**	**Perforated floor**	**Firing chamber**	**Stoking channel**	**Stoke pit**
Diameter	1.30–1.40	-	1.50?	1.50	-	2.00–2.10
Width	-	0.26-0.60	-	-	0.50-0.62	-
Length	-	1.06	-	-	0.50	-
Height	0.30-0.40	0.40	-	0.50*	0.40-0.50	1.10
Thickness	0.10	-	0.10?	0.04	?	-

***

The presented stratigraphic situation allows the reconstruction of the design and relative chronology of the use of the two kilns.

Kiln no. 1 was the first one built on the spot. Taking into account the plan of the combustion chamber and the type of support for the perforated floor, it could be classified as type I/b/1 of the typology for the antique kilns in the territory of modern Bulgaria[15]. It had a sunken or semi-sunken firing chamber, which allowed for the underground part of the latter to be preserved.

After kiln no. 1 was abandoned, the preserved part of its firing chamber was reused as a stoke pit for the later built kiln no. 2 (**Fig. 14**). The three described layers of yellowish clay should be identified as three consecutively formed floors of the latter stoke pit, while the layers of debris above each of them ought to correspond to the periods of their use (**Fig. 6.2**). The position of the lowest one, beneath the discovered floor level of the stoking channel of kiln no. 2, was most likely owed to its gradual sinking over a long period of time, caused by the lack of firm ground below it, combined with the effect of the hot ash and charcoals taken out of the stoking channel during the kiln firing, and also due the burdening of this small area with heavy materials (for example the wood used as fuel).

During the repurposing of the firing chamber of kiln no. 1, the upper part of its

[15] See HARIZANOV 2019a, p. 81–122.

stoking channel was most likely reused as an entrance for the new stoke pit (**Fig. 8–9**) and was probably renovated (or even built up).

Apart from the stoke pit, kiln no. 2 had similar planning to that of kiln no. 1 and could also be classified as type I/b/1. However, in contrast to the first one, it was built using the technique of shaping most of the kiln's structural components out of the virgin soil and plastering them with clay on the inside. It also had a semi-sunken firing chamber, while the upper part of this component was probably rebuilt after each firing (the same could be supposed for the superstructure of the firing chamber of kiln no. 1). The considerable sloping of its floor, from the back of the combustion chamber towards the opposite end of the stoking channel, combined with the lack of ash and charcoal in the higher parts of the floor of the former, is a strong indication that the fire was lit and maintained at the junction point between the latter and the stoke pit.

As for the perforated floor of kiln no. 2, there are at least two possibilities for its design. The first one is the conventional type of permanent perforated floors, which were formed either entirely out of clay or in combination of other building materials (bricks, tiles, mud bricks, etc.) and clay. The second possibility is the so-called "movable" type of perforated floors, which were made of pre-fabricated ceramic bars or full sized and fragmented *imbrices* or *tubuli*, resting in horizontal position upon the walls of the lower chamber and the internal support[16].

The noted differences in the applied construction techniques in the erection of the two kilns, together with the described stratigraphic situation, provide no less than two alternatives for the time of their use. According to the first option, the two installations were used by the same potters, with the second construction being built shortly after the abandonment of the first one. However, it seems more plausible that kiln no. 2 wasn't built immediately after the disuse of kiln no. 1, but nonetheless at a time that the latter was still visible on the surrounding terrain and suitable for a partial reuse. Furthermore, it is possible that the potters that built the second structure weren't the ones who constructed the first kiln and had different training and technological background.

The ceramic assemblage[17]

The largest amount of pottery, discovered in the course of the excavations of the two kilns (over 340 rim fragments in total), was found inside the chambers of kiln no. 1, mainly in the layers of debris above the three clayish layers identified as consecutively formed floor levels of the stoke pit of kiln no. 2. The assemblage comprised hard fired coarse wares, mostly cooking pots, jugs with round and trefoil rims, table amphorae and pitchers, cups (mugs) and goblets (or deep bowls), and limited number of bowls and lids. Most of the vessels had similar coarse fabric, with sand, gravel, mica and sometimes shells or chamotte being used as tempers.

[16] For the construction and internal structure of the antique kilns in the modern territory of Bulgaria, see HARIZANOV 2019a, p. 38–66; HARIZANOV 2019b, p. 15–39.

[17] The drawings and initial description of the discovered pottery items were made by Dr. Anastasia Cholakova (Asst. Prof., NAIM-BAS), in the course of the excavation of the two kilns. The digitalisation and graphic design of the drawings, along with the presented here identification of the forms, was done by the author of this contribution.

The cooking pots were of two main varieties. The first one had mostly biconical (less frequent globular) partly ribbed bodies, plain almost cylindrical short necks and everted (out-turned) rims, with or without lid seats (**Fig. 16.1–7**). The second major type comprised vessels with globular or biconical partly ribbed bodies and everted rims, with or without lid seats (**Fig. 16.8–13**). The major divergence between this second type of pots and the first one is the lack of neck, with the rim of the second being placed directly above the body (making sharp corner in the section). The preserved examples had one, two or no handles. The fabric was coarse, with sand, gravel, mica and shells being used as tempers. The colour of the external surfaces of the pots varied from light to dark grey or grey-brown. The inner surfaces ranged from brown to brown-orange or orange-brown.

Part of the jugs had larger rim diameter, compared to the height of the vessels. They had globular bodies, everted rims, single or two handles, similar to those of the cooking pots (**Fig. 16.14–15**). Their fabric was coarse, with sand, gravel and mica being used as tempers, sometimes supplemented with chamotte (grog) and shells. Some of the jugs with trefoil rim had smoother surfaces, probably due to additional treatment after their forming. All jugs had identical colours of both surfaces, which ranged from light to dark grey or grey-black, also grey-brown, brown, beige-brown. Some of the vessels were brown or beige-brown inside the cross-section.

The rather small number of lids (**Fig. 17.1–5**) found at the site had coarse fabric, with sand being the main temper, supplemented by gravel, mica and, in few occasions, chamotte or shells. The lids had matching colours of both surfaces, namely beige-brown, brown or grey.

Bowls represented the smallest number of finds from the assemblage. They had thinner bodies, with cylindrical upper part and rounded rims (**Fig. 17.9**) or larger everted rims with lid seats, with a sharp-angled transition towards the body (**Fig. 17.6–8**). Sand was the main temper, supplemented by gravel and chamotte. The colour of both surfaces was brown or grey.

Another small group of tall vessels could be described as deep, almost cylindrical bowls or beakers (goblets) with slightly everted rims and no handles (**Fig. 17.11–13**). A find of similar shape, but partially covered in dots of dark green glaze, was also discovered among the discarded pottery (**Fig. 17.10**).

Vessels with globular bodies, short cylindrical necks, almost vertical, ribbed rims and a single handle were also attested in overall large numbers within the assemblage. They were most likely used as drinking cups (mugs) although some of the sherds of larger specimens could have actually been parts of jugs with similar profile (**Fig. 18.1–9**). Other finds could be more securely attributed to two types of jugs with one or two handles, with a horizontal or slightly out-turned rim with a lid seat (**Fig. 18.10, 15**).

A significant number of the preserved rim fragments belong to table *amphorae* and pitchers with similar rim diameter (**Fig. 18.12–14, 16–18**). They were ribbed on the outside and had identical coarse fabric, where sand, gravel, mica and in several occasions, shells were used as tempers. Some vessels were additionally smoothed on the outside after their forming. The entire group had identical colours on both surfaces, ranging from light grey to dark grey or grey-black, and pale brown or beige-brown to brown or brown-grey.

***

As it was already mentioned, most of vessels from the assemblage were discovered above the clayish layers inside the firing chamber of kiln no. 1, which should correspond to renewed floor levels (at least three) of the stoke pit of kiln no. 2, related to the exploitation periods of the latter (one to several seasons for each floor?). This hypothesis places the discarding of the ceramic items in the time of use of kiln no. 2 and supposedly within the repertoire of the same workshop, which leaves the purpose of kiln no. 1 uncertain.

The majority of the described vessels show homogenous technological and morphological characteristics, common for products of a single workshop. Their hard and coarse fabric is related both to the technique of their manufacture and their functional purpose. The use of large range of tempers was done to ensure lack of breakage during the initial firing of the items, in the course of which they were subjected to temperature fluctuations and close (although not immediate) contact with the flames. The latter could be proven by the variation of colours of the vessels from the assemblage, showing signs of alternating cycles of oxidised and reduced firings inside the kiln, at least some of which weren't planned by the potters, but happened due to the lack of good insulation, sudden temperature fluctuations and/or unwanted cold airflows.

The variety of colours of the vessels from the assemblage was owed also to their function in the household. The divergence between the colours of the external and internal surfaces of the pots could be explained either by secondary firing during cooking (which should mean that they were discarded after being used) or by intentional "smoking" of the vessels. The latter was done in the last stages of the initial firing, when fresh wood and leaves were put as a fuel, resulting in the release of greater amount of carbon and the absorption of latter in the walls[18] of the vessels[19].

