Quiver sets and their associated grave goods are extremely important for studying different aspects of the Early Scythian culture, and, in particular, for determining the chronology of the Early Scythian period. This article is devoted to an analysis of quiver sets found in the south of Eastern Europe together with imported Greek amphorae of the first half of the 6th century BC.

Keywords: Scythians, south of Eastern Europe, 6th century BC, burial sites, quiver sets.

Bronze arrowheads are some of numerous and authentic categories of Scythian material culture. The informational content of this archaeological source depends on how the representative the quiver sets and the nature of accompanying grave goods are. Their joint study is prerequisite to obtaining reliable and accurate information about the chronology of considering materials 1.

The primary goal of this paper is to analyze the quiver sets from burials of the first half of the 6th century BC, including the interred Greek amphorae. Currently, at least six such burials are known. They are located from the Kuban region in the east (Lebedi V, kurgan 11 burial 8) to the forest-steppe areas of the right bank of Dnieper in the west (fig. 1: 1, 6; Repyakhovataya Mogila, burial 2) (Ильинская, Мозолевский, Тереножкин 1980; Дэраган 2015; Пьянков, Рябкова, Зеленский 2019). The same burials were investigated in the Lower Don area (Novoaleksandrovka, kurgan 7 burial 8; Кхарпы, kurgan 1 burial 25; Bushuika, kurgan 2 burial 10) and in the Dnieper left bank steppe area (kurgan near the Kitaigorod village; fig. 2: 1—5; Коренько, Лукияно, Беспалый, Парусимов 1991; Ильюков, Папинян 1999; Копылов, Русаков 2014; Ромашко, Скорый, Филимонов 2014).

The burial assemblages include transport and painted amphorae, which are represented by the Miletus, Klaizomenai, and Theos production types (fig. 2: 1—6, 8). They can be dated to the first half of the 6th century BC based on the works of experts in antique pottery as well as the recovery of similar amphorae from Greek sites 2 (Cook, Dupont 2020, с. 30, 31). M. Daragan’s attempt to limit the dating of the Milesian amphorae from the Repyakhovataya Mogila 2 type to the end of the 7th century BC cannot be considered impartial (Дэраган 2010). This assumption contradicts the conclusions of experts in antique pottery, and also ignores the dating of other important chronological indicators from this burial (Iонийская курия, cup-type scoops, bronze bits with stirrup-shaped loops and protuberance decorations of the rods, mirrors with bronze and iron side handles). The latter, along with the chronology of the Greek amphora itself, indicate a date for the Repyakhovataya Mogila 2 to the first half of the 6th century BC (Монахов 2003; Seifert 2004; Бийских, Бийских 2010, c. 25, 26; Гришко 2012, c. 77—78; Махортых 2016, c. 150). Daragan’s statement about the «complete similarity» of the grave goods from the Repyakhovataya Mogila, burial 2 with those from the Kelermes kurgans and dated to the second half of the 7th century BC must also erroneous (Дэраган 2010, с. 188, 191).

1. Neglect of this integrated approach for an analysis of quiver sets might lead to erroneous conclusions which, for example, were made by M. Daragan when she considered the chronology of Scythian symmetrical arrowheads with hidden plug of the 6th—5th centuries BC (Дэраган 2017).

2. Dating of the burial 8 in kurgan 11 of Lebedi V cemetery to the last decade of the 7th century BC (Пьянков, Рябкова, Зеленский 2019, c. 225) is based on the discovery of an amphora of the «Klaizomenai circle» with traces of repair, is incorrect since it does not take into account the finds of analogous pottery in the Berezan complexes of the first half of the 6th century BC (fig. 2: 7; Чистов и др. 2020, с. 30, 31). M. Daragan’s attempt to limit the dating of the Milesian amphorae from the Repyakhovataya Mogila 2 type to the end of the 7th century BC cannot be considered impartial (Дэраган 2010). This assumption contradicts the conclusions of experts in antique pottery, and also ignores the dating of other important chronological indicators from this burial (Iонийская курия, cup-type scoops, bronze bits with stirrup-shaped loops and protuberance decorations of the rods, mirrors with bronze and iron side handles). The latter, along with the chronology of the Greek amphora itself, indicate a date for the Repyakhovataya Mogila 2 to the first half of the 6th century BC (Монахов 2003; Seifert 2004; Бийских, Бийских 2010, c. 25, 26; Гришко 2012, c. 77—78; Махортых 2016, c. 150). Daragan’s statement about the «complete similarity» of the grave goods from the Repyakhovataya Mogila, burial 2 with those from the Kelermes kurgans and dated to the second half of the 7th century BC must also erroneous (Дэраган 2010, с. 188, 191).

