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THE CHERNIAKHOV CULTURE IN OLBIA PONTICA IN THE LIGHT OF POLISH-UKRAINIAN EXCAVATIONS 2016-2018

ABSTRACT

Twardecki A. and Buiskikh A. 2021. The Cherniakhov Culture in Olbia Pontica in the light of Polish-Ukrainian excavations 2016-2018. *Sprawozdania Archeologiczne* 73/2, 251-273.

In the paper will be presented the results of archaeological research done by a Polish-Ukrainian team in the years 2016-2018 at the archaeological site Olbia Pontica. The main result of this excavations is the thesis, strongly documented in the archaeological finds, that the last inhabitants of Olbia left this place at the beginning of the 5th century AD and that during the last period of its existence Olbia was strongly connected with the Cherniakhov culture. Additionally, thanks to major concentration of animal bones, the finds allowed research into the meat diet of the inhabitants of Olbia in the 4th century AD. The bone finds also seem to confirm a climate change in that century too.

Keywords: Olbia Pontica, Cherniakhov Culture, Black Sea, Northern Black Sea, Classical Archaeology, Huns

Received: 23.06.2020; Revised: 22.07.2020; Accepted: 01.06.2021

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INTRODUCTION

In 2016, the Polish Archaeological Mission “Olbia” of the National Museum in Warsaw (NMW) began its first excavation season at Olbia Pontica (just south of Parutyne, Mykolaiv Oblast, Ukraine) in cooperation with the Institute of Archaeology of the National Academy of Sciences of Ukraine (IA NASU) as a part of the project “Antiquities of the Black Sea” fully financed by the Polish Ministry of Culture and National Heritage. Preliminary reports and the database of the finds are regularly published on the website of the project (<https://blackseaproject.mnw.art.pl/en>) There too can be found further basic information about the expedition, this text is partly based on these reports. Since 2019, the project has been continued from the Polish side by Institute of Archaeology and Ethnology of the Polish Academy of Sciences (IAE PAS) under the same personal lead. Since the NMW excavations in Olbia began in 2016, this paper is intended to present the first interesting results after 3-year of research.

The first season was conceived as introductory work. The humus layer was removed, two mounds were partly cleared which, at the end of the season, uncovered a layer of rock rubble visible more or less along the east-west axis and concentrated along the central part of the trench and revealed traces of a functional layer (light-yellow, solid clay surface). There was very large concentration of artefacts in the analysed layers in spite of the relatively small volume of explored soil. There were several tens of thousands of mass finds and 324 objects with particularly scholarly value. The discovered objects represent all periods of the activity of the city – from the beginning of 6th century BC to the end of the 4th century AD and even beyond.

Based on these results, we checked in the field the procedures and field methods both sides of the project were practicing. This was a crucial and very important moment since we have to make documentation in both the Polish and Ukrainian languages. Unification of documentary procedures was therefore crucial for the general process of research at the site. After this first year of common field work, both sides agreed to make minor changes in the originally designed procedures that allow harmonic cooperation at the professional level of these collaborative activities.

It should be mentioned here that field reports are published on the website of the project (see above). Also all objects discovered during three years activity of the NMW mission in Olbia are separately and preliminarily published on the researchable database on the project website (<https://blackseaproject.iaepan.edu.pl/en/discovery>). A brief preliminary report information is published also regularly in the several publications – especially in *Arkheologichni Doslizhdennia v Ukrayini* (e.g. Twardecki et al. 2017, 45-52; Buisikh et al. 2020, 124-128).

The Polish mission was a part of the Ukrainian Olbian Expedition headed by Dr Alla Buisikh (IA NASU) and was directed by Dr Alfred Twardecki (IAE PAS). The most important part in the excavations was always played by the Ukrainian and Polish trench supervi-

sors: Dr Maria Novichenkova (IA NASU) and Dr Piotr Jaworski (Warsaw University). The rest of the team consisted of mixed Polish and Ukrainian archaeologists from different Polish and Ukrainian institutions that were being employed by NMW. During all seasons, the survey and field documentation was done by Ms Magdalena Antos and the documentary team was supervised in 2016 by Dr Inga Głuszek and in seasons 2017-2018 by Ms Diana Świąćka. Interpretation of ceramic finds, so crucial for dating of the whole site, was in hands of Dr Sergei Didenko, the glass was processed by Ms Olga Puklina and the huge and very interesting bone collection by Dr Evgeniya Yanish. Another extremely important kind of finds – the coins – were interpreted by Dr Piotr Jaworski. The study of the lamps was in the charge of Dr Irina Sheiko and metal finds, especially remains of armour, were described by Dr Maria Novichenkova, glass beads were described by Dr Andzhelika Kolesnichenko. The interpretation of the painted pottery was shared between Dr Alla Buisikh and Dr Inga Głuszek. The very small number of fragments of inscriptions was analysed by Dr Alfred Twardecki and finally all *dipinti* by Dr Pavel Diatropov. The drone aerial photos were taken mainly by Dr Szymon Lenarczyk with the occasional addition of Dr Alfred Twardecki. Dr Szymon Lenarczyk is also responsible for the final orto-photographical processing of the photos.

We would like stress that the Polish expedition would not have been a success without the support of trainees and students from the Ivan Franko National University of Lviv (headed by Dr Anastasia Baukova), from the “Odarennost” School of Fine Arts of the Kharkiv District Council (headed by Dr Mikhail Fomin) and from the Berdyansk State Pedagogical University (headed by Dr Valentina Papanova) as well as a number of Ukrainian volunteers. Last but not least both authors would like express special thanks to Mr Sergei Shein, acting director of the National Historical and Cultural Reserve “Olbia” of NASU for friendly assistance.

The strategic aim of the Polish expedition was to open a new trench in the area of the Roman Citadel very close to the area of the earlier Trench R-25. The Roman Citadel is located in the southern part of ancient Olbia, right next to the edge of the promontory cutting over 30 metres into the Boh Estuary, or liman. It is this part of the city that was settled since the 6th century BC to the 4th/5th century AD, when the city was finally abandoned. So, we have there the opportunity to research practically all cultural layers of ancient Olbia Pontica. Moreover, there are several earlier trenches in its vicinity (R-25, L, L-1). Additionally, it is the largest area with relative flat profile, which is important in the research process. This gave us the opportunity to make excavations in a relatively untouched area and the results are easy to compare with the earlier results of trenches excavated nearby. Summing up – we hoped to dig an area with a relative clear stratigraphic situation and get a synergetic effect after studying the joint results of research made in other trenches situated in the closest neighbourhood.

