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# PROBLEMS IN THE ARCHAEOLOGICAL STUDY OF MEDIEVAL BILHOROD AND ITS CERAMICS (BASED ON THE EXCAVATIONS OF ONE OF THE POTTERY WORKSHOP)

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## ABSTRACT:

The medieval city and fortress built on the ruins of ancient Tyras at the mouth of the Dniester (the territory of modern Bilhorod-Dnistrovskiy, Ukraine) are among the key archaeological sites of the Northern Black Sea region of the late Byzantine and Ottoman times. Despite the long term of excavation in the site and the large explored area, the chronology of its cultural layers and ceramics from them, as well as the declared origin of some groups of the pottery cause reasonable doubts. That is why the re-examination of 'old' excavation data from the perspective of new achievements of medieval archaeology and ceramology in the Northern Black Sea region is the focus of our study. The article analyses in detail the excavation materials in the area of one of the pottery workshops, which from 1970s were considered as a reference for dating the construction periods of a medieval settlement outside the fortress walls. The study of the archival documentation and ceramic collections allowed us to find out that the cessation of the activity of the pottery workshop dates back to the second half of the 15<sup>th</sup> century and not to the beginning of the 14<sup>th</sup> century as has been regarded before. So subsequent dwellings and other constructions were built, accordingly, more than 100 years later than previously thought. Hence we have obtained a strong case for significantly correcting the chronology of the cultural horizons of medieval Bilhorod. Moreover, it became possible to clarify ideas about ceramic production and the historical topography of the city, as well as to outline the topical questions for future research.

## RÉSUMÉ: PROBLÈMES DANS L'ÉTUDE ARCHÉOLOGIQUE DU BILHOROD MÉDIÉVAL ET DE SA CÉRAMIQUE (SUR LA BASE DES FOUILLES D'UN ATELIER DE POTERIE)

La ville et la forteresse médiévales construites sur les ruines de l'ancienne Tyras à l'embouchure du Dniestr (territoire de l'actuelle Bilhorod-Dnistrovskiy, Ukraine) comptent parmi les sites archéologiques clés de la région nord de la mer Noire de la fin de l'époque byzantine et de l'époque ottomane. Malgré la longue durée des fouilles et la grande superficie explorée du site, la chronologie de ses couches culturelles et les céramiques ainsi que l'origine de certains groupes de poteries restent discutables. Par conséquent, notre étude s'est concentrée sur la révision des données obtenues par les fouilles précédentes dans la perspective de nouvelles recherches en archéologie et céramologie médiévales dans la région du nord de la mer Noire. L'article analyse en détail les résultats de fouilles dans la zone des ateliers de poterie, qui depuis les années 1970 sont considérés comme des références pour la chronologie des périodes de construction du quartier médiéval hors des murs de la forteresse. L'étude de la documentation d'archives et des collections de céramiques nous permet de constater que l'atelier de poterie ainsi que des bâtiments résidentiels situés dans la même zone sont apparus 100 ans plus tard qu'on ne le croyait auparavant, c'est-à-dire non pas au début du 14<sup>ème</sup>, mais dans la seconde moitié du 15<sup>ème</sup> siècle. Nous avons donc obtenu des arguments solides pour corriger la chronologie des horizons culturels du Bilhorod médiéval. De plus, il devient possible de clarifier les idées sur la production de céramique et la topographie historique de la ville, et également de définir les questions d'actualité pour les recherches futures.

**KEYWORDS:** North-western Black Sea Region, medieval Bilhorod, chronology, pottery, ceramics workshop

**MOTS CLEFS :** Région nord-ouest de la mer Noire, Bilhorod médiéval, chronologie, poterie, atelier de céramique

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## Introduction

Medieval Bilhorod also known as Akja-Kermen, Maurokastro, Moncastro, Mokastro, Asprokastron, Akkerman, Cetatea Albă, was one of the largest trade centres of the North-western Black Sea coast in the late Byzantine and Ottoman times. The site is located on the estuary of the Dniester River leading to the Black Sea, in the modern

Bilhorod-Dnistrovskiy (Odesa region) in South-Western Ukraine. It is situated on top of the remains of ancient Tyras and is known as one of the largest surviving late medieval fortresses in Eastern Europe (Fig. 1).

The history of medieval Bilhorod has been studied in details thanks to the historical records, epigraphic and cartographic sources<sup>1</sup>. It is traditionally divided into three main stages with rather conventional titles, which, however, took root in soviet, and post-soviet historiography<sup>2</sup> and have been in use in archaeological practice also<sup>3</sup>.

1. 1290–1370s – the ‘Golden Hordes period’. This is the time of the foundation and the growth of the urban settlement with the Genoese trading post under the protection of Ulug Ulus<sup>4</sup>.
2. 1380s–1484 – the ‘Moldavian period’. The site gradually came under the control of the Moldavian princes, who built the fortress during the early – third quarter of the 15<sup>th</sup> century. It was well known as a centre of international transit trade connecting Central European countries with the Black Sea and the Mediterranean.
3. 1484–1806 – the ‘Ottoman stage’. Asprokastron was conquered by the troops of Sultan Bayezid II and renamed Akkerman. After reconstruction, the city became the best-fortified and largest commercial port of the Ottomans in the North-Western Black Sea region until the Russians captured it in 1806<sup>5</sup>.

On the contrary, there are still many questions related to the results of the archaeological study of the medieval site and its material culture despite more than 120 years of excavations and the quite big researched area (more than 4000 m<sup>2</sup>)<sup>6</sup>. The chronology of the cultural layers and attribution of the ceramics are among the main ones<sup>7</sup>. Ceramic finds are represented in publications mainly out of the connection to their precise archaeological contexts<sup>8</sup> with rare exceptions<sup>9</sup>. So it is rather difficult to get reliable information about the composition of certain ceramics assemblages even having abundant of published materials. For the same reason, it is also difficult to clarify the chronology of the archaeological context based on ceramic data. Furthermore, the basic characteristic features of the local pottery (specificity of the raw material, manufacturing technology, decoration, etc.), especially glazed ones, are also not coherent yet, despite the discovery of the ceramics workshops with kilns<sup>10</sup>. The researchers have been able to identify only several of the most recognized groups of imported vessels – Byzantine glazed ware<sup>11</sup>, Spanish Lustreware<sup>12</sup>, Miletus Ware<sup>13</sup>, Golden Hordes Soft-Paste Ware, some Moulded Ware, Chinese Celadon<sup>14</sup>. Other pottery of different origins that could not be determined well, usually was grouped under the title ‘local wares’<sup>15</sup>. I. Căndea indicates an abundance of coarse limestone sand in the composition of the clay of local pottery, but refrains from its more detailed descriptions<sup>16</sup>. In addition, ceramics finds were dated quite wide – 13–14<sup>th</sup>, 14–15<sup>th</sup>, or even 13–15<sup>th</sup>, 14–16<sup>th</sup> centuries and not always correct<sup>17</sup>.

At the same time, the new effective approach for processing plentiful ceramics material, together with detailed typology and chronology for the late of the 13<sup>th</sup> to the 16<sup>th</sup> centuries from the Northern Black Sea region has been

<sup>1</sup> Historiographical overview see e.g.: Căndea 2001; 2003; 2016, 183-242; Shlapak 2001; Krasnozhon 2012, 23-58, etc.

<sup>2</sup> More details about this problem see: Russev 2015.

<sup>3</sup> Kleiman 1979; Kravchenko 1986; Boguslavskii 2013.

<sup>4</sup> According to some researchers, in the first decades of the 14<sup>th</sup> century, during the reign of the Bulgarian Tsar Teodor Svetoslav (1300–1322), Bilhorod was probably under the dual subordination of the Bulgarians and the Horde, see: Konovalova and Russev 1988, 38-40; Russev 1999, 88-90.

<sup>5</sup> Krasnozhon 2012; Russev 2015; Ostapchuk and Biliaeva 2009.

<sup>6</sup> More details about the history of archaeological study of Bilhorod, see: Kleiman 1979; Shlapak 2021; Krasnozhon 2012; Teslenko and Myronenko 2022b.