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Early Scythian Quiver Sets of the First Half of the 6th Century BC...

The finds of antique ceramics on settlements of the forest-steppe Scythia, specifically on the Belsk hillfort, also demonstrate that the peak of the Milesian amphorae supplies falls within the second quarter of the 6th century BC (Задников 2014, с. 260—262).

The majority of the socketed arrowheads under consideration are made of bronze. The exception is one or two iron, mainly trilate arrowheads from Lebedi V, kurgan 11 burial 8, Bushuika, kurgan 2 burial 10 and Khapry, kurgan 1 burial 25. It should also be mentioned the rare nature of finds of three or four bullet-shaped bone arrowheads from Lebedi V, kurgan 11 burial 8, Khapry, kurgan 1 burial 25 and Repyakhovataya Mogila burial 2.

The number of arrowheads in quiver sets varies from nine (Bushuika, kurgan 2 burial 10) to 100 (Khapry, kurgan 1 burial 25); Lebedi V, kurgan 11 burial 8 — 99 items; Novoaleksandrovka, kurgan 7 burial 8 — 72 items; Kitaigorod — 42 items. Most of them (279 items) were found in Repyakhovataya Mogila, burial 2, where they are represented by two quiver sets (155 and 124 items). In some sets the trilobate bronze specimens are dominated. Its number in Repyakhovataya Mogila, burial 2, where they are represented by two quiver sets (155 and 124 items). In some sets the trilobate bronze specimens are dominated. Its number in Repyakhovataya Mogila, burial 2, where they are represented by two quiver sets (155 and 124 items).

1. Bilobate arrowheads. Bronze bilobate arrowheads were found in all mortuary complexes under consideration. They are most numerous in Novoaleksandrovka (n = 46 items) and Kitaigorod (n = 27), where they constitute more than 60% of all arrows represented in the quiver set. Their presence in Khapry is also noticeable (38%). Among the arrowheads of this group, barbed specimens dominate (at least 80%).

Among the arrowheads without a barb, the most widespread are specimens with an oval-shaped head. A group with a long projecting socket is distinguished (Kitaigorod, n = 7; Lebedi V, kurgan 11 burial 8, n = 5; Khapry — at least n = 2; fig. 3: 1—5; table 1). Their length varies from 3.2 to 4.5 cm. The closest parallels to these examples are found at the sites of the first half — middle of the 6th century BC: Bobritsa, kurgan 35 on the right bank of the Dnieper river, the Smolenice-Molpir settlement in Slovakia, etc. (Ковпаненко, 1981, рис. 10: 17, 18; Hellmuth, 2006, таf. 1: 1, 2; Мелюкова, 2006, с. 28).

The bilobate arrowheads with a barb are represented by several types. The specimens with a head of oval form include more than 40 items — Novoaleksandrovka, kurgan 7 burial 8, Repyakhovataya Mogila, burial 2, etc. Some of arrowheads are quite large in size. Their length is 4—4.4 cm, a maximal blade width is 1.4 cm (fig. 3: 14—21; table 1). Analogs are known from materials recovered at the Skorobor cemetery (kurgan 2/2013, Vorskla river basin), Khotov and Trakhtemirov hillforts (forest-steppe area of the right bank of Dnieper), where they are dated to the first half of the 6th century BC (Шрамко, Задников 2014, рис. 77: 1—3; ред. Кравченко 2017, рис. 64: 1—2).

