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# CERAMIC FRAMINGS OF STOVE MOUTHS – INTERPRETATION OF THE FINDS AND THE FUNCTIONAL PURPOSE OF EARLY MODERN AGE STOVES IN THE MIDDLE DNIEPER REGION (UKRAINE)

LIUDMYLA MYRONENKO

**Abstract:** *This study summarises the results of investigating one category of architectural-decorative stove ceramics – ceramic framings of stove mouths. Analysis of the shapes and sizes of the products, studying the circumstances of their discovery, as well as drawing on known analogies allowed us to supplement the understanding of the features of stove construction in the 17th–18th centuries in one of the regions of Ukraine and to clarify some nuances of their functional purpose.*

**Key words:** *ceramic framings – stove ceramics – ovens – tile-stoves – pottery kilns.*

**Keramická ústí kamen:** *interpretace nálezů raně novověkých kamen a jejich funkce v oblasti středního Dněpru (Ukrajina)*

**Abstrakt:** *Studie shrnuje výsledky zkoumání jedné kategorie architektonicko-dekorativní kamenné keramiky – keramických ústí pecí. Analýza tvarů a rozměrů výrobků, studium okolností jejich nálezů, jakož i čerpání ze známých analogií umožnily doplnit poznatky o specifických konstrukčních prvcích pecí v 17.–18. století v jedné z oblastí Ukrajiny a objasnit některé detaily jejich funkčního určení.*

**Klíčová slova:** *keramická ústí pece – kamnářská keramika – pece – kachlová kamna – hrnčářské pece.*

## Introduction

The material culture of the late Middle Ages and the Early Modern Age is one of the least researched topics of modern Ukrainian archaeology. The lack of written records has made archaeological studies of cultural layers of this time remain almost the only reliable source for reconstructing the culture and lifestyle of the population of Ukraine in the 17th–18th centuries. During the Soviet era, the sites of the Early Modern Age were studied sporadically. Archaeological features and materials of this period were usually ignored. Only the most attractive artefacts ended up in museum collections, while mass materials stayed outside the scientific discussion. The situation has changed for the better since the 1990s. Since then, articles and studies dedicated to various categories of material culture in the Late Middle Ages and Early Modern Age have been published. Among them, a significant share is occupied by ceramic material research. Due to their massiveness, decorative appeal, and chronological potential, ceramic wares and stove tiles constantly attract the scientific community's attention. On the other hand, some categories of architectural ceramics continue to stay understudied, which is explained primarily by the difficulty in their interpretation. Precisely such category, represented by the ceramic framings of the stove mouth, will be discussed below.

## Terminology and research history

The ceramic framings are elongated, bent-in-an-arc clay slabs with conical flanges (U-shaped) or without them. Several framings combined into a single integral system formed a narrow arched vault at the stove's mouth, strengthening its structure. Due to the products being often found outside a clear archaeological context and due to the great variety of forms, composition of moulding clay masses, and decoration, the functional purpose of this category of finds was long uncertain. In the old field reports, they were recorded as “the rim of a ceramic vessel” (Зоценко 1981, a.f. no. 20644, 83), “roof tile” (Карнабед 1992, 41; Черненко 2002, 36), “tile” (Черненко 2002, 40) or simply a “ceramic product” (Ситий et al. 1996, 55). L. Syta and Yu. Sytyi first assumed these

products belonged to the stove's design. Researchers, during the research into the citadel of the Baturyn fortress, speculated that “ceramic products are somehow related to the oven” (Ситий et al. 1996, 55–56). Confirming their guess, researchers in 2006, while continuing excavations on the citadel's territory, called the product a “ceramic detail from a stove with a figured cut edge” (Ситий et al. 2006, 37). In 2017, the author of this study, relying on the found foreign analogies (Пусаў 2009) and the context of finds in the manuscript of her PhD thesis, also attributed ceramic products from Baturyn as stove ceramics, calling them “the framing of the stove mouth” (“облямівка” – in Ukrainian; Мироненко 2017, 86–87). This definition was later used by O. Veremeychuk (2021, 169) in the publication of the residential assemblage of the beginning of the 17th century from Liubech, adding the term “arced” for emphasising the peculiarity of the product's shape.

In contrast to Ukraine, ceramic framings of stove mouths have long been known in Belarus and the northwestern region of Russia. However, as in the case of Ukrainian researchers, there is no single accepted term for these products. Usually the term was formed based on the products' characteristic arcuate shape: “arcs” (Спегальський 1968, 74), “stove arcs” (Здановіч 1998, 129; Синчук–Зайцева 1997, 244), and “elements of arc-shaped decorated stove mouths” (Бубенько 2007, 255). O. Levko, in her monograph devoted to Viciebsk in the Late Middle Ages (1984, 26–27), emphasises the shape of these products, their decor, and the similarity of the brick moulding mass, calls them “ornamented brick for stove vaults”. T. Pryburova (2019, 55) also called products from Pskov “arc brick”. P. Rusov (2009) attempted to understand the issues of terminology, where he concluded that the term “stove mouth framing” most accurately reflects the functionality and form of the product (Русов 2009, 251–252). Later on, N. Shutkova (2017, Fig. A22) and the Ukrainian researchers mentioned above (Мироненко 2017, 86–87; Веремейчик 2021, 169) used this definition as the most successful.

## Methods and research sources

To date, in museum collections, expedition funds, and research centres, we have discovered 109 artefacts originating from the territory of the historical and geographical region of the Middle Dnieper, namely from sites within the boundaries of the modern Chernihiv, Kyiv, and Cherkasy administrative regions (Fig. 1). Most of the materials were directly accessible within scientific repositories, but a small part was involved based on drawings and photos from reports on the results of archaeological field research (e.g. Казаков–Мултанен–Сытый 1986, Fig. 9, 46; Мовчан 1971, Fig. 23). All artefacts were measured and drawn, and some were photographed. The following parameters were determined: length of the product or preserved fragment, width, thickness of the slab, the thickness of the flanges, total height, and height of the flanges (Fig. 2). The following criteria were also taken into account: the shape of the edges, the design, and colour of the inner and outer surface, the features of the moulding mass that can be determined visually, the decor, the place of its placement, the presence of traces of soot, clay solution or fabric prints. The field reports clarified the circumstances of the artefact's discovery: cultural layer, feature, building, pit, stove, etc. Stratigraphic analysis and analysis of accompanying material (ceramic ware or stove tiles) were carried out to determine the products' chronological belonging. Chronological-typological schemes, developed by L. Chmil (2010), were used to date ceramic ware.

Unfortunately, some materials from the 1950s and early 1990s collections did not always have field reports. Also, drawings and/or photos of accompanying material were often missing. In such cases, information about the context could be obtained only from field descriptions or the textual part of the report. Some ceramic framings had no accompanying information besides a field code on their surface. However, they were still included in the study to show the prevalence of the framing within the study region.

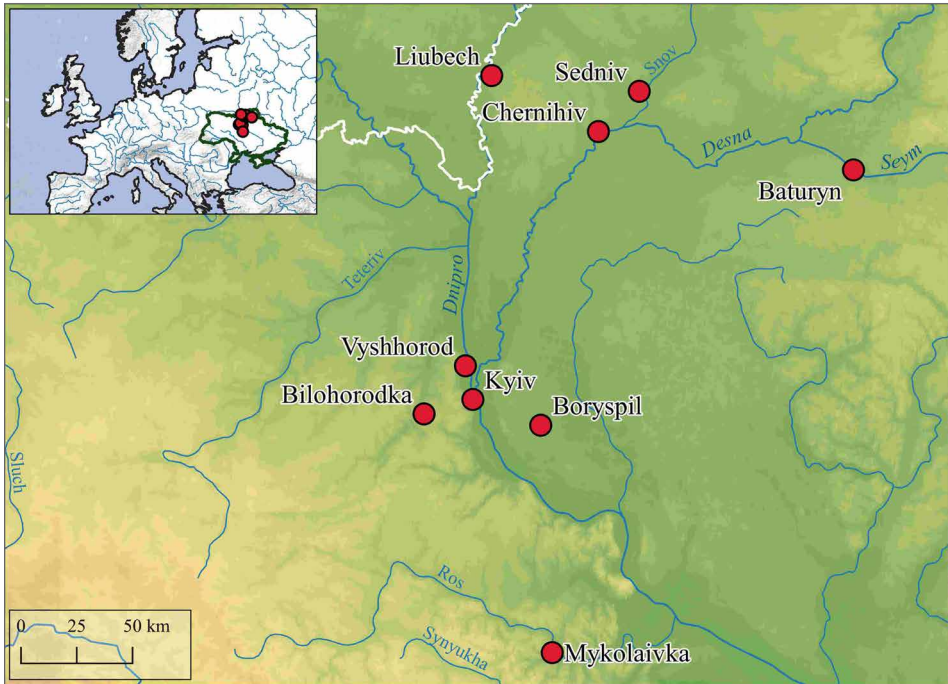


Fig. 1. Locations of the finds of ceramic framings on Ukraine territory.

Obr. 1. Lokality s nálezmi keramických tvarovek z ústí pece na Ukrajině.

