**DOI: 10.53737/2713-2021.2025.20.62.002**

**Mikhail Treister**

# IMPORTED AND LOCALLY MANUFACTURED JEWELLERY IN THE CIMMERIAN BOSPORUS IN THE LATE 6TH — 5TH CENTURIES BCE*

This article is devoted to the publication and analysis of gold, electrum and silver jewellery dating from the late 6th to the end of the 5th centuries BCE, found in the territory of the Cimmerian Bosporus. The main well-dated complexes with finds are considered. Jewellery is discussed by categories: beads and necklaces, pendants and amulets, earrings and temple pendants, torcs, bracelets, and finger rings.

The fact, that the jewellery items examined here are considered primarily basing on publications of varying levels of description and quality of illustrations and are unavailable to the author for any technological research, significantly reduces the possibilities of their attribution in terms of distinguishing between imported and locally produced items. Nevertheless, having been studied in the context of all known pieces of jewellery of the late Archaic and early Classical periods from the Black Sea region, Asia Minor, the Near East and Greece, they allow us to express in a cautious form some considerations, basing primarily on the peculiarities of the geographical distribution of forms and decorative motifs.

Among the supposedly imported ones, one can single out products of the workshops located in Asia Minor, primarily Lydia, Cyprus and the South-Eastern Black Sea region.

There are also grounds to suggest that already in the first half, possibly in the first quarter, of the 5th century BCE, local jewelry workshops working with precious metals appeared in the Cimmerian Bosporus. Discussed are certain types of boat earrings, spiral pendants, pendants of necklaces, torcs, bracelets and finger rings which could have been manufactured in the local workshops.

**Key words:** Cimmerian Bosporus, jewelry, beads, necklaces, pendants, amulets, earrings and temple pendants, torcs, bracelets, rings from the Late Archaic and Early Classical periods, imported and locally produced.

**About the author:** Treister Mikhail, Dr. phil. habil. (RUS), Independent researcher.

**Contact information:** 53175, Federal Republic of Germany, Bonn, Weißenburgstr. 59, e-mail: mikhailtreister@yahoo.de.

---

**М.Ю. Трейстер**

# ИМПОРТНЫЕ И МЕСТНЫЕ ЮВЕЛИРНЫЕ ИЗДЕЛИЯ НА БОСПОРЕ В КОНЦЕ VI — V ВВ. ДО Н.Э.

Данная статья посвящена публикации и анализу ювелирных изделий из золота, электра и серебра, датируемых концом VI — концом V вв. до н.э., найденных на территории Киммерийского Боспора. Рассматриваются основные хорошо датируемые комплексы с находками. Ювелирные изделия анализируются по категориям: бусы и ожерелья, подвески и амулеты, серьги и височные подвески, гривны, браслеты, перстни.

То обстоятельство, что здесь ювелирные изделия рассматриваются преимущественно по публикациям разного уровня описания и качества иллюстраций и недоступны автору для каких-либо технологических исследований, в существенной степени снижает возможности их интерпретации с точки зрения выделения изделий импортных и местного производства. Тем не менее, будучи исследованы в контексте всех известных нам ювелирных изделий позднеархаического и раннеклассического времени из Причерноморья, Малой Азии, Ближнего Востока и Греции, они позволяют высказать в осторожной форме некоторые соображения, основанные, прежде всего, на особенностях географического распределения форм и мотивов декора.

* Статья поступила в номер 21 июня 2025 г.
Принята к печати 12 июля 2025 г.

© М.Ю. Трейстер, 2025.

Среди предположительно импортных можно выделить изделия мастерских Малой Азии, прежде всего Лидии, Кипра и Юго-Восточного Причерноморья.

Есть основания предполагать, что уже в первой половине, возможно в первой четверти, V в. до н.э. на Боспоре появляются местные ювелирные мастерские, работающие с драгоценными металлами. Рассматриваются отдельные типы серег в форме калачика, спиралевидные подвески, ожерелья и подвески, гривны, браслеты, а также перстни, которые могли быть изготовлены в местных мастерских.

**Ключевые слова:** Боспор Киммерийский, ювелирные изделия, бусы, ожерелья, подвески, амулеты, серьги и височные подвески, гривны, браслеты, перстни позднеархаического и раннеклассического времени, импорты и местные изделия.

**Сведения об авторе:** Трейстер Михаил Юрьевич, Dr. phil. habil. (RUS), независимый исследователь.

**Контактная информация:** 53175, Федеративная республика Германия, г. Бонн, Вайсенбургштрассе 59, e-mail: mikhailtreister@yahoo.de.

---

## Introduction

The choice of topic is not accidental. While quite a lot has been written about the jewellery of the Classical, Hellenistic periods and the first centuries CE found in the Cimmerian Bosporus, the early periods, the late Archaic and early Classical, remained a blank spot against their background. Although the rarity of jewellery of the period under consideration in the Bosporus has been repeatedly noted, including that in comparison with Olbia (Skudnova 1988: 23), as our study of the finger rings made of precious metals has shown (Treister 2023: 298—306), this is not entirely true, and given the rarity of finds of jewellery dating before the second half of the 5th century BCE also in the territory of Greece (Higgins 1980: 121—122; Williams, Ogden 1995: 49), the Cimmerian Bosporus looks quite worthy against this background. How did things stand in general?

## Complexes of finds

Finds of jewelry in the Bosporan necropoleis of the late 6th — 5th centuries BCE are extremely rare. In addition to the items dating back to the middle — third quarter of the 5th century BCE, from the so-called senior Seven Brothers burial mounds no. 2 (Goroncharovskiy 2014: 556—559, 570, 572) and 4 (Treister 2012b: 36—38; Goroncharovskiy 2014: 561—566, 570, 572), tombs no. 8 of the burial mound no. 17/1876 (Silant'eva 1959: 71—78, figs. 38—42; Williams, Ogden 1995: 133—134, nos. 76—77), no. 19 of the burial mound no. 24/1876 (Silant'eva 1959: 56—71, figs. 24—37), stone tomb no. 9/1876 (Silant'eva 1959: 41—42, figs. 17—18), tomb no. 23/1876 (Silant'eva 1959: 46, fig. 19: 4) with a black-figure lekythos from the middle of the 5th century BCE (Silant'eva 1959: 30—31, 46, figs. 9: 2; 19: 4) of the Nymphaion necropolis, the jewellery dating to the first half of the 5th century BCE from the Asian part of the Bosporus is represented by beads and pendants of necklaces, temple pendants from several burials of the Artyushchenko-2 burial ground (Kashaev 2010: 137—139, figs. 1—2; 2019: 249, 251, fig. 12), including from the burial no. 6, dated by black-figure, black-glazed pottery and a glass amphoriskos to the second quarter of the 5th century BCE (Kashaev 2009: 194—197; 2019: 230—253; 2021: 206—208, fig. 1)), no. 47, dated by a Proto-Thasian amphora and black-glazed pottery to the second quarter of the 5th century BCE (Kashaev 2013: 191, 197—198, fig. 2: 5; 10; 2019: 233, 234, 242, figs. 1: 5; 7: 1), burial no. 66 of the early 5th century BCE with an amphoriskos of "Phoenician glass" (Kashaev 2019: 253, fig. 14: 2; 2021: 209—210, fig. 2), as well as burials of the Volna-1 necropolis on the Taman Peninsula: no. 539 (with bracelets, a boat earring, and a plaque depicting a double sphinx) (Mimokhod et al. 2018: 223, 225), nos. 140-29 and 140-42 (with spiral pendants) (Treister, Sudarev 2025b: 443—444, fig. 4: 2. *5*), which are reliably dated to the second quarter of the 5th century BCE, and the burials no. 1 of the burial mound no. 3/2012 and no. 12 of the burial mound no. 1/2012 of the South-Eastern necropolis of Phanagoria (Treister, Sudarev 2025b: 444—446 ). The burial no. 5/2006 of the

necropolis of the Sindian harbor with a plaque depicting a sphinx is dated to the third quarter of the 5th century BCE by beads and a black-glazed salt cellar (Sudarev 2023: 67—68, figs. 9—10).

Two red-figure askoi, and black-glazed: kylix, skyphos and lekane (Vickers 1979: 38—41, figs. 4—8, pls. 7—9; 2002: 8—9, 28—33, pls. 8—10) date the tomb no. 2/1868 at Nymphaion to the late 5th century BCE. Tombs nos. 4/1868 with a bronze sieve, a silver kylix and a chalcedony scaraboid (Vickers 1979: 41—44, pls. 11—14, 16: a; 2002: 9, 36—43, pls. 12—15; Cat. London 2017: 287—289, nos. 192—198) and 6/1868 with a bronze ladle and black-glazed pottery (Vickers 1979: 44—46, pls. 15: b—c, 16: b; 17; 2002: 9—10, 44—51, pls. 16—19; Cat. London 2017: 290—291, nos. 200—204) belong to the same period. Burials with pendants of necklaces in the form of lion heads from the necropoleis of Kepoi (no. 282/27 (1964)) and Volna-1 (nos. 72 and 114/2015) (Treister, Sudarev 2024: 197—200, figs. 3—5), with silver spiral pendants — from the necropolis of Volna-1 (burial no. 27) (Treister, Sudarev 2025a: 1—41), as well as burials in the Seven Brothers tumuli nos. 6 and 7 (Goroncharovskiy 2014: 570—571) are dated within the last quarter of the 5th — the turn of the 5th—4th centuries BCE.

A relatively large number of jewellery items from the late Archaic and early Classical periods also appear in the burials, which are dated from the turn of the 5th—4th centuries BCE: a stone tomb discovered by A.E. Lyutsenko in 1854 on the northern slope of the Mithridates Mount (see Treister 2023: 298 with bibliography). In rare cases, pieces of the 5th century BCE jewellery survived until the next century, as was the case with the bracelet with plates depicting Eos with Kephalos and the fight between Peleus and Thetis from the male burial of the Kul-Oba burial mound (Manzewitsch 1931: 106—116; Galanina, Grach 1986: fig. 180; Grach 1994: 139—141, figs. 4—6; Williams, Ogden 1995: 140, no. 82; Kat. Bonn 1997: 162, Nr. 68; Treister 2001: 150—152; Kalashnik 2004: 93; Kalashnik 2014: 120—121; Treister with complete bibliography, in print a).

**Necklaces and pendants of necklaces**

The necklaces can be divided into several types: 1) those formed only by beads, without pendants; 2) necklaces of alternating beads and beads with teardrop-shaped (seed) elements soldered to them; 3) necklaces composed of hollow box-links or double tubes strung on two threads with figural terminals; 4) necklaces formed only by figural beads (in the form of rams' heads).

The gold beads from the Artyushchenko-2 burial ground are represented by two main types: type 1 — spherical, hollow beads soldered from two halves, with rings of beaded wire soldered to the ends around the holes; type 2 — spherical beads, similar in shape to type 1 beads, in the lower part of which a hollow seed pendant is soldered. At the tip of each pendant a ball of grain is soldered, the soldering place is framed with beaded wire. Similar wire is used to frame the place where the pendant is attached to the bead (Kashaev 2010: 138—139, figs. 1—2; 2019: 249, 251, fig. 12).

In the burial no. 140-29 of the Volna-1 necropolis there were found barrel-shaped silver (Tsokur et al. 2022b: 76, fig. 395: 2) and a three-partite bead made of three oval beads soldered together, with ridges at the ends around the holes (Tsokur et al. 2022b: 76, 80—81, fig. 395: 4). The closest parallel — three-part elements with beads of a similar shape, but additionally decorated with longitudinal ridges — is a purchase in Yaprakli (Bingöl 1999: 111, no. 109), dated in the catalogue of the Museum of the Anatolian civilizations to the 8th—7th centuries BCE, basing on very distant parallels from Ephesos (Marshall 1911: 76—77, nos. 982—999, pl. IX).

The necklaces could have been formed only from beads without pendants, like the necklaces from burial no. 66 of the first half of the 5th century BCE in the Artyushchenko-2 necropolis (fig. 1: 1) (Kashaev 2010: 138, fig. 1: 3; 139, fig. 2: 3; 2019: 249, 251, fig. 12: 4; 2021: 209—210, no. 5—6, fig. 2: 1—2), and the necklaces from the burials of the Nymphaion necropolis of the mid-5th century BCE. Biconical beads with holes outlined with beaded wire were also found in stone tomb no. 9/1876 of the Nymphaion necropolis (Silant'eva 1959: 42, fig. 19: 1) together with the mid-5th century BCE kylikes (Silant'eva 1959: 41—42, figs. 17—18). Also, biconical beads with longitudinal ridges formed a necklace from the tomb no. 23/1876 (Silant'eva 1959: 46, fig. 19: 4)

with a black-figure lekythos from the mid-5th century BCE (Silant'eva 1959: 30—31, fig. 9: 2). The latter are reminiscent in shape and decoration of beads from the necropoleis of Salamis and Arsos in Cyprus, which date to the late 7th century BCE (Pieridis 1971: 26—27, pl. XIV: 3, 5; Deppert-Lippitz 1985: 110, 111, Abb. 61, Taf. 7), as well as beads of necklaces from the necropolis of Aegean Mesembria-Zoni (Euros in Macedonia) (Iliopoulou 2015: 124, εικ. 208) and from the mid-5th century BCE burial no. 11/1969 (Kacharava, Kvirkvelia 2008: 133—137, pls. 2: a—b; 3—5; 6: a; 143, pl. 12: a—b) and the first half of the 4th century BCE burial no. 6/1961 (Kacharava, Kvirkvelia 2008: 156, pl. 21) in Vani in Colchis.

Comparaneous beads form the necklaces from Thracian burial in Duvanli: burials in Muchovitsa (Velkov 1930—1931: 39, no. 13—15; pl. XI: 1; Filow 1934: 85, Nr. 4; 87, Abb. 108; Venedikov, Gerassimov 1973, Taf. 203; Kat. Köln 1979: 91—92, Nr. 161; Deppert-Lippitz 1985: 122, 123, Abb. 70; Cat. Venice 1989: 210, 219, no. 176/6; Тонкова 2002: 495, fig. 1: 8; 496; Kat. Bonn 2004: 158, Nr. 212e; Kat. Basel 2007: 186, Nr. 126d; Cat. Paris 2015: 66, no. 19; Cat. Bergen 2017: 142, no. 137) and Kukova Mogila (Filow 1934: 40, Abb. 47; 42, Nr. 3; Tonkova 1998: 751, 754, fig. 4b; 2002a: 279, fig. II: 1; 2002b: 495, fig. 1: 7; 496; 2003: 220, pl. III: 4; 2015: 215, fig. 15.1; Tonkova, Penkova 2009: 202, fig. 2), of the first half to the middle of the 5th century BCE (on the dating of the Kukova Mogila, see Treister 2012b: 36), and from the somewhat later Arabadzhijska Mogila, dating to the third quarter of the 5th century BCE (Filov 1932—1933: 258, fig. 44; 260—261, no. 3—4; 1934: 130, Abb. 154; 132, Nr. 3; Kat. Köln 1979: 96, Nr. 172, col. pl. on p. 28; Cat. Montreal 1987: 152, no. 212; Cat. Venice 1989: 211, 222, no. 178/4; Tonkova 1998: 751, fig. 4a; 2002a: fig. II: *2*; 2002b: 495, fig. 1, 9; 498; 2003: 220, pl. III: 3, 5; 2015: 215; Cat. Brussels 2002: 126, 128, no. 191b; Kitov, Agre 2002: 303, 304, fig. 160; Kat. Bonn 2004: 160—161, Nr. 213в; Cat. Paris 2006: 125, no. 39; Kat. Basel 2007: 187, Nr. 127d; Cat. Bergen 2017: 146, no. 144).

The appearance as part of necklaces of not only plain or embossed beads, but also beads with filigree decoration or those formed by granulation, dates back no earlier than the late 5th / turn of the 5th—4th centuries BCE, and is characteristic already to the 4th century BCE (Silant'eva 1979: 54—55), although, judging by the find of such beads in the Kukova Mogila (Kat. Köln 1979: 92, Nr. 165; S. 94; Deppert-Lippitz 1985: 145, 147, Abb. 95), they appear no later than the first half of the 5th century BC. Alternating spherical beads, plain and with filigree decoration, form a necklace from the Seven Brothers burial mound no. 6 (Silant'eva 1979: 52, no. 11, pl. 2: 2; Anfimov 2011: 112—113; Goroncharovskiy 2014: 568). Spherical beads with filigree decoration are also represented by finds from the burial mounds of Nymphaion (Silant'eva 1959: 7, fig. 2: 3; 1979: 50, no. 2, pl. 1: 2). Beads, formed by three rows of granulation, and spherical beads decorated with 7—8 rows of granules, along with plain spherical and barrel-shaped beads formed a necklace from the stone tomb excavated by A.E. Lyutsenko in 1854 on the northern slope of Mount Mithridates (fig. 1: 3) (Williams, Ogden 1995: 156, no. 95; Kat. Bonn 1997: 141—142, Nr. 52; Kalashnik 2004: 85, fig. 52; 2014: 72—73). A similar combination of beads is also represented on a necklace from the necropolis of Sardis (Curtis 1925: 16—17, no. 25, pl. III: 1; Karagöz 2013: 155, Nr. 137, Abb. 298). Also worth noting the use of beads composed of three rows of grains in the necklaces from Ikiztepe (Özgen, Öztürk 1996: 187, no. 138; Meriçboyu 2001: 52; 2010: 159, fig. 2; Cat. Istanbul 2010: 540, no. 176). Beads of the type in question was found in the Persepolis treasury (Schmidt 1957: 76, pl. 43: 4) and in the burials of the early nomads of the foothills of Southern Urals (Treister 2012a: 150, no. A12.1.1.4.Б; color pl. II.18: *3*; pl. I. 109; fig. II.53: 6). Spherical beads decorated with 7—8 rows of granulation find parallels on the necklace from Sardis (Curtis 1925: 26—27, no. 52, pl. VI: *2*; Meriçboyu 2001: 90—91, res. 3).

Another variant of necklaces was formed by alternating beads and beads with soldered from below seed-shaped elements, represented by the finds from the burials nos. 47 and 69 of the Artyushchenko-2 necropolis. A ball of grain was soldered to the tip of each pendant, the soldering place is framed with beaded wire. Similar wire is used to frame the place where the pendant is attached to the bead (fig. 1: 2, 4) (Kashaev 2010: 138, fig. 1: 2, 4*;* 139, fig. 2: 2, 4; 2019: 249, 251, fig. 12: 2, 5). A necklace from the

Seven Brothers burial mound no. 2 has a similar structure: the beads and pendants of are decorated with embossed pattern in the form of cross-hatching (fig. 1: 6) (CR St. Petersburg 1876, 1879: 120, no. 11, pl. IV: 7; Artamonow 1970: 26, Abb. 41; Williams, Ogden 1995: 129, no. 71; Kat. Bonn 1997: 83, Nr. 7; Cat. Los Angeles 2007: 216—217, no. 116; Vlasova 2010: 205, fig. 14; Kalashnik 2014: 55). A similarly decorated bead comes from the burial no. 83 of the Artyushchenko-2 necropolis (fig. 1: 5) (Kashaev 2019: 249, 251, fig. 12: 3: erroneously, as from the burial no. 66), which is dated by the red-figure lekythos of the *ca*. 400 BCE (Kashaev 2019: 245, 246, fig. 8: 7), and a pendant, fixedly attached to a bead, originating from the Crimea, is kept in the Antikenmuseum of Berlin (Greifenhagen 1970: 40, Taf. 16: 15). It is clear that in their structure necklaces of this type are comparable to those from the cremation A in Gordion, dated to *ca*. 530—525 BCE (Kohler, Dusinberre 2023: 179, TumA 22, 23, pls. 592—593), and from the necropolis of Eretria on Euboea, which are dated to the first quarter of the 5th century BCE (Kuruniotis 1913: 306—312, Taf. XV; Higgins 1980: 129, pl. 26; Deppert-Lippitz 1985: 120—121, Abb. 68 (with the dating to the late 6th century BC); Despini 1996: 134—125, figs. 119—120; 243; Cat. Thessaloniki 1997: 100—101, no. 88) and the necklace from the necropolis of Kurion, which belongs to the second half of the 5th century BCE (Williams, Ogden 1994: 245, no. 179; 1995: 245, no. 179).

A single variant is represented by a bead with a seed-shaped pendant from burial no. 20 of the Artyushchenko-2 necropolis, which was attached to a chain of three rings, the upper one of which was soldered to the bead (fig. 2: 2) (Kashaev 2009: 209, fig. 34: 2; 2010: 138, fig. 1: 1; 139, fig. 2: 1; 2019: 249, 251, fig. 12: 1). In a similar manner, a seed, decorated with vertical ridges, is attached with a ring soldered to a round plain bead, coming from a raw brick tomb near the village of Utash (fig. 2: 1) (Alekseeva 1991: 32, pl. 56, 4; Novichikhin, Galut 2013: 24: above left), which is dated to ca. 410—400 BCE (Goroncharovskiy 2014: 576) or to the turn of the 5th and 4th centuries BCE (Alekseeva 1991: 34). A pendant similar to the one from Utash with the ring on which it was attached, originating from Crimea, is kept in Berlin (Greifenhagen 1970: 40, Taf. 16: 14). From the excavations of V.V. Shkorpil of the necropolis between the capes of Tuzla and Panagia on the Taman Peninsula in 1911 (grave no. 184 with finds of a transport amphora and black-glazed vessels) comes a gold necklace consisting of fourteen spherical beads with beaded wire around the holes and with seed-shaped pendants, decorated with vertical ridges, suspended on rings (10 pendants have survived) (fig. 2: 4) (Shkorpil 1914: 58—59, fig. 20; CR St. Petersburg for 1911, 1914: 39—40, fig. 70).