Another arrowhead type consists of a narrower head of oval form has been found in Kitaigorod, Bushuika, Khapry and Lebedi V cemeteries (fig. 3: 33—36; table 1). They are similar to specimens from kurgan burials of the second half of the 7th century BC in the North Caucasus (Перегинко 1990, рис. 1; Галанина 1995) and mark the latest chronological horizon of the distribution of such arrowheads in the 6th century BC for south-eastern Europe.

Fig. 1. Distribution map of burials with quiver sets and imported Greek amphorae found in the south of Eastern Europe: 1 — Lebedi V, kurgan 11 burial 8; 2 — Novoaleksandrovka, kurgan 7 burial 8; 3 — Bushuika, kurgan 2 burial 10; 4 — Khapry, kurgan 1 burial 25; 5 — Kitaigorod; 6 — Repyakhovataya Mogila, burial 2
Fig. 2. Greek amphorae from burials of the first half of the 6th century BC in the south of Eastern Europe: 1 — Bushuika, kurgan 2 burial 10; 2 — Kitaigorod; 3, 4 — Repyakhovataya Mogila, burial 2; 5 — Novoaleksandrovka, kurgan 7 burial 8; 6 — Lebedi V, kurgan 11 burial 8; 7 — Berezan, semi-pit dwelling SK 63 8 — Khapry, kurgan 1 burial 25 (after Копылов, Русаков 2014; Ромашко, Скорый, Филимонов 2014; Пьяников, Рябкова, Зеленский 2019; Чистов и др. 2020)
The second type of binate arrowhead with a barb can be dated to the first half of the 6th century BC and contains a vault-shaped blade, with its largest width located at its lower part. The ends of the blades are often cut obliquely. Among these arrows, several variations can be distinguished as they differ in the degree of blade roundness, its proportions, socket length, etc. Arrowheads of this type were found in Kitaigorod and Khapry, but they are the most numerous in Novoaleksandrovo (n = 20+) (fig. 3: 43—57; table 1). Their lengths vary from 3.3 to 4.5 cm.

Arrows of a similar shape are found among the materials of the first half—middle of the 6th century BC from Berezan, Yagoryl and Trakhtemirov settlements, kurgans 2, 5 of Perebykovtsy, Smolenice-Molpir hillfort, etc. (Ostroukhov 1981, fig. 2: 6, 7; Smirnova 1979, fig. 8: 1; 15: 2; Domanskiy et al. 2006, fig. 32: 17; Hellmuth 2006; Mel’kova 2006).
The third type of biflade arrowheads with a barb includes specimens with a rhomboid head — Novoaleksandrovka, kurgan 7 burial 8 (n = 5) and Kitaigorod (n = 3; fig. 3: 64–71; table 1). Their sizes range from 3.6 to 4.5 cm. These arrowheads belong to the so-called cross-cutting types that existed in southeastern Europe and the Near East during the most of the 7th century BC, as well as in the first half of the 6th century BC (Maxoritä 2020).

The fourth type is represented by biflade arrowheads with a short socket and a barb formed by the extension of only one sharp blade (fig. 3: 61–63; table 1) — Lebedi (n = 11) and Khapry (n = 2). Their length is 3.8–4.5 cm. Such arrowheads (type 4 of group I according to A. I. Melukova’s classification) are easily recognizable in the late archaic Scythian burials of southeastern Europe (Melyukova 1964). Most often they are found in the Lower Don region (Vysoschino, kurgan 7 burial 4, Karataevo cemetery, grave 13; Krasnokhorovka III, kurgan 13 burial 5) and forest-steppe area of the left bank of Dnieper (Starshaya Mogila, Kup’evakha, kurgan 12 burial 2 and kurgan 15 burial 2, Belsk hillfort). The westernmost point of their distribution is the Smolenice-Molpir hillfort in Slovakia, with the easternmost point being the Chernigovskiy burial mound near Magnotgor (Hellmuth 2006; Maxoritä 2016a, c. 132). The main period of their using falls on the first half — middle of the 6th century BC.

