EARLY IRON AGE POTTERY FROM SAHARNA MARE–*DEALUL MĂNĂSTIRII*: INTERDISCIPLINARY APPROACH

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Abstract: *Thanks to a project funded by the Volkswagen Foundation, interdisciplinary research of pottery from several Early Iron Age sites in the Northern Black Sea region, including the Middle Dniester region, was carried out. Among these sites, due to the number of samples and the variety of forms of the vessels subject to analysis, the settlement of Saharna Mare–*Dealul Mănăstirii *(Rezina District, Republic of Moldova), attributed to the Cozia-Saharna culture, is of special interest. Fifty-two pottery samples were collected there, which were subjected to petrographic and chemical analyses. Also, in order to establish the provenance of the raw material used for pottery manufacture, samples were taken from the clay outcrops located at a distance of about 1.0 km southwest of the settlement. The results of these analyses, supplemented by the archaeological remains of a pottery workshop, as well as by the tools used for production and ornamenting of vessels, suggest a local manufacture.*

Rezumat: *Graţie unui proiect finanţat de Fundaţia Volkswagen au fost realizate cercetări interdisciplinare asupra ceramicii provenite din mai multe situri de prima epocă a fierului din nordul Mării Negre, inclusiv din regiunea Nistrului Mijlociu. Printre acestea, după numărul de probe, precum şi după varietatea formelor de vase supuse analizelor, se evidenţiază aşezarea Saharna Mare–*Dealul Mănăstirii*, raionul Rezina, Republica Moldova, atribuită culturii Cozia-Saharna. De aici au fost prelevate 52 probe de ceramică, care au fost supuse analizelor petrografice şi chimice. De asemenea, cu scopul de a stabili proveniența materiei prime utilizate la modelarea ceramicii, au fost prelevate probe din aflorimentele naturale de argile, amplasate la o distanţă de cca. 1,0 km sud-vest de aşezare. Rezultatele analizelor, suplimentate de vestigiile arheologice ale unui atelier pentru prelucrarea ceramicii, precum şi de ustensilele utilizate pentru modelarea şi ornamentarea vaselor, conduc spre concluzia unei producţii locale a recipientelor.*

Keywords: *Early Iron Age, Middle Dniester region, pottery, petrographic analyses, chemical analyses, raw material, local production, pottery workshop.*

Cuvinte cheie: *prima epocă a fierului, regiunea Nistrului Mijlociu, ceramică, analize petrografice, analize chimice, materie primă, producţie locală, atelier de olărie.*

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INTRODUCTION

The main focus of the investigations supported by the Volkswagen Foundation, project no. 90216, was to adopt a complex archaeometric approach to characterize the pottery of communities that lived in the forest steppe zone and steppe zone to the north of the Black Sea between the Dniester and Dnieper rivers, between 1100 and 600 BC.[1]

For a deeper knowledge of the pottery made by the sedentary communities of the forest steppe zone, several batches from five settlements in the Middle Dniester region attributed to the Cozia-Saharna culture of the 10th-9th centuries BC[2] (Glinjeni II–*La Şanţ*, Solonceni–*Hlinaia*, Saharna Mare–*Dealul Mănăstirii*, Mateuţi–*La Başne* and Alcedar III) were analyzed within this project. The resulting database[3] offers new perspectives to the study of Early Iron Age ceramic production in our study area and reflects the trend of interdisciplinary research during the last sixty years.[4] We can also mention the recent archaeoceramological analysis at Late Iron Age sites from Botna River micro-region[5] and Butuceni micro-region.[6]

Thus, among the archaeological sites from which pottery has been subjected to interdisciplinary analyses in the above-mentioned project, the site of Saharna Mare–*Dealul Mănăstirii* stands out due to its large number of samples, as well as by the variety of vessel shapes.

ARCHAEOLOGICAL INVESTIGATIONS

The Saharna Mare–*Dealul Mănăstirii* site is located west of the Saharna village (Rezina District, Republic of Moldova) on a promontory of quasi-trapezoidal shape with an area of about 15 ha and an altitude of about 130 m relative to the level of the Dniester River (Fig. 1). The north, east and south sides of the promontory are formed by two ravines with steep slopes, which unite on the east side in a valley called by locals *Valea Crac*.

The first archaeological investigations were carried out by G. Smirnov in 1946-1947[7]. After a break of more than 50 years, in 2001-2014 and 2017-2019 the archaeological investigations were carried out by the team of the Scientific Research

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1 Kaiser *et alii* 2019.

2 Кашуба 2000.

3 Kaiser *et alii* 2019, no. 1-20, 81-83, 366-422.

4 Shepard 1956; Rye 1981; Rice 1987; Gibson, Woods 1990; Ailincăi 2011; Orton, Hughes 2013; Ailincăi 2016; Roux 2019; Ailincăi 2020; Kulkova *et alii* 2020.

5 Daszkiewicz *et alii* 2017.

6 Daszkiewicz *et alii* 2019.

7 Смирнов 1949, 93-96. Some of the archeological materials unpublished by G. Smirnov were used in: Кашуба 2000, 403-412, рис. LXIX-LXXV; Kašuba *et alii* 2000, 76-84, pl. XLVIII-LIII; Arnăut 2000; Arnăut *et alii* 2004.

Laboratory "Thracology" of the Moldova State University led by Professor Ion Niculiţă.[8] As a result, it was established that several open and fortified settlements chronologically succeeded each other on the Saharna Mare promontory between the second half of the 12th century and the end of the 3rd century BC. Thus, from the second half of the 12th century until the 11th century BC there was an open settlement, which, according to the collected artifacts, was attributed to the Holercani-Hansca culture. In the following centuries (10th-9th BC) on the promontory there was a hillfort, as well as a large open settlement in its immediate vicinity, which belonged to the Cozia-Saharna culture. As for the 8th-7th centuries BC, there were evidences found in favour of the existence here of a settlement characteristic of the Basarabi-Şoldăneşti culture. During the 6th-3rd centuries BC on the Saharna Mare promontory there was an impressive fortification attributed to the Thracian-Getic communities[9].

A special interest for this stydy is the habitation level attributed to the Cozia-Saharna culture, consisting of a fortification and an open settlement. The fortification is located on the southwestern edge of the Saharna Mare promontory, on the high bank of the *Valea Crac* gorge. It consisted of two parts: a "citadel" of quasi-round shape in plan, with dimensions of about 74 × 76 m (approx. 0.50 ha), to which, on the north side, another "enclosure" of semi-oval shape was added, with the dimensions of 55 × 78 m (Fig. 1).

As a result of the archaeological investigations, it was established that the defensive system of the "citadel" consisted of a "wall" with an adjacent ditch with a total length of about 300 m, which surrounded the enclosure. The presence and arrangement of postholes indicate that the rampart, with a width of 1.00-1.20 m, was made up of two timber frames with earth and stones infill. The ditch was dug in front of the rampart on all its length, having a width at the top of about 4.20-6.00 m and a depth of 1.20-1.60 m from the ancient cultural layer.

The adjacent "enclosure" was delimited by a ditch, which in plan has a semi-oval shape. The ditch, the ends of which were joined with the "citadel" ditch, had a length of about 185 m, a width of about 3 m and a depth of about 1.00-1.40 m.[10]

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[8] The results of these investigations were published in several scientific articles (Niculiţă *et alii* 2007, 27-62; Niculiţă, Nicic 2007, 225-248; Niculiţă *et alii* 2009, 193-225; Niculiţă *et alii* 2011, 226-236; Niculiţă, Nicic 2012, 169-184; Niculiţă *et alii* 2013, 351-372; Niculiţă *et alii* 2012, 111-167; Niculiţă *et alii* 2013, 219-292; Zanoci, Băţ 2019; Niculiţă *et alii* 2019; Băţ *et alii* 2019 etc.), as well as in two monographic studies (Niculiţă *et alii* 2008, 51-150, fig. 40- 159; Niculiţă *et alii* 2016, 19-248).

[9] Niculiţă *et alii* 2016, 242-248.

[10] Niculiţă *et alii* 2016, 45-60, fig. 26-38.

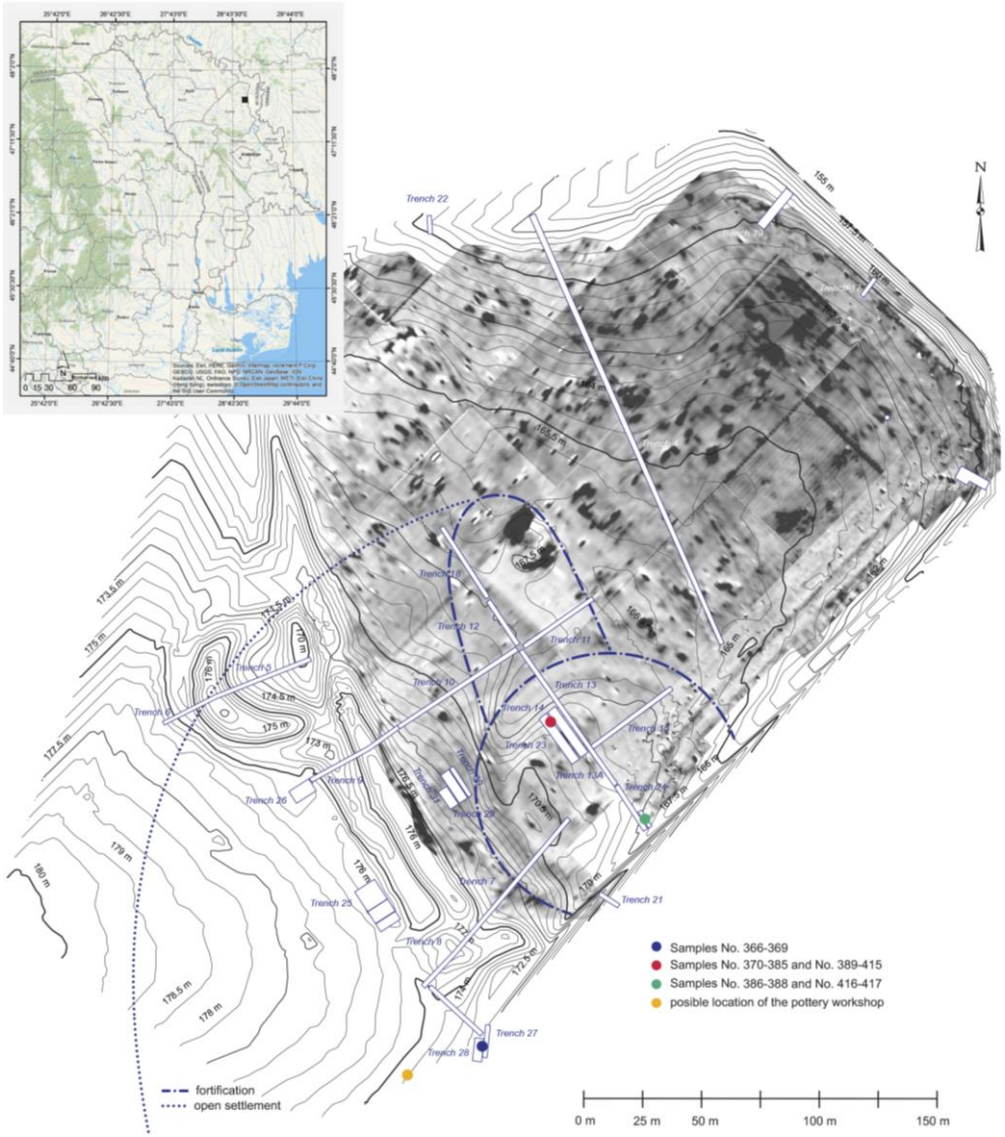

Fig. 1. Saharna Mare–*Dealul Mănăstirii* site. Samples location on the topographical and magnetometric maps.

