

# ANALECTA

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ARCHAEOLOGICA RESSOVIENSIA

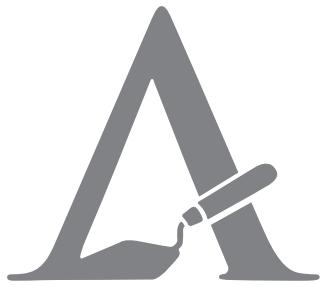
VOLUME

19

RZESZÓW 2024







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## ARCHAEOLOGICA RESSOVIENSIA

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Andrzej Kokowski

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## Jet Beads from Grave 436 from Masłomęcz. A Further Contribution to the Study of Contacts between the Gothic Population of the Masłomęcz Group and the Sarmatians

### Abstract

Kokowski A. 2024. Jet Beads from Grave 436 from Masłomęcz. A Further Contribution to the Study of Contacts between the Gothic Population of the Masłomęcz Group and the Sarmatians. *Analecta Archaeologica Ressoviensia* 19, 105–115

In Gothic grave 436 in Masłomęcz, central-eastern Poland, beads were found that were made of a jet raw material rarely present in central Europe of the Roman period. It has been established that such a pattern was the most common in Crimea and the north-eastern part of the Black Sea basin. By the third century after Christ, it was found almost exclusively in the Crimea, in Sarmatian graves. Thus, another element confirming the thesis of contact between the population of the Masłomęcz group and the Sarmatians has been discovered.

**Keywords:** jet, Sarmatians, Goths, intercultural contacts

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### Introductory remarks

One of the striking research problems in the Eastern European Barbaricum of the Roman Empire is the relationship between the Germanic tribes, especially the Goths, and the Sarmatians, an Eastern European steppe people. Their mutual contacts have been confirmed by ancient written sources (e.g. Müller 1998; Kokowski 2004); on the other hand, objects of Sarmatian origin have come to light in archaeological find complexes of the Gothic circle. Mainly metal elements of clothing and its ornaments produced by the Sarmatians reached the Goths: brooches, bells, belt buckles, amulets; less frequently mirrors and even clay vessels (Kokowski 2001; 2003). There are many indications that it was through the Sarmatians that coral products reached the Goths (Michalec 2004; Kokowski and Vynokur 2024) and glass beads produced in glassmakers' workshops operating in the Danubian Roman Provinces (Kokowski 2023, 82). In the Gothic cemeteries

of the Masłomęcz group in Gródek nad Bugiem and in Masłomęcz (both in the district of Hrubieszów), burials of Sarmatian women have even been identified (Kokowski 1999a, 95–97), indicating specific, close contacts. It is also assumed that the Sarmatians were important intermediaries in trade with the Germanic tribes in the ancient world, as they transferred provincial Roman products to Germanic territory – a conference on this topic was organised at the time (see von Carnap-Bornheim (ed.) 2003).

In 1995, a grave with an interesting inventory was discovered in the cemetery in Masłomęcz (site 15), indicating relatively early contacts between the two peoples.

### Grave 436

It lies at the edge of the northern, oldest part of the cemetery. A grave pit measuring 200 × 110 cm with a light-coloured fill was discovered at a depth of 35 cm, oriented on the N-S axis, with its deviation

towards W. At a depth of 70 cm it was regularly rectangular, measuring 185 × 80 cm. In the northern part, an oval, uniform grey darkening was visible, a trace of the reopening of the grave. At a depth of 118 cm, the outline of a tree coffin measuring 180 × 58 cm was revealed. The coffin walls were 3 cm thick, and the disturbance observed earlier only covered the northern part of the pit (Fig. 1). It indicates that the disturbance occurred when the construction of the tree coffin was still stable. At a depth of 130 cm, the coffin became regularly rectangular, measuring 180 × 45 cm; the walls were still 3 cm thick. The skeleton lay on its right side, the left hand across the pelvis. The skull, right shoulder blade, left arm and almost the entire left arm were missing. There was a brooch on the left arm and beads scattered around the neck. A large clay vessel fragment was found at the bottom of the legs and a comb on the left foot (Fig. 2).

#### Accoutrements:

1. copper alloy crossbow brooch, with folded foot, short spiral with axle pin, type FG.20 (Kokowski

1999b, 651f., fig. 2: d): length 55 mm, height 17 mm (Fig. 3: 1);

2. three-part bone comb with copper rivets, consisting of six segments, and low, semicircular handle, type G1 (Kokowski 1999b, 654, 655, fig. 3a), type Thomas I: length 102 mm, height 57 mm, handle thickness 11 mm (Fig. 3: 2);

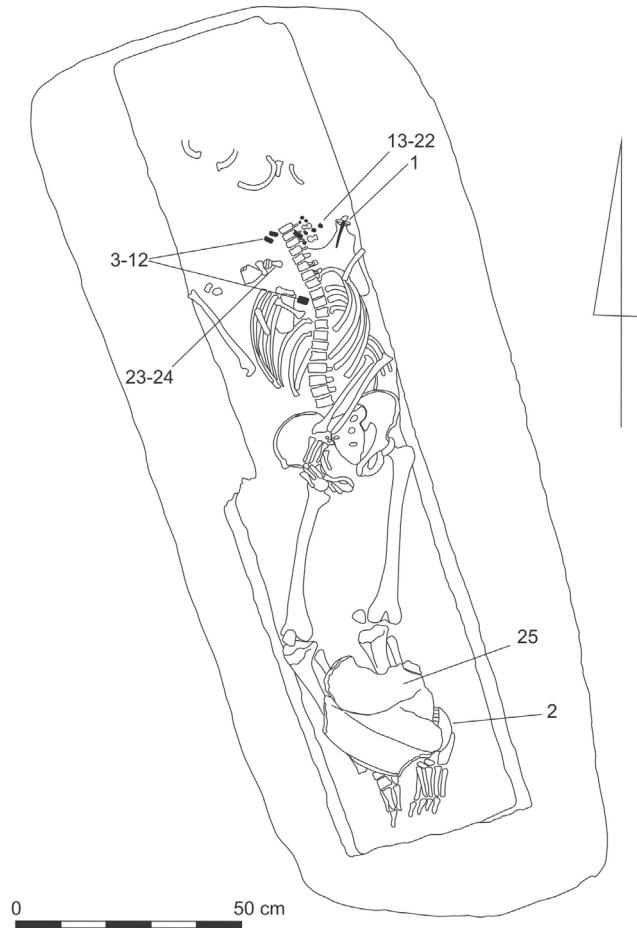
3–12. 10 elongated, polyhedral beads, semi-transparent, blue, like type Tempelmann-Mączyńska XIII: 126 (Tempelmann-Mączyńska 1985): 10 × 6 × 6 mm (Fig. 3: 3–12);

