

NEW FINDINGS IN SCYTHIAN ANIMAL STYLE FROM OLBIA PONTICA

Alla BUISKIKH*
Andrii IVCHENKO*

Keywords: *Olbia Pontica, Scythian animal style, Greek-barbarian relations, Northern Black Sea region*

Abstract: *This contribution presents some new artifacts produced in the Scythian animal style together with a casting mold that were found at Olbia Pontica. The items were used mainly as a decoration of a horse bridle and the details of armament in the late Archaic – early Classical time. The stylistic peculiarities demonstrate the usual images of Scythian origin and a specific combination of Ionian artistic tradition. A question of artisans and customers that used these items is discussed. The authors join the scholars who suggest their common use as armament decorations both by Olbian residents and barbarians and defend a point of view that some of them could be produced in the polis' workshops by local, Ionian artists.*

The foundation of Borysthenes and Olbia in Scythia left an impact on all the future coexistence and cooperation between the Milesians or Borysthenitai / Olbiopolitai and the barbarians, Scythians. Their interaction in the earlier period, in the second half of 7th–5th c. BC creates a special interest and up to now produces some speculative ideas. Some generations of scholars in the 20th century, starting from Ellis Minns¹, provoked the controversial conclusions about the political, cultural, religious, and economic development of the Northern Pontic *poleis* and Olbia Pontica as its part in the light of Scythian dominance, departing from the archaeological finds. Despite the catastrophic number of archaeological materials, that have appeared in the last half of a century as a result of permanent scientific

* Alla BUISKIKH: Institute of Archaeology of Ukrainian National Academy of Sciences, Classical Archaeology Department ; e-mail: abujskikh@ukr.net

* Andrii IVCHENKO: Institute of Archaeology of Ukrainian National Academy of Sciences, Classical Archaeology Department; e-mail: comandor_a@ukr.net

¹ MINNS 1913, p. 262 ff.

excavations, the artifacts directly connected with the barbarians in the early Olbia, increase too slowly.

An important place among them belongs to the handicraft production with the depictions in the Scythian animal style. They attracted the attention of different researchers being the reliable proof of the physical presence of Scythians in Olbian *polis* and the strong influence of the barbarian material and spiritual culture. The bronze-making handicraft tradition was transferred from the inner Scythian territory to Olbia – it was the main conclusion about the artifacts in the Scythian animal style.² The points of view that tried to move away from the direct interpretation of these products as those that were manufactured by barbarians and to explain their appearance in Olbia at least in another manner, looked to be rear.³

In recent years Olbian collection of artifacts, made in the Scythian animal style, has been expanded with new items. They attracted our attention and gave us a chance to join this interesting and still actual for the early Olbian history discussion. In the attribution of the newly published finds from Olbia we used the latest classification and typology of these items proposed by Anatoli Kantorovitch. It must be specially mentioned before starting our contribution, that stylistically all the Olbian items belong to the main images of the East-European local variant of the Scythian and Siberian animal style.⁴ They were found in the graves of the city necropolis and the early cultural strata in the territory of the South-Eastern part of the Upper City of Olbia.

A bronze plaque in a form of a curled-up beast with two hinges on a flat back side (**Fig. 1**)⁵ was found in the destroyed grave with poor rests of human bones, to the left of the body. A curled fantastic feature contains a motif of some transformed animals with the main animal, a complete figure of a wolf, and an additional one, a ram's head. The wolf's image demonstrates a body with degenerative proportions and anatomic discrepancies such as the joined front and hind legs, an ear, an eye, and a nose; a ram head on a wolf's body is more symbolic than realistic. The curled predator – is one of the most popular motifs in the Scythian animal style⁶. This plaque belongs to a horse bridle⁷.

The circled Scythian animal-style compositions are known from the Eastern Crimea materials. Three very similar plaques, even made in a more simple manner, were found at Panticapaion, in ritual horse burial dated by the beginning of the second quarter of 5th century BC⁸. Next plaque in this stylistic line was founded in the Fifth Ak-Burun tumulus in the Yuz-Oba necropolis – this plaque is

² KAPOSHINA 1956, p. 172 ff.

³ VINOGRADOV 1989, p. 109; OSTROVERKHOV 1994; TREISTER 1998a and 1998b.

⁴ KANTOROVICH 2022, p. 398–401.

⁵ Grave No 4, inventory No O-2013/Nekr/132; dimensions 4.7 × 4.1 cm. This and other items from Olbia, published in the paper, are preserving in the Archaeological Museum, Institute of Archaeology, NAS of Ukraine, Kyiv.

⁶ KANTOROVICH 2022, p. 39–42, type I-1-A-b-I-3. A detailed analysis of an iconographic composition with an attempt at regional peculiarities and stylistic innovations, see also: POLIDOVICH 1994, p. 64 ff., fig. 1–2.

