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New finds of antler cheekpieces and horse burials from the Trzciniec Culture in the territory of western Little Poland

Abstract

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The subject of this paper are the new discoveries of antler cheekpieces of horse harness at Trzciniec Culture sites in Morawianki, Miechów and Jakuszowice (Little Poland, Poland). It also addresses the issue of double horse burials being parts of sepulchral complexes, with barrows at their centres. The article tackles the problem of the occurrence of such burials and cheekpieces in the Danubian regions, the steppe zone of Eastern Europe and in the territory of Greece. It also considers the function of cheekpieces, as parts of horse gear used for harnessing a horse to a chariot.

Keywords: antler cheekpieces, horse burials, chariots, barrows, Trzciniec Culture, bronze age

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Introduction

Antler cheekpieces, being elements of horse harness encountered at various sites of the Trzciniec Culture (TC), are artefacts revealing the strongest connections with the influences coming from the Carpathian Basin (Fig. 1). Until the present, such finds were mostly recorded in the territory of western Little Poland, at the settlement in Jakuszowice, in particular. However, in recent years successive artefacts of this type have been discovered not only in settlements but also from collective burials of horses. Moreover, such burials are recorded increasingly often in sepulchral complexes of the Trzciniec Culture. This article presents the artefacts coming from three archaeological sites, namely Morawianki, dist. Kazimierza Wielka, Miechów, dist. Miechów and Jakuszowice, dist. Kazimierza Wielka, as well as the horse burials discovered in Morawianki. The author of this paper has also made an attempt to determine the chronology of the utilisation of cheekpieces within the Trzciniec Cultural Circle (TCC) and the context of their usage by human communities of that time. An attempt will be made to establish the di-

rections of external influences that lead to the emergence of the above-mentioned traits within the Trzciniec Culture environment. The analysis will firstly cover the relationships with the Danubian regions and the East European steppe zone.

New finds of antler cheekpieces and horse burials

Morawianki, dist. Kazimierza Wielka site 10

A complex of features of the Trzciniec Culture (TC) connected with a barrow was discovered at the multicultural site in Morawianki, the mound of which has not preserved to the present day. It contained a collective human grave and two collective horse burials (feat. nos. 38 and 56). Reconstruction of the extent of the barrow mound was only possible based on observations of the horizontal planigraphy of younger features, namely graves from the Early Iron Age, Roman Period and the Migration Period. In the area where the barrow, with a diameter of a dozen or so meters, had been primarily erected, no younger features were

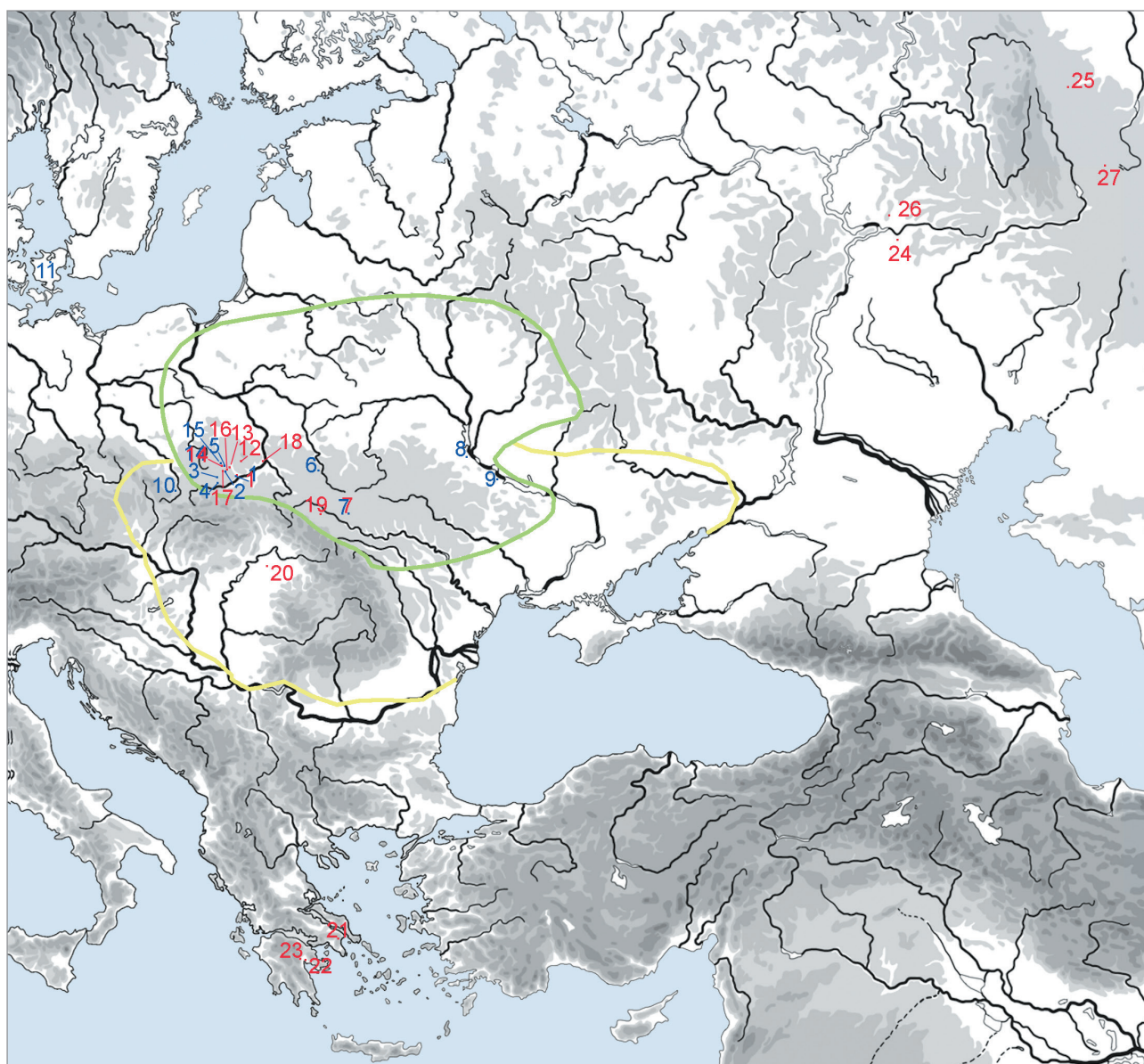


Fig. 1. Boundaries of the Trzciniec Cultural Circle (acc. to Makarowicz 2010, Fig. 1.1) – green line, and the extent of occurrence of rod cheekpieces (acc. to Hüttel 1981, Tab. 24–26; Pankovskiy 2016, Fig. 1) – yellow line. Blue colour: location of the TCC sites (as well as Kietrz and Østrup Bymark), where antler cheekpieces were recorded: 1 – Morawianki, 2 – Miechów, 3 – Jakuszowice, 4 – Kraków-Cło, 5 – Pelczyska, 6 – Belz; 7 – Gusyatin, 8 – Kozarovychy, 9 – Trachtemirov, 10 – Kietrz, 11 – Østrup Bymark, 14 – Michałowice, 15 – Dębiany. Red colour – location of double horse burials: 1 – Morawianki, 7 – Gusyatin, 12 – Żerniki Górne, 13 – Miernów, 14 – Michałowice, 16 – Gabułów, 17 – Kazimierza Wielka, 18 – Wilczyce, 19 – Bukivna, 20 – Oarța de Sus, 21 – Marathon, 22 – Dendra, 23 – Kokla, 24 – Utyovka, 25 – Krivoe Ozero, 26 – Potapovka, 27 – Sintashta.

encountered. In particular, the lack of a grove-like feature from the Roman Period that was expected to be found in this location was striking. The south-eastern, southern and south-western boundaries of the barrow were marked with a presence of skeletal burials dated to the Roman and Migration Periods, lying along the outline of the former mound. An identical situation associated with the location of the Roman Period cemetery around a very similar TC sepulchral complex with an alleged mound which has not survived

to the present day, was recorded in Michałowice, dist Kazimierza Wielka (Zagórska-Telega *et al.* 2011, 203).

The first animal burial (feature no. 38) was primarily situated under the barrow mound, in its south-western part. This grave (Fig. 2: 1–4) was an irregularly rectangular pit with dimensions of 3.5×2 m and a depth of 1.6 m (below the present ground level). At its bottom there was a single skeleton of a mature horse (no. 1), placed in anatomical order, lying on its left side along a N-S axis, with its head directed south-

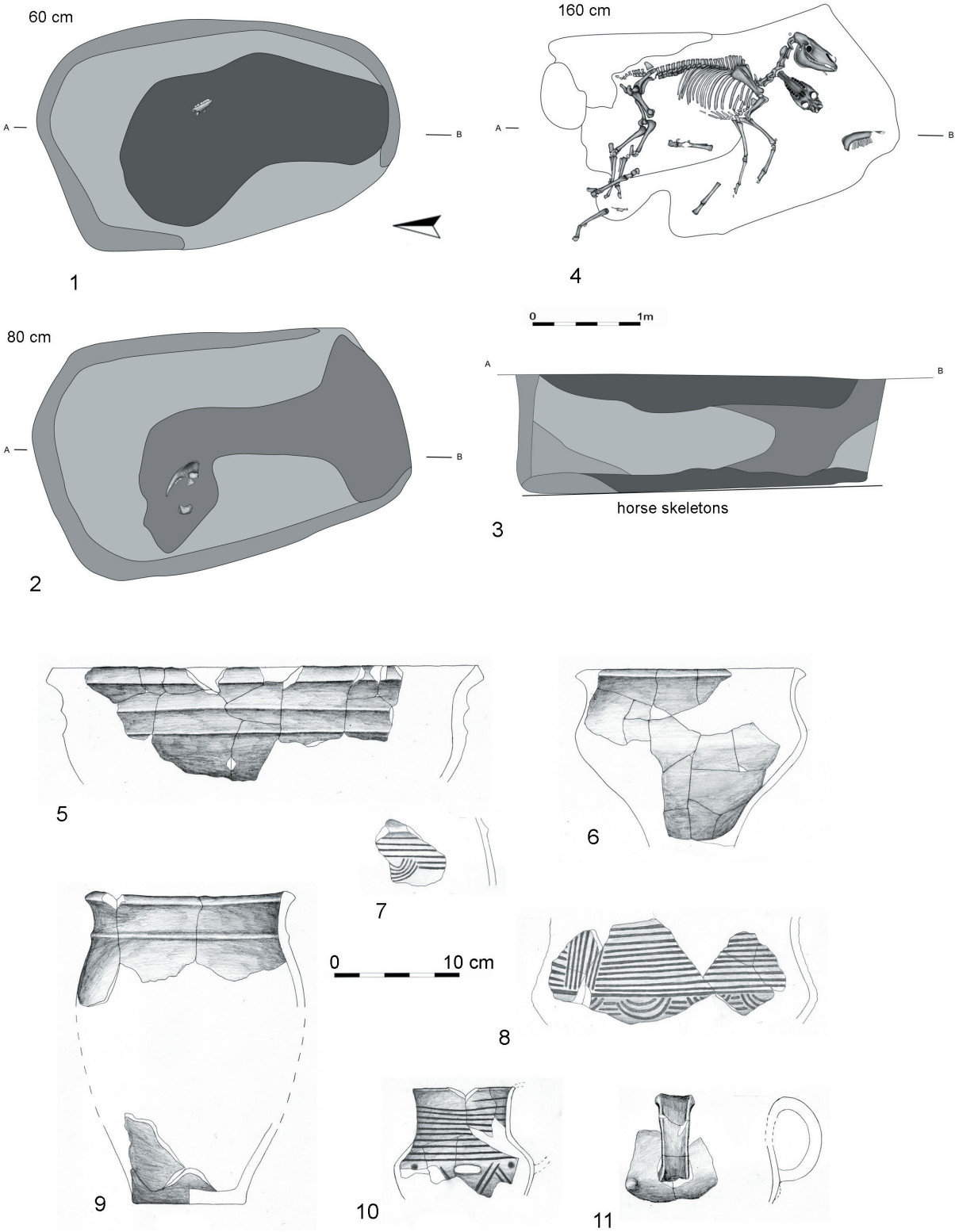


Fig. 2. Morawianki, dist. Kazimierza Wielka. Grave No. 38. 1–3 – horizontal views of the grave, 4 – cross section of the grave, 5–11 – vessels encountered in the ceiling of the grave (drawn by M. Podsiadło)

ward. The second horse remains (no. 2) were of a residual nature. They only consisted of a skull and a few long bones of limbs, displaced from their anatomical order. The alignment of the layers of sediments filling up the grave pit indicated that the grave chamber had originally been closed, most likely with some wooden elements. In the ceiling of this feature very numerous fragments of pottery were encountered, along with animal bones (including fragments of horse skulls) and a stone polishing tablet. The occurrence of these artefacts may be considered evidence of some sort of ritual, most likely connected with the establishment of the animal burial and the erection of the barrow. Next to the skull of horse no. 1, a set of antler elements of a horse harness (bridle) were found, namely two cheekpieces (placed by the animal's jaws, slightly displaced due to the post depositional processes), two knob strap junctions (lying on both sides of the skull; on one side on the upper part of the ramus of the mandible, on the other side, on the zygomatic process of the temporal bone). Behind the skull, at the position of the first cervical vertebra, a double-cone antler knob was encountered. During the exploration of the sediments from the surroundings of the skull, a fragment of another bead and an antler shaft were found.

The latter animal burial (feature no. 56) was situated outside of the barrow mound, on its south-western side. It had been dug into a sandy substratum, the properties of which affected the condition of the horse remains; only the largest, most massive bones have been preserved until the present day. In addition, it had been disturbed by the digging of two graves of a younger chronology, dated to the Roman and Migration Periods. The skeletons of three horses were placed into a rectangular pit (Fig. 3: 1–3) with dimensions of 3×2 m and a depth of 130 cm (below the present ground level). At the depth of 80 cm, the skeleton of horse no. 1 was found, lying on its right side, along the N-S axis and with its head directed southward. At the depth of 120 cm, skeletons of two horses were recorded, aligned symmetrically to one another, one on the right, the other on its left side, along the N-S axis, both with their heads directed southward. Unfortunately, the skull of horse no. 2 was destroyed by the grave no. 58 from the Migration Period (Fig. 4: 1–3). Next to the skull of the horse no. 3, an individual cheekpiece was found, lying on the horse's jaws, at the position of the alveolar ridge (Fig. 5: 2). Noteworthy is the fact that this was the first rod cheekpiece discovered next to an animal lying in an undisturbed anatomical order. It is clearly discernible that the bolt (preserved in a rudimentary condition) was fixed in the upper posi-

tion, while a thickened head was in the lower position. Analogical positions were recorded for two cheekpieces encountered in a horse grave in Gusyatin, however, at the latter site they were found lying directly on the animal's skull (Ilchyshyn 2016, fig. 5: b).