13–22. 10 flat, square jet beads with openings in secondary sides of two opposite corners, type Aleksejeva 37: 5 × 6 × 3; 6 × 6 × 3; 6 × 6 × 2; 6 × 5 × 3; 7 × 6 × 4; 6 × 7 × 3; 5 × 5 × 3 (damaged); 4 × 6 × 2; 7 × 6 × 2.5 (damaged); 5 × 5 × 2 mm (Fig. 3: 13–22; 4; Kokowska 2012, 126, fig. 7);

23–24. 2 eight-shaped amber pendants with slightly separated neck with transverse opening, type Masłomęcz II.2: h. 14–13 mm, dm. 9–8 mm (Fig. 3: 23, 24);



**Fig. 1.** Masłomęcz, site 15, grave 436. Plan at the level of the reopening of the coffin (drawn by A. Jączek).



**Fig. 2.** Masłomęcz, site 15, grave 436 – the numbers on the grave plan correspond to those on Fig. 3 (drawn by A. Jączek).

25. large fragment of a handmade vase, with protruding, thickened rim and sloping, kinked neck; decorated with hanging triangles on the belly; smooth surface at the neck, brown, rough at the bottom; group VIB/A Schindler/Wołagiewicz (Kokowski 2017, 402, no. 57): height approx. 215 mm; base dm. approx. 95 mm, belly dm. approx. 310 mm, mouth dm. 250 mm (Fig. 5).

Dating finds include: a brooch, dated to the older section of level C1, and a vessel whose decoration is typical of the Middle Roman Period (B2/C1–C1 – Kokowski 1999b, 683, 708f.; 2017, 397–401).

Of the burial inventory, the most interesting for us are the jet beads. This raw material, unique to European antiquity, was recently characterised by Ewelina Kokowska. She not only presented the geological aspects of jet and the history of its presence in ancient cultures, but also the terminology associated with it in various languages (Kokowska 2011, 490–497; 2012, 117–119). The phenomenon highlighted by the author of the renaissance of jewellery made with jet

during the reign of Queen Victoria is interesting. So-called mourning jewellery began to be made at this time, and the geological term “gagat” was replaced by the jeweller’s term “jet” (Kokowska 2011, 496–497). In this wording it took hold in colloquial language and is still used today.

This text attempts to answer the question of the origin of the gagate beads from the Masłomęcz grave and to look at the history and extent of the occurrence of this specific type of pattern.

### Typology – quantity – chronology

Ekaterina Mihajlovna Alekseeva (1978, 15–16) was the first to draw attention to jet beads of this type, defining them as type 37 in the group of jet artefacts. The type corresponds exactly to the finds from Masłomęcz. Additionally, it has separated variant 37a with faceted sides. According to the author, the type of necklace made of such jet beads has a broad chrono-