According to some researchers, smoking was also done to coarse wares, which were intended for holding liquids, with the carbonised surfaces being less porous than the oxidised ones[20]. This is one possible explanation for the colours of most of the jugs, table *amphorae* and pitchers of the assemblage, which were grey or grey-black both on the outside and the inside.

Ceramic production in *Novae* during Late Antiquity

The kiln site in question was not an isolated case in *Novae*. A number of similar installations, unearthed within the Late Antique stratigraphic layers of the town, were supposedly also used as ceramic kilns[21]. However, only a part of the latter had produced secure evidence for such identification[22].

[18] The reason why only the exterior of some vessels was smoked could be owed the way they were stacked for firing. The pots in particular could have been placed upside down with each pot covering the opening of another one, thus protecting the inner surface from the fumes.

[19] See SULTOV 1985, p. 83.

[20] See SULTOV 1985, p. 83.

[21] See KLENINA 2006, p. 25–28; BIERNACKI, KLENINA 2015, p. 373–377; TOMAS 2015, p. 63–73, HARIZANOV 2019a, p. 177–179.

[22] Out of the fifteen installations described by E. Klenina and A. Biernacki as ceramic kilns

One large kiln of rectangular floor plan was found in the extramural Sector VIIIA (**Fig. 3.2**). It was used either for the production of ceramic building materials or that of pottery vessels, during the second half of the 4th c. or the first half of the 5th c. AD[23].

The largest cluster of kilns, found at *Novae*, was discovered outside the opposite, eastern side of the fortress, near the mouth of Dermen dere[24] (**Fig. 2**). Due to the lack of diagnostic finds, some of the kilns were dated only on the basis of their construction, while others weren't dated at all. For example, the two two-chambered installations of rectangular floor plan, found on the eastern bank of the Dermen dere, were dated to the 4th–5th c. AD[25]. Conversely, it has also been suggested that they were used during the second half of the 3rd c. and/or the first three quarters of the 4th c. AD[26].

Moving inside the fortified area of *Novae* from the Late Antique period (covering the so-called "*Novae I*" and "*Novae II*"), there are several more installations, most likely used as ceramic kilns.

As it was already mentioned, four two-chambered ceramic kilns with circular plan of the combustion chamber were used during the late 4th c. and the first half of the 5th c. AD. in the south-eastern section of the former *scamnum*, as part of a workshop (**Fig. 3.3**), set in the artisanal area of the town at the time[27].

Another two-chambered kiln with circular plan of the combustion chamber, this one without support for the perforated floor, was found in 1960 within the limits of the so-called "Building of the Inscription", situated in Sector IV, sq. II 338[28] (**Fig. 3.4**). The installation was part of a workshop, which was in operation either during the late 4th-first half of the 5th c. AD.[29] or between the 520s and the reign of Justin II[30]. Judging by the coins discovered[31] and the stratigraphic position of the kiln, the latter dating seems more plausible[32].

One more kiln with circular plan of the combustion chamber was discovered in the Polish section of Sector X (sq. XVI 59), to the north-west of the Episcopal complex, near *Via Principalis* (**Fig. 3.5**). It was found filled with brownish earth and a batch of almost entirely preserved ceramic vessels, left there during the abandonment of the structure. The latter action was initially dated to the late 6th c.-beginning

and dated to the 4th–6th c. AD (KLENINA 2006, p. 25–28; BIERNACKI, KLENINA 2015, p. 375, tab. 1) no more than eleven could be more securely identified as such, however two of the latter (BIERNACKI, KLENINA 2015, p. 375, tab. 1.6–7) should be dated to the 3rd c. AD. The rest of the installations (see KLENINA 2006, p. 25–28, Nos. 1–2, 13–15; BIERNACKI, KLENINA 2015, tab. 1.1–2, 1–13–15) were most likely used as lime kilns, bread or domestic ovens, etc. (HARIZANOV 2019a, p. 165–166, 178, note 232).

[23] CHICHIKOVA *et alii* 1980, p. 80–83; SULTOV 1985, p. 14; HARIZANOV 2019a, p. 635–636.

[24] MITOVA-DZHONOVA 1966, p. 38–45; VALOV 1966, p. 46–51; DYCZEK 2005, p. 301–306, HARIZANOV 2019a, p. 166–167.

[25] MITOVA-DZHONOVA 1966, p. 40; VALOV 1966, p. 48–49.

[26] HARIZANOV 2019a, p. 166–167.

[27] GENČEVA 1999, p. 95–99; HARIZANOV 2019a, p. 177, 637–641.

[28] MAJEVSKI 1962, p. 117–118.

[29] BIERNACKI, KLENINA 2015, p. 375.

[30] CIOŁEK 2011, p. 277–278.

[31] See CIOŁEK 2011, p. 277–278, tab. 21.

[32] HARIZANOV 2019a, p. 178.

of the 7th c. AD.[33], while most recent studies date the assemblage within the limits of the 6th c. AD[34].

The last securely identified ceramic kiln from the Late Antique period in *Novae* was unearthed in a section of the northern *intervallum* of the fortress, in sq. II 151 (**Fig. 3.6**). The kiln had circular combustion chamber, a tongue-shaped support for the perforated floor and a semi-sunken firing chamber. It was dated to the mid- 6th c. AD on the basis of the pottery discovered inside of it, as well as on a coin of Justinian I, originating from the related stratigraphic layer[35].

Parallels and dating of the second "*scamnum*" kiln site

The levelling of the terrain of the former *scamnum* with a layer of yellowish earth has been dated to the 4th c. AD[36], which provides a secure *terminus post quem* for the erection of the two kilns, described in this contribution. Even more, the stratigraphic situation in the sector points that the latter were probably built after the devastation of the town by the Huns in AD 423[37].

The two abovementioned installations (kiln no. 2 in particular) find close parallels in other pyrotechnical structures discovered at *Novae*, namely the ones found near *Via Principalis* and in the northern *intervallum*. All four kilns had circular plan of the combustion chamber, a tongue-shaped support for the perforated floor and sunken (or semi-sunken) firing chamber. Furthermore, kiln no. 2 as well as the ones found near the *Via Principalis* (which was also sunken in a yellowish layer of earth) and in the northern *intervallum* were built using the same technique of shaping most of the kiln components out of the virgin soil and clay. According to a recent study, this technique became widespread in the modern territory of Bulgaria during the Roman period and was used by potters, originating from northern located territories[38].

The used construction technique and type of support for the perforated floor are both to be found in the structure of the so-called "Celtic type" kilns, which were widespread in Western and Central Europe during the La Tene and the Roman periods[39], while in the East they had been found in settlements of Dacian and Geto-Dacian origin[40] as well as in areas inhabited by peoples of the Chernyakhov culture[41].

Within the territory of modern Bulgaria installations with circular combustion chamber and a tongue-shaped support for the perforated floor are among the most popular types of installation used during the Hellenistic and the Roman periods[42].

---

[33] KOTECKI 1978, p. 193–205.

[34] BIERNACKI, KLENINA 2014, p. 151; BIERNACKI, KLENINA 2015, p. 377.

[35] TOMAS 2015, p. 63–73.

[36] GENČEVA 2002, p. 18, fig. 12, with additional still unpublished information provided by Dr. Evgenia Gencheva (Assoc. Prof., NAIM-BAS).

[37] Additional, still unpublished information by Dr. Evgenia Gencheva (Assoc. Prof., NAIM-BAS).

[38] HARIZANOV 2019a, p. 205–206; HARIZANOV 2019b, p. 29.

[39] See DUHAMEL 1979, p. 59–62; PEACOCK 1982, p. 67–72; ANDREAS RISY 1994, p. 22–38; COLL CONESA 2008, p. 114–125.

[40] MATEI 2007, p. 279–296; RAȚIU 2009, p. 173–177.

[41] BOBRINSKY 1991, p. 197–199.

[42] HARIZANOV 2019a, p. 89–92.

While the kilns with such support and above the ground firing chamber date back to the Classical and the Early Hellenistic period[43], the ones with sunken or semi-sunken upper chamber appear from the last centuries of the Late Iron Age onwards and have been excavated predominantly in the northern part of the country: for instance, at a 2nd–1st c. BC. site underneath modern Rousse[44], the Chichov elak pre-Roman and Roman site near Krivina (1st c. BC.–1st c. AD.)[45], the recently studied archaeological sites near Kosta Perchevo (late 1st c. BC.–1st c. AD.)[46], Gorni Dabnik (2nd c.-first half of the 1st c. BC.)[47], and the 1st c. BC.–1st c. AD. production centre near Sinagovtsi[48]. Such installations are likewise attested at the Roman production centres near Hotnitsa[49] and Pet mogili (2nd–3rd c. AD.)[50], where however, similarly to the *scamnum* kilns design, the support for the perforated floor does not reach the opening of the stoking channel. Another kiln, also shaped out of the virgin soil and clay, but with a nearly rectangular combustion chamber and again a tongue-wall that divided both the lower chamber and the stoking channel in two, was excavated in the vicinities of *Zikideva*[51], in modern Veliko Tarnovo. It was dated to the 4th–5th c. AD.[52] and could mark a re-appearance of the specific construction type to the south of Danube during the Late Roman period.