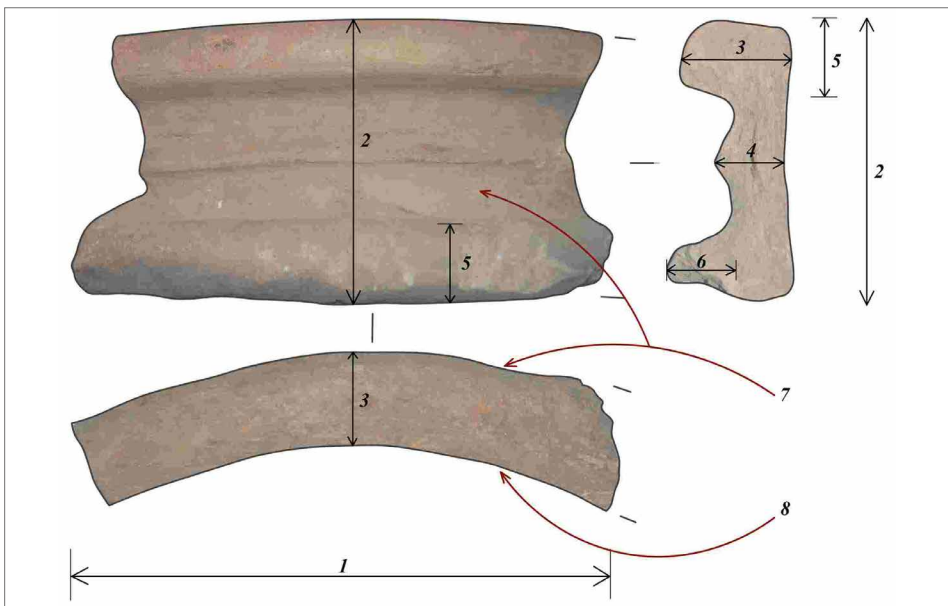


Fig. 2. Scheme with the main dimensions and names of structural parts of ceramic framings. 1 – length; 2 – width; 3 – total height; 4 – slab thickness; 5 – flange width; 6 – flange height; 7 – inner convex part; 8 – outer concave part.

Obr. 2. Schéma s hlavními rozměry a názvy konstrukčních částí keramických tvarovek z ústí pece. 1 – délka; 2 – šířka; 3 – celková výška; 4 – tloušťka desky; 5 – šířka příruby; 6 – výška příruby; 7 – vnitřní konvexní část; 8 – vnější konkávní část.

## Sizes, types and varieties

The sizes of ceramic framings are related to their morphological type, leading to a significant difference between the extreme lower and upper values of the dimensions of some structural parts. The width of the framings ranges from 7.2 to 13.0 cm, with an average value of 8.0 to 10.0 cm. Complete artefacts are rare. For today, only three complete framings are known, originating from Bilohorodka, Kyiv region (Fig. 5:1) and the Old Arsenal in Kyiv (Мироненко–Оногда, forthcoming, Fig. 7:3). Their lengths is 38.0 and 39.0–42.8 cm, respectively. Depending on the type, the height of framings ranges from 1.2 to 5.7 cm.

The identification of types and varieties took place primarily according to the shape criterion (cross-section shape, edge completion, degree of curvature of the product in profile) and the composition of the clay moulding mass. According to their cross-sectional shape, ceramic framings can be divided into two types: completely flat (Fig. 5:1; 6:3; 7:2; 9:3, 4; 10:5) and U-shaped with an almost flat bottom and parallel conical flanges (Fig. 4:3; 6:1, 2, 4–9; 8). The first ones are the least numerous (12 %), just flat clay slabs bent into an arc. The thickness of such ceramic slabs is between 1.2 and 3.1 cm, depending on the specimen. The outer concave side<sup>1</sup> is smooth. The convex inner side, in some instances, had irregularities (Fig. 6:3; 9:3). The U-shaped type with flanges is dominant and occurs in 88 % of cases. The thickness of the slab of this type is in the range from 1.0 to 3.3 cm. The height of the flanges is 0.6–3.2 cm, and the thickness is 0.6–4.1 cm. Most often, the products have flanges 1.0–2.2 cm thick. The height of them was not always the same. In 25 % of cases, one side was slightly higher than the other (e.g. Fig. 4:3; 9:2), but not by more than 0.5 cm. The flanges were contained on the inner convex part and were used to fix the framings in the stove's body conveniently. For the same purpose, the surface of the framings (in 41 % of cases) contained from three to five depressions along the entire length of the products between the flanges, probably from fingers (Fig. 4:1; 6:1, 4, 8, 9). Some of the products simply had an uneven inner convex surface (Fig. 8:1), the smallest number was smooth (Fig. 4:2). About 73 % of the framings included in our study are fragmented, the rest have one native edge completion, and only three items from Bilohorodka (Fig. 5:1) and Kyiv (Мироненко–Оногда, forthcoming, Fig. 3:7) have both complete edges are preserved. The designs of the end edge were quite diverse. Since the primary purpose of the framings was to strengthen the stove's structure, the products had to be firmly connected, avoiding any unnecessary movement. As a result, the edges of the neighbouring framings were connected according to the principle of a groove and tongue joint, thus forming a single, strong structure (Fig. 3).

According to the design criterion of edge completion, ceramic framings were divided into two main types and varieties. Framings with a flat edge belong to the first type (e.g. Fig. 6:3; 7:1, 4; 9:1; 10:2). They can also be called initials since they touched the stove base or were slightly recessed. Among them, varieties with rectangular (Fig. 6:2; 7:1, 4) and semicircular edge completions (Fig. 6:3) can be singled out. A rare variant is framing with a rectangular finish and a slight conical thickening closer to the side face (Fig. 9:1). A low curvature of the sides usually characterises this initial type. Sometimes, minor fragments look almost straight in profile (Fig. 6:3; 7:1). The second type includes framings with figured edge completions (Fig. 4; 5:1–3; 6:4, 8; 7:7; 9:3). Ceramic products with subrectangular (Fig. 5:1–3; 6:4, 8) and rounded (Fig. 4; 7:7; 9:3) grooves and tongues are known. These grooves and tongues could be located in the centre of the framing's width or closer to its side edge (Fig. 3). Also, in the collections of the Old Arsenal in Kyiv, there is a ceramic framing with a zigzag edge completion (Мироненко–Оногда, forthcoming, Fig. 5:4). In the case of placing the framing at the beginning of the structures in the lower part closer to the stove base, could have a flat edge completion on one side and a figured on the other, while the framings in the upper central part of the stove's mouth had figured edge completion with tongs and/or grooves (Fig. 5:1) in both sides.

<sup>1</sup> Designation of the sides as outer and inner refers to the location of the product in the stove: the inner side touched the stove body, and the outer side remained visible.

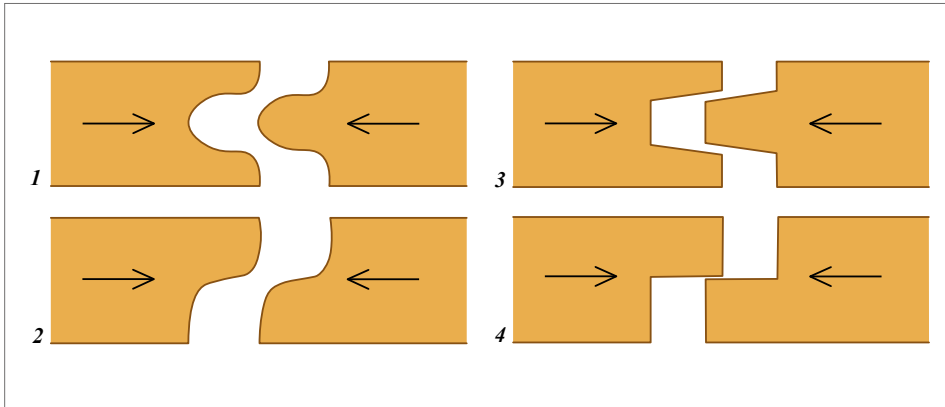


Fig. 3. Schematic representation of framing connection types in a stove mouth.

Obr. 3. Schematické znázornění typů spojů keramických tvarovek z ústí pecí.



Fig. 4. Ceramic framings stove mouths from Kyiv. 1 – excavations in 2016 on the street Kyrylivska street, 37, SR IA NAN of Ukraine, collection no 1610; 2 – print of fabric on one of the flange sides; 3 – excavations at Honchari tract in 1989, SR IA NAN of Ukraine, collection no. 1244.

Obr. 4. Keramická ústí pecí z Kyjeva. 1 – výzkum z roku 2016 na Kyrylovské ulici čp. 37, SR IA NAN Ukrajina, inv. č. 1610; 2 – otisk tkaniny na jedné ze stran příruby; 3 – výzkum v Hončarském újezdu v roce 1989, SR IA NAN Ukrajina, inv. č. 1244.

The next criterion, distinguishing varieties, is the specifics of the moulding clay masses from which the framings were made. Our oversight indicates varieties with conditional names brick-similar and tile-similar can be identified. These names were intended to reflect some similarity to other building architectural and decorative categories ceramics. The first ones were dominant and were made of poorly kneaded clay of red or orange colours with visible additions of coarse-grained sand. Their composition was often similar to the bricks in the same assemblage (e.g. Fig. 4:1). This type of framing has frequently been interpreted as a figured brick. The second type was less numerous and was made of well-kneaded clay of light and red colours without visible addition or with a barely noticeable admixture of fine sand, similar to that from which floor tiles, stove tiles, or roof tiles are made (e.g. Fig. 4:2; 9:1–2). For this reason, framings were most often confused with these categories of ceramics during archaeological research or the interpretation process of museum collections.

About a third of the framings had decoration. It was usually located on the outer side of one of the flanges, and the outer concave part of the plate closer to the decorated side (Fig. 6:3, 5; 8:5; 10:1). Less often, the entire concave outer surface was ornamented (Fig. 6:3; Fig. 10:1). Frequently the decoration was applied only on one side of the flanges (Fig. 5:1–2, 5; 6:7; 7:5, 6; 8:1–4, 6, 8). As seen, the decoration has been placed on those parts that remained open after the framings were inserted into the stove's body. Mostly, it was a relief ornament in the form of impressions of various stamps.