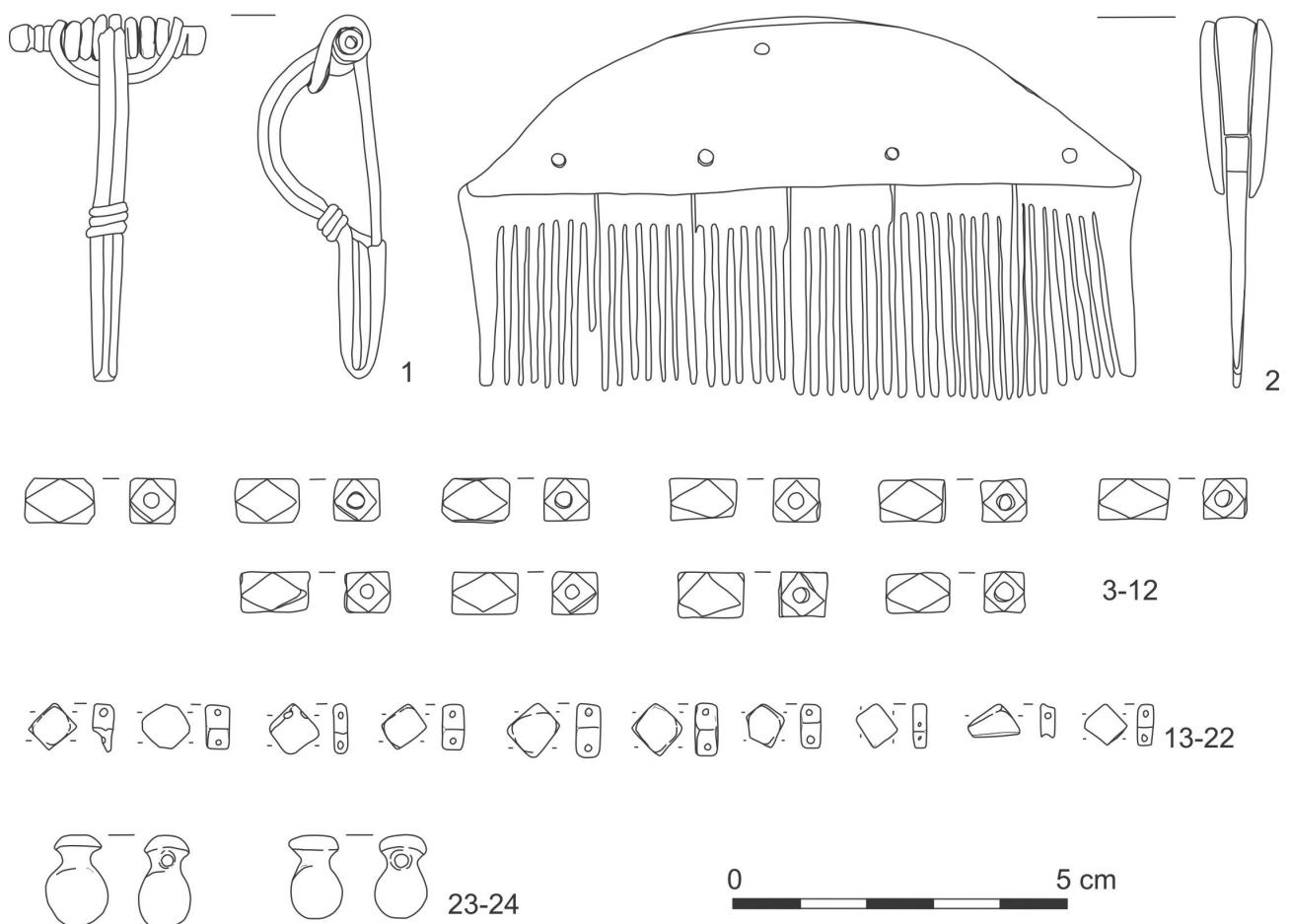
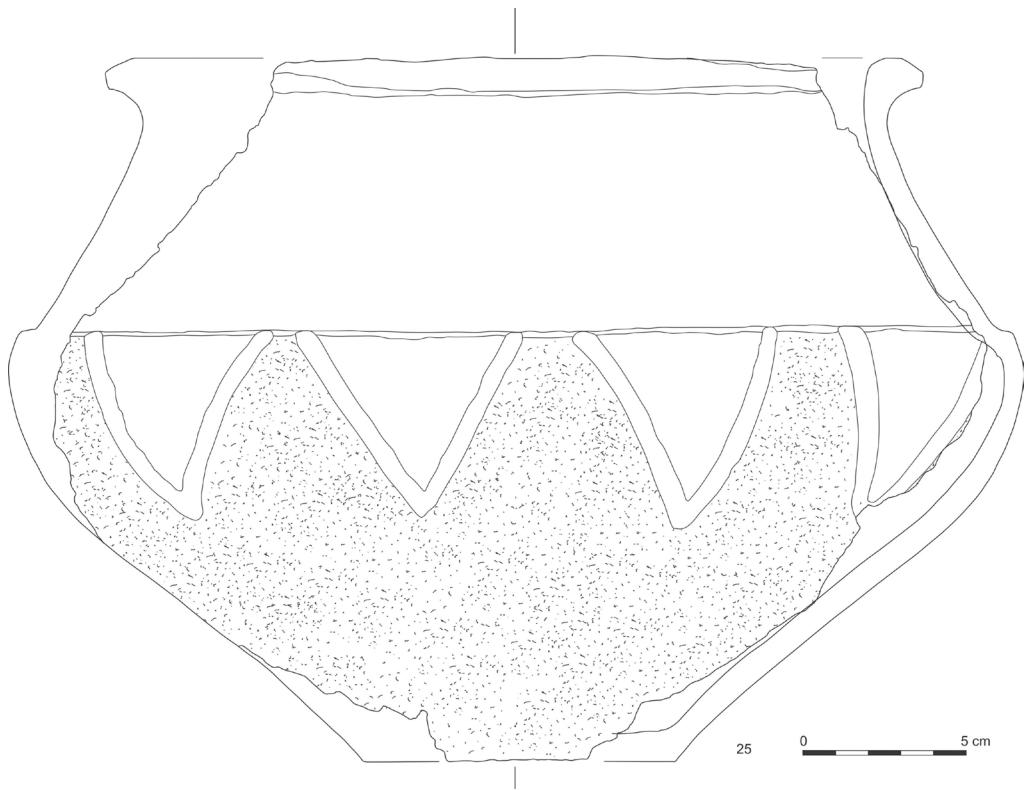


Fig. 3. Masłomęcz, site 15, grave 436, grave goods – numbers according to the description in the text (drawn by A. Jączek).



**Fig. 4.** Masłomęcz, site 15, grave 436, jet beads (photo by J. Kuśnierz).



**Fig. 5.** Masłomęcz, site 15, grave 436, clay vase (drawn by A. Jączek).

logical framework and occurs in three different time periods: 1. 6<sup>th</sup>–5<sup>th</sup> century BC (includes stone beads made of allegedly non-jet, known only from a single cemetery near the ancient city of Olbia); 2. 2<sup>nd</sup> century BC (exclusively from Hellenistic funerary complexes); 3. 1<sup>st</sup> century BC – 3<sup>rd</sup> century AD, the beads of the late group, most widespread in the 1<sup>st</sup>–2<sup>nd</sup> century AD (at that time these beads probably came into use among the peoples living in the vicinity of ancient cities, who, according to the author, were not the inhabitants of these cities – Alekseeva 1978, 15f.). In my opinion, there is one more variant to be distinguished, namely the one decorated with circles (type 37b).