Description of the artefacts:

Grave no. 38

Cheekpiece (Fig. 3: 1). Preserved length: 88 mm (primarily ca. 110 mm). Circular cross-section, diameter between 6–12 mm. The artefact is decorated on its head with six ovals. There is a groove running around above the ovals, complemented with a motif of “hanging triangles”. The head is mounted with an engraved circle with a central point inside. The body is decorated with two bands of double “toothed ovals”, each of them divided into two “triangular” fields containing circles with central points inside. The ovals are separated with an additional circle with a central point inside. The bands of the ornament are framed (from the top and the bottom) with double bands of tiny “hanging triangles” running around. There were two oval-shaped perforations: one with dimensions of 8×5 mm in the frontal plane; another identical one in the side plane, drilled with a movable shaft and having a diameter of 2 mm. The upper bolt, ornamented with plastic knobs, was split off.

Cheekpiece (Fig. 3: 2). Preserved length: 75 mm (primarily ca. 110 mm). The other dimensions and decoration are identical to cheekpiece no. 1, described above. The only difference is that the adjoining ovals in the main bands of the ornament are not separated by circles with central points inside. The upper band of the ornamentation was only partially preserved. The upper bolt, ornamented with plastic knobs, had been split off.

Antler bit – knob (Fig. 3: 3). In the horizontal view, it is circular with a diameter of 20 mm. In the longitudinal view, it is convex-concave with a thickness of 2.5 mm. The eyelet was only partially preserved. The eyelet width is 5.5 mm, its diameter – 7.5 mm.

Antler bit – knob (Fig. 3: 4). In the horizontal view it is circular, with a diameter of 17 mm. In the longitudinal view, it is convex-concave with a thickness of 2 mm. The eyelet width is 5 mm, its diameter – 4 mm.

Knob (Fig. 3: 5). In the horizontal view it is circular, with a diameter of 20 mm, with a drilled perforation 10 mm in diameter. In the longitudinal view, it forms a double-cone, 12 mm in height.

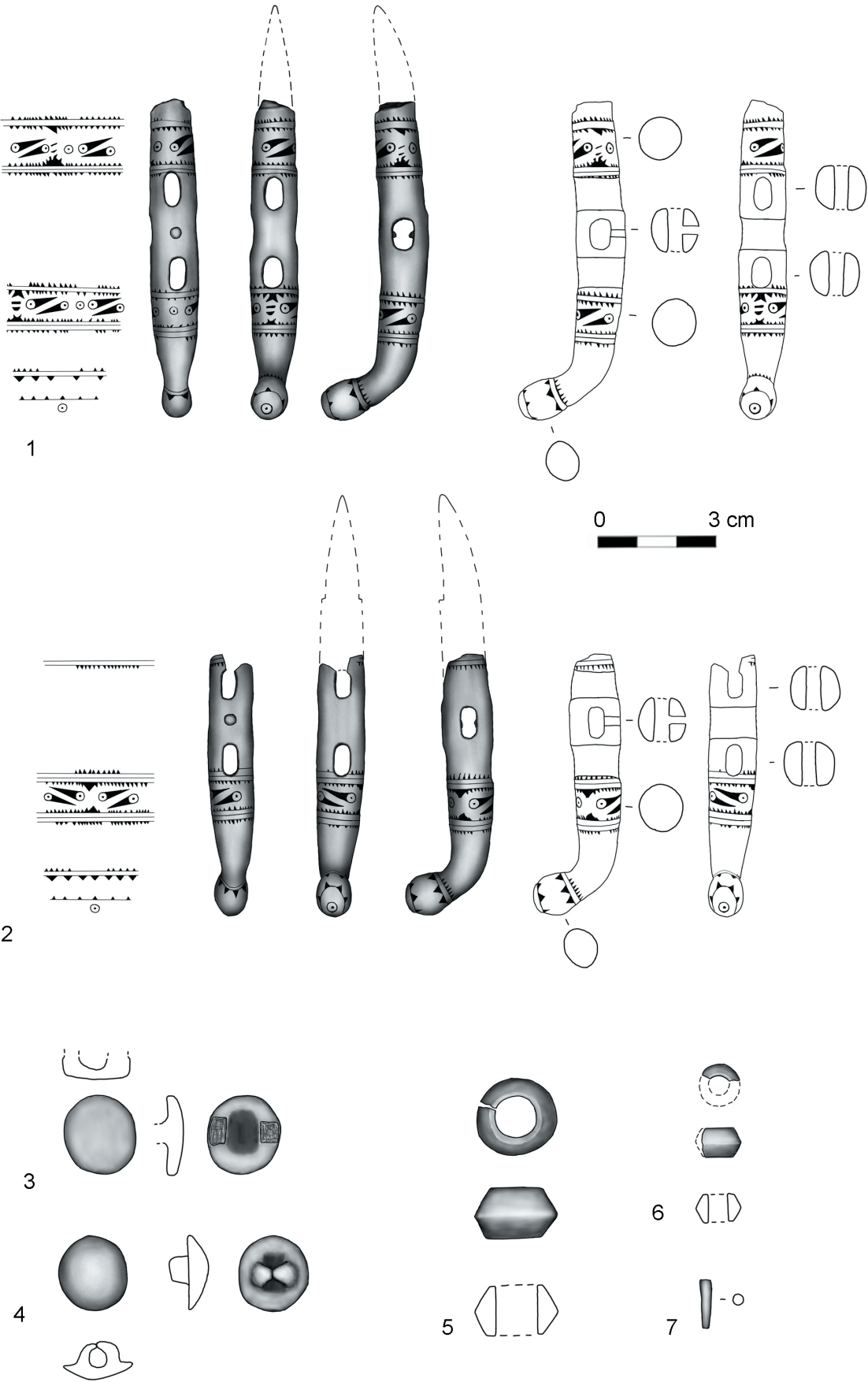


Fig. 3. Morawianki, dist. Kazimierza Wielka. Grave No. 38. Antler elements of horse harness found on the skull of horse No. 1 (drawn by M. Podsiadło)

Knob (only half of it has preserved, Fig. 3: 6). In the horizontal view it is circular, with a diameter of 9 mm, with a drilled perforation 5 mm in diameter. In the longitudinal view it forms a double-cone, 7 mm in height.

Shaft (Fig. 3: 7). Preserved length: 11.5 mm, diameter: 1–2 mm. Irregularly circular in its cross-section.

Grave no. 56

Cheekpiece (Fig. 4: 4). Preserved length: 86 mm (primarily ca. 100 mm).

Irregularly circular in its cross-section, with a diameter of 1–14 mm. The head is slightly flattened. Two oval-shaped perforations with dimensions of 10×5 mm in the frontal plane. One identical perforation in the side plane. The upper part of the cheekpiece, ornamented with plastic knobs, was split off and only preserved in the upper part.

Miechów, dist. Miechów site 3

A considerably small settlement of the Trzciniec Culture was discovered at the multicultural site in Miechów, having functioned in its classical phase. Within a shallow, oval-shaped pit no. 4668 (Fig. 6: 3) an antler cheekpiece was found preserved in perfect condition. It was accompanied by very numerous archaeological materials, including large fragments of a dozen or so vessels (Fig. 7: 1–7) and a partly preserved stone axe (Fig. 6: 4). Another antler cheekpiece was encountered within the cultural layer. In its surroundings were a small number of ceramic materials associated with the Trzciniec Culture (Fig. 6: 8–10).

Description of the artefacts:

Cheekpiece of the “Y” letter shape preserved entirely, found in feature no. 4668 (Fig. 6: 2). Its maximum dimensions are 62×71 mm, thickness: 5–7 mm.

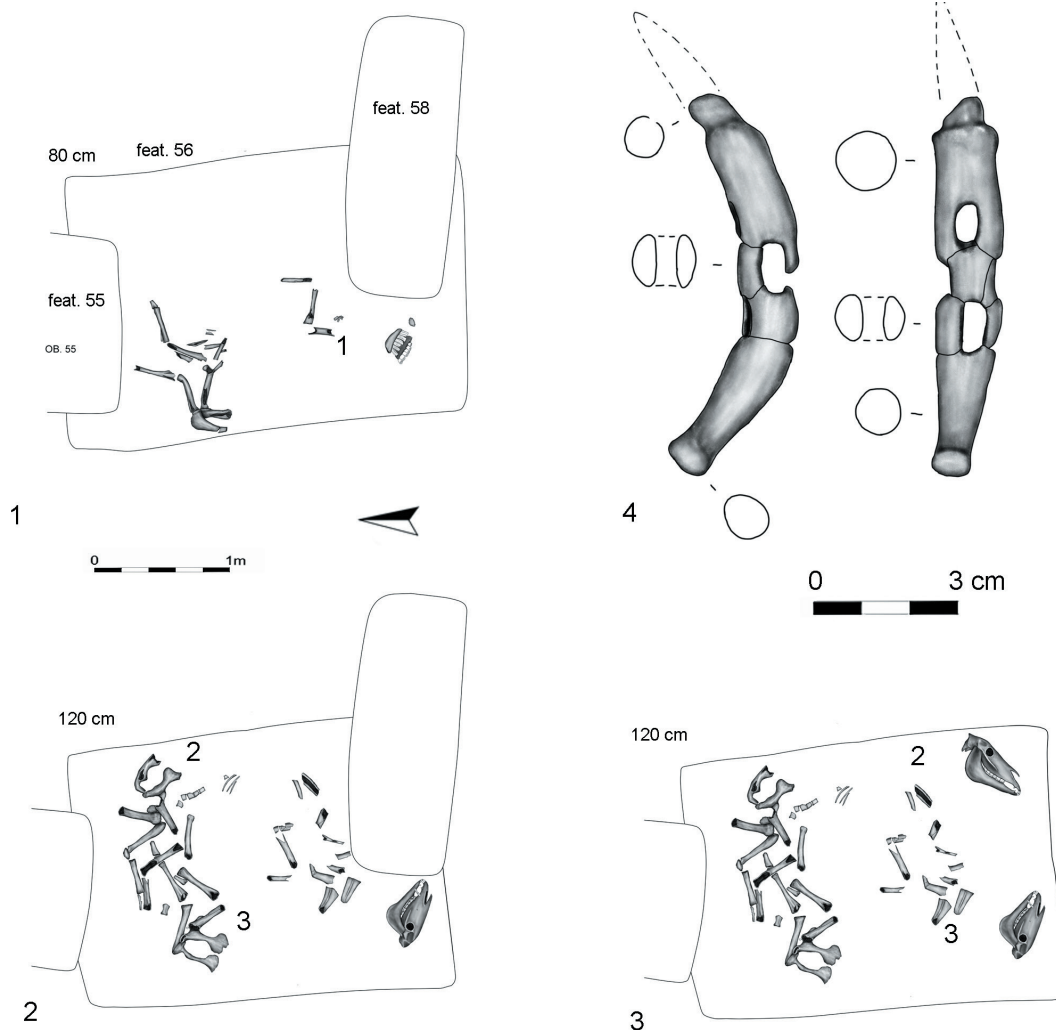


Fig. 4. Morawianki, dist. Kazimierza Wielka. Grave No. 56. 1 – horizontal view at the depth of 80 cm, burial of horse No. 1; 2 – horizontal view at the depth of 120 cm, burials of horses Nos. 2 and 3; 3 – reconstruction of the primary alignment of skeletons of horses Nos. 2 and 3 (before the skeleton No. 2 was disturbed by feature No. 58); 4 – cheekpiece found next to the skull of horse No. 3 (drawn by M. Podsiadło)

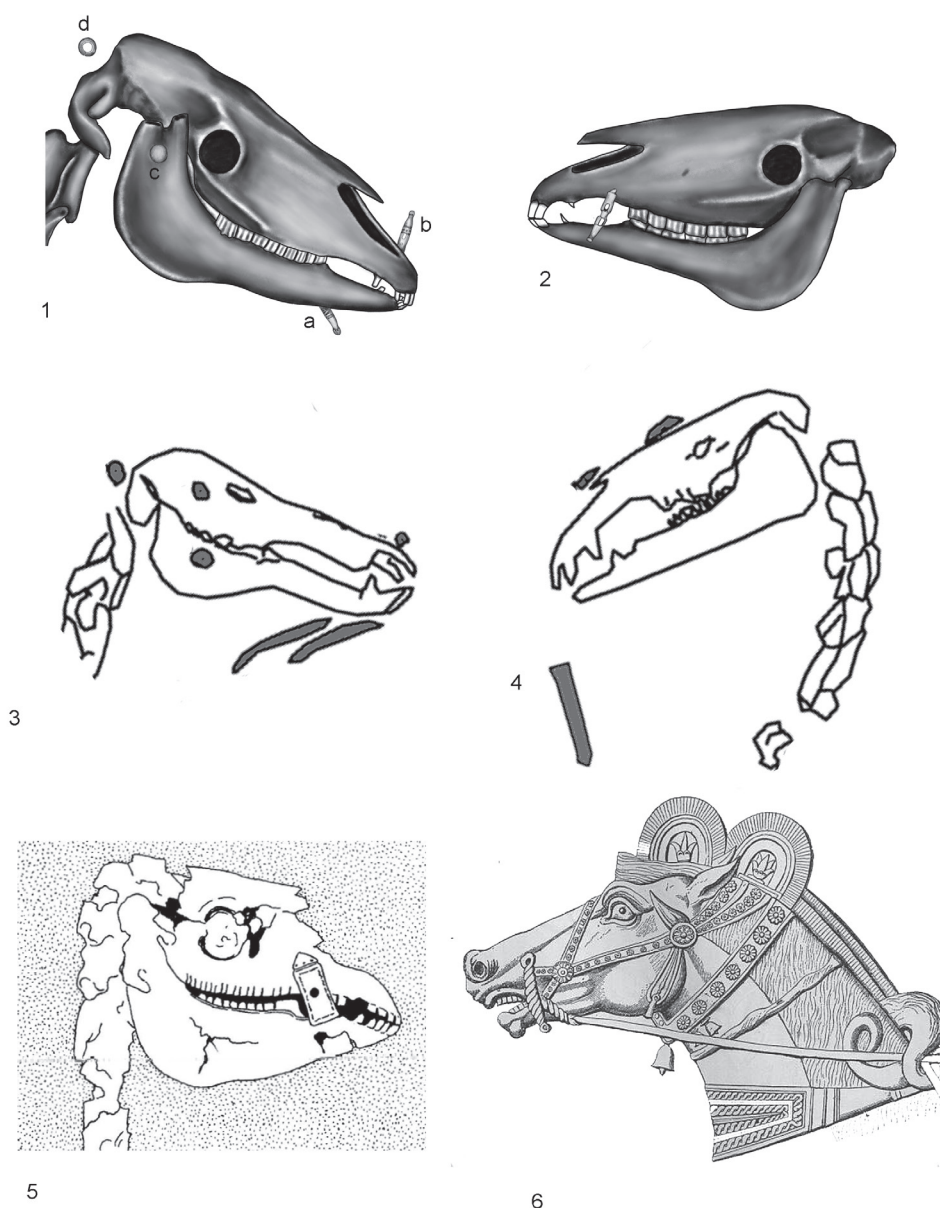


Fig. 5. Examples of horse harness. 1 – found next to the skull of the horse No. 1 from the grave No. 38 in Morawianki; 2 – found next to the skull of the horse No. 3 from the grave No. 56 in Morawianki; 3, 4 – found within the grave from Gusyatin (acc. to Ilchyshyn 2016, Fig. 5); 5 – found within the grave from Komarovka (acc. to Hüttel 1981, Tab. 28); 6 – bridle of a horse harnessed to a chariot presented on the Assyrian relief from Koyunjik (acc. to Rawlinson 2016, Tab. 93: 3)

It is equipped with a centrally placed large perforation with dimensions of 12×10 mm, above which another perforation was placed, with a diameter of 8 mm, and three further smaller ones, with a diameter of 3 mm each. The other two cheekpiece branches have one perforation per each, 4 mm in diameter. Another such perforation is located at the edge of the cheekpiece.