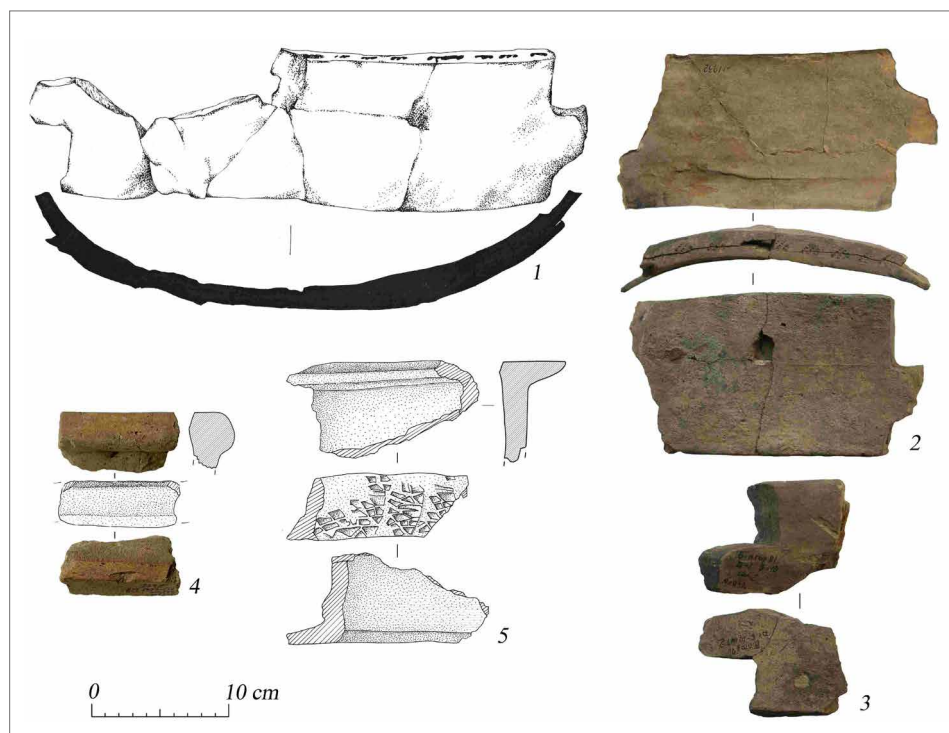


Fig. 5. Ceramic framings of stove mouths from the territory of the Kyiv region. 1–3 – Bilohorodka, Archaeological Museum of the Taras Shevchenko National University of Kyiv; 4 – Boryspil, excavation of 2020, SR IA NAS of Ukraine, collection no. 1720; 5 – Vyshhorod, Museum of the History of the City of Kyiv, inv. code A5045/721. 1 – drawing by E. A. Liniova; 2–5 – photos and drawings by L. Myronenko.

Obr. 5. Keramická ústí pecí z Kyjevské oblasti. 1–3 – Bilohorodka, Archeologické muzeum Národní univerzity Tarase Ševčenkova v Kyjevě; 4 – Boryspil, výzkum z roku 2020, SR IA NAS Ukrajina, inv. č. 1720; 5 – Vyšhorod, Muzeum dějin města Kyjeva, inv. č. A5045/721. 1 – kresba E. A. Liniova; 2–5 – fotografie a kresby L. Myronenko.

Single prints of a round shape (Fig. 7:5; Fig. 8:1) or in the form of multi-petal rosettes (Fig. 6:3, 5, 7; 7:6; 10:1) are most often found. Triangular (Fig. 5:1–2) and square stamps (Fig. 8:5) lines of a stamped ornament applied with a wheel (Fig. 8:2, 3, 6, 7) are less common, as well as chaotic stamps, which covered the entire surface of one of the flange (Fig. 5:5).

Rounded holes on the outer concave surface of the framing (Fig. 9:1, 2) from Baturyn were included in the relief decoration. The holes were made with a pointed object (a pointed wooden stick?) from the outside to the inside so that holes on the inner convex side between the flanges had smaller diameters or were not visible at all (Fig. 9:2).

Polishing of the surface should also be classified as decoration. Only one of the flanges and a part of the outer concave surface of the framings were usually polished. This decoration technique rarely occurs – only two items from Boryspil (Fig. 5:4) and Sedniv can be noted as such.

The least rare are ceramic framings covered with glaze. So far, such decoration has been found only on two framings: from Chernihiv (Fig. 7:2) and Baturyn (Fig. 9:4). They had the form of flat bent slabs without flanges. In both cases, a clear green glaze was applied to one of the sides (Baturyn) and an outer concave surface (Chernihiv).

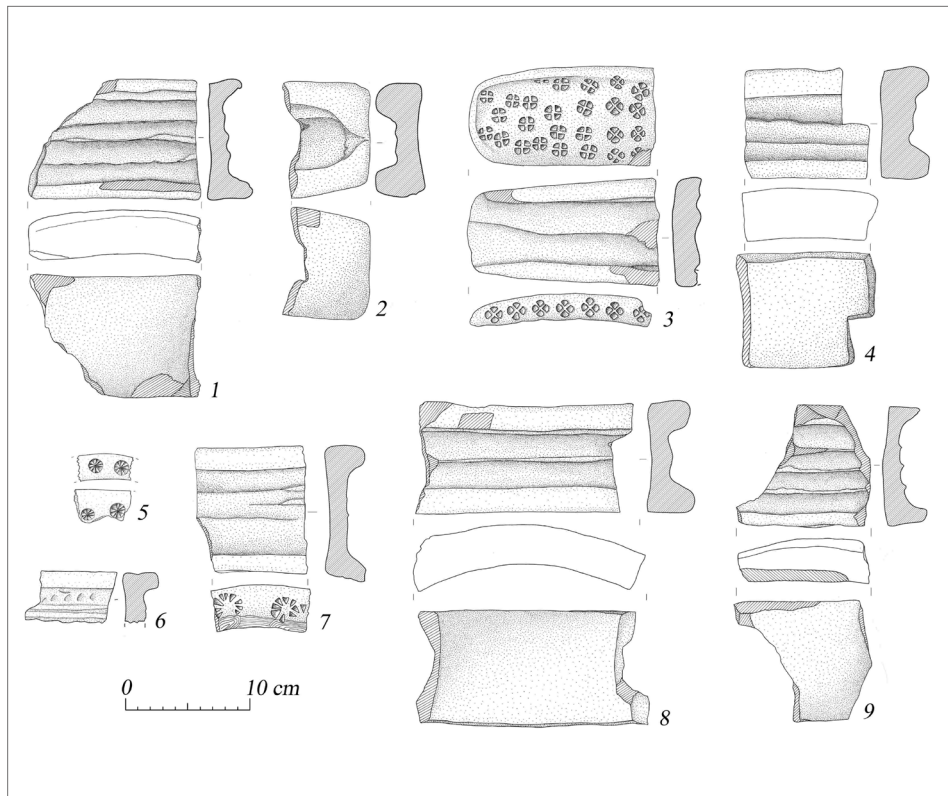


Fig. 6. Ceramic framings of stove mouths from Chernihiv. 1–4, 9 – excavation of 1956, ChOIM. 1 – inv. code A35-117/198; 2 – inv. code A35-469/198; 3 – inv. code A35-547/198; 4 – inv. code A35-362/198; 9 – inv. code A35-147/198. 5–6 – excavation on Rodimtseva street in 1986 (after Казаков–Мултанен–Сытыйй 1986, Fig. 9); 7 – an occasional find on the Rodimtseva street; 8 – excavations in 1986, NIAZ „Ancient Chernihiv”, inv. code ЧИМ 175.

Obr. 6. Keramická ústí pecí z Černihova. 1–4, 9 – výzkum z roku 1956, ChOIM. 1 – inv. č. A35-117/198; 2 – inv. č. A35-469/198; 3 – inv. č. A35-547/198; 4 – inv. č. A35-362/198; 9 – inv. č. A35-147/198. 5–6 – výzkum na ulici Rodimceva v roce 1986 (podle Казаков–Мултанен–Сытыйй 1986, obr. 9); 7 – náhodný nález na ulici Rodimceva; 8 – výzkum v roce 1986, NIAZ „Ancient Chernihiv“, inv. č. ЧИМ 175.