⁷ MOGYLOV 2008, type 1.2.55; fig. 102, 1–17.

⁸ TOLSTIKOV 2017, p. 28, pl. 45.

dated by the whole deposit in the frames of middle – third quarter of 5th century BC⁹. Olbian plaque seems to be earlier than the Eastern Crimean ones, that are more primitive; it has more details of transformed animals' depictions, and can be dated by the end of 6th – the beginning of 5th century BC. The dating of Olbian plaque can be detailed with the help of seven bronze three-bladed arrow heads of basis type, founded in the same grave. They belong to the second chronological group after Anna Melyukova with dating in the frames of second half of 6th – first half of 5th century BC.¹⁰ The modern dating of these arrow heads looks narrower, its upper dating is the beginning of 5th century BC¹¹. The mentioned analogues together with the stylistic peculiarities, such as schematic interpretation of image, and other grave materials give the possibility to date the published plaque by the end of 6th – the beginning of 5th century BC¹².

A bronze Christ-shape plaque with a hinge on the back side (**Fig. 2**)¹³ was found in the partly destroyed masculine grave, to the left from the skeleton, on the thigh bone. The back side of the badge contains a long groove and two loops – this construction indicates that the badge had be sewed on a leather or wooden base. The item consists from a circle central part, long handle and three figurative endings constructing together a Christ-shape form. The face side is covered with relief ornament. The other finds from the grave, including two circular plaques and eight bronze arrow heads of basis type, found together, propose the dating that is closed to the above-mentioned inventory with the curled-up beast plaque¹⁴. The location of the item on the lumbar skeleton and the group of arrow heads permit to propose its usage as a decoration of a *gorytos* that was put into the grave in its normal position. Usually, almost all the famous Christ-shape plaques were used as a decoration of a *gorytos*.¹⁵

Without any doubts, this item belongs to the famous category of casted plaques that contained the different images in the Scythian animal style. According to Yurii Polidovich's classification of Christ-shape plaques, this item belongs to the first group.¹⁶ It's interesting to note that the published item contains any (!) image in the Scythian animal style; perhaps it's a reason why it can be the latest among some dozens of them that this group includes. All the decorative motifs are more abstract than being composed in the Scythian stylistic manner; perhaps the usual bird of prey heads' endings of a christ with ribs at their bugs were transformed into degenerative curls with ribs.

It's necessary to mention that the published Christ-shape plaque is the second find of this type of bronze decorations from Olbian necropolis. The first

⁹ YAKOVENKO 1970, p. 58, fig. 24, 3; BUTYAGIN & VINOGRADOV 2014, p. 28 ff., fig. 21

¹⁰ MELYUKOVA 1964, pl. 7.

¹¹ POLIN 1987, p. 23 f., fig. 4.

¹² BUISKIKH & IVCHENKO 2021a, p. 165–166, fig. 9.

¹³ Grave No 7, inventory No O-2020/Nekr/96; dimensions 8 x 10.5 cm.

¹⁴ BUISKIKH & IVCHENKO 2021b, p. 23–26, Pl. 21–22; 43.

¹⁵ MOGYLOV 2008, type 1.2.62; fig. 104, 1.

¹⁶ POLIDOVICH 2000, p. 36–37.

one, found in 1910, is widely known in historiography¹⁷. It opened the long-time discussion about possible Olbian origin of this and the later founded plaques in the barbarian graves in Northern Black Sea region and the Forest-Steppe zone. Only in the latest years the point of view about its possible non-Olbian, but Scythian production looks to be preferable.¹⁸

A bronze plaque in a form of bird of prey head (**Fig. 3**) was found in the mixed cultural strata at the Upper city with the materials of 2–3rd centuries AD and numerous late-Achaic items starting from the middle of the 6th century BC.¹⁹ A face side represents a bird of prey head to the left with hypertrophied enlarged and curled anatomic details, a curved beak and a circle eye inside of a curl; a flat back side contains a loop. The reduced image of a bird of prey that belonged to the order of falcons or *Falconiformes*, was an extra-popular in the Eastern European Scythian animal style; it created ca. 85% from all the bird images that are known now.²⁰ The plaque belongs to a horse bridle decoration.²¹

On the contrary of the Christ-shape plaque, the plaques in a form of bird of prey heads could be produced in Olbia together with the other productive bronze-working centers. There was found a stone matrix for embossing of metal (golden) plaques in a form of birds of prey.²² Exactly this matrix gave a fresh impulse for the developing of an idea about the possibility of local production of the Scythian animal-style items in Olbia. This position was seriously strengthened with the later finds at Borysthenes, in the 1930^s, where some casted molds for the items in the Scythian style were excavated. Among them there is a mold for casting of two diminutive bird of prey heads, the most degenerative among the famous images of this type.²³