As a result of the archaeological research[11] carried out in the "citadel" and in the adjacent "enclosure" an above-ground structure, a hearth, 62 household pits and a "cultic

[11] Total investigated area – 508 m².

complex" were discovered. From the archaeological structures, as well as from the cultural layer, various tools and utensils, weapons, adornments, etc. were collected.[12] The open settlement is located in the southwestern part of the promontory and occupies the western part of the fortification, extending over an area of about 4 ha (Fig. 1).

As a result of archaeological investigations carried out on an area of 1544 m^2, the following archaeological structures were found: a pit-house, the remains of a pottery workshop (?), 57 household pits and three graves. These rich and varied archaeological finds come from both the archaeological structures and the archaeological layer.[13]

However, the pottery is the most abundant category of artifacts attested in the fortification and the open settlement of Saharna Mare–*Dealul Mănăstirii*. It was found, for the most part, in a fragmentary state. However, based on these fragments, it was possible to reconstruct complete or partial profiles of the vessels used by the Early Iron Age communities at Saharna. Thus, at the moment, it is possible to name the following types of vessels: amphorae, pots, bowls, cups, and pyxides (Fig. 2-4).

Regardless of the type of vessels, three types of decorating techniques are used: incision, impression and application of separate elements. They can be found in combination on the same container[14] (Fig. 2-3; 5/2, 6-8).

CERAMIC MATERIALS

In order to achieve a more complete picture of the Early Iron Age pottery from Saharna Mare–*Dealul Mănăstirii*, several types of analytical techniques of analyses were performed using 52 samples. The samples were collected while taking into consideration the place of discovery, vessel types and vessel parts, etc. Thus, the samples come from both the open settlement (samples 366-369[15]) and the fortification (samples 370-417). According to the place of discovery, they are from the cultural layer – four fragments (samples 366-369), the ruins of the rampart – 16 fragments (samples 370-385), the filling of the defensive ditch – three fragments (samples 386-388), and pits – 29 fragments (samples 389-417). The samples cover practically all types of vessels: amphorae (6 fragments), pots (36 fragments), bowls (6 fragments), cups (3 fragments)

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12 Niculiță *et alii* 2016, 61-103, fig. 39-66.

13 Смирнов 1949, 94-95; Niculiță *et alii* 2008, 51-63, 71-82, fig. 40-53, 69-74; Niculiță *et alii* 2016, 115-136, fig. 76-87; Niculiţă *et alii* 2019, 257-272, fig. 6-18; Băţ *et alii* 2019, 22-28, fig. 8-11.

14 Niculiță *et alii* 2008, 63-67, 83-87, fig. 54-67, 75-84; Niculiță *et alii* 2016, 104-114, 136-140, fig. 67-75, 88-91; Niculiță *et alii* 2019, 257-272, fig. 7-9.

15 Here and below the number of samples is given according to the general numbering used in the *Dataset of the Volkswagen Fond Project no. 90 216 "Early mounted nomads and their vessels Ceramic analysis project aimed at supporting the reconstruction of socio-economic conditions in mobile populations north of the Black Sea between 1100 and 600 BC"*, DOI: 10.5281/zenodo.3521608.

and pyxides (1 fragment). The parts of a vessel from which the samples were taken are also diverse, representing rim sherds (14), body sherds (33), handle sherds (2), and base sherds (3). Regardless of the type, most of the fragments are decorated with applied, incised, impressed, or combined decorations (see Catalog).

1

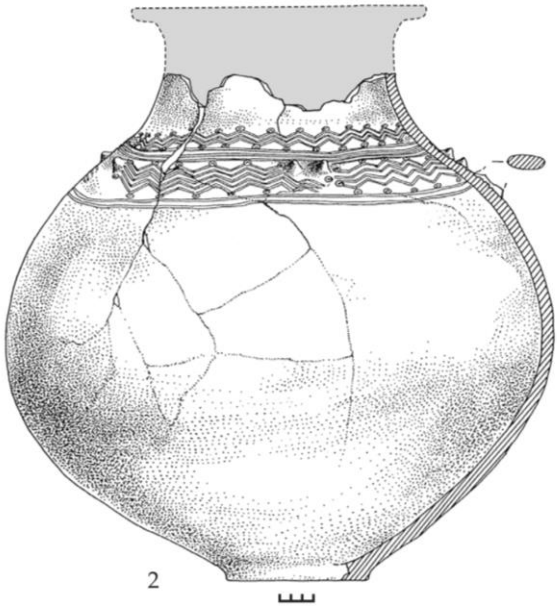

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Fig. 2. Saharna Mare–*Dealul Mănăstirii*. Amphorae (drawing after Niculiță *et alii* 2008; photo by authors, courtesy of the Museum of Antiquities "Tudor Arnăut", Moldova State University).

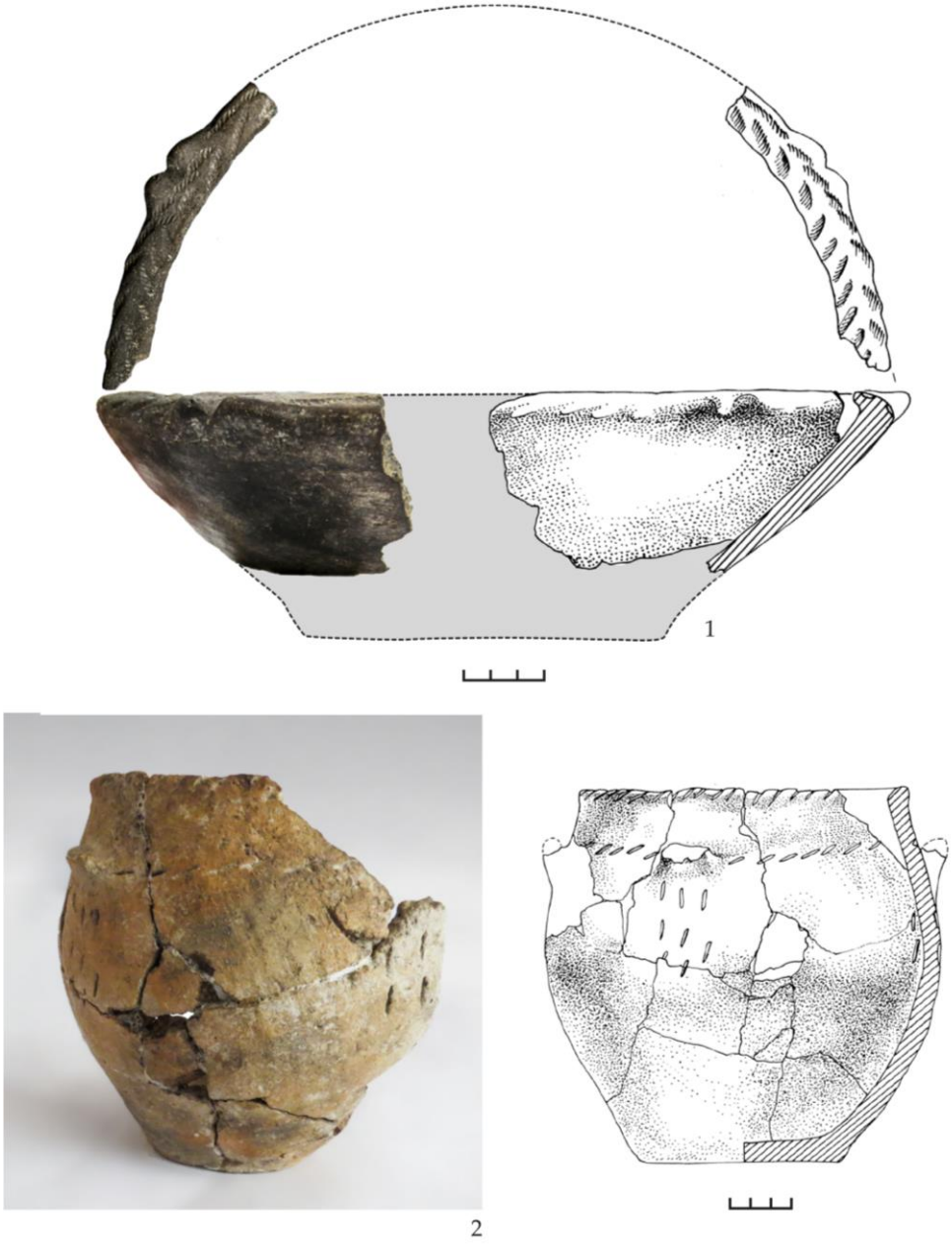

Fig. 3. Saharna Mare–*Dealul Mănăstirii*. Bowl and pot (drawing after Niculiță *et alii* 2008; photo by authors, courtesy of the Museum of Antiquities "Tudor Arnăut", Moldova State University).

Fig. 4. Saharna Mare–*Dealul Mănăstirii*. Cups and pyxides (drawing Stela Burciu; photos by authors, courtesy of the Museum of Antiquities "Tudor Arnăut" (Moldova State University) and the National Museum of History of Moldova.

Fig. 5. Saharna Mare–*Dealul Mănăstirii*. Types of pottery decoration (photo by authors, courtesy of the National Museum of History of Moldova).

Also, in order to establish the provenance of the raw material used in the pottery making, samples were taken from the clay outcrops located at a distance of about 1.0 km southwest of the settlement (Fig. 6).

1

2

Fig. 6. Clay outcrops and their location (1. Google Earth image; 2. photo M. Vetrova).

METHODS AND RESULTS OF POTTERY INVESTIGATIONS

A thin section analysis of the selected sherds was carried out under polarization microscope Leica 4500-P at 65.7 times magnification. The petrographic analysis allows us to determine the matrix composition of ceramics, their temperature and conditions of firing based on ceramic mineralogical composition[16], as well as the recipe of ceramic paste. The firing temperature of the samples was checked by other methods such as the Differential Thermal Analysis (DTA).[17]

The ceramic sherds of 2 × 2 × 15 mm of size were used for mCT-tomography. The scanning volume resolution is 6.9 μm/voxel. Open and closed porosity was calculated from all volume of ceramic fragment. The pore sphericity was assessed in virtual volume by CTAn software. After scanning of a sample in the virtual program the Volume Of Interest (VOI) with sizes of 7 × 7 × 7 mm was selected in the central part of sample. Geometrical parameters (linear dimention, volume, sphericity) of all pores from volume were analyzed by operation of the Individual object analysis (CTAn).