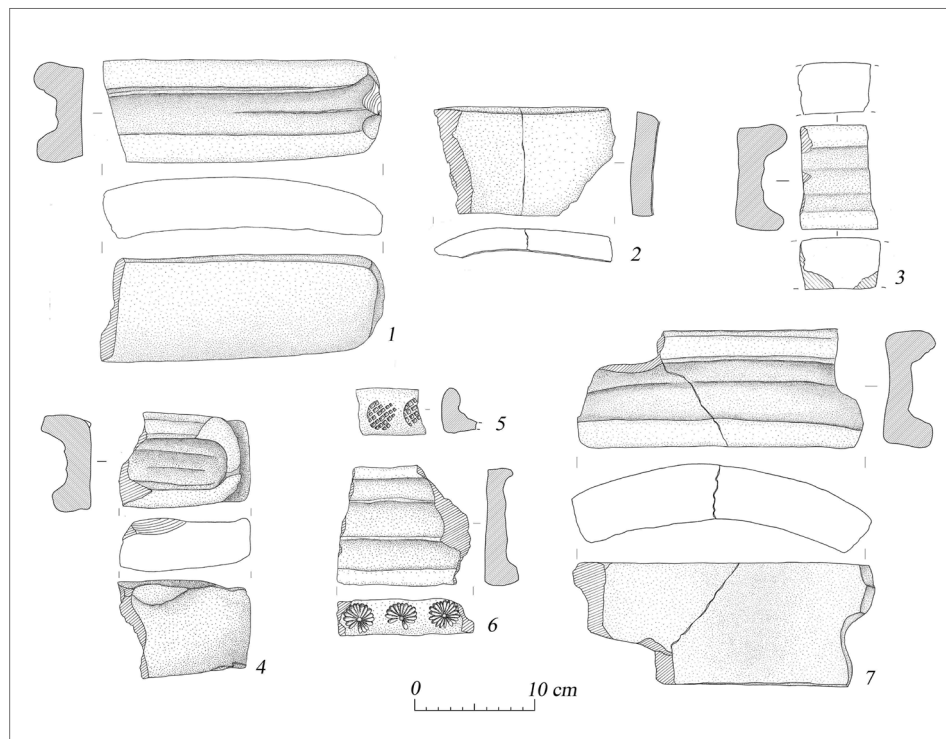


Fig. 7. Ceramic framings of stove mouths from Chernihiv. 1, 2, 4, 7 – excavation of 2002 on the Kyrponosa street, ChOIM (inv. codes 81-1275/B apx. 251, 81-1358/B apx. 251, 81-293/B apx. 251, 81-719/B apx. 251); 3 – excavations in 2020 on the Peremogy avenue, ChOIM; 5–6 – excavations of 2017 and 2015, NIAZ “Ancient Chernihiv”.

Obr. 7. Keramická ústí pecí z Černihova. 1, 2, 4, 7 – výzkum z roku 2002 na Kyrponosově ulici, ChOIM (inv. č. 81-1275/B apx. 251, 81-1358/B apx. 251, 81-293/B apx. 251, 81-719/B apx. 251); 3 – výzkum v roce 2020 na Peremohžské třídě, ChOIM; 5–6 – výzkum z let 2017 a 2015, NIAZ Ancient Chernihiv.

### Features on the surface

In addition to the decor, attention is also drawn to some features that can be noticed when inspecting the surface of the framings. The first group includes those traces formed during the process of use. About a third (32 %) of the framings contains traces of soot, usually on the inner convex part (Fig. 10:1) and on the surface of one of the flanges or lateral side (Fig. 4:2). In cases where the ceramic framings contained decor, the unornamented opposite flanges were covered with soot. Also, some items contained traces of the clay used to attach the framing to the stove’s body (e.g. Fig. 4:2).

The second group of features is related to the manufacturing of the ceramic framings. Thus, one specimen from Vyshhorod contained traces of wood fibres located along the long axis of the framing on the outer concave part (Fig. 5:5). Artifacts from Kyiv (Fig. 4:3) and Boryspil (Fig. 5:4) contained traces of (sand?) on the outer concave part, and one of them additionally had recess from the fingers. Besides, the framing from Kyiv (Fig. 4:1, 2) had a small imprint of the fabric on the upper part of one flange. All these give us an idea about the process of making framings. P. Rusov (2009, 257) suggests that they were made from a rectangular flat clay slab, from which the craftsman formed the flanges from the slabs edges. Probably after that, this clay slab was bent into an arc according to the shape of the stove’s mouth. Wood or sand traces on the outer concave parts of the framings indicate that

some structures made of bent boards were used for their production. It can also be assumed that, in some cases, the production process took place with the help of a small mound of sand. Figured edges were formed on raw clay. One of the products contained traces of cutting with a thread (Fig. 4:4).

### Context and dating

To understand the framings' functional purpose, geographical distribution, and period of existence, it is necessary to briefly dwell on the context of discovering these artefacts. To date, all 109 finds of ceramic framings come from the following settlements: Kyiv, Vyshhorod, Bilo-horodka, Brovary – Kyiv region, Chernihiv, Liubech, Sedniv, Baturyn – Chernihiv region, and Mykolaivka – Cherkasy region. Presumably, the distribution area of ceramic framings of stove mouths is not limited to this territory but only reflects the current state of studying museum collections and the region.

*Kyiv.* Four cases of revealing ceramic framings were known.

The first framing (Fig. 4:2) was discovered during rescue research in 2016 on the territory of Kyiv Podil in the filling layer of a habitable building – Feature 3 (Івакін et al. 2017). The building was investigated partially. The location of the framing in the square next to the tile-stove remains allows us to attribute the product to its construction. The combustion chamber vault, with traces of soot inside, fragments of the brick basis with a height of 0.7 m, and 24 stove tiles were preserved from the destroyed tile-stove (Пашковський 2022, 38). According to the published drawings, the entrance to the combustion chamber was shaped like a semicircular stilted arch (Пашковський 2022, Fig. 1) and was about 0.7 m high and 0.65 m wide at the base. Based on L. Chmil's conclusion, the building and stove tiles from there dated from the middle to the second half of the 18th century (Івакін et al. 2017, 135). O. Pashkovskiy (2022, 40), in analysing the stove tiles' collection and reconstruction of this tile-stove, also dated the object and finds to the 18th century.

The second ceramic framing came from the research into a well-known pottery centre in Kyiv – Honchari tract, where 26 pottery kilns were investigated during 1974–2007 (Чміль–Хамайко 2015, 401). This product (Fig. 4:3) was discovered during the excavation in Trench V in 1989 in one of the kiln. Fragments of ceramic wares and stove tiles were found together with the framing. Based on morphological features, ceramics can be dated from the first half to the middle of the 17th century. Whether the framing was a product of this kiln or a structural part is unknown. However, the soot on one of its flanges suggests a second guess. The field report contains a photo of the kiln (Івакін 1989, Fig. 61, 62), which shows a parabolic mouth. According to the scale on the drawing, its height should have been no more than 25–30 cm.

One ceramic framing is known from the illustrations in the field report, which is based on the results of archaeological research in 1971 in the Vydubychi district of Kyiv (Мовчан 1971, Fig. 23). The image contains a photo of ceramic framing with a figured edge completion in the form of a trapezoidal groove in the centre. The framing belongs to the type with flanges and has an uneven surface between them. According to the field report and inventory description, the product came from the cultural layer of Trench 5 near Kiln 1, at the same depth as the firing chamber vault. This kiln was dated to the first half of the 17th century. However, as in the previous case, whether the framing belonged to the kiln's production or construction remains unclear.

The most extensive collection of ceramic framings came from research on the territory of the Old Arsenal in Kyiv and included 28 fragments and one complete product. A particular study will be devoted to this collection (Мироненко–Оногда, forthcoming). All products found in complexes together with plate stove tiles are dated from the 17th to the beginning of the 18th century.

*Bilohorodka, Kyiv region.* Nowadays, only one complete ceramic framing in fragments (Fig. 5:1–3) was found. The product in the form of a curved flat clay slab came from the excavations of 1991 by Ye. A. Liniova. Unfortunately, there is no field report on the results of this

excavations (Непом'ящих 2017, 48), which makes it impossible to establish the context of the find and determine its dating. The code on the product's surface indicates that all the fragments were found in the cultural layer outside the features. The framing contains a decoration on the side in the form of a triangular stamp 0,7 cm in size and two figured edges in the form of tongues, which contain traces of cutting on the already-fired surface. This was probably done to correct firing defects, so this particular framing could not be combined with the adjacent one in the process of gathering the stove's mouth.

*Boryspil. Kyiv region.* Only a small fragment of the flanges represents the ceramic framing (Fig. 5:4). The product came from Feature 1, investigated in 2020. The feature's filling contained fragments of pots, plates, and stove tiles. According to morphological features, they should be dated no earlier than the beginning of the 18th century, as should the fragment of the ceramic framing.

*Vyshhorod. Kyiv region.* One fragment (Fig. 5:5) originated from excavations in 1981 in the northeastern part of medieval Vyshhorod (Зоценко–Пекарська 1981, 1). According to the field report and the inventory description, the ceramic framing came from a sunk into the sterile earth rectangular building by 0.96–1.04 m (Зоценко–Пекарська 1981, 4). The excavation authors dated the building to the 18th century. The field report documents information that the layer where the framing of the stove mouth was found also contained fragments of ceramic glazed wares, but there are any drawings or photos. Considering that the 17th–18th centuries ceramic wares were glazed on the inner or outer surface, we can assume the authors' accuracy in dating this complex.

*Chernihiv.* Thirty-six fragments of ceramic framings came from excavations in different parts of the city in various years. The most significant number of framings (8 specimens) originated from the excavations in 1956 on the medieval town citadel (Рыбаков 1956, 2). Although the field report provides relatively short descriptions of the layers and characteristics of the finds of the 17th and 18th centuries, among the illustrative material was a detailed plan of the location of all the objects of that time (Рыбаков 1956, Fig. 7). By comparing the field codes on the framings with the presented plans, it was possible to trace the regularity of discovering these artefacts in the cultural layer within or next to features of the 17th–18th centuries, namely tile stoves. The report describes the stoves' remains as layers of clay and brick fragments together with stove tiles covered with polychrome and green glazes (Рыбаков 1956, 4–6). Based on morphological and decorative features and analogies, the tile stoves could be dated to the end of the 17th century – the first half of the 18th century (Мироненко 2011). In one of the trenches in the northern section of the excavated area, one of the framings covered with small stamps was discovered. Smoking pipes and pots with a straight rim and a sharp, high shoulder were found in the same layer (Рыбаков 1956, 25–26). Such accompanying material testifies to forming a layer on the border between the 17th and 18th centuries.