The described conventionality of the kiln construction used by the potters at *Novae* makes uncertain any chronological considerations, based on the morphology of the installations. A more precise dating of the exploitation period of the kiln site at the former *scamnum* could be obtained through analysis of the discovered ceramic assemblage.

It is probably not a coincidence that the vessels from the assemblage in question find their closest parallels in the repertoire of the workshops, which utilised the kiln near *Via Principalis* (**Fig. 19**) and the one in the northern *intervallum* (**Fig. 20**), as well as in other studied groups of coarse wares from *Novae*, dated to the late 5th and the 6th c. AD (**Fig. 21**)[53].

The cooking pots (**Fig. 16.1–13**) find direct parallels in the described types of pots of the late 5th and the 6th c. AD., manufactured in *Novae*[54] (**Fig. 19–21**), as well as in the assemblages from period C (first half of the 5th c. AD) and especially period D (6th c. AD.) at *Iatrus*[55], and in types I and V of the cooking pots, used in the settlement

[43] HARIZANOV 2019a, p. 43–44, 91.

[44] VARBANOV *et alii* 2016, p. 101–117.

[45] VAGALINSKI 2011, p. 219–226; HARIZANOV 2019a, p. 481–482.

[46] GEORGIEV *et alii* 2020, p. 504–509.

[47] TONKOVA, MADZHAROV 2020, p. 514–520.

[48] Personal information from the site's researcher Dr. Zdravko Dimitrov (Assoc. Prof., NAIM-BAS), to whom I express my gratitude.

[49] SULTOV 1969, p. 12–24; HARIZANOV 2019a, p. 148, 680–696.

[50] ANTONOVA, ATANASOV 1979, p. 28–36; HARIZANOV 2019a, p. 157–158, 588–595.

[51] For the Early Byzantine town on the Tsarevets hill in Veliko Tarnovo, identified as the *Zikideva* known from the sources, see for instance DINTCHEV 2018, p. 368–369, and the literature cited.

[52] See ROBOV 1997, p. 136–142; HARIZANOV 2019a, p. 185–186, 403–404.

[53] See KOTECKI 1978, p. 193–199; BIERNACKI, KLENINA 2014, p. 151–157; TOMAS 2015, p. 65–69.

[54] BIERNACKI, KLENINA 2014, p. 152–153, 156, fig. 3.1–2.

[55] BŐTTGER 1978, p. 28–30; BŐTTGER 1991, p. 157–166, taf. 53.

at Gradishteto near Dichin, dated respectively to c. AD. 410–490 and c. AD. 540–580[56]. The latest parallels, dated to the late 6th c.-the beginning of the 7th c. AD., come from a closed complex, discovered in the Late Antique settlement on cape Kaliakra[57]. According to the classification of G. Kuzmanov the pots from the assemblage are close to types I, VI and VII, dated to the 5th c.-the early 7th c. AD[58]. Parallels are also to be found in *Scythia Minor*, namely in types II, IV, V, IX and X of the typology of A. Opaiţ, dated to the 5th c.-the early 7th c. AD., with the majority being common for the 6th c. AD[59]. The wide distribution of this variety of cooking vessels during the Early Byzantine period is further confirmed by the presence of similar items during the 5th and the 6th c. AD. in north-western Asia Minor[60].

Identical forms to the jugs with biconical or globular bodies and everted trefoil rims from the *scamnum* assemblage (**Fig. 16.14–15**) are to be found in the repertoire of both the *Via Principalis*[61] and the *intervallum* workshops[62], as well as in the other sets of vessels (described as "jugs-*oinochoai*" and "pots-*oinochoai*") from the late 5th c. and the 6th c. AD[63] (**Fig. 19–21**).

The small number of bowls, located within the *scamnum* assemblage (**Fig. 17.6–9**), show resemblance with bowl types II and III of the vessels from the site at Gradishteto near Dichin, used there during both habitation periods (c. AD. 410–490 and c. AD. 540–580), predominantly in the course of the first one[64]. In the typology of G. Kuzmanov they find similarities with type I, dated to the 4th c.-early 6th c. AD., and type III, discoverable in both Roman and Late Antique contexts[65].

The tall handless goblets/beakers or deep bowls (**Fig. 17.11–13**) could also be seen in the former publication[66] (**Fig. 21**) as well as in assemblages from period D in *Iatrus*[67].

The drinking cups (mugs) with single handle, globular body, cylindrical neck and almost vertical rims (**Fig. 18.1–9**) are also to be found in the published assemblages of the late 5th and 6th c. AD from *Novae*[68] (**Fig. 21**). Furthermore, they find parallels in the vessels of cups type IV from the classification of G. Kuzmanov, dated to the 5th–6th c. AD[69], while two handled varieties of the form occur in *Scythia Minor* during the 4th–6th c. AD[70].

The group of vessels, comprising table *amphorae*, pitchers and jugs with similar rim diameter (**Fig. 18.11–14**; **16–18**), find parallels in the said assemblages of

[56] KUZMANOV 2009, p. 153–154, 162–164, 169–170, 189–190, 196–197.
[57] See KUZMANOV 1978, p. 20–25.
[58] KUZMANOV 1985, p. 47–54, 90, T. 29, p. 92, T. 31, p. 93, T. 32.
[59] OPAIŢ 2004, p. 47–52.
[60] See KAN ŞAHIN, LAFLI 2015, p. 358–374.
[61] KOTECKI 1978, p. 196, tab. III.4–7.
[62] TOMAS 2015, p. 67, tab. 2.
[63] BIERNACKI, KLENINA 2014, p. 155, fig. 2.5, 8–9, p. 156, fig. 3.3–4.
[64] KUZMANOV 2009, p. 157–158, 185.
[65] KUZMANOV 1985, p. 39–40, p. 84, T. 23.
[66] BIERNACKI, KLENINA 2014, p. 152, 155, fig. 2.3–4.
[67] CONRAD 2007, p. 51–52; taf. 10.
[68] BIERNACKI, KLENINA 2014, p. 152, 155, fig. 2.1–2.
[69] KUZMANOV 1985, p. 45–46, 87, T. 26.
[70] OPAIŢ 2004, p. 67–68.

the late 5th c. and 6th c. AD. in *Novae*[71] (**Fig. 19**, **21**) and also in types III and IV of the jug forms from Gradishteto near Dichin, dated mostly in the 6th c. AD[72]. Two of the pitchers from the assemblage (**Fig. 18.11, 13**) are close to the jugs of Kuzmanov types II and III, mostly dated to the 4th–6th c. AD. and the end of the 4th c.-first half of the 5th c. AD., while at least one (**Fig. 18.12**) is close to the jugs of Kuzmanov type X, dated to the Late Antique period, with more securely dated examples from the 6th c. AD[73]. Another of the illustrated finds (**Fig. 18.16**) is very similar to the *amphorae* of Kuzmanov type XIX and Opaiţ type IIb, both dated mainly to the 6th c. AD[74]. The other two shapes, similar to types of locally produced *amphorae* (**Fig. 18.17–18**) find common features with Kuzmanov types XV and XVII[75].

***

The parallels described of the *scamnum* assemblage come mostly from contexts, dated from the second half of the 5th c. to the beginning of the 7th c. AD., but predominantly to the 6th c. AD. Therefore, it could be suggested that the later-built kiln no. 2 was used and abandoned at some point during the 6th c. AD. (the second / third quarter of the century?).

As for the vessels of earlier date (for instance **Fig. 17.9**, **10**, **18.11**), discovered among the debris in the kiln pit of kiln no. 1, there is another possibility for their origin. The overall large quantity of pottery, found inside the usually kept clean stoke pit, together with the traces of secondary smoking on the external surface of some vessels (for example some of the cooking pots with parallels in mentioned 5th c. AD. contexts), could be regarded as an indication that the latter were thrown there after their discard along with other waste material, during the levelling and raising of the bottom of the stoke pit of kiln no. 2. Furthermore, it could also be suggested that they were made prior the start of the use of the later kiln and, given their earlier date, that they could have been part of the repertoire of the potters, who used kiln no. 1.

Conclusions

According to A. Biernacki and E. Klenina, the ceramic workshops of the late 5th and the 6th c. AD. in *Novae* were controlled by the bishop and probably owned by the eparchy[76]. A. Tomas, on the other hand, sees a domestication of the craft during the same period due to the simplifications of the vessel forms. This is pointed as evidence for the lack of a direct control over the pottery production by the bishopric in favour of a less strict demand for a regular supply[77].

[71] KOTECKI 1978, p. 194, tab. I.4–5, p. 196, tab. III.1, 3; BIERNACKI, KLENINA 2014, p. 152, 155, fig. 2.6–7.

[72] See KUZMANOV 2009, p. 159–161, 187.

[73] KUZMANOV 1985, p. 31–34, 79, T. 18, p. 80, T. 19.

[74] KUZMANOV 1985, p. 25; OPAIŢ 2004, p. 5. I was additionally consulted on the supposed *amphorae* shapes by dr. Nikolay Rusev (National Institute of Immovable Cultural Heritage, Bulgarian Ministry of Culture) to whom I express my gratitude.