It is also worth mentioning the five original bronze arrowheads from Novoaleksandrovka, kurgan 7 burial 8 (fig. 3: 72–77; table 1). They have a projecting socket with a barb and an oval-shaped head, which is divided into two parts in place of its widest part. An upper, striking part of the head has a tetrahedral shape, while the lower portions of the head is flat, biflade. Their length is 3.4–3.6 cm.

A small number of such biflade arrowheads with so-called «weighted» head of various modifications are known in southeastern Europe, dated to the 7th–6th centuries BC: Osnyagi, kurgan 1, Zhabotin, kurgan 524, Yagorlyk, etc. (Ostromerhov 1981, рис. 3: 17; Шрамко 1987, рис. 71: 3; Рабкова 2014, табл. 2: 23). It is supposed that their origin was connected with Central Kazakhstan and the Aral Sea area (Рабкова 2014). It should be noted that they are also known in more eastern regions, for example, in Tuva (e.g., Чугунов 2019). However, the archaeo-cultural (Tasmolinskaia, Aldy-Belskaya, etc.) and the territory of the origin of such arrowheads, as well as the chronological dynamics of their distribution in this vast area, remain uncertain.

Single finds among biflade arrowheads are specimens with rhomboid, asymmetrical (Novoaleksandrovka, kurgan 7 burial 8) and trapezoidal head (Kitaigorod) (fig. 3: 12, 13).

2. Triblade arrowheads. Triblade arrowheads in the quiver sets under consideration are characterized by notable variety. Among the most numerous (n = 140+) are arrows with a protruding socket with a barb, a vault-shaped blade having the largest width in the lower part, and the ends of the blades cut often sloping (Repyakhovataya Mogila, burial 2, Lebedi V, kurgan 11 burial 8; fig. 4: 1–11, 24–27; table 2). Their lengths vary from 3.5 to 5.5 cm. It is possible to distinguish several variants among this type based on the shape of the head and the length of the socket 1.

Two triblade barbed arrowheads with bevelled blade ends from Novoaleksandrovka, kurgan 7 burial 8 and Kitaigorod, differ from the above-mentioned specimens from Repyakhovataya Mogila by the subtriangular outlines of the head (fig. 4: 39, 40). Their lengths vary between 3.5—3.9 cm.

Quiver sets from Repyakhovataya Mogila, burial 2 contain numerous triblade arrowheads with a narrow oval head and a socket without a barb (n = 48; fig. 4: 43–52; table 2). Their lengths are between 3—3.4 cm.

Three similar arrowheads are also present in Kitaigorod, but they have larger sizes and a longer socket (length 3.9–4.1 cm; fig. 4: 53–55).

Bronze triblade arrowheads with and without barbs, similar to the aforementioned examples from the Repyakhovataya Mogila and Kitaigorod, have been found in the layers of the first half of the 6th century BC at the Berezan and Trakhtemirov settlements (Філко, Болтрик 2003, рис. 26; Чистов и др. 2012, табл. 81: 20; Чистов и др. 2020, табл. 29: 14, 17). They are also known on the Yagorlyk site, which was founded in the first quarter of the 6th century BC (Острорехов 1980, рис. 3: 23, 24; 4: 5, 6; Буйских, Буйских 2010).

In Novoaleksandrovka, kurgan 7 burial 8 six arrowheads with a short socket and a vault-shaped head, with the lower portions of the blades sharpened, were discovered (fig. 5: 26–31; table 2). Their lengths are between 3.3–3.8 cm. Similar exemplars were also found in Khapry, kurgan 1 burial 25 (fig. 5: 32). They are well known on Early Scythian sites of southeastern Europe in the second half — end of the 7th century BC, as well as in the first half of the 6th century BC: Novozavedennoe II, kurgans 6, 17; Kup’evakha, kurgan 12, Kurilovka, kurgan 68, etc. (Копаненко 1981, рис. 24: 13–16; Пиренко, Маслов, Каптерович 2006, рис. 3).