A similar system of fastening and the pendant of a form similar to that of the Utash pendant decorates three necklaces of the 5th century BCE from the Nymphaion necropolis and one from the necropolis of Pantikapaion (the pendants of this necklace are practically identical to that from Utash), consisting of hollow box-links, double tubes or rosettes strung on two threads. These facts prove the inconsistency of the assertion that pendants on rings (chains) appeared only in the 4th century BCE (Kalashnik 2014: 102).

One of them is a necklace of the third quarter of the 5th century BCE from the burial no. 8 of the burial mound no. 17/1876, consisting of ten hollow box-links, embossed in a matrix, with the terminals in the form of embossed palmettes. The figural elements of the necklace at the top and bottom are outlined by spectacle-shaped spirals with curls made of beaded wire. In the center of each box there is soldered an eight-petal rosette with petals made of plain wire with alternating filling of blue and green enamel (fig. 2: 5) (Silant'eva 1959: 72—74, fig. 38: 1; Artamonow 1970: Taf. 90; Williams, Ogden 1994: 133, no. 76; 1995: 133, no. 76; Kat. Bonn 1997: 132—133, Nr. 43; Cat. Los Angeles 2007: 230—231, no. 131; Kalashnik 2014: 66—67).

The second one comes from the tomb no. 3/1868 and consists of 25 rectangular elements, representing double beaded tubes. Eight of them are larger and are decorated with six-petal rosettes with a grain in the center soldered on. The pendants, similar in shape and decoration to the pendants of the necklace from the necropolis between the capes of Tuzla and Panagia, are suspending one or two at a time to soldered rings with intermediate rings (fig. 2: 3) (Gardner 1884: 67, 71—72, pl. 67: 9; Vickers 1979: 41, pl. 10: a; 2002: 34—35, pl. 11; Higgins 1980: 129, pl. 27A; Deppert-Lippitz 1985: 143, Abb. 92: with the dating to the mid-5th century BCE; Despini 1996: 150, fig. 136; 246: late

5th — early 4th centuries BCE). Similar double tubes, but without pendants, were used as elements of necklaces from the necropolis of Amatus (British Museum: Marshall 1911: 215—216, no. 1957, pl. XXXVI; Laffineur 1986: 70, no. 421, fig. 78; Williams, Ogden 1994: 233, no. 166; 1995: 233, no. 166: with the dating to the last quarter of the 5th century BC; Nicosia: Pieridis 1971: 28, pl. XVI: 2; Laffineur 1986: 50, no. 258, fig. 61) and Kurion (Williams, Ogden 1994: 243, no. 178; 1995: 243, no. 178: with the dating to the second half of the 5th century BCE). A similar design of the necklace elements in the form of double tubes, but plain ones, decorated on the front side with soldered cells forming a rosette, with enamel inlays and with firmly fixed plain seed pendants is represented on a necklace from the 1867 excavations of A.E. Lyutsenko in the necropolis of Pantikapaion, which is dated, for reasons unclear to me, to the second half of the 4th century BCE (Kalashnik 2014: 102—103).

The necklaces from the burials of the late 5th to the turn of the 5th—4th centuries BCE from the tomb no. 4/1868 of the Nymphaion necropolis (fig. 3: 1) (Gardner 1884: 66, 70, pl. 47: 4; Vickers 1979: 41—42, pl. 11: a—b; 2002: 36, 37, pl. 12; Higgins 1980: 129, pl. 27b; Deppert-Lippitz 1985: 144—145, Abb. 93; Cat. London 2017: 288—289, no. 198) and the stone cist, excavated by A.E. Lyutsenko in 1854 on the northern slope of Mount Mithridates (fig. 3: 2) (Miller 1979: 11, pl. 5: c; Williams, Ogden 1994: 152—153, no. 94; 1995: 152—153, no. 94; Kalashnik 2004: 86, fig. 16; 2014: 78—79; Cat. Los Angeles 2007: 150—151, no. 57) are formed by double rosettes with acorns (Nymphaion) or seeds (Pantikapaion) on rings, which alternate with double lotus flowers, in the first case with small plain seeds, in the second — with pendants in the form of masks of Achelous. The necklace from Pantikapaion shows the terminals, decorated with filigree palmettes.

It is worth noting that acorn-shaped pendants find parallels primarily among jewellery from Phrygia (Gordion, cremation A, dated to *ca.* 530—525 BCE (Young 1951: 17, pl. VIII: 3; Kohler, Dusinberre 2023: 167—169, 175—176, TumA 11, pls. 571—574), Lycia (Bayandir-Köyiçi, tumulus B4, dated to 530—510 BCE (Özgen, Öztürk 1996: 27, 155; Yener 2022: 453, res. 15: 3; 454—455, no. 2; Çağıltemeller, tumulus G with the dating to the last quarter of the 6th — first half of the 5th centuries BCE: Yener 2022: 445—447, no. 2, res. 12: 3) and Lydia (Toptepe: Özgen, Öztürk 1996: 155, no. 108; Meriçboyu 2001: 104; 2010: 167—168, fig. 11; Baughan 2010: 286, fig. 12; Cat. Istanbul 2010: 538—539, no. 175), but also decorate the above-mentioned necklaces of the first quarter of the 5th century BCE (?) from Eretria (Kuruniotis 1913: 306—312, Taf. XV; Higgins 1980: 129, pl. 26; Deppert-Lippitz 1985: 120—121, Abb. 68: with the dating to the late 6th century BC); Despini 1996: 134—125, figs. 119—120; 243; Cat. Thessaloniki 1997: 100—101, no. 88), the necklace from Marion on Cyprus (Gjerstad et al. 1935: pl. 5: 3c) and the one from the burial no. 83 of the burial mound on Temir-Gora near Kerch, which is dated to the late 5th or to the turn of the 5th and 4th centuries BCE (Yakovenko 1977: 142, fig. 2: 1; Miller 1979: 11, pl. 5: a; Vakhtina 2017: 400). A similar, but bronze pendant originates from Isthmia (Raubitschek 1998: 66—67, 69—70, no. 265, pl. 40). The stamps for embossing of such pendants come from Lydia (Özgen, Öztürk 1996: 223, nos. 201—202; Treister 2001: 62, figs. 12—13). In all the cases mentioned above, however, the acorn-shaped elements are firmly attached to the beads, rather than suspended from rings — a distinction which has already been noted in connection with the analysis of similarly fixed pendants, presumably from Asia Minor, acquired by the Brooklyn Museum (Davidson, Oliver 1984: 12—13, no. 3).

A necklace formed only by beads in the form of hollow rams' heads comes from the tomb no. 2/1868 in Nymphaion, dated to the late 5th century BC. The beads are soldered from two embossed halves. Triangles of granulation are soldered onto the foreheads of the rams. The eyes are formed by a grain framed with soldered plain wire (fig. 2: 6) (Gardner 1884: 65, 72, pl. 47: 12; Vickers 1979: 38, pl. 6: a; 2002: 26, 27, pl. 7). The beads in the shape of rams' heads, soldered from two embossed halves, but without additional decoration, alternating with elongated biconical beads with longitudinal ridges, are elements of a necklace from the burial no. 11/1969 in Vani, dated to the mid-5th century BCE (Chqonia 1981: 104—105, no. 19; 144, pl. 13; Kacharava, Kvirkvelia 2008: 135, pl. 4).

Also comparable in function are the figural beads of the headdress designed for two threads in the form of riders on mules, originating from the burial no. 9/1961, also from Vani, dating to the third quarter of the 4th century BCE (Chqonia 1981: 112, no. 72; pl. 37: a—b; Chqonia 1996: 48—49, fig. 7;

Kacharava, Kvirkvelia 2008: 87, fig. 11; 167, pl. 29: a—b; Treister. 2008: 508 with complete bibliography, fig. 6: 6). The beads in the form of bird figures from the burial no. 6/1961 in Vani were strung on one thread (Chqonia 1981: 105, no. 22, pl. 15; Kacharava, Kvirkvelia 2008: 154—155, pl. 20: b—c; Treister 2008: 508 with complete bibliography, fig. 6: 3). A figurine of a lioness from the Kurdzhips burial mound belongs also to the single-row necklace (Galanina 1980: 26, pl. 1: below left; Treister 2008: 508—509, 519—520, no. 3 with complete bibliography, fig. 5: 3). The elements of the three-row necklaces were figurines of lions found in the Ulyap burial mound no. 4 (Cat. Moscow 1987: 90, no. 42, fig. 31; Leskov 1990: 191, Nr. 229, Abb. 162; Treister 2008: 508—509, 520—521, no. 5 with complete bibliography, fig. 5: 1), and those of winged horses from the Kurdzhips burial mound (Galanina 1980: 83—84, no. 17, pl. VII: below; Treister 2008: 508—509, 520, no. 4 with complete bibliography, fig. 5: 4; Anfimov 2011: 155: below right).

**Pendants and amulets**

In the burial of the Seven Brothers burial mound no. 4, seven amulets were found next to the buried warrior (fig. 4: 1) (Maksimova 1962: 228, no. 14; Goroncharovskiy 2014: 564). Publication level (only drawings from the album to the Report of the Imperial Archaeological Commission are available) (CR St. Petersburg for 1877. 1880: 27, pl. II: 11—15) allows us to discuss only a part of them, first of all, the amulet in the form of a tusk in a frame (CR St. Petersburg for 1877. 1880: 27, pl. II: 13; Treister 2012b: 38; Goroncharovskiy 2014: 564).

The sheet frame of the fang has a rounded suspension-ring, which is decorated along the butt end with a row of soldered grains. The upper part of the frame is decorated with a filigree rosette, below there are two friezes separated by filigree bands. The upper one is decorated with two rows of triangles of granulation facing each other, the lower one — with horizontally located S-shaped spirals. Along the lower edge of the frame there is a row of triangular protrusions decorated with soldered granulation (fig. 4: 1.13).

The closest parallel is a tusk pendant in a gold frame from the burial mound no. 2/1911 near the village of Pokrovka in the Southern Urals (Treister 2012a: 153—155, no. A10.1.2, pl. 112), found in the same complex with other pendants in gold frames (Treister 2012a: 153—155, no. A10.1.1—3, pls. 110—112). The frame of the Pokrovka pendant is decorated with friezes with opposing triangles of granulation.

The upper parts of the pendants — gold frames (including those with preserved inlays) from Sardis (Curtis 1925: 21—22, nos. 35—37, 40, pl. III: 4—7; Rehm 1992: 113, 130—131, Nr. E16—20; Meriçboyu 2001: 94, res. 1; Karagöz 2013: 152, Nr. 131, Abb. 289) and an element of a necklace from the Ikiztepe burial mounds in Eastern Lydia (Özgen, Öztürk 1996: 188, no. 139) — are also decorated along the lower edge with triangular protrusions with soldered granulation. The finds from Ikizetepe originate from the looting excavations of burial mounds (von Bothmer 1981; von Bothmer 1984; Özgen, Öztürk 1996), the burials in which most likely date to the late 6th — early 5th centuries BCE (Il 2009: 748—761; Mohr 2015: 101, 374—375, 377—378, FO 93.5).

The decoration of the butt end of the loop with a row of grains finds parallels on gold pendants from Sardis (here with transverse rows of fine grain between large granules: Curtis 1925: 21—22, nos. 35—37, 40, pl. III: 4—7; Rehm 1992: 113, 130—131, Nr. E E17, 19; Meriçboyu 2001: 94, res. 1; Karagöz 2013: 152, Nr. 130—131, Abb. 288—289; and on a pendant with a cylindric seal made of onyx: Curtis 1925: 21—22, no. 104, pl. X: 1; Dusinberre 2003: 268, fig. 80; 2010: 181, fig. 2; Cat. Istanbul 2010: 502, no. 128; Karagöz 2013. 122—123, Nr. 76, Abb. 183) and from the Ikiztepe burial mounds (Özgen, Öztürk 1996: 188, no. 139; 190, nos. 144—145).

The motif of triangles of granulation adjacent to a row of granules was widely used in jewellery art (see in detail: Treister 2012a: 143). Opposite rows of triangles of granulation decorate the gold bead frames from a Scythian burial of the 5th century BCE in the burial mound no. 1/1876 near the village of Yablonovka (Onayko 1966: 64, no. 234, pl. XXIII: 5; Cat. Moscow 2002: 100, no. 452), the gold frames of the bead from the burial no. 1 in Filippovka in the Southern Urals (Treister 2012a: 151—153, no. A13.1.3.3; цв. pl. I.35; II.21: 6; fig. II.63: 4) and a gold frame of a trapezoid pendant made of blue

paste, the central element of a necklace from the already mentioned burial mound near the village of Yablonovka (Cat. Moscow 2002: 100, no. 451).

Another amulet from the Seven Brothers burial mound no. 4 in the form of a raw carnelian is suspended from a loop of gold wire, the ends of which are tied in spiral turns (fig. 4: 1.14) (CR St. Petersburg for 1877. 1880: 28, pl. II: 14; Cat. St. Petersburg 2024, vol. 1, 339, no. 150). Similar amulets with similar loops and pendants made of agate and argillite come from the Ikiztepe burial mounds (Özgen, Öztürk 1996: 138—139, nos. 93—94; Meriçboyu 2001: 60—61, res. 1—2; 2010: 160, fig. 3; Cat. Istanbul 2010: 541, no. 178). Similar loops were used for suspension of the pyramidal seal from Ikiztepe (Özgen, Öztürk 1996: 140, no. 95; Meriçboyu 2001: 60—61, res. 3; 2010: 161, fig. 4; Cat. Istanbul 2010: 541, no. 177) and a gold bell-shaped pendant from Yozgat in Asia Minor (Bingöl 1999: 118, no. 119 with the dating to the 4th century BCE).

Similarly designed loops occur on the gold nugget-pendants from Ikiztepe (Özgen, Öztürk 1996: 137, no. 92; Meriçboyu 2001: 58—59, res. 2; Özgen 2010: 324, fig. 32), Artemis sanctuary at Brauron in Attica (Pologiorgi 2019: 20—21, figs. 1—2 with the dating to the 5th century BCE) and the Northern tomb of the Oguz burial mound in the Lower Dnieper basin (Boltrik, Fialko 1991: 128, Taf. 14; 2024: 221—222, fig. 146; 388—389, no. 208; Fialko 1994: 121, 123, fig. 1; Cat. Rimini 1995: 89, no. 69), as well as the pendants in the form of spherical carnelian beads from the late 4th century BCE burial in the Kurdzhips (Maksimova 1962: 227, no. 6—9; Galanina 1980: 87—88, no. 28, pl. V), Ak-Burun (CR St. Petersburg for 1876. 1879: 6, no. 8, pl. II: *9*; Maksimova 1962: 227, no. 3—4; Butyagin, Vinogradov 2014: 85, nos. 39—40 with bibliography) and Zelenskoy burial mounds (Maksimova 1962: 226—227, nos. 1—2), and also from Kerch (Greifenhagen 1970: 40, Taf. 17: 4).

A comparable silver loop is attached to the amber pendant in the form of astragalus from the cremation S-D on the island of Thasos dated to the first half — the middle of the 4th century BCE (Sgourou, Agelarakis 2001: 344—345, figs. 29, 31; 354, no. 55a). Finally, also a miniature round-bottomed gold vessel from the first quarter of the 5th century BCE from the Acanthos necropolis is equipped with a similar silver loop (Kaltsas 1998: 139, no. 2 (burial no. 1653), 280, αρ. 1208; πίν. 156; Cat. Thessaloniki 2007: 195, no. 11), the vessel itself reminiscent of another pendant in the shape of a vessel from the Seven Brothers burial mound no. 4 (fig. 4: 1.12) (CR St. Petersburg for 1877. 1880: 27, pl. II: 12), the closest parallel to which, made of gold, comes from the burial no. 29/1913 of the Olbian necropolis, dating to the second quarter of the 5th century BCE (Pharmakowsky 1914: 242, Nr. 6; 245, Abb. 62—63; CR St. Petersburg for 1913—1915. 1918: 40, figs. 53—54; Skrzhinskaya 1986: 114, fig. 2: 4; 122; 1987: 178, 179, fig. 56: 11; Skudnova 1988: 132, no. 207.6).

Also an amulet in the form of an insect larva or cicada from the Seven Brothers burial mound no. 4 (fig. 4: 1.15) (CR St. Petersburg for 1877. 1880: 28—29, pl. II: 15) attracts attention. An amulet in the form of a fly or cicada, decorated with compositions of rhombuses and triangles of granulation, comes from the excavations of Artemision in Ephesos (Meriçboyu 2001: 58, res. 1). The brooch in the shape of a cicada with embossed decoration on the folded wings also comes from there (Hogarth 1908: 98, pl. IV: 33; Meriçboyu 2001: 64, res. 3). A silver pendant in the shape of a cicada was found in a hoard in the palace at Vouni in Cyprus (Gjerstad et al. 1937: 238, no. 292r, pls. LXXXIX: 14; XCII; collections.smvk.se: 1) and may be dated no later than 390—380 BCE (Zournatzi 2017: 159—178). Comparable silver pendants were acquired by the Louvre (Coche de la Ferté 1956: 48—49, 58—59, pl. XV: 4—5; Higgins 1980: 129, pl. 24f). A gold figure of cicada decorates a silver finger ring from the late 6th century BCE burial of Polis necropolis on Cyprus (Marshall 1907: 163, no. 1014, pl. XXVI; Cat. Princeton 2012: 158—159, no. 53). Cicada in profile is shown over the head of the youth on an oval bezel of a gold finger ring from Nymphaion, which, given its form may be dated perhaps rather to the 4th than to the 5th century BCE (fig. 9: 2) (Gardner 1884: 66, 71, pl. 47: 7; Boardman, Vollenweider 1978: 31, no. 135; Vickers 1979: 46, pl. 16: d—e; 2002: 48—49, pl. 18: below right; Boardman 2001: 223, 299, pl. 730). Four gold appliqués in the shape of cicadas, each with two loops on the rear, allegedly from Asia Minor, are kept in Brooklyn and dated to the 4th century BCE (Davidson, Olver 1984: 13—14, no. 4), whereas a bone amulet in the form of cicada comes from a child burial in the necropolis of Abdera, dating to

the late 4th — early 3rd century BCE (Kallintzi 2007: εικ. 19; Kallintzi, Chatziprokopiou 2024: 206—208, figs. 2—3). A rectangular plate with two loops on the rear and a relief image of a larva on the front side was found in Kukova Mogila (Filow 1934, 42—43, Nr. 4, Abb. 49: 3; Tonkova, Penkova 2009: 202—203, fig. 3). An embossed plaque depicting a cicada or bee, originally from the Crimea, is kept in Berlin (Greifenhagen 1970: 39, Taf. 16: *3*). The structure of the insect and the elaboration of one of its parts with parallel ridges is extremely close to the design of the pendant from Seven Brothers burial mound no. 4.

Gold pendants in the form of lion heads of the 5th century BCE from the necropoleis of the Taman Peninsula (fig. 4: 2—4) and Pantikapaion belong to the most common type of gold pendants in the shape of animal heads, which are also represented by items in the form of bull and ram heads. They were widespread from Southern Italy and Sicily in the West, to Rhodes, Euboea, Macedonia, Thasos and Thrace, to Olbia and the Bosporan kingdom, as well as the Kuban region, in the East (Treister, Sudarev 2024: 194—223; 2025a: 1—41). In the North Pontic region, the earliest sample in the form of a lion's head is a find from grave no. 10/1913 of the necropolis of Olbia, which may date back to the second, or rather the third quarter of the 5th century BCE (CR St. Petersburg for 1913—1915: 41, fig. 51: in the centre; Pharmakowsky 1914: 241—242, Nr. 2, Abb. 60: in the centre; Skrzhinskaya 1986: 114, fig. 2: 11; 118, 120, fig. 4: 9; 122; 1987: 175, 178, рис. 56: 10; 179; Skudnova 1988: 128, no. 199.2; Kryzhitskiy et al. 1999: 496, fig. 148). The pendants from the contexts of the Taman Peninsula can be dated to the last quarter of the same century and even to the turn of the 5th—4th centuries BCE. It is obvious that all pendants are to some extent individual and stylistic features do not allow us to speak of one or another center of their manufacture. Rather, this can be evidenced by their findplaces, which show a fairly distinct concentration of pendants in Southern Italy, primarily in Tarentum, and in the North Pontic region, in Olbia, and especially in the Bosporan Kingdom (Treister, Sudarev 2024: 194—223; 2025a: 1—41).

This list is supplemented with gold and silver plaques with loops or tubes on the rear from the necropoleis of Volna-1 (a running winged goddess with a hare in one hand and a wreath in the other (fig. 4: 6): Sudarev, Mimokhod 2019: 436, fig. 667; a walking lion with its head turned back (fig. 4: 5): Mimokhod et al. 2017: 303, fig. 5; Novichikhin 2019: 63, fig. 79), a double sphinx (fig. 4: 7) (Mimokhod et al. 2018: 224, 226, fig. 10: 1) and Sindian Harbor (a sitting sphinx (fig. 4: 8): Sudarev 2010: 445, 448, fig. 24; 2023: 67—68, fig. 10: 1; Novichikhin, Galut 2013: 87: below).

The plaques from the Sindian Harbor and Volna-1 necropoleis are rectangular in shape loops or tubes on the rear most likely served to thread a cord. The absence of holes along the edges excludes the attribution of them as appliqués sewn onto fabric. The presence of a loop or a tube suggests another method of fastening (hanging) these plates, most likely on leather cords. This is indirectly confirmed by the location of the plaques in the burial. Thus, a plaque with an image of a sphinx from burial No. 5/2006 of the Sindian necropolis was found on the right side of the lower jaw of the buried woman (judging by the presence of a bronze mirror, a spindle whorl and beads in the burial, this was a female burial, dated by beads and a black-glazed salt cellar to *ca*. 450—420 BCE) (Sudarev 2023: 67—68, figs. 9—10).

**Earrings and temple pendants**

Rare types of jewellery of the period under consideration are earrings or temple pendants, represented by examples in the form of a boat and spiral.