Cheekpiece from the cultural layer (Fig. 6: 1). Preserved length: 142 mm (primarily ca. 150 mm), width: 14–19 mm, thickness: 9–18 mm. It is irregularly oval-shaped in its cross-section. The external side planes, as well as the frontal and rear planes, are thoroughly

smoothed. The internal side plane, with a preserved sponge structure, is strongly eroded. In the side plane there are two large, centrally placed and oval-shaped perforations with dimensions of 14×4.5 mm. At its bottom end there are also two circular perforations with diameters of 2 and 4 mm, respectively. Both endings of the cheekpiece are decorated with longitudinal and transverse incisions. Both of them are damaged, one preserved rudimentarily (reconstructed ornamentation). On the side plane there are two transverse bands of a wave-banded ornament, made with the use of a tool of a compass type. The lower band consists

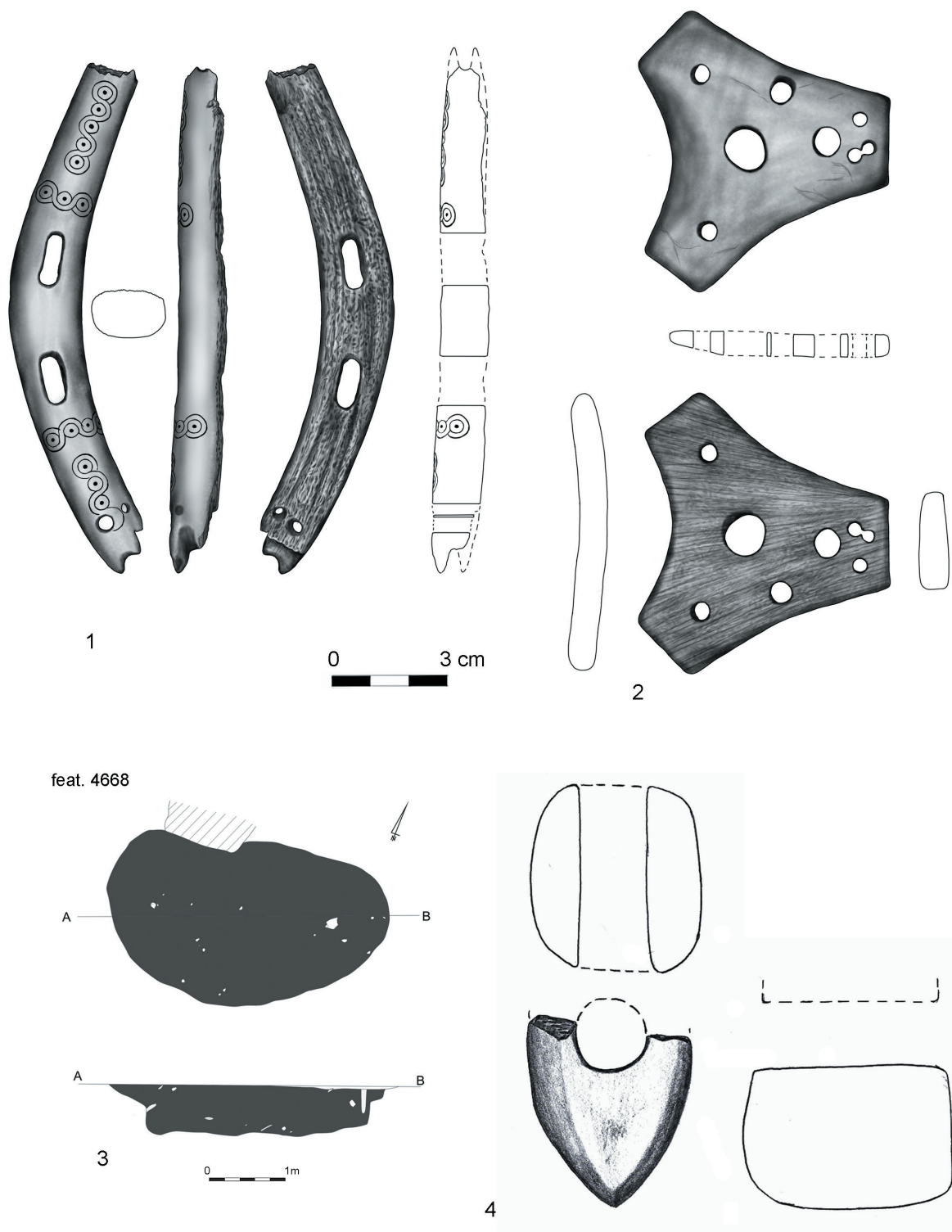


Fig. 6. Miechów, dist. *loco*. 1 – cheekpiece found within the cultural layer; 2 – cheekpiece from feature No. 4668; 3 – horizontal view and cross-section of the feature No. 4668; 4 – fragment of a stone axe from feature No. 4668 (drawn by M. Podsiadło)

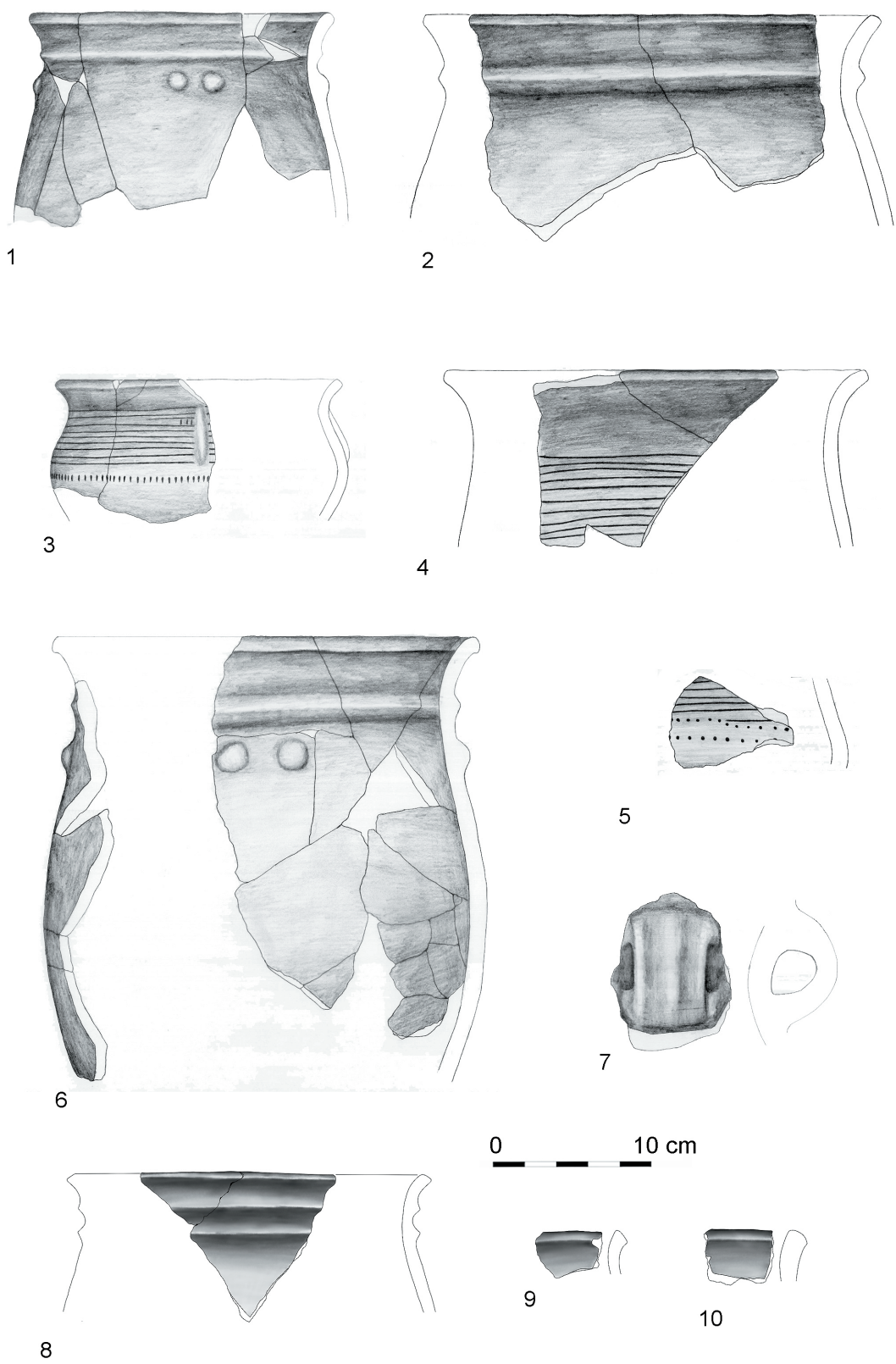


Fig. 7. Miechów, dist. *loco*. 1–7 – fragments of vessels from feature No. 4668; 8–10 – fragments of vessels accompanying the cheekpiece from the cultural layer (drawn by M. Podsiadło and S. Rupiński)

of four waves, the upper of three waves. By the endings of the cheekpiece there are bands with analogical ornamentation, one of which consists of five waves, the other one of four waves. Within the latter band, a circular perforation is to be found.

Jakuszowice, dist. Kazimierza Wielka site 2

At the multicultural site in Jakuszowice, a very abundant, multiphase settlement of the Trzciniec Culture was discovered (Górski 1990). To date it has already delivered five finds of cheekpieces of the Spiš type (Bąk 1992; Godłowski and Rodzińska-Nowak 1995; Górski and Przybyła 2014). Another cheekpiece was encountered in the small feature no. 2271, trapezoid in shape, (Fig. 8: 2), and accompanied by numerous fragments of pottery of the Trzciniec Culture (Fig. 8: 3–4)

Description of the artefact:

Cheekpiece (Fig. 8: 1). Preserved length: 62 mm. Oval-shaped in its cross-section, with a diameter of 10×12 mm. In its lower (?) part the cheekpiece has

a mushroom cap-like head, clearly distinguished from the body. Directly above the head there is an oval-shaped perforation with dimensions of 10×5 mm. The artefact is undecorated.

Typology and ornamentation of cheekpieces

Both of the above-mentioned cheekpieces from the grave no. 38 in Morawianki should undoubtedly be classified as belonging to the Spiš type (Vladar 1971, 8; Hüttel 1981, 82–83). This type corresponds with the Borjas type acc. to Mozsolics (Mozsolics 1953, 95–97) or the type IVb acc. to Boroffka (Boroffka 1998, 100–101). However, in this paper, the name of the Spiš type will be adopted since it is well known and commonly used in the related Polish literature (Bąk 1992; Gedl 1988, 85). Cheekpieces of this type are associated with the Carpathian Basin (Hüttel 1981, tab. 26). Determination of its variants is mostly based on the analysis of the number and alignment of knobs ornamenting the bolt (Hüttel 1981, 83; Boroffka 1998,

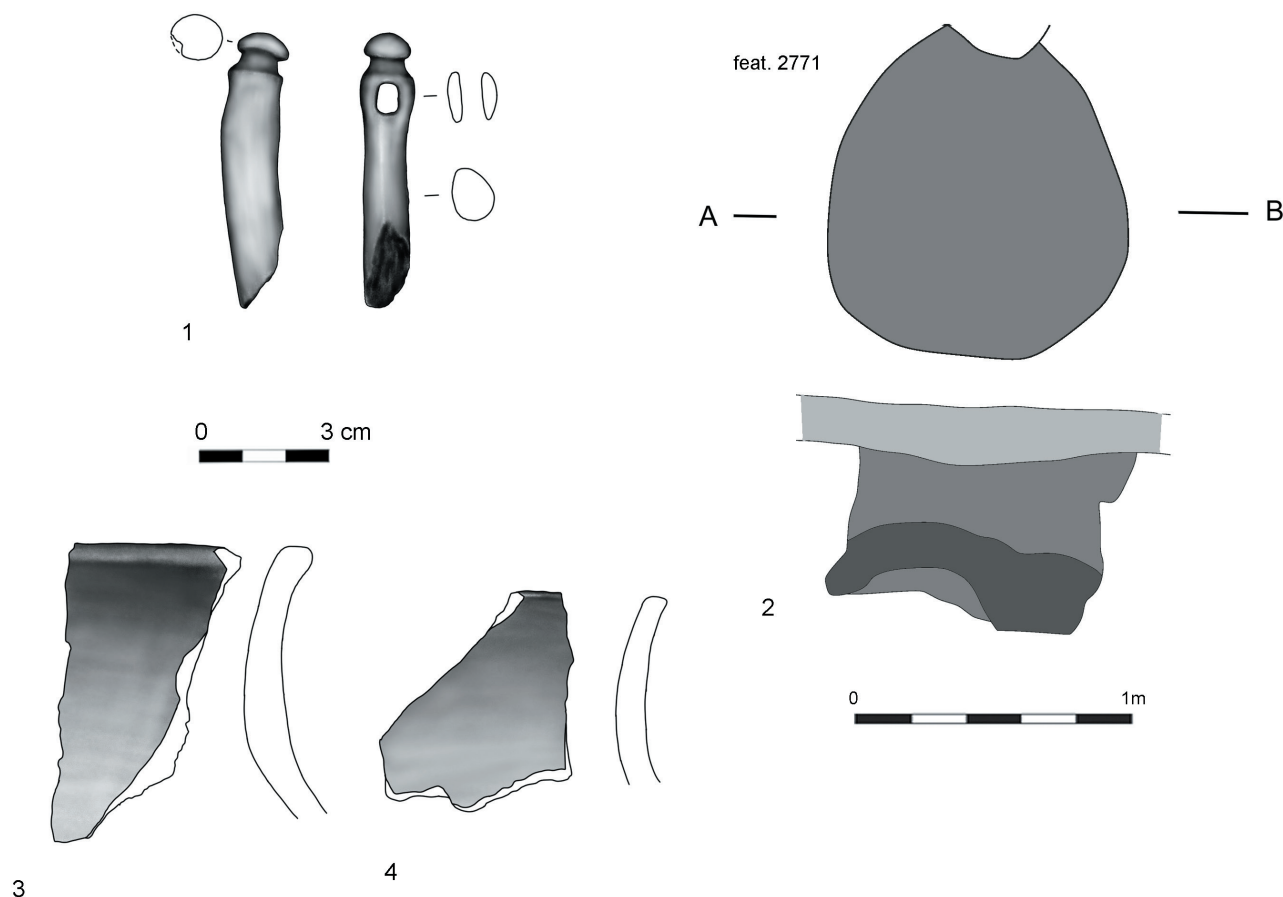


Fig. 8. Jakuszowice, dist. Kazimierza Wielka. 1 – fragment of a cheekpiece found in feature No. 2271; 2 – horizontal view and cross-section of feature No. 2771; 3–4 – fragments of vessels from feature No. 2271 (drawn by M. Podsiadło)

