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Verum ab Histro oppida Cremniscoe, Aepolium, montes Macrocremni, clarus amnis Tyra, oppido nomen imponens ubi antea Ophiusa dicebatur. In eodem insulam spatiostam incolunt **Tyragetae**; abest a Pseudostomo Histri ostio CXXX.

Plinii Secundi, *Naturalis Historia*, IV, 12 (26), 82

Iar de la Istru înainte se află orașele Cremniscoe, Aepolium, munții Macrocremni, vestitul fluviu Tyras, care dă numele și orașului, numit odinioară Ophiusa. Tot acolo este o insulă întinsă, locuită de **tirageți**, la o depărtare de o sută treizeci de mii de pași de brațul Pseudostomon al Istrului.

Pliniu cel Bătrân, *Istoria naturală*, IV, 12 (26), 82



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# ARROWHEADS FROM KARTAL EXCAVATIONS

Igor V. Bruyako

**Keywords:** arrowheads, bilobate, trilobate, Scythians, pre-Scythians period, Middle Ages.

A collection of arrowheads made of flint, bone, bronze and iron has been collected during the excavations of the Kartal hillfort on the Lower Danube (fig. 1). The collection includes specimens that date from the Bronze Age to the Middle Ages. Most of the tips are found in the cultural layer, or on the surface as lifting material. Some specimens come from the respective closed complexes. The publication of the materials is organised chronologically. The numbering of the arrowheads in the figures is continuous. The number in the list corresponds to the number in the figure.

## Early Bronze Age

**1.** The earliest specimen in the whole collection, made of light grey flint, was found in the Central section of the settlement site in 2009 as lifting material (fig. 2/1). Taking into account the presence of Late Pit culture burials at the settlement (Бруяко, Агульников 2017), this arrowhead may belong to the same group of monuments. Similar ones are known in burials of the Yamnaya (Budzhak) culture of the North-Western Black Sea region (Субботин 2003, 52 и сл., табл. 8/2, 4).

## Late Bronze Age (Early Hallstatt period)

Two bone arrowheads belong to this chronological group. Both are found in closed complexes (pits).

**2.** One specimen is of type of arrowheads with petiole (fig. 2/2). It is tetrahedral, and there are triangular notches on its edges. It was found in pit no. 46 ("North-Eastern" excavation area, I/2005) at the very bottom accompanied by a very bright ceramic complex, characterising the horizon of the Tămăoani – Hansca type so called incised Hallstatt cultures. For the Late Bronze Age, bone arrowheads with petioles are common (Никулина, Арнэут 2004). However, in any case, I am not aware of any tetrahedral specimens. Perhaps, only in 1 case we see something similar – the settlement of Magala (Крушельницька 2006, рис. 49/1).

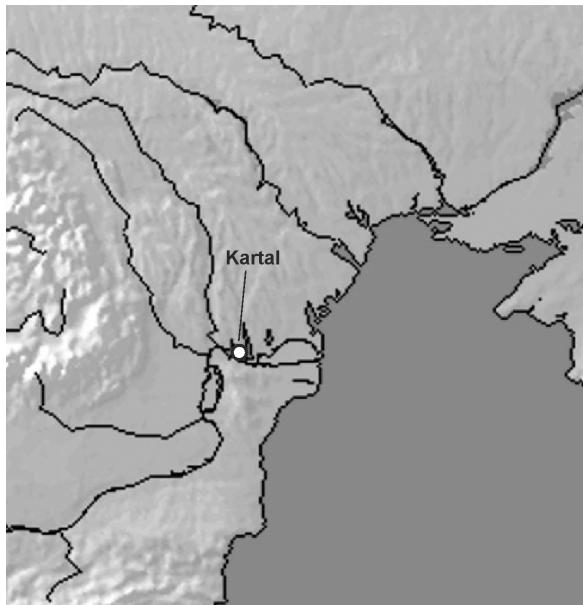


Fig. 1. Location of the Kartal hillfort.