One fragment of a framing (Fig. 6:8) with a subrectangular groove on the edge completion, kept in the scientific funds of the NIAZ "Ancient Chernihiv," also came from the Chernihiv citadel. The artefact was found in 1986, but the field report did not provide information about the context and dating (Карнабед 1986).

The repository of this reserve also contained materials from the research into the Chernihiv citadel in 2015 (Черненко–Новик 2015), during which seven fragments (Fig. 7:6) of framings were discovered in two trenches. Two came from the cultural layer of the beginning of the 18th century, while the rest belong to the filling of two buildings. These sunken buildings were partially investigated, so their purpose cannot be established. The framing with the decoration in the form of a single rosette stamp originated from the filling of Building 1, which, based on the peculiarities of the morphology of the ceramic wares, was dated to the middle of the 17th century (Черненко–Новик 2015, 21–22, Fig. 119–120). The rest of the artefacts came from Building 4, which could have had a non-residential purpose, according to the researchers. The morphological features of the ceramic ware and building's filling allowed us to date the building to the end of the 17th – the beginning of the 18th century.

Among the materials of this repository, there is also one tiny fragment of framing from the 2017 excavations (Fig. 7:5) with a single round stamp, which originated from the cultural layer of the middle of the 17th – beginning of the 18th centuries.

The next four fragments of framings are known only from the drawings in the field report (Казакoв–Мултанен–Сытый 1986, Fig. 9, 46), which is based on the results of research on the suburban territory of the medieval Chernihiv (Fig. 6:5, 6). One of the framings with a single rosette stamp (Fig. 6:5) came from Pit 2 (Казакoв–Мултанен–Сытый 1986, 3), which, according to the accompanying material, is dated no earlier than the 17th–18th centuries. The rest of the products originated from Building 1, interpreted as a dwelling (Казакoв–Мултанен–Сытый 1986, 5–6). A thick layer of weakly fired clay and daub was fixed in the filling of the building. The layer contained green glazed stove tiles as well. The lack of information about the specific location of the framings did not allow us to say with certainty, so it can be assumed that these artefacts belonged to the five-stove's structure. The accompanying material from the filling enabled us to date Building 1 and its artefacts to the early beginning of the 18th century.

Ceramic framings were also found during research in various suburban parts of Chernihiv in 1979 (Карнабед 1979, 1), 1992, 2002 (Черненко 2002, 1), 2020 and 2021 (Скороход et al. 2020, 3). The field reporting documentation is missing only for artefacts from 1992, making it impossible to establish the date and context. However, the code on their surface gave information about localising the framings within the parts of the city.

The framings from the research from the years mentioned above involved the filling of various features, including the dwelling (Кардабед 1979), sunken non-residential buildings (Черненко 2002, Figs. 71–73, 76, 92; Скороход et al. 2021, 6) and the well (Скороход et al. 2021, 16). Based on the analysis of the accompanying ceramic material, all of them can be dated to the end of the 17th – beginning of the 18th century. The 2002 assemblage, which contains unique specimens with a smoked (Fig. 7:1, 4) and glazed surface (Fig. 7:2), attracts particular attention. All finds were associated with non-residential buildings located in the area next to the early modern pottery kiln (Черненко 2002, Fig. 1a).

*Liubech, Chernihiv region.* The collection of framings (Fig. 8:2–7), unique in its decor, was discovered during excavations of 1958–1959 on the suburban territory of medieval Liubech. The field report about the results of the archaeological research in 1959 is quite detailed. It describes archaeological features from the 16th to 18th centuries (Рыбаков 1959, 51–67). There are also plans of their location within the excavation areas (Рыбаков 1959, Fig. 92). The inventory descriptions that were transferred to the ChOIM from Moscow, together with part of the collection in the 1970s (Ситий–Сита 2011, 68), are of great value. Thanks to them, it was possible to localise the places of finds of some of the framings and connect them with the investigated features. Most ceramic products came from Trench IIA (Fig. 8:2–4). The analysis of the field report made it possible to establish that all ceramic framings were discovered in the northwestern corner of the trench, approximately within the boundaries of the stove's remains layer (Рыбаков 1959, 54–55, Fig. 92), and the filling of the building of the 16th–18th centuries (Рыбаков 1959, 56–57). Thanks to the ceramic drawings made by Yu. Sytyi and field descriptions, it can be assumed that except for two specimens (Fig. 8:5, 7), the rest of the ceramic framings from Liubech date to the second half of the 17th – the beginning of the 18th century.

An interesting collection of six fragments of ceramic framings (Fig. 8:1) was discovered during the research into the first half of the 17th-century house in a suburban part of Liubech (Веремейчик 2021). All fragments of framings were similar in the composition of the moulding clay mass, size, and decoration in the form of single round stamps. These six fragments formed the mouth of the stove, the remains of which, in the form of a layer of burnt clay, daub, pieces of bricks, burnt stone, and stove tiles, were found in the eastern corner of the lower part of the house. Some fragments of burnt clay contained traces of wooden rods. Researchers believed (Веремейчик 2021, 169–170) that the stove was located at the ground floor level and fell to the

basement during the dwelling's destruction. The analysis of ceramic wares and stove tiles established that the dwelling existed in the first half of the 17th century.

*Baturyn, Chernihiv region.* Six ceramic framings were discovered on the territory of the citadel of the early modern city. Three of them in fragments, identical in shape, composition of moulding clay mass, and decoration by the conical small holes came from Dwelling 2 (Fig. 9:1–2), excavated in 1996 (Ситий et al. 1996, 55–56). The analysis of the depth and location of the finds allows us to state that all the fragments belonged to the same stove mouth and were related to the construction of a niche-like clay oven located in the centre of the southern wall of the dwelling. The oven was built in the sterile layer wall of the dwelling at a height of 0,4 m from the floor (Ситий et al. 1996, Fig. 75, 85). The accompanying ceramic material (Ситий et al. 1996, Fig. 87:1–12) and the stratigraphic situation on the site allow us to date the building to the earliest stage of the Baturyn Castle's existence – the second quarter of the 17th century (Ситий et al. 1996, 57).

Three other framings (Fig. 9:3–4) are associated with Building 1, discovered in 2006. The building was represented by the part of the sunk-into sterile earth basement (Ситий et al. 2006, 33). Based on stratigraphic observations and ceramic material from the filling, the experts of the excavations were able to date this building to the second quarter – the middle of the 17th century.

*Sedniv, Chernihiv region.* Framings in 14 fragments came from Trench 5 on the territory of the Crown Castle in Sedniv. There is no field report, but the research results were published

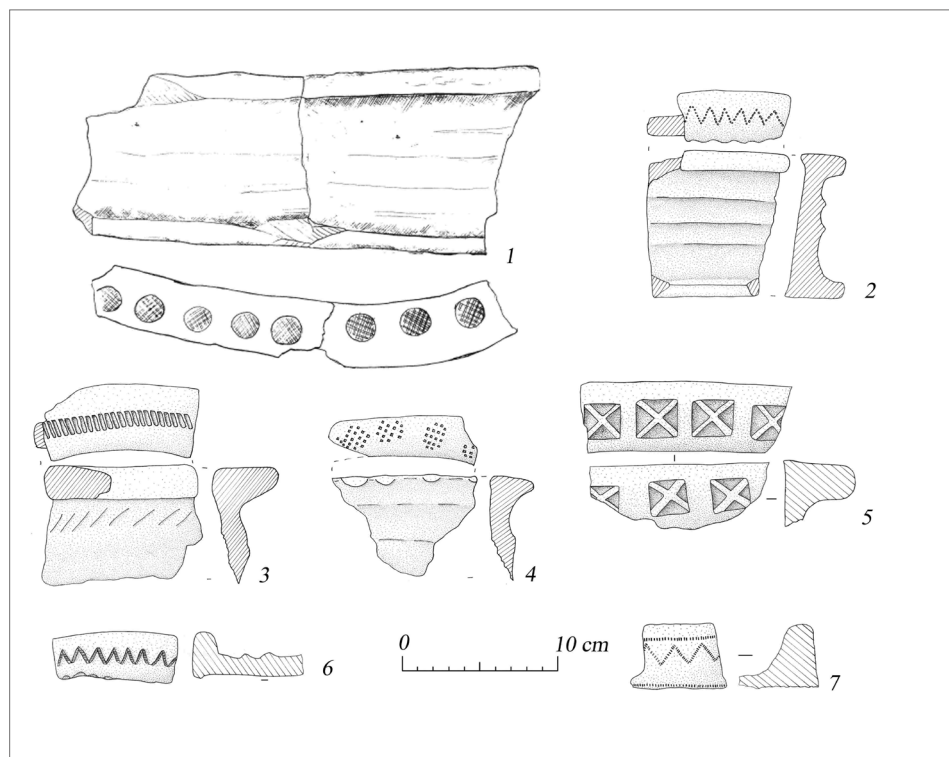


Fig. 8. Ceramic framings of stove mouths from Liubech. 1 – excavation of 2016 (after Веремейчик 2021, Fig. 4); 2–7 – excavations of 1958–1959, drawings by Yu. Sytyi and L. Myronenko, Historical and archaeological museum complex “Ancient Liubech”.

Obr. 8. Keramická ústí pecí z Ljubeče. 1 – výzkum z roku 2016 (podle Веремейчик 2021, obr. 4); 2–7 – výzkum z let 1958–1959, kresby Yu. Sytyi a L. Myronenko, Historický a archeologický muzejní komplex Ancient Liubech.