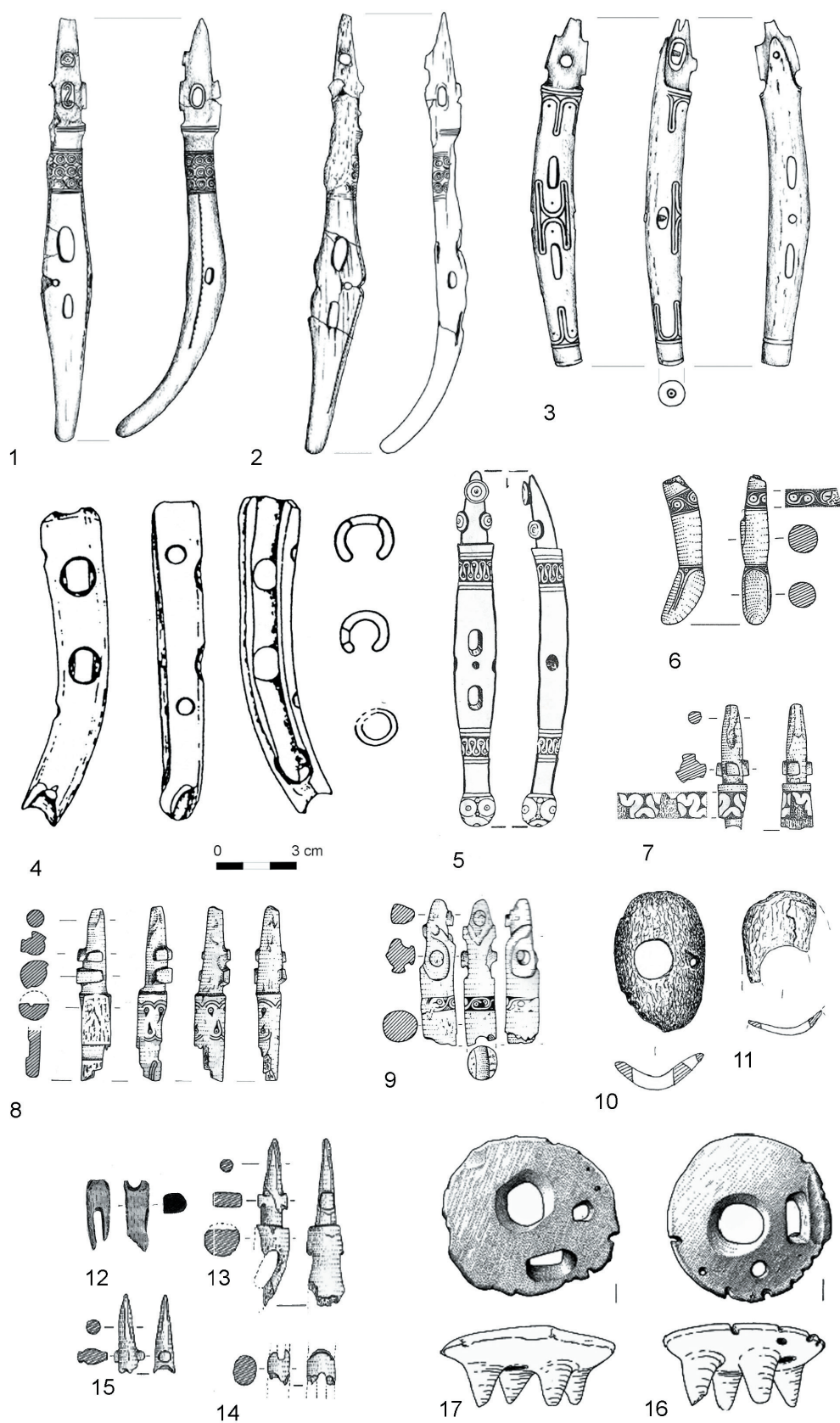


Fig. 9. Antler cheekpieces from the extent of the Trzciniec Cultural Circle and cheekpieces from Kietrz. 1–3 – Gussyatin, Ukraine (Ilchysyn, 2016, Fig. 4); Kraków–Cłó, Poland (Górski 2007, Tab. 64A: 1); 5 – Belz, Ukraine (Bukowski 1976, Tab. I: 1); 6–9 – Jakuszowice, Poland (Bąk 1992, Fig. 1: 1–2; Godłowski 1992, Tab. 2: 1; Godłowski, Rodzińska-Nowak 1995, Tab. 2: 1–2); 10–11 – Kozarovychy, Ukraine (S. Lisenko 1999, Tab. 5:1–2); 12–15 – Kietrz, Poland (Gedl 1988, Fig. 1: b–c, 3: a); 16–17 – Trachtemirov, Ukraine (Hüttel 1981, Tab. 2: 14, 15)

100–101). Unfortunately, with regard to the specimens under scrutiny, this particular element has been split off. However, a closer examination of cheekpiece no. 1 shows that the rear wall of the shaft forms a common plane with the bolt wall. As a result, the knobs could only have been placed on three quarters of the bolt's circumference. Most likely, the ornamentation was limited to only three knobs, making it somewhat untypical of the Spiš type (Hüttel 1981, 83). Nevertheless, it cannot be excluded that the number of knobs was originally greater. An ornamentation consisting of six knobs aligned in two rows was recorded for the Tószeg variant of the Spiš type (Hüttel 1981, 83, tab. 8: 76). Taking into account the alignment of oval-shaped slots for straps and their shape in general, the cheekpieces from Moravianki are close to three artefacts coming from Spišský Štvrtok in Slovakia, which are characterised with an analogical alignment of oval-shaped slots and the occurrence of an additional perforation for fixing a pin (Hüttel 1981, tab. 8: 72, 72A; tab. 9: 86).

Both cheekpieces from grave no. 38 bear finely developed and well-preserved ornamentation covering the body and head of the specimens. Decoration of the body consists of two horizontal bands of ornamentation, placed below and above the slots for straps. This alignment is commonly encountered on cheekpieces of the Spiš type. Examples include among others, artefacts from Belz, Ukraine (Fig. 9: 5; Bukowski 1976, tab. I: 1), Cărlomănești – Cetățuia, Romania (Fig. 10: 7; Motzoi-Chicideanu *et al.* 2012), Budapest-Lágymános, Hungary (Fig. 10: 5; Hüttel 1981, Tab. 8: 71), Spišský Štvrtok, Slovakia (Fig. 10: 4; Hüttel 1981, tab. 8: 72A) and Østrup Bymark, Denmark (Fig. 10: 1; Hüttel 1981, tab. 11: 110–111). It seems very likely that the decoration was also present on three fragmentarily preserved cheekpieces known from Jakuszowice, dist. Kazimierza Wielka (Fig. 9: 6–8; Bąk 1992, fig. 2: 1–2; Godłowski 1992, tab. 2: 2). On the other hand, a detailed analysis of the ornamentation motif contained within both bands of the decoration indicates its uniqueness. With a certain simplification, one can state that two adjoining ovals were placed in each band of the ornament covering both cheekpieces, inside of which there is an image of two antithetically aligned “tear drops”, in the wider parts of which there is a circle with a central point inside. The outline of the ovals is “toothed”, consisting of tiny triangles forming an ornament of the “hanging triangles” type. Such motifs also frame the main ornamentation bands, from the top and the bottom. This ornament was placed on the basis of the cheek-

piece head as well. The above-mentioned ornamentation motif of ovals and tear drops is very rare yet some analogues can be found. The closest, which is not very surprising, are those from Jakuszowice (Bąk 1992, fig. 1: 2; Godłowski 1995, tab. 2: 2). One of the cheekpieces discovered there is decorated with a very similar ornamentation, containing an identically expressed motif of “tear drops”. However, the ornamentation in this case is aligned vertically, not horizontally; moreover, the element of “hanging triangles” is missing (Fig. 13: 2). Similar ornamentation is present on the artefacts from Spišský Štvrtok (Fig. 13: 6; Vladar 1971, tab. 14). Another two cheekpieces from Jakuszowice are decorated with a motif of ovals and “tear drops” aligned horizontally, but formed by clearly discernible engraved lines (Fig. 9: 6, 9; 13: 3). There is one more analogue coming from a significantly larger distance. Ornamentation consisting of horizontally aligned spirals with centrally placed circles with central points inside, which conjoin one with another to form oval-shaped patterns, was recorded on two cheekpieces from Østrup Bymark on the Danish island of Zeeland (Fig. 13: 4; Hüttel 1981, tab. 11: 110–111). Similar decoration is also present on the cheekpiece from Budapest-Lágymános (Fig. 10: 5; Hüttel 1981, tab. 8: 71). The motif of ovals and “tear drops” discussed above evolved from a classical wave ornament, namely from a variant consisting of very high and tight waves, like in the case of a cheekpiece from Belz (Fig. 9: 5; Bukowski 1976, tab. I: 1). The rotation of this motif by 90 degrees to a horizontal position led to the creation of oval and “tear drops” ornamentation.

The motif of tiny “hanging triangles”, legible on both of the cheekpieces discussed in this paper, is much more common. It was encountered on cheekpieces of the Spiš type coming from Gîrbovăț, Romania and Tószeg, Hungary (Hüttel 1981, tab. 8: 74 and 76), as well as on one of the cheekpieces from Gusyatin, Ukraine (Ilchyshyn, 2016, fig. 4: 5). It occurs more frequently on cheekpieces of the Füzesabony type, for instance, on artefacts coming from Nitrianský Hrádok, Slovakia (Hüttel 1981, tab. 5: 39), where it is accompanied by wave ornamentation, or as an exclusive decoration motif on specimens from Köröstarcsa and Mezöcsát-Pástidomb, Hungary (Hüttel 1981, tab. 6: 52, 53). The heads of both of these cheekpieces are decorated with a motif of empty ovals. Although identical ornamentation has not been encountered on any other artefact, some other motifs showing a great resemblance to the former are well known. A very similar decoration, even though it consists of circles instead of ovals, was recorded on the head of a cheek-

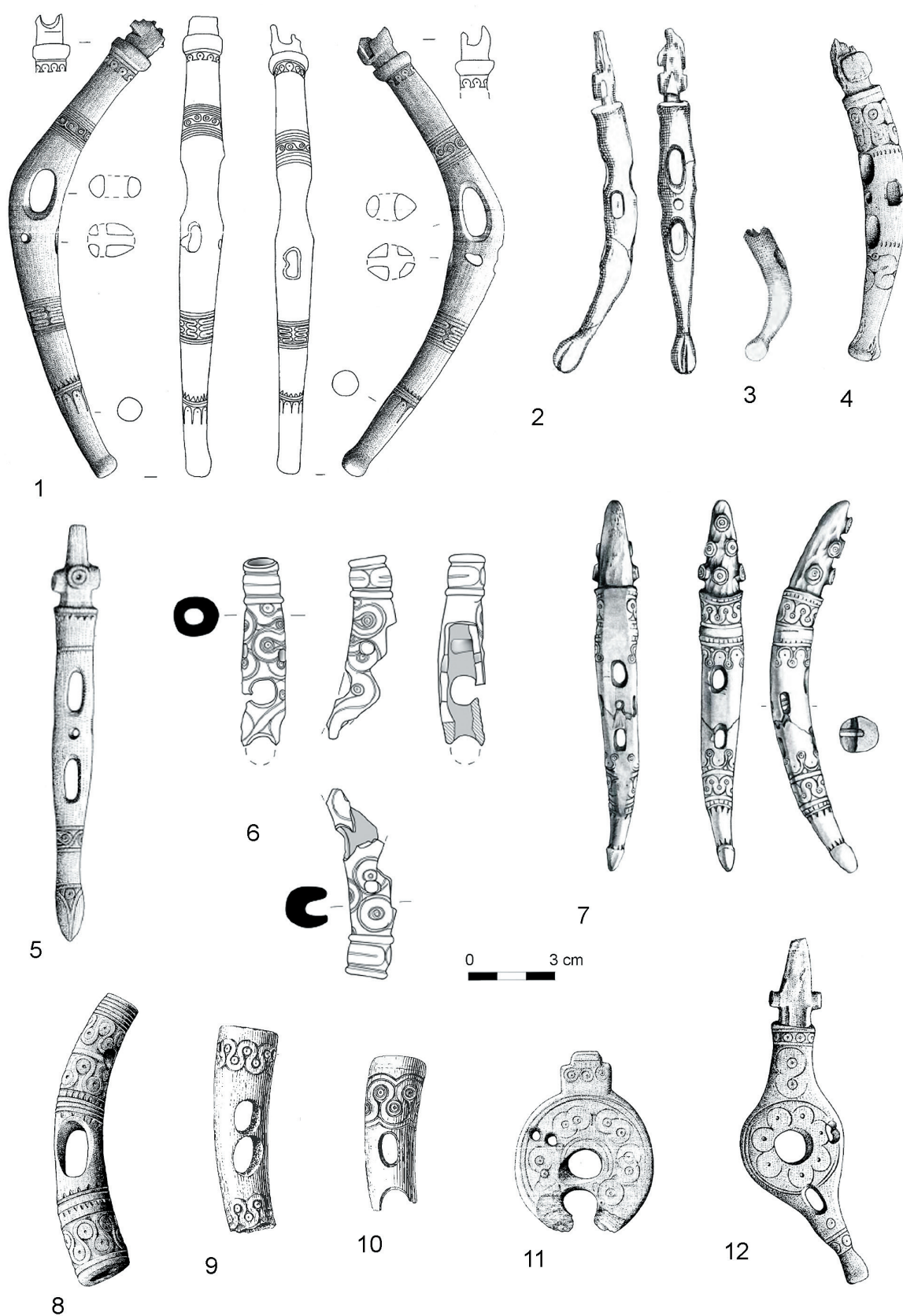


Fig. 10. Antler cheekpieces discussed in this paper: 1 – Østrup Bymark, Denmark (Hüttel 1981, Tab. 11: 110–111); 2, 3 – Spišský Štvrtok, Slovakia (ibidem, Tab. 8: 72, 86); 4 – Spišský Štvrtok, Slovakia (ibidem, Tab. 8: 72A); 5 – Budapest–Lágymános, Hungary (ibidem, Tab. 8: 71); 6 – Mitrou, Greece (Maran, van de Moortel 2014, Fig. 6); 7 – Cârlomănești – Cetățuia, Romania (Motzoi - Chicideanu, *et al.* Matei 2012); 8 – Nitrianský Hrádok, Slovakia (Hüttel 1981, Tab. 5: 39); 9 – Malé Kosihy; 10 – Veselé, Slovakia (Točík 1959, Tab. 2: 3; 3: 6); 11, 12 – Tószeg, Hungary (Hüttel 1981, Tab. 3: 26; 4: 28)

piece from Belz (Fig. 9: 5). A similar decoration, although only consisting of two large ovals, is present on the specimen from Budapest-Lágymános (Fig. 10: 5). The head of one of the cheekpieces from Jakuszowice bears two ovals which are not entirely closed on their bottoms (Fig. 9: 6). There are two further specimens from Østrup Bymark and Gusyatin, decorated with a motif of a half of an oval (Fig. 10: 1, 2; 9: 1, 3; Hüttel 1981, Tab. 11: 110–111; Ilchyshyn, 2016, fig. 3:3), although they are placed on the cheekpiece body instead of its head.