**3.** A flat, two-bladed specimen with a notch in the base (fig. 2/3) was found in dwelling 1 at the "Central" area, excavation IV/2007. Unlike the previous one, this type is well known. Territorially and chronologically, the closest analogues come from the settlement of *Gîrbovaț* of the Noua culture (phase I). The site is located in the northern part of Galați County, in the basin of the Byrlad River (Florescu 1991, fig. 143 - A/3, 6, 7, 8). A series of similar arrowheads was found in the Middle Dnieper region at the Subotovo hillfort of the 11/10<sup>th</sup>-9<sup>th</sup> centuries BC (Гершкович 2016, 128, 183, 354, рис. С21/4-10).

## Early Iron Age (pre-Scythian period)

Three arrowheads made of bronze belong to this group. All of them are bilobate socketed typ.

**4.** The Novocherkassk type of the arrowhead was found in excavation area VI/2019 ("Central" part). The socket is long, the nib is rhombic. Between them is a transverse rib. The edges of the feather are flattened (forged). The peculiarity of the Kar-

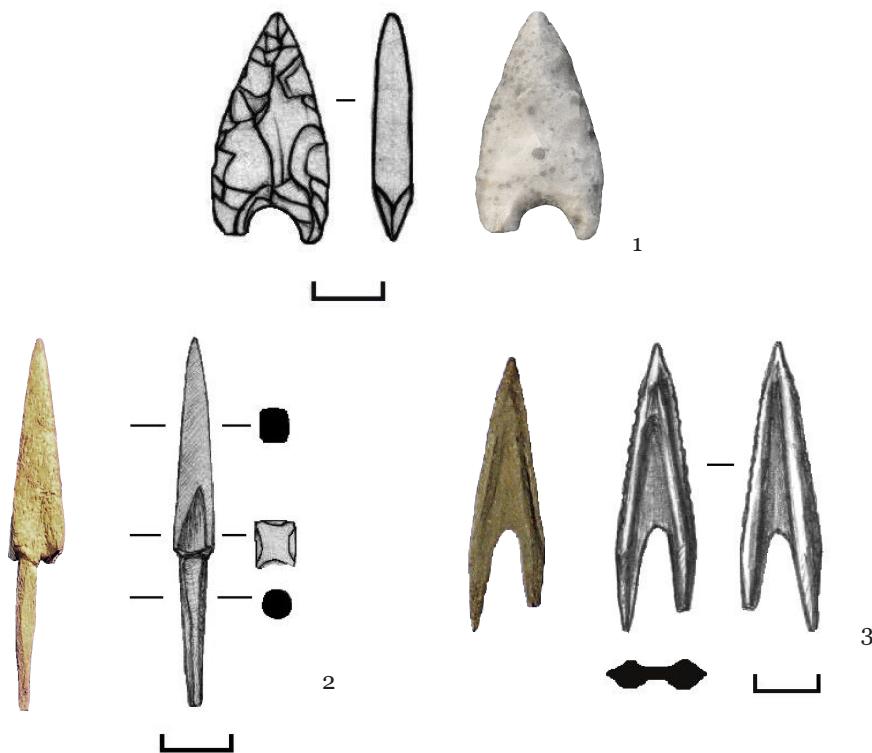


Fig. 2. Arrowheads of Early Bronze Age (1) and Late Bronze Age (2, 3).

tal specimen is a very long socket combined with a small feather (fig. 3/1). The closest analogies are found in the settlement Mikhailovka of the Zhabotin time, located not far from the eponymous monument – the settlement of Zhabotin (Дараган 2015, 131-132, рис. 2/1). I know another tip of Novocherkassk type from Kartal, which was found in the 90s among the scree of the citadel on “Kamennaya Gora” (“Stone Hill”).<sup>1</sup>

5. An arrowhead of the asymmetric-rhombic type with a very short socket (fig. 6) was found in pit no.165 of the Getaean time (“North-Eastern” of excavation area, I/2009). This complex of the 4<sup>th</sup> century BC had signs of not at all a domestic object. The pit contained a whole human skull and a fish dish of light-coloured clay with a red coating of antique type. This arrowhead could have entered the complex either accidentally or deliberately. It belongs to the Endzha type, which T.V. Ryabkova suggests to distinguish in the previously unified Endzha – Zhabotin group (Рябкова 2012). Sim-

ilar specimens are known among the materials from Rudkovetskoye hillfort (Винокур 1985, 46, рис. 10/15; Могилов 2020, 144, рис. 6/1-8) at the settlement of Zhabotin (Дараган 2011, табл. 115/11, рис. V/34, 1). A series of similar arrowheads with a short and barely protruding socket comes from the Gumarovo barrow (Исмагилов 1988, рис. 5/11).