<sup>7</sup> Teslenko and Myronenko 2022a; 2022b.

<sup>8</sup> Slătineanu 1937; Constantinescu 1959; Kravchenko 1986, 46-114; Boguslavskii 2002; 2005; 2007; 2010a; 2010b; 2013, 779-787, Fig. 188-191; Căndea 2016, 261-265, 275.

<sup>9</sup> Avakian 1931.

<sup>10</sup> Kravchenko 1969; 1979; 1986, 38-44.

<sup>11</sup> Constantinescu 1959, Fig. 777; Kravchenko, Stoliarik 1983; Kravchenko 1986, 102-113; Boguslavskii 2013, 784-785. It is worth noting the widespread tendency among Romanian researchers to associate almost all glazed red clay sgraffito ceramics with the Byzantine tradition, see: Constantinescu 1959, Fig. 2/1-3, 4, Pl. II, III; Spinei 1994, Fig. 4, 5; Căndea 2016, 263-264, Fig. 10, 12-14, 46-49. As a result, not only really Byzantine vessels were included in this group but also the wares of another origin. More detail see: Teslenko and Myronenko 2022b.

<sup>12</sup> Kravchenko 1986, 99-102; Boguslavskii 2010a, 176, Fig. 1; 2013, 785.

<sup>13</sup> Boguslavskii 2010b; 2013, 785, 790.

<sup>14</sup> Kravchenko 1986, 95-97; Boguslavskii 2013, 785. G. Boguslavskiy and A. Kravchenko also mention ceramics of the ‘Crimean-Transcaucasian’ or ‘Transcaucasian’ origin. But they proposed quite vague criteria for this definition, see: Boguslavskiy 2013, 785.

<sup>15</sup> Kravchenko 1986, 46-81; Boguslavskii 2013, 779, 785.

<sup>16</sup> Căndea 2016, 264.

<sup>17</sup> Kravchenko 1986, 46-114; Boguslavskii 2002; 2005; 2007; 2013, 779-781; Biliaeva and Fialko 2008; Căndea 2016, Fig. 10, 12-14, 46-49; Karashevych 2010.

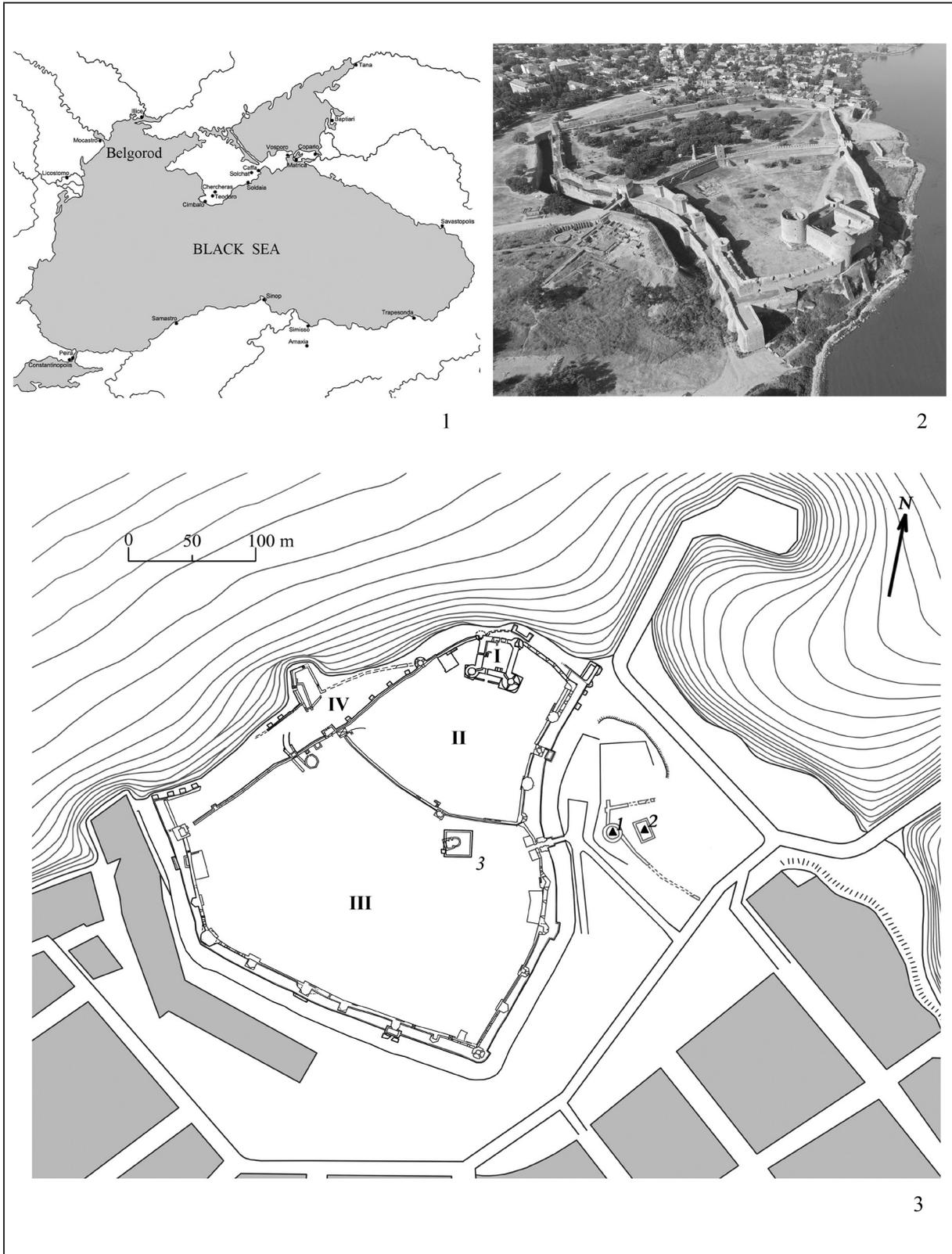


Fig. 1. Bilhorod-Dnistrovskiy fortress and ancient Tyras, Bilhorod-Dnistrovskiy, Odesa region, Ukraine. Location, general view, plan: 1 - map of the Black Sea basin with the names of settlements according to Genoese and Venetian sources of the middle of the 15<sup>th</sup> century (after Dzhhanov 2019, Fig. 6); 2 – general view from the northeast, a fragment of the photo from the site <https://commons.wikimedia.org/wiki/File:Akkerman-fortress-aerial-3.jpg> access date 25/08/2022; 3 – plan of the fortress and the settled area outside the walls: I - Citadel; II - Military Court; III - Civil Court; IV - Trading Court (adapted after Krasnozhon 2012, Fig. 77); 1-2 - location of ancient constructions with the medieval pottery kilns inside; 3 - Christian church, 15<sup>th</sup> century and Sultan Bayezid Mosque built on its ruins, late 15-18<sup>th</sup> centuries.

already proposed in recent decades. They are based on the materials from the excavation in Crimea and the Azov region<sup>18</sup>. Taking into account the close parallels of their ceramics assemblages with the ones in Bilhorod, returning to the materials from previous excavation there could be quite promising. That's why the re-examination of 'old' data from the perspective of new knowledge is the focus of our study. To begin this great work, we concentrate on the materials from the excavations in the area of one of the ceramic workshops with the evidences of glazed pottery manufacturing. There are two main reasons for this. Firstly, the results of the excavation on the area have already become classical in Soviet and then Ukrainian archaeology for demonstrating the chronology of the medieval deposits outside the fortress and migrated over the years from one publication to another. So, it would be particularly interesting to check its viability. Secondly, this workshop was only one among four or five others mentioned in the different publications, where glazed ceramics seem to have been indeed produced<sup>19</sup>. Thus, their ceramic assemblage could help us to clarify the specifics of local pottery.