The latter decorative elements are singular circles with central points inside, mounting the top of the cheekpiece heads. An identical ornamentation motif is known from the above quoted artefacts from Belz and Gusyatin (Fig. 9: 5, 3).

Summarising the overview of ornamentation motifs encountered on the cheekpieces from the grave no. 38, it must be stressed that, although all of them have their analogues in the Danubian cultural environment, the artefacts decorated in such manner constitute a strongly distinctive group located in the northern foothills of the Carpathians, within the circle of the Trzciniec Culture (cheekpieces from Morawianki, Jakuszowice, Gusyatin and Belz). In addition, this group also includes a cheekpiece from Østrup Bymark, although the latter is isolated in terms of its geographic location.

The undecorated cheekpiece from grave no. 56 in Morawianki also represents the Spiš type. Its association with the above-mentioned specimens is expressed by its general shape, although its body is more arched-shaped. However, the strongest connection is discernible in the alignment of the slots for straps. On the other hand, the major differences include: no ornamentation at all, a lack of a linchpin, and the bolt shaped around the body, instead of embracing the three-fourth of its circumference. Also a greater part of the bolt was split off in this case, which hinders the determination of the nature of its decoration.

Similar, undecorated specimens with an arched-shaped body and a distinctive head (Fig. 10: 2, 3) are known from Spišský Štvrtok (Hüttel 1981, tab. 8: 72, 86; Vládar 1971, 8, fig. 3: 1, 3).

A separate issue are the knobs found in grave no. 38. Two of them have eyelets, which can be determined as strap junctions (antler bits). They have no ideal analogues in assemblages of other published sites. The closest analogues for the artefacts from Morawianki are represented by knobs with eyelets known from the Monteoru Culture (Fig. 12: 1, 2; Diaconu and Sîrbu 2014, fig. 1: 2, 7). Similar artefacts are

common in the Noua Culture, where they are always equipped with bronze shaft instead of an antler eyelet. In this cultural environment they are considered variously as parts of an outfit, amulets or elements of horse harness (Diaconu and Sîrbu 2014, 125). An argument for connecting them with elements of horse harness is strongly supported by a discovery of such knobs equipped with bronze shafts on the skulls of horses in the animal burial in Gusyatin (Fig. 12: 3–8; Ilchyshyn 2016, fig. 4). Artefacts resembling the specimens from Morawianki, although made of bronze, became more common from the Cimmerian horizon onwards (period V of the Bronze Age). In the territory of Poland, an undercoated bronze bit-knob dated to the HaA1 period was found in Samborowice, dist. Racibórz, 72 (Bugaj 2005, 69).

The abundantly decorated cheekpiece from Miechów, in contrast to the above-mentioned specimens from Morawianki, belongs to the group of artefacts of the Füzesabony type, variant B. According to Hüttel, cheekpieces of this type, with an arched-shaped body and lacking a distinctive bolt, are divided into variant A, with a singular perforation in the side plane of the cheekpiece, and variant B, with two slots for straps (Hüttel 1981, 66–67). Mozsolics classified cheekpieces with two slots as the Tószeg type (Mozsolics 1953, 95–97). On the other hand, according to Boroffka, the specimen from Miechów, due to an occurrence of smaller perforations placed by the cheekpiece ending, should be counted as type II, variant IIa (Boroffka 1998, 100). Cheekpieces of the Füzesabony type are associated with the Carpathian Basin (Hüttel 1981, tab. 26). However, almost 30 of them were also found at the sites of the Sabatinowka Culture and the early phase of the Bilozerka Culture on the northern shore of the Black Sea, where they are dated to the period BrD-HaA (Pankovskiy 2016, 239–240).

The specimen from Miechów is distinctive amongst the artefacts of the Füzesabony type due to a few features. Its body is oval-shaped, slightly flattened in its cross-section, in contrast to other cheekpieces which usually have a circular body in their cross-sections. The artefact in question is most likely the only one of its kind known from the related literature, with decorated endings of identical width (usually one of the endings is wider). A specimen resembling the one from Miechów, to some extent at least, comes from Tiszafüred, Hungary (Hüttel 1981, tab. 6: 56, p. 70). The latter is also slightly flattened and equipped with two small perforations drilled next to its upper ending (although their alignment is different). The cheekpiece from Miechów, however, is not

the first artefact of this type known from the extent of the Trzciniec Culture. An undecorated cheekpiece of the Füzesabony type was encountered at the site Kraków – Cło, in Poland (Górski 2007, tab. 46A: 1).

Ornamentation on the cheekpiece from Miechów has no perfect analogues amongst the artefacts published in the existing literature. It is decorated with two horizontal bands of wave-banded ornament embracing approximately half of the body circumference, placed below and above the central part of the cheekpiece equipped with two slots for straps. This alignment of ornaments is typical of many artefacts of this kind (Hüttel 1981, tab. 5: 39; 40, 42). Moreover, there appear two further fragments of analogical ornamentation placed vertically, along the axis of the specimen, in its upper and lower part, which must be considered a solution which has not been recorded on any other cheekpiece. A characteristic trait of the ornament on the cheekpiece from Miechów is the manner of its execution, namely using a tool of the compass type. The ornament consists of waves formed by fragments of circles and entire circles engraved with the use of the compass tip. Clearly readable is the point where the steady leg of the compass was anchored, used as an element of decoration as well. Cheekpieces of various types, ornamented using the above-described technique are known, among others, from Tószeg, Hungary (including a specimen decorated in the so-called “Mycenaean style”, Fig. 10: 11, 12; Hüttel 1981, tab. 3: 26; 4: 28), Malé Kosihy and Veselé, Slovakia (Fig. 10: 9–10; Točík 1959, tab. 2: 3; 3: 6), Nitrianský Hrádok, Slovakia (Fig. 10: 8; Hüttel 1981, Tab. 5: 39) and Cărlomănești – Cetățuia, Romania (Fig. 10: 6; Motzoichideanu *et al.* 2012, tab. 11). Recently, a cheekpiece decorated using this technique has been discovered in Greece, within a building of an elite nature at the Mitrou site (Maran and van de Moortel 2014, fig. 6). The ornament under discussion corresponds well with the so-called *karpätenländischostmediterrane Wellenbandornamentik*, namely the Carpathian and east Mediterranean wave-banded ornamentation. This is the type of stylistics that developed within the circle of the Danubian cultural units, such as Maďarovce-Věteřov-Böheimkirchen, Vátya, Mureș, Vatin, Otomani - Füzesabony, Wietenberg and Monteoru Cultures (David 2007, 412–413). Artefacts decorated in this style are encountered in the territory of the middle basin of the Danube River, in the Peloponnesian peninsula and western Asia. Such ornaments are recorded on fittings, boxes of the pyxis type, cheekpieces, and stone stelae. In Greece, artefacts decorated in this manner are concentrated within three sites, namely Mycenae,

Kakovatos and Staphylos, where they were found in tholos tombs and shaft graves, always accompanying abundantly furnished burials while in the Danubian zone they are significantly more common. In the latter region they were usually made of animal bones and antler, but metal specimens were also recorded, even those made of gold. Such artefacts are more frequently found within tells or fortresses. The existence of this ornamentation style evidences the close relationships between the cultural environments of the Carpathian Basin and Mycenaean Greece (David 2007, 412–414). Other scholars have suggested that the genesis of this type of ornamentation should be sought elsewhere, in the cultural environment of the Pontic steppe, where cheekpieces decorated in the style under scrutiny can also be found (Penner 1998, 20–22).

Another artefact found in Miechów is a cheekpiece in the shape of the letter “Y”. It belongs to the type much less common than the specimens discussed above. In the existing literature, identical artefacts can be found classified as strap junctions, namely elements of a horse harness placed above the cheekpiece, on the upper part of the horse’s jaw (Bandi 1963; Choyke 2005, 140). S. Penner (Penner 1998) presented various possible interpretations of artefacts of this type. They could have been used as both strap junctions or cheekpieces, transitional forms between plate and rod types, and characteristic only for the Carpathian regions. The above-mentioned scholar distinguished them as the ypsilon type, and mapped all of the known, rare artefacts of this type (Penner 1998, 52–54, 55–58; tab. 9). The best matching analogues for the specimen from Miechów come from the territory of Hungary. These are represented by undecorated cheekpieces from Jászdózsza – Kápolnahalom (Fig. 11: 2; Choyke 2005, tab. V: 1), Tiszafüred (Fig. 11: 3; Penner 1998, tab. 9: 7) and Tószeg (Fig. 11: 4; Penner 1998, tab. 9: 6). Another formally close, albeit geographically very remote, analogue comes from Turkey, from the Alaça Höyük site (Fig. 11: 9; Hüttel 1981, tab. 42: III.1). An argument for considering the above-mentioned artefacts as cheekpieces instead of strap junctions is provided by an analysis of the sizes and alignment of perforations drilled within them. Similarly to circular plate cheekpieces from Füzesabony and Tiszafüred, Hungary, or Trachtemirov, Ukraine (Fig. 11: 5, 6, 7; Hüttel 1981, tab. 3: 24; 3: 24A; 2: 14, 15), they are equipped with centrally drilled large perforations, accompanied by another slightly smaller one. Around these two perforations there are other tiny perforations in a changeable configuration. If we consider these artefacts to be strap junctions, the central per-

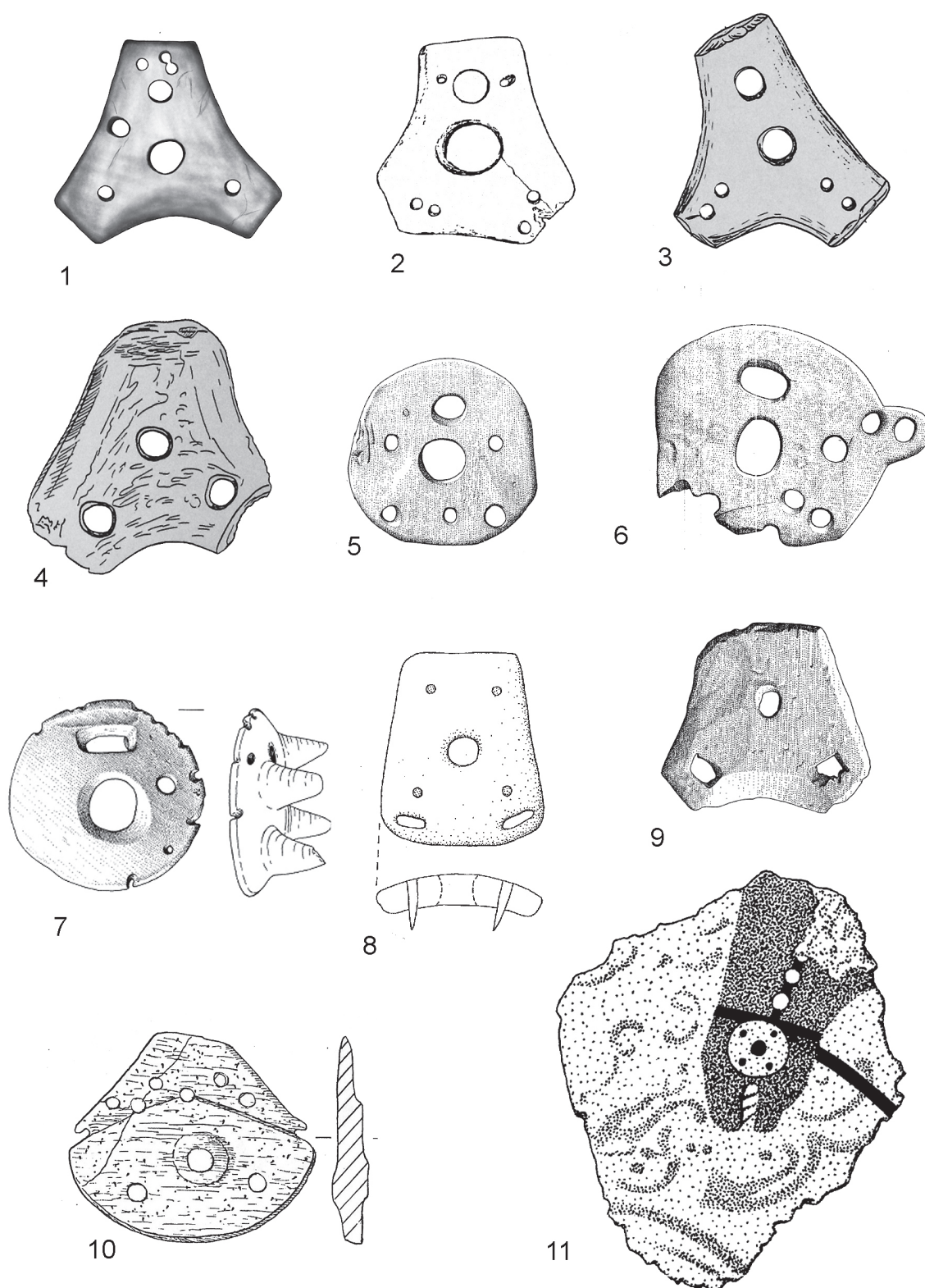


Fig. 11. Antler cheekpieces of the ypsilon type and associated plate forms: 1 – Miechów, Poland; 2 – Jászdózsza-Kápolnahalom, Hungary (Choyke 2005, Tab. V: 1); 3 – Tiszafüred, Hungary (Penner 1998, Tab. 9: 7); 4 – Tőszeg, Hungary (Penner 1998, Tab. 9: 6); 5 – Füzesabony; 6 – Tiszafüred, Hungary (Hüttel 1981 Tab. 3: 24; 3: 24A); 7 – Trachtemirov, Ukraine (Hüttel 1981 Tab. 2: 14, 15); 8 – Oarța de Sus, Romania (8; Boroffka 1998, Tab. 9: 1); 9 – Alaça Höyük, Turkey (Hüttel 1981, Tab. 42: III.1); 10 – Sintashta, Russia (Gening1992, Fig. 114); 11 – fragment of a fresco from Tiryns, Greece, with a visible harness on a head of a horse harnessed to a chariot (Hüttel 1981, Tab. 1: 9b)