The location of trench R-23 (Fig. 1) was selected based on the results of geophysical research done at the very beginning of the 2016 season by Mr Tomasz Herbich (IAE PAS)

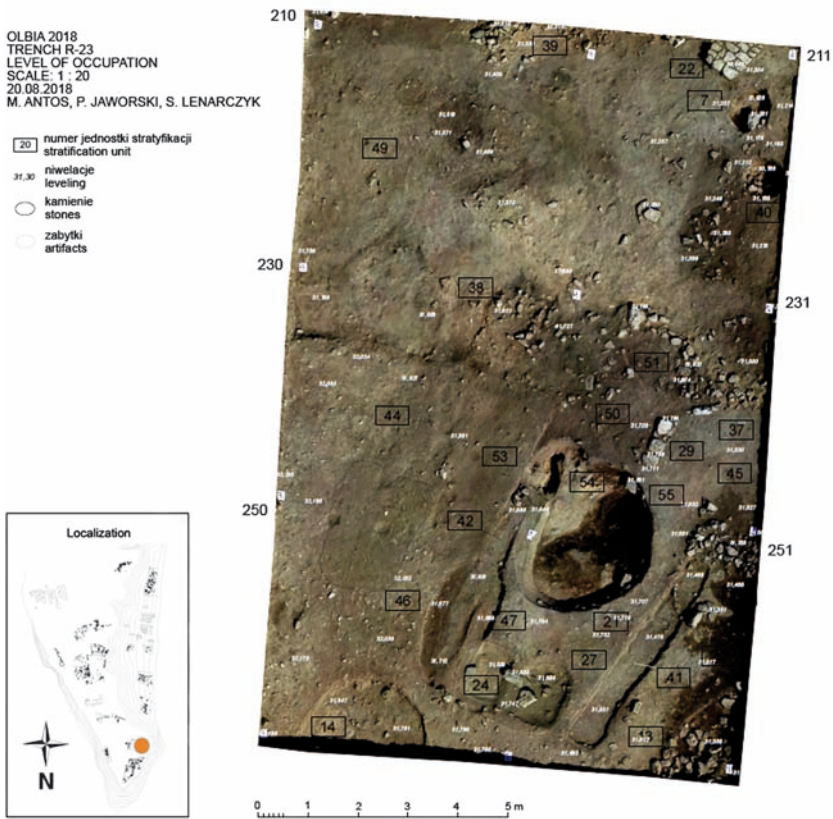


Fig. 1. Ortophotoplan of Trench R-23. General view of the trench at the end of the 2018 season

and, as mentioned above, analysing the topography of the site, especially after taking into consideration the location of several earlier explored trenches in the vicinity. Most important is the trench R-25, located to the south and which has been explored for many years by the mission of the IA NASU. Trench R-23 has been marked out so as to form part of the local site grid that has already been in use for a long time, whose lines follow the north-south and east-west axis. This grid is based on a division into 100×100 m squares, which are in turn divided into smaller 5×5 m squares. In the first season, we opened four squares (no. 210, 211, 230 and 231). In the second season we added two more squares to the south (nos 250 and 251). In the third season, we did not enlarge the trench, so, after three years the trench area was 150 m^2 (Fig. 2). While marking out the trench, we discovered certain inaccuracies of the existing local grid, which were systematically verified and corrected by Ms Magdalena Antos using an electronic total station. Back dirt piles –

separate ones for soil and stones – were located around 15 m south of the trench, in the hollow of a former trench.

Archaeological research in trench R-23 in the Roman citadel of Olbia was preceded by a thorough survey of archives and bibliographic research, an investigation of the site and precise geophysical surveying of the research location, so as to ensure that results obtained in the future would meaningfully enrich the current state of knowledge on Olbia's history.

A Leica TSO6plus electronic total station was permanently present at the trench and used in topographical and documentation activities. The total station served to measure the exact location of the majority of discrete artefacts. A DJI Inspire 1 Pro drone with an attached camera proved to be an invaluable asset in topographical and documentation activities, enabling us to take high-quality vertical and angular photographs. Owing to the

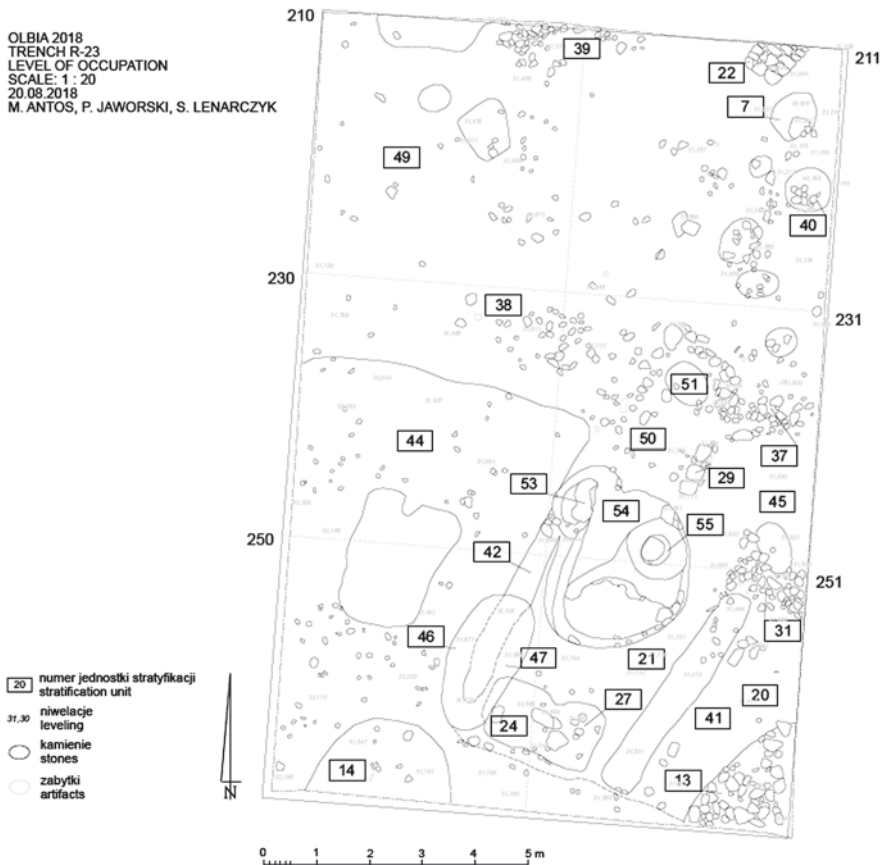


Fig. 2. Plan of Trench R-23 showing situation at the end of the 2018 season with the construction structures from the 4th-5th centuries AD

permanent presence of technically advanced measurement and documentation equipment, it was possible to execute orthophotomaps of the trench at individual stages of excavation work, as well as photogrammetric trench profiles at the end of field work in each season.

Archaeological excavations were conducted based on the stratigraphic method, and particular care was exercised to preserve the proper order of exploring the existing system of layers. The surveying of elevations in the trench was performed on a daily basis, along with a number of additional measurements. Plans of the entire trench were also drawn up at every stage of the work. All discrete artefacts were additionally measured using the total station and then, furnished with a label containing their description, packed and entered into the inventory. A Fisher Lab F70 metal detector proved to be extremely helpful in searching for metal artefacts. It was also used to regularly analyse the spoil heap, leading to the recovery of around a dozen artefacts. In addition to that, soil from the explored layers was meticulously sifted on an on-going basis. Mass objects, mainly ceramics, were laid out on a special patch, where they were systematically classified, described and counted. Fragments of high diagnostic value were moved to the group of discrete artefacts, and the remaining ones were stored in a separate pile of ceramics.