The bulk chemical composition of ceramics was determined by XRF-WD analysis using the SpecroscanMax equipment. Data on the chemical composition of all samples were processed by the main components of factor analysis and correlation analysis (Statistica 10.0) (Fig. 7). The factor F1 is characterized by formula (Al_2O_3, Fe_2O_3, *Zn*/ *Zr*, Na_2O). Such components as Al_2O_3, Fe_2O_3 are the main chemical components of iron oolite inclusions and clay minerals. The chemical components (*Zr*, Na_2O) are included in minerals like feldspar, zircon, etc. The factor F2 is characterized by formula (*CaO*, *Sr*/ SiO_2). *CaO*, *Sr* are the main components of carbonates, while SiO_2 is a part of quartz (Table 1). The variations in the chemical composition of samples depend on the clay, clastic material, and temper composition. The comparison with the chemical composition of local raw sources confirmed the use of local clay, sand, and carbonate rocks for pottery manufacture.[18]

Analysis of pottery by means of X-ray micro-Computer Tomography was applied for assessment of technological features of inner structure. The samples of ceramics were scanned using the SkyScan 1172 device of the "RDMI" Research Centrum of Saint-Petersburg University with a beam energy of 100 kV, a flux of 80 μA and aluminum filter with a resolution of 4-6 μm, performing a 180-degree rotation with a step size of 0.4 degrees. CTvox and CTan have been used for the visualization and calculation of cavities. Analysis and 3D visualization of porosity with pore sizes

16 Feliu *et alii* 2004; Rye 1981.

17 Vetrova *et alii* 2018, 81-82.

18 Vetrova *et alii* 2018, 81-82.

more than 5 μm allows to determine their origin. These pores can be a result of thermal shock, fractures from mineral inclusions, burnout of organic remains etc. The ratio between open and closed porosity relates to fractures in ceramics and is the technological parameter which characterizes quality of pottery manufacture. It can be calculated as the coefficient of pore sphericity.[19]

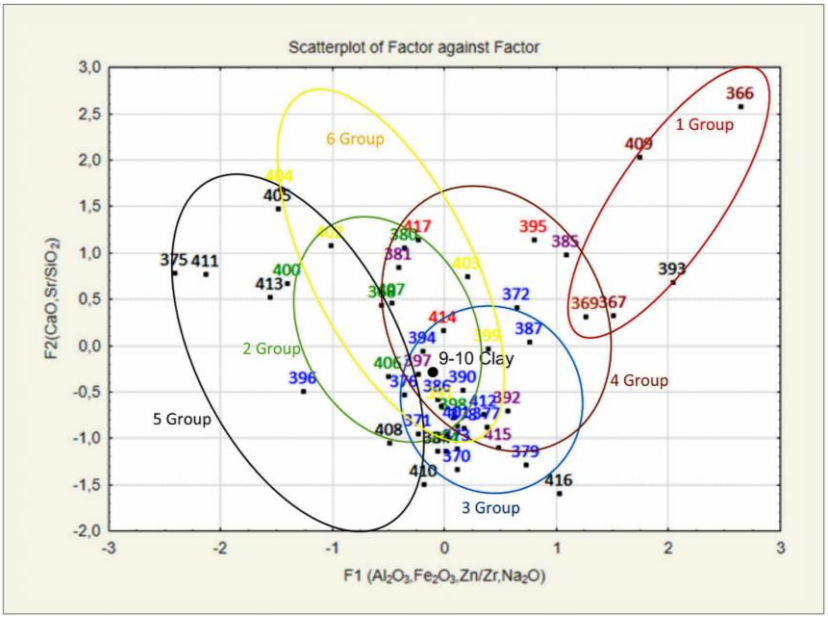

Fig. 7. Groups of ceramics and clay from raw sources (clay 9-10) on the base of the main components of factor analysis of chemical compositions.

Seven groups of ceramics had been divided based on the results obtained using archaeometric analysis (chemical composition, firing temperature, and type of fractures).

Group 1 (Fig. 8)

Pottery was made of smectite clay with lot of clastic material, iron oolites and remains of aquatic plant. The crushed rocks of carbonates (35%) were added as a temper. The chemical composition of samples is characterized by high concentrations *of* Al_2O_3, Fe_2O_3, *CaO, Sr*. The high content of Al_2O_3, Fe_2O_3 is due to the inclusion of iron oolites, while the high concentration of *CaO, Sr* is the result of adding crushed carbonate rocks.

[19] Kulkova *et alii* 2018; Kulkov, Kulkova 2018.

The ceramics have a high degree of fracture. The fracture parameter is the coefficient of sphericity according to m-CT analysis, which in this case is between 0.7 and 0.2 (with an average of 0.5).

The samples are 366, 367, 388, 409.

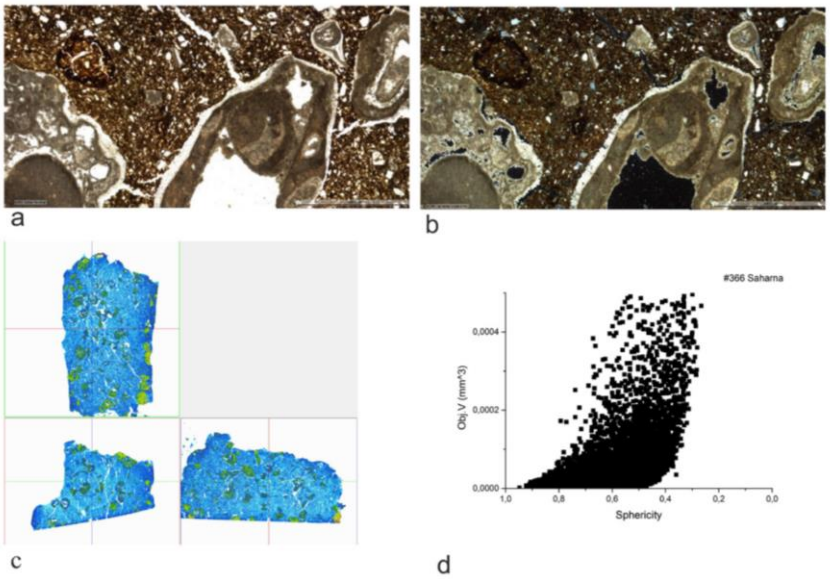

Fig. 8. Group 1. Thin section of sample #366: a. plan polarized light, field of view 1 mm; b. cross-polarized light, field of view 1 mm; c. m-CT section of sample; d. diagram of sphericity on base of m-CT.

Group 2 (Fig. 9)

The pottery was made of smectite-illite clay with a lot of clastic material, iron oolites and remains of aquatic plant. Grog and sand were added as a temper. The firing was performed at a temperature of T=750-800°C in oxidizing conditions.

These samples are characterized by a high concentration of *Zr, Na_2O, and SiO_2*. These are the main components of quartz-feldspar sand which was determined in the matrix on the base of thin section analysis and in the temper part from grog and sand.

Based on the quality of ceramics, these were divided into two subgroups.

2.1. Ceramics with low inner fracture, with a coefficient of sphericity between 0.3 and 0.1 (with an average of 0.2); see samples 368 and 374 (similar to sample 81 from Solonceni).

2.2. Ceramics of mid-quality with a coefficient of sphericity ranging from 0.48 to 0.1 (with an average of 0.38); see samples 398, 380, 400, 406, 407.

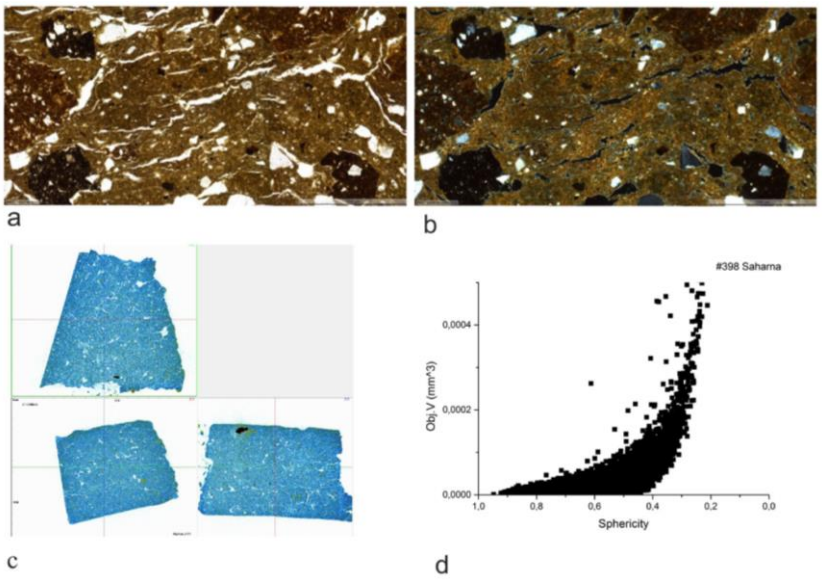

Fig. 9. Group 2. Thin section of sample #407: a. plan polarized light, field of view 1 mm; b. cross-polarized light, field of view 1 mm. # 398; c. m-CT section of sample; d. diagram of sphericity on base of m-CT.

Group 3 (Fig. 10)

The pottery was made of smectite-illite clay with a lot of clastic material. Grog and sand were added as a temper. The firing was performed at a temperature of T=650-700°C in reduction conditions.

The samples are characterized by a high concentration of Al_2O_3, Fe_2O_3, SiO_2. The mineralogical composition of clastic material is comprised of quartz and gneiss, according to the thin section analysis. The sand for tempering consists of quartz, gneiss and sandstone. The bulk chemical composition reflects this mineralogy.

3.1. The samples with inner fracture with a parameter of cracks ranging from 0.5 to 0.15 (with an average of 0.35) are 378, 390, 387, 412 and 394. They present similarities with some several samples from the Glinjeni site.

3.2. *The samples with inner fracture with a parameter of cracks ranging from 0.6 to 0.15 (with an average of 0.45) are 370, 371, 372, 377, 382, 383, 386 and 396.*

3.3. *The samples with inner fracture with a parameter of cracks ranging 0.62 to 0.15 (with an average of 0.47) are 373 and 401.*

3.4. *The samples with inner fracture with a parameter of cracks ranging from 0.7 to 0.2 (with an average of 0.5) are 376, 379 and 414.*

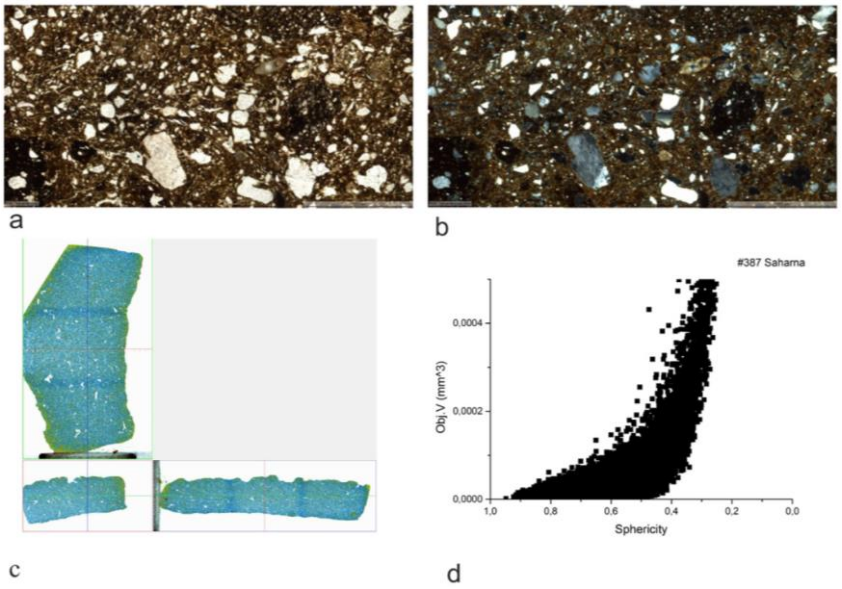

Fig. 10. Group 3. Thin section of sample #387: a. plan polarized light, field of view 1 mm; b. cross-polarized light, field of view 1 mm; c. m-CT section of sample; d. diagram of sphericity on base of m-CT.

Group 4 (Fig. 11)

The pottery was made of smectite-illite clay with a lot of clastic material. Grog, sand and crushed oolite carbonates were added as a temper.

The samples are characterized by a high concentration of Al_2O_3, Fe_2O_3, SiO_2, *CaO*, *Sr*. According to the thin section analysis, the mineralogical composition of clastic material is quartz and gneiss. The sand for tempering consists of quartz, gneiss and sandstone (Al_2O_3, Fe_2O_3, SiO_2) and crushed carbonate rocks (*CaO*). The bulk chemical composition reflects this mineralogy.