It seems that the evolution of the socket can be an indicator of the relative chronology of the whole set of Endzha-Zhabotin. At the beginning of the row are the tips with a completely hidden socket. This is clearly an Asian in origin form (Рябкова 2012, 349). Then, gradually, a very short (Kartal, Rudkovets settlement) and then a long (Zhabotin 524) socket gradually emerges from the nib. That is, the specimen from Kartal, together with the series from Rudkovetskoye hillfort, are a kind of intermediate form between the Endzha type, with a completely hidden socket, and the Zhabotin 524 type with a long socket, which makes up from a quarter to a third of the total length of the tip. There are no arrowheads with a completely hidden socket in Gumarovo. Thus, the Gumarovo,

<sup>1</sup> I've seen this advice personally. It was not included in the museum collection. His further fate is unknown.

Rudkovets series and Kartal form approximately one chronological horizon – late 8<sup>th</sup> - early 7<sup>th</sup> centuries BC.

**6.** Another bronze arrowhead of the same group as the previous one was discovered during excavations on the acropolis of Kartal in 2011. It differs from no. 5 by its shorter length and due to this more pronounced rhombic silhouette (fig. 3/3). One of the edges is rounded. Analogies are known again, in Gumarovo (Исмагилов 1988, 35, рис. 5/26, 29; Дараган 2015 139, рис. 7/25), near Alekseevsky village (Тереножкин 1976, 127, рис. 77/1), in Arzhan (Грязнов 1980, рис. 11/8), in an unnamed settlement in Sokirnoye village near Zhabotin together with the corresponding Zhabotin ceramics (Ляшко 2018, рис. 4/8).

Since there are no materials for most of the 7<sup>th</sup> century BC in Kartal, the upper date of the tips of this type (no. 5 and no. 6) can be limited to the beginning of this century.

*In addition to Kartal*, in the same area, in the vicinity of Izmail, between the villages of Brovska and Matroska<sup>2</sup>, one more tip of Novocherkassk type was found (fig. 4/15). As can be seen, it belongs to another variant – with a wide and long nib and a relatively short (shorter than the nib) socket. Wide edges with additional forging, thin rib along the feather hub and across the hub on the border with the feather. Judging by the available data, the type of arrowhead from under Izmail is rare. I know one similar specimen, which comes from random finds in south-western Alföld – Kiskunhalas (Kemenczei 2009, 124, 250, Taf. 28/3).

### Early Scythian culture

Several arrowheads can be attributed to the earliest (Kelermess) stage of the Scythian culture, although they were in use for quite a long time, especially in isolated form as part of generally later quiver sets.

**7.** Bilobate bronze leaf-shape arrowhead was found in excavation area IV/2001 (“Central part”). The tip is broken off. The socket is rather short (fig. 3/4). Presumably, it is connected with the Early Iron Age complex (“dwelling 2”). Analogies are quite numerous (Daragan, Didenko 2021, fig. 2).

**8.** Fragment of the lower part of a bronze bilobate arrowhead, apparently similar to the previous one (fig. 3/4). Stray find from the territory of the settlement.

**9-10.** Two spearheads belong to the group of trilobate socketed arrowheads with triangular heads (fig. 3/6, 7). They are known already in Gumarovo (Исмагилов 1988, 39, рис. 7/ 85-88), and are widely spread since the Kelermess stage (Галанина 1997, 106, 109, рис. 27/37-40). A serie of such arrowheads comes from the Lukashevka barrow (Daragan, Didenko 2021, fig. 16/43-48). Although it is unknown how this mound dates.

### Middle Scythian culture

**11.** A trilobate arrowhead with a rhombic nib and a slightly protruding socket belongs to a variety quite rare for the Northern Black Sea region (fig. 3/8). Such arrowheads were widespread in the Achaemenid quiver sets since the 6<sup>th</sup> century BC. A great number of such arrowheads were found during the excavations of Persepolis, Pasargadae (Stronach 1978, 218, fig. 94). A large collection has also been gathered at the site of the camp of the Persian army besieging Alt-Paphos in Cyprus in 498/7 BC, at the site of the battle of Thermopylae, and in other areas of the Aegean basin, Asia Minor, the Middle East, and Egypt (Erdmann 1977, 9-15, Taf. I; Yalçıklı 2006, 228, 277, Taf. 7).