### Analysis of the archaeological data from the publications

The workshop had been excavated in 1971 and then was published twice by Dr. Anastasiia Kravchenko in 1979 and 1986<sup>20</sup>. It is located outside the fortress, about 50 m to the east of the main gate, on the eastern area of a medieval site (Fig. 1/3). It had a pair of rectangular, vertical, updraft, two-story kilns built of brick (Fig. 2/1–3, 3: no. 123,130). They were established inside the remains of monumental antique construction, the so-called 'round tower' (Fig. 2/1: no. 123,130). The kilns are oriented along different axes converging at an angle of about 50° to each other. They had a common pit for loading fuel (size – 1,5 x 1,1 m), into which their mouths went out. The combustion chambers of both kilns were equipped with parallel arches based on piers of the sidewalls, which supported the perforated firing floor (Fig. 3: no. 123,130), subtype II/e by K. T. Raptis<sup>21</sup>. The sizes of the kilns: 1,05 x 1,35 and 0,75 x 1,00 m, the height of the lower combustion chamber – 1,08–1,10 and 0,80–0,85 m. Upper chambers for firing wares did not survive.

It is important to note that 15 m to the east of this workshop there were investigated two other pottery kilns for firing bricks (Fig. 1/3, 2/1, 3: no. 24, 25). They were larger but similar in structure, subtype II/d by K. T. Raptis<sup>22</sup>, and were also allocated inside the ruins of the big ancient building. The authors of the excavations believed that both workshops were active at the same time and were part of the pottery quarter on the outskirts of the settlement<sup>23</sup>. The quarter was placed near the road leading to the central part of the site (Fig. 1/3), which quite corresponded to the logistics of the city development in Byzantine time<sup>24</sup>.

After the cessation of the workshops, its territory was built up with one or two dwellings. They included 3 or 4 chambers (Fig. 4: Structures no. 69, 128, 103, 165) equipped with tandoors<sup>25</sup>, hearths, and stoves, as well as the stone-paved yard no. 149 with a ground-based furnace (Fig. 4). One of the kilns (no. 130) was damaged under construction of the tandoor in Structure no. 128 (Fig. 2/3, 4). The dwellings have been rebuilt at least once before their final destruction<sup>26</sup>.

A. Kravchenko thoroughly described the constructions of kilns, dwellings, and tandoors but did not pay any attention to the analysis of ceramic assemblages from them. She published only one table with five ceramics wares from kilns and their area<sup>27</sup>. There were a front plate of a stove tile with the scene of 'falconry', a jug with sgraffito decoration, a fragment of the wall of a similar vessel, and two tripods stilts among them. She attributed all items to local production, and represented the jug as a biscuit<sup>28</sup>. Black and white photography was not clear enough to get more information (Fig. 5). A. Kravchenko also shortly mentioned some fragments of glazed wares and other stove tiles including one with a man's figure from the kilns<sup>29</sup>, but has never returned to their detailed analysis later. Nevertheless, she offers a fairly detailed chronology of three successive building periods at this site. According to her the pottery kilns refer to the earliest period and date back to the turn of the 13–14<sup>th</sup> or to the beginning of

<sup>18</sup> Maslovskii 2006; 2017; Teslenko 2018; 2021.

<sup>19</sup> Kravchenko 1979; 1986, 39-44; Teslenko and Myronenko 2022b.

<sup>20</sup> Kravchenko 1979; 1986, 38-44.

<sup>21</sup> Raptis 2012, 40, Fig. 2.

<sup>22</sup> Raptis 2012, 40, Fig. 2.

<sup>23</sup> Kravchenko 1979; 1986, 38-42.

<sup>24</sup> Raptis 2012, 41.

<sup>25</sup> Tandoor is a cylindrical clay oven usually deepened into the ground, used in the East regions (Caucasus, Middle East, India, etc.) for baking bread and cooking.

<sup>26</sup> Kravchenko 1986, 25-27.

<sup>27</sup> Kravchenko 1979, 124, Fig. 9.

<sup>28</sup> Kravchenko 1979 Fig. 9; 1986, 64, Fig. 25/17.

<sup>29</sup> Kravchenko 1986, 44.

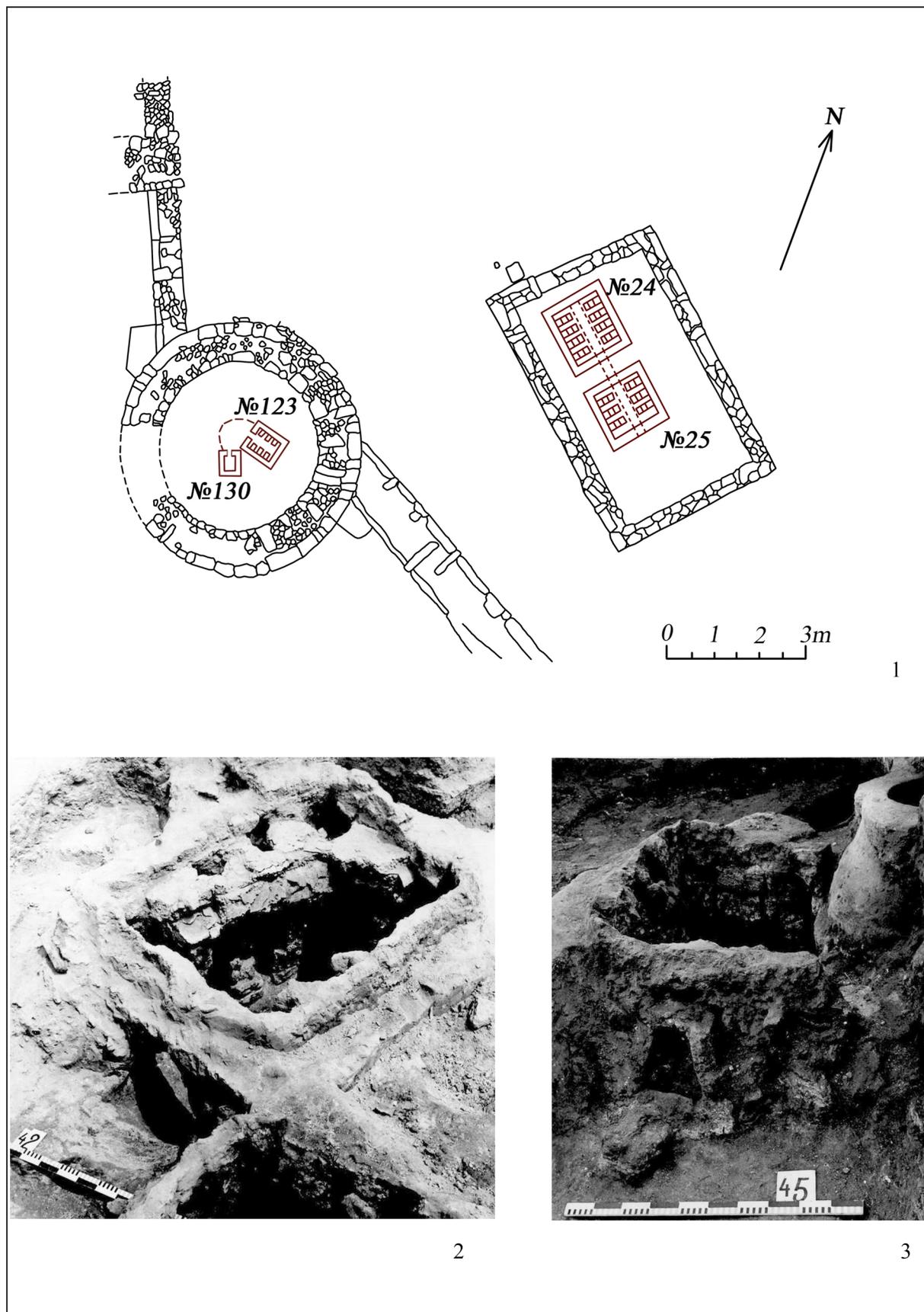


Fig. 2. Medieval Bilhorod, Bilhorod-Dnistrovskiy, pottery kilns: 1 – schematic plan of the kilns inside of the ancient constructions, No 24, 25 – kilns for the firing bricks; No 123, 130 – kilns for the firing stove tiles and glazed pottery; 2 – pottery kiln No 123, view from the southeast; 3 – pottery kiln No 130 view from the north (after Kryzhitskii, Kleiman 1971).