This pottery has a high degree of fracture. The coefficient of sphericity is between 0.6 and 0.1 (with an average of 0.5).

4.1. Sample 369.

4.2. Samples 381, 385, 392, 397 and 415 are similar to some pottery from the Glinjeni settlement.

The quality of pottery became worse with the increase of carbonate inclusions in the ceramic matrix.

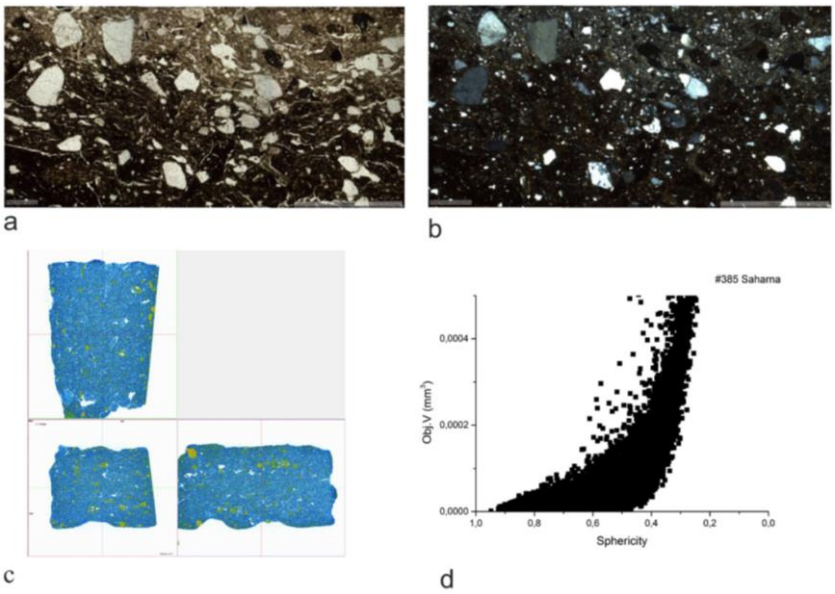

Fig. 11. Group 4. Thin section of sample #392: a. plan polarized light, field of view 1 mm; b. cross-polarized light, field of view 1 mm. #385; c. m-CT section of sample; d. diagram of sphericity on base of m-CT.

Group 5 (Fig. 12)

The pottery was made of smectite-illite clay. Grog was added as a temper.

The samples are characterized by a high concentration of *Zr, Na_2O*. According to the thin section analysis the composition of grog is the same as that of clay matrix. In cases where crushed carbonate rock was present in the grog, the bulk composition of ceramics is enriched by *CaO, Sr* (samples # 405, 413). The samples 375 and 411 are characterized by high concentrations of *CaO, Sr*, but the carbonates are absent in these samples. Probably the carbonates in this case were disintegrated during firing. This pottery is of medium quality. The coefficient of sphericity is between 0.55 and 0.2 (with an average of 0.33).

5.1. The samples are 375, 408, 410, 411, 416.

5.2. The sample is 384.

5.3. The samples are 405, 413.

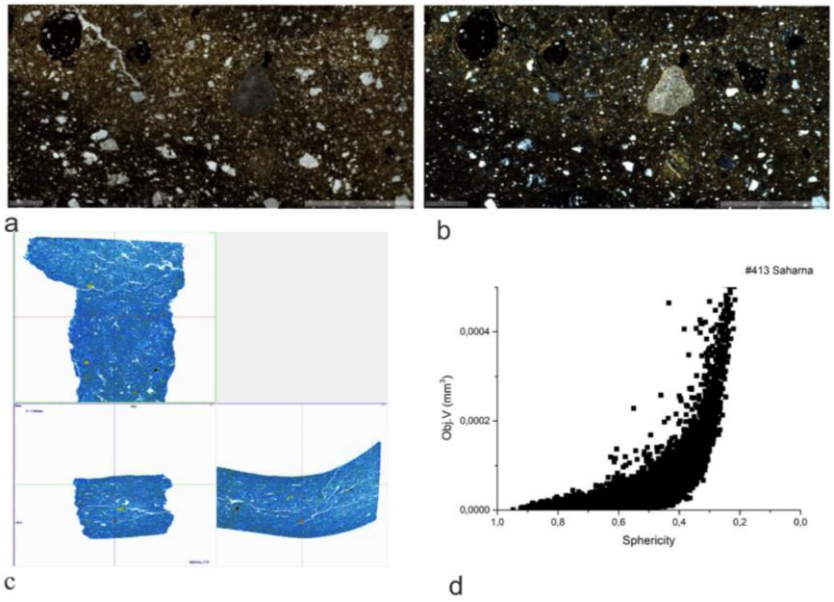

Fig. 12. Group 5. Thin section of sample #410: a. plan polarized light, field of view 1 mm; b. cross-polarized light, field of view 1 mm. #413; c. m-CT section of sample; d. diagram of sphericity on base of m-CT.

Group 6 (Fig. 13)

The pottery was made of smectite clay. Grog and crushed carbonate rocks were added as a temper. The firing was performed at a temperature of T=700-850°C in oxidizing conditions. This is high temperature firing.

The samples are characterized by a high concentration of *Zr*, *Na_2O*, *CaO*, *Sr*, *Al_2O_3*, *Fe_2O_3*. According to the thin section analysis the composition of grog differs from that of clay matrix. The differentiation of geochemical and mineralogical composition of grog is determined by a variation in chemical elements, such as *Zr*, *Na_2O*, *Al_2O_3*, *Fe_2O_3*. The presence of unburned crushed carbonate rocks increases the concentration of *CaO*, *Sr*.

6.1. The sample is 389.

The coefficient of sphericity is between 0.75 and 0.15 (with an average of 0.6). The pottery is of poor quality.

6.2. The samples are 391, 399, 402, 403, 404.

The coefficient of sphericity is between 0.5 and 0.2 (with an average of 0.3). The pottery is of good quality.

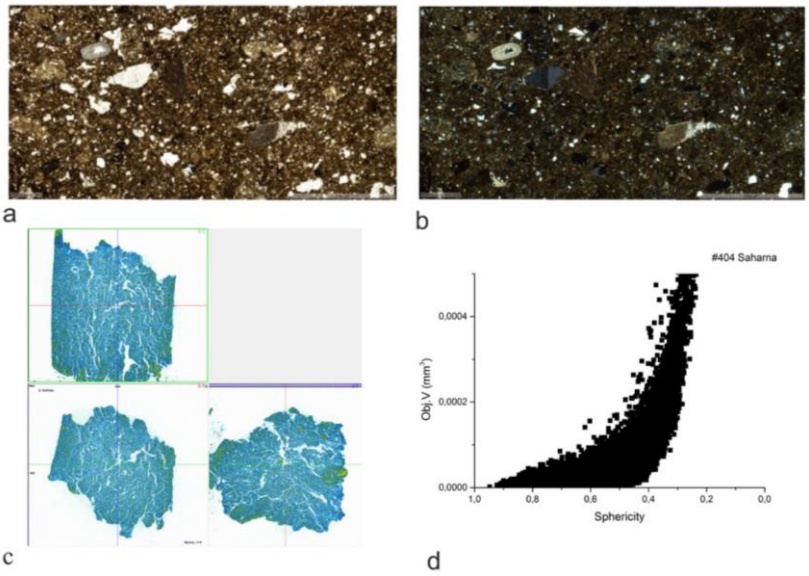

Fig. 13. Group 6. Thin section of sample # 399: a. plan polarized light, field of view 1 mm; b. cross-polarized light, field of view 1 mm. #404; c. m-CT section of sample; d) diagram of sphericity on base of m-CT.

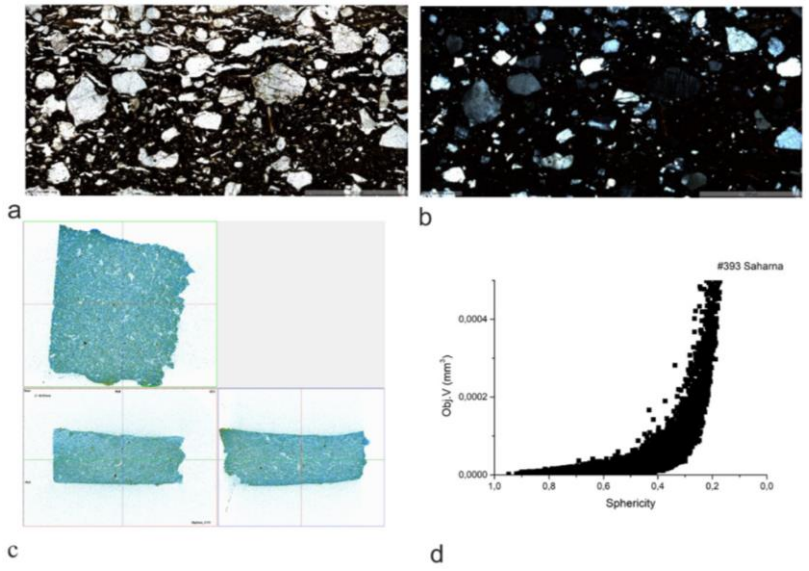

Fig. 14. Group 7. Thin section of ceramics #393: a. plan polarized light, field of view 1 mm; b. cross-polarized light, field of view 1 mm; c. m-CT section of ceramics; d. diagram of sphericity on base of m-CT.

Group 7 (Fig. 14)

Pottery was made of smectite clay. Sand and crushed igneous rocks were added as a temper.

The sample is characterized by a higher concentration of K_2O, P_2O_5 in comparison with other samples. Probably, for the sample 393, rocks and clay of other geological province were used.

CORRELATION OF ANALYTIC CERAMIC INVESTIGATIONS WITH THE RESULTS OF ARCHAEOLOGICAL RESEARCH

As a result of the comparison of pottery samples from Saharna Mare–*Dealul Mănăstirii* and clay samples[20], the outcrops of which are located about 1 km south-west of the settlement, according to geochemical analysis, it can be established that local clay was used to make the ware.

Inclusions added to the raw clay also had a local origin. Thus, sand and limestone, which have been used in the preparation of these ingredients, are found in abundance in the Saharna micro-region. Additionally, the wood from the nearby forests was used for firing pottery.[21]

The local production of pottery is also confirmed by archaeological discoveries. Thus, the investigations conducted by G. Smirnov in 1947 revealed in the southwestern part of the open settlement, at depth of 0.4-0.7 m, a structure interpreted by the author of the excavation as the remains of a pottery workshop (Fig. 15).[22] It consisted of five platforms made of stones or rammed ground, the edge of which was covered with limestone and the surface was covered with a layer of burnt clay with a thickness of about 1.0-2.0 cm. They had a quasi-circular shape with a diameter of 1.0-2.0 m and a height of 0.20-0.25 m. Near the platforms, there were found the ruins of a heavily destroyed kiln and a "table" with a diameter of 0.35 m also made of stones and coated with clay.[23] According to G. Smirnov, it served as a "table" on which the vessels were shaped, and on nearby platforms they were dried before firing.[24] The hypothesis of the existence of a workshop is also supported by the presence in this area of 15 stamps for the ornamentation of pottery made of fired clay (11 specimens)

[20] Ветрова *et alii* 2018, 81-82.

[21] Revenco *et alii* 2016, 10, 17.

[22] Смирнов 1949, 95.

[23] Смирнов 1949, 95; Arnăut *et alii* 2004, 264, fig. 2/1-2.