Not so long ago, A. Hellmuth Kramberger published an article where she examines arrowheads of the “Persian” type found in the Carpathian Basin. Among them, there are several rhombic ones with a hidden socket, similar to our no. 11. The author explains the appearance of these arrowheads by the formation of the Persian satrapy in the Balkans as a result of the campaign of Darius I and their subsequent spread up the Danube (Hellmuth Kramberger 2015, 172, 175). At the same time, according to the map of finds (Hellmuth Kramberger 2015, Abb. 9), there are no such arrowheads in Thrace itself.

Apart from the campaign of Darius, these items could have appeared from the opposite, eastern direction. Firstly, together with the Transcaucasian population, the bearers of clay pintaderae, who advanced westwards as far as the Carpathian basin in the 7<sup>th</sup>-6<sup>th</sup> centuries BC (Бруяко 2014, 46). And, secondly, with the new population from the Asian region that formed the Middle Scythian culture (MSC).

<sup>2</sup> East of the road between the villages in the second field.

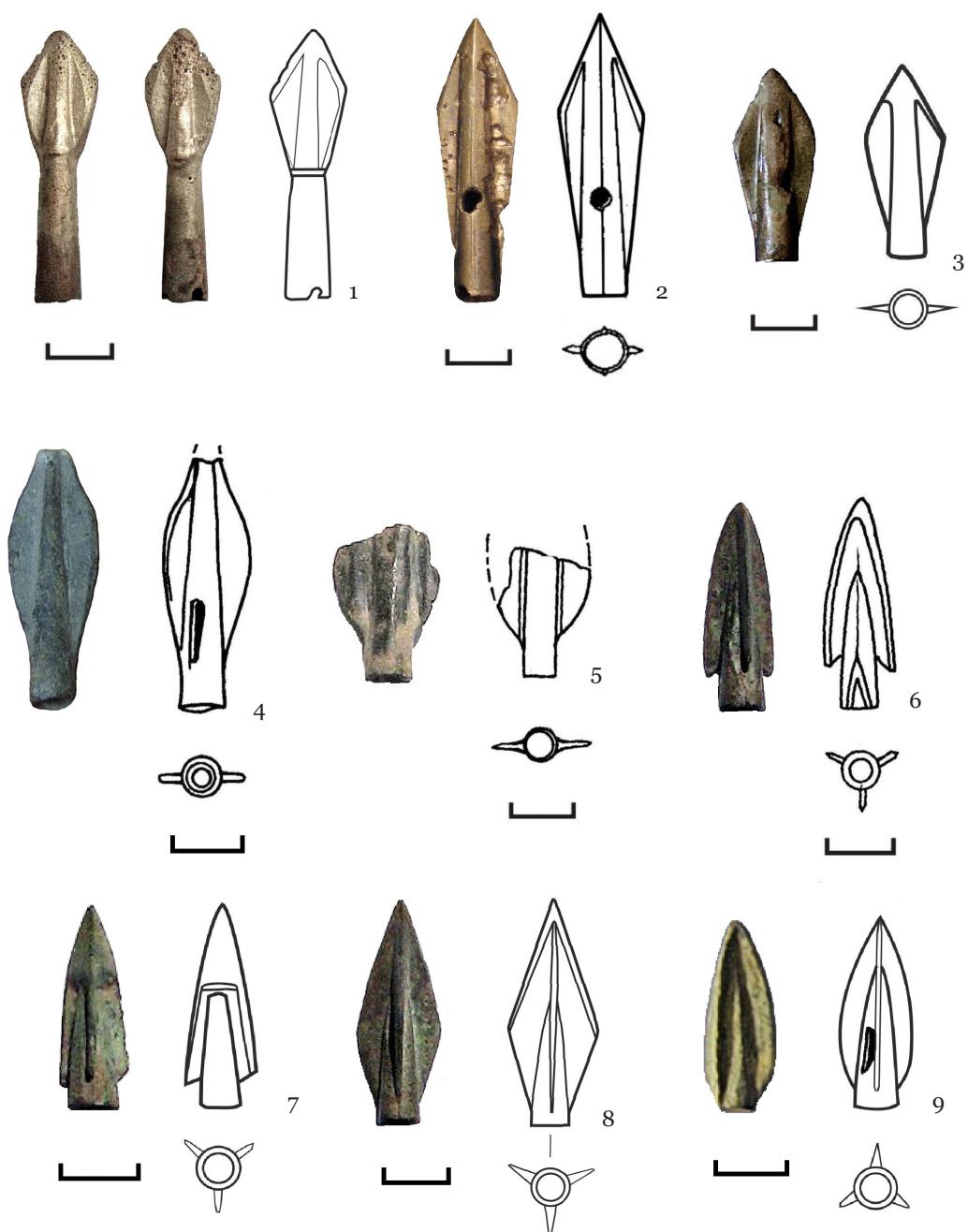


Fig. 3. Bronze arrowheads of Pre-Scythian time (1-3), Early Scythian (4-7) and Middle Scythian cultures (8, 9).

The only question that remains unresolved is why, when such spearheads spread from east to west, they are absent in the North Black Sea region. And, then, as S.V. Polin suggested, such spearheads can really be considered as archaeological evidence of the Scythian campaign of Darius I (Полін 1987, 29).

**12.** Trilobate arrowhead with an oval nib and a slightly protruding socket. Stray find on the territory of suburb (fig. 3/9).

**13-15.** The three specimens (fig. 4/1-3) belong to the large family of trilobate arrowheads with hidden socket (so-called base arrowheads), which is a distinctive hallmark of the Middle Scythian culture. Arrowhead no. 15 was found in burial site 514, stuck in the first rib and probably caused the death of the buried man.

**16.** Another basic arrowhead with a notch in the base (fig. 4/4). Analogies are quite numerous: Opishlyanka (Дараган 2017, рис. 21/8,