(Коваленко–Луценко–Терещенко 2007). The codes on the surface of the artefacts indicate that they all originated from a cultural layer outside the archaeological features. The publication contains information about the thick layer of burnt clay and raw brick, which, according to the authors, could be the remains of the stove on the ground floor of the dwelling, which was investigated in this trench as well (Коваленко–Луценко–Терещенко 2007, 159). Drawings of ceramic ware (Коваленко–Луценко–Терещенко 2007, Fig. 3) from this dwelling allow us to date it to the end of the 17th – beginning of the 18th century. It is possible to assume that all framings from this excavated area can be related to the layer of destruction of the stove.

The framings discovered during the 2020 archaeological surveys on the territory of the Sedniv Crown Castle are probably dated to the same period (Скороход et al. 2020, App. 4). This is indicated by the accompanying ceramic material, including ceramic wares and stove tiles, also found in this area.

*Mykolaivka, Cherkasy region.* The framing with a single rosette stamp on the flange came from excavation in 1956. There is no data about the layers and features of the late medieval and Early Modern Age on the territory of the site. Only the accompanying material contained in the same box in the collection can testify to the dating. Provided these artefacts came from the same layer or assemblage, the framing can be dated quite broadly – from the second half of the 17th to the early 18th century.



Fig. 9. Ceramic framings of stove mouths from Baturyn. 1, 2 – excavations in 1996; 3, 4 – excavations in 2006. National Historical and Cultural Reserve “Hetman’s Capital”.

Obr. 9. Keramická ústí pecí z Baturýna. 1, 2 – výzkum v roce 1996; 3, 4 – výzkum v roce 2006. Národní památková a kulturní rezervace Hetman’s Capital.

## Discussion and preliminary conclusions

As we can see from the above, except for specimens found in a cultural layer or outside a clear context, ceramic framings mainly originated from the filling of buildings in the areas closer to the stoves (e.g. Івакін et al. 2017) or the layers of the stove's destruction (e.g. Веремейчик 2021, 169; Ситий et al. 1996, 55–56). This fact leaves no doubt that ceramic framings were part of the stove design. The lack of finds of well-preserved stoves with ceramic framings *in situ* complicates determining the number of individual framings to create a stove's mouth. Given the size of the framings and known analogies (Левко 1984, 26, 27; Спегальский 1968, Fig. 18), their number could be three to four framing per stove's mouth. The variety of shapes of the artefacts (from almost straight to strongly curved) allows us to assume that the mouth of the stoves with the use of framings could be arch-shaped of three varieties of arch: semicircular (Fig. 11:2), stilted (Fig. 11:3) and parabolic (Fig. 11:1). When framings with distinct curved and practically straight profiles were found together, it is worth discussing the last two varieties of stove mouth shapes.

According to the measurements, the height of such a ceramic mouth was, on average, 40–60 cm, and the width of the base was approximately the same size. However, in some cases, the height of the mouth could reach 70 cm (Пашковський 2022, Fig. 1).

Considering the context of the discovery, it can be argued that the framings are used in three types of heat-technical structures: simple clay ovens, pottery kilns, and tile-stoves.

The framings strengthened the weakest part of the construction for simple clay ovens – the mouth (Fig. 12). Stones, burnt clay, brick fragments, etc., were added to the clay to strengthen the stove's body. Or, as in the case of the dwelling in Baturyn, the stove was built in a sterile layer of the dwelling wall (Ситий et al. 1996, 55). The vault above the mouth remained the most vulnerable place in constructing, and ceramic framings solved this problem. The same applies to the pottery kilns. However, in this case, whether the framings were placed in the firing or combustion chambers remains unknown.

Framings in the construction of tile stoves could be used in two ways. The first and most obvious option is at the entrance to the combustion chamber. Thus, miniature models of tile-stoves from the second half of the 16th–17th centuries in Germany, besides square small ones, had arch-shaped stove entrances of various configurations (Rosmanitz 2020), which correspond to the shapes of the stove mouths reconstructed by framings (Fig. 11). With such a design, as shown on the models, the stove was heated from another room. Traditionally, it is considered that the tile-stove was used mainly for heating. This is valid in the case of placing stoves in castles or large brick early modern estates, where, due to the ample space, the kitchen could be located in another room or even in another building (e.g. Mazáčková–Žaža 2023, 63). However, is this statement valid for small simple wooden houses with dimensions an average of  $6 \times 4$  m or even less? With such limited space, any stove had to perform two functions: heating and cooking. Considering that the stoves' mouths formed from ceramic framings are quite large,  $45\text{--}60 \times 45\text{--}60$  cm, and correlated with the average height of early modern ceramic wares (Чміль 2010, 208), it can be concluded that ceramic framings found among the remains of tile-stoves can testify to the dual function of these stoves.

In this case, it could be very simple tile-stoves on a clay or brick base, some parts of which were built using wooden elements, as evidenced by the impressions of rods and boards on burnt daub in the places where the remains of such stoves were researched (e.g. Веремейчик 2021, 169). The stove's mouth, also intended for cooking, was in another nearby room.

According to archival and pictorial sources, bifunctional tile-stoves were known, but they had a more complicated design. The National Historical Archive of Belarus kept a drawing of a two-chamber complex stove in the bakery of the Radzyvil Princes estate in Boryslav, Belarus. The drawing was made in the middle of the 17th century (ІБІІ, 24). It depicted a hearth extension from which a tile-stove and oven for baking bread were heated (Fig. 13:1). The oven had a semicircular mouth. Also, a stove of a similar design was depicted on the icon "The Nativity of the Virgin" (end of the 17th – the first half of the 18th century). Icon originated from the Volyn

region, Ukraine (IPB). In the image's background was a brick oven with a mouth shaped like a stilted arch (Fig. 13:2). To the right of it was a tile-stove, which was probably connected to the oven by a single combustion chamber. The mouth in these two pictures repeats the shape of the stove's mouth, which was formed by ceramic framings.

The analysis of the origin of all the framings allowed us to determine that stoves with them in the design existed in the territory of the Middle Dnieper Region from the beginning of the 17th to the middle of the 18th century.

The earliest finds came from Liubech and Baturyn, dating to the beginning – the first quarter of the 17th century. The latest recorded case of the framings use was a tile-stove from the

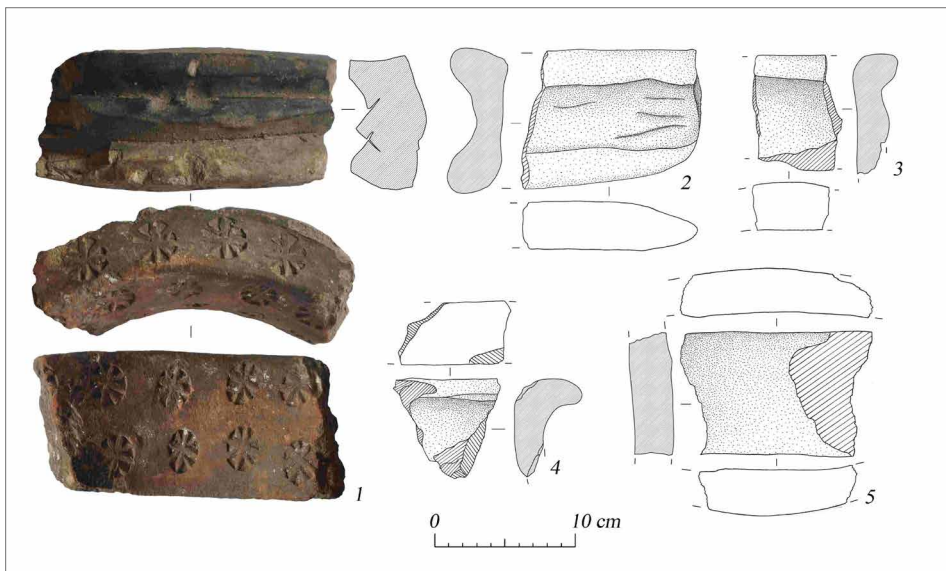


Fig. 10. Ceramic framings from Sedniv, Chernihiv region (2–5) and Mykolaivka, Cherkasy region (1). 1 – collections nos. 346–348, SR IA NAS of Ukraine; 2 – National University “Chernihiv Collegium”.

Obr. 10. Keramická ústí pecí ze Sedniva, Černihivská oblast (2–5) a Mykolajivky, Čerkaská oblast (1). 1 – inv. č. 346–348, SR IA NAS Ukrajina; 2 – Národní univerzita Chernihiv Collegium.

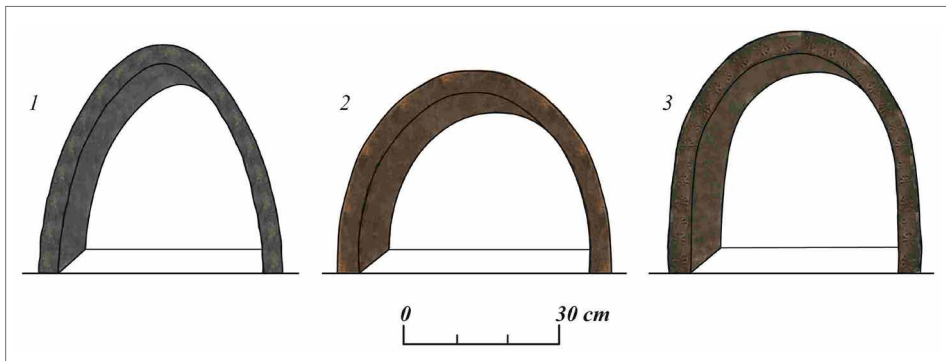


Fig. 11. Forms of stove mouths with ceramic framings.