After the end of each year's work, the decision was made to secure the trench against devastation. Such actions are necessary, as the practice of looting the remains of ancient Olbia is currently widespread, as testified, among other things, by the (luckily minor) losses revealed in the central part of the rubble layer on 29 July 2016. The bottom of the trench was secured with plastic sheet, and then covered with two layers of loose soil.

Descriptive documentation – a site notebook, a notebook of topographical measurements and a notebook of stratigraphic units – was systematically kept throughout the archaeological work. Discrete artefacts, particularly ceramics and glass, but also selected stone and metal finds, were documented using drawings. The remaining finds were photographed. Coins were cleaned and then provided with specialist documentation drafted by a numismatist. All discrete artefacts were entered into the computer database. The research documentation is supplemented with a list of drawings and an inventory book.

RESULTS

General Remarks

In the 2018 field season, horizons were reached across the entire surface of the trench that form a part of the unearthed fragment of a settlement level, and whose common feature is their similar chronological age and the mutual spatial dependence of individual stratification units. Based on the state of our knowledge, they form the youngest cultural

layer on the site. The unearthed surface can be divided into three zones that differ in soil consistency and probably also in their original functional purpose (Fig. 3).

Utility Area

In the southwest corner of the Trench was what may be interpreted as a utility area. This comprised a deposit of solid light-yellow clay, containing significant amounts of small stones and fragments of ceramics. It forms a working surface falling gently to the north-east. It encompasses the southern part of square 230, the majority of square 250 and the lower edge of square 251. On the eastern side it is bordered by what is interpreted as a residential zone, and on the north both is bounded by another utility horizon (see below). In the southern part of square 250, the continuity of the solid utility area was interrupted by digging a hole (passing under the southern profile of the trench), containing, among other things, numerous fragments of ceramics and an imitation of an Alexander Severus denarius with perforation (inv. no. 89/2018). The homogeneous nature of the deposit and low thickness of the aggradation layer on the top of the earthen floor seems to indicate that in antiquity, cleaning activities were undertaken over the area of used land.

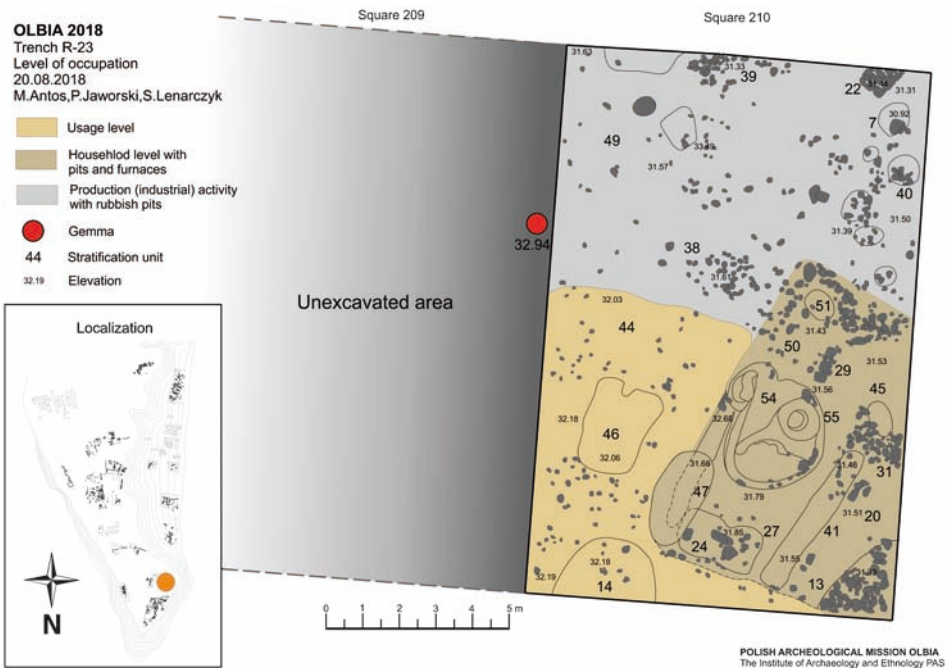


Fig. 3. Plan of Trench R-23 with levels of occupation and the findspot of the gem outside the trench area

Structure and associated layers

To the east of the yellow clay floor is what is interpreted as a residential and utility horizon with pits and furnaces (see Fig. 3). Within this are at least two main groups of stratigraphic units. The first group lies on the west side and consists of an area of about 3 m in width (so-called Room 1), separated by two walls aligned along a southwest – northeast axis (stratigraphic units 18, 19; 41 and 42), preserved in the form of robber trenches (Fig. 4). Southern part of the remnants of the western wall was destroyed, together with the western edge of the furnace (unit 24) and the eastern edge of the earthen floor horizon, by means of a pit presumably aimed at excavating the stones lying on the base of the wall filling (remnants of the foundation?). Such an interpretation of the purpose of this feature is supported by the presence of a significant number of stones in the northern part of the wall trench (unit 42) that was outside the boundaries of this pit. It seems that the original stone fill of the eastern wall has not been disturbed; an Olbian coin (inv. no. 91/2018) and a coin of Geta from the turn of the second and third centuries were found on its base (inv. no. 461/2018). On the southern side, the discussed area ends with a double furnace feature (units 24 and 27). On the northern side, it probably ends about 2 m beyond the northern edge of Pit 1, with a stone rubble layer running crosswise (unit 37), which may be a remnant of a wall structure (this needs to be verified later, first of all by extending the trench in the eastern direction). In contrast to the solid clay floor of the utility level located in the western part of the trench, the area in question, separated by walls, was formed by a layer of compacted soil lying almost horizontally. In the sediments of this part of the site, there



Fig. 4. Photo of the structures with 'Room 1' dated to 4th-5th centuries AD (illustrated by Piotr Jaworski and Alfred Twardecki)