[75] KUZMANOV 1985, p. 20–22, 25, 70–71, T. 10–11, p. 74, T. 13.

[76] BIERNACKI, KLENINA 2015, p. 377, 380.

[77] TOMAS 2015, p. 70–71.

The here presented ceramic assemblage fits well in the production repertoire of the *Novae* workshops of the late 5th and 6th c. AD. However, the overall small number of produced forms is not a secure indication for a domestication of the craft. On the contrary, the strong correspondence among the vessel forms from the repertoire of the several identified potteries in the north-western part of the Late Antique town points toward some sort of centralised control over this activity. The latter is in agreement with the proposition of A. Biernacki and E. Klenina. Nevertheless, the available published information in is not sufficient for the secure acceptance of their hypothesis. Furthermore, the data presented for the technology of kiln building and vessel production during the same period in *Novae* provides grounds for the distinct possibility still worth noting that this last phase of development of the potter's craft within the settlement was at least partly owed to newly arrived peoples of different ethnic or cultural background.

BIBLIOGRAPHY

ANDREAS RISY 1994 – R. Andreas Risy, *Römerzeitliche Brennöfen in Noricum*, Wien, 1994.

ANTONOVA, ATANASOV 1979 – V. Antonova, G. Atanasov, *Peshti za bitova keramika v zemlishteto na s. Pet mogili, Shumensko*, Jahrbuch der Museen in Nordbulgarien 5 (1979), p. 28–36.

BIERNACKI 2013 – A. B. Biernacki, *The Episcopal Complex in Novae (5th and 6th Cent. AD)*, in: A. B. Biernacki, R. Czerner (eds.), *The Bishopric of Novae (Moesia Secunda) 4th–6th Cent. History, Architecture, Daily Life, Vol. I, History, Architecture*, Poznań, 2013, p. 31–54.

BIERNACKI, KLENINA 2014 – A. B. Biernacki, E. Klenina, *Early Byzantine Coarse Ware from Novae: Production and Chronology*, in: N. Poulou-Papadimitriou, E. Nodarou, V. Kilikoglou (eds.), *LRCW 4, Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean*, BAR International Series 2616 (I), 2014, Oxford, p. 151–157.

BIERNACKI, KLENINA 2015 – A. B. Biernacki, E. Klenina, *Early-Byzantine Pottery Workshops in Novae (Moesia II, Bulgaria): Technological, Economic and Historical Aspects*, in: F. Thuillier, E. Louis (eds.), *Tourner autour du pot… Les ateliers de potiers médiévaux du Ve au XIIe siècle dans l'espace européen*, Publications du Centre de Recherches Archéologiques et Historiques Médiévales (CRAHM), Brepols, 2015, p. 373–381.

BOBRINSKY 1991 – A. Bobrinsky, *Goncharnye masterskie i gorny Vostochnoi Evropy (po materialam II–V vv. n. e.)*, Moskva, 1991.

BŐTTGER 1978 – B. Bőttger, *Céramique ménagère des Ive-Ie s. de Jatrus Mesie inferieure*, Arheologija 20/2 (1978), p. 26–32 [in Bulgarian].

BŐTTGER 1991 – B. Bőttger, *Die gefäßkeramischen Funde (1975–1981)*, in: *Iatrus-Krivina, Band IV: Ergebnisse der Ausgrabungen 1975–1981*, Berlin, 1991, p. 157–166, taf. 46–54.

CHICHIKOVA *et alii* 1980 – M. Chichikova, B. Sultov, V. Naydenova, A. Dimitrova-Milcheva, *Razkopki v Nove (bylgarski sector)*, Arheologicheski otkritiya i razkopki prez 1979 g., 1980, p. 80–82.

CIOŁEK 2011 – R. Ciołek, *Conclusions from the inventory*, in: P. Dyczek (ed.), *Novae, Legionary fortress and Late Antique town, Volume II, Coins from Sector IV*, Warszawa, 2011, p. 235–278.

COLL CONESA 2008 – J. Coll Conesa, *Hornos romanos en España. Aspectos de morfología y tecnología*, in: *Ceramicas Hispanorromanas. Un estado de la cuestion*, Cadiz, 2008, p. 113–125.

CONRAD 2007 – S. Conrad, *Kommentierter Katalog der gefäßkeramischen Funde*, in: *Iatrus Krivina, Band VI: Dokumentation der Ausgrabungen 1992–2000*, Mainz am Rhein, 2007, p. 1–80, taf. 1–22.

DINTCHEV 2015 – V. Dintchev, *The Municipia of the province of Moesia Inferior*, in:

L. Vagalinski, N. Sharankov (eds.), *Proceedings of the 22nd International Congress of Roman Frontier Studies, Ruse, Bulgaria, September 2012* (*Bulletin of the National Institute of Archaeology* XLII), 2015, p. 581–591.

DINTCHEV 2018 – V. Dintchev, *Town and Church in Late Antiquity*, in: L. Vagalinski, M. Raycheva, D. Boteva, N. Sharankov (eds.), *Proceedings of the 1st International Roman and Late Antique Thrace Conference "Cities, Territories and Identities" (Plovdiv, 3rd–7th of October 2016)* (*Bulletin of the National Archaeological Institute* XLIV), 2018, p. 357–370.

DUHAMEL 1979 – P. Duhamel, *Morphologie et évolution des fours céramiques en Europe occidentale. Protohistoire, Monde Celtique et Gaule Romaine*, Acta Praehistorica et Archaeologica 9/10 (1978) [1979], p. 49–76.

DYCZEK 2005 – P. Dyczek, *A New Pottery Manufacturing Center at Novae*, RCRF Acta 39 (2005), p. 301–306.

DYCZEK 2008 – P. Dyczek, *Archaeological Excavations at Novae. A History of Research with Special Considerations of Sector IV (Legionary Baths, valetudinarium, Late Architecture)*, in: T. Derda, P. Dyczek, J. Kolendo (eds.), *Novae. Legionary Fortress and Late Antique Town, Volume 1, A Companion to the Study of Novae: History of Research, Novae in Ancient Sources, Historical Studies, Geography, Topography, and Cartography, Bibliography 1726–2008*, Warsaw, 2008, p. 31–70.

GENČEVA 1999 – E. Genčeva, *La production dans le camp militaire romain Novae pendant la Basse Antiquité (à l'instar du scamnum tribunorum)*, in: *Der Limes an der Unteren Donau von Diocletian bis Heraklios*, Vorträge der Internationalen Konferenz (Svištov, 1–5 September 1998), Sofia, 1999, p. 95–98.

GENČEVA 2002 – E. Genčeva, *Parviat voenen lager v Novae, provincia Miziya (Severna Bulgaria)*, Sofia-Warszawa, 2002.

GENČEVA 2003 – E. Genčeva, *Le premier camp militaire à Novae*, Novaensia 14 (2003), p. 21–38.

GENČEVA 2006 – E. Genčeva, *Bazyliki odsłonięte na odcinku X w Novae, koło współczesnego Svisztov, północna Bułgaria*, Novaensia 17 (2006), p. 45–52.

GENCHEVA 2010 – E. Gencheva, *Nove. Razkopki na sector X–scamnum tribunorum*, Arheologicheski otkritiya i razkopki prez 2009 g., 2010, p. 312–313.

GENCHEVA *et alii* 2007 – E. Gencheva, T. Sarnowski, P. Dyczek, A. Biernacki, *Bylgaropolski razkopki v rimskiya voenen lager i rannovizantiyski grad Novae*, Arheologicheski otkritiya i razkopki prez 2006 g., 2007, p. 263–266.

GENCHEVA *et alii* 2008 – E. Gencheva, T. Sarnowski, P. Dyczek, A. Biernacki, *Bylgaropolski razkopki v rimskiya voenen lager i rannovizantiyski grad Novae*, Arheologicheski otkritiya i razkopki prez 2007 g., 2008, p. 340–343.

GENCHEVA *et alii* 2011 – E. Gencheva, T. Sarnowski, P. Dyczek, A. Biernacki, *Rimski voenen lager i rannovizantiyski grad Nove*, Arheologicheski otkritiya i razkopki prez 2010 g., 2011, p. 276–280.

GEORGIEV *et alii* 2020 – P. Georgiev, R. Alexandrov, O. Milanova, H. Hristova, Y. Nikolova, Y. Baev, M. Baeva, S. Staykov, *Rescue Archaeological Excavations of Early Neolithic and Late Iron Age Site in the Land of Kosta Perchevo Village, Municipality of Kula, Vidin District, Archaeological Discoveries and Excavations in 2019*, 2020, p. 504–509 [in Bulgarian].

HARIZANOV 2019a – A. Harizanov, *Peshti za keramika v dneshnite bylgarski zemi prez I–VI vek* [*Ceramic kilns in the territory of modern Bulgaria from the 1st to the 6th century AD.*], Dissertations 15, National Archaeological Institute and Museum-BAS, Sofia, 2019.

HARIZANOV 2019b – A. Harizanov, *Bridging the gap: continuity and innovation in ceramic kiln technology from the 6th c. BC to the beginning of the 7th c. AD in the modern territory of Bulgaria*, Archaeologia Bulgarica 23/3 (2019), p. 15–39.