Obr. 11. Tvary ústí pecí z keramických tvarovek.



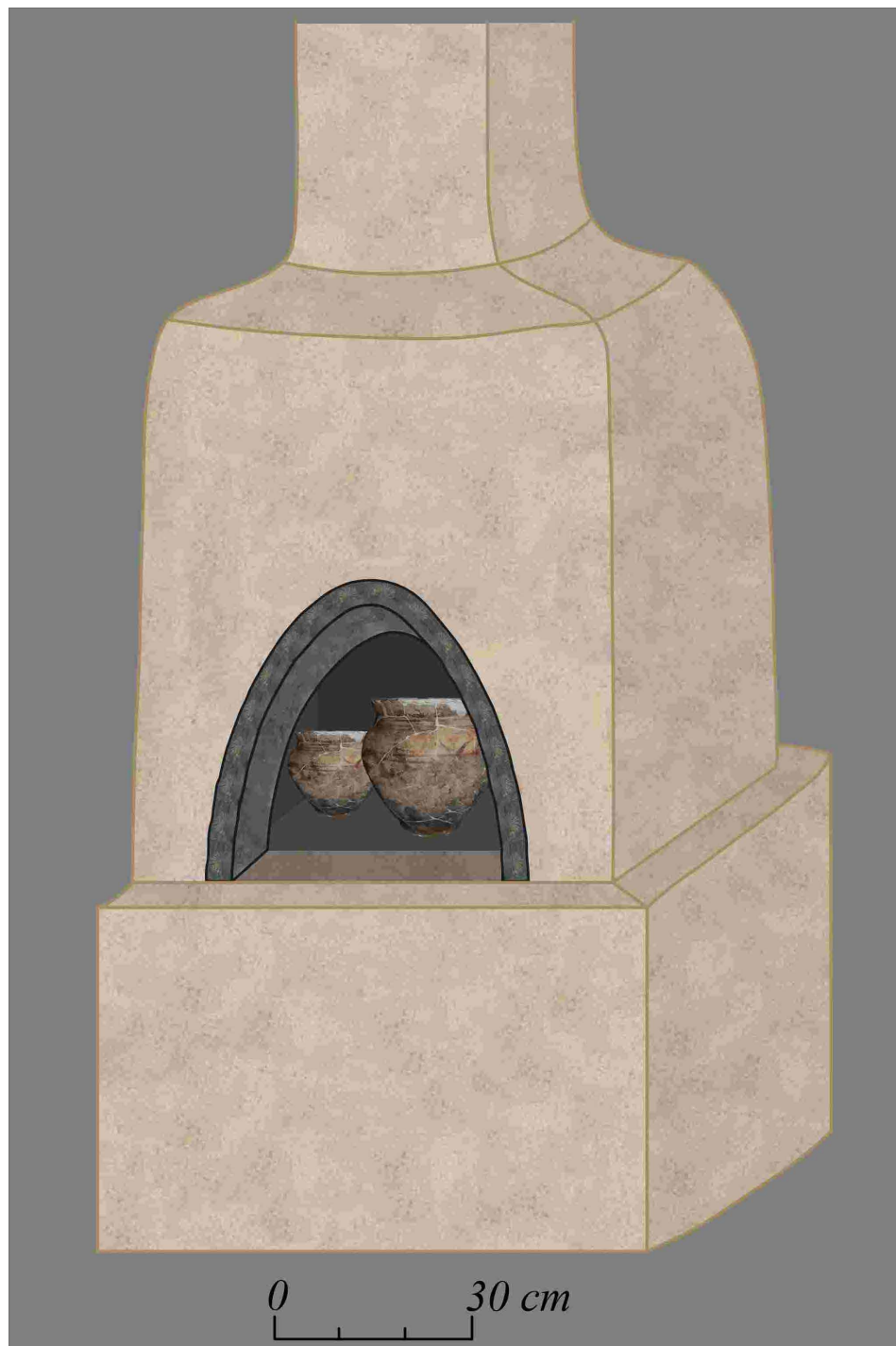


Fig. 12. Ceramic stove mouth in the design of a simple clay oven of the beginning of the 17th century. Reconstruction by L. Myronenko.

Obr. 12. Jednoduchá pec s ústím z keramických tvarovek z počátku 17. století. Rekonstrukce L. Myronenko.

middle – second half of the 18th century from Kyiv (Пашковський 2022, 40; Івакін et al. 2017, 135, Fig. 4). In the layers of the 19th century, there were no finds.

In the neighbouring territories of North-Eastern Belarus, ceramic framings were used from the 15th–16th centuries (Левко 1984, 27, Fig. 15; Бубенько 2007, Fig. 2). The book of O. Levko (1984, 26, Fig. 15) also contained references to the 14th century as the time when ceramic framings appeared in the late medieval layers of Viciebsk. However, the inconsistency between the dates in the text and the captions to the picture, as well as the absence of stratigraphic dating for the Viciebsk finds (Синчук–Зайцева 1997, 250), do not allow us to use this date as the lower chronological limit of the framings' existence. Ceramic framings from Stary Shklov, found in an assemblage with pot-shaped tiles, were dated from the end of the 15th – first half of the 16th centuries (Шуткова 2017, Fig. A22:1–2). The most significant number of finds on Belarus' territory belonged to the 17th century and disappeared from use in the first half of the 18th century (Синчук–Зайцева 1997, 250).

Ceramic framings from Pskov, Russia, were dated to the second half of the 17th century (Сперальский 1968, 74). It should be noted that Russian framings differed in shape from Ukrainian and Belarusian samples (Fig. 14:1, 2): they usually have one high flange, and the opposite one is very short or absent at all (Fig. 14:2). According to Russian researchers, all the known framings are concentrated in the territory of Pskov, which could be connected with a local feature of stoves that did not take root in other territories of the European part of Russia (Прибурова 2019, 57).

Another artefact similar to the framings (Fig. 14:3) was discovered in Gdańsk, Poland. The product resembled ceramic framings in terms of shape and size. Researchers assumed this figured

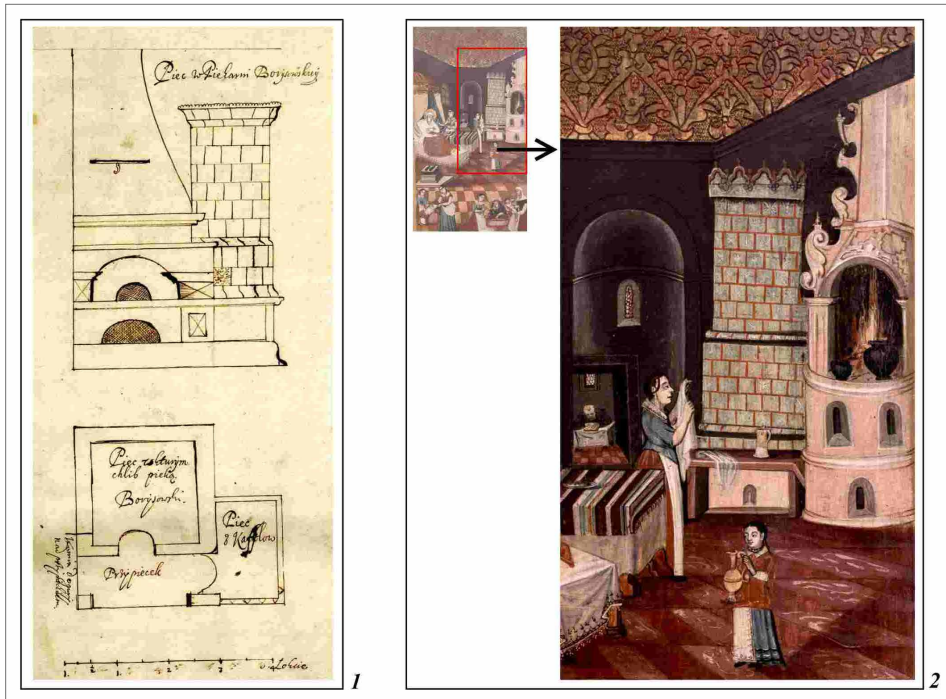


Fig. 13. Bifunctional stoves of a complex design. 1 – the stove from the middle of the 17th century from the Radzivil estate bakery, Boryslav, Belarus, National Historical Archive of Belarus (after ПБІІ); 2 – the stove the icon “The Nativity of the Virgin” from the end of the 17th – the first half of the 18th century, Volyn region, Ivan Honchar Museum.

Obr. 13. Dvoufunkční kamna kombinované konstrukce. 1 – kamna z poloviny 17. století z pekárny panství Radzivil, Boryslav, Bělorusko, Národní historický archiv Běloruska (podle ПБІІ); 2 – kamna s krbem na ikoně „Narození Panny Marie“ z konce 17. až první poloviny 18. století, Volyňská oblast, Muzeum Ivana Hončara.

brick was used to construct water and heating channels (Dąbal–Szczepanowska 2016, 166) and date the product to the Late Middle Ages.

Considering the limits of the distribution of ceramic framings on Ukraine's territory within the Middle Dnieper region and the most significant number of analogies from the neighbouring northeastern regions of Belarus, this may indicate a specific structure of stoves in these regions. They were built using clay as the primary building material, and ceramic framings were necessary for the construction. It can be assumed that this is why there are not so many known ceramic framings in the Right Bank Dniper region and Western Ukraine, where more stone and brick were used for stove.