Triblade arrowheads with a tower-shaped head without a barb, presented in Lebedi V, kurgan 11 burial 8, form the original and characteristic type of arrows of the 6th century BC (51 items, fig. 5: 1–5; table 2). Their blades are situated vertically, almost parallel to each other, and the ends are beveled to the short socket. The lengths are between 3.1—4 cm. Similar arrowheads were found in kurgan 2 near the Perebykivtsi village in the Middle Dniestri basin (Smirnova 1979, fig. 8: 7, 8; 10: 2—

1. In Repyakhovataya Mogila, burial 2, were also found 23 triblade arrowheads of the same type, but without a barb (fig. 4: 32—37). Three triblade arrowheads with triangle-shaped head and a projecting socket without a barb are presented in Bushuika, kurgan 2 burial 10 (fig. 4: 38). Their length is 3.5 cm.

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5), which is dated to the second quarter — middle of the 6th century BC (Гречко 2012).

Lebedi V, kurgan 11 burial 8 also contains trilobate arrowheads of another type \((n = 8)\). They are represented by the specimens with a long barbed socket, leaf-shaped head, with their maximal widening in the lower part (fig. 5: 34—37). Their lengths are 3.9—5.2 cm.

Such arrowheads with a narrow head were found in Khapry, kurgan 1 burial 25 and Gulyaj-Gorod, kurgan 38, and are dated to the first half — middle of the 6th century BC (fig. 5: 39—43; Ильинская 1975). In Khapry, arrowheads of a similar type without a barb are also known (fig. 5: 45).

**3. Trilobate solid arrowheads.** As for the trilobate solid arrowheads, they are extremely rare on the Lower Don area and in the Kuban region in the first half of the 6th century BC — Lebedi V, kurgan 11 burial 8 \((n = 1)\), Khapry, kurgan 1 burial 25 \((n = 5)\). Such arrowheads are more nu-
Numerous on the right bank of Dnieper. Thus, 43 arrowheads with vault-shaped head were recovered from Repyakhovataya Mogila, grave 2. Among them, two varieties have been distinguished: 1) specimens with a short socket and sharply cut edges of the blade in the form of thorns and 2) specimens with a longer socket and slightly sharpened edges of the blade (fig. 5: 6–14; table 2). Their lengths fall between 2.6–2.8 cm. Four trilobate solid arrowheads from Khapry are characterized by an elongated sub-triangular head (fig. 5: 24, 25). Practically all of these specimens have a polished socket.

Close parallels to the above-mentioned arrowheads are known on the left and right bank of Dnieper (Starshaya Mogila; Gladkovshchina, kurgan 4, burial 1; Malaya Ofirna; Teklivka, kurgan 1; Trakhtemirov and Khotov settlements), as well as in the Lower Bug area (Yagorylky), where they are dated to late 7th — first half of the 6th century BC (Петровська 1968, рис. 5: 12; Іллінська 1951, табл. П: 22; Островерхов 1981, рис. 3: 33; Ильинская, Мозолевский, Тереножкин, Кореняко, Лукьянко, Ильюков, Пашинян 1999; Ромашко, Скорый, Филимонов 2014; Дараган 2015; Пьянков, Рябкова, Зеленский 2019).
Table 1. Bronze bilobate arrowheads of the first half of the 6th century BC

<table>
<thead>
<tr>
<th>Bilobate arrowheads</th>
<th>Rhomboid head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oval-shaped head, with the maximum width in the middle of its length</td>
<td>Vault-shaped head, with the maximum width in the lower part of its length</td>
</tr>
<tr>
<td>Medium width blade</td>
<td>Wide blade</td>
</tr>
<tr>
<td>Narrow blade</td>
<td>Lower parts of the blades are beveled</td>
</tr>
<tr>
<td>One of the edges is beveled</td>
<td></td>
</tr>
<tr>
<td>Without a barb, long socket</td>
<td>With a barb</td>
</tr>
<tr>
<td>One of the edges extended to form a barb</td>
<td></td>
</tr>
<tr>
<td>With a barb</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Bronze triblade and trilobate solid arrowheads of the first half of the 6th century BC