[24] Смирнов 1949, 95.

and bone (four specimens), as well as other tools used in pottery-making, such as spatulas and polishers (Fig. 16/1-2, 6-8; 17; 18).[25]

Arguments in favour of the production of pottery in the Saharna Mare–*Dealul Mănăstirii* site also come from recent archaeological research; these are three stamps for pottery decoration (Fig. 16/3, 4, 8)[26], spatulas, bone and stone polishers.[27]

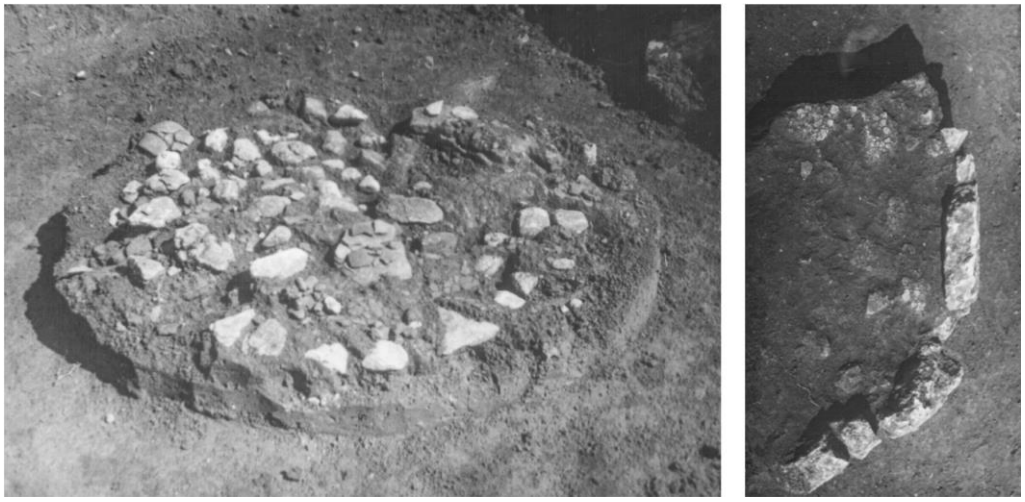

Fig. 15. Saharna Mare–*Dealul Mănăstirii*. Pottery workshop (photo by G. Smirnov, 1947).

Also, as a result of the analytical research of the pottery from Saharna Mare–*Dealul Mănăstirii*, it was established that some containers according to the technology, specifically the chemical composition of clay, the paste recipe, the firing temperature, etc., have similarities with pottery from other sites of the same time span in the Middle Dniester region: Solonceni–*Hlinaia*, Glinjeni–*La Şanţ* etc.[28]

[25] Смирнов 1949, 95; Мелюкова 1989, таб. 6/19-34; Кашуба 2000, рис. LXXV/7-9; Arnăut *et alii* 2004, 264-265, fig. 3-4; Ailincăi *et alii* 2005, 119, fig. 5/10-13.

[26] Niculiţă, Nicic 2007, 238, fig. 10/13; Niculiţă, Nicic 2012, 169, fig. 3/1; Niculiţă *et alii* 2016, 101, fig. 30/4.

[27] Niculiţă *et alii* 2008, 80, fig. 148/5, 7, 10; Niculiţă *et alii* 2016, 99, fig. 65/6, 8-10; Niculiţă *et alii* 2019, 271, fig. 18/4, 5.

[28] Kaiser *et alii* 2019, nr. 1-18, 81; Гольцева, Кашуба 1995, 20-25, таб. LIII-LXIII; Кашуба 2000, 421-427, рис. LXXXI-LXXXIII; Мелюкова 1954, 59-64.

Fig. 16. Saharna Mare–*Dealul Mănăstirii*. Tools for pottery production and decoration: 1-2. bone; 3-8. Burnt clay (3. after Niculiță, Nicic 2012; 4. after Niculiță, Nicic 2007; 5. after Niculiță *et alii* 2016; 6. drawing Stela Burciu; 7. after Кашуба 2000). Photo by authors, courtesy of the National Museum of History of Moldova.

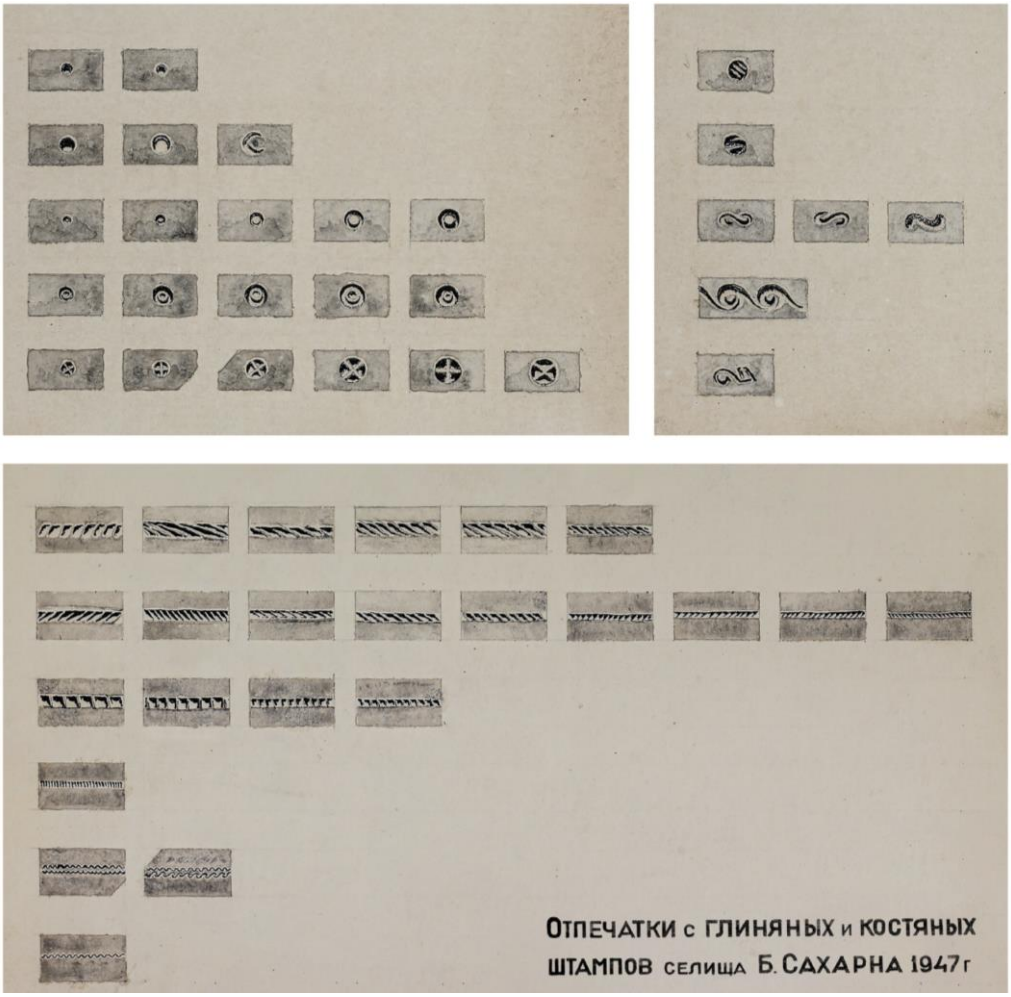

Fig. 17. Saharna Mare–*Dealul Mănăstirii*. Samples of stamped decoration (National Archive of the Republic of Moldova, G.D. Smirnov Fund, P-3330, inv. 1, file 101).

In some cases, similarities can be traced in the shapes and decoration of the vessels. For example, the fragment of a vessel from Saharna Mare–*Dealul Mănăstirii* (sample 374) is similar in terms of chemical composition, shape and ornament with the pot from Solonceni–*Hlinaia* (sample 81)[29] (Fig. 19). Such similarities could suggest that these vessels were made in one and the same workshop and, respectively, there

[29] Кашуба 2000, рис. LXXXI/6; Kaiser *et alii* 2019, nr. 81.

existed trade and exchange networks between the communities of the Cozia-Saharna culture from the Middle Dniester region.[30]

At the same time, a bowl (sample 393), which according to the petrographic and geochemical analysis clearly differs from the containers from the Middle Dniester region, could indicate some imports from other regions, which are not yet identified.

CONCLUSIONS

Based on the results of the archaeological and interdisciplinary investigations, we can argument the existence of local production of pottery at Saharna Mare–*Dealul Mănăstirii* in the 10th-9th centuries BC. This is evidenced by the use of raw materials extracted in the immediate vicinity of the settlement, by the presence of the remains of pottery workshops, as well as of the tools for modelling and ornamenting pottery, which were found in the area of the site.

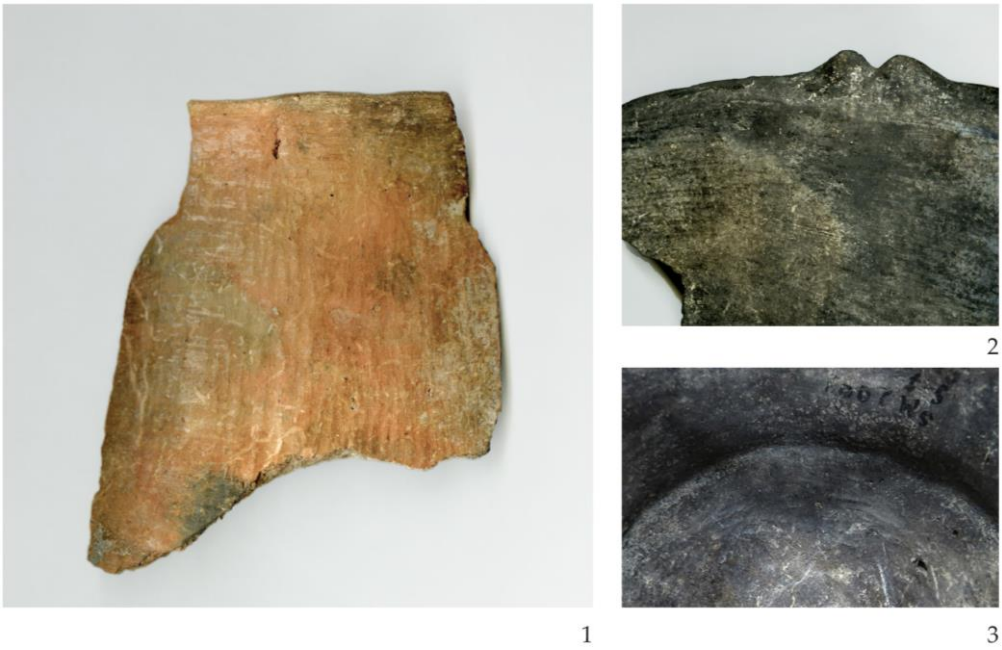

Fig. 18. Saharna Mare–*Dealul Mănăstirii*. Burnished ware: 1. Pot (outside); 2. Bowl (outside); 3. Cup (inside). Photo by authors, courtesy of the National Museum of History of Moldova.

[30] The distance as the crow flies between the settlement of Saharna Mare–*Dealul Mănăstirii* and those from Solonceni–*Hlinaia* and Glinjeni–*La Şanţ* is about 15-16 km.