Nevertheless, this assumption remains a guess until the source base is replenished with more investigated different types of stoves. The disappearance of framing from the territory of Ukraine

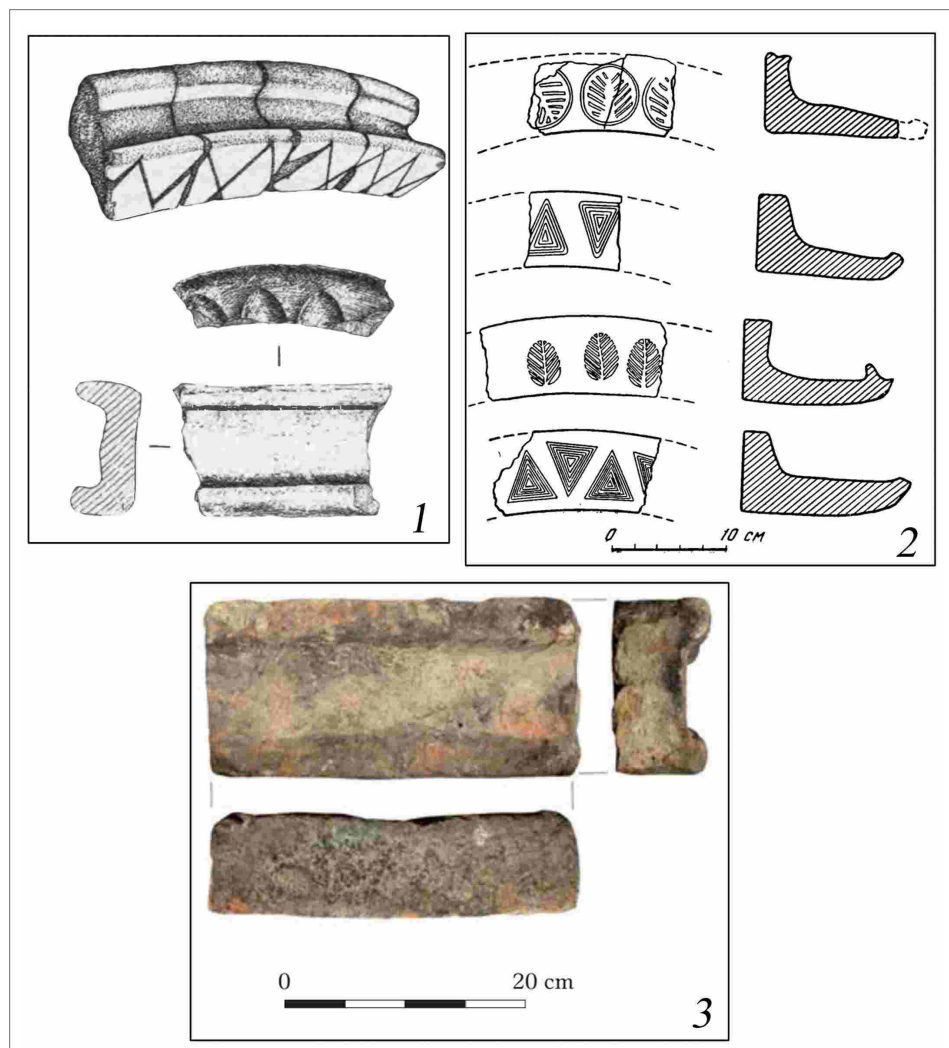


Fig. 14. Ceramic framings from other countries. 1 – from Viciebsk, Belarus (after Бубенько 2007, Fig. 2:1, 2); 2 – from Pskov, Russia (after Снегальский 1968, Fig. 18); 3 – figured brick from Gdańsk, Poland (after Dąbal–Szczepanowska 2016, Fig. 77:7).  
Obr. 14. Keramické tvarovky z ústí pecí z jiných zemí. 1 – Viciebsk, Bělorusko (podle Бубенько 2007, obr. 2:1, 2); 2 – Pskov, Rusko (podle Снегальский 1968, obr. 18); 3 – figurální tvarovka, Gdańsk, Polsko (podle Dąbal–Szczepanowska 2016, obr. 77:7).

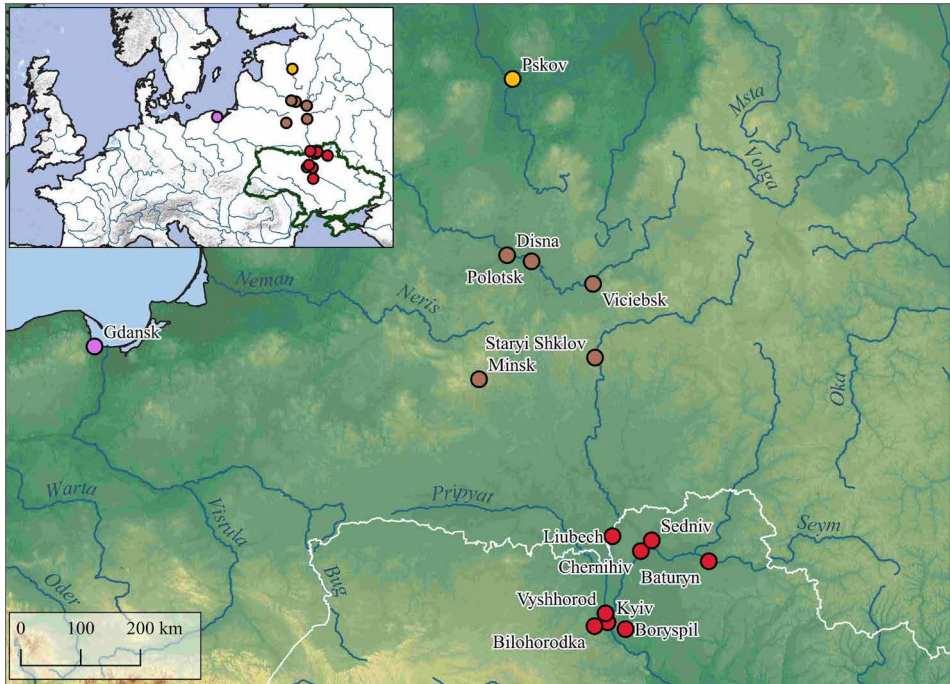


Fig. 15. Map of ceramic framings distribution in Central Eastern Europe.

Obr. 15. Mapa rozšíření keramických tvarovek ústí pecí ve středovýchodní Evropě.

and Belarus in the second half of the 18th century is connected with the increase in the use of bricks in buildings and the gradual disappearance of tile-stoves, which were replaced by brick stoves with hearth benches – the so-called “rusian stoves”.

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### Abbreviations / Zkratky

IA NAS of Ukraine – Institute of Archaeology National Academy of Science of Ukraine / Archeologický ústav Národní akademie věd Ukrajiny

SR IA NAS of Ukraine – Scientific Repository of the Institute of Archaeology National Academy of Science of Ukraine / Vědecký repozitář Archeologického ústavu Národní akademie věd Ukrajiny  
ChOIM – Chernihiv Regional Historical Museum named by V. Tarnovskiy / Černihivské regionální historické muzeum V. Tarnovského  
NIAZ – National Historical and Architectural Reserve / Národní historická a architektonická rezervace

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## Zusammenfassung

### Keramikfassungen von Ofenmündungen: Interpretation der Funde und der Gebrauchsfunktion frühnezeitlicher Öfen in der Mittleren Dnipro-Region (Ukraine)

Keramische Ofenmündungen sind Keramikwerkstücke in Form einer länglichen Platte mit oder ohne Ränder. Die Platten sind bogenförmig mit jeweils unterschiedlichem Krümmungsgrad gewölbt. Mehrere dieser mit Kanten und Rillen kombinierten Einfassungen bildeten massive keramische Ofenöffnungen in Form von Bögen mit unterschiedlichen Konfigurationen. Die Studie basiert auf einer Analyse von 109 Fragmenten bzw. ganzen Funden, die aus Museums-sammlungen und Feldprotokollen bekannt sind. Anhand der Kriterien Form, Zusammensetzung der Tonmasse und Dekor wurden die verschiedenen Typen von Ofenmündungen identifiziert, was es ermöglichte, ihre Position im endgültigen Aufbau, die Art der Befestigung untereinander und am Ofenkörper besser zu verstehen, einige Aspekte des Herstellungsprozesses zu klären und die Form der Ofenöffnung zu rekonstruieren: halbkreisförmig, halbkreisförmig mit langer Basis und stützend mit abgerundetem oberen Ende.

Bis heute stammen alle bekannten Funde aus dem Gebiet von drei Regionen der Ukraine: Kiew, Tschernihiw und Tscherkassy, die der historischen und geografischen Region der mittleren Dnipro-Region entsprechen. Nach Betrachtung der Fundbedingungen und ihres archäologischen Kontextes konnte festgestellt werden, dass die Fassungen mit Öfen des 17. und 18. Jahrhunderts verschiedener Typen verbunden waren, einschließlich Tonöfen, Kachelöfen und Töpferöfen. Der Hauptzweck des Rahmens bestand darin, den Aufbau des Ofens an der schwächsten Stelle – der Mündung – zu verstärken. Die Abmessungen der Ofenmündungen und ihre Korrelation mit der Höhe typischer frühnezeitlicher Keramikware aus dieser Region legen nahe, dass Öfen, insbesondere Kachelöfen mit Keramikfassungen, in ihrem Design zwei Funktionen erfüllen konnten: das Zimmer zu beheizen und zu kochen.

Die nächstgelegenen identifizierten Analogien aus dem Gebiet des nordöstlichen Belarus und ein Vergleich der zeitlichen Grenzen ihrer Existenz mit ukrainischen Mustern legt nahe, dass die Tradition aus dieser Region im frühen siebzehnten Jahrhundert eingeführt wurde.

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