<table>
<thead>
<tr>
<th>Triblade arrowheads</th>
<th>Trilobate solid arrowheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vault-shaped head</td>
<td>Leaf-shaped head, with the maximum width in the lower part</td>
</tr>
<tr>
<td>Lower parts of the blades are beveled</td>
<td>Lower parts of the blades are beveled</td>
</tr>
<tr>
<td>Lower parts of the blades are sharpened</td>
<td>Lower parts of the facets is sharpened</td>
</tr>
<tr>
<td>Subtriangular head</td>
<td>Subtriangular cavities at the base of the head</td>
</tr>
<tr>
<td>Tower-shaped head</td>
<td>Without a barb</td>
</tr>
<tr>
<td>Without a barb</td>
<td>Without a barb</td>
</tr>
<tr>
<td>With a barb</td>
<td>With a barb</td>
</tr>
<tr>
<td>Shot socket</td>
<td>Long socket</td>
</tr>
<tr>
<td>Without a barb</td>
<td>Shot polished socket</td>
</tr>
<tr>
<td>With a barb</td>
<td>Long polished socket</td>
</tr>
<tr>
<td>Without a barb</td>
<td></td>
</tr>
<tr>
<td>With a barb</td>
<td></td>
</tr>
</tbody>
</table>
In conclusion, it should be mentioned that the analyzed group of burials with imported Greek amphorae belongs to the final stage of the Scythian archaic period and allows us to define the types of arrowheads that existed in southeastern Europe in the first half of the 6th century BC. The types, which are mostly typical for this period, are also clearly identifiable. Among the biface arrowheads, these are specimens with an oval-shaped head and a long socket without a barb and barbed arrows with a vaulted blade, with a wide lower part and beveled ends for the blades. Among the triblade arrowheads, there are specimens with a tower-like head without a barb and the items with leaf-shaped heads. The latter arrowheads have a maximal widening of their lower section and the ends of the blades are often beveled as well as a long socket with a barb, which extends about half the length of the arrowhead.

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EARLY SCYTHIAN QUIVER SETS OF THE FIRST HALF OF THE 6th CENTURY BC IN THE SOUTH OF EASTERN EUROPE

Quiver sets and their associated grave goods are extremely important for studying different aspects of the Early Scythian culture, and, in particular, for determining the chronology of the Early Scythian period. This article is devoted to an analysis of quiver sets found in the south of Eastern Europe together with imported transport and painted Greek amphorae of the first half of the 6th century BC, which are represented by the Miletus, Klaizomenai, and Theos production types. Burial complexes which include these items are located on the territory from the Kuban region in the east to the forest-steppe areas of the right bank of Dniester in the west (Lebedi V, kurgan 11 burial 8; Novoaleksandrovka, kurgan 7 burial 8; Khaury, kurgan 1 burial 25; Bushuika, kurgan 2 burial 10; Kitaigorod village; Repyakhovataya Mogila, burial 2). Arrowheads, which are mainly represented by bronze socketed types, are characterized by significant typological diversity. Among the bilbade and trilbade arrowheads, several typological groups stand out. The distribution of some groups can be correlated use in the first half of the 6th century BC. Among the bilbade arrowheads, these are specimens with an oval-shaped head and a long socket without a barb and barbed arrows with a vaulted blade, with a wide lower part and beveled ends for the blades. Among the trilbade arrowheads, there are specimens with a tower-like head without a barb and the items with leaf-shaped heads. The latter arrowheads have a maximal widening of their lower section and the ends of the blades are often bevelled as well as a long socket with a barb, which extends about half the length of the arrowhead. The importance of the above complexes lies not only in the presence of reliable chronoindicators (amphorae and some other objects), but also in informativeness and representativeness of the quiver sets, which makes them a trustworthy source for studying the peculiarities of the development of Scythian shooting arms in the 6th century BC.

Keywords: Scyths, south of Eastern Europe, 6th century BC, burial sites, quiver sets.

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