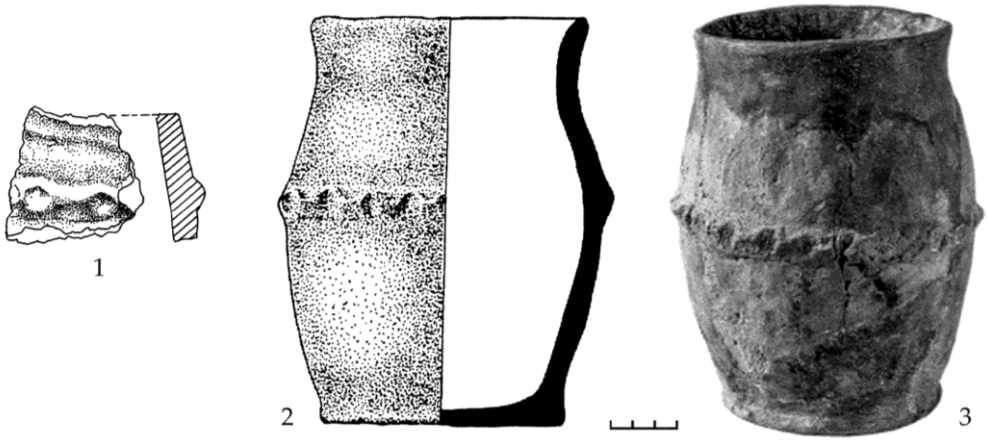

Fig. 19. Hand-made pottery with similar chemical composition: 1. Saharna Mare–*Dealul Mănăstirii* (sample No. 374); 2-3. Solonceni–*Hlinaia* (after Кашуба 2000, рис. LXXXI/6; Kaiser *et alii* 2019, sample No. 81).

The existence, according to archaeometric investigations, of six groups of local pottery, each with a distinct paste recipe and composition, suggests the idea of using different technologies in the process of pottery fabric, which were used depending on the type and the function of pottery vessels. Such diversity in technology can also be explained by developed pottery manufacture on this site. Similarities in the technological features of pottery from Saharna Mare–*Dealul Mănăstirii* with that from other settlements of the same time span in the Middle Dniester region can probably indicate the exchange of ceramic products or their manufacturing technologies at regional level. The bowl whose composition is completely different from that of the local ceramics represents probably an import pottery. However, this aspect of the ceramic analysis remains one of the priorities for future research.

ACKNOWLEDGMENTS

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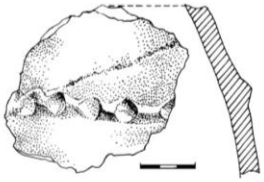
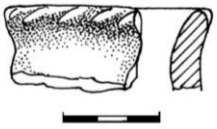
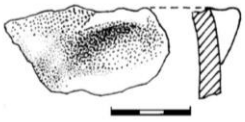
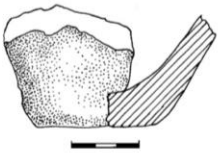
Table 1. Results of XRF-WD analysis.

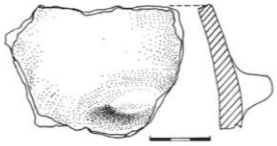
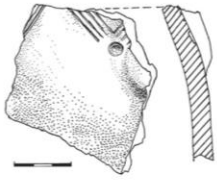
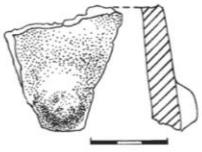
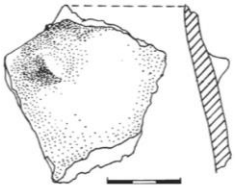
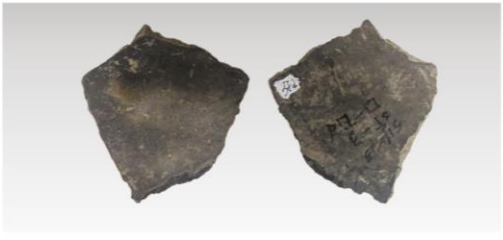
Sample	ppm V	Cr	Ni	Cu	Zn	Rb	Sr	Y	Zr	Nb	Ba	La	Pb	LOI
366	84	76	48	61	52	78	469	27	239	15	765	19	18	16.33
367	116	98	51	71	65	102	210	30	270	15	730	19	11	7.66
368	172	115	66	92	94	129	203	31	227	14	880	46	21	3.14
369	123	105	50	72	66	104	289	31	277	16	802	17	18	7.11
370	126	120	56	68	96	108	165	34	279	16	870	66	27	6.30
371	126	113	68	76	98	109	180	33	280	15	856	36	28	6.22
372	121	98	55	66	76	107	225	31	243	15	855	65	22	8.85
373	127	113	51	63	91	123	174	33	286	14	865	45	23	2.37
374	124	136	62	71	93	109	189	34	286	16	867	67	19	4.90
375	169	143	80	89	121	165	206	31	140	13	667	52	27	2.17
376	135	119	68	70	95	115	220	31	258	13	855	66	26	5.76
377	139	116	56	70	89	117	190	34	305	15	840	33	24	5.36
378	134	123	55	46	88	112	200	33	255	15	800	50	27	5.24
379	113	114	50	46	83	109	161	33	313	15	786	17	25	3.76
380	144	115	63	108	90	137	172	31	172	16	803	58	21	3.55
381	185	135	57	88	92	126	178	27	178	14	826	54	18	8.34
384	146	115	58	85	79	127	190	33	291	15	778	48	21	1.16
385	141	102	59	63	68	91	206	28	206	15	865	21	20	11.11
386	146	123	57	69	83	111	165	30	243	15	930	67	24	5.71
387	130	101	52	57	83	103	192	27	246	14	744	25	19	6.48
390	98	123	51	48	99	110	171	29	205	15	986	22	22	3.29
391	117	105	73	70	96	112	252	33	252	17	950	52	30	7.77
392	128	102	46	52	97	119	194	29	210	15	865	21	20	3.71
393	120	55	25	45	60	57	210	24	184	10	572	17	20	0.72
394	149	117	67	57	102	117	206	30	225	16	550	58	25	7.57
395	112	97	62	74	82	110	269	31	223	15	837	17	23	12.40
396	158	133	75	99	102	128	186	33	185	13	765	52	32	6.54
397	156	111	66	80	96	110	247	32	236	14	810	42	22	7.29
398	118	119	59	68	93	112	192	30	261	14	770	68	22	5.90
399	123	124	57	70	84	106	275	31	234	13	690	48	16	7.96
400	132	138	72	97	118	138	292	30	163	14	944	65	30	7.09
401	118	113	51	49	91	110	201	31	204	14	806	44	30	5.39
402	160	132	61	74	103	142	227	29	162	12	659	17	29	5.37
403	139	123	61	59	92	113	260	30	217	14	598	17	19	8.42
404	162	128	65	81	110	162	253	30	134	13	868	53	26	3.36
405	168	146	75	62	112	137	249	29	140	14	667	66	24	6.57
406	130	131	64	61	98	130	170	33	224	15	659	37	24	2.09
407	121	115	65	59	105	112	196	30	153	13	634	15	18	4.89
408	134	121	91	73	114	113	165	37	246	15	916	23	22	4.17
409	120	84	36	51	76	88	361	25	240	15	890	69	15	13.97
410	137	130	61	62	99	112	160	36	297	17	928	47	22	3.69
411	177	155	73	73	117	141	242	31	147	13	720	15	28	6.50
412	117	107	49	63	90	132	180	29	210	15	936	57	23	1.91
413	161	151	72	68	111	138	203	28	141	14	810	24	23	8.48
414	117	106	57	57	97	114	208	30	176	14	763	50	27	6.87
415	104	111	58	68	96	113	165	33	269	17	872	32	24	6.41
416	97	114	55	55	83	111	173	33	299	19	785	23	21	4.86
417	143	120	68	60	93	128	293	29	180	12	765	23	17	8.18
9-Clay	122	123	66	56	101	146	224	29	150	12	449	44	21	12.31
10-Clay	115	119	65	65	112	153	240	22	181	14	420	51	18	12.09