A part of a stone mold for casting the three different items in the Scythian animal style (**Fig. 4**) was found in a pit of the first century AD.²⁴ This pit destroyed a semi dug-out that was attributed as a metal-working place.²⁵ Its dating is in frames of the last quarter of the 6th century BC, up to the end of this century; it is supported with a rich ceramic deposit from this object.²⁶ The form contains a depiction of a wolf with widely opened mouth with teeth, long and triangular ear, a reared wool on the neck, shoulders, thigh, and belly, the bent hind legs, and two

¹⁷ PHARMAKOVSKII 1913, p. 95, fig. 121; PHARMAKOVSKII 1914, p. 28, pl. XII, 1–2; KAPOSHINA 1956, p. 173–176; SKUDNOVA 1988, cat. No 55.

¹⁸ OLGOVSKII 1995, p. 28–30; POLIDOVICH 2000, p. 39–42. In spite our supporting an idea about non-Olbian, but barbarian origin of the Christ-shape plaque, excavated in 1910, the arguments *contra*, expressed by Sergei Olgovskii and his successor Yuri Polidovich, we don't accept (see our arguments below).

¹⁹ Inventory No O-98/R-25/1780; dimensions 3.7 x 1.3–2 cm: KRAPIVINA & BUISKIKH 1999, p. 38–39, Pl. 134.

²⁰ KANTOROVICH 2022, p. 250–255, 377, type 3.

²¹ MOGYLOV 2008, type 1.2.37; fig. 98, 1–15.

²² PHARMAKOVSKII 1929, p. 48, fig. 42; KAPOSHINA 1956, p. 183, fig. 23; see also: OSTROVERKHOV 1996, p. 100, fig. 6, 6–7.

²³ OSTROVERKHOV 1994, p. 63, fig. 3. 1.

²⁴ Inventory No O-2008/R-25/2996, dimensions 9.5 x 9 cm.

²⁵ KRAPIVINA & BUISKIKH 2011, p. 204 ff.

²⁶ BUISKIKH 2015, p. 93 ff.

bird of prey heads. The depiction of the wolf has direct analogs at the other casting molds, found at Borysthenes.²⁷ The icons of birds of prey are closely similar to those that were cut in the above-mentioned form from Borysthenes.²⁸ A common intake for both items preserved the traces of high temperature, that means that the form was in long-time use.

A one-side plaque in the shape of a lioness head's profile (**Fig. 5**) was found in a dug-out²⁹. This plaque was made from a deer's horn, the face side is polished, and the back side partly preserved an original structure of a horn.³⁰ The archaeological materials from this object give a wide date in the frames of the last quarter of 6th – the first quarter of 5th century BC. The head is turned to the right, it has a rectangular form with raised superciliary arch; an ear is small and has a round-rectangular form, on the opposite side – a protruding rounded underlip. An eye is small and round, the pupil is conveyed by a straight line. The main accent of the lioness depiction is concentrated at the wide-opened mouth with two fangs in front and four teeth made in stylized manner, being little rounded, with two intersecting drawn lines. This plaque combines the realistic manner of Ionian art and the stylization, used in the Scythian animal style.

The plaques in the shape of a lion's head, the reduced image after Kantorovich,³¹ became popular in the repertoire of the Scythian animal style. It's not the first find of one-side reduced plaque in a shape of an animal head made from a horn, found in Olbia and the nearest city's vicinity. All the known depictions are different; they also have some stylistic similarities in details.³² But the most popular for this period were the identical items produced from bronze that were the details of a horse bridle.³³ A complete casting mold consisting of two parts was found in one of the tumuli at Maritsyn necropolis in the Adzhyhol valley³⁴, in 18 km to the South-West from Olbia. This form was used for the production of bronze plaque with the depiction of a lion head profile, the most similar with the publishing one. The stylistic peculiarities of Olbian plaques, looking at the modern chronology of building activity in Olbia,³⁵ suggest the narrower date for the publishing item – in the frames of the last quarter of the 6th – the turn between the 6th and the 5th centuries BC.

The number of bronze plaques in a shape of a lion's head have their origin from the North-Eastern part of the Northern Black Sea littoral, the Bosporan territory. Special interest creates those are dated of the first half of 5th century BC.

²⁷ SON 1987, p. 120, fig. 41, 4–5; TREISTER 1998a, p. 135, fig. 5; 7; TREISTER 1998b, p. 182, fig. 5–6; about a wolf's depiction see also: KANTOROVICH 2022, p. 68–69, type III-I-4.

²⁸ OSTROVERKHOV 1994, p. 63, fig. 3, 1.

²⁹ Dugout No 1178; inventory No O-2003/R-25/180; dimensions 4 x 3 cm: KRAPIVINA, BUISKIKH & KRUTILOV 2004, p. 62–64, Pl. 152.

³⁰ This information we owe to our colleague Alice Semenova.