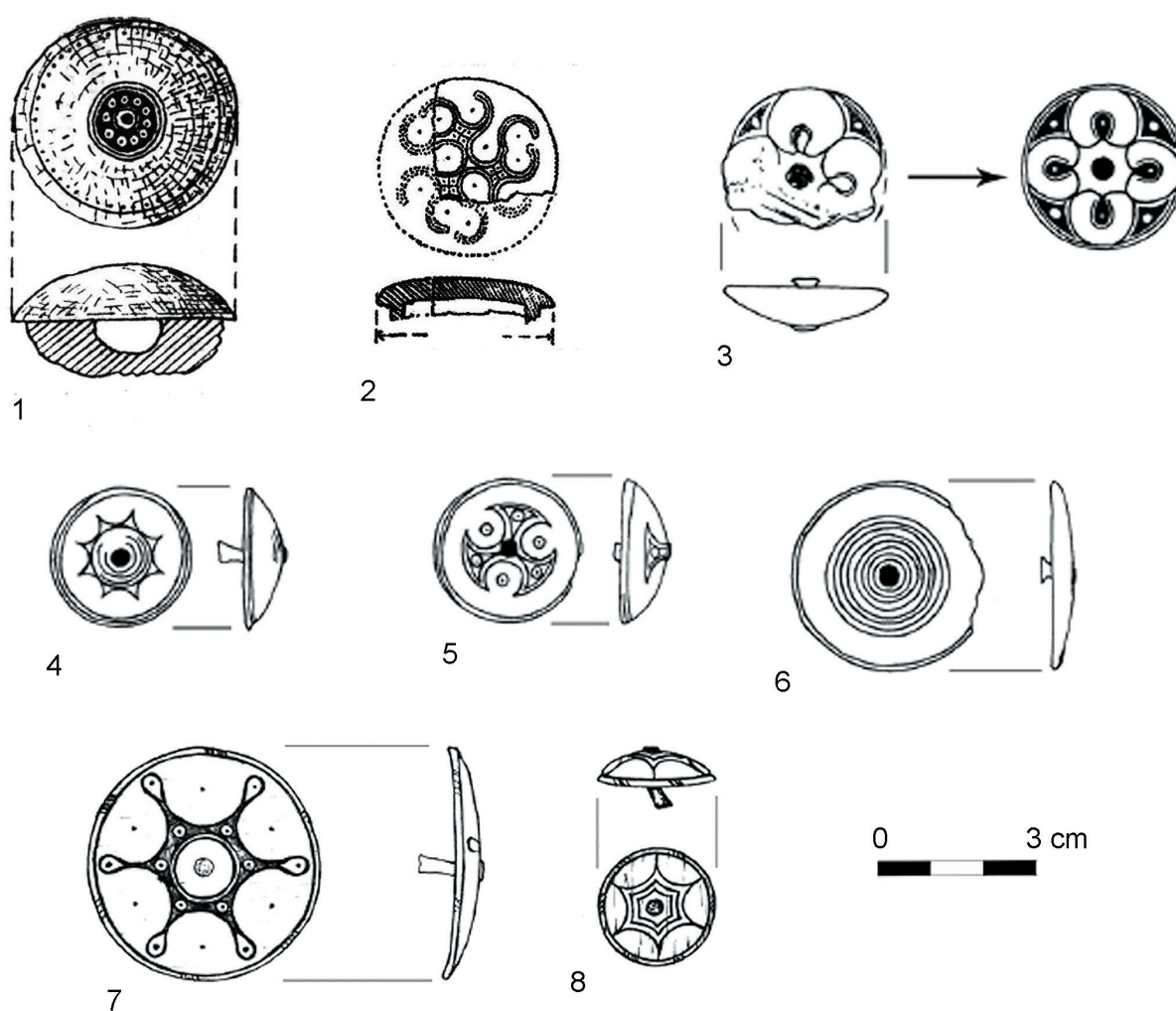


Fig. 12. Antler knobs: 1, 2 – from the sites of the Monteoru Culture (Diaconu, Sirbu 2014, Fig. 1: 2, 7); 3–8 – and from Gussyatin, Ukraine (Ilchyshyn 2016, Fig. 4)

foration becomes absolutely useless. A characteristic shape of cheekpieces of the ypsilon type is inscribed within a circle, which leads us to assume that they were used identically as circular plate cheekpieces, in fact being one of their variants. Also noteworthy is the existence of a certain number of cheekpieces deriving from the circular specimens, trapezoid in shape, such as the artefact from Oarța de Sus (Fig. 11: 8; Boroffka 1998, tab. 9: 1), as well as the commonly encountered plate cheekpieces in the Sintashta Culture, which are semi-circular and trapezoid in shape (Fig. 11: 10; Gening 1992, fig. 114), the formal position of which is between the circular and ypsilon type cheekpieces.

The last discussed artefact was found in Jakuszowice. Its apparently trivial form hinders its classification to any type of rod cheekpieces described in the related literature. It differs from the specimens of the Spiš type due to the location of the perforation drilled in the frontal plane directly above the cheekpiece

head. Solutions of this sort are recorded for cheekpieces of the Füzesabony type. However, with regard to the latter, cheekpieces with plastically distinguished heads have never been encountered. In such a case we should consider the artefact under study as a local variant, combining traits of both of these types.

Cheekpieces within the Trzciniec Cultural Circle

The cheekpieces discussed in this paper are not the first artefacts of this type known either from the extent of the Trzciniec Culture, or the widely considered Trzciniec Cultural Circle (TCC– referring to the Trzciniec-Komarov-Sośnica cultural circle; Makarowicz 2010, 15–16). The settlement in Jakuszowice has delivered as many as six cheekpieces of the Spiš type, all of which preserved fragmentarily. Four of them

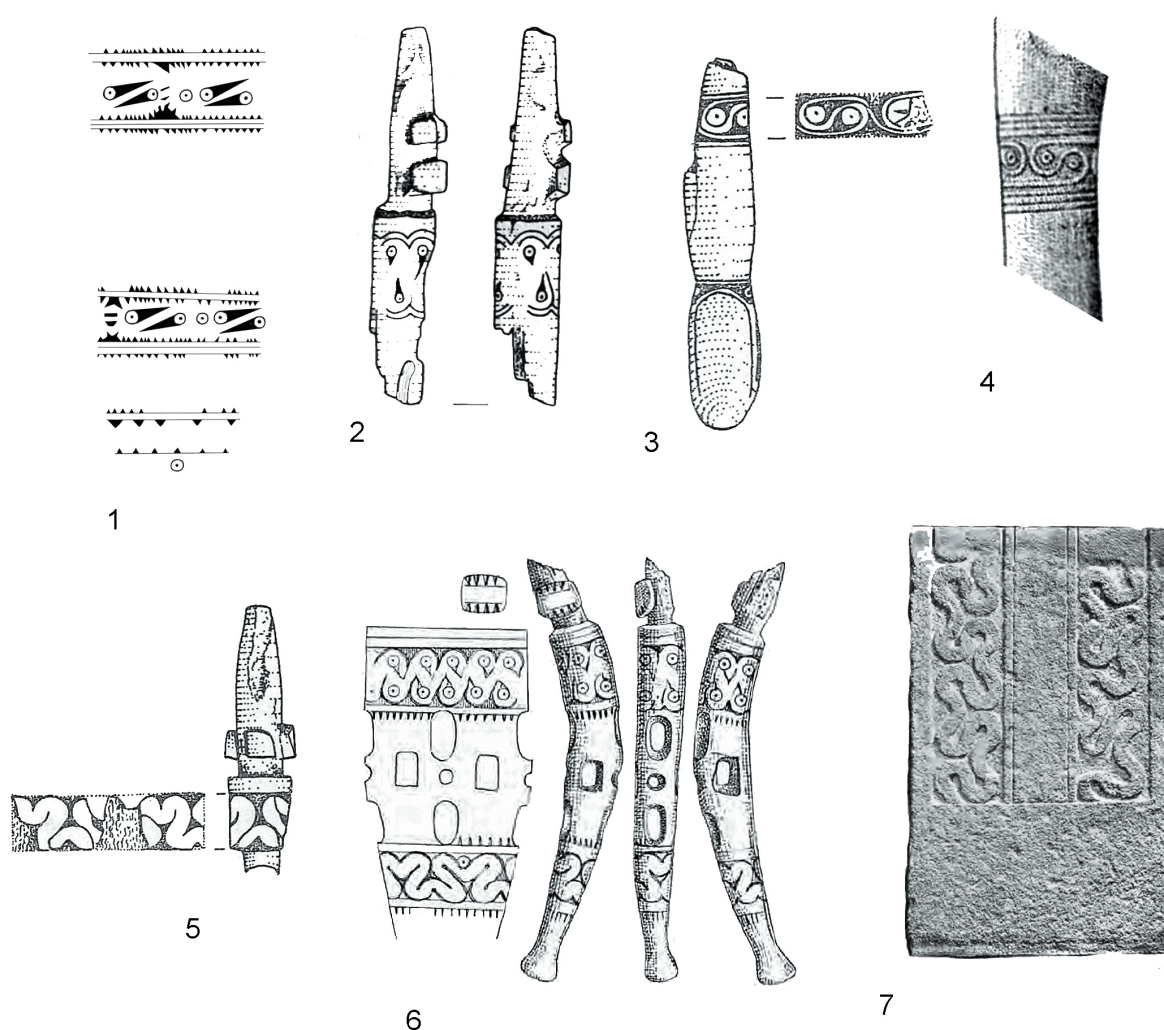


Fig. 13. Examples of wave-banded ornamentation: 1 – ornament on a cheekpiece from grave No. 38 in Morawianki; 2, 3 – decorated cheekpieces from Jakuszowice, Poland (Godłowski, Rodzińska-Nowak 1995, Tab. 2: 1, 2); 4 – Østrup Bymark, Denmark (Hüttel 1981, Tab. 11: 110); 5 – Jakuszowice (Bąk 1992, Fig. 1: 1); 6 – Spišský Štvrtok, Slovakia (Vladar 1971, 8, Fig. 3: 1, 3); 7 – Mycenae, Greece (David 2009, 420, Tab. CV: d4)

represent forms abundantly decorated with wave-banded ornament (Fig. 9: 6–9). Three of them were found within the cultural layer (Bąk 1992; Godłowski 1992, Godłowski and Rodzińska-Nowak 1995), the fourth one – in a small feature, trapezoid in shape. The scarce fragments of pottery accompanying the latter (Bąk 1992, fig. 1, 2: 3–7) can be associated in general with the classical phase of the Trzciniec Culture development (assemblages of type A acc. to Górski 1997). Particularly noteworthy is the cheekpiece preserved only in its lower part, decorated with a very specific ornament of “soft”, plastic, waved band, not containing any circular elements, engraved with the use of a compass (Fig. 9: 7). This motif is encountered extremely rarely in the Danubian zone. The closest analogue for the above-mentioned motif is represented by the upper band of the ornament recorded on the

cheekpiece of the Spiš type from Spišský Štvrtok (Fig. 13: 6; Vladar 1981, tab. 14). On the other hand, close analogues for decoration of this type are very easy to find in Greece, where it appears on both metal (grave no. 56 in Mycenae and David 2007, 420, tab. CV: d1) or stone artefacts (e.g. stelae from the shaft grave no. II in the grave complex A, fig. 13: 7; David 2007, 420, tab. CV: d4). The fifth cheekpiece from Jakuszowice is an undecorated specimen, belonging to the Spiš type, and was found within the cultural layer (Górski and Przybyła 2014).

Another cheekpiece should also be linked with the Trzciniec Culture, one oft-mentioned in the existing literature from Belz, reg. Sokal in Ukraine (Fig. 9: 5; Bukowski 1976, tab. I: 1). The context of its discovery is unknown, as a result of which the determination of its cultural affiliation and dating are varied. Accord-

ing to the former scholars it should be linked with the Scythian or Thraco-Cimmerian Culture, the early phase of the Lusatian Culture or late phase of the Trzciniec Culture (Bukowski 1976, 13–14). It has also been associated with the Noua Culture as well (Bąk 1992, 160). Its chronology is sometimes connected with the period Br D/HaA, but based on the results of analyses Hüttel ultimately dated the cheekpiece in question to the decline of the period Br A and the older phase of the period Br B (Hüttel 1981, 87–88; tab. 46). Its affiliation with the Noua Culture must be definitively rejected since Belz is located outside of this ecumen's boundaries, within the extent of the Trzciniec Culture (Makarowicz 2010, fig. 1.1). With regard to the dating issue, due to very legible relationships of details of its ornamentation with cheekpieces from the grave no. 38 in Morawianki, a grave from Gusyatin and cheekpieces from Cârlomanesti – Cetățuia, Budapest-Lagymanyos, and Østrup Bymark even, it should be decisively associated with the period A2 and the beginning of the period B of the Bronze Age.

There is a very interesting find of cheekpieces and a full horse bridle from Gusyatin reg. Ternopil. A grave of two horses was discovered there, covered with a barrow mound, and associated with the Proto-Komarov Culture. One cheekpiece of the Spiš type was encountered on the skull of horse no. 1, while on the skull of horse no. 2 there were another two cheekpieces of this type. In addition, next to these artefacts there were found respectively two and four antler knobs with bronze shafts (Ilchyshyn 2016). The above-mentioned specimens were subject to detailed analysis in terms of their stylistics and chronology, ultimately being dated to the second half of the period BrA2 (Bandrivskyi 2016).

From the settlement of the Trzciniec Culture at the Kraków – Cło site, an undecorated cheekpiece is known (Górski 2007, 61; tab. 46A: 1), counted to the Füzesabony type. It was discovered within a feature of trapezoid shape (ibidem, Tab. 46; 46A). The cheekpiece was accompanied by pottery that can be linked with the classical phase of the Trzciniec Culture in western Little Poland, with the subtype A2 dated to the phases A2 and B of the Bronze Age to be exact (ibidem, 57–61, tab. 34). An unpublished antler cheekpiece was also encountered in Pełczyska, dist. Pińczów (Makarowicz 2012, 195), in Michałowice (oral information provided by the grave explorer, Joanna Telega-Zagórska) and in Dębiany dist. Pińczów (discovered by M. Przybyła and J. Bulas in 2020).