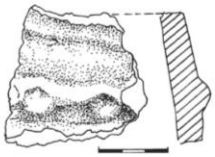
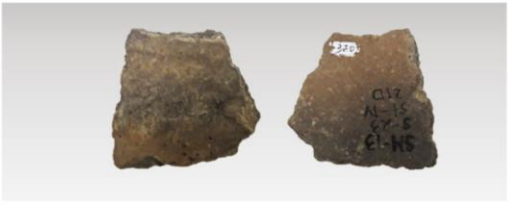
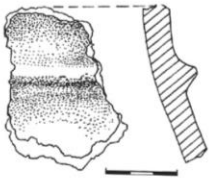
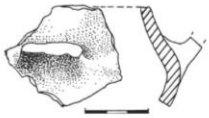
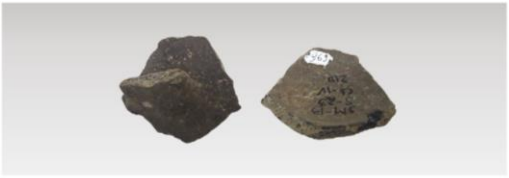
							(%)					
Site	Sample	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	SUM
SMDM	**366**	61.34	1.162	11.56	3.73	0.10	2.38	15.61	1.2900	2.37	0.25	99.80
SMDM	**367**	69.42	1.251	13.39	4.39	0.11	1.80	5.97	0.5500	2.54	0.13	99.55
SMDM	**368**	67.94	1.314	15.21	5.26	0.08	2.56	3.40	0.5300	3.00	0.13	99.43
SMDM	**369**	68.28	1.232	13.37	4.40	0.08	1.90	6.82	0.5200	2.65	0.16	99.40
SMDM	**370**	69.94	0.838	16.65	4.63	0.08	2.11	1.14	0.7500	2.64	0.54	99.32
SMDM	**371**	69.29	0.993	16.53	4.74	0.09	2.31	1.24	0.2400	2.53	0.36	98.33
SMDM	**372**	64.99	0.873	14.59	3.77	0.08	1.93	6.10	0.5300	5.18	0.50	98.54
SMDM	**373**	70.10	0.842	16.47	4.61	0.09	2.21	1.14	0.2200	2.70	0.29	98.69
SMDM	**374**	70.03	0.849	16.22	4.68	0.08	2.17	1.15	0.4900	2.53	0.21	98.41
SMDM	**375**	65.04	0.801	18.56	5.28	0.06	3.30	2.07	0.1500	3.52	0.25	99.03
SMDM	**376**	67.94	0.900	16.55	4.83	0.09	2.14	2.00	0.3500	2.88	0.53	98.21
SMDM	**377**	69.18	0.851	15.85	4.45	0.07	2.17	1.85	1.1000	2.72	0.60	98.85
SMDM	**378**	68.80	0.920	15.74	4.71	0.11	2.18	1.88	0.5900	2.78	0.68	98.38
SMDM	**379**	70.36	0.881	15.66	4.41	0.08	1.95	1.26	0.5200	2.60	0.35	98.06
SMDM	**380**	67.00	1.375	14.75	5.02	0.17	2.59	6.03	0.6500	3.02	0.17	100.80
SMDM	**381**	69.34	1.373	14.79	4.67	0.05	2.62	3.23	0.5700	2.98	0.17	99.80
SMDM	**384**	71.68	1.251	15.04	5.09	0.06	1.97	0.83	0.4900	2.76	0.14	99.31
SMDM	**385**	67.34	1.381	13.17	4.54	0.10	2.13	7.78	0.7600	2.70	0.26	100.16
SMDM	**386**	70.35	1.135	15.30	4.97	0.08	2.13	1.25	0.4500	3.23	0.26	99.15
SMDM	**387**	71.24	0.950	14.48	4.17	0.08	2.08	2.04	0.4500	3.00	0.13	98.63
SMDM	**390**	68.22	0.814	16.63	4.91	0.08	2.22	1.53	0.4400	3.14	0.17	98.15
SMDM	**391**	68.07	0.937	15.76	4.57	0.14	2.33	2.79	0.5100	3.11	0.46	98.68
SMDM	**392**	70.83	0.821	15.02	4.25	0.13	1.97	1.57	0.3300	2.76	0.52	98.20
SMDM	**393**	70.30	0.872	18.32	3.91	0.04	1.53	1.89	1.1000	1.25	0.06	99.28
SMDM	**394**	67.37	0.956	15.94	4.60	0.10	2.49	3.16	0.6000	2.96	0.47	98.65
SMDM	**395**	64.80	1.135	13.98	4.76	0.23	2.33	7.91	1.0900	2.84	0.25	99.33
SMDM	**396**	69.41	1.295	15.57	5.54	0.12	1.95	1.41	0.5200	3.36	0.26	99.44
SMDM	**397**	68.93	1.113	15.51	4.96	0.12	2.09	2.34	0.3800	3.02	0.42	98.88
SMDM	**398**	70.74	1.177	15.06	4.99	0.09	2.03	1.21	0.4600	3.09	0.34	99.19
SMDM	**399**	68.95	1.217	14.41	4.85	0.11	2.11	3.64	0.5300	3.11	0.54	99.46
SMDM	**400**	65.23	1.132	16.75	5.04	0.08	2.82	3.56	0.5000	3.88	0.23	99.22
SMDM	**401**	69.70	0.832	15.22	5.06	0.08	1.90	1.76	0.3700	2.92	0.68	98.53
SMDM	**402**	65.86	0.923	16.51	4.55	0.08	2.41	3.62	0.5600	3.91	0.19	98.62
SMDM	**403**	65.57	0.908	16.02	4.54	0.08	2.74	4.50	0.9100	2.91	0.28	98.46
SMDM	**404**	62.09	0.965	16.64	5.12	0.09	3.09	5.98	0.3600	3.98	0.38	98.70
SMDM	**405**	63.59	0.940	17.56	4.88	0.09	3.39	3.68	0.7700	3.52	0.18	98.60
SMDM	**406**	68.59	0.871	16.20	4.53	0.09	2.24	2.24	0.2200	3.24	0.17	98.40
SMDM	**407**	66.95	0.817	16.41	4.76	0.05	2.34	2.81	0.2900	3.72	0.26	98.40
SMDM	**408**	69.47	0.943	15.95	4.66	0.11	1.99	1.38	0.6300	3.20	0.40	98.75
SMDM	**409**	60.46	0.756	13.66	3.74	0.07	2.76	13.19	0.5900	2.65	0.27	98.16
SMDM	**410**	70.14	0.876	16.07	4.89	0.07	2.11	0.90	0.2500	2.98	0.24	98.54
SMDM	**411**	63.76	1.019	18.32	5.51	0.07	3.09	2.57	0.2100	3.68	0.35	98.58
SMDM	**412**	70.93	0.777	15.22	4.52	0.08	1.83	1.22	0.4400	2.62	0.27	97.91
SMDM	**413**	65.14	0.888	18.28	5.51	0.07	2.83	1.78	0.4200	3.11	0.30	98.34
SMDM	**414**	67.83	0.813	15.53	4.62	0.06	2.34	2.85	0.6100	3.29	0.30	98.25
SMDM	**415**	70.85	1.053	15.68	4.33	0.08	2.39	1.21	0.7800	2.64	0.40	99.41
SMDM	**416**	71.13	0.833	14.76	4.21	0.10	1.73	1.22	0.6700	3.03	0.51	98.20
SMDM	**417**	64.94	1.061	16.18	4.55	0.14	2.51	5.37	0.3800	3.63	0.53	99.28
Raw source	**9-Clay**	64.53	1.102	16.35	5.47	0.07	2.56	5.24	0.7100	3.08	0.08	99.21
Raw source	**10-Clay**	64.92	1.208	16.20	5.25	0.08	2.38	6.89	0.7500	3.05	0.10	99.19

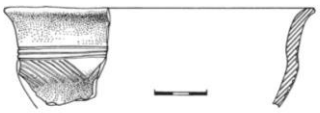
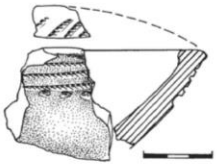
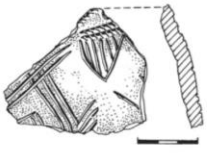
CATALOG

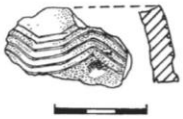
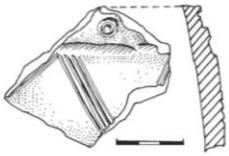
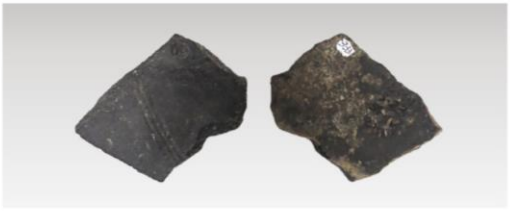
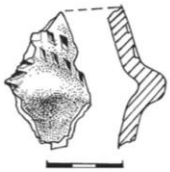
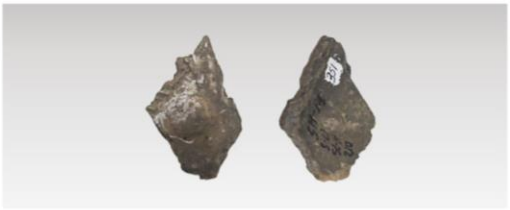
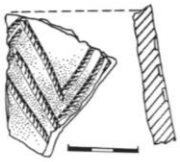
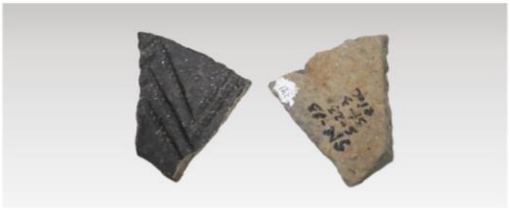
Nr.	Description	Context	Depth	Reference
	OPEN SETTLEMENT			
1 (366**)	Body sherd (Th*=11 mm) with finger impressed cordon.  	Cultural layer	0.60 m	Niculiță *et alii* 2011, 27, fig. 3/1; Kaiser *et alii* 2019, no. 366.
2 (367)	Rim sherd (Th=11 mm) with fingernail impressions on the edge.  	Cultural layer	0.55 m	Niculiță *et alii* 2011, 27, fig. 3/2; Kaiser *et alii* 2019, no. 367
3 (368)	Body sherd (Th=7 mm) with lug.  	Cultural layer	0.60 m	Niculiță *et alii* 2011, 27, fig. 3/3; Kaiser *et alii* 2019, no. 368.
4 (369)	Base sherd (Th=11 mm).  	Cultural layer	0.50 m	Niculiță *et alii* 2011, 27, fig. 3/4; Kaiser *et alii* 2019, no. 369.

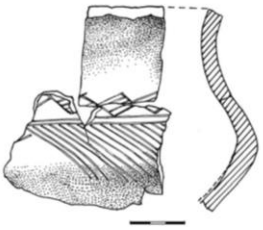
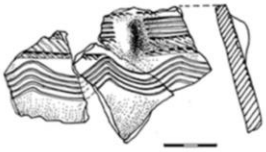
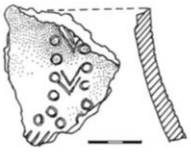
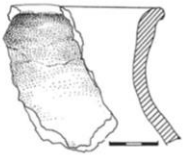
*The following abbreviations are used in this catalog: H – height; Dm – mouth diameter; Dc – carination diameter; Db – base diameter; Th – thickness; ** Number in Dataset of the Volkswagen Fond Project no. 90 216 "Early mounted nomads and their vessels Ceramic analysis project aimed at supporting the reconstruction of socio-economic conditions in mobile populations north of the Black Sea between 1100 and 600 BC", DOI: 10.5281/zenodo.3521608.

Nr.	Description	Context	Depth	Reference
	FORTIFICATION			
5 (370)	Body sherd (Th=9 mm) with lug.  	Rampart	0.70 m	Niculiță *et alii* 2014, 60, fig. 10/1; Kaiser *et alii* 2019, no. 370.
6 (371)	Body sherd (Th=9 mm) with lug, incised lines and impressed circle.  	Rampart	0.65 m	Niculiță, Zanoci, Băț 2016, 53, fig. 32/15; Kaiser *et alii* 2019, no. 371.
7 (372)	Body sherd (Th=9 mm) with lug.  	Rampart	0.70 m	Niculiță *et alii* 2014, 60, fig. 10/3; Kaiser *et alii* 2019, no. 372.
8 (373)	Body sherd (Th=7 mm) with lug.  	Rampart	0.50 m	Niculiță *et alii* 2014, 60, fig. 10/2; Kaiser *et alii* 2019, no. 373.

Nr.	Description	Context	Depth	Reference
9 (374)	Body sherd (Th=11 mm) with finger impressed cordon.  	Rampart	0.50 m	Niculiță *et alii* 2014, 60, fig. 10/4; Kaiser *et alii* 2019, no. 374.
10 (375)	Body sherd (Th=10 mm) with cordon.  	Rampart	0.70 m	Niculiță *et alii* 2014, 60, fig. 10/10; Kaiser *et alii* 2019, no. 375.
11 (376)	Handle sherd (Th=7 mm).  	Rampart	0.60 m	Niculiță *et alii* 2014, 60, fig. 10/5; Kaiser *et alii* 2019, no. 376.
12 (377)	Body sherd (Th=7 mm) with incised decoration.  	Rampart	0.80 m	Niculiță, Zanoci, Băț 2016, 52, fig. 31/19; Kaiser *et alii* 2019, no. 377.

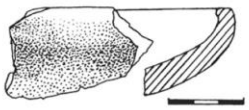
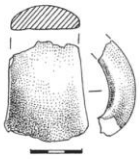
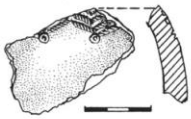
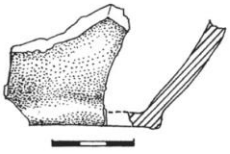
Nr.	Description	Context	Depth	Reference
13 (378)	Partial profile of fineware bowl (Th=6 mm, Dm=18 cm, Dc=16.5 cm) with incised decoration.  	Rampart	0.70 m	Niculiță, Zanoci, Băț 2016, 52, fig. 31/24; Kaiser *et alii* 2019, no. 378.
14 (379)	Loop handle (Th=7 mm) of a cup. The handle is decorated with incised decoration. Has a cylindrical knob.  	Rampart	0.70 m	Niculiță, Zanoci, Băț 2016, 52, fig. 31/5; Kaiser *et alii* 2019, no. 379.
15 (380)	Rim sherd of bowl (Th=7 mm) decorated on the edge with impressed lines. The topside is decorated with impressed lines and circles.  	Rampart	0.80 m	Niculiță, Zanoci, Băț 2016, 53, fig. 32/3; Kaiser *et alii* 2019, no. 380.
16 (381)	Body sherd (Th=5 mm) with incised and impressed decoration.  	Rampart	0.85 m	Niculiță, Zanoci, Băț 2016, 53, fig. 32/12; Kaiser *et alii* 2019, no. 381.