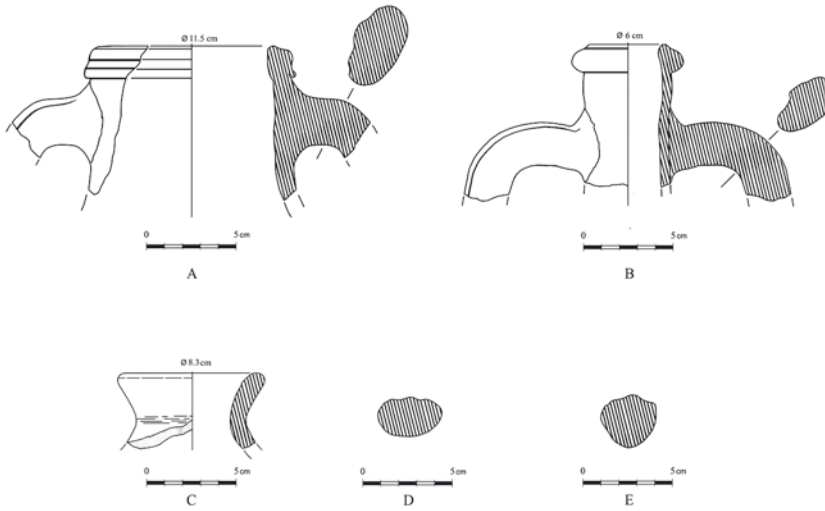


Fig. 5. A – Zeest type 100 amphora; B – Shelov type F amphora; C – Rim of amphora 4th/5th centuries; D – Shelov type F amphora; E – Shelov type E amphora – markers for the dating of the cultural level reached in the trench (illustrated by Serhii Didenko)

were numerous fragments of ceramic material and burnt stones, suggesting that the structure here might have been abandoned as a result of fire. In the central part of the room, a large pit (Pit 1) measuring approx. 2.5 × 3 m was dug out with an annexe, located to the north-west. After they had gone out of use, they had both been backfilled with a homogeneous filling. The bottom of the pit and the annexe, located about 0.5 m below the level of the surface between the walls, in the northern part is formed by a deposit of solid clay and in the southern part compacted soil (unit 54). In the northern profile of the cavity there is a flat, large stone block, possibly forming a part of the original structure of Wall 2. At the junction of the annexe and Pit 1, at the level of the earthen floor of both features, a Roman denarius of Geta was found (inv. no. 461/2018). In the northern part of the junction between the two features, a rectangular outline (approx. 10 × 10 cm) of a posthole seems to indicate the existence of a wooden structure in the pit (roofing?). In the northeastern part of the pit, a smaller Pit 4 with a diameter of about 1.2 m was dug from this level (unit 55), with a stone slab at the bottom. Also, in the annex situated in the northwestern part of Pit 1 – a furnace was found (unit 53), containing numerous pieces of heavily burnt ceramic material, including fragments of amphorae dating back to the 2nd quarter of the 4th century – beginning of the 5th centuries (Fig. 5). Across the pit, a drain running into Pit 4 was cut out from the level of compacted soil. The chronological and functional link between the above-mentioned features of Pit 1 indicates their simultaneous use in late antiquity. The purpose and use of the large pit complex is not entirely clear. Both residential

and production functions should be considered. On the surface of the backfill of Pit 1 there is a fragmentarily preserved earthen floor (unit 28), which seems to indicate that this area of the site was utilised after the pit had gone out of use. It should be stressed, however, that at the time of discovery, Pit 1 was a closed feature, containing deposits not disturbed by subsequent destructive processes taking place on the site, and therefore the historical material originating from the pit is key for the dating and interpreting of not only the discussed horizon but also the whole settlement level covered by trench R-23.

The second group of stratigraphic units in this part of the Trench lies to the east of the eastern wall (Fig. 3). This consists of a second utility area (unit 20) whose surface is composed of sediments that are difficult to separate, which indicates heavy use of the space. In 2017, near the wall, a complete, storage pot bearing the features of vessels typical of the Cherniakhov culture was found lying on its side. Several similar specimens were discovered a little further north, in the settlement and production horizon in the northern part of the Trench (see below). The discussed utility level is limited on the north by an adjacent linear layer of stone rubble (wall?) that is perpendicular to the rubble of the western wall and passes under the eastern profile of the trench (unit 31). On the southeastern side, the utility level in question is limited by a pit (unit 13) filled in tightly with stone rubble, which goes beyond the boundaries of the trench, in the southeastern corner of square 251. It is to be hoped that more light will be shed on the discussed eastern part of the residential and utility horizon in the following field seasons as a result of the planned extension of the trench towards the east.

Settlement and production horizon

The settlement and production horizon with pits and rubbish layers (see Fig. 3) is located in the northern part of trench R-23 (Squares 210 and 211 and the northern parts of 230 and 231). To the south, it is limited by the edge of the yellow clay surface of the utility area, and the units comprising the structures discussed above and associated layers. A characteristic feature of this area is the complicated stratification, composed of numerous sediments that are hard to define. These may be the outcome of either intensive human activities in antiquity or several post-deposition geological factors resulting from the location of the trench near the edge of the slope and the gentle descent of the area to the east, or perhaps of both. Within this zone two groups of deposits may be recognised.

The first group (Sediment Deposit Set 1) in character resembles a dump, containing traces of bone artefact manufacturing. It is located in square 210, in the western part of square 211, and along the northern edge of squares 230 and 231 (see Figs 1-3). This series of deposits contains three distinct stratification units. Along the north side of the Trench and only partially visible, is unit 39, which has a limited extent and seems to surround a patch of stone rubble of unclear function. To the south, Unit 49 forms a wide strip across the middle of square 210 in the direction of square 211. This contains sediments that probably