³¹ KANTOROVICH 2022, p. 71–72, type 2.

³² KAPOSHINA 1958, p. 98–99, fig. 1, 1–2; OSTROVERKHOV & OTRESHKO 1986, p. 61–62, fig. 1; OSTROVERKHOV 1994, fig. 1. 4, 7.

³³ MOGYLOV 2008, type 1.2.11.

³⁴ EBERT 1913, p. 5, fig. 6, a.

³⁵ The dug-outs in the south-eastern part of the Upper city were demolished before the regular city-planning system started ca. 500 BC: BUISKIKH 2021, p. 682.

Four plaques were found together with the other details of a horse harness in the necropolis of Nymphaeum in 1876. The lion's heads were casted in realistic manner – with rounded eyes, thick manes, hangs and openwork holes instead of the teeth.³⁶ The similar bronze plaques were found in the Scythian tumuli in the Forest-Steppe zone of the Dnieper region.³⁷ The above-mentioned graves with the lion-head's bronze plaques were dated by the first half of the 5th century BC.

When to compare the Olbian horn plaque with those that were produced from bronze and found in the barbarian graves (a horse harness from the Nymphaion's grave now has the identical cultural attribution), their stylistic peculiarities are looking to be quite different in spite of the common compositional and iconographic proximity. It's necessary to add that some characteristic features of Ionian animal style possible to compare with the lions' heads in Milesian, North-Ionian, including Clazomenian and Chian vase painting (Fig. 6, 1–7),³⁸ they became also permanent in the Scythian animal style iconography. The stylistics of the Olbian item is possible to compare with a double-side *ostrakon* on a black-glossed sherd from the destroyed upper part of another dug-out. It contains an image of a wolf on one side and a deer on another (Fig. 7). The stylistic peculiarities that are normal for Ionian animal style are visible – the realistic manner of animal faces in profile and eyes in front, the anatomic details, deer's antler, thick and wavy wolf's mane, its widely opened mouth with protruding tongue between sharp, triangular in shape, teeth without fangs, per three in every row. Its local origin and belonging to the work of the local Olbian artist, Ionian by his origin, to our mind, can't be disputable.

The general Ionian stylistic influence, direct or indirect, on the items produced in the Scythian animal style, and on those, produced in Olbia also, was under the discussion for more than hundred years.³⁹ For Olbia it became an actual problem in connection with a long-time speculative discussion about possible forms of barbarian (Scythian) influence in the early period of the Olbian *polis* existence. With any doubts, the strong presence of the barbarian, first of all, Scythian elements in Olbian material culture at the end of 6th and the beginning of 5th c. BC reflects a diversified system of cooperation between the Olbian *polis* and the Scythian world, that became more complicated after the Darius' expedition to Scythia.⁴⁰ Were these items produced by Olbian artisans or by the barbarian ones and where they had to be produced finally? Were these items used by Olbiopolitai in their everyday life and military activity or they were used by Scythians, being the best indicator of their strong presence in early Olbia and their influence at the development of a local handicraft production?

³⁶ SILANT'EVA 1959, p. 86, fig. 48, 1–2.

³⁷ GALANINA 1977, tabl. 13, 1; p. 30, 12; the full information about 13 items including those from Nymphaion: MOGYLOV 2008, p. 45, fig. 93, 8–12.

³⁸ All the fragments were found at Borysthene: BUISKIKH 2019a, cat. No 1.143; 2.219–220; 5.1; 8.44–45; 8.53; 8.67.

³⁹ MINNS 1913, p. 262–264; PHARMAKOVSKII 1914, p. 32–37; KAPOSHINA 1956, p. 188; OSTROVERKHOV 1994, p. 67.

⁴⁰ With the detailed reconstruction of political situation see: VINOGRADOV 1989, p. 82–109.

The historiographic tradition demonstrates that every archaeological find in Borysthene and Olbia, that had non-Hellenic origin, had to be included in a large list of material indicators that proved not only their barbarian origin, but also the use by the barbarians only. Among them – the handmade kitchen pottery, armament, metal and bone decorations, and the finds from the city necropolis, especially the things, connected with barbarian war- and every-day culture.⁴¹ Up to nowadays the two opposite points of view exist in the interpretation of the production in the Scythian animal style from Olbia and from the inner territory of the Olbian *polis*, including Borysthene as its part.