The latter finds of cheekpieces found within the Trzciniec Cultural Circle mentioned in this paper come from its eastern extreme. In the locality of Kozarovychy, Ukraine, two cheekpieces were discovered on the surface of a small cemetery, coming from a devastated grave or a deposit of some other sort. However, these specimens belong to a completely different type, namely convex plate cheekpieces (Fig. 9: 10, 11), widely spread within the environment of the Multi-cordoned Ware (Mnogovalikovaya) Culture (S. Lisenko 1999, 70; tab. 5:1–2). It is possible that another discovery of a pair of plate cheekpieces of the type A can be linked with the Trzciniec Cultural Circle, one coming from Trachtemirov, Ukraine. Cheekpieces are frequently quoted with reference to their resemblance to artefacts known from Mycenae. The circumstances of the discovery of the cheekpieces from Trachtemirov remain unknown (Fig. 9: 16, 17; Hüttel 1981, 38, tab. 2: 14, 15). However, it should be stressed that they were found within the extent of the TCC settlement.

From the territory of Poland there is only one site not connected with the Trzciniec Culture that delivered finds of antler cheekpieces of horse harness. This site is the cemetery of the Lusatian Culture in Kietrz, dist. Głubczyce in Upper Silesia. Within three cinerary graves from the early phase of this cultural unit, tiny charred fragments of four cheekpieces were found (Fig. 9: 12–15). They are dated to period III of the Bronze Age (Gedl, M. 1988). Their occurrence at the cemetery in Kietrz undoubtedly evidences the existence of influences coming from the Transcarpathian cultural environment as well. However, their chronology and context are completely different from those of the above-mentioned artefacts.

The chronology of the occurrence of antler cheekpieces within the Trzciniec Cultural Circle

It seems that the emergence of cheekpieces within the TCC has certain chronological frames, narrower than those determined for the particular types of these artefacts in their genetic areas. The general dating of all types of both rod and plate cheekpieces may be enclosed within the period between the Early and the Late Bronze Age (Br A2–Br D; Borrofska 1998, 103–104). Cheekpieces of the Füzesabony type are dated to the period Br A and the early phase of the period Br B. They were encountered mostly in the Hatvan, Otomani – Füzesabony and Madarócse Cultures (Hüttel 1981, 69–72). The chronology of cheekpieces of the

Spiš type is even longer, since they were utilised from the A2 period of the Bronze Age until the formation of the Urnfield Culture (Hüttel 1981, 82–86).

Chronological frames of artefacts discovered at the TCC sites and their best analogues from the Danubian zone are, however, narrower. A horse burial from Gusyatin is dated to the second half of phase A2 (Bandrivskyi 2016, 598). A cheekpiece from Østrup Bymark in Denmark is dated to the period B of the Bronze Age, ca. 1600 BC (Vandkilde 2014, 605–606). An abundantly decorated cheekpiece from Spišský Štvrtok is associated with the development of the classical phase of the Otomani Culture (Hüttel 1981, 86, tab. 8: 73), i.e. with the period A2/B of the Bronze Age. A cheekpiece from Cărlomănești - Cetățuia in Romania is dated to the very same period, having been linked with the late phase of the Monteoru Culture development and also dated to the period between 1640 and 1520 cal BC (Motzoi-Chicideanu *et al.* 2012, 69). Also very significant is the dating of the Carpathian and Mycenae wave-banded ornamentation style (*karpátenländischostmediterrane Wellenbandornamentik*), with which the decorated cheekpieces from Morawianki, Miechów, Jakuszowice, Belz and Gusyatin correspond very well. This style developed in the period A2b and the early phase of the period B of the Bronze Age (David 2007, 415; Hüttel 1981, 87–88).

There are very few cheekpieces of the ypsilon type that have been precisely dated. An artefact of this type from Tószeg in Hungary is linked with phase A2/B1 of the Bronze Age (Penner 1998, 58), whereas a cheekpiece from Jászdózsza-Kápolnahalom was found within a layer associated with the late Hatvan Culture, dated to the years 1550–1450 cal BC (Choyke 2005, 133). However, it seems that this layer, and consequently the cheekpiece itself, should be dated much earlier, namely to the period between 2024 and 1750 BC (Raczky *et al.* 1994, 43–44).

At many sites of the Trzciniec Culture cheekpieces were encountered in both settlement features as well as graves, often accompanying ceramic artefacts. The pottery found in grave no. 38 in Morawianki, as well as in feature no. 4688 in Miechów and at the Kraków – Cło site (Górski 2007, 61; tab. 46A) bear traits typical of the classical phase of the Trzciniec Culture in western Little Poland. It was represented by profiled vessels (pots, bowls and beakers), equipped with thickened and trimmed rims, and decorated with horizontal, plastic bands. There were also numerous vessels decorated on their necks with an ornament of multiplied engraved lines. In general, they meet the criteria to count them as subtype A2

acc. to Górski (Górski 2007, 57–63). Nevertheless, with regard to the ceramic assemblage from grave no. 38 in Morawianki, there occurred fragments of two vases decorated with an ornament of horizontal engraved lines and groups of arched engraved lines, which makes them typical of the oldest assemblages of the Trzciniec Culture in Little Poland, classified as subtype A1 and representing an early stage of its classical phase, from period A2 of the Bronze Age (Górski 1997:18; 2007:47; 2013:97). Such an early dating based on typological traits is supported by a relatively early radiocarbon date obtained from the skeleton of horse no. 1, namely 3360 ± 70 BP (1742–1535 BC within the interval 68.2%). This grave also delivered two jug type vessels, referring in terms of their form and ornamentation to artefacts known from the environment of the Otomani Culture, like those from the cemetery in Nižna Myšľa in Slovakia. In the above-mentioned region, similar jugs are associated with the younger classical phase of the Otomani Culture, dated to the decline of the Bronze Age A (Br A3; Olexa, Nováček 2013, 17–19, fig. 4). In general, other fragments of pottery should also be linked with the classical phase of the Trzciniec Culture, such as those coming from feature no. 585 (Bąk 1992, fig. 2: 3–7) and feature no. 2271 in Jakuszowice. Early classical ceramic assemblages of subtype A1, classical sets of subtype A2, and assemblages characterised with an occurrence of vessel forms affected by Transcarpathian influences of the subtype A4, are placed within considerably wide chronological frames, i.e. BrA2 – BrB1/B2 (Górski 2007, 89–91). Noteworthy is the fact that such dating is consistent with the chronology of the above-mentioned cheekpieces from outside of the territory of Poland and the development of the wave-banded ornamentation style. Therefore, it can be assumed that the episode of the emergence and existence of cheekpieces within the Trzciniec Culture in western Little Poland may be enclosed within the period A2-B of the Bronze Age (17th–15th century BC).

Collective horse burials within the Trzciniec Cultural Circle

The issue of the emergence of cheekpieces within the TCC is associated with an occurrence of collective horse burials. Features containing horse bones are quite commonly encountered within the Trzciniec Culture. They enclose settlement pits with small amounts of horse bones (Koszyce, Poland; Górski 2008, 106), or entire skeletons (Smroków, Poland; Górski and Włodarczak 2010). Horse remains were

also recorded in the context of human burials. This is best exemplified by a collective grave of five humans and 14–16 horse skeletons from Pełczyska in Poland. A horse skull was also discovered in one of the graves at the cemetery in Małopołoveckoje, Ukraine (Górski 2008, 112; Makarowicz 2010, 258–259).

However, there is a very distinctive group of horse burials (mainly containing two horses) placed into large, rectangular pits situated under a barrow mound or on its boundary. In most cases, graves of this type enclose the skeletons of two horses, placed symmetrically along a N-S axis and with their heads directed towards each other, southward. Within grave no. 56 in Morawianki, three horses were buried on two levels. In the upper level the corpse of one individual was laid while in the lower level two other animals were placed, aligned accordingly with the rules described above (Fig. 14: 4).

A fine example of a double, symmetrical burial of horses comes from Gusyatin, Ukraine (Fig. 15: 1). Fragments of horse harness were found buried next to the skulls of horses, allowing their precise dating. According to the description (unfortunately, the plan of the entire barrow has not been published), the horse grave was located five meters to the south of the centre of the barrow, but still under its mound (Ilchyshyn 2016, 78, Fig. 2). Another double burial of horses known from the territory of Ukraine comes from Bukivna and was discovered within the barrow at the cinerary cemetery of the Komarov Culture (Bandrivskyi 2016, 112). In the territory of Poland, a well preserved grave of this type was recorded in Michałowice, where a complex of features of the Trzciniec Culture was uncovered, including human graves and two double horse burials (Fig. 15: 2), one partly destroyed by younger features. These features were the remains of the TC barrow construction like the one in Morawianki (Zagórska-Telega *et al.* 2011, 200–203). An existence of the mound that has not preserved until present is evidenced by the organisation of a younger cemetery of the Przeworsk Culture, obviously surrounding the TC barrow which must have survived until the Roman Period (Fig. 17: 4). The burial of horses did not contain any artefacts. However, within one of the human graves, a bronze pin and a number of ceramic vessels were found (Zagórska-Telega *et al.* 2011, p. 203, Fig. 3–6), which can be dated to phase A2-B of the Bronze Age. A burial of two horses, preserved in a worse condition than those mentioned above, was discovered under the mound of barrow no. II in Miernów, dist. Pińczów (feature no. 10, Fig. 14: 4). It was different from the former since the skeletons of horses were

placed along a W-E axis, within a very large pit that also contained human remains (Fig. 14: 5). The grave description mentioned only one skeleton of a horse, whereas the analysis of its plan evidently indicated the occurrence of skulls and lower limb bones belonging to two horses, arranged in a very specific alignment. The discrepancy between these two interpretations was most likely due to a poor state of preservation of bones (merely skulls and few massive long bones had been preserved). The barrow no. II in Miernów consisted of an older mound of the Corded Ware Culture, covered by an overbuilt mound of the Trzciniec Culture. The author of the barrow's publication linked the burial under scrutiny with the Corded Ware Culture (Kempisty 1978, 22–23, Fig. 5, 17). However, taking into account the absolute lack of such horse burials in the Corded Ware Culture on one hand, and their common occurrence in the Trzciniec Culture on the other, the affiliation of the barrow in question with the latter is practically certain. The grave no. 10 was situated in the eastern part of the mound, slightly to the south of the W-E axis of the barrow (Fig. 17: 2). Noteworthy was the lack of any other burial of the Trzciniec Culture under the mound, while in its central part there was only one feature, namely the pit no. 7 containing a vessel of this cultural unit (Kempisty 1978, 12–17). As a result, grave no. 10, with its human and horse remains, becomes the most crucial element of the entire sepulchral complex of the Trzciniec Culture. In terms of typology, ceramic vessels encountered within the mound no. II in Miernów are associated with assemblages of the type A1 acc. to Górski, namely the oldest phase of the Trzciniec Culture development in Little Poland, dated to the period A2-B1 of the Bronze Age (Górski 2007, 50, 85–87).

In particular, less numerous cases, the alignment of horse skeletons do not follow the pattern discussed above. Such a situation was observed with regard to grave no. 38 in Morawianki, where only one skeleton was placed in anatomical order (Fig. 14: 1), while the other was incomplete, with particular elements having been relocated. Another case like this was encountered within a grave under the barrow mound in Żerniki Górne, dist. Busko Zdrój (grave no. 41, Fig. 14: 2). At this site, the skeletons of a mare and a foal were placed into a rectangular pit, while the latter lay in the corner of the pit. This burial, like the grave in Miernów, was hypothetically ascribed to the Corded Ware Culture, a presence of which was manifested by graves discovered under the barrow mound, in companionship of burials of the Trzciniec Culture (Kempisty 1978, 49–50, fig. 37, 57). Having marked this fea-

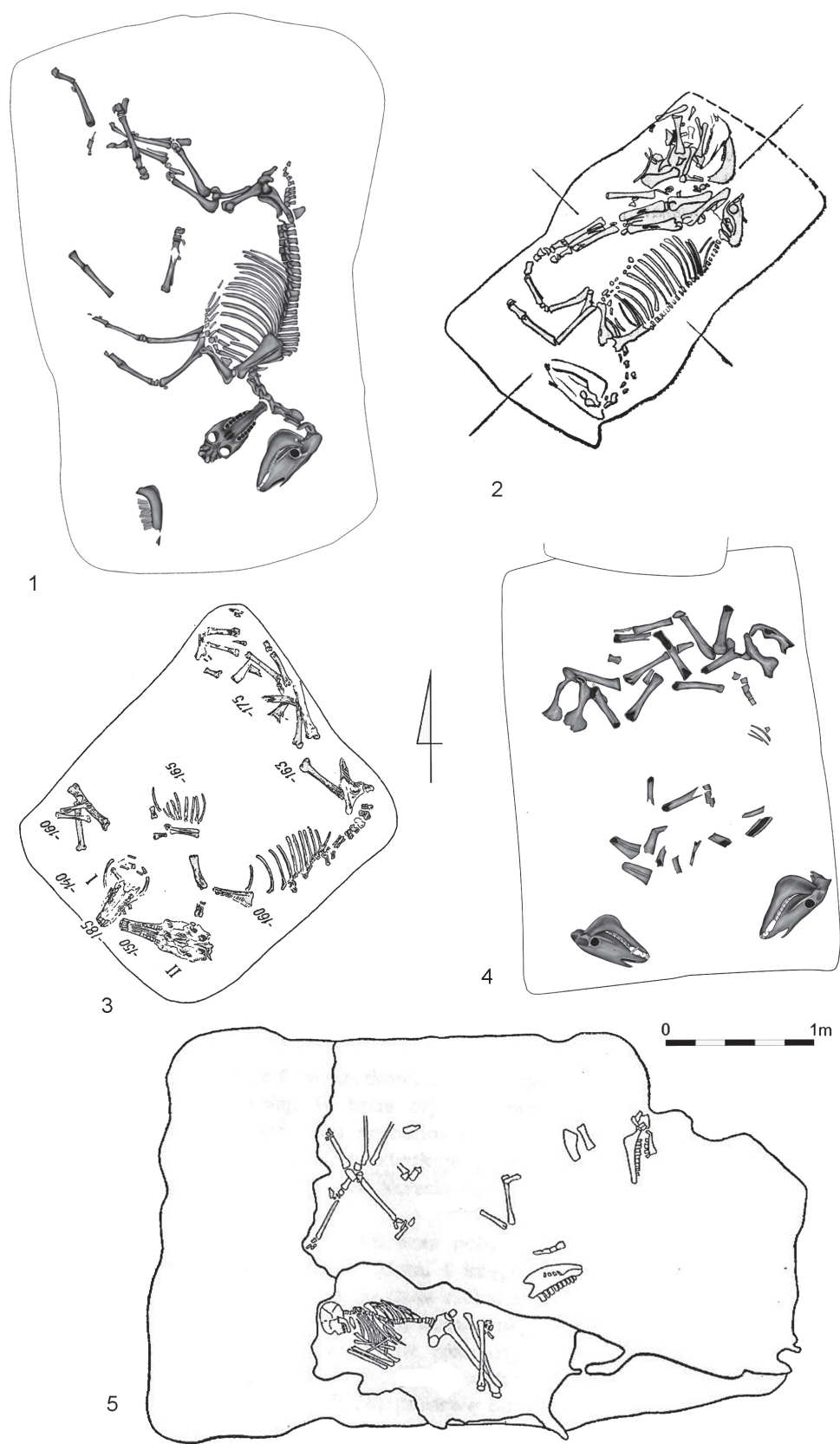


Fig. 14. Double horse burials: 1 – Morawianki, grave No. 38; 2 – Żerniki Górne, Poland (Kempisty 1978, Fig. 57); 3 – Sintashta, Russia (Gening *et al.* 1992, Fig. 102: 3); 4 – Morawianki, grave No. 56; 5 – Miernów, Poland (Kempisty 1978, Fig. 17)