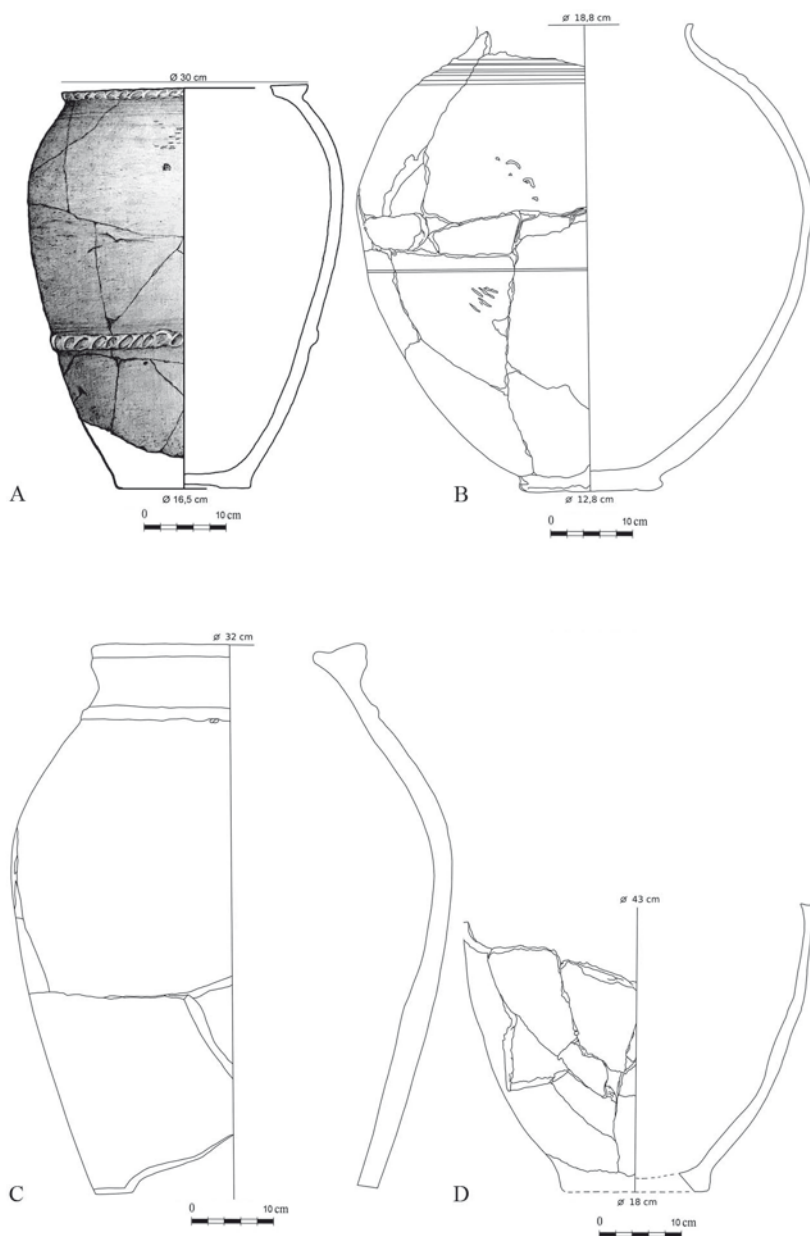


Fig. 6. Large storage vessels typical for Cherniakhov culture – markers for the cultural identity of the inhabitants of the site in the last period of settlement activity (illustrated by Katarzyna Dejtrowska, Angelika Bogusz and Maria Pronobis)

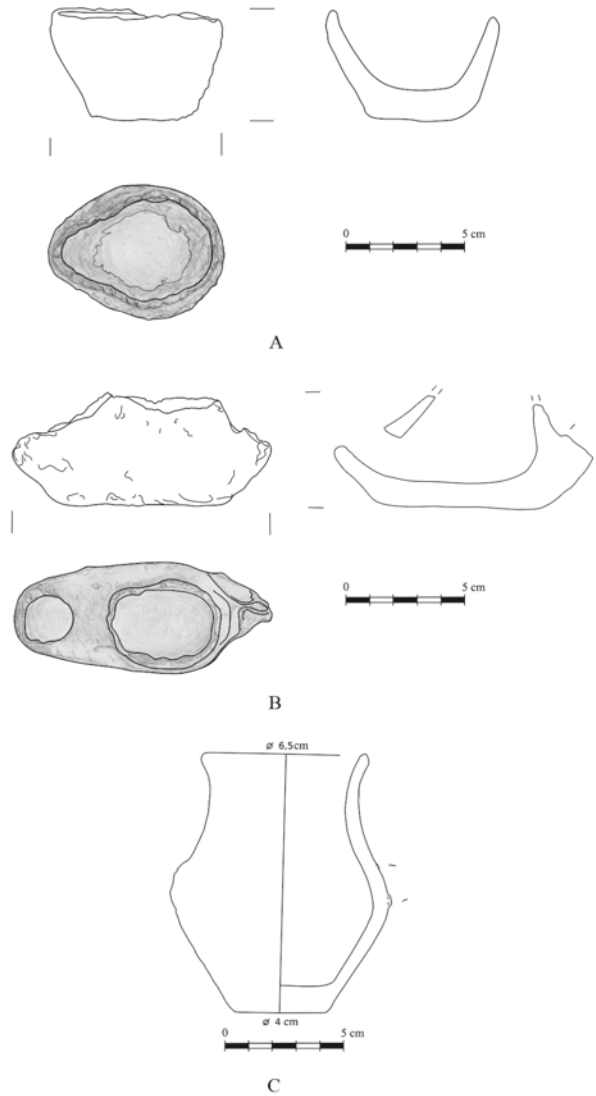


Fig. 7. Ceramic hand-made lamps and pottery vessel typical for the Cherniakhov culture – markers for the cultural identity of the inhabitants of the site in the last period of settlement activity (illustrated by Sylwia Groń and Maria Pronobis)

are the result of intensive use of the surface and frequent levelling performed as part of a cleanup of the utility area. This layer contains large quantities of ceramics (including items dated to the 4th – early 5th centuries A.D. – amphorae of the types Shelov F and Shelov E), as well as burnt lime mortar. To the south of this is unit 38. This lies adjacent to

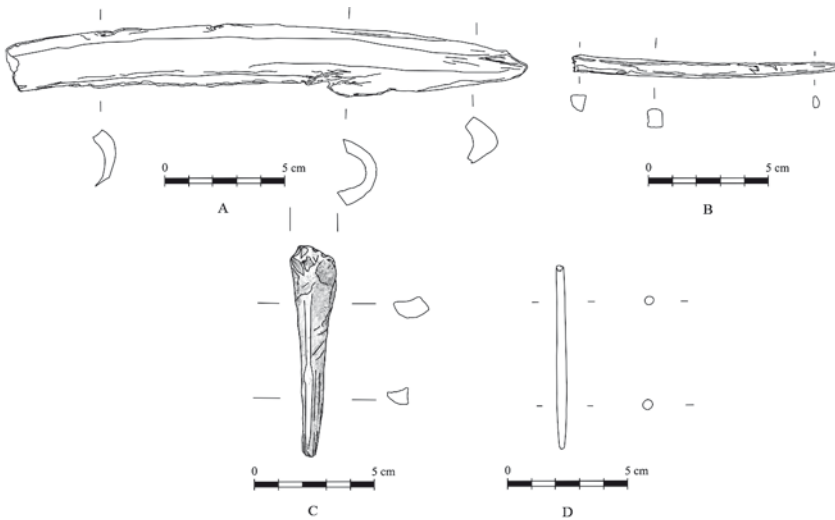


Fig. 8. Bone artefacts found at the place of deposit of c. 6000 animal bones (bone workshop): stylus and a bone perforator (illustrated by Maria Pronobis and Katarzyna Dejtrowska)

the north edge of the utility horizon in the southwest corner of the Trench. It stretches both to the north and to the south of another patch of stone rubble. This unit is elongated east-west axis and measures approximately 4×2.5 m. In the northern part of this sediment deposit, five large storage pots of the Cherniakhov culture were discovered in the 2017 season, which were re-documented in 2018 after their partial reconstruction and conservation in the winter season (inv. no. 2-5; Fig. 6), as well as two hand-made lamps (inv. no. 2017/162 and 2017/163; Fig. 7: A, B) and a pitcher (inv. no. 2017/242; Fig. 7: C). The latter rested next to a flat stone slab with an almost square cross-section, perhaps serving a utilitarian function (seat?).

In the 2018 season, numerous fragments of raw bone material, as well as semi-finished and finished bone artefacts were discovered here (including piercing tools, a bone pin, inv. no. 34, 35, 142 and 200; Fig. 8), which seem to provide evidence for the manufacture of bone artefacts within this settlement level. The sediment deposits that make up the stratification unit are characterized by a loose, powdery structure with high ash content and traces of burning (fire?). This unit can be interpreted as a rubbish layer, created as a result of piling up and spreading scraps as part of cleaning activities.