HARIZANOV 2022 – A. Harizanov, *Ceramic workshops in Dacia Mediterranea (late third-early seventh century AD)*, Journal of Ancient History and Archaeology 9.2 (2022), p. 156–188.

KAN ȘAHIN, LAFLI 2015 – G. Kan Șahin, E. Lafli, *Roman and Late Roman-Early Byzantine*

Coarse Ware from Southwestern Paphlagonia, in: E. Lafli, S. Pataci (eds.), *Recent Studies on the Archaeology of Anatolia*, BAR International Series 2750, Oxford, 2015, p. 327–437.

KLENINA 2006 – E. Y. Klenina, *Ceramic Tableware and Kitchenware of the 3rd–6th Century from Novae (Northern Bulgaria)*, in: A. B. Biernacki (ed.), *Novae. Studies and Materials II*, Poznan-Sevastopol, 2006.

KOTECKI 1978 – J. Kotecki, *Piec Garncarski w "Sondażu Wodociągowym"*, Archeologija 28 (1977), p. 193–205.

KUZMANOV 1978 – G. Kuzmanov, *Céramique de la Haute époque byzantine du castel du cap Kaliakra*, Arheologija 20/2 (1978), p. 20–25 [in Bulgarian].

KUZMANOV 1985 – G. Kuzmanov, *Rannovizantiyska keramika ot Trakia i Dakia (IV-nachaloto na VII v.)* (Razkopki i prouchvaniya 13), Sofia, 1985.

KUZMANOV 2009 – G. Kuzmanov, *Early Byzantine Pottery from Gradishteto (North-West Area)*, in: V. Dintchev (ed.), *Bylgaro-britanski razkopki na Gradishteto pri s. Dichin, Velikotyrnovska oblast, 1996–2003*, Razkopki i prouchvaniya 39 (2009), p. 153–206.

LEMKE 2015 – M. Lemke, *The Dwindling Legion: Architectural and Administrative Changes in Novae (Moesia Inferior) on the Threshold of Late Antiquity*, in: R. Collins, M. Symonds, M. Weber (eds.), *Roman Military Architecture on the Frontiers: Armies and Their Architecture in Late Antiquity*, Oxford, 2015, p. 90–97.

MAJEVSKI 1962 – K. Majevski, *Sprawozdanie tymczasowe z wykopalisk w Novae w 1960 roku*, Archeologija 12 (1962), p. 75–170.

MATEI 2007 – S. Matei, *The morphology and typology of kilns for firing ceramic in the Geto-Dacian Classical period (2nd century BC–1st century AD.)*, Istros 14 (2007), p. 279–296.

MITOVA-DZHONOVA 1966 – D. Mitova-Dzhonova, *Peshti za keramika i keremidi ot Nove*, Arheologija 8/1 (1966), p. 38–45.

OPAIȚ 2004 – A. Opaiț, *Local and Imported Ceramics in the Roman Province of Scythia (4th–6th centuries AD.). Aspects of economic life in the Province of Scythia*, BAR International series 1274, Oxford, 2004.

PEACOCK 1982 – D. P. S. Peacock, *Pottery in the Roman World: an ethnoarchaeological approach*, London, 1982.

RAȚIU 2009 – A. M. Rațiu, *Pottery kilns from North-Western Transylvania from the 2nd–4th centuries AD*, in: O. Țentea, I. C. Opriș (eds.), *Near and Beyond the Roman Frontiers, Proceedings of a Colloquium held in Târgoviște, 16–17 October 2008*, Bucharest, 2009, p. 165–186.

ROBOV 1997 – M. Robov, *Pottery furnace at the west foot of the hill "Momina krepost" in Veliko Turnovo*, Bulletin of the Muzeum of History-Veliko Tânovo 12 (1997), p. 136–142 [in Bulgarian].

SARNOWSKI *et alii* 2009 – T. Sarnowski, E. Gencheva, P. Dyczek, A. Biernacki, *Novae. Rimski voenen lager i rannovizantiyski grad*, *Arheologicheski otkritiya prez 2008* g., 2009, p. 419–422.

SARNOWSKI *et alii* 2014 – T. Sarnowski, A. Biernacki, P. Vladkova, E. Yordanov, M. Lemke, A. Tomas, *Nove (Novae). Arheologicheski pytevoditel po rimskiya legionen lager i rannovizantiyski grad na Dolniya Dunav (Bulgaria*), Warsaw, 2014.

SULTOV 1969 – B. Sultov, *Novootkrit keramichen centar pri s. Hotnitsa ot rimskata i starobalgarskata epoha*, Arheologija 11/4 (1969), p. 12–24.

SULTOV 1985 – B. Sultov, *Ceramic production on the territory of Nicopolis ad Istrum*, Anuaire de L'Université de Sofia "Kliment Ohridski"/Faculté d'Histoire 76/2 (1983), 1985.

TOMAS 2015 – A. Tomas, *Sixth-century Pottery Kiln from Novae (Moesia Secunda), A Contribution to the Studies of Local Pottery Manufacturing*, Archaeologia Bulgarica 19/3 (2015), p. 63–73.

TONKOVA, MADZHAROV 2020 – M. Tonkova, K. Madzharov, *Site of the Late Hellenistic Period and the Bulgarian Revival Period near Gorni Dabnik Village, Dolni Dabnik Municipality. Complete Archaeological Investigations, Archaeological Discoveries and Excavations in 2019*, 2020, p. 514–520 [in Bulgarian].

VAGALINSKI 2011 – L. Vagalinski, *A new Late La Tène pottery kiln with a bread oven on the lower Danube (northern Bulgaria)*, in: M. Guštin, M. Jevtić (eds.), *The Eastern Celts. The Communities between the Alps and the Black Sea*, Beograd, 2011, p. 219–226.

VALOV 1966 – V. Valov, *Pesht za stroitelna keramika ot Nove*, Arheologija 8/1 (1966), p. 46–51.

VARBANOV *et alii* 2016 – V. Varbanov, N. Rusev, S. Todorova, R. Yordanova, *Late Hellenistic kilns found on the territory of Rousse, Bulgaria*, Banatica 26/1 (2016), p. 101–117.

VELKOV 1977 – V. Velkov, *Cities in Thrace and Dacia in Late Antiquity (Studies and Materials)*, Amsterdam, 1977.

Fig. 1. Map of the Central and North-eastern Balkans with provincial and diocese borders of the 4th c. – 6th c. AD. (after HARIZANOV 2022, p. 158, fig. 1, with additions and corrections).

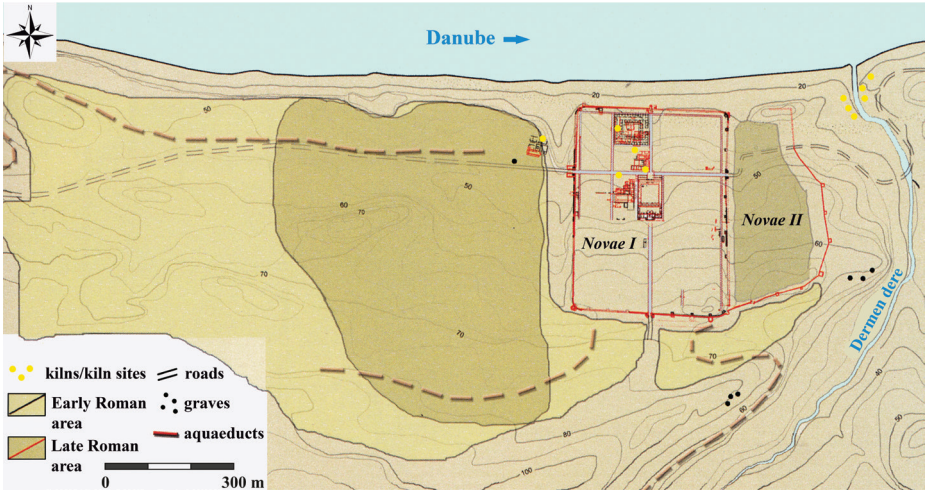

Fig. 2. General plan of the area of *Novae* with marked locations of excavated ceramic kilns (after SARNOWSKI *et alii* 2014, p. 79, fig. 1, with additions and corrections by A. Harizanov).