The author of the classification was aware of 251 such jet beads, all from eight necropolises with connections to the Hellenistic city centres (Alekseeva 1978, 86). Unfortunately, it is impossible to reconstruct the full number of beads from all the tomb complexes considered by Alekseeva.

Since the time of Alekseeva's research, the number of type 37 beads as well as their chronology and distribution have changed considerably. According to the literature available today, we have more than 712 finds – the number of beads in some find inventories is imprecise (see catalogue). It was assumed that in such cases there were always more than two pieces

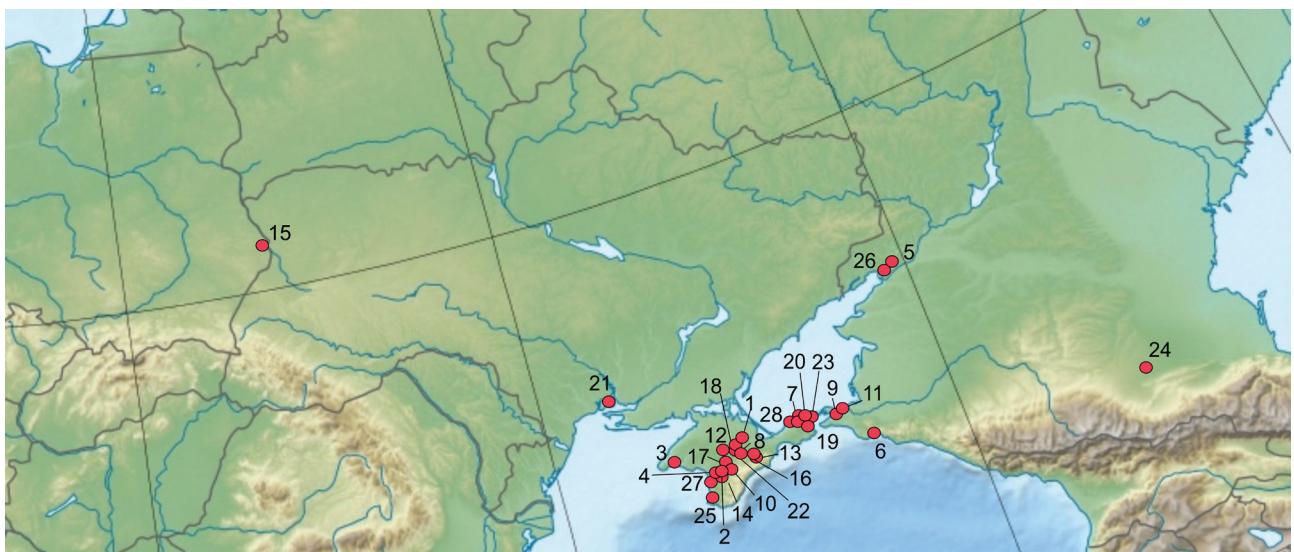
(+2) – from 28 necropolises. They are also known from graves dated to the 4<sup>th</sup> century AD, e.g. in grave 21 in Družnoe in the Crimea. Although the grave has a broad date, in the second half of the 3<sup>rd</sup>–4<sup>th</sup> century AD, there were several burials in the burial chamber whose burial time is difficult to determine (Hrapunov 2002, 68). Tomb 21 also poses the problem of the exact chronology of other finds from the Crimea, where several bodies were buried in a burial chamber over the course of several or more decades (cf. Mul'd 2011, 99). Nevertheless, E. M. Alekseeva knew of no reasons to date the jet beads of type 37 later than the 3<sup>rd</sup> century AD.

Jet beads with circles on a relatively large surface are a new variant of major importance. They are known from the following archaeological sites: Čal'tyr, grave 10 with at least 19 specimens from the 1<sup>st</sup> century BC – 1<sup>st</sup> century AD (Larenok and Potapov 2004, 175, fig. 10: 14–17, 19; 176); Preobraženskoe, grave 5 in barrow 3: 3<sup>rd</sup>–1<sup>st</sup> century BC – 12 specimens (Abramova and Petrenko 1995, 55, fig. 12: 1); Tanais (most numerous), grave 209 from the 1<sup>st</sup> century BC – 14 specimens (Alekseeva 1982, 87, pl. 50: 9); tomb 180 – 17 specimens (Arsen'eva 1977, 139, pl. XLV/2; Alekseeva 1982, pl. 52: 1); grave 207 from the 1<sup>st</sup> century BC – 14 specimens (Arsen'eva 1977, 139, pl. XLV/3; Alekseeva 1982, pl. 50: 9) and tomb 48/1992, from the 1<sup>st</sup> century AD – 14 specimens (Arsen'eva *et al.* 2001, 58, 164, pl. 75: 970). It can be assumed that the gagat beads decorated with circles were widespread in the north-eastern part of the entire area of occurrence. Their period of use closes in the relatively