The second group of deposits (which may be collectively labelled 'Utility area with small pits 2') was associated with the use of a series of small pits in the eastern part of the trench, in squares 211 and 231 (Fig. 9), covered with a sequence of sediment deposits on a light-yellow solid clay earthen floor, the level of which has been reached so far only in the north-eastern corner of square 211 between Wall 1 (unit 22) and Pit 2 (unit 7). The



Fig. 9. Wall 1, Pit 2 and Pit 3 situated at the north-eastern corner of the trench – part of the utility area (illustrated by Piotr Jaworski and Alfred Twardecki)

historical material from the two pits (2 and 3) explored so far is not very abundant and contains fragments of Roman and late-antique vessels.

DATING

The main method of dating the site involves ceramics, supplemented by coins. The pottery found in the trench was studied, described and catalogued by Dr. Sergei Didenko (National Museum of Ukrainian History in Kyiv) and the numismatic material was analysed by Dr. Piotr Jaworski (Institute of Archaeology, University of Warsaw).

The archaeological work carried out in the 2018 season, and especially the research conducted within several features selected for exploration, helped confirm preliminary conclusions formulated in the previous season, particularly with regard to the chronology and function of the studied area. Particularly relevant were the findings formulated on the basis of exploration of the horizon of a separate space called Room 1, containing a large pit (Pit 1) with a fairly complex structure (which, as a closed context, was highly representative and useful for the dating of the remaining elements of the uncovered settlement complex from the same period).

Data from stratigraphic analysis and preliminary analysis of the finds indicate that one common settlement level was reached within trench R-23, no earlier than the beginning of the 3rd century (Geta denarius at the bottom of Pit 1), and most probably much later,

related to settlements bearing features associated with the Cherniakhov culture. For example, there was a significant percentage of amphorae dating back to the 2nd quarter of the 4th – early 5th centuries A.D. in the fillings of individual components of the closed context of Pit 1 and several whole forms of storage vessels typical of the Cherniakhov culture found in the vicinity (unit 20), as well as a perforated imitation of Alexander Severus denarius, typical for *barbaricum* found in a depression near the room.

Dating based on ceramics (Figs. 5 and 10)

On the basis of Dr. Sergei Didenko's findings, it can be concluded that the late Roman ceramics found in the trench, and in particular the amphorae, dating back to the 4th – first quarter of the 5th century A.D., appeared in most stratigraphic contexts unearthed in 2018.

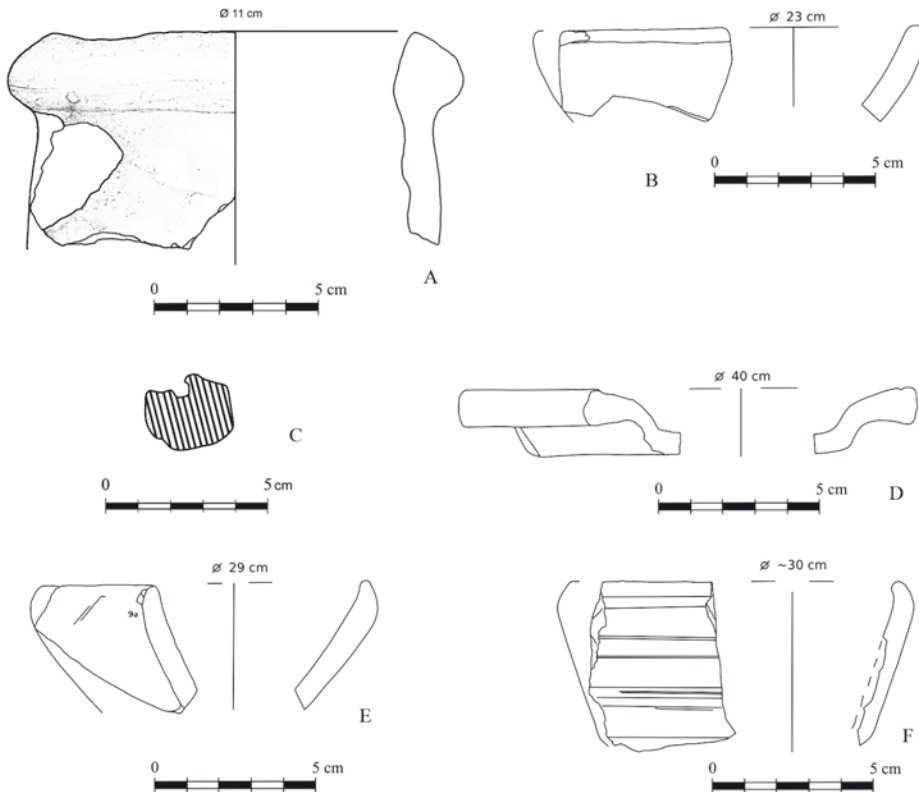


Fig. 10. Imported pottery: A – fragment of an amphora, B – fragment of a red slipped vessel, C – fragment of a handle of a Lirey LRA 1 type amphora, D – fragment of a red slipped plate, E – fragment of red slipped bowl, F – fragment of red slipped bowl – markers for the dating of the cultural level reached in the trench (illustrated by Katarzyna Dejrowska, Sylwia Groń, Serhii Didenko and Angelika Bogusz)

The main finds are amphorae from Heraclea Pontica, Shelov types E (third quarter of the 4th century – first half of the 5th centuries) and F (second-third quarter of the 4th century), as well as redware vessels from Sinope, Zeest type 100 (4th to 5th centuries A.D., with their production reaching its peak in the second half of the 4th century and the beginning of the 5th century) as well as vessels from centres located on the northern shores of the Black Sea type 1.5 Bettera, Charaks, Abramov's Burial 33 (second half of 4th century – beginning of the 5th century) and eastern Mediterranean amphorae type LRA 1 Benghazi, Railey (end of the 4th – middle of the 7th centuries) which are extremely interesting in this context; an amphorae with a folded rim of unknown origin, dated to the end of the 4th-5th century, according to the stratigraphic context of excavations in Tanais. During the 2018 field season, a significant number of red slip utility vessels of Pontic origin were also found, especially of K. Domzalski's Pontic Red Slip Ware types 1 and 2, which are found in the entire Black Sea basin and are particularly common in Crimean complexes dated to the 4th and 5th centuries (Arseneva and Domzalski 2002, 422-428). In Tanais, this type of ceramic is dominant among red slip ware in layers dated to the 4th to the middle of the 5th centuries. Among numerous ceramic fragments found on site, there was a rim of a Hayes form 67 red slip vessel from the African Red Slip Ware category dated to the 4th – first half of the 5th centuries and produced in North Africa – mostly in the area of contemporary Tunis.

Comprehensive analysis of the ceramic material found during excavation work suggests that the site, including the architectural structure incorporating the so-called Room 1, was still in operation at the end of the 4th and at the beginning of the 5th century.