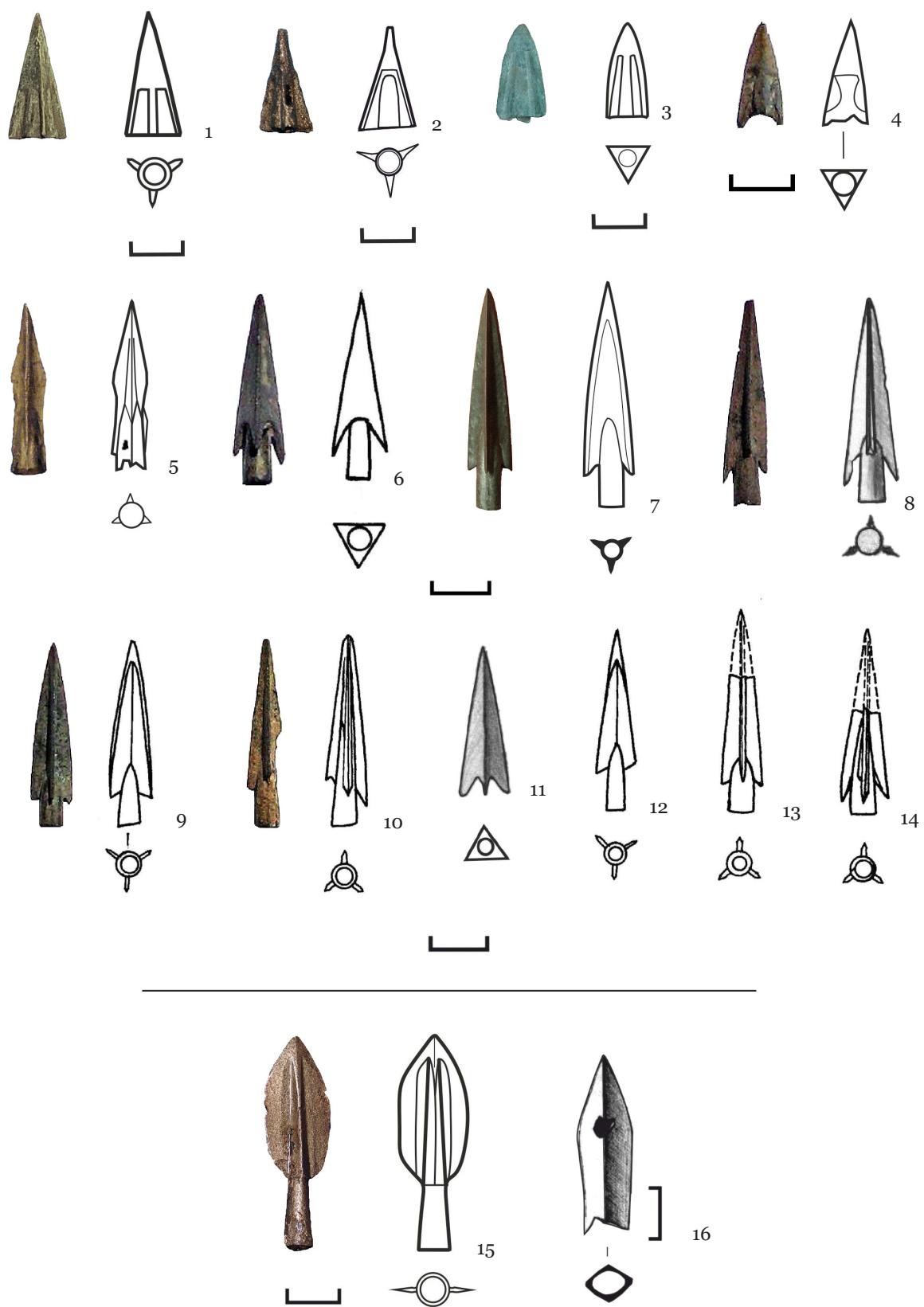


Fig. 4. Bronze arrowheads of Middle Scythian (1-5) and Classic Scythian cultures (6-14);  
bronze arrowheads from under Izmail (15) and Belousovka (16).

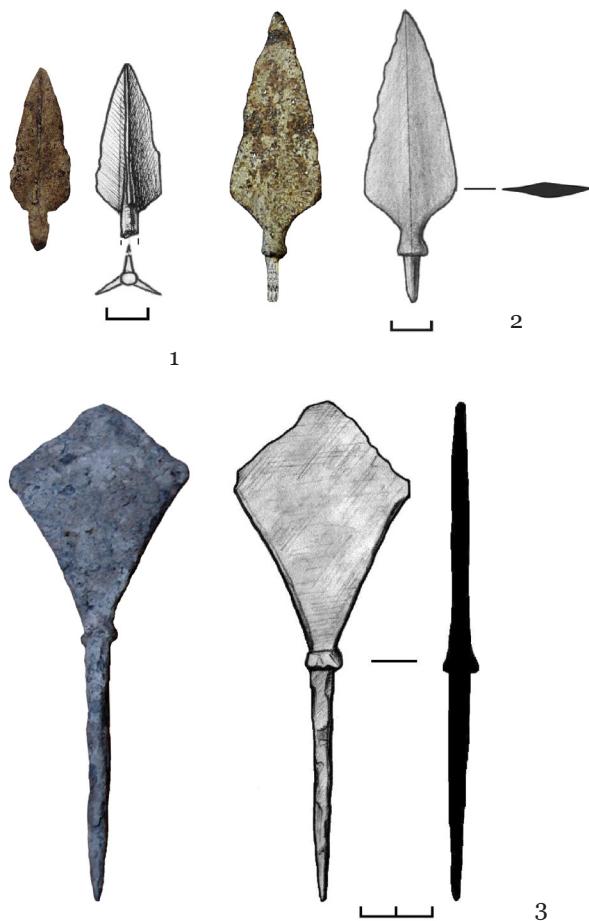


Fig. 5. Iron arrowheads from Kartal of the Middle Age period.

9)<sup>3</sup>, Kryachkovka, Steblev k. 12 and other sets of arrowheads, which, according to M.N. Daragan, are dated as early as the first half 5<sup>th</sup> century BC (Дараган 2019, рис. 41; 61).

**17.** The elongated tip with concave edges, like the previous one (fig. 4/5), belongs to the same chronological group (Дараган 2019, 239, табл. I, типы 4/2, 5; 5/1).