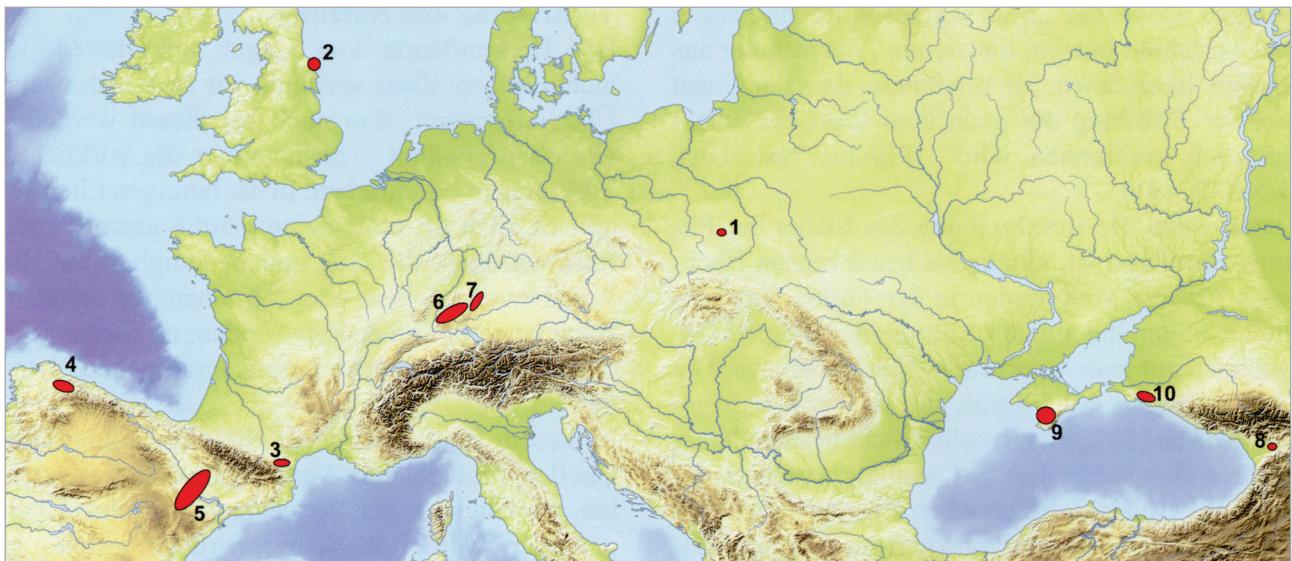
narrow period from the 2<sup>nd</sup> (?) century BC to the end of the 1<sup>st</sup> century AD.

In comparison with the classification of E. M. Alekseeva, the chronology of the occurrence of jet beads of type 37 should be modified. Apart from considerable difficulties in the dating of individual find complexes (see catalogue), they are most numerous in five time horizons. The first corresponds to Alekseeva's findings and covers the 6<sup>th</sup>/5<sup>th</sup> century BC, when the type, represented by 22 specimens, appears for the first time. The second horizon includes 37 beads from the 3<sup>rd</sup>–2<sup>nd</sup> century BC; 8 from the 2<sup>nd</sup> century BC and 37 from the 2<sup>nd</sup>–1<sup>st</sup> century BC, totalling 81 pieces. Together with find complexes with a broad chronology from the 3<sup>rd</sup> to 1<sup>st</sup> century BC, the group comprises 101 specimens. The third horizon comprises burial inventories from the 1<sup>st</sup> century BC (91 pieces), the 1<sup>st</sup> century BC – 1<sup>st</sup> century AD (69) and the 1<sup>st</sup> century AD (21), totalling 181 beads, almost a third of the total number. The fourth horizon includes find complexes from the 1<sup>st</sup>–2<sup>nd</sup> century AD and from the end of the 1<sup>st</sup> and 2<sup>nd</sup> century AD (6 beads each), as well as from the 2<sup>nd</sup>–3<sup>rd</sup> century AD (18) and from the second half of the 3<sup>rd</sup> century (74), totalling 104 specimens, including the beads from Masłomęcz. Finally, only four specimens are known from the final horizon, dated to the end of the 3<sup>rd</sup> and 4<sup>th</sup> century.

It is quite possible that the third horizon would have looked different, assuming that the finds from the 2<sup>nd</sup>–1<sup>st</sup> century BC are basically closer to its younger section. The dominance of this horizon would then be even greater.



**Fig. 6.** Distribution of jet beads of the Alekseeva 37 type – the numbers correspond to those in the find catalogue (prepared by A. Kokowski).



**Fig. 7.** European jet deposits (after: Kokowska 2012, fig. 2). 1. Świętokrzyskie Mountains; 2. Whitby / Yorkshire; 3. department of Aude; 4. province of Asturias; 5. province of Aragon; 6. Swabian Alb; 7. Franconian Alb; 8. Caucasus / Kutaisi; 9. Crimea / Balaklava; 10. Novorossijsk-Gelendžik.

The conclusions that can be drawn from this highly imprecise analysis can be formulated as follows: Alekseeva 37 type jet beads were favoured as part of the composition of necklaces especially in the 1<sup>st</sup> century BC – 1<sup>st</sup> century AD. A perhaps apparent revival, as we have no information on the dating of nine burial inventories from Nejzac in Crimea, took place in the second half of the 2<sup>nd</sup> and 3<sup>rd</sup> century AD, at the time when our beads arrived in Masłomęcz.

### Origin and spread of the bead pattern

The origin of the discussed bead shape is closely linked to archaic Greek craftsmanship. In an impressive necklace from Olbia, grave 75/1910, there were eight specimens of type 37, according to M. V. Skrzinska made of lignite, a rock similar to jet, but also seven others made of gold, with circular decoration on the flat side, like Alekseeva type 37b (Skrzinska 1986, 124, fig. 5: 4). Identically decorated were the rhomboidal beads of unknown material, with a diagonal opening, discovered in grave 97/1913 in the same cemetery (Skrzinska 1986, 124, fig. 5: 3).

There remains the question of the distribution of square jet beads and presumably also the accessibility of this particular component of the necklace.

The vast majority of sites with our pearls – as many as 19 – come from the Crimea (Fig. 6). There are only three more outside the peninsula, albeit at a short distance from it, on the eastern side of the Kerč strait. Others are scattered; however, beads of type 37b were

found in two necropolises in Tanais and Čaltyr' at the mouth of the Don to the Sea of Azov. There is also a site in the Pre-Caucasus to the east and the cemetery in Masłomęcz to the north-west.