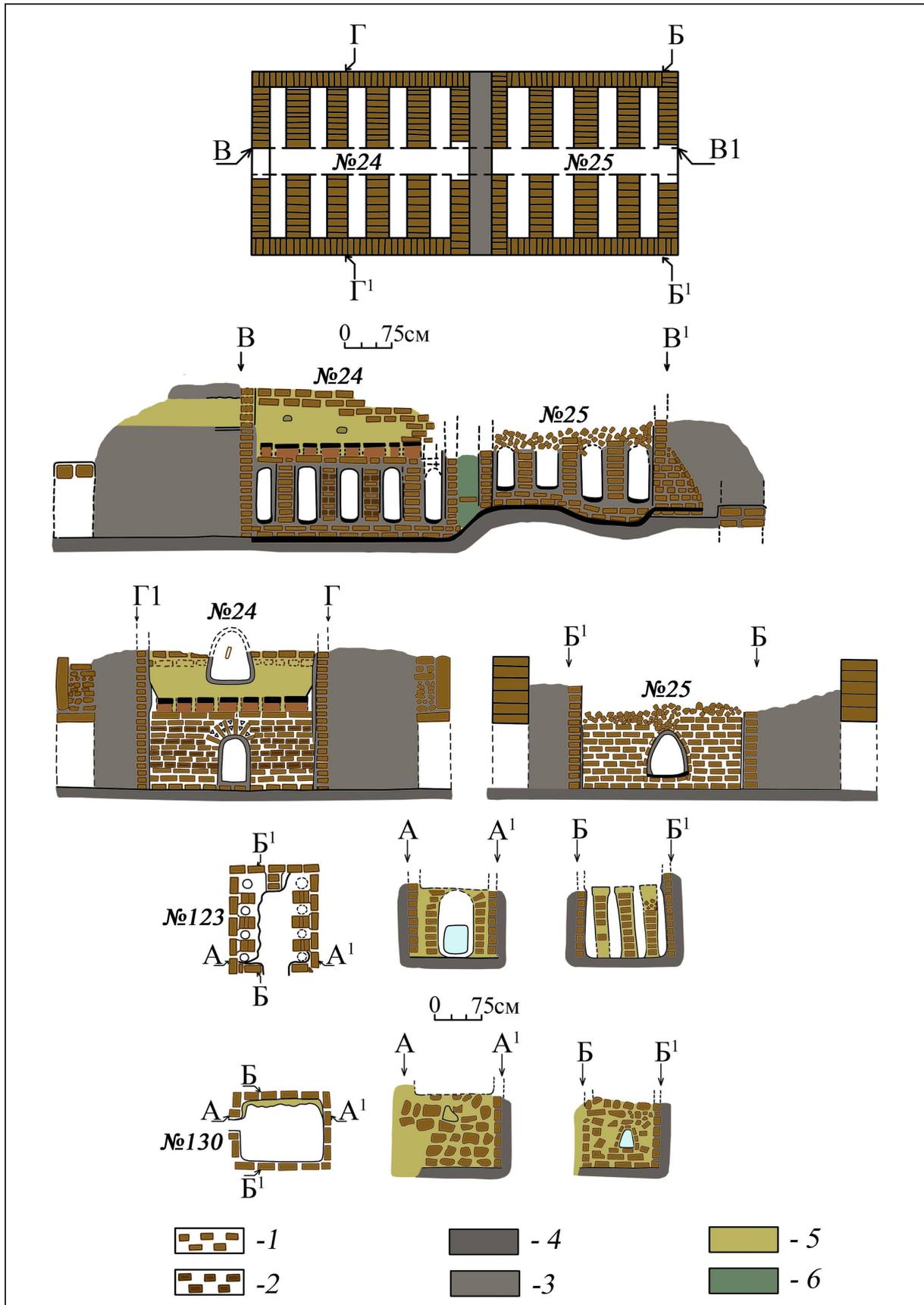


Fig. 3. Medieval Bilhorod, Bilhorod-Dnistrovskiy, pottery kilns, plans and sections (after Kravchenko 1979, Fig. 3, 8).  
 1 – raw brick; 2 – burnt brick (antique); 3 – thermal insulation layer; 4 – cultural layer;  
 5 – clay coating; 6 – backfill with green clay.

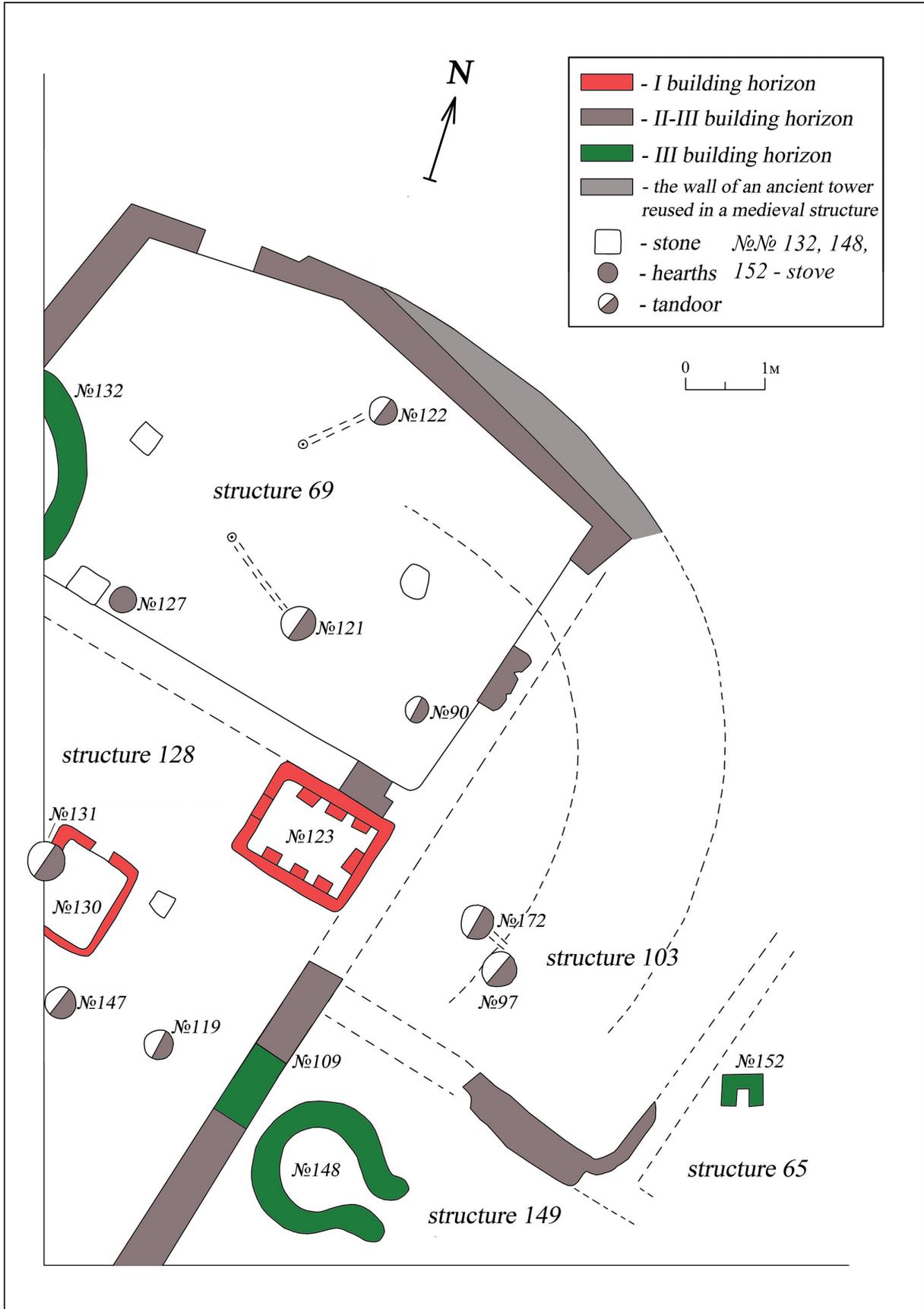


Fig. 4. Medieval Bilhorod, Bilhorod-Dnistrovskiy. The remains of buildings and pottery kilns on the ruins of an ancient tower; schematic plans, adapted (after Kryzhitskii 1971).

the 14<sup>th</sup> century. The following dwellings formed the second and third phase of construction activity, which lasted from the first half of the 14<sup>th</sup> century till the end of the Golden Horde period in the 1370s or 1380s<sup>30</sup>. She did not clearly distinguish these periods, noting only the two-floor levels in dwellings, tandoors of different times, and some reconstructions of the wall. The absence of a stratigraphic section in the archaeological documentation does not allow clarifying these issues now either.