In this context, one find is especially worthy of notice. The fragment of Benghazi LRA 1 type vessel is of a vessel form that was produced over a relatively long period, from the end of the 4th century to the mid-7th century. If it was in use and deposited at Olbia in the earliest years of its commercial availability in accord with the dating of most of the late antique ceramic material from this Trench, it would not constitute a chronological anomaly in the presented material. However, it is tempting to consider whether such an artefact could provide evidence of some activities taking place in Olbia also in the Byzantine period. For the time being, we leave this issue to be settled later.

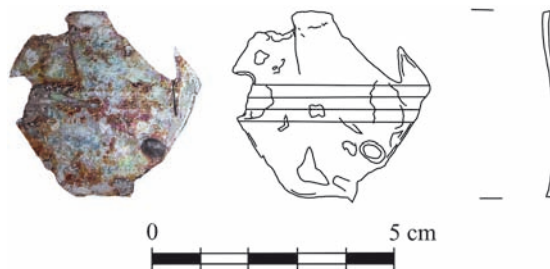


Fig. 11. Glass vessel, photo and drawing – marker for the dating of the cultural level reached in the trench (illustrated by Angelika Bogusz)

Dating based on glass items (Fig. 11)

Among the various glass fragments, a piece of a cup decorated with a blue glass button (unit 48, inv. no. 169) stands out. Glass vessels of this type appeared in the 4th century and were made in the workshops of the Rhine Valley.

Dating based on coins

Numismatic finds (eight coins) helped clarify the dating of some features at the site. The latest dated bronze coin minted in the local mint comes from the 2nd/3rd century (inv. no. 91, Fig. 12) and was found under a layer of stones on the bottom of the southern part of the robber trench of the eastern wall of the so-called Room 1 (unit 41). Two Roman denarii come from the same period: a Geta denarius (200-202 A.D., inv. no. 269, Fig. 13) and a cast imitation of denarius of Alexander Severus (original – 222-228 A.D., inv. no. 89, Fig. 14) with a hole drilled in the right field of the obverse. The Geta denarius was found at the bottom of the annex to Pit 1 (unit 52), on the edge of a small furnace shared with Pit 4,



Fig. 12. Latest coin from local mint (2nd-3rd centuries AD) found in the trench – marker for the dating of the cultural level reached in the trench (photo by Szymon Lenarczyk)



Fig. 13. The Geta denarius (200-202 AD) – marker for the dating of the cultural level reached in the trench (photo by Szymon Lenarczyk)



Fig. 14. Pierced Alexander Severus denarius (222-228 AD) – marker for the dating of the cultural level reached in the trench as well as for the cultural identity of the inhabitants of the site in the last period of settlement activity (photo by Szymon Lenarczyk)

which was located in the eastern part of Pit 1. The second coin was found at the bottom of a depression situated to the southeast of this complex (unit 14).

The Olbian coin and two Roman denarii are the first coins discovered in trench R 23 in these closed archaeological contexts and they set the *terminus post quem* of the room to the middle of the third century.

Cultural identification – Cherniakhov Culture

Cultural identification of the population inhabiting the area studied by the Polish mission back in the 4th – early 5th centuries A.D. can be based on a comparative analysis of the artefacts found during the expedition and the artefacts previously described and classified on the basis of their archaeological context as typical examples of the Cherniakhov Culture.

Metal objects (without coins)

Among fragments of metal objects, a bronze tongue of a belt buckle stands out (unit 34, inv. no. 88; Fig. 15: A) as well as a fragment of a bronze, two-part fibula with an iron spring (Pit 3, unit 40, inv. no. 86; Fig. 15: B). Similar belt buckle tongues can be found in products of the Cherniakhov Culture typical for phases III-V (Gorokhovskiy 1988, 34-46) – second quarter of the 4th century – first quarter of the 5th century). Similar fibulas are typical markers of phase III and stage C3 (second and third quarter of the 4th century) in Godłowski's chronology (Godłowski 1970). A fragment of an iron object should be probably included in the same period (unit 34, inv. no. 84, shovel fitting?; Fig. 15: C). Although no analogy has been found yet, similar elements were used to fix the iron edges of wooden shovels in Kievan Rus.

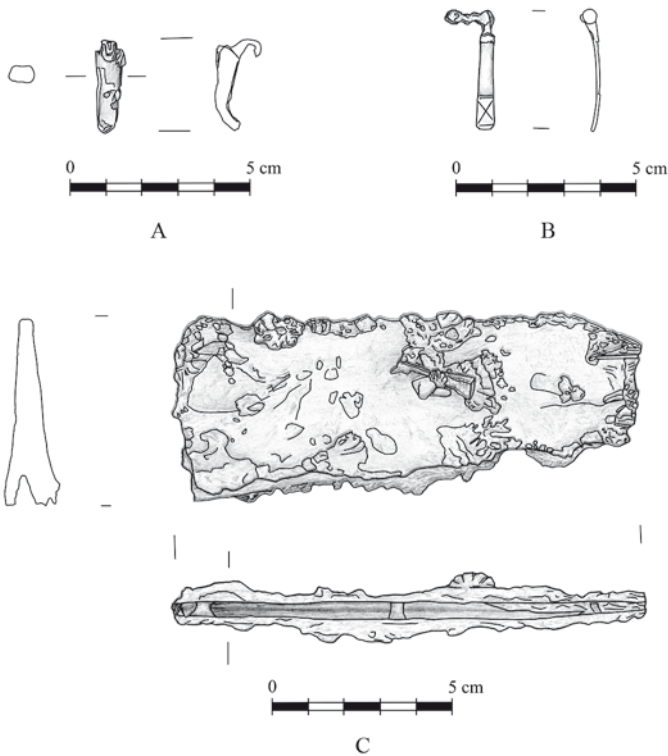


Fig. 15. Metal objects: A – fragment of a buckle; B – fragment of a fibula with an iron spring; C – fragment of the iron edge of a wooden shovel – markers for the cultural identity of the inhabitants of the site in the last period of settlement activity (illustrated by Katarzyna Dejtrowska, Angelika Bogusz and Maria Pronobis)

Coins

Eight ancient coins were found during field work carried out in 2018. This is a much smaller number when compared to the numismatic finds of the previous seasons. This was due to the fact that the excavation work was limited to previously unearthed squares and the surface of the trench was cleaned to achieve more or less the same chronological level over the entire area. Five of the coins are Olbian issues made in the local mint between the 5th century B.C. and the 2nd/3rd century A.D. The remaining three coins are of Roman origin – two denarii from the first half of the 3rd century and one, heavily worn bronze coin from the 2nd century A.D. (compare inv. nos 91, 89, 269 above). Both denarii and the youngest bronze Olbian coin perfectly support the dating of the uncovered complexes (see above), while the cast denarius no. 89, together with similar numismatic finds from previous years, provide very strong support for the thesis concerning the links of the settlers using the

unearthed utility areas with the Cherniakhov Culture. Dr Piotr Jaworski will publish a separate paper on the Olbian coins found during excavation work in the broader context of the material from the neighbouring trenches.