### Summary

The “political distribution” of our beads is interesting. Almost a third of all finds were registered in the Bosporan Empire, and practically all others in the politically and economically dependent area of the “Scythian Empire” in the Crimea with its capital in Scythian Naples, which ruled over the Pontic steppes on both sides of the Dnieper and the Southern Bug – we have extensive literature on both areas. Especially recommended: Anohin *et al.* 1986; Hrapunov 2005, 120–148, 165–217. The prevalence of jet beads, which are rare outside the Crimea, means that either the Scythians, and after them the Sarmatians who lived to the north, were not interested in such jewellery, or they had no access to jet.

The explanation lies in the occurrence of jet in nature. The deposits lie from the province of Asturias and Aragon in present-day Spain; mutually from the Pyrenees to the latter in Département Aude; then further to the east are the Swabian Alb and Franconian Alb. On the British Isles they are known in Whitby/Yorkshire. Traces of jet have also been identified in Poland, in the Świętokrzyskie Mountains. In Eastern Europe, the area of Kutaisi (Caucasus) and an area between Novorossijsk and Gelendžik can be shown

(Fig. 7). The nearest deposits are in the Crimea, in the vicinity of Simferopol' and Balaklava, in the small valleys of the Al'ma and Kača rivers (Kokowska 2011, 500–502, map 1; 2012). Hence a large number of jet beads, also of other types, in the necropolises of the Bosporan Empire and in Scythian and Sarmatian tombs not far away (Kokowska 2011, 503, map 2).

At the beginning of the 3<sup>rd</sup> century AD, type 37 jet beads were almost exclusively a component of necklaces worn in Crimea; the exception is grave 49 from the Cemadolinskij cemetery near Novorossijsk. The appearance of the type we are interested in far to the north, in the Hrubieszów Valley, may mean that the Goths living there were already in contact with the Crimean Sarmatians. Interestingly, these contacts took place before the historic attack of the Goths and their allies on Crimea in 253–254 and 254–256 AD (Wolfram 1990, 60–62; Kokowski 2007, 170–171).

However, it should be remembered that the early contacts of the Gothic tribes with the Sarmatians date back at least to the turn of the 2<sup>nd</sup> and 3<sup>rd</sup> centuries AD. This applies to communities living on the Great Hungarian Plain and the Black Sea steppes: areas of today's Moldova, southwestern Ukraine and Romania (Kokowski 2019, 59–61; Kokowski and Mazurek 2021, 228–229). Therefore, the discovery of jet beads from Masłomęcz is not only another confirmation of this fact, but also allows the Crimean Peninsula to be included in the area of contacts between these communities. Of course, with the reservation that type 37 jet beads, eagerly worn on the peninsula, could have reached the Goths from the Hrubieszów Valley via the Sarmatians living on the continent.

## Catalogue of finds

The number in the catalogue corresponds to the number on the map in Fig. 5. It is followed by the number of finds in the locality in brackets; after the = sign the current number of all finds included in the catalogue.

1. [18 = 18] **Artezian / Артезиан**, Crimea, grave 112/2003, probably 18 specimens – uncertain, 3<sup>rd</sup> century AD?, exact description lacking (Vinokurov 2014, 450, fig. 345: 5);
2. [+2 = 20] **Balta-Čokrak / Балта-Чокрак**, Crimea, grave 14, several specimens, end of 2<sup>nd</sup> – first half of 3<sup>rd</sup> century AD (Zajcev *et al.* 2005, 173, 192, fig. 14: 6);
3. [+58 = 78] **Belāus / Беляус**, Crimea, more than 58 specimens in 12 graves: grave 1 – 3 specimens (Daševskaâ 2014, 13, 115, pl. 6: 3; 118, pl. 9: 2, 9); grave 11 – 2 specimens (that one 15, 122, pl. 13: 4); grave 21 – 3 specimens (that one 26, 155, pl. 46: 5); grave 38 – 16 (?) specimens (that one 30, 175, pl. 66); grave 39 – 1 (?) specimen (that one 32, 179, pl. 70: 1); grave 61 – 16 specimens (that one 37, 196, pl. 46: 5); grave 61 – 16 specimens (that one 37, 196, pl. 46: 5); grave 61 – 1 (?) specimen (that one 32, 179, pl. 70: 1; 87: 2); grave 64 – 1 (?) specimen (that one 38, 199, pl. 90: 16); grave 90 – 6 (?) specimens (that one 43, 215, pl. 106: 4); grave 138 – 1 (?) specimen (that one 49, 233, pl. 124: 19); grave 141 – 1 specimen (that one 51, 234, pl. 125: 3); tomb 153 – “several” ex. (that one 52, 238, pl. 129: 16); tomb 156 – 8 ex. (that one 54, 242, pl. 133: 6); time period – 1<sup>st</sup> century BC – 1<sup>st</sup> century AD;
4. [+4 = 82] **Brânskoe / Брянское**, Crimea, grave 7 – probably several specimens, end of 2<sup>nd</sup> – first half of 3<sup>rd</sup> century AD (Trufanov 2005, 323, fig. 2: 8); burial chamber 19 – several specimens, 1/2<sup>th</sup> century – first half of 3<sup>rd</sup> century AD (Trufanov 1998, 142, fig. 1: 2; 2005, 319);
5. [19 = 101] **Čaltyr' / Чалтырь**, obl. Rostov, RUS, grave 10, broad dating: 2<sup>nd</sup> century BC – 1<sup>st</sup> century AD – 19 (?) specimens with circular decoration (Larenok and Potapov 2004, 175, fig. 10: 14–17, 19; 176);
6. [2 = 103] **Cemadolinskij / Цемдолинский**, city Novorossijsk, RUS, grave 49, 2<sup>nd</sup>/3<sup>rd</sup> century AD (Dovgalûk 2008, 190, fig. 117: 13–14; 231, fig. 123: 1);
7. [21 = 124] **Chersones (Tavrijskij – Χερσόνησος, Sevastopol') / Херсонес Таврийский**, Crimea, grave chamber 242/1910, the finds were determined “to be dated to BC” – 1 specimen; grave 1910, undated – 1 specimen (Alekseeva 1978, 17, 84);
8. [23 = 147] **Družnoe / Дружное**, Crimea, grave 24, single burial, second half of 3<sup>rd</sup> century AD – 21 specimens (Khrapunov and Muld 1999, 117, 120; fig. 120; Hrapunov 2002, 69, 121, fig. 21; 208, fig. 108: 3); burial chamber 21, 7 burials, second half of the 3<sup>rd</sup>–4<sup>th</sup> century AD – 2 specimens (Hrapunov 2002, 68, 118, fig. 18; 204, fig. 104: 37–38);
9. [16 = 163] **Fanagorâ (Φαναγόρεια) / Фанагория** (Sennyj), Krasnodarskij Kraj, RUS, grave 8/1964, 1<sup>st</sup> century BC – 11 specimens; tomb 189/1965, undated – 5 specimens (Alekseeva 1978, 83);
10. [18 = 181] **Fontany / Фонтаны**, Crimea, grave 8, single burial, 2<sup>nd</sup>–3<sup>rd</sup> century AD (Hrapunov 2008, 12, 46, fig. 17: 19; 54, fig. 25: 5);
11. [26 = 207] **Kery / Керы**, Krasnodarskij Kraj, RUS, grave 34/1960, 2<sup>nd</sup> century BC – 3 specimens; grave