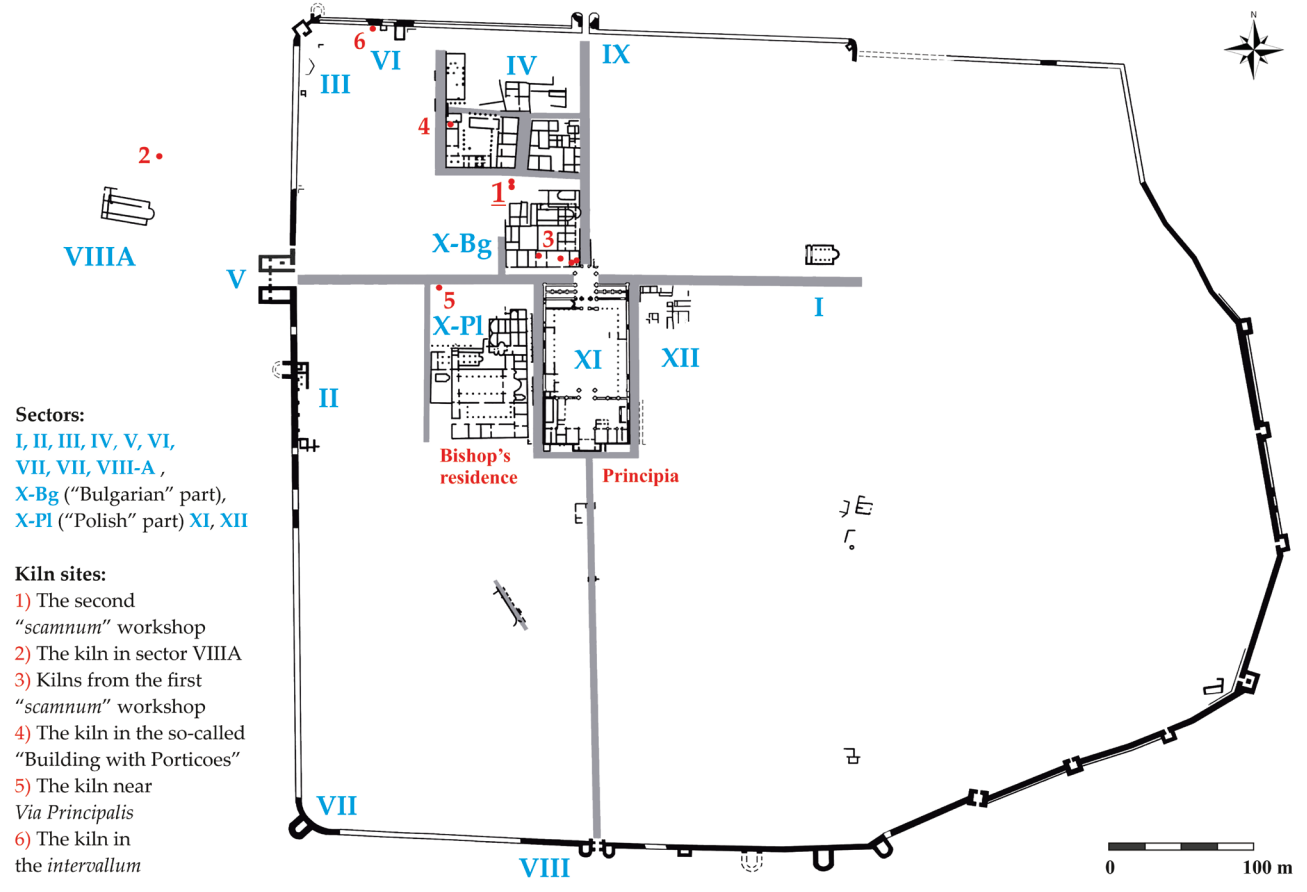

Fig. 3. Plan of the fortified area of *Novae* during Late Antiquity with locations of the kiln sites mentioned in the text and part of the studied sectors (after LEMKE 2015, p. 91, fig. 8.1; DYCZEK 2008, p. 56, fig. 19; with additions and correction by A. Harizanov).

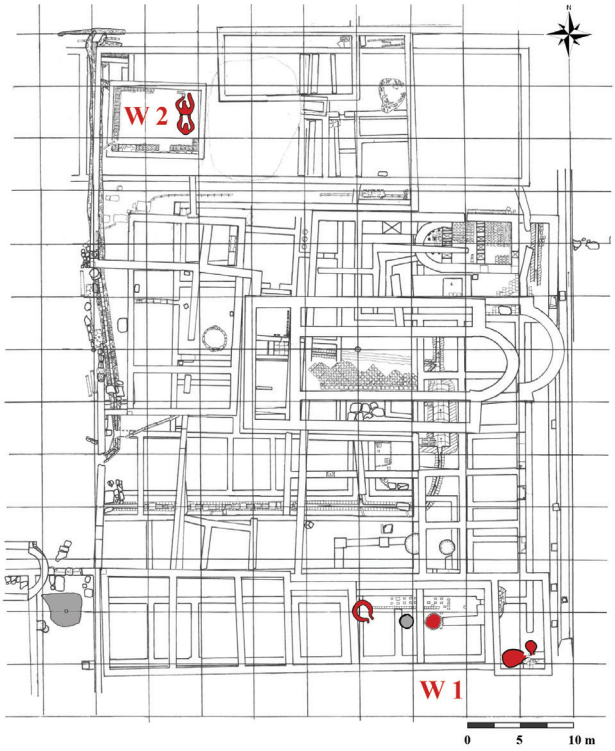

Fig. 4. General plan of the site of *scamnum tribunorum* with locations of the two kilns sites described in the text (W1-the earlier workshop; W2-the second *scamnum* kiln site) (plan courtesy of Assoc. Prof. Dr. E. Gencheva, with additions by A. Harizanov).

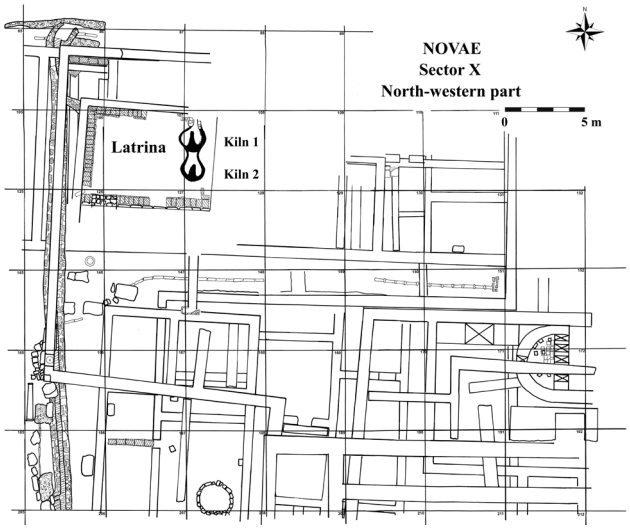

Fig. 5. Plan of the north-western section of sector X with location of the second *scamnum* kiln site (after SARNOWSKI *et alii* 2009, p. 420, fig. 2, with additions by A. Harizanov).

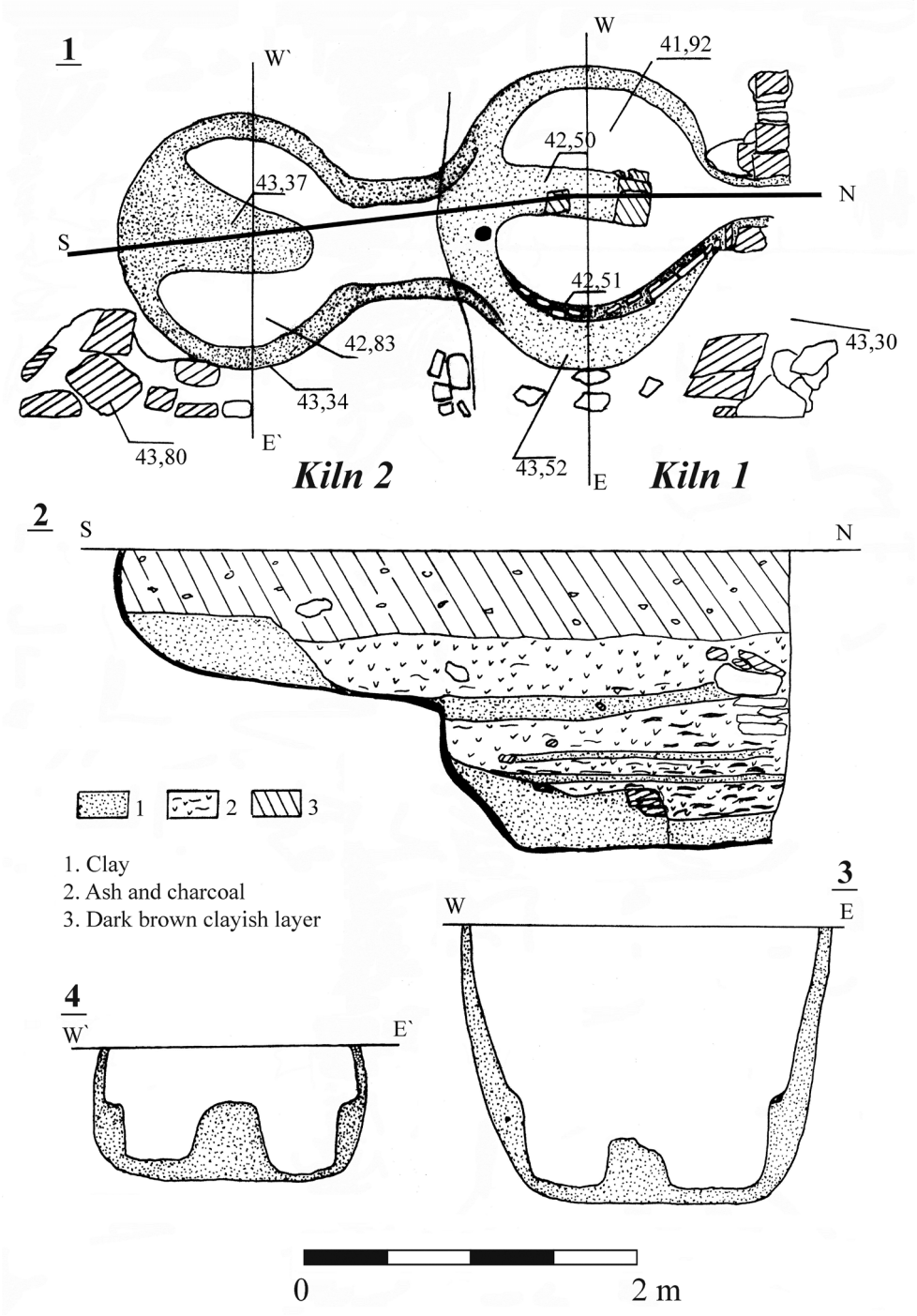

Fig. 6. Plan and cross-sections of the two kilns from the second *scamnum* kiln site (after GENCHEVA *et alii* 2008, p. 341, fig. 1, with additions and corrections by A. Harizanov).