In Ionia and Asia Minor, boat-, or crescent-shaped earrings were known as early as the 7th century BCE (Pülz 2009: 83—84). In other regions of Greece, they became widespread in the 6th century BCE. It is quite obvious that local variants of ornaments stand out, and their production in various regions of the ancient world, from Asia Minor to the Northern Black Sea region, is confirmed by the finds of stamps for their embossing in Eastern Lydia (Özgen, Öztürk 1996: 228—229, nos. 214—217; Treister 2001: 62, figs. 17—18) and a mold for casting of solid earrings of this type jewelry — in Olbia (Williams, Ogden 1995: 260, fig. 1). Probably, the items in the boat form, given their finds in burials,

could have been used mainly as earrings (Pantikapaion, grave No. 10/1911 on the Mithridates Mount — one pair on each side of the skull) and temple pendants (in the burial of a child in Troad, four copies were found on each side of the skull), but could also have been used in other ways, presumably even as fasteners for clothing (Williams, Ogden 1994: 134, no. 77; 1995: 134, no. 77), as it suggested for 8 pieces found in the male burial in Nymphaion, although they were also attributed as temple rings (fig. 5: 1) (Silant'eva 1959: 74; Petrenko 1978: 29).

In particular, for the finds from Asia Minor (Kizöldun, eight pieces from the child burial of the first quarter of the 5th century BCE: Sevinç, Rose 1999: 500—501, no. 15, figs. 19—21; Meriçboyu 2001: 101, res. 3; Rose 2014: 106, 108, fig. 4.6; 111, 112 (on the date of the burial). — Meriçboyu 2001: 103, res. 2. — Sardis: Curtis 1925: 29—30, nos. 61, 65—66, pls. VI: 7; VII: 3—4; Meriçboyu 2001: 114, res. 1; Karagöz 2013: 55, 148—149, Nr. 120—121, Abb. 277—278. — Gödiz: Bingöl 1999: 59. no. 24; Meriçboyu 2001: 114, res. 2), Syria (De Ridder 1911: 122, nos. 682, 684, pl. II; Coche de la Ferté 1956: pl. 2: 3) and Cyprus (Pierides 1971: 31, pl. XX: 5—6; Deppert-Lippitz 1985: 148—149, Abb. 96; Kaba 2016: 227, note 14 with the bibliography; tomb no. 4b in Soloi — three pairs, including two — of larger dimensions: Kaba 2016: 227, fig. 4; 2020: 217 — with the dating of the burial to the early 4th century BCE: Kaba 2020: 219) typical is the decoration of the end and sometimes the front part of the boats with soldered triangles and rhombuses of granulation, as well as S-shaped spirals. A pair of such earrings from a private collection, exhibited in Kassel, comes allegedly from Asia Minor (Naumann 1980: 31, Nr. 38, Taf. 10). In the Cimmerian Bosporus we know of only one pair of such earrings, found in the stone tomb no. 10, excavated in 1911 on the Mithridates Mount (along with two black-glazed alabastra, "decorated with black lines on a red background") (fig. 5: 2) (Pharmakowsky 1912: 342, 346, Abb. 32; Shkorpil 1914: 5, fig. 1). Another earring of this type, in the collection of P. Canellopoulos in Athens, presumably comes from the Peloponnese (Laffineur 1980: 376—377, no. 51, fig. 50).

Moreover, earrings from the Troad, from Sardis (?) (Meriçboyu 2001: 103, res. 2) and the Canellopoulos collection have a vertical rib in the center of the boat, which brings them closer to the stamps for embossing such earrings from the Ikiztepe burial mounds (Özgen, Öztürk 1996: 228—229, nos. 214—217; Treister 2001: 62, figs. 17—18). It should be noted that two pairs of gold earrings with vertical ribs, but without decoration, come from the same burial mounds (Özgen, Öztürk 1996: 164, nos. 113—114; Meriçboyu 2010: 167, fig. 10; Cat. Istanbul 2010: 543, no. 181), and another one — from the early 5th century BCE tomb at Gökciler in Northern Lydia (Cat. Istanbul 2010: 548—551). Three pairs of such earrings from a private collection exhibited in Kassel (Naumann 1980: 31, Nr. 35—37, Taf. 9—10) are also reported to have come from Asia Minor. Two pairs of similar earrings were in the collection of N. Schimmel (Kat. Berlin 1978: Nr. 94). It is assumed that the boat earrings with vertical ribs are characteristic of Lydia and Northern Lycia (Özgen, Öztürk 1996: 164).

While the boat-shaped decorations from Scythian burial mounds have attracted serious attention from researchers (Petrenko 1978: 29—30, type 9, pl. 19; Bessonova 2007: 4—10), the picture is completely different with similar finds from the necropoleis of the Greek ancient centers. In general, boat-shaped pendants in the Northern Black Sea region are represented by various types (Hadaczek 1903: 21—24, figs. 39—43; Gorskaja 2019: 78—88, figs. 10—1), some of which have plain crescents and decorated with pyramids of granulation at the ends (see below), while others are embellished either with filigree decoration in the form of braids and spirals with rosettes at the ends (Gorskaja 2019: 84, 85, fig. 15), or have friezes of decoration made of granulation, less often filigree, with rosettes (Saverkina 1998: 73, fig. 9: 1; Gorskaja 2019: 85—87, fig. 16), with cones formed by wound wire at the ends (Pharmakowsky 1912: 333—334, Abb. 18; CR St. Petersburg for 1911. 1914: 40, fig. 74; Saverkina 1998: 73, fig. 9: 2; Gorskaja 2019: 80—82, fig. 11) or with cones and figures of ducks at the ends (Ganina 1974: ill. 32; Petrenko 1978: 30, pl. 19: 9; Bessonova 2007: 5, fig. 2: 17—19; 12—13) or with one end decorated with a griffin's head and the other — with a rosette (Petrenko 1978: 30, pl. 19: 10—11; Алексеев 2012: 124—125). Relatively late, dating to the 4th century BCE, earrings with duck figurines at the ends could be additionally decorated with pendants on chains (Ganina 1974: ill. 9; Petrenko 1978: 30, variants 6—7, pl. 19: 9, 12—13; Galanina, Grach 1986: figs. 247—248; Kat. Schleswig 1991: 315,

Nr. 109; Kat. Wien 1993: 174—175, Nr. 48; Cat. San Antonio 1999: 266, no. 129; Bessonova 2007: 5, fig. 2: 19; Klochko 2010: 60—67, figs. 3—7).

Finds of pendants made of gold and silver without additional decoration (Petrenko 1978: 29, variant 2) (up to 9 in one burial) come from the complexes of the late 6th century BCE of the Olbian necropolis (CR St. Petersburg for 1913—1915. 1918: 40, fig. 50; Skrzhinskaya 1986: 113—116, figs. 1—2; 1987: 177, 178, fig. 56: 58; Skudnova 1988: 22—23, see the photo on p. 50, no. 50.1). An analogous earring was acquired by the Hermitage from the private collection in Odessa (Gorskaja 2019: 83, fig. 14). In the Bosporus, similar earrings are represented by 8 (!) pieces with pyramids of granulation on one end and a horizontal row of granules between two plain wires on the other from the second quarter of the 5th century BCE burials: no. 8 of the burial mound no. 17/1876 of the Nymphaion necropolis (fig. 5: 1) (CR St. Petersburg for 1877. 1880: 237, no. 21, pl. III: 33; Hadaczek 1903: 22, 23, fig. 41; Silant'eva 1959: 74, fig. 38: 2; Artamonow 1970: Taf. 98; Petrenko 1978: 29, pl. 19: 5; Williams, Ogden 1994: 134, no. 77; 1995: 134, no. 77; Kat. Bonn 1997: 132, Nr. 44; Bessonova 2007: 5, fig. 2: 5; 8) and no. 539 of the Volna-1 necropolis (fig. 5: 3) (Mimokhod et al. 2018: 223, 225, fig. 10: 3). Despite their closeness, the earrings from the Volna-1 necropolis are distinguished by larger balls of granulation, and instead of the classic pyramid, like in the earrings from Nymphaion, at the other end of the earring there is a similar decoration in the form of a row of grains between two plain wires, topped with a large ball of granulation.

Pendants with ducks and griffin heads at the ends come mainly from the Scythian burial mounds — a rare exception is the discovery of a pair of earrings with a crescent decorated with rows of triangles of granulation with a griffin head at one end and a rosette at the other (variant 5, according to the classification of V.G. Petrenko) — in a tomb no. 1/1868 at Nymphaion (fig. 5: 6) (Gardner 1884: 67—68, pl. 46: 6; Hadaczek 1903: 22, 23, fig. 42; Petrenko 1978: pl. 19: 11; Vickers 1979: 35, pl. 3: a; 2002: 18—19, pl. 3; Deppert-Lippitz 1985: 148—149, Abb. 97; Bessonova 2007: 5, fig. 2: 8; 8), which is dated by a red-figure lekythos (Vickers 1979: 36, pl. 4: a; 2002: 8, 20—21, pl. 4) to the late 5th century BC. The closest parallel to them comes from the burial mound no. 2 ("Pastak") of Dort-Oba necropolis in the Central Crimea (fig. 5: 7) (Artamonow 1970: 71, Abb. 135; Petrenko 1978: pl. 19: 10; Kat. Hamburg 1993: 86, Nr. 44; Bessonova 2007: 5, fig. 2: 16; 9—10; Koltukhov, Senatorov 2015: 113, fig. 9; 2016: 169—170, fig. 18: 3), dating to the early 4th century BCE (Monakhov 1999: 210; Polin 2014: 306; Koltukhov, Senatorov 2015: 106, 111—112; 2016: 49, 51, 61). These earrings are significantly (2—2.5 times) larger than the above-mentioned boat earrings from Nymphaion and the Volna-1 necropoleis. One more pair comes from the burial no. 2 of the burial mound no. 6/1971 near the village of Balabanu in Moldova, here with the evident signs of wear (Niculiţă 2018: 64—65, no. 20 with complete bibliography).

Much less common are earrings with embossed decoration in the form of ridges designed as rays, like an earring, a chance find from near the village of Glinishche in the Poltava region, which alone belongs to variant 1 according to the classification of V.G. Petrenko (Petrenko 1978: 29, pl. 19: 1; Cat. Moscow 2002: 94, 100, no. 448; Bessonova 2007: 4—5, fig. 2: 1). Two earrings with similar decoration are kept in the Hermitage: one with three missing pendants was acquired in Taman (Pharmakowsky 1912: 333—334, Abb. 17; CR St. Petersburg for 1911. 1914: 40, fig. 73; Bessonova 2007: 5, fig. 2: 7; 8[1]; Gorskaja 2019: 80—82, fig. 12), the second originally comes from a private collection in Odessa (Gorskaja 2019: 82—83, fig. 13). Also from Taman comes allegedly an earring, which found its way to Berlin via the collection of A. Merle de Massoneau (Greifenhagen 1970: 43, Taf. 20: 5). Another earring, presumably from Olbia, came to the collection of B.I. and V.I. Khanenko (Khanenko, Khanenko 1907: 17, no. 599, pl. VIII; Skrzhinskaya 1986: 113, fig. 1: 5; 115; 1987: 177, 178, fig. 56: 60; Bessonova 2007: 8; Velichko 2019: 69, fig. 1: 12; 73, no. 20). The relief ridges here are divided by transverse parallel grooves, forming radial rows of projections. The surface of the earring' crescent from a child's burial in the earthen tomb no. 26/1876 of the Nymphaion necropolis is designed in the form of plain ray-shaped ridges (fig. 5: 5) (Silant'eva 1959: 26, fig. 13: 2;

[1] S.S. Bessonova notes that the earring was found between the capes of Tuzla and Panagia, which is not entirely true — it was acquired by V.V. Shkorpil "from graves discovered on the Taman Peninsula by the looters' excavations" (CR St. Petersburg 1911. 1914: 40).

Skrzhinskaya 1986: 115; Bessonova 2007: 5, fig. 2: 6; 8), the closest parallel to which is an earring, a chance find of 1947 in Olbia (Skrzhinskaya 1986: 114, fig. 2: 5; 115). Outside the North Pontic region, an earring from Ephesos, with a body of a slightly different shape, more in the form of a lunula, but with similar decoration, should be mentioned (Marshall 1911: 72, no. 942, pl. IX; Higgins 1980: 119, pl. 21: f), as well as an earring from the early 5th century BCE burial in Sardis with a similar decoration (Curtis 1925: 29—30, no. 64, pl. VII: 2; Meriçboyu 2001: 98, 99, res. 1; 2010: 167, fig. 9; Cat. Istanbul 2010: 496, no. 117; Karagöz 2013: 151, Nr. 126, Abb. 284). The pendants on chains embellished some of the boat earrings from Sardis (Curtis 1925: 29—30, nos. 61, 66, pls. VI: 7; VII: 4; Karagöz 2013: 55, 149, Nr. 121, Abb. 278).

A pair of gold earrings in the boat shape from the Seven Brothers burial mound no. 7 varies from all the others in that their surface is covered with friezes of incised pattern in the form of a zigzag and a series of angles (fig. 5: 4) (CR St. Petersburg for 1876. 1879: 152, pl. III: 41; Hadaczek 1903: 22, 23, fig. 40; Williams, Ogden 1994: 131, no. 75; 1995: 131, no. 75; Bessonova 2007: 8), which, as I have already mentioned, reminds the decoration of the seed-shaped pendants of the necklace from the Seven Brothers burial mound no. 2 (fig. 1: 6) (CR St. Petersburg for 1876. 1879: 120, no. 11, pl. IV: 7; Artamonow 1970: 26, Abb. 41; Williams, Ogden 1994: 129, no. 71; 1995: 129, no. 71; Kat. Bonn 1997: 83, Nr. 7; Cat. Los Angeles 2007: 216—217, no. 116; Vlasova 2010: 205, fig. 14; Kalashnik 2014: 55). Besides, the wire of the hoop is not round in cross-section, but faceted.

A special feature of the earrings from Nymphaion and the Volna-1 necropoleis is their decoration not only with beaded rings at the ends (like the earrings from Olbia), but also with granulated pyramids. There is every reason to date the finds from Nymphaion no later than the first half, or rather the first quarter of the 5th century BCE.

The fact that of all the known to us boat earrings, only the finds from the necropoleis of Nymphaion, Pantikapaion and Volna-1 are decorated with pyramids of granulation, an ornamental element characteristic of spiral pendants, which were especially common in the Bosporan Kingdom in the second half of the 5th — first half of the 4th century BCE (Silant'eva 1976: 123—137), probably is a proof of the possible local manufacture of the crescent-shaped earrings. The already expressed assumption that these gold and bronze gold-covered ornaments were most likely made in the Bosporus (Silant'eva 1976: 134) is confirmed by the analysis of silver and bronze pendants of this type from the necropoleis of the Taman Peninsula (fig. 6). There is reason to believe that the spiral ornaments from Lycia could have served as prototypes of such ornaments. The earliest examples of gold spiral ornaments with cuffs with transverse ridges in Olbia and the Bosporus are generally dated to the first half of the 5th century BCE. Ornaments with cuffs decorated with spiral decoration also appeared no later than the second quarter of the century. Obviously, they were extremely popular and were made not only in gold, but also in silver. As early as the 5th century BCE, a simplified, single-piece version of such pendants appeared, cast in molds like the one found in Nymphaion (Silant'eva 1976: 133, fig. 8; 134; Treister 1992: 75, fig. 5, 4; 79—80; Williams, Ogden 1995: 261, fig. 2; Kalashnik 2004: 35, fig. 10; 2014: 18: below left; Cat. Los Angeles 2007: 58, 59, fig. 73a;). Such pendants were cast not only in silver and bronze, but also in gold, and were widely distributed both in the Bosporus and among the barbarian population of the Eastern Crimea, Sindika and the Kuban region, until the beginning of the 3rd century BCE, when they went out of fashion (Treister, Sudarev 2025b: 436—463).

Unique for the North Pontic region is a pair of gold earrings from the tomb no. 2/1868 of the Nymphaion necropolis, dated by black-glazed vessels to the second half (last quarter) of the 5th century BCE (Vickers 1979: 39—41, figs. 4—8, pls. 7—9; 2002: 28—33, pls. 8—10). They are soldered from two halves with embossed decoration in the form of transverse ridges. The clasp is a crossbar on a hinge (Gardner 1884: 65, 72, pl. 46: 13; Vickers 1979: 38, pl. 6: d; 2002: 26—27, pl. 7; Williams, Ogden 1994: 134, commentary to no. 77; 1995: 134, commentary to no. 77). The closest parallel comes from the necropolis of Sardis (Curtis 1925: 31, no. 69, pl. VII: 8; Meriçboyu 2001: 94, res. 2; Karagöz 2013: 150, Nr. 125, Abb. 283).

**Torcs**

Massive torcs, all of the same type, made of rounded in a cross-section rod with a thickening in the middle and chopped off ends (Petrenko 1978: 44, section III, type I, pl. 30) were found in the high-status military burials of the Seven Brothers and Nymphaion tumuli of the middle—second half of the 5th century BC: Seven Brothers burial mound no. 2 (CR St. Petersburg for 1876. 1879: pl. IV: 6; Goroncharovskiy 2014: 556—557, fig. 8): Nymphaion, tomb no. 19 of the burial mound no. 24/1876 (Silant'eva 1959: 67, fig. 24: 1; Petrenko 1978: 44, pl. 30: 2; Cat. St. Petersburg 1999: 92, no. 225); Nymphaion, tomb no. 6/1868 of the late 5th century BCE (Vickers 1979: 44, pl. 15: a; 2002: 48—49, pl. 18; Cat. London 2017: 291, no. 202).

**Bracelets**

Bracelets of the 5th century BCE are represented by silver ones with hollow hoops and knobs on the ends from the burial no. 539 of the Volna-1 necropolis (fig. 7: 1). The closest parallel is a pair of silver bracelets with knobs on the ends from a child's burial in the earthen tomb no. 26/1876 of the Nymphaion necropolis (fig. 7: 2) (Silant'eva 1959: 26, fig. 13: 3). Two silver bracelets with knobs on the ends, dated by P.F. Silant'eva to the first half of the 5th century BCE (Silant'eva 1976: 125), have close parallels found in the earthen tomb no. 7/1911 covered with slabs on the Mithridates Mount, together with a gold spiral pendant (Shkorpil 1914: 4; Silant'eva 1959: 39; 1976: 124, fig. 2: в; 125). Similar in shape bracelets, but with solid hoops, originate from a burial of the third quarter of the 5th century BCE in the necropolis of Apollonia Pontica (Chacheva 2015: 5—6, fig. 4: B1; 2016: 144—145, fig. 6: 1). Two silver bracelets, one with a filigree decoration at the end, the other with a thickening and rounded protrusions at the ends, come from Seven Brothers burial mound no. 7, dating from the turn of the 5th to the 4th centuries BCE (Goroncharovskiy 2014: 570).

A pair of silver bracelets with missing terminals and hoops made of hollow tubes filled with silver-lead alloy come from the Ikiztepe burial mounds in Eastern Lydia (Özgen, Öztürk 1996: 149, no. 104) and similar bracelets were found in the burials of the Olbian necropolis, dated to the late 6th century BCE (Skudnova 1988: 100, no. 149.4; 154, 156, no. 236.6).

Lion heads were used in Greek jewellery in the 6th—4th centuries BCE to decorate various ornaments, but primarily the ends of the bracelets (Pfrommer 1990: 100—108, 335—340, TA 37—108; Deppert-Lippitz 1998: 92—93). This practice was particularly widespread in Asia Minor (Gordion: Young 1951: 17, pl. VIII: 1; Deppert-Lippitz 1985: 131—132, Abb. 82; Kohler, Dusinberre 2023: 171—173, TumA 1—3, pls. 551—552. — Ikiztepe: Özgen, Öztürk 1996: 180, no. 131. — Toptepe: Özgen, Öztürk 1996: 160—161, no. 111. — Sardis: Curtis 1925: 25—26, nos. 49—50, pl. IV, 7—8; Meriçboyu 2001: 108—109), but also in the north of the Balkan peninsula (Mesembria-Zoni: Iliopoulou 2015: 132, εικ. 227. — Abdera: Kallintzi 2007: 263, εικ. 11). It is possible that some of the bracelets with hollow silver hoops and missing terminals could have originally been decorated with lion heads at the ends, similar to the bracelets from the burial no. 83/1913 of the Olbian necropolis, dating to the late 6th century BCE (Skudnova 1988: 140, no. 221.6—7), from the Scythian burial near the village of Emchikha (Onayko 1960: 35: 1966: 64, no. 243, pl. XXII: 9; Petrenko 1978: 56 (erroneously as bronze with silver terminals), pl. 46, 3; Cat. Moscow 2002: 92, no. 384), from the tomb no. no. 3/1868 in Nymphaion (fig. 7: 4) (Gardner 1884: 66, 72, pl. 47: 10; Vickers 1979: 41, pl. 10: b; 2002: 34, 35, pl. 11; besides this pair of bracelets the burial yielded a necklace: Gardner 1884: 66, 71—72, pl. 47: 9; Vickers 1979: 41, pl. 10: a; 2002: 34, 35, pl. 11; Higgins 1980: 129, pl. 27: a; Deppert-Lippitz 1985: 143, 144, Abb. 92: with the dating to the mid-5th century BCE). A more luxurious and apparently later version, represent a pair of bracelets from the stone tomb excavated on the Mithridates Mount in 1854 (fig. 7: 3) (Deppert-Lippitz 1985: 158, Abb. 111; Williams, Ogden 1994: 156—157, no. 96; 1995: 156—157, no. 96; Kat. Bonn 1997: 142—143. Nr. 53; Cat. Los Angeles 2007: 148—149, no. 56; Kalashnik 2014: 80—81).