- 38/1960, 2<sup>nd</sup>–1<sup>st</sup> century BC – 8 specimens; grave 81, skeleton 3, 3<sup>rd</sup> – beginning of the 2<sup>nd</sup> century BC – 6 specimens; grave 160/1962, 2<sup>nd</sup> century BC – 9 specimens (Alekseeva 1978, 77);
12. [+3 = 210] **Kermen-Kyr / Кермен-Кыр**, Crimea, barrow, 2<sup>nd</sup>–1<sup>st</sup> century BC – more than 2 specimens (Vysotskaâ 1968; Puzdrovskij 2007, 324, fig. 51: 11);
13. [4 = 214] **Kurskoe / Курское**, Crimea, grave 1 – more than 2 specimens, first half of 3<sup>rd</sup> century AD (Trufanov and Koltuhov 2002, 280, fig. 2); grave 5 – 1 specimen (Trufanov 2009, 248, fig. 78: 40), grave 22 – 1 specimen (Trufanov 2009, 248, fig. 78: 80); without dating;
14. [55 = 269] **Levadki / Левадки**, Crimea, grave 9, niche 1, mid-3<sup>rd</sup> century AD – 18 specimens (Hrapunov *et al.* 2001, 119, fig. 11: 3, 30; 161); grave 12 – 24 specimens (that one 127, fig. 17: 37); stray find (that one 129, fig. 18: 22); grave 18, 2 burials, 2<sup>nd</sup>–1<sup>st</sup> century BC – 1 specimen (Hrapunov 2004, 193, fig. 10: 52; 194, fig. 11: 4); burial chamber 60, more than 3 burials, 1<sup>st</sup> century BC – 3<sup>rd</sup> century AD – 12 specimens (Mul'd 2011, 107, 108, 114, fig. 6: 29; 115, fig. 7: 21);
15. [10 = 279] **Masłomęcz**, county Hrubieszów, PL, Masłomęcz Group, grave 436, early 3<sup>rd</sup> century AD (C1a);
16. [5 = 284] **Mičurinsk / Мичуриńsk**, Crimea, grave, single burial, first half of 3<sup>rd</sup> century AD (Mul'd 2001, 56, no. 32a; 66, fig. 5: 12);
17. [7 = 291] **Neapol' Skifskij (Neapolis – Simferopol') / Неаполь Скіфський**, Crimea, grave 6, at least 3 burials, 1<sup>st</sup> century AD (Symonovič 1983, 32; 165, pl. XLVI/8);
18. [85 = 376] **Nejzac / Нейзац**, Crimea, burial chamber 306, 3<sup>rd</sup> – early 4<sup>th</sup> century AD – 2 specimens (Hrapunov 2011a, 18, 61, fig. 30: 20); grave 17 – 2 specimens (Hrapunov 2004, 218, fig. 35: 96); grave 20, single burial, second half of 2<sup>nd</sup> – first half of 3<sup>rd</sup> century AD – 17 specimens (Hrapunov 2006, 165, 233, figs. 34: 14, 16, 18); grave 1 – 8 specimens; grave 18 – 1 specimen; grave 23 – 2 specimens; grave 28 – 1 specimen, grave 36 – 3 specimens; grave 50 – 1 specimen; grave 53 – 1 specimen; grave 92 – 6 specimens; grave 139 – 4 specimens; grave 169 – 3 specimens (Stoânova 2004 – in the case of the tombs cited here, exact dating is not possible, as the author was only interested in the frequency of individual bead types.); grave 191, 2<sup>nd</sup> – early 3<sup>rd</sup> century AD – 18 specimens (Stoânova 2013, 161, fig. 3: 3; 163, fig. 5: 2); grave 300, 2 burials, 3<sup>rd</sup> century AD – 30 specimens (Hrapunov 2011b, 198, 214, fig. 9: 19);
19. [6 = 382] **Nimfejon (Νυμφαῖον) / Нимфейон**, Crimea, grave A216, first half of the 3<sup>rd</sup> century AD? (Grač 1999, 85, 262, pl. 115: 4);
20. [3 = 385] **Novo-Otradnoe / Ново-Отрадное**, Crimea, grave 7, 1<sup>st</sup>–2<sup>nd</sup> century AD (Alekseeva 1970, 164, pl. IV/14; 1978, 77);
21. [32 = 417] **Ol'biâ (Ολβία Ποντική) / Ольбия**, Mikolaïvskaâ oblast', UKR, burial chamber 47/1902, “post-Christian” – 3 specimens; grave 30/1907 – 3 specimens; grave 75/1910, 6<sup>th</sup>–5<sup>th</sup> century BC – according to Skudnova (1988, 68), the grave is dated to the 6<sup>th</sup> century BC – 8 specimens (Skržinskaâ 1986, 123f., fig. 5; Skudnova 1988, 69, fig. 87); grave 39/1912, 5<sup>th</sup> century BC – 12 ex. (Skudnova 1988, 113–114, figs. 172; grave 56b/1912, 6<sup>th</sup>/5<sup>th</sup> century BC – 2 specimens; and stray finds – 4 specimens (Alekseeva 1978, 77f.);
22. [2 = 419] **Opuški / Опушки**, Crimea, grave 5, single burial, 2<sup>th</sup> (?) century AD – 2 specimens (Stoânova 2012, 7, 9, fig. 4: 24);
23. [8 = 427] **Pantikapaion (Παντικάπαιον, Kerč) / Пантикопей (Керч)**, Crimea, grave 7/1860, 1<sup>st</sup>–2<sup>nd</sup> century AD – 3 specimens; stray finds, 2<sup>nd</sup> century BC – 4 specimens; single find – 1 specimen, undated (Alekseeva 1978, 79–80);
24. [32 = 459] **Preobraženskoe / Преображенское**, Caucasus, barrow 3, grave 5, single burial, 3<sup>rd</sup>–1<sup>st</sup> century BC – 32 specimens of which 12 with circular decoration (Abramova and Peterenko 1995, 55, fig. 12: 1; Fialko 2015, 72, fig. 43; Prokopenko 2014, 211, fig. 62);
25. [36 = 495] **Sovchoz 10 Inkerman / Инкерман**, Crimea, grave 69, second half of 2<sup>nd</sup>–3<sup>rd</sup> century AD – 4 specimens; grave 115, second half of 2<sup>nd</sup>–3<sup>rd</sup> century AD – 13 specimens; grave 181, second half of 2<sup>nd</sup>–3<sup>rd</sup> century AD – 19 specimens (Alekseeva 1978, 80);
26. [135 = 630] **Tanais (Τάναις) / Танаис (Nedvigovka)**, obl. Rostov, RUS, more than 135 specimens: grave 15/1955, 2<sup>nd</sup> century BC – 1 specimen (Šelov 1961, 13 – Šelov's descriptions of the grave inventories are highly generalised, so Alekseeva's determinations cannot be verified); grave 54 – 4 specimens; grave 70 – 6 specimens; grave 80 – 1 specimens (Šelov 1961, 32); tomb 209, single burial, 1<sup>st</sup> century BC – 17 specimens: 14 with circular decoration, 3 undecorated (Arsen'eva 1977, 35; Alekseeva 1982, 87, pl. 50: 9); grave 177, single burial 1<sup>st</sup> century AD – ca. 54 specimens (Arsen'eva 1977, 19–20; Alekseeva