An idea about barbarian artisans that moved to Olbia (the visiting masters) and produced there the different items in the Scythian animal style that have the direct analogues in the barbarian world, is proposed constantly by Sergei Olgovskii.⁴² Moreover, the author is doubtful about the potential possibilities of Olbian residents to study the demands of the local, non-Greek, customers from the one hand, and their aims in metalwork production being cut from the sources from the mother-city from another hand.⁴³ It seems, the last hypothesis appeared as an answer to Michael Treister's supposition to consider such products as manufactured by the local artisans, Ionian by their origin, that were acquainted with the Ionian schools of metalworking and had to be presented in the colonists' contingent for satisfaction the demands of the both-side customers, Ionian residents and barbarians.⁴⁴

In this connection we can add, that the Olbian mold indicates that a repertoire of the similar bronze items in the Scythian animal style was repeated in Olbia and Borysthene because of their popularity among the customers. The active development of an intensive handicraft activity in early Borysthene, including bronze-casting and iron-smelting production with agricultural tools⁴⁵ corresponds the information about the similar activity in Olbia. The lesser number of workshops, excavated up to now in late-Achaic Olbia, finds the rough explanation for the worth preservation of the early cultural strata in comparison with Borysthene. But the rare finds of metal workshops in Olbia don't exclude their presence in the *polis*-center for the satisfaction in the every-day production and those that had to be used in the religious activity. In two sacred zones, the Western, connected with the worship of Apollo Ietros and the Mother of Gods, and the Southern, connected with the worship of Aphrodite, the rests of bronze-

⁴¹ For Borysthene: SOLOVYOV 1999, p. 43–49; for Olbia: BESSONOVA 1991, p. 93–95.

⁴² The numerous author's publication concerning this subject for convenience are reduced to the latest: OLGOVSKII 2016; OLGOVSKII 2021.

⁴³ OLGOVSKII 2016, p. 189 ff.

⁴⁴ TREISTER 1998a, p. 141; for the Northern Black Sea *poleis*: TREISTER 1998b, p. 179 ff.

⁴⁵ LAPIN 1966, p. 137–138; DOMANSKII & MARČENKO 2003, p. 29 ff.; CHISTOV & KRUTILOV 2014, p. 213–214. The range of the local goods' production covers also the newly excavated Ceramic district with kilns and the rests of the numerous painted table pottery: KRUTILOV & BONDARENKO 2015, p. 205 ff. In the nearest vicinity, at the Yagorlyk settlement, the rests of bronze casting and glass beads production is known: KOLESNICHENKO & YATSUK 2021.

metal workshops were found.⁴⁶ Besides, the preliminary chemical analysis of cooper ores' slag from Olbia gave the possibility to conclude that the raw material base included the import from the territory of modern Anatolia.⁴⁷

When to summarize, the new finds of items, stylistically belonging to the wide range of the Eastern-European Scythian animal style, and produced from bronze and deer's horn together with the casting mold for bronze decorations, can be surely attributed as a part of the local, Olbian, handicraft. The attempts to characterize the barbarian ethnicity of the artisans as the reason for a low-skill of Olbian residents in the period of nearly two or three generations can't be adopted as serious arguments. We can only support those authors who suggested the role of barbarian customers in the development of bronze-casting in Olbia and Borysthenes. But the evidence that this role was strongly definite, is absent up to now. Even the details of barbarian armament, that were found in the separate graves, don't permit us to suppose the barbarian ethnicity of the graved persons. The evidences of barbarian grave tradition in Olbian and Maritsyn necropoleis are extremely rare (if to speak about the specific number of grave goods put into a grave with different elements of defensive costume and armament) up to now, besides the presence of separate items that could be used by the barbarians and the Olbian residents.⁴⁸ We consider it possible to use the term "fashion" – some items for horse bridles and personal toilet, used by barbarians, became popular among the *polis* inhabitants at the end of 6th – the beginning of 5th c. BC as a result of Hellenic and Scythian cultural interaction and acculturation.

BIBLIOGRAPHY

BESSONOVA 1991 – S.S. Bessonova, *Ob elementakh skifskogo obryada v arkhaischeskom nekropole Olvii*, in: A.V. Gavrilov et alii (eds), *Problemy arkeologii Severnogo Prichernomor'ya (K 100-letiyu osnovaniya Khersonskogo muzeya drevnostei)*, Kherson, 1991, p. 92–122.

BUISKIKH 2015 – A.V. Buiskikh, *O datirovke bronzoliteinoi masterskoi v Yuzhnoi chasti Olvii*, *Arkheologiya i davnya istoriya Ukrainy* 1(15), (2015), p. 93–112.

BUISKIKH 2019a – A.V. Buiskikh, *Archaicheskaya raspisnaya keramika iz Borisfena (raskopki 1960–1980 gg.)*, Kyiv, 2019.

BUISKIKH 2019b – A.V. Buiskikh, *Vyrobnuha maisternya na Pivodennomu temenosi Olvii*, in: V.P. Chabai (ed.), *I Vseukrainskii arkeologichniy z'izd: Materialy roboty*, Kyiv, 2019, p. 327–333.

BUISKIKH 2021 – A.V. Buiskikh, *Gradostroitelnyi plan Olvii Pontiiskoi*, *VDI* 3 (2021), p. 673–698.