Of particular note is the bracelet in the form of a cord made of interwoven chains with the ends in the form of snake heads from the Seven Brothers burial mound no. 4 (fig. 7: 6) (CR St. Petersburg for 1877. 1880: 26, pl. II: 10; Artamonow 1970: Taf. 133; Kat. Bonn 1997: 92, Nr. 19; Kalashnik 2004: 54, fig. 28; 2014: 62—63; Anfimov 2011: 111; Cat. St. Petersburg 2024, vol. 1, 340, no. 151; Nebelsick 2024: 704, fig. 4: 5; 707, fig. 7: 5; Treister in print b). Although the only known parallel to the bracelet with a hoop made of a cord formed by chains comes from Eastern Lydia and dates to approximately the same time (Özgen, Öztürk 1996: 176—177, no. 129), the fact that snake-head-shaped terminals are completely unusual of jewellery from this region in the period under consideration, and, on the other hand, were common in the north of the Balkan Peninsula, in Macedonia (Misailidou-Despotidou 2011: 109—119; Del Socorro 2017: 76, fig. 21; Nebelsick 2024: 704 with bibliography, fig. 4), provides certain grounds for searching for prototypes of the bracelet from the Seven Brother burial mound no. 4 in this region. This is indirectly confirmed by the widespread use in Macedonia of cords made of chains with the ends in the form of clamps with snake heads, represented by the finds from the burials of the Sindos necropolis of the late 6th century BCE (Despini 2016: vol. III, 127—129, αρ. 203—209; 522—523, πίν. 25—26; 584—586. εικ. 222—227) and the bracelets with pair or two pairs of snake heads on each of the ends — in the necropolis of Trebenishte (Tonkova 2018: 80, 82, 84, fig. 16: c; Cat. Belgrade 2018: 300, nos. 153—156 (tomb IX); Cat. Belgrade 2018: 307, nos. 179—180 (tomb X)).

At the same time, the clasp of the bracelet from the Seven Brothers burial mound no. 4 in the form of two pairs of hooks with ends in the form of snake heads and rings is unusual — there are no parallels to it, and the technique of fixing the braided cords in the clamps reveals a similarity with how the terminals of the gold rhyta from the same burial were attached to the horns (Artamonow 1970: 33—34, Abb. 58—59; Galanina, Grach 1986: figs. 110—111; Kat. Hamburg 1993: 83. Nr. 42; Kat. Bonn 1997: 89—90. Nr. 17; Vlasova 2000: 55—56, no. 5—6; 2001: 20—27, fig. 2; 4: 2; 2010: 212, fig. 29—30; Cat. Los Angeles 2007: 219—220, no. 120; Manassero 2008: 111—112, nos. 15—16; 131, tav. XXXVI; Anfimov 2011: 104, 120—121; Kalashnik 2014: 56—61; Novichikhin 2019: 222, fig. 332; Cat. Moscow 2024: 39, no. 21). All this gives certain grounds to assume that the gold bracelet, unique in its form and design, found in the male burial of the Seven Brothers burial mound no. 4, could have been the work of a local jeweller, made under a certain influence of the motifs and techniques of jewelry that became widespread in the north of the Balkan Peninsula in the late Archaic period.

The bracelet from the male burial in the Kul-Oba burial mound is unique in its shape and decoration. It is a closed plate ring with ridges along the edges, decorated on the outside with soldered plates with relief images of the fight between Peleus and Thetis and Eos carrying the kidnapped Kephalos or Triton (fig. 7: 5) (Manzewitsch 1931: 106—116; Artamonow 1970: Taf. 206; Galanina, Grach 1986: fig. 180; Williams, Ogden 1994: 140, no. 82; 1995: 140, no. 82; Grach 1994: 139—141, figs. 4—6; Kat. Bonn 1997: 162, Nr. 68; Deppert-Lippitz 1998: 93—94; Treister 2000: 94—95; 2001: 150—152; Damyanov 2007: 243: with an erroneous indication of the location of the Kul-Oba burial mound on the Taman Peninsula, 245—248, fig. 6; Meyer 2013: 125, fig. 46; 322, K11c; Kalashnik 2014: 120—121; Treister, in press a: with complete bibliography). Despite the generally logical assumption of N. L. Grach that the three bracelets from Kul-Oba were made in one workshop in the Bosporus at the end of the 5th or beginning of the 4th century BCE (Grach 1994: 141), it does not necessarily correspond to reality. Here it is more likely that the craftsman of the bracelet from the male burial had a matrix or matrices with the indicated scenes, but the dimensions of the scenes in width did not correspond to the width of the bracelet that they were supposed to decorate, and the total length of 10 plates also did not correspond to the circumference of the bracelet. This led to the fact that the plates embossed in the matrix were cut to fit the size of the bracelet core, while the bracelet in its finished form could well have been the work of a jeweller from the 5th century BCE.

## Finger rings

The finger rings made of precious metals, primarily gold and electrum, of the late 6th — 5th centuries BCE, found in the Cimmerian Bosporus, and represented by two groups: signet rings (figs. 8—9) and rings with decorative bezels (fig. 10), have already been examined in detail (Neverov 1986: 17—21; Treister 2023: 298—306).

### *Signet rings*

This group is represented by rings of several types.

One of them has elongated oval bezels, pointed at the ends and a narrow hoop, called by J. Boardman stirrup / "staple-shaped", which is quite consistent with the outline (Boardman 2001: 156—157, fig. 198: M). Boardman unites these rings into the Penelope Group (Boardman 2001: 215, 296, 435, notes 461—476):

with an image of a sphinx from tomb no. 2/18678 in Nymphaion (fig. 8: 1—2) (Vickers 2002: 26—27, pl. 7; Despini 1996: 262, no. 203; Neverov 2000: 180—181, no. 2; Boardman 2001: 215, 296, pl. 657; Treister 2023: 299, fig. 1: 1—2); with an image of a flying Nike with taenia — from tomb no. 8 in the burial mound no. 17/1876 of the Nymphaion necropolis (fig. 8: 3—4) (Silant'eva 1959: 74, fig. 38: 3; Neverov 1986: 19, note 19; 2000: 179—181, no. 1, fig. 1; Boardman 2001: 215, 296, pl. 658; Kalashnik 2014: 64; Treister 2023: 299, fig. 1: 3—4). Let us point out a similar finger ring with a similar motif — a flying Nike with a wreath — from a burial of the second quarter of the 5th century BCE in the necropolis of Eretria (Kuruniotis 1913: 296, 299, Taf. XVI: 5—5a; Despini 1996: 200, 263, no. 204). Another finger ring of this type with an image of a flying Nike (with a wreath) presumably comes from the Crimea and was acquired by the Hermitage in 2001 (Arsent'eva, Gorskaya 2019: 45—46, no. 10).

The image of a flying Eros with a wreath and a band is presented on a similarly shaped bezel of a silver ring from Phanagoria (fig. 8, 5) (ABC 1854, vol. 1, 132 (as a gold one); vol. 3, pl. XVIII: 14; Furtwängler 1900: Bd. 1, Taf. 10: 10; Bd. 2: 50; Neverov 1986: 19, note 20; Boardman 2001: 215, 296, pl. 659; Treister 2020: 235—236; 2023: 299, fig. 1: 5). A similar motif adorns a finger ring from the Taman Peninsula. (T.1852.96: Neverov 1986: 19, note 20; Boardman 2001: 435, note 469). J. Boardman noted that finger rings with the image of a flying Eros with a wreath or a wreath and a lyre are characteristic of Cyprus, where three examples come from Marion (Boardman 1967: 25, 26, nos. N3—5, pl. 7; Boardman, Vollenweider 1978: 30, no. 130. pl. XXIII) and pointed out that this subject is characteristic of the late Archaic scarabs. Iconographically similar images of flying Nike (Kurtz 1975: pl. 61: 3; Wehgartner 1983: 46, Nr. 6; 122, Taf. 42: 6; CVA Berlin 8, 1991: 59, Taf. 41: 9; CVA München 15, 2010: 22—23, Taf. 6: 7—9; 24—25. Taf. 7: 6—8) and Eros (CVA München 15, 2010: 24. Taf. 7: 1—3) with taenia or a wreath are presented on white-ground lekythoi and alabastra dating from 470—460 BCE and on a red-figure lekythos dating from *ca.* 450 BCE.

The finger ring from the Taman Peninsula, which J. Boardman attributes to the Waterton Group, which he dates to the middle — third quarter of the 5th century BCE, represents Penelope (fig. 8, 9) (Neverov 1986: 19, note 17; Gauer 1990: 35, Nr. 22; LIMC VII, 1994: 292, Nr. 8b s.v. Penelope [Chr. Hausmann]; Boardman 2001: 216, 435, note 481; Treister 2023: 301, fig. 1: 9).

Unique is a gold finger ring found in 2018 in a mud-brick building (sanctuary no. 835) under the stone foundation of a temple in Phanagoria. Both the shape of the ring and the style of the image on its bezel leave no doubt about the dating of the ring to the late Archaic period, most likely around the turn of the 6th—5th centuries BCE. The image of a naked beardless youth in a diadem, with wreaths in his lowered hands, can rather be associated with motifs of a pederastic circle or associated with symposium, rather than sports (fig. 8: 6—8) (Treister 2020: 233—240, fig. 1; 2023: 301, fig. 1: 6—8).

A gold finger ring with the image of a flying heron from the necropolis of Pantikapaion (fig. 9: 4) (Neverov 1973: 58, fig. 2; 59; 1986: 20, note 25; Boardman 2001: 219, 297, pl. 677; Cat. Los Angeles 2007: 146, no. 52), belonging to the group of the so-called Classical Light Rings (Boardman 2001: 216,

219) is dated to the middle second half of the 5th century BCE (Boardman 2001: 219; Cat. Los Angeles 2007: 146) or to the first decades of the 4th century BCE (Neverov 1973: 58—59) and is attributed to the workshop of Dexamenos or its reproduction / imitation.

Profile portraits appear no later than the middle of the 5th century BCE, an example of which is the ring from Nymphaion (fig. 9: 5) (Gardner 1884: 66, 71, pl. 47: 6; Boardman, Vollenweider 1978: 30, no. 131, pl. XXIII; Boardman 2001: 216, 296, pl. 670; Vickers 1979: 46, pl. 17: b—c; 2002: 48—49 (with complete bibliography), pl. 18: below left). Probably, finger rings with images of female heads from Pantikapaion can also be attributed to the second half of the century (Neverov 1986: 19, note 22; 20, note 36; Boardman 2001: 220, 297, pl. 678; 436, notes 509, 511).

The Persian drawing his bow is depicted on the bezel of the gold ring bearing the signature of the craftsman (Athenades) (fig. 9: 1) (Maximova 1928: 670, fig. 25; Maksimova 1956: 193, fig. 3; Zazoff 1983: 151, Anm. 135; Neverov 1986: 19; 145, pl. I: 4; Boardman 2001: 220, 297, 316, pl. 681; Williams, Ogden 1994: 158, no. 97; 1995: 158, no. 97: Kat. Bonn 1997: 144, Nr. 55; Kalashnik 2004: 50, fig. 23; 51, 86; Cat. Los Angeles 2007: 148, no. 55; Kalashnik 2014: 76—77; Cat. St. Petersburg 2024: vol. 1, 494, no. 245), from a female burial in a stone tomb in the necropolis at Pantikapaion discovered by A.E. Lyutsenko on the northern slope of Mount Mithridates in 1854. Although certain finds from that burial are dated to the early decades of the 4th century BCE, the ring was dated to the middle of the 5th century BCE (Furtwängler 1900: 52, Taf. X: 27; Maximova 1928, 670), to the second half of the 5th century BCE[2] (O. Ya. Neverov (Kat. Bonn 1997: 144, Nr. 55); Cat. Los Angeles 2007: 148, No. 55) or given a narrower date range: 430s to the beginning of the 420s BCE (Maksimova 1956, 193) 9 or 420—400 BCE (Williams, Ogden 1994: 158; 1995: 158) or the end of the 5th century BCE. Despite these divergences, all the dates given for the Athenades ring fall within the second half of the 5th century BCE (Kalashnik 2004: 50, fig. 23; 51, 86; 2014: 76—77). The ring belongs to the Classical Heavy Rings, or type III, after J. Boardman (Boardman 2001: 220; Neverov 1986: 19). The point of view to the effect that the ring was made in Asia Minor, voiced as early as the 1920s by M. I. Maksimova, was subsequently supported by the other scholars (Maksimova 1956: 195; Neverov 1986: 19; Kalashnik 2014: 76).

J. Boardman ascribes to the same group gold finger rings from Kerch, with a youth kneeling over a tunny fish and a prawn (Boardman 2001: 220, 297, pl. 682), from Nymphaion, with a griffin attacking a horse (fig. 9: 6) (CR St. Petersburg for 1877. 1880: 261, pl. V: 12; Silant'eva 1959: 46, fig. 19: 3; Neverov 1973: 58, fig. 1; 59; 1986: 19, note 16; Boardman 2001: 220, 297, pl. 695; Cat. Los Angeles 2007: 235, no. 135) and from the Seven Brothers burial mound no. 6, with a panther attacking a stag (fig. 9: 3) (CR St. Petersburg for 1876. 1879: 149, pl. III: 34; Artamonow 1970: Taf. 132; Neverov 1986: 19, note 23; Boardman 2001: 220, 297, pl. 694; Anfimov 2011: 113: below; Goroncharovskiy 2014: 568), suggesting that some of these rings, with the motifs of animal combat, „were made by Greek goldsmiths on the shores of the Black Sea" (Boardman 2001: 220). At the same time, the ring from Nymphaion is often ascribed to the workshop of Dexamenos (Neverov 1973: 58; Cat. Los Angeles 2007: 235) — a point of view that the engraver from Chios could also work some time in the Cimmerian Bosporus or the local Bosporan engravers could imitate his style has been also expressed (Neverov 1973: 58; Neverov 2007: 62, 63).

In any case there are evident parallels with the scenes of the animal tornment on the items of the so-called Greco-Scythian metalwork. Thus the scene with a stag and panther may be compared with the motif on the upper plate of the gold conical object from Bratolyubov burial mound (Kat. Schleswig 1991: 304, Nr. 90; Schiltz 1994: 150—155, figs. 112—115; 364, fig. 273; Cat. San Antonio 1999: 276—281, no. 136; Cat. Trento 2007: 181, fig. 6; 343, no. 122; Kubyshev et al. 2009: 52, fig. 10a, 6; 59; foto 11) and on the gold overlay of the sword from Tolstaya Mogila (Chernenko 1975: 157—161; Mozolevs'kiy 1979: 68—73, no. 135, figs. 52—56; 178—179; Galanina, Grach 1986: fig. 150—151; Kat. Wien 1993: 96—99, Nr. 17; Schiltz 1994: 399, Abb. 330; Cat. San Antonio 1999: 252—254, no. 122; Kat. Bonn 2013: 424—425, Nr. XX.6). Two eagle-headed griffins are tearing apart a horse on a gold pectoral from Tolstaya Mogila, on

[2] In his article Neverov (Neverov 1986: 19) is inclined rather to date it to the third quarter of the 5th century BCE.

which three different scenes with this motif are represented, the closest one, with a similar image of a horse in the center (see, e.g., Galanina, Grach 1986: figs. 118—121; Schiltz 1994: 196—197, Abb. 145; 204—205, fig. 149; Cat. San Antonio 1999, 327, 329—330). One griffin is tormenting a horse on a gold scaraboid ring from a Scythian burial of the first half of the 4th century BCE in Denisova Mogila (Mozolevskiy 1980: 134, 136, figs. 69—70; Cat. San Antonio 1999: 218, no. 99; Kat. Mannheim 2009: 170, Nr. 45).

A gold ring from Kerch shows Nike sacrificing a stag (Boardman 2001: 223, 298, pl. 722 with bibliography), given the name for the finger rings of type VII, or the Nike Group (Boardman 2001: 223—224). Although most of the finger rings of the group, a lot of which found in the North Pontic area, belong already to the 4th century BCE, this one, being perhaps, the earliest, was executed in the 5th century BCE style (Boardman 2001: 223) and even dated to the second half of the 5th century BCE (Ерохова 1945: 101—118; Neverov 1986: 20, note 29).

**Decorative rings**

The so-called decorative rings (Boardman 2001: 232—234) deserve special attention. O.Ya. Neverov (1986: 22—23) devoted only one paragraph to them in his article. These rings have bezels of the same shape as the early type of signet rings discussed above, elongated oval bezels, pointed at the ends, but differ in the shape and manufacturing technique of the hoop and the bezel. A plate with a relief image was soldered onto the bezel. The beaded wire soldered along the edge of the bezel served, among other things, as an additional fixation of the plate to the base (Treister 2023: 301—305, fig. 2).

These include: a finger ring dating to the first half or middle of the 5th century BCE with a three-wire twisted hoop with a leaf-shaped bezel decorated with a soldered plate with a relief image of a seated figure of Penelope, from a stone tomb discovered in 1854 on Mount Mithridates (fig. 10: 1—3) (Furtwängler 1900: Bd. I, Taf. 10: 20; Jacobstahl 1931: 193, Nr. 7 (460—450 BCE); Neverov 1986: 22, 23, note 73; Gauer 1990: 35, Nr. 20; LIMC VII, 1994: 292, Nr. 8a s.v. Penelope [Chr. Hausmann]; Kat. Bonn 1997: 143, Nr. 54; Kalashnik 2004: 86; 2014: 74—75; Cat. Los Angeles 2007: 147, no. 54; Treister 2023: 301, 303, fig. 2: 1—3). The bezel is framed along the edge with beaded wire. Rings of beaded wire between two plain wires are soldered at the transition from the hoop to the bezel. The bezel of another finger ring from the middle of the 5th century BCE is decorated in a similar way, representing the figure of Penelope with a bow (fig. 10: 4) (ABC 1854, vol. 1: 130; vol. 3, pl. XVIII: 9; Neverov 1986: 22, 23, note 73; Gauer 1990: 35, Nr. 21; LIMC VII, 1994: 292, Nr. 8c s.v. Penelope [Chr. Hausmann]; Vinogradov 2020: 145, 150, fig. 1: 1; Treister 2023: 301, fig. 2: 4) from a female burial in a wooden sarcophagus in a stone cist, excavated by A.B. Ashik near the Pavlov battery in 1842 and dated to the late 5th (Boardman 1970b: 37) or the turn from the 5th to the 4th centuries BCE (Vinogradov 2020: 152). Here the hoop at the transition to the bezel is decorated with two lion heads. J. Boardman attributed the rings from the Pantikapaion necropolis to the type 1 of the Relief Rings category (Boardman 2001: 446).

We find comparable images of Penelope on Melian terracotta reliefs from about 470—450 BCE (Jacobstahl 1931: 165, 192; LIMC VII, 1994: 294, Nr. 33 s.v. Penelope [Chr. Hausmann]; Stulp 2006: 100—101, 200—205, Nr. 65—72, Taf. XXIX—XXXI), on the other finfer rings and their offprints and in vase-painting (Gauer 1990: 33—36. Hoelscher 2011: 46—49, Abb. 11—14).

It is also worth noting that the finger ring from the tomb excavated in 1854 is decorated on the inside with soldered filigree spirals (fig. 10: 2). This element and the design of the hoop itself, which is additionally decorated with lion heads at the transition to the bezel, allow us to compare it with the ring from tomb no. 9 of the burial mound no. 20/1876 of the Nymphaion necropolis (fig. 10: 5—6) (Silant'eva 1959: 42, fig. 19, 2а—б; Neverov 1986: 22, note 72, pl. II: 4; 2000: 180, fig. 5; 182, no. 9; Kalashnik 2014: 65 Treister 2023: 303, fig. 2: 5—6). The decoration of the front side of the bezel with a double filigree palmette, as L.F. Silant'eva (1959: 42) rightly noted, is comparable to the decoration of the finger ring from the burial CLV of the Ialyssos necropolis on Rhodes of the late 5th century BCE (Jacopi 1929: 158, fig. 151). The latter is similar to the finger

ring from the tomb of 1854 in the decoration of the butt end of the bezel with soldered S-shaped spirals. A ring of the same group, also from the North Pontic region, is kept in Berlin — here a double filigree palmette is soldered on both the outer and inner sides of the bezel. The hoop with ends in the form of lion heads is braided in the form of a pigtail from two wires (Greifenhagen 1970: 41, Taf. 17: 6—7; Higgins 1980: 132, no. 4; Despini 1996: 45, 205, 266, no. 214).

Another finger ring with a twisted hoop with ends in the form of lion heads with a bezel with a band of Ionian kymation along the butt end, decorated on the front and inner sides with a double filigree palmette, on top of which on the front a six-petal rosette is soldered in the center, is in the collection of S. Yedaev (fig. 10: 7—9) (Spier, Ogden 2015: 68—69, no. 24 Treister 2023: 303, fig. 2: 7—9). The bezel of the gold finger ring in Providence, framed with beaded wire, is decorated with a plate with a relief image of a flying Nike with a wreath (Hackens 1976: 54, no. 13). The ring from the collection of P. Cannelopoulos also belongs to this group — it features a twisted hoop, decorated at the transition to the bezel with lion heads. On the bezel there is soldered a plate with a relief image of Eros (?) in profile to the right (Laffineur 1980: 378—379, no. 54, figs. 53—54). The bezel of a finger ring with a plate with a relief image of a draped male figure from the excavations of the sanctuary of Athena Polias in Stymphalos in Arcadia, dated to the 4th century BCE, is decorated with beaded wire along the edge (Young 2006: 131, no. 6, fig. 3).

Twisted hoops, like those on the rings from the Cimmerian Bosporus, appear no later than the second quarter of the 5th century BCE — they occur on several finger rings from burials in the Eretria necropolis of this time (Kuruniotis 1913: 300—301. Taf. XVI: 6—10), while bezels of a similar shape on two rings are decorated with filigree double palmettes (in one case, with a rosette in the center), with grains soldered into the curls (petals) (Kuruniotis 1913: 305—306, Taf. XVI: 9—10), as well as on a silver finger ring from the Mesembria (Zoni) necropolis, the bezel of which is decorated with two S-shaped spirals with balls of granulation soldered into the curls and a row of granulated triangles along the edge (Vavritsa 1970: 74, πίν. 107δ).