Ceramics

Late-antique ceramics are represented mainly by fragments of grey-polished pottery (cups and bowls), as well as kitchen ceramics characterized by high level of impurities in the ceramic clay, rough surface and traces of undercuts in the lower part (above the foot) of the vessels. Fragments of high capacity greyware vessels (*pithoi*) (unit 20, inv. no. 244;

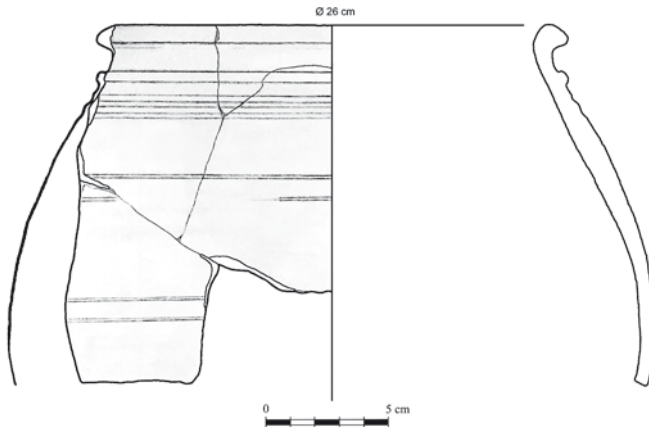


Fig. 16. A high capacity greyware vessel (*pithos*) – a marker for the cultural identity of the inhabitants of the site in the last period of settlement activity (illustrated by Sylwia Groń)

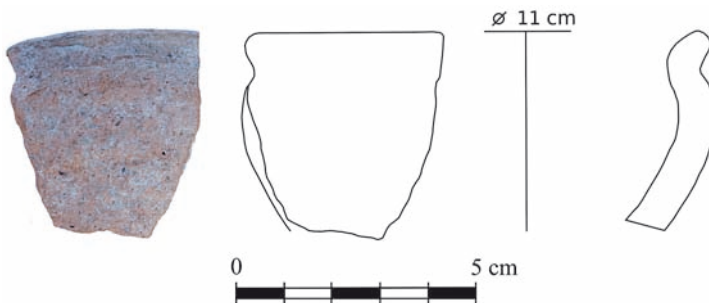


Fig. 17. Sherd of handmade pottery close to that of the Wielbark or Przeworsk cultures, of a type often found at Cherniakhov Culture sites – a marker for the cultural identity of the inhabitants of the site in the last period of settlement activity (illustrated by Szymon Lenarczyk and Sylwia Groń)

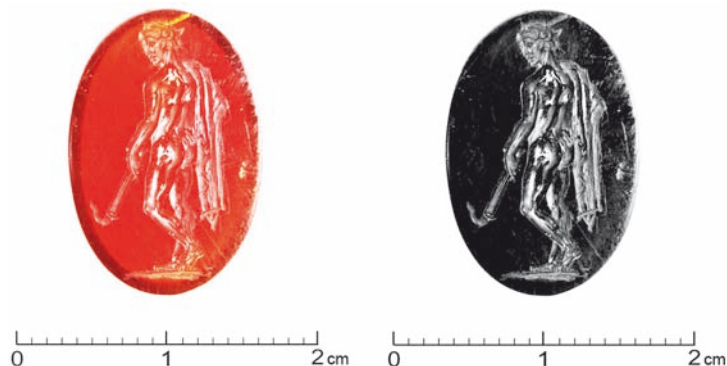


Fig. 18. The intaglio gem with the representation of a youth holding a lowered torch – chance surface find (photo by Szymon Lenarczyk)

Fig. 16) were also found. The greyware vessels have their closest analogies in vessels of the Cherniakhov and Sântana de Mureş cultures dated to around 230 A.D. to the beginning of the 5th century. The forms of the vessels found in the trench are typical for phases III-V; 350-430 BC (Gorokhovskii 1988, 34-46). It should also be noted that only relatively few fragments of hand-made ceramics have survived – mainly flat-bottomed pots. However, among these finds, a fragment of a bowl stands out, which undoubtedly is a piece of a vessel attributed to the Wielbark or Przeworsk culture (unit 34, inv. no. 58; Fig. 17).

Special finds

The gem (Fig. 18)

The most valuable find of the 2018 season is without a doubt an intaglio gemstone with the depiction of a young man holding a lowered torch (inv. no. 245). It was initially dated to the period of Augustus and should be classified as an object of the highest artistic value. It was found accidentally, just outside the boundaries (Fig. 3) of the trench after heavy rainfall, when it was most likely washed out of the turf by rainwater. The context of this find, despite its significant artistic value, adds nothing new to the dating of the cultural layers explored in the trench in 2018. Comprehensive information concerning the gemstone will be available in a separate article by Paweł Gołyźniak and Alfred Twardecki.

The bones

During the three field seasons, a large number of animal bones were found in the excavation area. However, it was the 2018 season that brought a significant discovery in this regard – a bone deposit that is probably a remnant of a craftsman's workshop where bone

artefacts were made. Overall, around 6,000 pieces of bone were found during the last season. Such an amount of reasonably well dated (according to stratigraphic context) bone remains provided an opportunity for analysing the meat diet of the last Olbia inhabitants as well as offered a contribution to discussions concerning the process of steppe formation in this area and possible climate changes (as the bones belonged to animals typically inhabiting steppe biomes). The results of this research are presented in a separate publication by Alfred Twardecki and Evgeniya Yanish in *Ancient Civilisations from Scythia to Siberia*, 2022.

FINAL REMARKS

In 2018, the same chronological horizon was reached over the entire excavation area. The unearthed cultural layer is, so far, the youngest cultural layer identified in Olbia. The analysis of material from archaeological work carried out in the years 2016-2018 shows that the latest cultural strata uncovered in trench R23 date to the end of the 4th and the beginning of the 5th century A.D., when the area explored by the Polish mission was finally abandoned by its last inhabitants. Relics of material culture found during excavation work are evidence that the last inhabitants of Olbia had strong ties with the Cherniakhov culture.

In previous years, a connection with the Cherniakhov culture was established for the last phase of the settlements of Olbia's *chora* on the basis of an analysis of the findings from the settlements around Olbia (Buisikh *et al.* 2006, 289-352).

For Olbia itself, only ceramic fragments of this culture stood out (Magomedov 2007, 47-54; 2020, 219-226), however, for a long time they were not considered in the context of specific construction activities. The publication of the latest finds has so far been far from being fully carried out, and their connection to the Cherniakhov culture was denied for a long time (Krapivina 2013, 77-94). Therefore, in historiography, there was a certain dissonance in the study of the late Roman period – there were settlements of the Cherniakhov culture in the *chora*, but they were absent in Olbia itself. The merit of the first three years of our joint project is the identification of a significant housing and economic complex at the same stratum, in which a representative complex of material culture was discovered, indicating the long-term residence of the carriers of this culture.

It seems to us that the considerations expressed in this work regarding the cultural attribution of the remains of the explored part of the site as a part of the Cherniakhov culture, have not only confirmed the preliminary conclusions made earlier, but also opened the way to study the later cultural layers of Olbia at a new level.

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