BUISKIKH & IVCHENKO 2021a – A.V. Buiskikh, A.V. Ivchenko, *The Necropolis of Olbia in 6th – 5th centuries BCE. New Data on the Territorial Development*, in: J. Fornasier & A.V. Buiskikh (Hrsg.), *An den Ufern des Bug. Deutsch-ukrainische Ausgrabungen in Olbia*

⁴⁶ BUISKIKH 2019b. Also, a special contribution after A. V. Buiskikh "Workplace at the Southern sacred area in Olbia Pontica" is in print.

⁴⁷ KRAPIVINA, MANICHEV & KRUTILOV 2004, p. 84–86.

⁴⁸ Olbia: KAPOSHINA 1956, p. 173–176; Maritsyn: EBERT 1913, S. 11–15. Analysis of grave goods from Olbian necropolis connected with Scythians: BESSONOVA 1991, p. 92–95.

Pontike im Kontext internationaler Forschungen zu antiken Migrationsprozessen, seria Frankfurter Archäologische Schriften 42, Bonn, 2021, p. 155–184.

BUISKIKH & IVCHENKO 2021b – A.V. Buisikh, A.V. Ivchenko, *Otchet o raskopkakh na territorii nekropolya Olvii v 2020 g.*, in: *Nauchnyi arkhiv Instituta Arkheologii, Fond Ekspeditsii No 64*, Kyiv, 2021.

BUTYAGIN & VINOGRADOV 2014 – A.M. Butyagin, Yu.A. Vinogradov, *Yuz-Oba. Kurgannyi nekropol aristokratii Bospora II. Kurgany na myse Ak-Burun*, seria Bosporskie issledovaniya, Suppl. 13, Simferopol – Kerch, 2014.

CHISTOV & KRUTILOV 2014 – D. Chistov, V. Krutilov, *The Archaic Town on the Berezan Island: New Studies on the Chronology and Urban Planning of the Berezan Settlement*, in: N. Povalachev (Hrsg.), *Phanagoreia und darüber hinaus... Festschrift für Vladimir Kuznetsov*, Göttingen, 2014, p. 209–229.

DOMANSKIJ & MARČENKO 2003 – Ja.V. Domanskij, K.K. Marčenko, *Towards Determination the Chef Function of the Settlement of Borysthenes*, in: P. Guldager Bilde et alii (eds), *The Cauldron of Ariantas*, Aarhus, 2003, p. 29–35.

EBERT 1913 – M. Ebert, *Ausgrabungen auf dem Gute Maritsyn, Gouv. Cherson (Süd-Russland)*, *Prähistorische Zeitschrift* 5 (1913), p. 1–111.

GALANINA 1977 – L.K. Galanina, *Skifskie drevnosti Podneprovyia*, seria Svod arkheologicheskikh istochnikov D1-33, Moskva, 1977.

KANTOROVICH 2022 – A.R. Kantorovitch, *Iskusstvo skifskogo zverinogo stilya Vostochnoi Evropy: Klassifikatsiya, tipologiya, khronologiya, evolyutsiya*, Vol. 1–2, Moskva, 2022.

KAPOSHINA 1956 – S.I. Kaposhina, *O skifskikh elementakh v kulture Olvii*, MIA 50 (1956), p. 154–189.

KAPOSHINA 1958 – S.I. Kaposhina, *Pamyatki skifskogo zvirynogo stilyu, znaideni v Olvii*, *Arkheologichni pamyatky URSR* 7 (1958), p. 98–112.

KOLESNICHENKO & YATSUK 2021 – A. Kolesnichenko, O. Yatsuk, *Vyrobnytstvo skla chy jogo obrobka? Yagorlytske poselennya u svitli novykh doslidzhen*, *Eminak* 1 (33) (2021), p. 144–156.

KRAPIVINA & BUISKIKH 1999 – V.V. Krapivina, A.V. Buisikh, *Otchet o raskopkakh na uchastke R-25 v Olvii v 1998 godu*, in: *Nauchnyi arkhiv Instituta Arkheologii, Fond Ekspeditsii No 64*, Kyiv, 1999.

KRAPIVINA & BUISKIKH 2011 – V.V. Krapivina, A.V. Buisikh, *Novyi proizvodstvennyi kompleks pozdnearkhaicheskogo vremeni iz Olvii*, *Bosporskie chteniya* 12 (2011), p. 204–210.

KRAPIVINA, MANICHEV & KRUTILOV 2004 – V.V. Krapivina, V.I. Manichev, V.V. Krutilov, *O metallurgicheskome proizvodstve v Olvii (tsvetnye metally)*, in: N.O. Gavrylyuk (ed.), *Paleoekonomika rannogo zaliznogo viku na terytorii Ukrainy*, Kyiv, 2004, p. 66–87.