Kravchenko's chronological arguments were based not so much on the analysis of ceramics and other finds but on the common scientific opinions of her contemporaries.

1. Following L. Polevoi, P. Byrnia<sup>31</sup>, S. Kryzhitskii, I. Kleiman<sup>32</sup>, she believes that tandoors is among the main feature of the Golden Horde cultural tradition<sup>33</sup>. Therefore, she associated with the Golden Horde period the dwellings with this type of furnace as well<sup>34</sup>.
2. The second argument also followed the widespread opinion that the residential and craft quarters outside of the city walls were destroyed in the process of the fortress building to improve its defenses. As she thought, the final stage of this activity fell in the first half of the 15<sup>th</sup> century. So since then, the buildings outside of the fortress were completely destroyed<sup>35</sup>.

It is interesting to note that she mentioned the finds of about 100 coins dated to the 1290–1370s in different parts of the settlement outside the fortress as an argument for the proposed chronology<sup>36</sup>. But at the same time, she did not pay a lot of attention to the finds of another fifty coins from the 15<sup>th</sup> century in the same area<sup>37</sup>. As she regarded, these coins got into the constructions when they had been already ruined and so cannot be used to determine the time of their existence<sup>38</sup>. Such conclusions look inconsistent. But anyway, this chronology for medieval building activity outside the fortress became the basis for the next three decades and has never been seriously disputed<sup>39</sup>.

### Analysis of ceramic materials

In 2021 we come back to the materials from the workshops area in the framework of the collaborative project of the "Archaeology and Archaeometry" Laboratory (CNRS – UMR 5138, Lyon, France) and the Institute of Archaeology NAS of Ukraine (Kyiv, Ukraine)<sup>40</sup>. The part of our study involved revisiting the data available in the archaeological report 1971 together with related ceramics stored in the Scientific Repository of the Institute of Archaeology NAS of Ukraine. In spite of involving only a few wares<sup>41</sup>, the result of their research proved interesting and surprising.

#### *The workshop space*

The archaeological report mentions more than a hundred large fragments of unglazed stove tiles found in the area of the kilns<sup>42</sup>. The 65 fragments come from the kiln no. 130. Another 62 pieces of tiles plus one shard of a jar with a sgraffito decoration without glaze, and two tripods stilts were mentioned in the fuel pit.

It became possible to clear up the morphological features for the three stove tiles (Fig. 5/1, 6/1-2) and two tripods stilts from the workshop area (Fig. 5/4, 6/3). We also managed to find the jug represented in A. Kravchenko's article among production of a local workshop (Fig. 5/2, 6/5).

*The tripod stilts* belong to the same type widespread in the Byzantine world since the early 13<sup>th</sup> century (Fig. 5/4, 6/3)<sup>43</sup>. In the Northern Black Sea region, they also were common in glazed pottery manufacturing from its beginning at the end of the 13<sup>th</sup> century and haven't changed a lot over time<sup>44</sup>. That is why *the tripod stilts* can't be used for detailed chronology.

<sup>30</sup> Kravchenko 1979; 1986.

<sup>31</sup> Polevoi 1969, 11; Polevoi and Byrnia 1974, 5-11; Polevoi 1979, 67-69; Abyzova et al. 1981 etc.

<sup>32</sup> Kleiman 1979, 61-62.

<sup>33</sup> Kravchenko 1986, 23, 37.

<sup>34</sup> Kravchenko 1986, 20-38.

<sup>35</sup> Kleiman 1979, 65; Kravchenko 1986, 19.

<sup>36</sup> Kravchenko 1986, 117-120.

<sup>37</sup> By the 1980s, about 50 coins of the Moldavian Principality dated back to the 15<sup>th</sup> century and one gold ducat of the Hungarian king Matia Corvin (1458–1490) were found there, see: Kravchenko 1986, 19.

<sup>38</sup> Kravchenko 1986, 18-19.

<sup>39</sup> Bohuslavskiy 2008; Boguslavskii 2013

<sup>40</sup> The leaders of the project are Dr.HdR. S. Y. Waksman from the French side and Dr. I. Teslenko from the Ukrainian side.

<sup>41</sup> The vast majority of excavated materials are stored in the Odessa Archaeological Museum and the Bilhorod-Dnistrovskiy Historical Museum. They, unfortunately, are not available for study now.

<sup>42</sup> Kryzhitskii and Kleiman 1971, L. 21, 35.

<sup>43</sup> Papanikola-Bakirtzi 1999, 21-22.

<sup>44</sup> Teslenko 2018, 13; 2021, 121-122.



Fig. 5. Medieval Bilhorod, Bilhorod-Dnistrovskiyi. Ceramics wares from kilns No 123, 130 and their area published by A. Kravchenko (after Kravchenko 1979, 124, Fig. 9)

On the contrary, *the stove tiles* are quite specific and can be dated more precisely.

1. One of them with an anthropomorphic image was found in the Scientific Repository of IA NAS of Ukraine (Fig. 6/2). It came from the kiln no. 130. It is a crown stove tile with a triangular panel and a half-cylinder body. Traditionally, products of this shape were placed in the upper part of the stove. The shard burnt out to gray-brown color. Clay includes abundant of coarse limestone sand. In terms of body shape, this stove tile is similar to type 9 according to E. R. Hegee's typology — to a composite niche-tile with a

half-cylinder body<sup>45</sup>. Such type was widely represented in Central Europe: in Germany<sup>46</sup>, the Czech Republic<sup>47</sup>, Romania<sup>48</sup>, and Moldova<sup>49</sup>, where they appeared no earlier than the middle – second half of the 15<sup>th</sup> century. Close analogies to the decoration have not been found yet. However, triangular and rectangular stove tiles with anthropomorphic figures in the center of the composition are known in the territory of Romania and the Czech Republic, where they also date back no earlier than the second half of the 15<sup>th</sup> century<sup>50</sup>.

2. The photo of another stove tiles come from the 1971 Excavation Report (code BD-1971/221, 231)<sup>51</sup>. These are three fragments of the front plate of a niche-like tile with cut-through architectural decoration in the form of a lattice (Fig. 6/1). These fragments came from the kiln no. 123. The tiles of this type also usually have a half-cylinder body. Decorative and morphological features allow us to date them to the second half of the 15<sup>th</sup> century<sup>52</sup>.
3. One more exemplar was published in the articles of A. Kravchenko mentioned above (Fig. 5/1)<sup>53</sup>. It comes from the kiln no. 123 or no. 130. Only the front part of the item has been partially preserved. It is unglazed, square or rectangular, with relief decoration and a thin decorative frame similar to the triangular tiles from the kiln no. 130. The relief of the image is quite clear, and high, with carefully crafted small details. The basis of the composition is a scene of 'falconry': a rider holding a bird of prey with outstretched wings on his left hand. A similar plot is typical for Central European stove tiles of the second half of the 15<sup>th</sup>–16<sup>th</sup> centuries<sup>54</sup>. A direct analogy to this tile is among the materials from the excavation in Suceava (Romania)<sup>55</sup>. It is quite possible that both exemplars, from Suceava and from Bilhorod, were made in the same matrix. Referring to a tile

<sup>45</sup> Hegee 2012, 254-262.

<sup>46</sup> Hegee 2012, 74, Abb. 82.

<sup>47</sup> Jiřík and Kypta 2013, 108.

<sup>48</sup> Marcu-Istrate 2004a, 117, Fig. 27.

<sup>49</sup> Batariuc 1999, 88-89.

<sup>50</sup> Marcu-Istrate 2004b, Pl. 6/3; Jiřík and Kypta 2013, kat. 56, 90; Smetanka 1969, obr. 7/3,6.