Similar hoops are also found on the finger rings with the bezels in the shape of a Boeotian shield, most of which are decorated in the center with an embossed gorgoneion: from the Kavala region in Eastern Macedonia (Amandry 1953: 72—73, no. 214, pl. XXX; Cat. Thessaloniki 1978: 96, no. 399, pl. 54) and Thespiae in Boeotia (Coche de la Ferté 1956: 60, pl. 17: 2—3). One more finger ring of this type, but made of silver, comes from the excavations of a sanctuary on the island of Kythnos (Koukoulidou et al. 2017: 227, figs. 102—103). Three finger rings from Eretria with gorgoneion-shaped overlays on the bezels, dating to no later than the first half of the 5th century BCE, with similar hoops ending in snake heads (two of them with bezels in the form of a Boeotian shield), are distinguished by the fact that the free part of the bezel is decorated with soldered triangles of granulation (Kuruniotis 1913: 300—301, Taf. XVI: 6, 6a—b = Cat. Thessaloniki 1997: 99, no. 86. — Kuruniotis 1913: 300—301, 302—303, Taf. XVI: 8, 8a) or petals executed from beaded wire (Kuruniotis 1913: 302, Taf. XVI: 7, 7a).

Overall, of the fifteen finger rings with engraved bezels of the Penelope Group, twelve of which have known find locations, at least four definitely come from the territory of the Cimmerian Bosporus (Boardman 2001: 215, 296, 435, notes 461—476). Of the 17 decorative rings mentioned here, 11 have a precisely known or most probable place of origin. Of these, four come from the North Pontic region, including three from the territory of the Cimmerian Bosporus.

**Problems of attribution of production centers**

The fact, that the jewellery items examined here are considered primarily basing on publications of varying levels of description and quality of illustrations and are unavailable to the author for any technological research, significantly reduces the possibilities of their attribution in terms of distinguishing between imported and locally produced items. Nevertheless, having been studied in the context of all known pieces of jewellery items of the late Archaic and early Classical periods from the Black Sea region, Asia Minor, the Near East and Greece, they allow us to express

in a cautious form some considerations, basing primarily on the peculiarities of the geographical distribution of forms and decorative motifs.

Among the supposedly imported ones, one can single out products of the workshops located in Asia Minor, primarily Lydia, Cyprus and the South-Eastern Black Sea region.

**Imports**

***Asia Minor, primarily Lydia***

— amulets in the form of a tusk in a frame (fig. 4: 1.13) (CR St. Petersburg for 1877. 1880: 27, pl. II: 13; Treister 2012b: 38; Goroncharovskiy 2014: 564) and in the form of a raw carnelian, suspended from a loop of gold wire, the ends of which are tied in spiral turns (fig. 4: 1.14) (CR St. Petersburg for 1877. 1880: 28, pl. II: 14) from the Seven Brothers burial mound no. 4;

— a unique for the North Pontic region pair of gold earrings from the tomb no. 2/1868 of the Nymphaion necropolis soldered from two halves with embossed decoration in the form of transverse ridges and the clasp in the form of a crossbar on a hinge (Gardner 1884: 65, 72, pl. 46: 13; Vickers 1979: 38, pl. 6: d; 2002: 26—27, pl. 7; Williams, Ogden 1994: 134, commentary to no. 77; 1995: 134, commentary to no. 77);

— a necklace from the stone tomb excavated by A.E. Lyutsenko in 1854 on the northern slope of the Mithridates Mount with the beads, formed by three rows of granulation, and spherical beads decorated with 7—8 rows of granules, along with plain spherical and barrel-shaped beads formed (fig. 1: 3) (Williams, Ogden 1995: 156, no. 95; Kat. Bonn 1997: 141—142, Nr. 52; Kalashnik 2004: 85, fig. 52; 2014: 72—73).

— a finger with the Persian drawing his bow with the signature of the craftsman (Athenades) (fig. 9: 1) (Maximova 1928: 670, fig. 25; Maksimova 1956: 193, fig. 3; Zazoff 1983: 151, Anm. 135; Neverov 1986: 19; 145, pl. I: 4; Boardman 2001: 220, 297, 316, pl. 681; Williams, Ogden 1994: 158, no. 97; 1995: 158, no. 97: Kat. Bonn 1997: 144, Nr. 55; Kalashnik 2004: 50, fig. 23; 51, 86; 2014: 76—77; Cat. Los Angeles 2007: 148, no. 55), from the same burial.

***Asia Minor and Cyprus***

— an amulet in the form of an insect larva or cicada from the Seven Brothers burial mound no. 4 (fig. 4: 1.15) (CR St. Petersburg for 1877. 1880: 28—29, pl. II: 15)

— a pair of boat earrings, decorated with soldered triangles and rhombuses of granulation, found in the stone tomb no. 10, excavated in 1911 on Mount Mithridates (fig. 5: 2) (Pharmakowsky 1912: 342, 346, Abb. 32; Shkorpil 1914: 5, fig. 1).

***Cyprus***

a necklace consisting of 25 rectangular elements, representing double beaded tubes, with eight of them decorated with six-petal rosettes with a grain in the center soldered on from the tomb no. 3/1868 of the Nymphaion necropolis (fig. 2: 3) (Gardner 1884: 67, 71—72, pl. 67: 9; Vickers 1979: 41, pl. 10: a; 2002: 34—35, pl. 11; Higgins 1980: 129, pl. 27A; Deppert-Lippitz 1985: 143, Abb. 92: with the dating to the mid-5th century BC; Despini 1996: 150, fig. 136; 246: late 5th — early 4th centuries BCE).

***Colchis***

A necklace formed only by beads in the form of hollow rams' heads from the later 5th century BCE tomb no. 2/1868 in Nymphaion (fig. 2: 6) (Gardner 1884: 65, 72, pl. 47: 12; Vickers 1979: 38, pl. 6: a; 2002: 26, 27, pl. 7).

## Objects of supposedly local manufacture

There are grounds to suggest that already in the first half, possibly in the first quarter, of the 5th century BCE, local jewelry workshops working with precious metals appeared in the Cimmerian Bosporus.

### *Some variations of boat earrings and necklaces*

In the Bosporus, boat earrings without additional decoration on the crescents are represented by 8 pieces with pyramids of granulation on one end and a horizontal row of granules between two plain wires on the other from the second quarter of the 5th century BCE burials: no. 8 of the burial mound no. 17/1876 of the Nymphaion necropolis (fig. 5: 1) (CR St. Petersburg for 1877. 1880: 237, no. 21, pl. III: 33; Hadaczek 1903: 22, 23, fig. 41; Silant'eva 1959: 74, fig. 38: 2; Artamonow 1970: Taf. 98; Petrenko 1978: 29, pl. 19: 5; Williams, Ogden 1994: 134, no. 77; 1995: 134, no. 77; Kat. Bonn 1997: 132, Nr. 44; Bessonova 2007: 5, fig. 2: 5; 8) and no. 539 of the Volna-1 necropolis (fig. 5: 3) (Mimokhod et al. 2018: 223, 225, fig. 10: 3). A special feature of the earrings from Nymphaion and the Volna-1 necropoleis is their decoration not only with beaded rings at the ends (like the earrings from Olbia), but also with granulated pyramids. There is every reason to date the finds from Nymphaion no later than the first half, or rather the first quarter of the 5th century BCE. The fact that of all the known to us boat earrings, only the finds from the necropoleis of Nymphaion, Pantikapaion and Volna-1 are decorated with pyramids of granulation, an ornamental element characteristic of spiral pendants, which were especially common in the Bosporan Kingdom in the second half of the 5th — first half of the 4th century BCE (Silant'eva 1976: 123—137) is the possible evidence of local production of such earrings.

A rare variant of boat earrings with a crescent decorated with rows of triangles of granulation with a griffin head at one end and a rosette at the other originate from the late 5th century BCE tomb no. 1/1868 at Nymphaion (fig. 5: 6) (Gardner 1884: 67—68, pl. 46: 6; Hadaczek 1903: 22, 23, fig. 42; Petrenko 1978: pl. 19: 11; Vickers 1979: 35, pl. 3: a; 2002: 18—19, pl. 3; Deppert-Lippitz 1985: 148—149, Abb. 97; Bessonova 2007: 5, fig. 2: 8; 8). The closest parallel to them comes from the early 4th century BCE burial mound no. 2 ("Pastak") of Dort-Oba necropolis in the Central Crimea (fig. 5: 7) (Artamonow 1970: 71, Abb. 135; Petrenko 1978: pl. 19: 10; Kat. Hamburg 1993: 86, Nr. 44; Bessonova 2007: 5, fig. 2: 16; 9—10; Koltukhov, Senatorov 2015: 113, fig. 9; 2016: 169—170, fig. 18: 3). Given the fact of their rarity and mainly local distribution, it is likely that they were made in a Bosporan workshop.

A pair of gold earrings in the boat shape from the Seven Brothers burial mound no. 7, dating to the turn of the 5th and 4th centuries BCE, varies from all the others in that their surface is covered with friezes of incised pattern in the form of a zigzag and a series of angles (fig. 5: 4) (CR St. Petersburg for 1876. 1879: 152, pl. III: 41; Hadaczek 1903: 22, 23, fig. 40; Williams, Ogden 1994: 131, no. 75; 1995: 131, no. 75; Bessonova 2007: 8), which reminds the decoration of the seed-shaped pendants of the necklace from the Seven Brothers burial mound no. 2 (fig. 1: 6) (CR St. Petersburg for 1876. 1879: 120, no. 11, pl. IV: 7; Artamonow 1970: 26, Abb. 41; Williams, Ogden 1994: 129, no. 71; 1995: 129, no. 71; Kat. Bonn 1997: 83, Nr. 7; Cat. Los Angeles 2007: 216—217, no. 116; Vlasova 2010: 205, fig. 14; Kalashnik 2014: 55). It has been suggested that the earrings and the necklace "could have been made in the same workshop or by the same jeweller", and that they are executed "in a local tradition, but under some influence from Greek style" (Williams, Ogden 1994: 131; 1995: 131). This point of view is quite justified, given the uniqueness of the decoration of the boats, although earlier, dating from around the middle of the 6th century BCE, boat earrings from the hoard found on the island of Berezan in 1975, are decorated with rows of embossed decoration (Skrzhinskaya 1986: 113, fig. 1: 4; 1987: 177, 178, fig. 56: 59)). A similarly decorated bead comes from thew burial no. 83 of the Artyushchenko-2 necropolis (fig. 1: 5) (Kashaev 2019: 249, 251, fig. 12: 3), which is dated by a red-figure lekythos to ca. 400 BCE (Kashaev 2019: 245, 246, fig. 8: 7).

Gold and silver plaques from the necropoleis of Volna-1 (fig. 4: 5—7) (a running winged goddess with a hare in one hand and a wreath in the other: Sudarev, Mimokhod 2019: 436, fig. 667; a walking lion with its head turned back: Mimokhod et al. 2017: 303, fig. 5; Novichikhin 2019: 63, fig. 79) and Sindian Harbor (fig. 4: 8) (a sitting sphinx: Sudarev 2010: 445, 448, fig. 24; 2023: 67—68, fig. 10: 1; Novichikhin, Galut 2013: 87: below) are rectangular in shape with loops or tubes on the rear most likely served to thread a cord. Some of them, like the plaque from the Volna-1 necropolis with the image of a running winged goddess with a hare in one hand and a wreath in the other, demonstrate a motif unique to the Archaic period, while, given other finds of small silver and gold plaques in this necropolis, its (their) local manufacture cannot be ruled out.

***Spiral pendants***

The already expressed assumption that these gold and bronze gold-covered ornaments were most likely made in the Bosporus (Silant'eva 1976: 134) is confirmed by the analysis of silver and bronze pendants of this type from the necropoleis of the Taman Peninsula (fig. 6). There is reason to believe that the spiral ornaments from Lycia could have served as prototypes of such ornaments. The earliest examples of gold spiral ornaments with cuffs with transverse ridges in Olbia and the Bosporus are generally dated to the first half of the 5th century BCE. Ornaments with cuffs decorated with spiral decoration also appeared no later than the second quarter of the century. As early as the 5th century BCE, a simplified, single-piece version of such pendants appeared, cast in molds like the one found in Nymphaion (Silant'eva 1976: 133, fig. 8; 134; Treister 1992: 75, fig. 5, 4; 79—80; Williams, Ogden 1995: 261, fig. 2; Kalashnik 2004: 35, fig. 10; 2014: 18, below left; Cat. Los Angeles 2007: 58, 59, fig. 73a). Such pendants were cast not only in silver and bronze, but also in gold, and were widely distributed both in the Bosporus and among the barbarian population of the Eastern Crimea, Sindika and the Kuban region, until the beginning of the 3rd century BCE, when they went out of fashion (Treister, Sudarev 2025b: 436—463).

***Bracelets***

The analysis of the gold bracelet in the form of a cord made of interwoven chains with the ends in the form of snake heads, unique in its form and design, found in the male burial of the Seven Brothers burial mound no. 4 (fig. 7: 6) (CR St. Petersburg for 1877. 1880: 26, pl. II: 10; Artamonow 1970: Taf. 133; Kat. Bonn 1997: 92, Nr. 19; Kalashnik 2004: 54, fig. 28; 2014: 62—63; Anfimov 2011: 111; Nebelsick 2024: 704, fig. 4: 5; 707, fig. 7: 5), gives certain grounds to assume that could have been the work of a local jeweller, made under a certain influence of the motifs and techniques of jewelry that became widespread in the north of the Balkan Peninsula in the late Archaic period (Treister in print b).

Despite the generally logical assumption of N.L. Grach that the three bracelets from Kul-Oba were made in one workshop in the Bosporus at the end of the 5th or beginning of the 4th century BCE (Grach 1994: 141), it does not necessarily correspond to reality. Here it is more likely that the craftsman of the bracelet from the male burial, decorated with soldered plates with relief images of the fight between Peleus and Thetis and Eos carrying the kidnapped Kephalos or Triton (fig. 7: 5) (Manzewitsch 1931: 106—116; Artamonow 1970: Taf. 206; Galanina, Grach 1986: fig. 180; Williams, Ogden 1994: 140, no. 82; 1995: 140, no. 82; Grach 1994: 139—141, fig. 4—6; Kat. Bonn 1997: 162, Nr. 68; Deppert-Lippitz 1998: 93—94; Treister 2000: 94—95; 2001: 150—152; Damyanov 2007: 243: with an erroneous indication of the location of the Kul-Oba burial mound on the Taman Peninsula, 245—248, fig. 6; Meyer 2013: 125, fig. 46; 322, K11c; Kalashnik 2014: 120—121; Treister, in press a: with complete bibliography), had a matrix or matrices with the indicated scenes, but the dimensions of the scenes in width did not correspond to the width of the bracelet that they were supposed to decorate, and the total length of 10 plates also did not correspond to the circumference of the bracelet. This led to the fact that the plates embossed in the matrix were cut to fit the size of the bracelet core, while the bracelet in its finished form could

well have been the work of a jeweller from the 5th century BCE. Of course, it is impossible to answer the question of where exactly this bracelet was made. However, it should be noted that the silver-gilt rectangular plate 5.7 cm high formed a frieze with six scenes of the Gigantomachy (one of the scenes is repeated twice) on a rhyton with a protome of Pegasus from the Ulyap burial mound no. 4 (Cat. Moscow 1987: 105, no. 101; Leskov 1990: 41—43, Nr. 240, Abb. 191—197; Schiltz 1994: 57, Abb. 108, 264; Ksenofontova a 1997: 60—78; Ksenofontova, Zajtseva 1997: 265—293; Nieswandt 1997: 137—148; Vickers 1999: 30, 66, fig. 18; Treister 2000: 96—101, pls. I—III; 2001: 155—156; 2010: 544, fig. 10; Cat. Moscow 2002: 124—125. no. 613; Vlasova 2002: 141—150, fig. 3—5; Erlikh 2010: 402—404, fig. 14; Leskov et al. 2013: 32, no. 10, photo 8—12; Lapatin 2015: 238—239, pl. 65), dated to the first half of the 4th century BCE (Leskov at al. 2013: 33). It is unlikely that this coincidence can be considered accidental, which accordingly does not exclude the possibility that the bracelet from the male burial in Kul-Oba was made in a Bosporan workshop (Treister, in press a: with complete bibliography).

### *Finger rings*

J. Boardman suggested that some of the gold finger rings, primarily those with the motifs of animal combat (fig. 9: 3, 6), "were made by Greek goldsmiths on the shores of the Black Sea" (Boardman 2001: 220). In any case there are evident parallels with the scenes of the animal tornment on the items of the so-called Greco-Scythian metalwork. Besides, a point of view that Dexamenos from Chios could also work some time in the Cimmerian Bosporus or the local Bosporan engravers could imitate his style has been also expressed (Neverov 1973: 58; 2007: 62, 63).

## References

Alekseev, A.Yu. 2012. *Zoloto skifskikh tsarey v sobranii Ermitazha (Gold of the Scythian Kings in the Collection of the Hermitage)*. Saint Petersburg: State Hermitage Publ. House (in Russian).

Alekseeva, E.M. 1991. *Grecheskaya kolonizatsiya Severo-Zapadnogo Kavkaza (The Greek Colonization of the North-Western Caucasus)*. Moscow: Nauka (in Russian).

Amandry, P. 1953. *Collection Hélène Stathatos. Les bijoux antiques.* I. Strasbourg: en depot chez l'auteur à l'Institut d'Archéologie de l'Université de Strasbourg.

Anfimov, N.V. 2011. *Drevnee zoloto Kubani / The Kuban's Ancient Gold.* 2nd ed. Krasnodar: Traditsiya (in Russian).

Arsent'eva, E.I., Gorskaya, O.V. 2019. *Antichnyye yuvelirnyye izdeliya iz chastnykh sobraniy. Kol'tsa i perstni. Katalog kollektsii (Antique Jewellery from Private Collections. Rings and Signet Rings. Collection catalogue).* Saint Petersburg: State Hermitage Publ. House (in Russian).

Artamonow, M.I. 1970. *Goldschatz der Skythen.* Prag: Artia; Leningrad: Sovetskij Khudoshnik.

Baughan, E. 2010. Lidya Gömü Gelenekleri. Lydian Burial Customs. In: Cat. Istanbul 2010, 273—304.

Bessonova, S.S. 2007. In *Bosporskie issledovaniya (Bosporan Studies)* XVI, 3—30 (in Russian).

Bingöl, F.R.I. 1999. *Anadolu medenizetleri müzesi. Antik takilar.* Ankara: T.C. Kültür ve Turizm Bakanlığı Anıtlar ve Müzeler Gnl.Müd.

Boardman, J. 1967. Archaic Finger Rings. *AntK* 10, 3—31.

Boardman, J. 1970. Pyramidal Stamp Seals in the Persian Empire. *Iran* VIII, 19—46.

Boardman, J. 2001. *Greek Gems and Finger Rings. Early Bronze Age to Late Classical*. 2nd ed. London: Thames & Hudson.

Boardman, J., Vollenweider, M.-L.1978. *Catalogue of the Engraved Gems and Finger Rings. I. Greek and Etruscan. Ashmolean Museum, Oxford*. Oxford: Oxford University Press.

Boltrik, Ju.V., Fialko, E.E. 1991. Der Oguz-Kurgan. Die Grabanlage eines Skythenkönigs der Zeit nach Ateas. *Hamburger Beiträge zur Archäologie* 18, 107—129.

Boltrik, Yu.V., Fialko, O.E. 2024. *Kurgan Ogz. Mogila iódnogo z ostannikh tsariv Skifii* (*Oguz Burial Mound. The Tomb of one of the last Kings of Scythia*). Kiev: Institute of Archaeology, National Academy of Sciences of the Ukraine (in Ukrainian).

Butyagin, A.M., Vinogradov, Yu.A. 2014. *Kurgany na myse Ak-Burun (Burial Mounds on the Ak-Burun Cape).* Simferopol; Kerch: "Demetra" Foundation (Bosporan Studies 13) (in Russian).

collections.smvk.se: 1: C05357e: Svenska Cypernexpeditionen, silver, föremålsbild. Available at: https://collections.smvk.se/carlotta-mhm/web/object/5180642 (accessed 12.04.2025).

Cat. Belgrade 2018: Ardjanliev P, Chukalev, K., Cvjetićanin, T., Damyanov, M., Krstić, V, Papazovska, A, Popov, H. (eds.). *100 Years of Trebenishte*. Sofia: National Archaeological Institute with Museum.

Cat. Bergen 2017: *Legends in Gold. Thracian Treasures from Bulgaria. Bryggens Museum, Bergen City Museum.* Bergen: Bryggens Museum.

Cat. Brussels 2002: Fol, A. (ed.). *L'or des thraces: trésors de Bulgarie*. Palais des Beaux-Arts; Bruxelles du 5 octobre 2002 au 5 janvier 2003; Europalia Bulgaria 2002. Bruxelles: Snoeck-Ducaju & Zoon.

Cat. Istanbul 2010: Cahill, N.D. (ed.). *Lidyalılar ve dünyaları: [bu katalog, Yapı Kredi Kültür Sanat Yayıncılık A.Ş. tarafından 19 Şubat — 15 Mayıs 2010 tarihleri arasında Yapı Kredi Vedat Nedim Tör Müzesi'nde açılan "Lidyalılar ve Dünyaları" sergisi dolayısıyla Yapı ve Kredi Bankası A.Ş. için hazırlanmıştır] = The Lydians and their World*. Istanbul: Yapı Kredi Kültür Sanat Yayıncılık.