- 1982, pl. 53: 6); tomb 180, single burial, 2<sup>nd</sup>–1<sup>st</sup> century BC – 17 specimens with circular decoration (Arsen'eva 1977, 21, 139, pl. XLV/2; Alekseeva 1982, pl. 52: 1); grave 207, single burial, 1<sup>st</sup> century BC – 14 specimens with circular decoration, 3 specimens undecorated (Arseneva 1977, 33–34, 139, pl. XLV/3; Alekseeva 1982, pl. 50: 9); grave 38/1992, single burial, “first century’s after Chr.” – 3 specimens (Arsen'eva et al. 2001, 56, 160, pl. 72: 925); grave 45/1992, single burial, 1<sup>st</sup> century BC – 1 ex. (that one 57, 163, pl. 74: 956); tomb 48/1992, 1<sup>st</sup> century AD – 14 specimens with circular decoration (that one 58, 164, pl. 75: 970);
27. [64 = 694] **Ust'-Al'ma / Усть-Альма**, Crimea, more than 64 specimens: burial chamber 92, 1<sup>st</sup> cent. BC (?) – 5 specimens? (uncertain) (Vysotskaâ 1994, 177, pl. 32: 22); tomb 598 – 1? ex. (Trufanov 2009, 246, fig. 76: 42); tomb 702 – 8 ex., 3<sup>rd</sup> century AD (that one Trufanov 2010, 157, fig. 8: 5b); tomb 803 – 19 ex., 3<sup>rd</sup> century AD (that one 159, 165, fig. 9: i); grave 824, skeleton 3 – 14 ex., 3<sup>rd</sup> century AD (that one 169, fig. 19: 21: ž; 173); 825 – 1 ex., 3<sup>rd</sup> century AD? (that one 174, fig. 22: l; 175); grave 995 – 16 ex., 3<sup>rd</sup> century AD? (Trufanov 2012, 79–80, fig. 10: 3b);
28. [18 = 712] **Zolotoe / Золотое**, Crimea: grave 237, 2 burials, “ancient period” – 9 specimens (Korpusova 1983, 112, 114, pl. II/5–6 – on the signature to the plaque erroneously labelled as grave 273); grave 47, 7 (?) burials, 2<sup>nd</sup>–1<sup>st</sup> century BC – 9 specimens (that one 103, 138, pl. II/1).

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