<sup>51</sup> Kryzhitskii 1971, album, L. 27, ill. 104.

<sup>52</sup> Kypta and Žegklitz 2017, 27, Fig. 5

<sup>53</sup> Kravchenko 1979, Fig. 9/1.

<sup>54</sup> Pavlík 2007, 86-87; Ławrynowicz and Nowakowski 2009, Fig. 12.

<sup>55</sup> Batariuc 1999, Fig. 54/1; Batariuc and Haimovici 2003, Fig. 15/3.



Fig. 6. Medieval Bilhorod, Bilhorod-Dnistrovskiyi. Stove tiles (1, 2, 4), tripod stilt (3) and glazed jug (5) from the excavations in 1971: 1 – fragments of a panel from composite niche-tile with a cut architectural décor from the kiln No 123 (after Kryzhitskii 1971, alb., L. 27, Fig. 104); 2 – stove tile with an anthropomorphic image from the kiln No 130 (inventory no БД-71/211); 3 – tripod stilt from the fuel chamber of the kiln No 123 (inventory no БД-71/220); 4 – stove tile with floral décor from the building No 128 (inventory no БД-461); 5 – jug from the displaced sediments (inventory no БД-71/244). 2–5 – Scientific Repository of the Institute of Archaeology NAS of Ukraine, Kyiv. Photographs and drawings by the authors, 2021.

with a similar plot from the exhibition of the Museum in Arad, P.-V. Batariuc dates them to the 17<sup>th</sup> century<sup>56</sup>. However, the stylistic similarity of the Bilhorod exemplar with another one from the local kiln and some parallels on Czech stove tiles of the second half of the 15<sup>th</sup> century allows us to relate it to the second half of the 15<sup>th</sup> century as well.

As for the jug (Fig. 5/2, 6/5), we investigated it again and tried to clarify its context in the Archaeological Report. The vessel is almost completely preserved. It has a biconical body, high, wide, slightly widened upward neck, one handle, and ring foot. The crock is hard, yellow-red with a beige tint on the surface. The clay contains the rare grain of limestone and chamotte. Sgraffito decoration covers the upper part of the vessel. It is really quite typical for the 14<sup>th</sup> century by analogies from Crimea and Azak<sup>57</sup>. It does not contradict a lot with dating suggested by A. Kravchenko. Besides, the other information from her publications is not correct. Firstly, the jug is not a biscuit. The upper part of the ware is covered with a transparent greenish-yellow glaze. Secondly, it was not found in the area of the kilns, but at least 30 m to the northeast of them in the displaced sediments. That is, this jug cannot be used for dating the pottery workshop. Most likely it comes from the complex of the Golden Horde time, which was destroyed during modern earthworks. Thirdly, there are no good reasons to classify it as local production. The composition of raw materials visible to the naked eye, the morphology and decoration of the jug are quite similar to the ceramics of the South-Eastern Crimea group<sup>58</sup>. Nonetheless, archaeometry studies are still needed to clarify its origin.

Hence it is obvious, that they are the stove tiles that were the main product of the pottery kilns at least at the last stage of their operation. One of the last series was fired there not earlier than the middle of the 15<sup>th</sup> century. That is why the kilns can't be dated to the turn of the 13–14<sup>th</sup> or the beginning of the 14<sup>th</sup> century as A. Kravchenko proposed. It is interesting to note that A. Kravchenko pointed out the differences in the structure of these pottery kilns from those in the craft centers of the Golden Horde, particularly in the Dnister region. She notes their similarity with the 8–10<sup>th</sup> centuries kilns of the Roman-Byzantine tradition from the Crimea<sup>59</sup>. She explained this phenomenon by the continuity of ancient traditions in the Northern Black Sea region. Indeed, both kilns, as mentioned above, can be attributed to the subtype II/e according to the K. T. Raptis classification. It became common from the early Christian to the late Byzantine period in the area of Byzantine cultural influence and was used primarily for the firing building materials<sup>60</sup>. In our case, kilns served for firing decorative stove tiles and, possibly, glazed pottery. A similar glazed pottery kiln dated back to the 15<sup>th</sup> century from Caffa (Crimea) should be also mentioned in this regard<sup>61</sup>. But this technological tradition hardly had been preserved in the Northern Black Sea region for centuries and for some reason was revived in the late medieval period. More likely it was brought there again with new inhabitants. Who were they and where did they come from? These questions will be among the most promising for further research. Anyway, there are very few reasons to believe that these potters originated from the Golden Horde centres.

Concerning the glazed wares, it is likely they had also been produced in the same workshop or elsewhere in Bilhorod as tripod stilts evidenced. But we do not have a representative collection of wastes, biscuits, or semi-finished products yet. Perhaps some materials are in the Odessa and Bilhorod-Dnistrovskiy museums but they can hardly be numerous. At least such artifacts did not present in the excavation reports and publications. In the collection of 1971, we managed to find only three fragments of a biscuit that belonged to the same plate with sgraffito decoration (Fig. 7/4). They came from redeposited sediments about 30 m from the workshop. The shards are burnt to a dark grey. The composition of the raw material is similar to the stove tiles: it contained abundant of limestone. However, this unique exemplar is not enough for the clear-cut view of local glazed pottery production, their types and range. This raises the question whether the ceramics that A. Kravchenko put into a 'local group' are really local? 15 samples of the glazed ware, which are rather numerous in the glazed pottery assemblages of the site and were associated with the Bilhorod production before, were examined in the "Archaeology & Archaeometry" laboratory in Lyon under the direction of S. Y. Waksman in 2021. All of them demonstrated a great similarity in the chemical composition of raw materials with the pottery of Crimean origin<sup>62</sup>. It is thus obvious that the Crimean ceramics forms an essential part of the so-called 'local Bilhorod group'. So, the percentage of real local pottery in this group and its main characteristics become one more important question for future research.

<sup>56</sup> Batariuc and Haimovici 2003, 176; Bârnea and Batariuc 1994, 287.

<sup>57</sup> Maslovsky 2006, 335-336, Fig. 22/3, 23/3.

<sup>58</sup> More details about this group see: Teslenko 2018.

<sup>59</sup> Kravchenko 1979, 124-127.

<sup>60</sup> For more information on the chronology and topography of potteries of the 8–10<sup>th</sup> centuries with these types of kilns in the Crimea, see: Parshyna et al. 2001.

<sup>61</sup> Raptis 2012, 40; Hesaki and Raptis 2016.

<sup>62</sup> Teslenko 2018, 13-14.

<sup>63</sup> Teslenko and Waksman forthcoming.