Cat. London 2017: Simpson, S.J., Pankova, S. (eds.). *The BP exhibition. Scythians. Warriors of Ancient Siberia.* London: Thames & Hudson.

Cat. Los Angeles 2007: *Greeks on the Black Sea. Ancient Art from the Hermitage*. Los Angeles: J. Paul Getty Museum.

Cat. Montreal 1987: *Gold of the Thracian Horsemen. Treasures from Bulgaria.* Montreal: Editions de l'Homme.

Cat. Moscow 1987*:*Leskov, A.M. (ed.). *Shedevry drevnego iskusstva Kubani / Kuban Ancient Art*. Moscow: Ministry of culture of the USSR (in Russian).

Cat. Moscow 2002: Zhuravlev, D.V. (ed.). *Na krayu oikumeny. Greki i varvary na severnom beregu Ponta Evksinskogo (At the Edge of Oikumene. Greeks and Barbarians on the Northern Coast of Pontus Euxeinos).* Moscow: State Historical Museum (in Russian).

Cat. Moscow 2024: Erlikh, V.R. (ed.). *Akhemenidskiy sled v Severnom Prichernomor'e* (*The Achaemenid Trace in the North Pontic Region*). Moscow: State Oriental Museum (in Russian).

Cat. Paris 2006: Fol, V. (ed.). *L'or des Thraces. Trésors de Bulgarie. Musée Jacquemart-André.* Bruxelles: Snoeck Gand.

Cat. Paris 2015: Martinez, J.-L. (ed.). *L'épopée des rois thraces — Des guerres médiques aux invasions celtes, 479—278 av. J.-C.* Paris: Somogy.

Cat. Princeton 2012: Childs, W.A.P., Smith, J.S., Padgett, J.M. (eds.). *City of Gold. The Archaeology of Polis Chrysochous, Cyprus*. New Haven; London: Yale University Press.

Cat. Rimini 1995: *Dal Mille al Mille. Tesori e popoli dal mar Nero. Rimini, 5 marzo — 25 giugno 1995*. Milano: Electa.

Cat. San Antonio 1999: Reeder, E.D. (ed.). *Scythian Gold. Treasures from Ancient Ukraine.* New York: Harry N. Abrams.

Cat. St. Petersburg 1999: Boriskovskaya, S.P.(ed.). *Drevniy gorod Nimfey. Katalog vystavki (Ancient City of Nymphaion. Exhibition Catalogue)*. Saint Petersburg: State Hermitage Publ. (in Russian).

Cat. St. Petersburg 2024: Zhizhina, N.K. (ed.). *V poiskakh antichnogo Bospora. K 150-letiyu so dnya rozhdeniya M.I. Rozhedniya (In search of the Antique Bosporus. On the 150th Anniversary of Mikhail Rostovtzeff).* Vol 1. Saint Petersburg: Tabula rasa (in Russian).

Cat. Thessaloniki 1978: Ninou, K. (ed.). *Treasures of Ancient Macedonia*. Thessaloniki: Archaeological Museum of Thessaloniki.

Cat. Thessaloniki 1997: *Greek Jewellery 6000 Years of Tradition. Thessaloniki.* Villa Bianki, 21 December 1997 —21 February 1998. Athens: Archaeological Receipts Fund.

Cat. Thessaloniki 2007: Grammenos, D. (ed.). *Ο χρυσός των Μακεδόνων. Από την έκθεση του Αρχαιολογικού Μουσείου Θεσσαλονίκης*. Thessaloniki: Zetros.

Cat. Trento 2007: *Ori dei cavalieri delle steppe. Collezioni dai Musei dell'Ucraina.* Milano: Silvana Editoreale.

Cat. Venice 1989: *Traci. Arte e cultura nelle terre di Bulgaria dalle origini alla tarda romanità.* Venezia, Palazzo Ducale, 13 Maggio 1989 — 30 novembre 1989. Milano: Art World Media.

Chacheva, M. 2015. Trinkets for the Afterlife: Personal Ornaments from Graves of Children in the Necropolis of Apollonia Pontica. *Archaeologia Bulgarica* XIX.1, 1—21.

Chacheva, M. 2016. Adornments or amulets? Personal ornaments of Apollonian children in Pontic context. In: Manoledakis, M. (ed.) *The Black Sea in the Light of New Archaeological Data and Theoretical Approaches. Proceedings of the 2nd International Workshop on the Black Sea in Antiquity held in Thessaloniki, 18—20 September 2015.* Oxford: Archaeopress, 139—152.

Chernenko, E.V. 1975. In: Terenozhkin, A.I. (ed.). *Skifskiy mir (The World of the Scythians)*. Kiev: Naukova dumka, 157—165.

Chqonia, A. 1981. *Zolotye ukrasheniya Vanskogo gorodishcha (Gold Ornaments of the Vani Fortified Settlement)*. Tbilisi: Metsniereba (Vani VI) (in Georgian).

Chqonia, A. 1996. Colchian Jewelry from the Vani City Site. In: Calinescu, A. (ed.). *Ancient Jewelry and Archaeology*. Bloomington; Indianapolis: Indiana Univ. Press, 45—50.

Coche de la Ferté, E. 1956. *Les bijoux antiques.* Paris: Presses Universitaires de France.

CR St. CTPetersburg for 1876, 1879: *Otchet imperatorskoy arkheologicheskoy komissii za 1876 god* (*Report of the Imperial Archaeological Commission for 1876*). Saint Petersburg: Printing House of the Imperial Academy of Sciences (in Russian).

CR St. Petersburg for 1877, 1880: *Otchet imperatorskoy arkheologicheskoy komissii za 1877 god* (*Report of the Imperial Archaeological Commission for 1877*). Saint Petersburg: Printing House of the Imperial Academy of Sciences (in Russian).

CR St. Petersburg for 1911, 1914: *Otchet imperatorskoy arkheologicheskoy komissii za 1911 god* (*Report of the Imperial Archaeological Commission for 1911*). Saint Petersburg: Printing house of the Main Directorate of Appanages (in Russian).

CR St. Petersburg for 1913—1915, 1918: *Otchet imperatorskoy arkheologicheskoy komissii za 1913—1915 gody* (*Report of the Imperial Archaeological Commission for 1913—1915*). Petrograd: 9th State typography (in Russian).

Curtis, C.D. 1925. *Jewelry and Gold Work. Pt. I, 1910—1914*. Rome: Sindicato Italiano Arti Grafiche (Sardis 13).

Damyanov, M. 2007. Medallion with Peleus and Thetis from the necropolis of Apollonia Pontica. In: *Drevnite tsivilizatsii i moreto. Mezhdunarodna konferentsiya v chest na sedemdeset godishninata na prof. Mikhail Lazarov, Varna, 13—15 oktomvri 2004 g. = Ancient civilisations and the sea: International conference in Honour of Prof. Michail Lazarov. Varna, 13th—15th October 2004*. Varna: Zograf, 238—252 (Acta Musei Varnaensis 5).

Davidson, P.F., Oliver, A.Jr. 1984. *Ancient Greek and Roman Gold Jewelry in the Brooklyn Museum*. Brooklyn: The Museum (Wilbour Monographs 8).

Del Socorro, N. 2017. *Rites funéraires dans le royaume Téménide et ses régions environnantes à la période archaïque.* Thèse de doctorat: Histoire et archéologie des mondes anciens. Paris: Université de Nanterre — Paris X.

Deppert-Lippitz, B. 1985. *Griechischer Goldschmuck*. Mainz: von Zabern.

Deppert-Lippitz, 1998. Greek Bracelets of the Classical Period. In: Williams, D. (ed.). *The Art of the Greek Goldsmith*. London: British Museum Press, 91—94.

De Ridder, A. 1911. *Collection de Clercq: Catalogue. Tome VII, Les bijoux et les pierres gravées*. Paris: E. Leroux.

Despini, Ai. 1996. *Greek Art. Ancient Gold Jewellery*. Athens: Ekdotike Athenon.

Despini, Ai. 2016. *Σίνδος: το νεκροταφείο. Ανασκαφικές έρευνες 1980—1982*. Vols. I—III. Αθήναι: Η εν Αθήναις Αρχαιολογική Εταιρεία (Βιβλιοθήκη της Εν Αθήναις Αρχαιολογικής Εταιρείας. 307—309).

Dusinberre, E.R.M. 2003. *Aspects of Empire in Achaemenid Sardis*. Cambridge: Cambridge Univ. Press.

Dusinberre, E.R.M. 2010. Sardeis'ten Lidya-Pers Mühürleri / Lydo-Persian Seals from Sardis. In: Cat. Istanbul 2010, 177—190.

Erlikh, V.R. 2010. In: Bongard-Levin, G.M., Kuznetsov, V.D. (eds.). *Antichnoe nasledie Kubani (Ancient Heritage of Kuban)*. Vol. 3. Moscow: Nauka, 392—409 (in Russian).

Erokhova, L.A. 1945. In *Trudy otdela istorii iskusstva i kul'tury antichnogo mira Gosudarstvennogo Ermitazha (Proceedings of the Department of the History of Art and Culture of the Ancient World of the State Hermitage Museum)* 1, 101—118 (in Russian).

Fialko, E.E. 1994. In: Okhotnikov, S.B. (ed.). *Drevneye Prichernomor'ye. Kratkiye soobshcheniya Odesskogo arkheologicheskogo obshchestva (Ancient Black Sea Region. Brief Communications of the Odessa Archaeological Society)*. Odessa: Odessa Archaeological Society, 121—124 (in Russian).

Filov, B. 1932/1933. In *Izvestiya na Natsionalniya arkheologicheski institut (Bulletin de l'Institut national d'Archéologie de Bulgarie)* VII, 217—276 (in Bulgarian).

Filow, B. 1934. *Die Grabhügelnekropole bei Duvanlij in Südbulgarien.* Sofia: Staatsdruckerei.

Furtwängler, A. 1900. *Die antiken Gemmen: Geschichte der Steinschneidekunst im Klassischen Altertum.* Bde. 1—3. Leipzig, Berlin: Giesecke & Devrient.

Galanina, L.K. 1980. *Kurdzhipskiy kurgan (Kurdzhips Burial Mound).* Leningrad: Iskusstvo (in Russian).

Galanina, L., Grach N. 1986. *Scythian Art*. Leningrad: Aurora Art Publishers.

Ganina, O.D. 1974. *Kievskiy muzey istoricheskikh dragotsennostey (Kiev Museum of Historical Treasures)*. Kiev: Mistetstvo (in Russian).

Gardner, E.A. 1884. Ornaments and Armour from Kertch in the New Museum at Oxford. *Journal of Hellenic Studies* 5, 62—73.

Gauer, W. Penelope, Hellas und der Perserkönig: ein hermeneutisches Problem. *JdI* 105, 31—65.

Gjerstad, E., Lindros, J., Sjökvist, E., Westholm, A. 1935. *The Swedish Cyprus Expedition. Finds and Results of the Excavations in Cyprus 1927—1931*. Vol. II. Stockholm: Swedish Cyprus Expedition.

Gjerstad, E., Lindros, J., Sjökvist, E., Westholm, A. 1937. *The Swedish Cyprus Expedition. Finds and Results of the Excavations in Cyprus 1927—1931*. Vol. III. Stockholm: Swedish Cyprus Expedition.

Goroncharovskiy, V.A. 2014. In *Bosporskie issledovaniya (Bosporan Studies)* XXX, 553—618 (in Russian).

Goroncharovskiy, V.A. 2016. In *Zapiski Instituta istorii material'noy kul'tury (Notes of the Institute of History of Material Culture)* 13, 90—98 (in Russian).

Gorskaja, O.V. 2019. Diadèmes et pendants d'oreille grecs des VIe—IVe s. av. J.-C. provenant de collections privées des XIXe et XXe siècles, d'après les objets du département du Monde antique du Musée de l'Ermitage. In: P. Burgunder (ed.), *Études bosporanes. Sur un royaume aux confins du monde gréco-romain*. Lausanne: Université de Lausanne, 63—92 (Études de lettres 309).

Grach, N.L. 1994. In *Vestnik drevney istorii (Journal of ancient history)* 1, 135—142 (in Russian).

Greifenhagen A. 1970–1975. *Schmuckarbeiten in Edelmetall.* I—II. Berlin: Gebr. Mann.

Hackens, T. 1976. *Catalogue of the Classical Collection. Classical Jewelry. Museum of Art, Rhode Island. School of Design*. Providence: Museum of Art, Rhode Island School of Design.

Hadaczek, K. 1903. *Der Ohrschmuck der Griechen und der Etrusker*. Wien: Hölder (Abhandlungen des archäologisch-epigraphischen Seminars der Universität Wien 14,1).

Higgins, R.A. 1980. *Greek and Roman Jewellery*. 2nd ed. London: Methuen.

Hoelscher, T. 2011. Penelope für Persepolis. *JdI* 126, 33—76.

Hogarth, D.G. 1908. *British Museum Excavations at Ephesos: The Archaic Artemisia*. London: British Museum.

Jacobstahl, P. 1931. *Die melischen Reliefs*. Berlin-Wilmersdorf: H. Keller.

Jacopi, G. 1929. *Scavi nella necropoli di Jalisso, 1924—1928*. Bergamo: Istituto storico-archeologico Rodi (Clara Rhodos III).

Il, Ö. 2009. *Tumuli Asiae Minoris. Untersuchung zu den phrygischen und lydischen Tumulusgräbern der Eisenzeit im zentralen und westlichen Kleinasien*. Inaugural-Dissertation zur Erlangung des Doktorgrades der Philosophischen Fakultät. Tübingen.

Iliopoulou, S. 2015. *Αρχαία Ζώνη IIIa. Το Νεκροταφείο. Ταφικά έθιμα και πρακτικές*. Κομοτηνή: Υπουργείο Πολιτισμού και Αθλιτισμού, Εφορεία Αρχαιοτήτων Έβρου, Περιφέρεια Ανατολικής Μακεδονίας-Θράκης.

Kaba, H. 2016. Rich in Life and Death. Gold and Silver Finds from a 4th Century Tomb in Soloi. In: Kaba, H., Summerer, L. (eds.). *The Northern Face of Cyprus. New Studies in Cypriot Archaeology and Art History.* Istanbul: Zero, 225—242.

Kaba, H. 2020. An Elite Tomb from Soloi: New Evidence for the Funerary Archaeology of Cyprus. *Adalya* 23, 205—238.

Kacharava, D., Kvirkvelia, G. 2008: *Wine, Worship, and Sacrifice: The Golden Graves of Ancient Vani.* New York: Institute for the Study of the Ancient World at New York University.

Kalashnik, Yu. 2004. *Greek Gold. From the Treasure Rooms of the Hermitage*. Zwolle: Waanders.

Kalashnik, Yu.P. 2014. *Grecheskoe zoloto v sobranii Ermitazha. Pamytniki antichnogo yuvelirnogo iskusstva iz Severnogo Prichernomor'ya* (*Greek Gold in the Collection of the Hermitage. Objects of Ancient Jewellery Art from the North Pontic Region*). Saint Petersburg: State Hermitage (in Russian).

Kallintzi, K. 2007. Κοσμήματα από το νεκροταφείο των αρχαίων Αβδήρων. In: *Η Θράκη στον ελληνο — ρωμαϊκό κόσμο, Πρακτικά του 10ου διεθνούς συνεδρίου Θρακολογίας, (Κομοτηνή — Αλεξανδρούπολη 18 — 23 Οκτωβρίου 2005)*. Αθήνα: Κέντρον Ελληνικής και Ρωμαϊκής Αρχαιότητος του Εθνικού Ιδρύματος Ερευνών, 255—267.

Kallintzi, C., Chatziprokopiou, K. 2024. Apotropaic and Prophylactic Jewellery from Abdera. In: Spathi, M.G., Chidiroglou, M., Wallensten, J. (eds.). *Apotropaia and Phylakteria. Confronting Evil in Ancient Greece*. Oxford: Archaeopress Archaeology, 204—222.

Kaltsas, N.E. 1998. *Ακανθος Ι: Η ανασκαφή στο νεκροταφείο κατά το 1979*. Αθήνα: Ταμειο Αρχαιολογικων Πορων και Απαλλοτριωσεων (Δημοσιεύματα του Αρχαιολογικού Δελτίου 65).

Karagöz, Ş. 2013. *Kleinasiatisch-Gräko-persische Kunstwerke im Archäologischen Museum von Istanbul* Tübingen: E. Wasmuth (IstForsch 54).

Kashaev, S.V. 2010. In *Zapiski Instituta istorii material'noy kul'tury (Notes oft he Institute of History of Material Culture)* 5, 137—145 (in Russian).

Kashaev, S.V. 2013. In *Antichnyy mir i arkheologiya (Antique World and Archaeology)* 16, 190—214 (in Russian).

Kashaev, S.V. 2019. In: Vinogradov, Yu.A. (ed.). *Proshloye chelovechestva v trudakh peterburgskikh arkheologov na rubezhe tysyacheletiy (K 100-letiyu sozdaniya rossiyskoy akademicheskoy arkheologii) (The Past of Humanity in the Works of St. Petersburg Archaeologists at the Turn of the Millennium (On the 100th Anniversary of the Creation of Russian Academic Archaeology))*. Saint Petersburg: Petersburg Oriental Studies, 230—253 (in Russian).

Kashaev, S.V. 2020. In *Bosporskie issledovaniya (Bosporan Studies)* XLI, 112—132 (in Russian).
Kashaev, S.V. 2021. In *Bosporskie issledovaniya (Bosporan Studies)* XLII, 206—223 (in Russian).
Kat. Basel 2007: Zanoni, I. (Hrsg.). *Die alten Zivilisationen Bulgariens. Das Gold der Thraker.* Basel: Antikenmuseum Basel und Sammlung Ludwig.
Kat. Berlin 1978: Settgast, J., Gehrig, U. (Hrsg.). *Von Troia bis Amarna: The Norbert Schimmel Collection*. New York, Mainz: von Zabern.
Kat. Bonn 1997: *Zwei Gesichter der Eremitage. Die Skythen und ihr Gold*. Bonn: Kunst- und Ausstellungshalle der Bundesrepublik Deutschland.
Kat. Bonn 2004: Echt, R. (Hrsg.). *Die Thraker. Das goldene Reich des Orpheus.* Bonn: Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH.
Kat. Bonn 2013: LVR — Landesmuseum Bonn (Hrsg.). *Die Krim. Goldene Insel im Schwarzen Meer. Griechen — Skythen — Goten.* Bonn: LVR — Landesmuseum Bonn.
Kat. Hamburg 1993: *Gold der Skythen. Schätze aus der Staatlichen Eremitage Saint Petersburg*. Neumünster: Wachholtz.
Kat. Köln 1979: *Gold der Thraker. Archäologische Schätze aus Bulgarien.* Mainz: von Zabern.
Kat. Mannheim 1989: *Gold und Kunsthandwerk vom antiken Kuban.* Sonderausstellung Mannheim. Stuttgart: Theiss.
Kat. Mannheim 2009: Seipel, W. (Hrsg.). *Das Gold der Steppe. Fürstenschätze jenseits des Alexanderreichs*. Wien: Kunsthistorisches Museum.
Kat. Schleswig 1991: Rolle, R., Müller-Wille, M., Schietzel, K. (Hrsg.). *Gold der Steppe. Archäologie der Ukraine*. Schleswig: Archäologisches Landesmuseum.
Kat. Wien 1993: Seipel, W. (Hrsg.). *Gold aus Kiew. 170 Meisterwerke aus der Schatzkammer der Ukraine. Eine Ausstellung des Kunsthistorischen Museums Wien.* Wien: Kunsthistorisches Museum.
Khanenko, B.I., Khanenko, V.I. 1907. *Drevnosti Pridneprov'ya i poberezh'ya Chernogo morya (Antiquities of the Dnieper Region and the Black Sea Coast)*. Iss. VI. Kiev: phototype and typograpy of S.V. Kul'zhenko (in Russian).
Kitov, G., Agre, D. 2002. *Vŭvedenie v trakiĭskata arkheologiya (Introduction to Thracian archaeology)*. Sofia: Avalon (in Bulgarian).
Klochko, L.S. 2010. In: L.V. Strokova (ed.). *Muzeyni chytannya. Materialy naukovoyi konferentsiyi "Yuvelirne mystetstvo — pohlyad kriz' viky" 9—11 lystopada 2009 r. (Museum Readings. Proceedings of the Scientific Conference "Jewelry Art — A Look Through the Ages" November 9—11, 2009).* Kiev: Museum of Historical Treasures of the Ukraine, 55—73 (in Ukrainian).
Kohler, E.L., Dusinberre, E.R.M. 2023. *The Lesser Phrygian Tumuli Part 2. The Cremations*. Philadelphia: University of Pennsylvania Museum of Archaeology and Anthropology (The Gordion Excavations, 1950—1973: Final Reports Volume II; Museum Monograph 158).
Koltukhov, S.G., Senatorov, S.N. 2015. In *Istoriya i arkheologiya Kryma (The History and Archaeology oft he Crimea)* 2, 102—122 (in Russian).
Koltukhov, S.G., Senatorov, S.N. 2016. *Skify Predgornogo Kryma v VII — IV vv. do n.e. Kurgany 1890—1892 i 1895 gg.: (Po materialam N. I. Veselovskogo i Yu. A. Kulakovskogo) (Scythians of the Crimean Foothills in the 7th—4th Centuries BCE. Burial Mounds of 1890—1892 and 1895: (Based on the materials of N.I. Veselovskiy and Yu. A. Kulakovskiy).* Simferopol: Individual Entrepreneur A.A. Brovko (in Russian).
Kryzhitskiy et al. 1999: Kryzhitskiy, S.D., Leypunskaya, N.A., Rusyaeva, A.S. Skrzhinskaya, M.V., Krapivina, V.V., Anokhin, V.A. 1999. *Olviya. Antichnoe gosudarstvo v Severnom Prichernomor'e* (*Olbia. Ancient State in the North Pontic Region*). Kiev: Institute of Archaeology, National Academy of Sciences of the Ukraine (in Russian).
Ksenofontova, I.V. 1997. In *Vestnik drevney istorii (Journal of ancient history)* 2, 60—78 (in Russian).
Ksenofontova, I.V., Zajtseva, N.G. 1997. A Silver Rhyton with the Protome of Pegasus from the 4th Ulyap Barrow. *ACSS* 4.4, 265—293.
Kubyshev, A.I., Bessonova, S.S., Kovalev, N.V. 2009. *Bratolyubovskiy kurgan (Bratolyubov Burial mound)*. Kiev: Institute of Archaeology, National Academy of Sciences of the Ukraine (in Russian).
Kurtz, D. 1975. *Athenian White Lekythoi*: *Patterns and Painters.* Oxford: Clarendon Press (Oxford Monographs on Classical Archaeology).
Kuruniotis, K. 1913. Goldschmuck aus Eretria. *AM* 38, 289—328.
Laffineur, R. 1980. Collection Paul Canellopoulos (XV). Bijoux en or grecs et romains. *BCH* 104, 345—457.
Laffineur, R. 1986. L'orfèvrerie. In: Laffineur, R. (ed.). *Amathonte III. Testimonia 3*. Paris: ADPF, 7—133 (Études Chypriote VII).