### Classical Scythian culture

**18-26.** The most numerous group is quite expectedly formed by finds of Classic Scythian culture arrowheads, mostly of the 4<sup>th</sup> century BC (fig. 4/6-14). Some of them (nos. 22, 26) were

found in complexes with Getae pottery. The rest were found in the settlement layer.

**18, 23.** Two ones belong to the group of triangular arrowheads. One with a protruding socket (fig. 4/6). The second one is without a socket (fig. 4/11).

\*\*\*

For a long time, about 15 years, the author has kept a drawing of a bronze arrowhead, made from the original, *found quite far from Kartal*. The place of its discovery is Belousovka village, Voznesensky district, Nikolaev region (fig. 4/16).

Practically all over the territory of Eurasia from the Late Bronze Age onwards, similar bone arrowheads are well known (Итина, Яблонский 1997, 51). There are them in the North-Western Black Sea coast (Серова, Яровой 1987, 34, рис. 14/4) and even in the Kartal area, at the settlement Novoselskoye II (Бруяко 2005, 33, рис. 4/4, 5). At the same time, the bronze replica for the Northern Black Sea region seems to be, if not unique, at least very rare. But, for the Early Saka monuments of the Aral Sea region, bronze rhombic in cross-section, without a socket, with sharpened edges at the bottom, is one of the most characteristic types of arrowheads. Here they are known both on settlements (Вайнберг 1979, табл. XII/18, 19) and on burials: Sakar-Chaga 6 (Иванчик 2001, 175, рис. 83/26), Southern Tagisken (Итина, Яблонский 1997, рис. 14/1-4; 57/3-7; рис. 70а), Uigarak (Вишневская 1973, табл. XXV/23)<sup>4</sup>. The origin of bronze arrowheads of this type was and, it seems, is still associated with Central Asia, specifically, with the Kazakh-Aral sea part of it (Итина, Яблонский 1997, 51). Although, precisely, both of these authors expressed a cautious doubt about it. They drew attention to the fact that bone prototypes are known mainly in the western area of the Eurasian belt and in the materials of Arzhan (Итина, Яблонский 1997, 51).

### Middle Age epoch

The last chronological group consists of three petiole arrowheads made of iron and dating from the Middle Ages.

<sup>3</sup> From the text of the article (Дараган 2017) it remains unclear where these arrowheads come from, either from Opishlyanka (as follows from the caption under fig. 21), or from Vitova Mogila (as follows from the text itself; Дараган 2017, 86-88)

<sup>4</sup> They are also known in Gumarovo. However, here both tips have a slight difference – an absolutely flat base (Исмагилов 1988, рис. 6/34, 35).

**29.** A trilobate specimen with, close to Medvedev's type 13 arrowheads (Медведев 1966, 59, рис. 30/13), which were widespread in Eastern Europe practically throughout the 1<sup>st</sup> mill. AD (fig. 5/1).

**30.** Rhomboidal flat tip with a stop and extension in the lower third of the quill (fig. 5/2). Type 40-41 according to Medvedev. Dating – 9(10)<sup>th</sup> - 11(14)<sup>th</sup> centuries AD (Медведев 1966, 64-65, табл. 15/31, 33).

**31.** Large flat lozenge-shaped tip with a broad point and a ring-shaped stop (fig. 5/3). Type 53 according to Medvedev. The main period of occurrence – 9<sup>th</sup>-11<sup>th</sup> centuries AD (Медведев 1966, 70, табл. 14/26; 16/14).

Judging by the dating, all three arrowheads may well correspond to the Kartal VI horizon, which

indicates the presence in Kartal of a settlement of the Balkan-Danubian culture (or Culture of First Bulgarian Kingdom) of the 9<sup>th</sup>-11<sup>th</sup> centuries AD. Although, trilobate specimen (no.30) can be dated earlier – 6<sup>th</sup>-8<sup>th</sup> centuries (Крым 2003, табл. 86/10). In addition to ceramics, the Kartal VI horizon includes a number of small bronze plastics, as well as finds of Byzantine coins<sup>5</sup>.