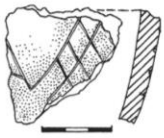
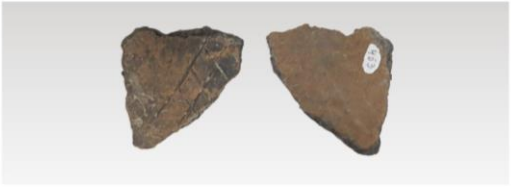
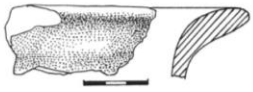
Nr.	Description	Context	Depth	Reference
17 (382)	Body sherd (Th=7 mm) with incised decoration.  	Rampart	0.75 m	Niculiță *et alii* 2014, 59, fig. 9/9; Kaiser *et alii* 2019, no. 382.
18 (383)	Body sherd (Th=11 mm) with incised and impressed decoration.  	Rampart	0.65 m	Niculiță, Zanoci, Băț 2016, 53, fig. 32/6; Kaiser *et alii* 2019, no. 383.
19 (384)	Body sherd (Th=7 mm) with lug and impressed decoration.  	Rampart	0.70 m	Niculiță, Zanoci, Băț 2016, 53, fig. 32/21; Kaiser *et alii* 2019, no. 384.
20 (385)	Body sherd (Th=10 mm) with and impressed decoration.  	Rampart	0.65 m	Niculiță, Zanoci, Băț 2016, 53, fig. 32/10; Kaiser *et alii* 2019, no. 385

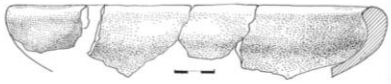
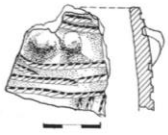
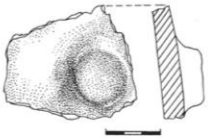
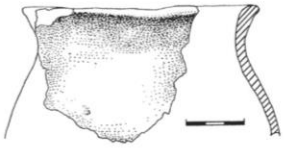
Nr.	Description	Context	Depth	Reference
21 (386)	Partial profile of cup (Th=15 mm) decorated with incised lines.  	Ditch	0.75 m	Niculiță, Zanoci, Băț 2016, 58, fig. 36/7; Kaiser *et alii* 2019, no. 386.
22 (387)	Body sherd (Th=7 mm) with lug, incised and impressed decoration.  	Ditch	0.70 m	Niculiță, Zanoci, Băț 2016, 58, fig. 36/16; Kaiser *et alii* 2019, no. 387.
23 (388)	Body sherd (Th=10 mm) decorated with impressed circles and incised lines.  	Ditch	0.65 m	Niculiță, Zanoci, Băț 2016, 58, fig. 36/15; Kaiser *et alii* 2019, no. 388.
24 (389)	Rim sherd (Th=10 mm).  	Pit 7/23/2013	0.80 m*	Niculiță, Zanoci, Băț 2016, 80, fig. 52/8; Kaiser *et alii* 2019, no. 389.

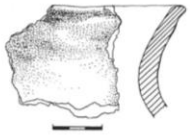
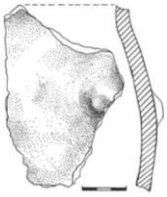
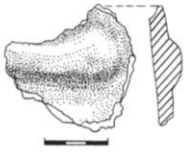
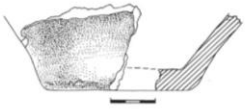
* Here and below, the depth from the mouth of the pit.

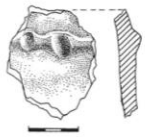
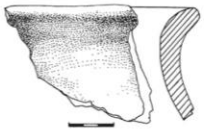
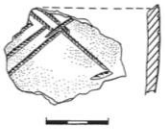
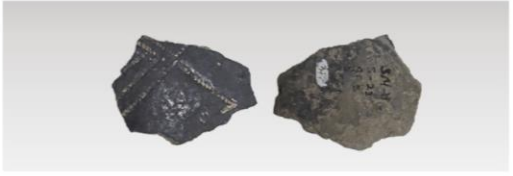
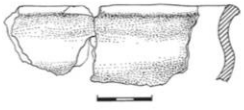
Nr.	Description	Context	Depth	Reference
25 (390)	Body sherd of pyxide (Th=7 mm) decorated with impressed circles and incised lines.	Pit 7/23/2013	0.70 m	Niculiță, Zanoci, Băț 2016, 80, fig. 52/3; Kaiser *et alii* 2019, no. 390.
26 (391)	Body sherd (Th=10 mm) with fingernail impressed cordon.	Pit 7/23/2013	0.90 m	Niculiță, Zanoci, Băț 2016, 80, fig. 52/20; Kaiser *et alii* 2019, no. 391.
27 (392)	Body sherd (Th=7 mm) with lug and impressed decoration.	Pit 7/23/2013	1.00 m	Niculiță, Zanoci, Băț 2016, 80, fig. 52/14; Kaiser *et alii* 2019, no. 392.
28 (393)	Rim sherd of bowl (Th=5 mm).	Pit 7/23/2013	0.90 m	Niculiță, Zanoci, Băț 2016, 80, fig. 52/6; Kaiser *et alii* 2019, no. 393.

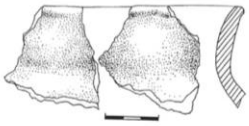
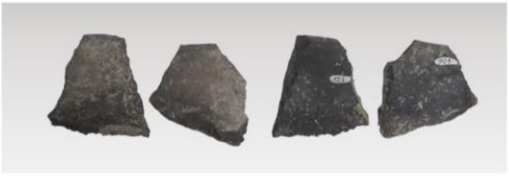
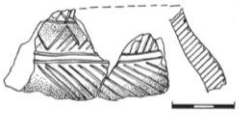
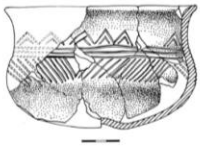
Nr.	Description	Context	Depth	Reference
29 (394)	Rim sherd of bowl (Th=5 mm).  	Pit 7/23/2013	1.10 m	Niculiță, Zanoci, Băț 2016, 80, fig. 52/4; Kaiser *et alii* 2019, no. 394.
30 (395)	Handle sherd (Th=5 mm).  	Pit 7/23/2013	0.60 m	Niculiță *et alii* 2014, 83, fig. 33/20; Kaiser *et alii* 2019, no. 395
31 (396)	Body sherd (Th=10 mm) decorated with impressed lines and circles.  	Pit 7/23/2013	0.70 m	Niculiță, Zanoci, Băț 2016, 81, fig. 52/12; Kaiser *et alii* 2019, no. 396.
32 (397)	Base sherd (Th=7 mm).  	Pit 7/23/2013	0.80 m	Niculiță *et alii* 2014, 83, fig. 33/21; Kaiser *et alii* 2019, no. 397.

Nr.	Description	Context	Depth	Reference
33 (398)	Body sherd (Th=9 mm) decorated with incised lines. 	Pit 7/23/2013 	0.90 m	Niculiță, Zanoci, Băț 2016, 81, fig. 52/11; Kaiser *et alii* 2019, no. 398.
34 (399)	Rim sherd of bowl (Th=5 mm) decorated on the edge with incised lines. 	Pit 7/23/2013 	1.00 m	Niculiță, Zanoci, Băț 2016, 80, fig. 52/5; Kaiser *et alii* 2019, no. 399.
35 (400)	Body sherd (Th=7 mm) with finger impressed cordon. 	Pit 7/23/2013 	0.90 m	Niculiță, Zanoci, Băț 2016, 80, fig. 52/19; Kaiser *et alii* 2019, no. 400.
36 (401)	Rim sherd (Th=8 mm). 	Pit 7/23/2013 	0.80 m	Niculiță, Zanoci, Băț 2016, 80, fig. 52/9; Kaiser *et alii* 2019, no. 401.

Nr.	Description	Context	Depth	Reference
37 (402)	Partial profile of fineware bowl (Th=5 mm, Dm=26 cm, Dc=27,6 cm).  	Pit 8/23/2013	0.50 m	Niculiță, Zanoci, Băț 2016, 82, fig. 53/6; Kaiser *et alii* 2019, no. 402.
38 (403)	Body sherd (Th=5 mm) with two lugs and impressed decoration.  	Pit 8/23/2013	0.40 m	Niculiță, Zanoci, Băț 2016, 82, fig. 53/14; Kaiser *et alii* 2019, no. 403.
39 (404)	Body sherd (Th=11 mm) with lug.  	Pit 8/23/2013	0.60 m	Niculiță, Zanoci, Băț 2016, 82, fig. 53/15; Kaiser *et alii* 2019, no. 404.
40 (405)	Partial profile of short-necked jar (Th=5 mm).  	Pit 8/23/2013	0.40 m	Niculiță, Zanoci, Băț 2016, 82, fig. 53/3; Kaiser *et alii* 2019, no. 405

Nr.	Description	Context	Depth	Reference
41 (406)	Rim sherd (Th=11 mm). 	Pit 8/23/2013 	0.45 m	Niculiță, Zanoci, Băț 2016, 82, fig. 53/4; Kaiser *et alii* 2019, no. 406.
42 (407)	Body sherd (Th=11 mm) with lug. 	Pit 8/23/2013 	0.60 m	Niculiță, Zanoci, Băț 2016, 82, fig. 53/19; Kaiser *et alii* 2019, no. 407.
43 (408)	Body sherd (Th=11 mm) with cordon ("rhyton"). 	Pit 8/23/2013 *no photo available*	0.45 m	Niculiță, Zanoci, Băț 2016, 82, fig. 53/16; Kaiser *et alii* 2019, no. 408.
44 (409)	Base sherd (Th=11 mm). 	Pit 8/23/2013 	0.30 m	Niculiță *et alii* 2014, 85, fig. 35/12; Kaiser *et alii* 2019, no. 409.

Nr.	Description	Context	Depth	Reference
45 (410)	Body sherd (Th=10 mm) with finger impressed cordon.  	Pit 8/23/2013	0.50 m	Niculiță, Zanoci, Băț 2016, 82, fig. 53/17; Kaiser *et alii* 2019, no. 410.
46 (411)	Rim sherd (Th=11 mm).  	Pit 9/23/2013	0.80 m	Niculiță, Zanoci, Băț 2016, 84, fig. 54/3; Kaiser *et alii* 2019, no. 411.
47 (412)	Body sherd (Th=5 mm) decorated with impressed lines.  	Pit 2/23/2013	0.70 m	Niculiță, Zanoci, Băț 2016, 79, fig. 51/9; Kaiser *et alii* 2019, no. 412.
48 (413	Partial profile of fineware bowl (Th=5 mm).  	Pit 10/23/2013	0.60 m	Niculiță, Zanoci, Băț 2016, 84, fig. 54/14; Kaiser *et alii* 2019, no. 413

Nr.	Description	Context	Depth	Reference
49 (414)	Rim sherd (Th=10 mm).  	Pit 10/23/2013	0.70 m	Niculiță, Zanoci, Băț 2016, 84, fig. 54/15; Kaiser *et alii* 2019, no. 414.
50 (415)	Body sherd (Th=7 mm) decorated with incised lines.  	Pit 10/23/2013	0.60 m	Niculiță, Zanoci, Băț 2016, 84, fig. 54/16; Kaiser *et alii* 2019, no. 415.
51 (416)	Partial profile of fineware cup (Th=5 mm, H=9,6 cm, Dm=15,0 cm, Dc=15,2 cm, Db=4,3 cm. The vessel is decorated with incised patern.  	Pit 9/24/2014	0.60 m	Niculiță, Zanoci, Băț 2016, 87, fig. 56/3; Kaiser *et alii* 2019, no. 416.
52 (417)	Body sherd (Th=10 mm) decorated with impressed lines.  	Pit 9/24/2014	0.50 m	Niculiță, Zanoci, Băț 2016, 87, fig. 56/4; Kaiser *et alii* 2019, no. 417.

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