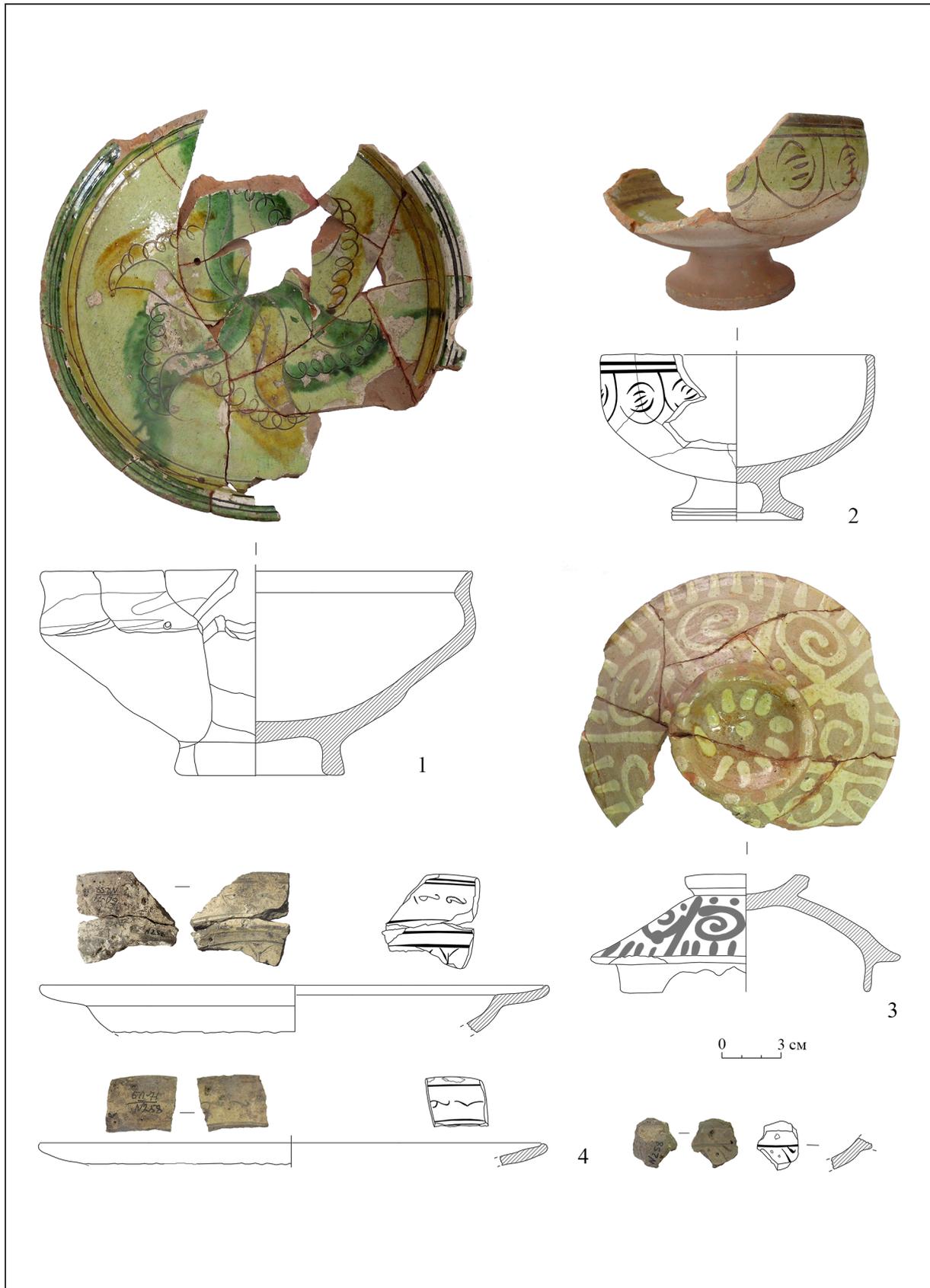


Fig. 7. Medieval Bilhorod, Bilhorod-Dnistrovskiyi. Glazed wares (1–3) and biscuit (4) from the excavations in 1971: 1–3 – bowls and lid from the Structure no 69 (inventory no 1 – БД-71/206, 2 – БД-71/207, 3 – БД-71/209); 4 – semi-finished plate from the redeposited sediments (inventory no БД-71/258). Scientific Repository of the Institute of Archaeology NAS of Ukraine, Kyiv. Photographs and drawings by the authors, 2021.

*The dwellings*

We were able to examine two glazed bowls and one lid from Structure no. 69 (Fig. 7/1-3), as well as a fragment of a stove tile with floral decoration from Structure no. 128 (Fig. 6/4). The first three items were found on the floor of Structure no. 69. Their shapes are reconstructed from the fragments.

One bowl is small, hemispherical with the monochrome sgraffito decoration outside (Fig. 7/2). It has a high conical foot with a complex configuration of the profile. Code: BD-71/207. The clay contains abundant of fine sand and coarse inclusion of loose and dense white minerals. The glaze is transparent, light yellow inside and light green outside of the body. The direct analogies of the bowl have not been found yet. Nevertheless, the composition of the raw material and the profile of the bottom are similar to the Byzantine ceramics, which are known in 15<sup>th</sup>-century assemblages in Crimea and Bilhorod<sup>63</sup>.

Another big bowl has polychrome sgraffito ornamentation (Fig. 7/1). Code: BD-71/206. It has a conical body on a low ring foot and an upright rim with a deflected lip. There are a lot of fine sand and a bit small limestone inclusion in the raw material. The surface of the bowl is decorated with a large floral rosette accompanied by small spirals. The petals of a flower are tinted with brown and green stripes. The glaze is transparent, light, and greenish-yellow. There are round holes in the wall drilled for repairs. According to technology, morphology, and decoration, this bowl is the closest to the so-called 'thick-walled bowls with bichrome painting' (TBBP) group of wares well-known in the Crimean assemblages from the last quarter of the 15<sup>th</sup> – the end of the 16<sup>th</sup> century<sup>64</sup>. Their origin is still unknown. The design has some parallels in the 'Polychrome (green and brown) sgraffito ware' of the late 15<sup>th</sup>–16<sup>th</sup> centuries from the Aegean Sea and the Marmara Sea regions<sup>65</sup>. The distribution area includes the southern coast of the Black Sea as well<sup>66</sup>.

The lid is conical with a top in the form of a ring, and a vertical rib along the inner edge (Fig. 7/3). Code: BD-71/209. It is decorated with white engobe painting under the transparent yellowish glaze on the outside. The crock is dense, rich yellow-red, lighter on the surface. The clay includes rare coarse grains of limestone and of dense red-brown or dark brown minerals. Morphologically, it is similar to the lids of the South-Eastern Crimean group, type 12.2 according to I. Teslenko<sup>67</sup>. However, the white engobe painting is not typical for them in the 15<sup>th</sup> century<sup>68</sup>. On the other hand, different slip-painted dishes and bowls with similar ornamental motifs are known in the assemblages of the second half of the 15<sup>th</sup> century from Chembalo and Mangup excavations in Crimea<sup>69</sup>. They are not homogeneous. It is possible that the lid belongs to the related group of ceramics and has the same chronology, but this question needs further research.

The stove tile is unglazed with embossed décor set in a frame (Fig. 6/4). Only the part of the front plate survived, so it is difficult to reconstruct the whole dimension and shape. The crock is yellow-red. The clay contained abundant of limestone inclusion like the exemplar with man-image from the kiln no. 130. The decoration with floral (lilies) and geometric elements is made in a style close to the Gothic. It has some parallels on the territory of the Czech Republic in the assemblages of the 15<sup>th</sup> century<sup>70</sup>. Most likely this item represents the other type of the local Bilhorod stove tiles of the 15<sup>th</sup> century.

Some fragmentary information about the pottery from other structures of this complex was obtained from the field documentations. A few shards of 'light-clay' and 'red-clay' ceramics with cobalt painting from the Structures no. 103 are mentioned in the Field journal<sup>71</sup>. They were found on the floor under the layer of fire. A. Kravchenko published two 'light-clay' fragments from the same plate later<sup>72</sup>. She rightly identified it with Spanish lusterware but incorrectly referred to the Golden Horde time. In fact, this plate most likely belongs to LVDC<sup>73</sup> decorated in the 'Persian style' with 'alafia' motifs and dated back to the first half of the 15<sup>th</sup><sup>74</sup> or a bit later<sup>75</sup>.

<sup>63</sup> Teslenko 2021, 112-114, Fig. 130/8; Teslenko and Waksman forthcoming.

<sup>64</sup> Teslenko and Aliadinova 2019, 309; Teslenko and Aliadinova forthcoming.

<sup>65</sup> Aslınapa et al. 1989, 57, 81; Hayes 1992, Pl. 47; Papanikola-Bakirtzi 1999, 249-265; Vroom 2005, 144-145.

<sup>66</sup> Inanan 2012, Fig. 4, tab. 4, 5.

<sup>67</sup> Teslenko 2021, 83, Fig. 74.

<sup>68</sup> White engobe painting is more usual for the production of the Crimean workshops dated back to the middle – second half of the 14<sup>th</sup> century, but such type of lid is not typical for ceramics assemblages of this time, see: Teslenko 2018, 44-46, Fig. 22.

<sup>69</sup> Teslenko 2021, 112-113, Fig. 130.

<sup>70</sup> Richterova 1982, tab. 65/4; Šrejberova 2017, katalog, 141–142, kat. 040a, 040b.

<sup>71</sup> Korpusova 1971, L. 36.