Fig. 7. Photo of kiln no. 1 with the layers of debris inside the firing chamber, view from the west (author E. Gencheva).

Fig. 8. Photo of kiln no. 1 after the completion of its research (author E. Gencheva).

Fig. 9. Photo of the tongue wall and the stoking channel of kiln no. 1 (author E. Gencheva).

Fig. 10. Photo of the tongue wall and the eastern wall of the combustion chamber of kiln no. 1 (author E. Gencheva).

Fig. 11. Photo of kilns no. 1 and no. 2 after the completion of their research, view from the north (author E. Gencheva).

Fig. 12. Photo of kiln no. 2 after the completion of its research (author E. Gencheva).

Fig. 13. Photo of kiln no. 2 after the completion of its research, view from the south (author E. Gencheva).

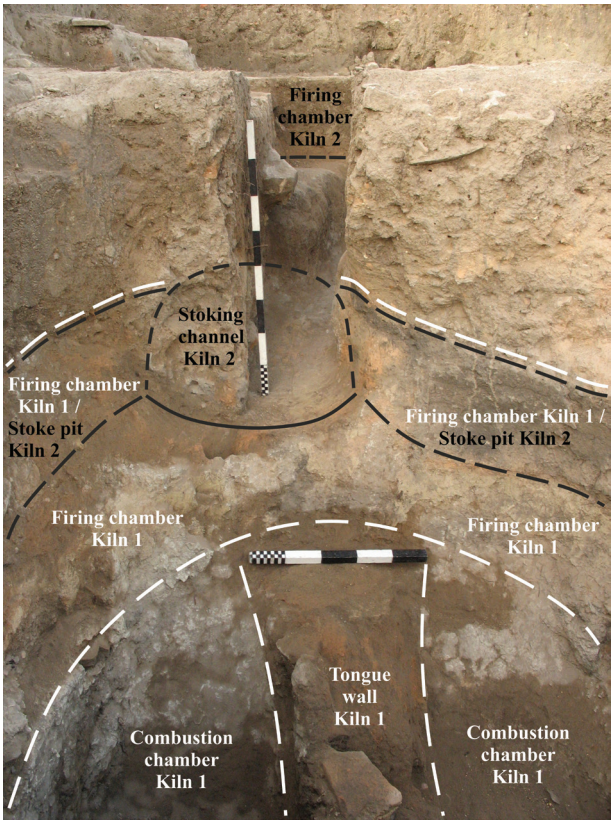

Fig. 14. Photo of kilns nos. 1 and 2 with drawings marking the visible preserved parts of the two installations (photo by E. Gencheva, additions by A. Harizanov).

Fig. 15. Photo of cooking pots from the *scamnum* assemblage (author A. Harizanov) a new illustration is sent

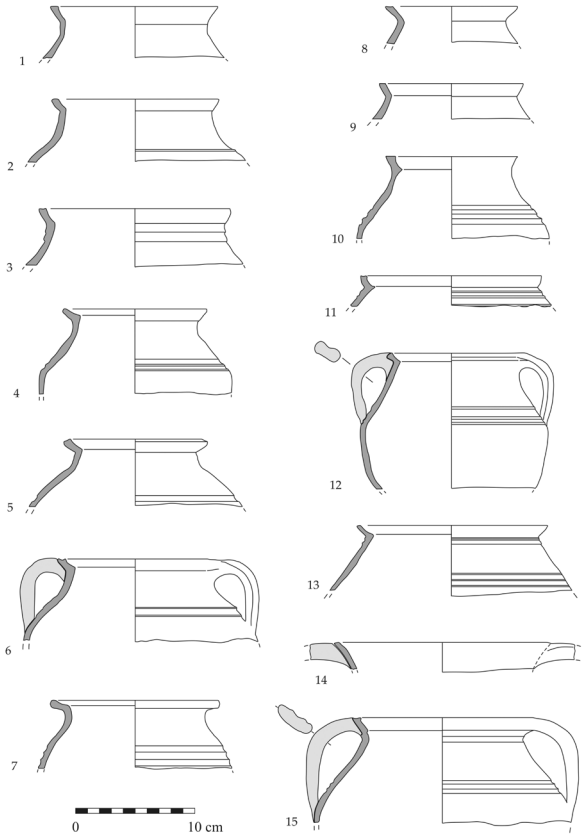

Fig. 16. Cooking pots and pots-*oinochoai* from the *scamnum* assemblage (drawings by A. Cholakova, graphic design and identification A. Harizanov).

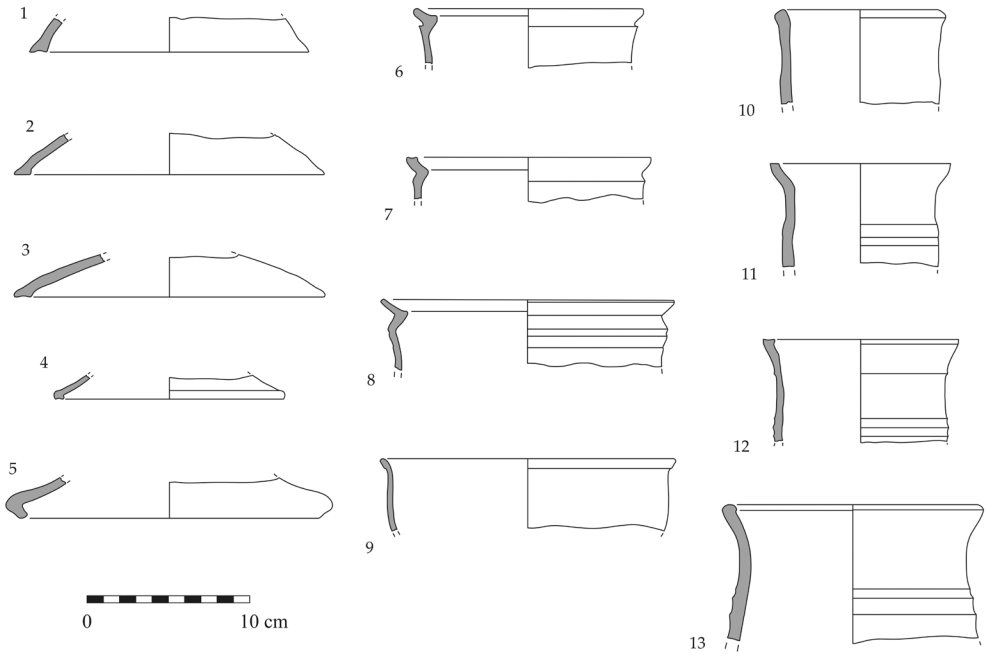

Fig. 17. Lids, bowls and beakers from the *scamnum* assemblage (drawings by A. Cholakova, graphic design and identification A. Harizanov).

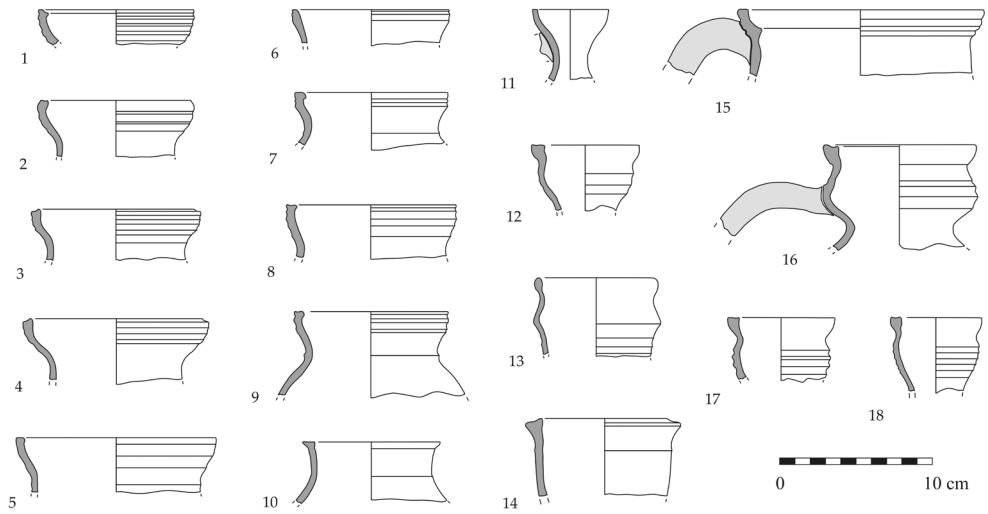

Fig. 18. Mugs, jugs, pitchers and table *amphorae* from the *scamnum* assemblage (drawings by A. Cholakova, graphic design and identification A. Harizanov).