KRAPIVINA, BUISKIKH & KRUTILOV 2004 – V.V. Krapivina, A.V. Buisikh, V.V. Krutilov, *Otchet ob okhrannykh raskopkakh na uchastke R-25 v Olvii v 2003 g.*, in: *Nauchnyi arkhiv Instituta Arkheologii, Fond Ekspeditsii No 64*, Kyiv, 2004.

KRUTILOV & BONDARENKO 2015 – V.V. Krutilov, D.V. Bondarenko, *Keramicheskie obzhygatelnye pechi Borisfena serediny VI v. do n.e. (po materialam raskopok 2011–2013 gg.)*, *Arkheologiya i davnya istoriya Ukrainy* 1 (14) (2015), p. 205–216.

LAPIN 1966 – V.V. Lapin, *Grecheskaya kolonizatsiya Severnogo Prichernomor'ya*, Kyiv, 1966.

MELYUKOVA 1964 – A.I. Melyukova, *Vooruzhenie skifov*, seria Svod arkheologicheskikh istochnikov D1-4, Moskva, 1964.

MINNS 1913 – E.H. Minns, *Scythians and Greeks*, Cambridge, 1913.

MOGYLOV 2008 – O.D. Mogylov, *Sporyadzhennya konya skifskoi doby u Lisostepu Skhidnoi Evropy*, Kyiv & Kamyanskyi, 2008.

OLGOVSKII 1995 – S.Ya. Olgovskii, *Pokhodzhennya khrestopodibnykh blyakh skifskogo chasu*, *Arheologia* 2 (1995), p. 25–31.

OLGOVSKII 2016 – S.Ya. Olgovskii, *Novaya liteinaya forma iz Olvii i olviiskaya metalloobrabotka pozdnearkhaicheskogo vremeni*, *Revista Arheologică* 1–2 (2016), p. 189–198.

OLGOVSKII 2021 – S.Ya. Olgovskii, *Varvarski lyvarnyky u Nyzhnyomu Pobuzhzhii v arkhaidchnyi chas*, *Eminak* 1(33) (2021), p. 157–163.

OSTROVERKHOV 1994 – A.S. Ostroverkhov, *Zvirynyi styl v kulturi Olvii*, *Arheologia* 2 (1994), p. 58–69.

OSTROVERKHOV 1996 – A.S. Ostroverkhov, *Zverynyi styl i antichnye goroda Severnogo Prichernomya*, *VDI* 2 (1996), p. 85–102.

OSTROVERKHOV & OTRESHKO 1986 – A.S. Ostroverkhov, V.M. Otreshko, *Novyi obrazets zverinogo stilya, najdennyi bliz Olvii*, in: H.A. Dzis-Raiko et alii (eds), *Pamyatniki drevnego iskusstva Severo-Zapadnogo Prichernomya*, Kiev, 1986, p. 61–66.

PHARMAKOVSKII 1913 – B.V. Pharmakovskii, *Raskopki v Olvii, Otchet Arkheologicheskoi Komissii za 1909–1910 gody*, Sankt–Peterburg, 1913, p. 1–105.

PHARMAKOVSKII 1914 – B.V. Pharmakovskii, *Arkhaicheskii period v Rossii*, *MIA* 34 (1914), p. 15–78.

PHARMAKOVSKII 1929 – B.V. Pharmakovskii, *Rozkopuvannya Olbii r. 1926*, Odesa, 1929.

POLIDOVICH 1994 – Yu.B. Polidovich, *O motive svernuvshegosya khishchnika v skifskom „zverinom stile”*, *Rossiiskaya arkheologiya* 4 (1994), p. 63–78.

POLIDOVICH 2000 – Yu.B. Polidovich, *Skifski khrestopodibni blyakhy*, *Arheologia* 1 (2000), p. 35–48.

POLIN 1987 – S.V. Polin, *Khronologiya pannyoskifskikh pamyatok*, *Arheologia* 59 (1987), p. 17–36.

SILANT'EVA 1959 – L.F. Silant'eva, *Nekropol Nimfeya*, *MIA* 69 (1959), p. 5–104.

SKUDNOVA 1988 – V.M. Skudnova, *Arkhaicheskii nekropol Olvii*, Leningrad, 1988.

SOLOVYOV 1999 – S.L. SOLOVYOV, *Archaic Berezan: The Architecture, History and Culture of the First Greek Colony in the Northern Black Sea*, in: J. Boardman & G.R. Tssetskhladze (eds), *Colloquia Pontica* 4, Leiden, Boston & Köln, 1999.

SON 1987 – N.A. Son, *Remeslennoe proizvodstvo*, in: S.D. Kryzhitskii (ed.), *Kultura naseleniya Olvii i ee okrugy v arkhaidcheskoe vremya*, Kiev, 1987, p. 118–125.