As we can see, the collection of arrowheads from Kartal is generally small, but culturally and chronologically quite representative, characterising almost the entire spectrum of ethno-cultural diversity characteristic of the settlement's history over several millennia. It should be especially noted that this story reflected the rather thorough participation in it of the nomadic population of the Eurasian steppes of the Early Iron Age.

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<sup>5</sup> Material from this cultural-chronological horizon is being prepared for publication.

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### Vârfuri de săgeată din săpăturile de la Kartal

*Cuvinte-cheie:* vârfuri de săgeți, bilobat, trilobat, sciți, perioada pre-scitică, evul mediu.

*Rezumat:* Articolul publică o colecție de vârfuri de săgeți obținute în mulți ani de săpături la situl Kartal de pe Dunărea de Jos din Ucraina. Vârfurile de săgeți aparțin unor perioade cronologice diferite ale existenței acestui sit arheologic – de la începutul epocii fierului până în Evul Mediu. Cele mai timpurii exemplare datează din epoca bronzului (epoca bronzului timpuriu și târziu; fig. 2/1-3). Majoritatea colecției constă din vârfuri de săgeți de stil scitic și prescitic, inclusiv tipurile Novocherkassk și Zhabotin (fig. 3/1-3). Dintre exemplarele corespunzătoare perioadei culturii scitice medii, merită atenție descoperirea unui vârf de săgeată de tip persan (fig. 3/8). În fine, ultimul grup, conform cronologiei, este format din trei vârfuri de săgeți de fier din evul mediu timpuriu (fig. 5/1) și dezvoltat (fig. 5/2, 3).

Pe lângă descoperirile de la Kartal, articolul include și două piese de tip prescitic de formă destul de rară, găsite în vecinătatea Izmailului (fig. 4/15) și în cursul inferior al Bugului de Sud (fig. 4/16).

*Lista ilustrațiilor:*

Fig. 1. Amplasarea sitului Kartal.

Fig. 2. Vârfuri de săgeată din epoca bronzului timpuriu (1) și din epoca bronzului târziu (2, 3).

Fig. 3. Vârfuri de săgeți din bronz din perioada prescitică (1-3), scitică timpurie (4-7) și scitică mijlocie (8, 9).

Fig. 4. Vârfuri de săgeți din bronz din perioada scitică mijlocie (1-5) și ale culturii scitice clasice (6-14); vârfuri de săgeți din bronz de lângă Izmail (15) și Belousovka (16).

Fig. 5. Vârfuri de săgeți de fier din evul mediu de la Kartal.

## **Наконечники стрел из раскопок Картала**

*Ключевые слова:* наконечники стрел, двулопастные, трехлопастные, скифы, предскифский период, средневековье.

*Резюме:* В статье публикуется коллекция наконечников стрел, полученная в ходе многолетних раскопок городища Картал на Нижнем Дунае на территории Украины. Наконечники стрел относятся к разным хронологическим периодам существования этого археологического памятника – от раннего железного века до средневековья. Наиболее ранние экземпляры относятся к бронзовому веку (ранняя и поздняя бронза; рис. 2/1-3). Самую большую часть коллекции составляют наконечники скифского и предскифского облика в т.ч. новочеркасского и жаботинского типов (рис. 3/1-3). Среди экземпляров соответствующих периоду среднескифской культуры заслуживает внимания находка наконечника стрелы персидского типа (рис. 3/8). Наконец, последнюю по хронологии группу образуют три железных наконечника стрел раннего (рис. 5/1) и развитого средневековья (рис. 5/2, 3).

Помимо находок из Картала в статью включены также два наконечника предскифского типа довольно редкой формы, найденные в окрестностях Измаила (рис. 4/15) и в нижнем течении Южного Буга (рис. 4/16).

*Список иллюстраций:*

Рис. 1. Место расположения городища Картал.

Рис. 2. Наконечники стрел раннего бронзового (1) и позднего бронзового века (2, 3).

Рис. 3. Бронзовые наконечники стрел предскифского (1-3), раннескифского (4-7) и среднескифского времени (8, 9).

Рис. 4. Бронзовые наконечники стрел среднескифской (1-5) и классической скифской культуры (6-14); бронзовые наконечники стрел из-под Измаила (15) и Белоусовки (16).

Рис. 5. Железные наконечники стрел из Картала эпохи средневековья.

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