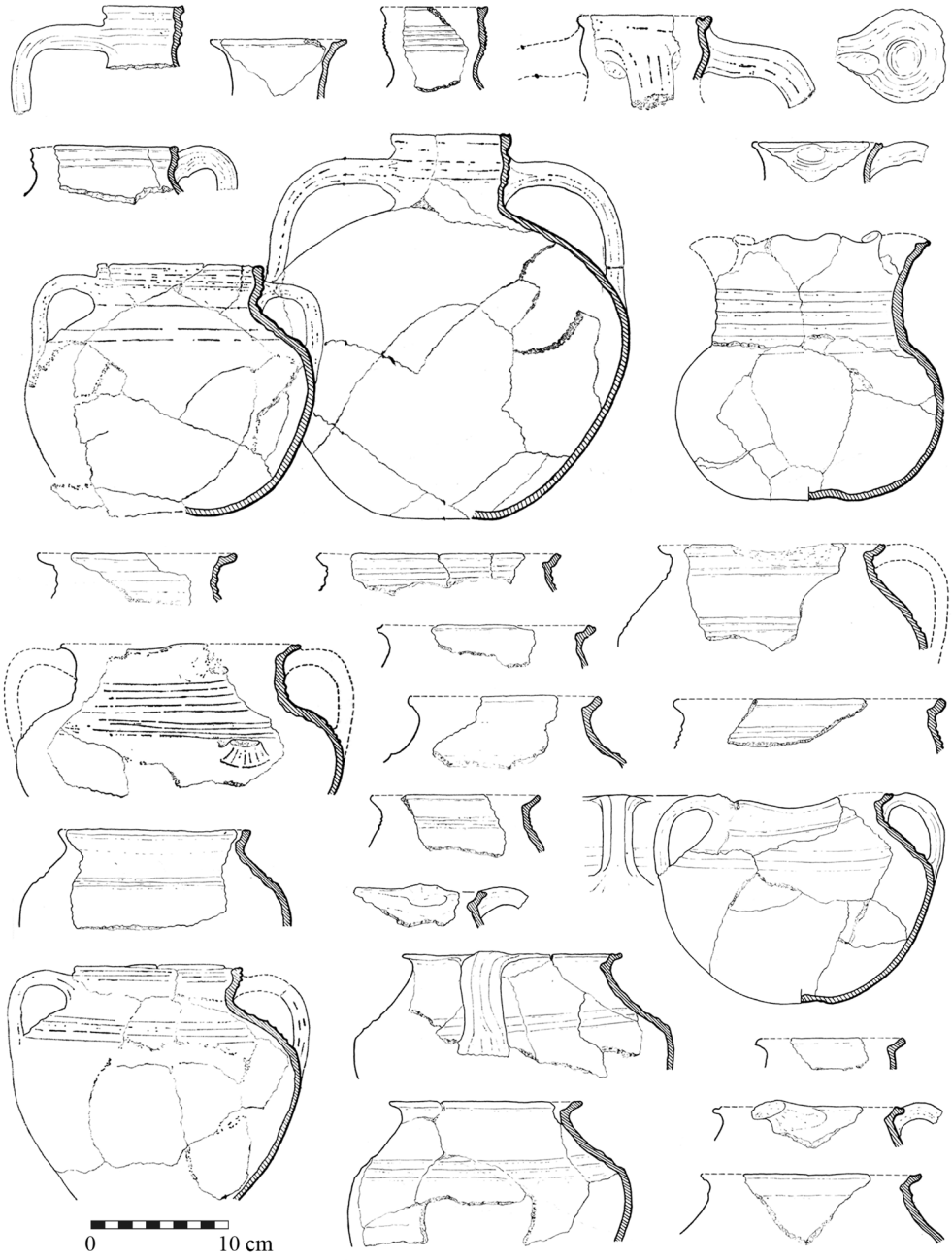

Fig. 19. The ceramic assemblage from the *via principalis* kiln site (after KOTECKI 1978, p. 194–196, tabl. I–III; compilation and additions by A. Harizanov).

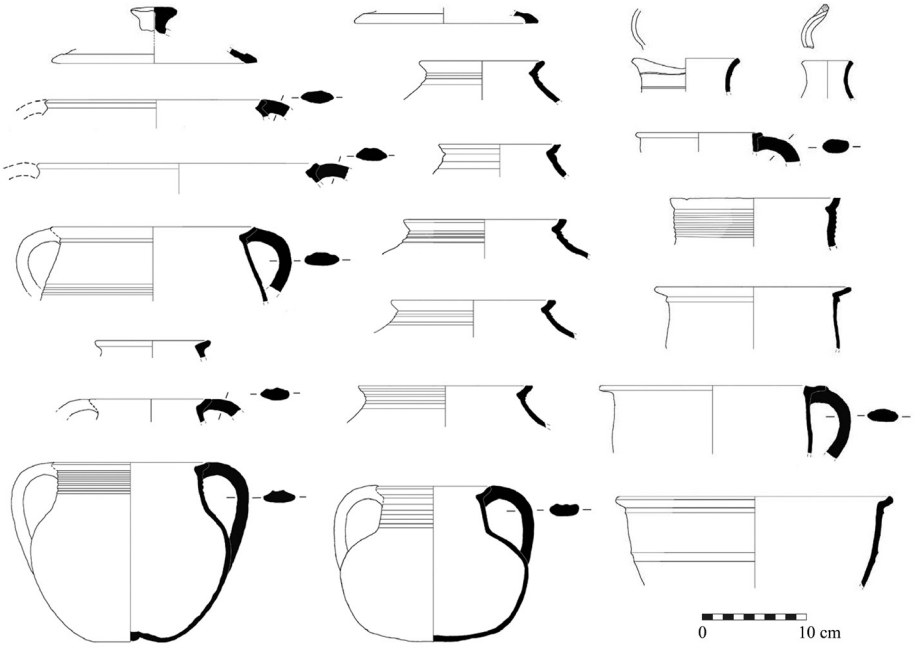

Fig. 20. The ceramic assemblage from the *intervallum* kiln site (after TOMAS 2015, p. 66–67, Tables I–II; compilation and additions by A. Harizanov).

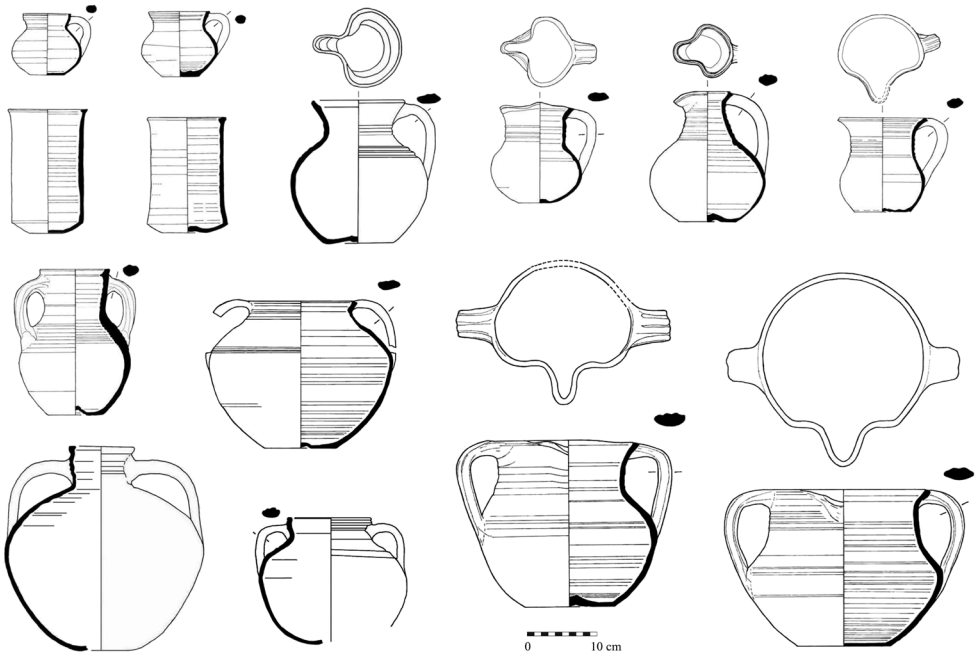

Fig. 21. Ceramic vessels of the late 5th c. and the 6th c. AD. found in *Novae* (after BIERNACKI, KLENINA 2014, p. 155–156, figs. 2–3; compilation and additions by A. Harizanov).