TOLSTIKOV 2017 – V.P. Tolstikov, *Ocherk gradostroitelnoi istorii Tsentralnogo rayona Pantikapeya v kontse 7 – seredine 5 vv. do n.e.*, in: V.P. Tolstikov, N.S. Astashova, G.A. Lomtadze, O.Yu. Samar, O.V. Tugusheva, *Drevneishyi Pantikapei. Ot apoikii – k gorodu*, Moskva, 2017, p. 10–42.

TREISTER 1998a – M.Yu. Treister, *Ioniiskie remeslenniki – skifam*, *VDI* 4 (1998), p. 130–141.

TREISTER 1998b – M.Yu. Treister, *Ionia and the North Pontic Area. Archaic Metalworking. Tradition and Innovation*, in: G.R. Tssetskhladze (ed.), *The Greek Colonisation of the Black Sea Area. Historical Interpretation of Archaeology*, seria *Historia*, Einzelschriften 121, Stuttgart, 1998, p. 179–182.

VINOGRADOV 1989 – Yu.G. Vinogradov, *Politicheskaya istoriya Olviiskogo polisa VII–I vv. do n.e. Istoriko-epigraficheskoe issledovanie*, Moskva, 1989.

YAKOVENKO 1970 – E.V. Yakovenko, *Uzdechnyi nabor 5 v. do n.e. iz Vostochnogo Kryma*, *KSIA* 124 (1970), p. 54–69.



Fig. 1. Bronze plaque in a form of a curled-up beast (after Andrii Ivchenko).

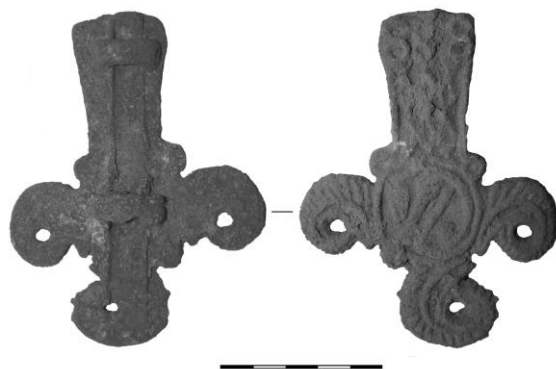


Fig. 2. Bronze Christ-shape plaque (after Andrii Ivchenko).



Fig. 3. Bronze plaque in a form of bird of prey head (after Alla Buisikh).



Fig. 4. Stone mold (after Alla Buisikh).



Fig. 5. Deer's horn plaque (after Alise Semenova).

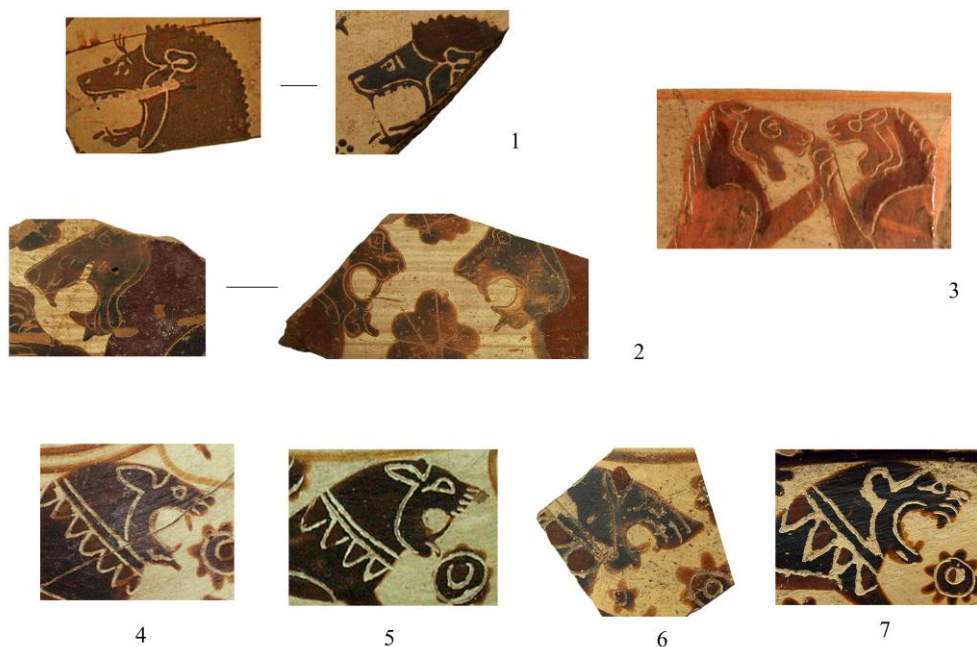


Fig. 6. Lions' heads motifs in Milesian, North-Ionian, including Clazomenian and Chian vase painting (after A. Buiskikh).



Fig. 7. Double-side ostrakon on a black-glossed sherd with different animals incised (after A. Buiskikh).