Laffineur R. 1992. Bijoux et Orfèvrerie. In: Karageorghis, V., Picard, O., Tytgat, Chr. (eds.). *La Necropole D'Amathonte Tombes 113-367, VI. Bijoux, Armes, Verre, Astragales et Coquillages, Squelettes*. Nicosie: École Française d'Athènes, 1—42 (Etudes Chypriotes XIV).

Lapatin, K. 2015. *Luxus. The Sumptuous Arts of Greece and Rome*. Los Angeles: Getty Research Institute.

Leskov, A.M. 1990. *Grabschätze der Adygeen: neue Entdeckungen im Nordkaukasus.* München: Hirmer.

Leskov et al. 2013: Leskov, A.M., Beglova, E.A., Ksenofontova, I.V., Erlikh,V.R. 2013. *Meoty Zakuban'ya IV—III vv. do n.e. Svyatilishcha i ritual'nye kompleksy (The Maiotians of the Trans-Kuban Region in the 4th—3rd Centuries BCE. The Sanctuaries and Ritual Complexes)*. Moscow: State Oriental Museum (in Russian).

Maksimova, M.I. 1956. In: Gaydukevich, V.F.(ed.). *Ol'viya i Nizhneye Pobuzh'ye v antichnuyu epokhu (Olbia and the Lower Bug Region in the Antique Period)*. Moscow, Leningrad Academy of Sciences of the USSR Publ., 190—196 (Materials and Studies on the Archaeology of the USSR 50) (in Russian).

Maksimova, M.I. 1962. In *Sovetskaya arkheologiya (Soviet Archaeology)* 2, 225—230 (in Russian).

Manassero, N. 2008. *Rhyta e corni potori dall'Età del Ferro all'epoca sasanide: libagioni pure e misticismo tra la Grecia e il mondo iranico*. Oxford: John and Erica Hedges Ltd.(BAR Intern. Ser. 1750).

Manzewitsch, A. 1931. Der Armring aus Kul-Oba. *AA*, 106—116.

Marshall, F.H. 1907. *Catalogue of the Finger rings, Greek, Etruscan, and Roman, in the Departments of Antiquities, British Museum*. London: British Museum.

Marshall, F.H. 1911. *Catalogue of the Jewellery, Greek, Etruscan and Roman, in the Departments of Antiquities, British Museum.* London: British Museum.

Maximova, M.I. 1928. Griechisch-persische Kleinkunst in Kleinasien nach den Perserkriegen. *AA*, 647—678.

Meriçboyu, Y.A. 2001. *Antikçağ' de Anadolu takilari.* Istanbul: Akbank.

Meriçboyu, Y.A. 2010. Lidya Dönemi Takilari. Lydian Jewelry. In: Cat. Istanbul 2010, 157—176.

Meyer, C. 2013. *Greco-Scythian Art & the Birth of Eurasia. From Classical Antiquity to Russian Modernity*. Oxford: Oxford University Press.

Miller, S. 1979. *Two Groups of Thessalian Gold*. Berkeley, Los Angeles: University of California Press (University of California publications Classical studies 18).

Mimokhod, R.A., Sudarev, N.I., Uspenskiy, P.S. 2017. In *Drevnosti Bospora (Antiquities of the Bosporus)* 21, 295—310 (in Russian).

Mimokhod, R.A., Sudarev, N.I., Uspenskiy, P.S. 2018. In: Engovatova, A.V. (eds.). *Goroda, selishcha, mogil'niki. Raskopki 2017 goda (Cities, Settlements, Burial Grounds. Excavations of 2017).* Moscow: Institute of Archaeology, Russian Academy of Sciences, 220—231 (Materials of Rescue Archaeological Investigations) 25) (in Russian).

Misailidou-Despotidou, V. 2011. *Χάλκινα κοσμήματα αρχαϊκών χρόνων από τη Μακεδονία: έρευνα στα χάλκινα κοσμήματα των νεκροταφείων της Αγίας Παρασκευής και της Νέας Φιλαδέλφεας*. Θεσσαλονίκη: Αρχαιολογικό Ινστιτούτο Μακεδονικών και Θρακικών Σπουδών (Dēmosieumata Archaiologikou Institoutou Makedonikōn kai Thrakikōn Spoudōn 10).

Mohr, E.-M. 2015. *Eisenzeitliche Nekropolen im westlichen Kleinasien: Struktur und Entwicklung zwischen dem 9. und 6. Jh. v. Chr.* İstanbul: Ege Yayınları (Byzas 21).

Monakhov, S.Yu. 1999. *Grecheskiye amfory v Prichernomor'ye: kompleksy keramicheskoy tary VII—II vv. do n.e. (Greek Amphoras in the Black Sea Region: Ceramic Containers Complexes of the 7th—2nd Centuries BCE).* Saratov: Publishing House of the Saratov University) (in Russian).

Mozolevs'kiy, B.M. 1979. *Tovsta Mogila* (*Tovsta Mogila*). Kiev: Naukova Duma (in Ukrainian).

Mozolevskiy, B.N. 1980. In: Terenozhkin, A.I. (ed.). *Skifiya i Kavkaz (Scythia and The Caucasus)*. Kiev: Naukova dumka, 70—154 (in Russian).

Naumann, F. 1980. *Staatliche Kunstsammlungen Kassel. Antiker Schmuck.* Kassel: Gutenberg.

Nebelsick, L. 2024. From Witaszkowo/Vettersfelde to Šūš/Susa (without leaving the Museumsinsel). Foxtail chains and pendent tassels as décor of elite bowmen's quivers in the mid-first millennium BCE. In: Schneeweiss, J. et al. (Hrsg). *Man sieht nur, was man weiß. Man weiß nur, was man sieht; Globalhistorische Perspektiven auf interkulturelle Phänomene der Mobilität*. Rahden/Westf.: Leidorf, 701—718 (Prähistorische Archäologie in Südosteuropa 33).

Neverov, O.Ya. 1973. In: Gorbunova, K.S. (ed.). *Pamyatniki antichnogo prikladnogo iskusstva* (*Monuments of Antique Applied Art*). Leningrad: Aurora, 51—61 (in Russian).

Neverov, O.Ya. 1986. In: Grach, N.L. (ed.). *Antichnaya torevtika* (*Antique Toreutics*). Leningrad: State Hermitage, 17—27 (in Russian).

Neverov, O.Ya. 2000. Gems and Finger-Rings from Nymphaeum (Towards a Monograph of Classical Glyptics). *ACSS* 6, 179—191.

Neverov, O.Ya. 2007. Dexamenos of Chios and his Workshop in the Northern Black Sea Region. In: Trofimova, A.A. (ed.). *Greeks on the Black Sea. Ancient Art from the Hermitage*. J. Paul Getty Museum. Los Angeles: J. Paul Getty Museum, 62—63.

Niculiţă, A, 2018. *Piese de giuvaiergerie antică din colecţiile Muzeului Naţionalde Istorie a Moldovei : Catalog*. Chişinău: Muzeul Naţ. de Istorie a Moldovei.

Nieswandt, H.-H. 1997. Zum sog. Pegasos-Rhyton aus Kurgan 4 von Aul Uljap. *Boreas* 20, 137—148.

Novichikhin, A.M. 2019. *Drevnosti Tamani (Antiquities of Taman).* Taman: Platonov (in Russian).

Novichikhin, A., Galut, O. 2013. *Zoloto Gorgippii (Gold of Gorguippia)*. Anapa, Krasnodar: Platonov (in Russian).

Onayko, N.A. 1960. In *Sovetskaya arkheologiya (Soviet Archaeology)* 2, 25—41 (in Russian).

Onayko, N.A. 1966. *Antichnyy import v Pridenprov'e i Pobuzh'e v VII—V vv. do n.e.* (*Antique Import in the Dbieper and Bug Regions in the 7th—5th Centuries BCE*). Moscow: Nauka (Corpus of Archaeological Sources D1-27) (in Russian).

Özgen, I., Öztürk, J. 1996. *Heritage Recovered. The Lydian Treasure.* Istanbul: Published by Uğur Okman for Republic of Turkey; Ministry of Culture; General Directorate of Monuments and Museums.

Petrenko, V.G. 1978. *Ukrasheniya Skifii VII—III vv. do n.e.* (*Finery of Scythia of the 7th — 3rd Centuries BCE*). Moscow: Nauka (Corpus of Archaeological Sources D4-5) (in Russian).

Pfrommer, M. 1990. *Untersuchungen zur Chronologie früh- und hochhellenistischen Goldschmucks*. Tübingen: E. Wasmuth (IstForsch 37).

Pharmakowsky, B. 1912. Archäologische Funde im Jahre 1911. Russland. *AA,* 323—381.

Pharmakowsky, B. 1914. Archäologische Funde im Jahre 1913. Südrußland. *AA*, 205—292.

Pierides, A. 1971. *Jewellery in the Cyprus Museum.* Nicosia: Department of Antiquities.

Polin, S.V. 2014. *Skifskiy Zolotobalkovskiy kurgannyy mogil'nik V—IV vv. do n.e. na Khersonshchine* (*A Scythian Zolotaya Balka Kurgan Cemetery of the 5th—4th Centuries BCE in the Kherson Region*). Kiev: Oleg Filyuk Publisher (Burial Mounds of the Ukraine 3) (in Russian).

Pologiorgi, M. 2019. Μία χρυσῆ θριπήδεστος, ἕνα θριπήδεστον χρυσοῦν καὶ ἕνα χρυσὸ Περίαπτο. *ΓΡΑΜΜΑΤΕΙΟΝ* 8, 15—21.

Pülz, A.M. 2009. *Die Goldfunde aus dem Artemision von Ephesos*. Wien: Verlag der Österreichischen Akademie der Wissenschaften (Forschungen in Ephesos. Bd. 12,5).

Raubitschek, I.K. 1998. *The Metal Objects (1952—1989)*. Princeton: American School of Classical Studies at Athens (Isthmia: Excavations by the University of Chicago under the Auspices of the American School of Classical Studies at Athens VII).

Rehm, E. 1992. *Der Schmuck der Achämeniden.* Münster: Ugarit-Verlag.

Rose, C.B. 2014. *The Archaeology of Greek and Roman Troy*. Cambridge: Cambridge Univ. Press.

Saverkina, I.I. 1998. Une collection méconnue de bijoux antiques au Musée de l'Ermitage. In: Williams, D. (ed.). *The Art of the Greek Goldsmith*, London: British Museum Press, 73—77.

Schiltz, V. 1994. *Die Skythen und andere Steppenvölker*. München: C. H. Beck.

Schmidt, E.F. 1957. *Persepolis III. The Royal Tombs and Other Monuments*. Chicago: Oriental Institute (Oriental Institute Publications LXX).

Sevinç, N., Rose, C.B. 1999. A Child's Sarcophagus from the Salvage Excavations at Gümüşçay. *Studia Troica* 9, 489—510.

Sgourou, M., Agelarakis, A.P. 2001. Jewellery from Thasian Graves. *BSA* 96, 327—364.

Shkorpil, V.V. 1914. In *Izvestiya arkheologicheskoy komissii (News of the Archaeological Commission)* 56, 1—74 (in Russian).

Silant'eva, L.F. 1959. In: Gaydukevich, V.F. (ed.). *Nekropoli nekotorykh bosporskikh gorodov* (*Necropoleis of Certain Bosporan Cities*). Moscow; Leningrad: Academy of Sciences of the USSR Publ., 5—107 (Materials and Studies on the Archaeology of the USSR 69) (in Russian).

Silant'eva, P.F. 1976. In *Trudy Gosudarstvennogo Ermitazha (Proceedings of the State Hermitage)* XVII, 123—137 (in Russian).

Silant'eva, P.F. 1979. In: Gorbunova, K.S. (ed.). *Iz istorii Severnogo Prichernomor'ya v antichnoe vremya (From the History of the North Pontic Region in the Antique Period).* Leningrad: Aurora, 49—58 (in Russian).

Skrzhinskaya, M.V. 1986. In: Rusyaeva, A.S. (ed.). *Olviya i ee okruga* (*Olbia and its Neighborhood*). Kiev: Naukova dumka, 112—126 (in Russian).

Skrzhinskaya, M.V. 1987. In: Kryzhitskiy, S.D. (ed.). *Kul'tura naseleniya Ol'vii i ee okrugi v arkhaicheskoe vremya* (*The Culture of the Population of Olbia and its Neighborhood in the Archaic Period*). Kiev: Naukova dumka, 175—183 (in Russian).

Skudnova, V.M. 1988. *Arkhaicheskiy nekropol' Ol'vii* (*The Archaic Necropolis of Olbia*). Leningrad: Iskusstvo (in Russian).

Spier, J., Ogden, J. 2015. *Rings of the Ancient World*. Wiesbaden: Reichert.

Stilp, F. 2006. *Die Jacobsthal Reliefs. Konturierte Tonreliefs aus dem Griechenland der Frühklassik*. Rom: Giorgio Bretschneider (RdA Suppl. 29).

Sudarev, N.I. 2010. In: Bongard-Levin, G.M., Kuznetsov, V.D. (eds.). *Antichnoe nasledie Kubani (Ancient Heritage of Kuban)*. Vol. 2. Moscow: Nauka, 418—473 (in Russian).

Sudarev, N.I. 2023. In *Drevnosti Kubani (Antiquities of the Kuban)* 26, 61—86 (in Russian).

Sudarev, N.I., Mimokhod, R.A. 2019. In: Novichikhin, A.M. *Drevnosti Tamani (Antiquities of Taman).* Taman: Platonov, 428—447 (in Russian).

Tonkova, M. 1998. Les ateliers d'orfèvres de luxe en Thrace: méthodes de localization. *Topoi. Orient—Occident* 8.2, 749—764.

Tonkova, M. 2002a. Classical Jewellery in Thrace: Origins and Development, Archaeological Contexts. In: Tsetskhladze, G.R., de Boer, J.G. (eds.). *Talanta. The Black Sea Region in the Greek, Roman, and Byzantine Periods. Proceedings of the Dutch archaeological and historical society* XXXII—XXXIII (2000—2001), 277—288.

Tonkova, M. 2002b. In: Gicheva, R., Rabadzhiev, K. (eds.). *Πιτύη. Izsledvaniya v chest na prof. Ivan Marazov (Research in Honor of Prof. Ivan Marazov).* Sofia: Anubis, 494—505 (in Bulgarian).

Tonkova, M. 2003. In: Fol, A.(ed.). *"Pŭtyat", Sbornik nauchni statii, posveten na zhivota i tvorchestvoto na d-r Georgi Kitov ("The Road", Collection of Scientific Articles dedicated to the Life and Work of Dr. Georgi Kitov)*. Sofia: Geo Pres, 216—225 (in Bulgarian).

Tonkova, M. 2015. Adorments. In: Valeva, J., Nankov, E., Graninger, D. (eds.). *A Companion to Ancient Thrace*. Chichester: Wiley Blackwell, 212—228.

Tonkova, M. 2018. Silver and Gold Jewellery from the Late Archaic Princely Graves I—VIII at Trebenishte. In: Cat. Belgrade 2018, 71—85.

Tonkova, M., Penkova, P. 2009. Les parures en or de la nécropole thrace de Duvanli. In: Guerra, M.F., Rehren, T. (eds.). *Authentication and Analysis of Goldwork*. Rennes: Presses universitaires de Rennes, 201—209 (ArcheoSciences. Revue d'Archéometrie 33).

Treister, M.Yu. 1992. In *Soobshchedniya GMII (Reports of the State Pushkin Museum of Fine Arts)* 10, 66—110 (in Russian).

Treister, M. 2000. Early Classical Motifs in the 4th Century BCE Toreutics from North Pontic Area (The Ways of Style Transfer in the Toreutics). In: Avram, A., Babeş, M. (eds.). *Civilisation grecque et cultures antiques périphériques. Hommage à Petre Alexandrescu à son 70e anniversaire*. Bucarest: Editura Enciclopedică, 94—101.

Treister, M. 2001. *Hammering Techniques in Greek and Roman Jewellery and Toreutics*. Leiden; Köln, Boston: R.J. Brill (Colloquia Pontica 8).

Treister, M.Yu. 2008. In *Drevnosti Bospora (Antiquities of the Bosporus)* 12, 506—540 (in Russian).

Treister, M.Yu. 2010. In: Bongard-Levin, G.M., Kuznetsov. V.D. (eds.). *Antichnoe nasledie Kubani (Ancient Heritage of Kuban)*. Vol. 2. Moscow: Nauka, 534—598 (in Russian).

Treister, M.Yu. 2012a. In: Treister, M.Yu., Yablonskiy, L.T.(eds.). *Vliyaniya akhmenidskoy kul'tury v Yuzhnom Prfiural'e (V—III vv. do n.e.) (The Influence of the Achaemenid Culture in the South Urals (5th—3rd Centuries BCE).* Vol. 1. Moscow: Taus, 134—167 (in Russian).

Treister, M.Yu. 2012b. In: Treister, M.Yu., Yablonskiy, L.T. (eds.). *Vliyaniya akhmenidskoy kul'tury v Yuzhnom Prfiural'e (V—III vv. do n.e.) (The Influence of the Achaemenid Culture in the South Urals (5th—3rd Centuries BCE).* Vol. 1. Moscow: Taus, 35—49 (in Russian).

Treister, M.Yu. 2020. In *Hypanis* 2, 233—240 (in Russian).

Treister, M.Yu. 2023. In: Khrshanovskiy, V.A. et al. (eds.). *Bosporskiy fenomen: quarta pars saeculi. Itogi, problemy, diskussii. Materialy mezhdunarodnoy nauchnoy konferentsii (The Bosporan Phaenomenon: quarta pars saeculi. Results, Problems, Discussions. Materials oft the International Scientific Conference)*. Saint Petersburg: "Tabula Rasa" Publ., 298—306 (in Russian).

Treister, M.Yu. (in print a). In *Trudy Gosudarstvennogo Ermitazha (Proceedings of the State Hermitage) (Materialy konferentsii "Nimfey i ego sosedi: kul'turnyye protsessy i vzaimodeystvie", posvyashchennoy 95-letiyu so dnya rozhdeniya N.L. Grach i 85-letiyu Nimfeyskoy arkheologicheskoy ekspeditsii Gosudarstvennogo Ermitazha ((Proceedings of the Conference "Nymphaion and its Neighbors: Cultural Processes and Interaction", dedicated to the 95th Anniversary of the Birth of N.L. Grach and the 85th anniversary of the Nymphaion Archaeological Expedition of the State Hermitage Museum))* (in Russian).

Treister, M.Yu. (in print b). In *Materialy konferentsii "Ot Semibratnikh kurganov k Labrisu: problemy izucheniya antichnoy Sindiki (k 150-letiyu s nachala raskopok") (Proceedings of the conference "From Semibratnye Burial Mounds to Labrys: Problems of Studying of Ancient Sindica (on the 150th Anniversary of the Beginning of Excavations")* (in Russian).

Treister, M.Yu., Sudarev, N.I. 2024. In *Materialy po arkheologii i istorii antichnogo i srednevekovogo Prichernomor'ya (Materials on Archaeology and History of the Ancient and Medieval Black Sea Region)* 16, 194—233 (in Russian).

Treister, M., Sudarev, N. 2025a. Gold Pendants in the Form of Lion Heads from the Burials of the Last Quarter of the 5th Century BCE from the Necropoleis of the Taman Peninsula. *ACSS* 31, 1—41.

Treister, M.Yu., Sudarev, N.I. 2025b. In *Drevnosti Bospora (Antiquities of the Bosporus)* 30, 436—463 (in Russian).

Tsokur, I.V., Sudarev, N.I., Sharov, O.V. 2022a. *Volna 1. Nekropol' arkhaicheskogo — ellinisticheskogo periodov na Tamanskom poluostrove* (*Volna 1. Necropolis of the Archaic — Hellenistic Periods on the Taman Peninsula)*. Pt. 1. Moscow: Institute of Archaeology Russian Academy of Sciences (Materials of Rescue Archaeological Research. Vol. 30. Pt. 1—2) (in Russian).

Tsokur, I.V., Sudarev, N.I., Sharov, O.V. 2022b. *Volna 1. Nekropol' arkhaicheskogo — ellinisticheskogo periodov na Tamanskom poluostrove* (*Volna 1. Necropolis of the Archaic — Hellenistic Periods on the Taman Peninsula).* Pt. 2. Moscow: Institute of Archaeology Russian Academy of Sciences (Materials of Rescue Archaeological Research. Vol. 30. Pt. 1—2) (in Russian).

Vakhtina, M.Yu. 2017. In *Bosporskie issledovaniya (Bosporan Studies)* XXXV, 389—410 (in Russian).