<sup>72</sup> Kravchenko 1986, 102, Fig. 39/4.

<sup>73</sup> Loza valenciana dorada y azul clásica, more detale see: Coll Conesa 2009.

<sup>74</sup> Coll Conesa 2009, 83-84.

<sup>75</sup> Gutiérrez 2000, 38.

The 'red-clay' exemplars are not mentioned anywhere else. They possibly belong to the 'Miletus Ware' family, which come to the Northern Black Sea region from around the middle of the 15<sup>th</sup> century<sup>76</sup>. At least, other red-clay pottery with cobalt painting is unknown in that area in the late medieval time. Both groups of vessels are typical for the Crimean deposits associated with the Ottoman conquest in 1475<sup>77</sup>. So more or less similar chronology for the Bilhorod assemblage is possibly as well.

It is also worth mentioning a Moldavian copper coin from the tandoors no. 147 of the first building period of the Structure no. 128 (Fig. 4), and five others from the Structure no. 69. The coins are not attributed precisely yet<sup>78</sup> and were only briefly mentioned in Report and publication<sup>79</sup>. On the contrary, A. Kravchenko draws more attention to the Jochid coin of the 14<sup>th</sup> century, which was found under the floor of the Structure no. 69<sup>80</sup>. She uses it as an argument for dating the first stage of building construction to the Golden Horde time. However, the earlier coin, as we know, cannot be a good reason for the chronology of the contexts<sup>81</sup>. In this case, it, assumable, could be redeposited and indicate some kind of anthropogenic activity in this area before<sup>82</sup>.

So, the construction of dwellings on the ruins of pottery kilns most likely dates back to the second half of the 15<sup>th</sup> century. Their ceramic material does not contradict this conclusion. Their destruction could be determined not earlier than the last quarter of the 15<sup>th</sup> century, possibly, due to the Ottoman conquest of Bilhorod in 1484 or later. At the minimum one building (no. 103) in the complex was destroyed in the fire. The details and sequence of these events are still unclear.

## Conclusion

Thus, the re-examination of materials from a single year of excavation of medieval Bilhorod leads us to several important outcomes.

1. 1. On the basis of modern study, we have clarified that stove tiles, which were among the main production of the analyzed ceramic workshop, belong to the Central European morphological types of the second half of the 15<sup>th</sup> century. Therefore, the last period of the workshop activities cannot be dated earlier than the second half of the 15<sup>th</sup> century as well. It is almost a century and a half later than previously thought, and accordingly, these kilns could not be attributed to the first building period of the Golden Horde time, as A. Kravchenko and others suggested. Moreover, the types of stove tiles were not inherent to the Golden Horde cultural tradition, and therefore cannot be associated with it at all. Their manufacturing in Bilhorod should be related to the Central European influences in the local ceramics craft during the Moldavian period.
2. 2. The dwellings and other objects on the ruins of the kilns were built in the second half of the 15<sup>th</sup>, and not in the first half of the 14<sup>th</sup> century, and apparently have been used until the Ottoman conquest or a bit longer. Anyway, the latest ceramic finds mark the destruction between the last quarter of the 15<sup>th</sup> and 16<sup>th</sup> centuries.
3. 3. The pottery workshop, as well as residential development on its ruins, continued to exist during the construction of the last line of fortifications in the years 1454–1473<sup>83</sup>, and even afterward. Thereby, the established opinion about the destruction of dwellings outside of the fortress in the first half of the 15<sup>th</sup> century should be classified as incorrect.
4. 4. It should also be noted that the tandoor is not a chronological indicator of the exclusively Golden Horde period, as previously believed. Indeed, the tradition of using tandoor came in the Dniester area with the new population during the expansion of the Jochid's state to the West. However, it did not disappear when the control over the city changed. It is obvious that tandoors were used in the Moldavian Bilhorod as well. Most likely, we can see a continuum of building traditions there. A similar long-term use of the tandoors over various historical periods, despite the change of 'owners' of the city, is also known in medieval Sudak in South-Eastern Crimea<sup>84</sup>.

<sup>76</sup> Teslenko 2021, 91-97.

<sup>77</sup> Teslenko 2021, 94-103.

<sup>78</sup> It is stored in the Odessa Archaeological Museum (OAM), so their identification could be possible in the future. In any case, they could not be earlier than the end of the 14–15<sup>th</sup> centuries.

<sup>79</sup> Kryzhitskii and Kleiman 1971, L. 35, 69; Kravchenko 1986, 27.

<sup>80</sup> Kryzhitskii and Kleiman 1971, L. 69; Kravchenko 1986, 27. It is stored in OAM, inv. no. 53475.

<sup>81</sup> For more details about the interpretation of coins in the archaeological record see: Sanders 2020.

<sup>82</sup> There were also fixed two pits dug into the mainland. Their ceramic assemblage significantly differs from found in the kilns and dwellings, and indeed dated back to the 14<sup>th</sup> century, see: Teslenko and Myronenko 2022a, 145.

<sup>83</sup> Krasnozhan 2012, 350-351.

<sup>84</sup> Teslenko and Maiko 2020.

5. 5. Finally, we have to admit the lack of reliable information about the local manufacturing of glazed ceramics in Bilhorod. The group of pottery, previously presented as local, is not homogeneous. It has a significant Crimean component, which is well-distinguished thanks to archaeometry research. Therefore, the precise attribution and chronology of glazed pottery of the medieval Bilhorod, which we initiated in this study, remain among the tasks for the future also.

To summarize it should be mentioned that the work of the previous researchers and archeological materials accumulated for 120 years of excavations are certainly very important and form a rather impressive information database. Nevertheless, we have to admit that the chronology of the medieval building periods outside the fortress proposed in 1970–1980s was clearly erroneous. Some stereotypes at that time, gaps in the methodology of field research, misunderstanding of the coin evidence and a lack of knowledge in the late medieval ceramics have caused these mistakes. Therefore the results of our study shows that some previous ideas concerning the historical topography of medieval Bilhorod, together with the chronology of its deposits and with the ceramics assemblages should be revised, and we have already started this work.

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## Liste d'illustrations

Fig. 1. Forteresse de Bilhorod-Dnistrovskiy et Tyras antique, Bilhorod-Dnistrovskiy, région d'Odesa, Ukraine. Localisation, vue générale, plan : 1 – la carte de la mer Noire avec les noms des établissements selon les sources génoises et vénitiennes du milieu du 15<sup>e</sup> siècle (d'après Dzhanov 2019, Fig. 6) ; 2 – vue générale de Bilhorod-Dnistrovskiy depuis le nord-est (détail de la photo du site <https://commons.wikimedia.org/wiki/File:Akkerman-fortress-aerial-3.jpg> access date 25/08/2022) ; 3 – le plan de la forteresse et de la zone habitée hors des murs : I – Citadelle ; II – Cour militaire ; III – Cour civile ; IV – Cour de commerce (adapté d'après Krasnozhan 2012, Fig. 77) ; 1-2 – emplacement des anciennes constructions avec les fours de potiers médiévaux à l'intérieur ; 3 – l'église chrétienne, 15<sup>e</sup> siècle et la mosquée du sultan Bayezid construite sur ses ruines, fin 15-18<sup>e</sup> siècles.

Fig. 2. Fours de potiers médiévaux de Bilhorod, Bilhorod-Dnistrovskiy : 1 – le plan schématique des fours à l'intérieur des anciennes constructions, n° 24, 25 – les fours pour la cuisson des briques ; n° 123, 130 – les fours pour la cuisson de carreaux de poêle et de céramiques émaillées ; 2 – le four de potiers n° 123, une vue du sud-est ; 3 – le four de potiers n° 130, une vue du nord (d'après Kryzhitskii, Kleiman 1971).

Fig. 3. Bilhorod médiéval, Bilhorod-Dnistrovskiy, les fours de potiers, plans et coupes (d'après Kravchenko 1979, Fig. 3, 8). 1 – une brique crue ; 2 – une brique cuite (antique) ; 3 – une couche d'isolation thermique ; 4 – une couche culturelle ; 5 – l'enduit d'argile ; 6 – un remblai avec de l'argile verte.

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