Vavritsa, A. 1970. Ἀνδρέου Βαβρίτσα, Ἀνασκαφαὶ Μεσημβρίας Θρᾴκης. *Πρακτικά της εν Αθήναις Αρχαιολογικής Εταιρείας* 1970 (1972), 66—75.

Velichko, E. 2019. In *Eminak* 1, 65—82 (in Russian).

Velkov, I. 1930—31. In *Izvestija na Nacionalnija arkheologicheski institut (Bulletin de l'Institut national d'Archéologie de Bulgarie)* VI, 1—44 (in Bulgarian).

Venedikov, I., Gerassimov, T. 1973. *Thrakische Kunst.* Wien, Münich: A. Schroll.

Vickers, M. 1979. *Scythian Treasures in Oxford.* Oxford: Ashmolean Museum.

Vickers, M. 1999. *Images on Textiles. The Weave of Fifth-Century Athenian Art and Society*. Konstanz: Universitätsverlag Konstanz (Xenia 42).

Vickers, M. 2002. *Scythian and Thracian Antiquities.* Oxford: Ashmolean Museum.

Vinogradov, Yu.A. 2020. In *Novyy Germes (New Hermes)* 12.1, 139—163 (in Russian).

Vlasova, E.V. 2000. In: Solovyov, S.L. (ed.). *Antichnoe Prichernomor'e. Sbornik statey po klassicheskoy arkheologii* (*Ancient Black Sea Region. Collection of Articles on Classical Archaeology*). Saint Petersburg: State Hermitage Publ., 46—67 (in Russian).

Vlasova, E.V. 2001. In: Zakharova, N.A. (ed.). *Yuvelirnoe iskusstvo i material'naya kul'tura (Jewellery Art and Material Culture)*. Saint Petersburg: State Hermitage Publ., 20—27 (in Russian).

Vlasova, E.V. 2002. In *Tamanskaya starina (Taman Antiquities)* 4, 139—152 (in Russian).

Vlasova, E.V. 2010. In: G.M. Bongard-Levin, V.D. Kuznetsov (eds.). *Antichnoe nasledie Kubani (Ancient Heritage of Kuban).* Vol. 3. Moscow: Nauka, 198—262 (in Russian).

von Bothmer, D. 1981. Les trésors de l'orfèvrerie de la Grèce orientale au Metropolitan Museum de New York, *Comptes-rendus des séances de l'Académie des Inscriptions et Belles-Lettres* 125e année, no. 2, 194—207.

von Bothmer, D. 1984. *A Greek and Roman Treasury*. New York: The Metropolitan Museum of Art (The Metropolitan Museum of Art Bulletin XLII, 1).

Wehgartner, I. 1983. *Attisch weißgrundige Keramik*. Mainz: Zabern (Keramikforschungen V).

Williams, D., Ogden, J. 1994. *Greek Gold. Jewellery of the Classical Period.* London: British Museum Press.

Williams, D., Ogden, J. 1995. *Grecheskoe zoloto. Yuvelirnoe iskusstvo klassicheskoy epokhi. V—IV veka do n.e. (Greek Gold. The Jewellery Art of the Classical Period. 5th—4th Centuries BCE).* Saint Petersburg: AO Slavia (in Russian).

Yakovenko, E.V. 1977. In: Terenozhkin, A.I.(ed.). *Skify i sarmaty (Scythians and Sarmatians)*. Kiev: Naukova dumka, 140—145 (in Russian).

Yener, A. 2022. Elmalı-Bayındır Tümülüsleri: Arkeolojik Kazılar ve Buluntular. In: Demirel. M., Arslan. M., Atalay. S., Orhan. U. (eds.). *Antalya Müzesi 100 Yaşında: Antalya'nın Arkeolojik Mirası*. Ankara: T.C Kültür ve Turizm Bakanlığı, 422—471.

Young, A. 2006. Gold and Gilded Jewelry from the "Athena" Sanctuary, Stymphalos. In: Nicolini, G. (ed.). *Les Ors des mondes grec et "barbare".* Paris: Picard, 129—138.

Young, R.S. 1951. Gordion — 1950. *University Museum Bulletin* 16.1, 3—19.

Zazoff, P. 1983. *Die antiken Gemmen*. München: C.H. Beck (Handbuch der Archäologie).

Zournatzi, A. 2017. The Vouni Treasure and monetary practices in Cyprus in the Persian period. In: Liampi K., Papaevangelou-Genakos C., Plantzos D. (eds.). *Coinage/Jewellery. Uses—Interactions—Symbolisms from antiquity to the present. International conference proceedings, Ios, 26—28 June 2009*. Athens: Lithia-Lithos, 159—178 (Kerma 4).




**Fig. 1. Gold beads and necklaces of the 5th century BCE.** *1—2, 4—5* — Artyushchenko-2. Taman, Taman museum complex; *3, 6* — Saint Petersburg, State Hermitage. *1* — burial no. 66; *2* — burial no. 69; *3* — Pantikapaion, stone tomb discovered in 1854 on Mount Mithridates, inv.-no. П.1854.23; *4* — burial no. 47; *5* — burial no. 83; *6* — Seven Brothers burial mound no. 2/1875, inv.-no. СБр II.27.

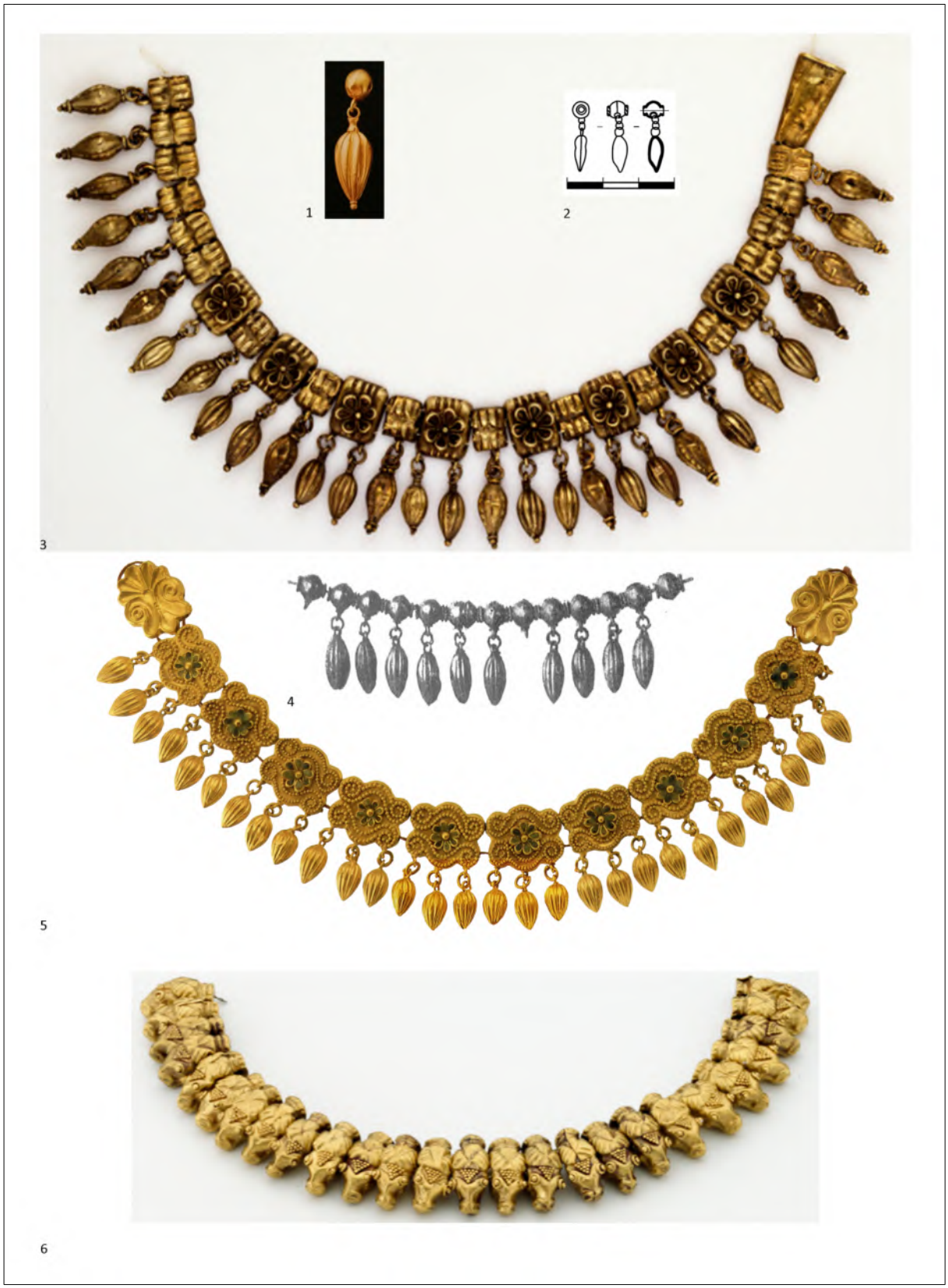


**Fig. 2. Gold necklaces and elements of necklaces of the 5th century BCE.** *1* — Utash, tomb, 1976. Anapa, Archaeological Museum, inv.-no. КМ 12132/113; *2* — Artyushchenko-2, burial no. 20. Taman, Taman museum complex; *3, 6* — Oxford, Ashmolean Museum; *3* — Nymphaion, tomb no. 3/1868, inv.-no. AN. 1885.502; *4* — necropolis between the capes of Tuzla and Panagia, burial no. 184/1911; *5* — Nymphaion, burial mound no. 17/1876, burial no. 8. Saint Petersburg, State Hermitage, inv.-no. ГК/Н.18; *6* — Nymphaion, tomb no. 2/1868, inv.-no. AN. 1885.493.

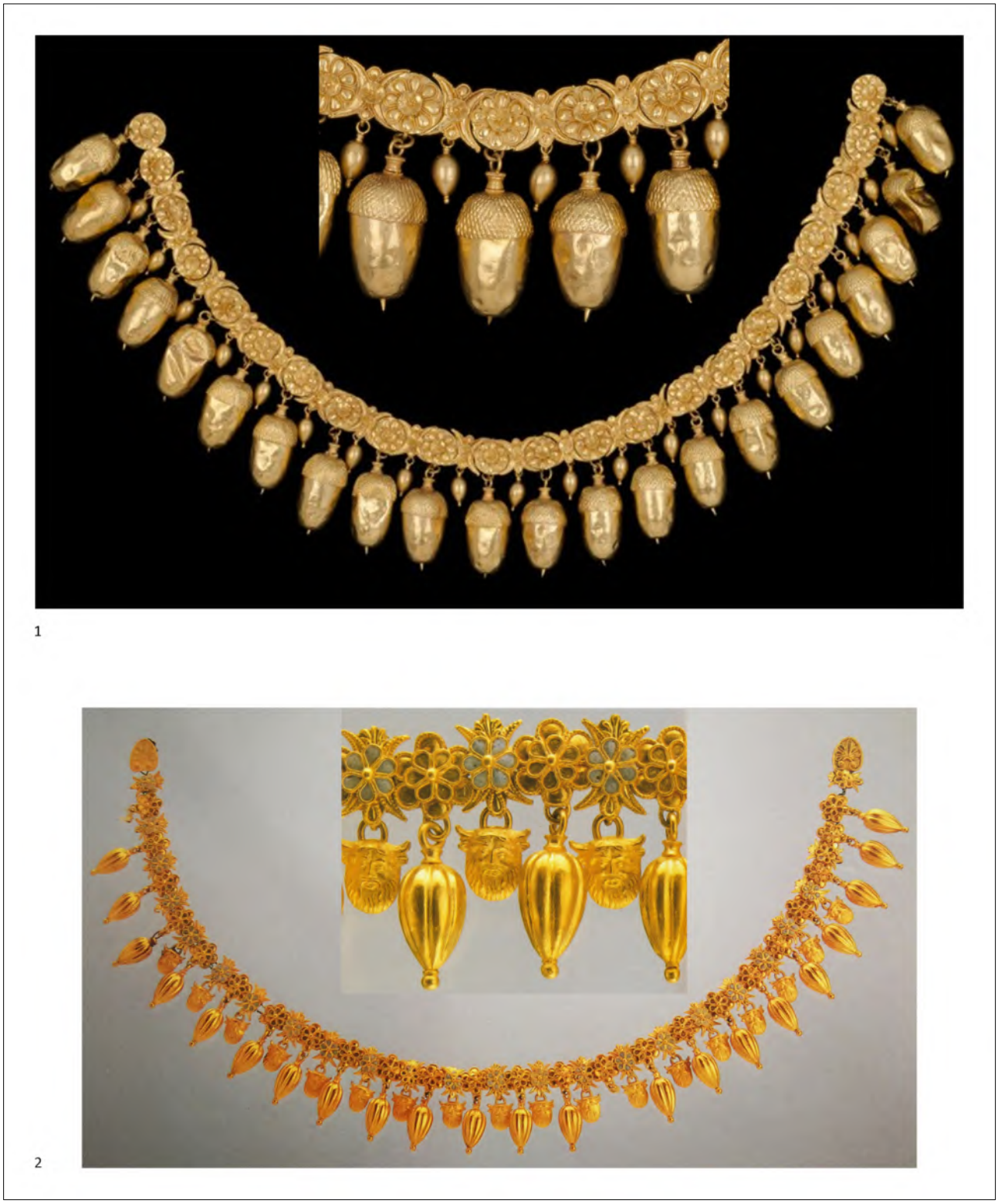

**Fig. 3. Gold necklaces of the 5th century BCE. General views and details.** *1* — Nymphaion, tomb no. 3/1868. Oxford, Ashmolean Museum, inv.-no. 1885.482; *2* — Pantikapaion, stone tomb discovered in 1854 on Mount Mithridates. Saint Petersburg, State Hermitage, inv.-no. П.1854.22.

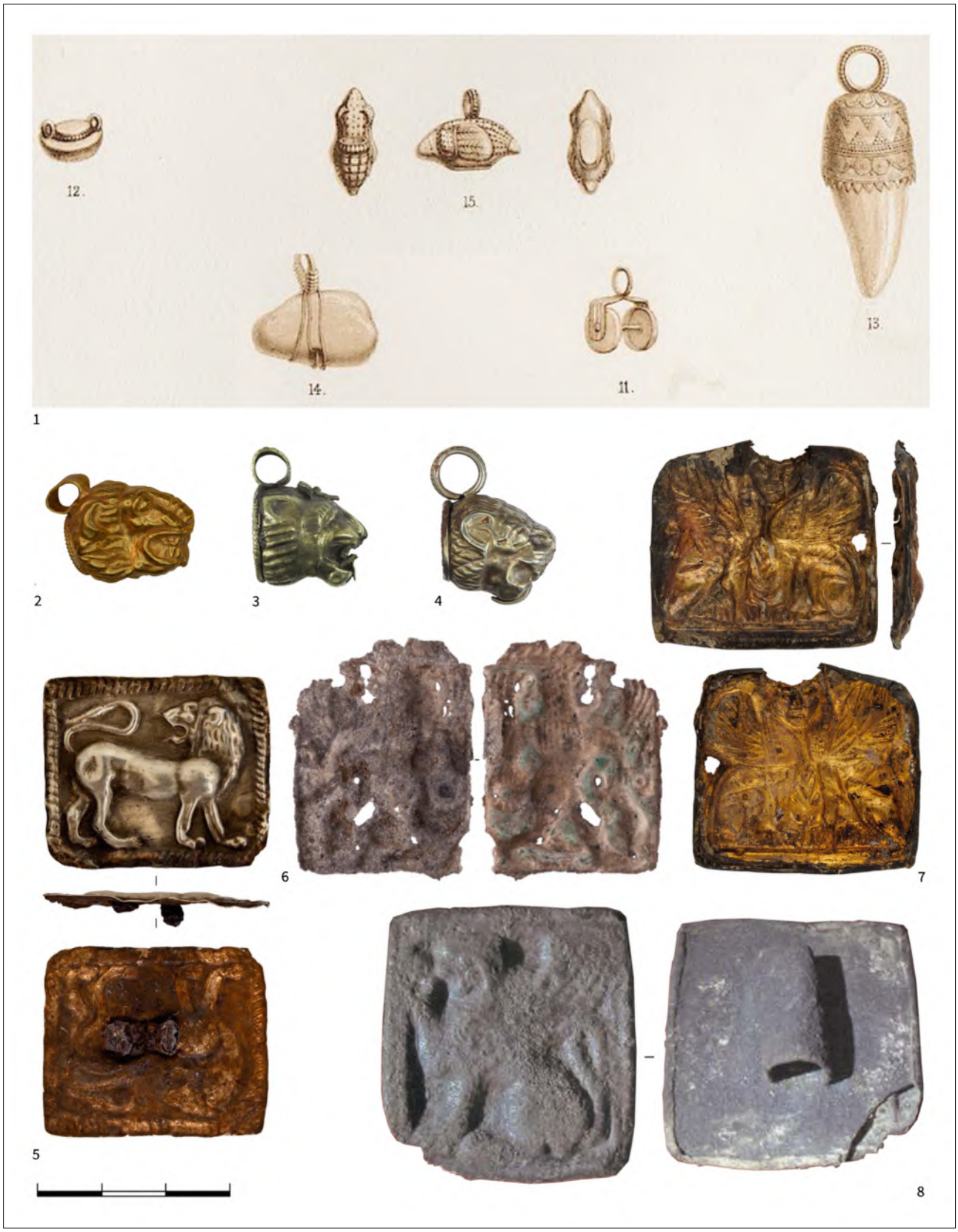


**Fig. 4. Pendants and amulets of the late 6th — 5th centuries BCE.** *1* — Seven Brothers burial mound no. 4/1876. Saint Petersburg, State Hermitage; *2* — Kepoi, burial no. 282/27 (1964). Moscow, State Historical Museum, inv.-no. 98709, list Б-1324, no. 87; *3—7* — Volna-1. Taman, Taman Museum complex; *3* — burial no. 72/2015, inv.-no. КМ-13928/158, *4* — burial no. 114/2015, inv.-no. КМ- КМ-13928/306; *5* — погребение № 207; *6* — find in the territory of the necropolis; *7* — burial no. 539; *8* — Sindian Harbour, burial no. 5/2006. Anapa, Archaeological Museum.




**Fig. 5. Gold temple rings and earrings of the 5th century BCE.** *1* — Nymphaion, burial mound no. 17/1876, burial no. 8, inv.-no. ГК/Н.17; *2* — Pantikapaion, stone tomb no. 10/1911 discovered on Mount Mithridates; *3* — Volna-1, burial no. 539. Taman, Taman Museum complex; *4* — Seven Brothers burial mound no. 7/1876, inv.-no. СБр VII.13; *5* — Nymphaion, earthern tomb no. 26/1876; *6* — Nymphaion, tomb no. 1/1868. Oxford, Ashmolean Museum, inv.-no. 1885.468; *7* — Dort-Oba, burial mound no. 2/1892 (“Pastak”). *1*—2, *4*—*5, 7* — Saint Petersburg, State Hermitage.




**Fig. 6. Silver spiral pendants of the 5th century BCE from the necropoleis oft he Taman peninsula.** *1—2* — Volna-1. *1* — burial no. 27; *2* — burial no. 54; *3* — Vyshesteblievskaya14, layer, no. 49.




**Fig. 7. Gold and silver bracelets of the 5th century BCE.** *1* — Volna-1, burial no. 539. Taman, Taman Museum complex; *2* — Nymphaion, earthern tomb no. 26/1876; *3* — Pantikapaion, stone tomb discovered in 1854 on Mount Mithridates, inv.-no. П.1854.28—29; *4* — Nymphaion, tomb no. 3/1868. Oxford, Ashmolean Museum, inv.-no. AN. 1885.503; *5* — Kul-Oba. Male burial, inv.-no. K-O 18; *6* — Seven Brothers burial mound no. 7/1876, inv.-no. СБр IV.14. *2*—3, *5*—*6* — Saint Petersburg, State Hermitage.




**Fig. 8. Gold and silver signet rings of the late 6th —5th centuries BCE.** *1—2* — Nymphaion, tomb no. 2/1868. Oxford, Ashmolean Museum, inv.-no. AN 1885.492; *3—4* — Nymphaion, burial mound no. 17/1876, burial no. 8, inv.-no. ГК/Н.18; *5* — Phanagoria, 1855, inv. no. Т.1885.1; *6—8* — Phanagoria, 2018. Phanagoria, Phanagoria State Historical and Archaeological Museum-Reserve, inv.-no. ФМ-КП-102/1 А2278 ГК 31684945; *9* — Taman Peninsula, inv. no. Т.1877.1. *3—5, 9* — Saint Petersburg, State Hermitage.




**Fig. 9. Gold signet rings of the 5th century BCE.** *1* — Pantikapaion, stone tomb discovered in 1854 on Mount Mithridates, inv.-no. П.1854.26; *2* — Nymphaion, inv.-no. AN 1885.490; *3* — Seven Brothers Burial Mound No. 6/1876, inv.-no. СБр VI.8; *4* — Pantikapaion, 1841, inv.-no. П.1841/42.23; *5* — Nymphaion, inv.-no. 1885.484; *6* — Nymphaion, tomb no. 22/1876, inv.-no. ГК/Н.125. *1, 3—4, 6* — Saint Petersburg, State Hermitage; *2, 5* — Oxford, Ashmolean Museum.




**Fig. 10. Gold decorative finger rings of the 5th century BCE.** *1—3* — Pantikapaion, stone tomb discovered in 1854 on Mount Mithridates, inv.-no. П.1854.25; *4* — Slab tomb near the Pavlov Battery, discovered in 1842, inv.-no. П.1842.110; *5—6* — Nymphaion, burial mound no. 20/1876, tomb no. 9, inv. no. ГК/Н.47; *1—6* — Saint Petersburg, State Hermitage; *7—9* — collection of S. Yedaev.