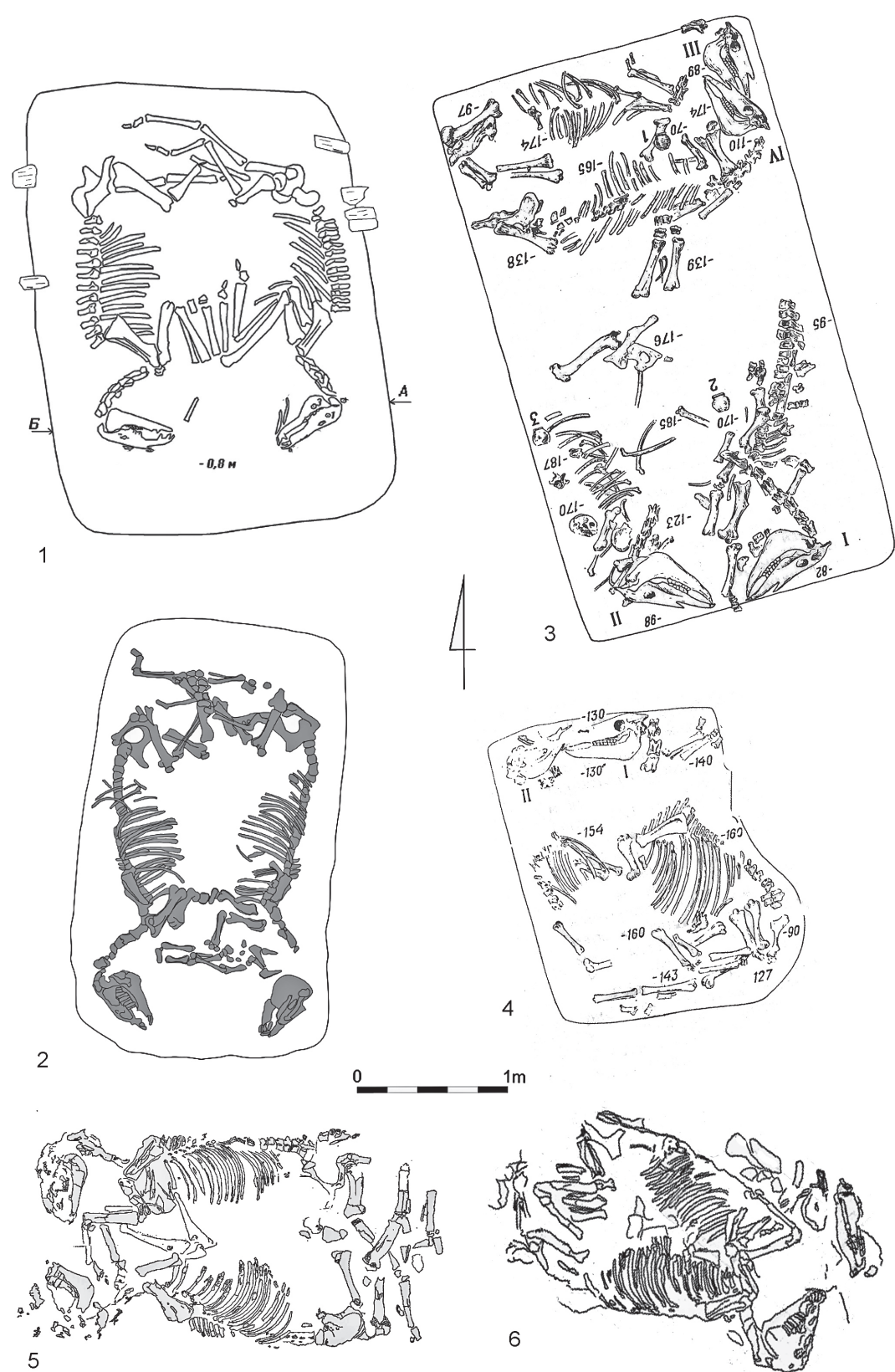


Fig. 15. Double horse burials: 1 – Gussyatin, Ukraine (Ilchyshyn 2016, Fig. 2); 2 – Michałowice, Poland (Zagórska-Telega *et al.* 2011, p. 203, Fig. 6); 3, 4 – Sintashta, Russia (Gening *et al.* 1992, Fig. 109: 1, 90); 5, 6 – Dendra, Greece (Pappi, Isaakidou 2015, Fig. 4, 8)

ture on the plan of the Trzciniec cemetery, it became obvious that it had been located in the western part of the mound, slightly to the south of its W-E axis, on the edge of one of the stone circles (Fig. 17: 2).

Another burial of this type was found in Gabułów, dist. Kazimierza Wielka, where a barrow of a nearly entirely preserved mound was explored. It contained graves of the Corded Ware and Trzciniec Cultures: one animal and three human burials (Górski, Jarosz 2006). Their alignment refers to the model known from Morawianki and Michałowice. Within rectangular pit no. 3, the scarce bones of two horses were found, including those of a lower limb and the skull of one individual, as well as a few bones of the limbs of the other. Moreover, under the mound in the southern part of the barrow, another five concentrations of bones were discovered which would have belonged to no fewer than seven horses (Abłamowicz, Kubiak 2006). The barrow's explorer, Górski, suggested that the horse burial had marked the centre of the mound of the Trzciniec Culture (Górski 2008, 112). However, it seems that the horse grave was rather situated in the southern part of the mound, while the human remains were buried outside of the mound's boundaries (Fig. 17: 5).

A very interesting discovery has been made recently in Kazimierza Wielka, dist. *loco*, where archaeologists explored a barrow with two phases of utilisation: an older one associated with the Corded Ware Culture, and a younger one with the Trzciniec Culture. With the latter, two collective human and two collective horse burials were connected. One of the latter contained six skeletons aligned symmetrically along a N-S axis, with the heads of some of them directed southward, the others' – northward. All of the burials were located in the zone adjacent to the barrow in the south-west (oral information provided by the barrow's explorer, Krzysztof Tunia). A double, symmetrical burial of horses was also explored in 2020 in Dębiany (researched by M. Przybyła and J. Bulas). Another sepulchral complex containing human burials and a collective horse grave was encountered in Wilczyca, dist. Sandomierz (oral information provided by the site's explorer, Tomasz Boroń). This is the first burial of this type recorded in central Little Poland.

At this point a question about the genesis of burials of this type should be raised. In this regard, an existing correlation between barrows with collective horse graves and the occurrence of elements of horse harness is very meaningful. Within the Trzciniec TCC, both of these elements only coexisted in the

territory of Little Poland and Ukraine. Seeking the genesis of horse burials in the Danubian cultural environment is an obvious direction due to the fact that this is the area of origins of all types of cheekpieces encountered in the Trzciniec Culture. Nevertheless, it turns out that graves of this sort are practically unknown in the Carpathian Basin. Only at the fortress of the Wietenberg Culture in Oarța de Sus (Romania) has a double horse burial been discovered, where one of the skeletons was accompanied by two cheekpieces (Boroffka 1998, 92).

A large concentration of horse burials or graves containing the bones of horses was recorded in Greece. In this territory ten sites with horse graves have been discovered which have been dated to the Bronze Age (another 15 were associated with the Iron Age). Two further sites were encountered on Crete (Kosmetatou 1993; Recht 2018, 84–85). The most famous of these is the cemetery in Dendra (Fig. 18: 3; Pappi, Isaakidou 2015, fig. 1, 2, 4, 8) previously dated to the Middle Helladic Period (Kosmetatou 1993, 37). However, more recent chronological determinations support their later dating, no sooner than to the Late Helladic Period III (1431–1132 cal BC; Pappi, Isaakidou 2015, 476). At this cemetery as many as four double horse graves were encountered, including two with a symmetrical alignment of skeletons (Fig. 15: 5, 6). Primarily, they were believed to have accompanied two tumulus tombs, however, this interpretation is currently questioned (*ibidem*, 471). Nevertheless, noteworthy is the fact that all of the horse burials were situated near the dromoi, leading to chamber graves, in the area adjacent to the graves in the south-west (Fig. 15: 2). Further burials, albeit containing individual horse skeletons, were recorded in Argolis and dated to the Late Helladic Period I–III (1600–1200 BC). A double horse grave, with symmetrically aligned skeletons, is known from the tholos tomb in Marathon (Fig. 18: 1), dated to the Late Helladic Period II (1500–1400 BC). In the corridor leading to the grave (dromos) two horse skeletons were placed in a symmetrical alignment (Daux 1959, 583–586; Kosmetatou 1993, 37–38). Unfortunately, the orientation of this burial cannot be determined based on the published materials. A collective burial of four horses was also recorded in a chamber tomb in Kokla, dated to the Late Helladic Period III (Pappi and Isaakidou 2015, 477).

Although horse graves with a symmetrical alignment of skeletons are recorded in Greece, they are not sufficiently numerous and, most likely, with too late a chronology for us to consider Greece as a generic area for this type of burial. A common cradle of the

phenomenon in question for both of the regions mentioned above should be sought elsewhere. The issue of the emergence of this type of grave in Greece has drawn the attention of scholars for quite some time. Some of them formulated the opinion that horse graves and the skill of chariot driving came from the north, from the Carpathian Basin or the eastern European and Asian steppes. One of the most essential pieces of

evidence supporting the above-quoted opinion is the emergence of antler cheekpieces in Greece together with the artefacts discovered, among others, in shaft grave no. IV in Mycenae (Diamant 1988; Harding A. 2005). At this point it should be stressed that there are also scientists who claim that horse burials in the Mycenaean Culture had Middle Eastern origins (Recht 2018). However, it seems that animal burials from the

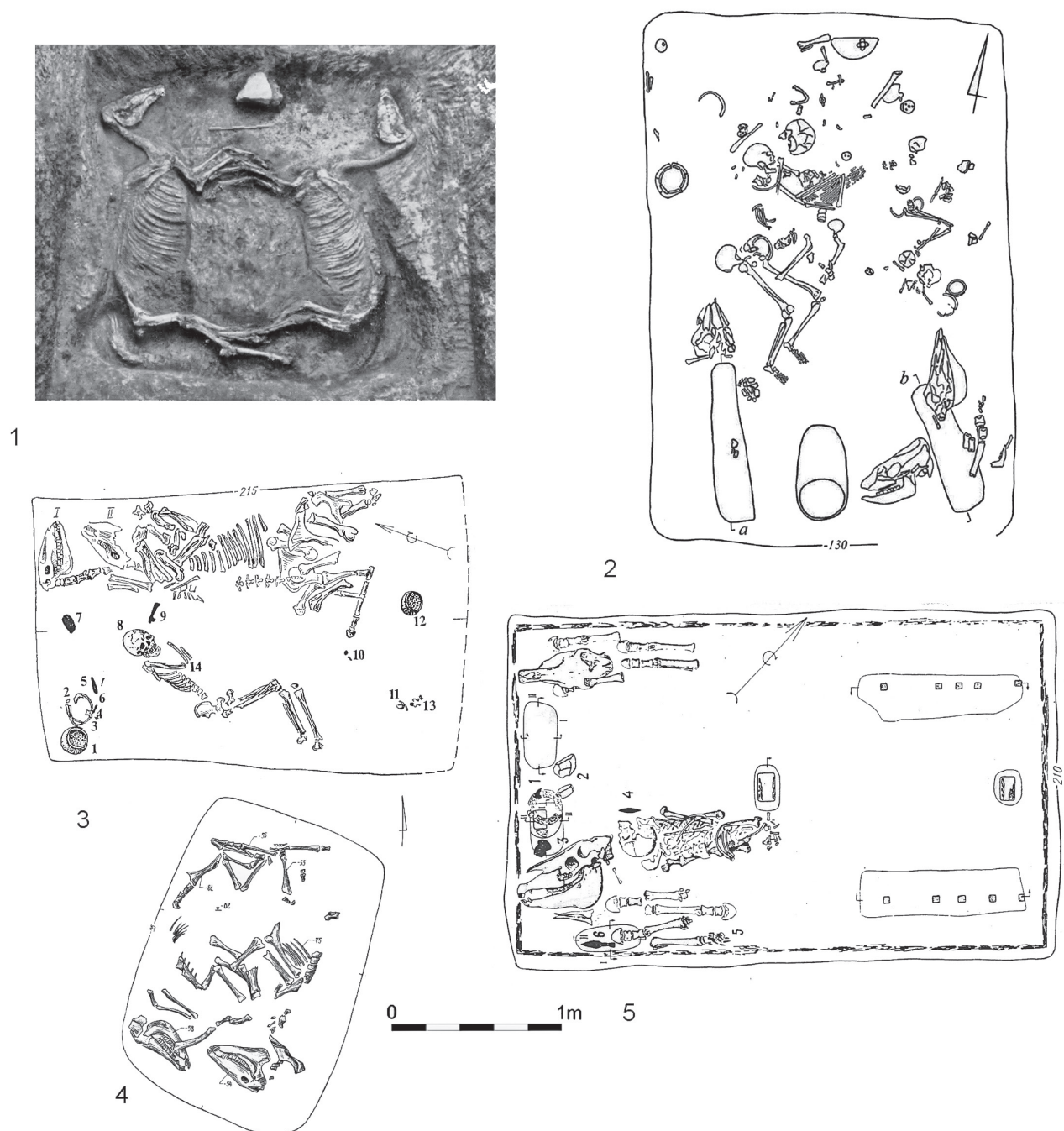


Fig. 16. Double horse burials: 1– Marathon, Greece (Stikas 1958, Fig 23); 2 – Kamennyi Ambar, Russia, (Chechushkov, Epimakhov, 2018, Fig. 5); 3 – Sintashta (Gening *et al.* 1992, Fig. 48); 4 – Steпноe, Russia (Kupriyanova, Zdanovich 2015, Fig. 106); 5 – Sintashta (Gening *et al.* 1992, Fig. 111)

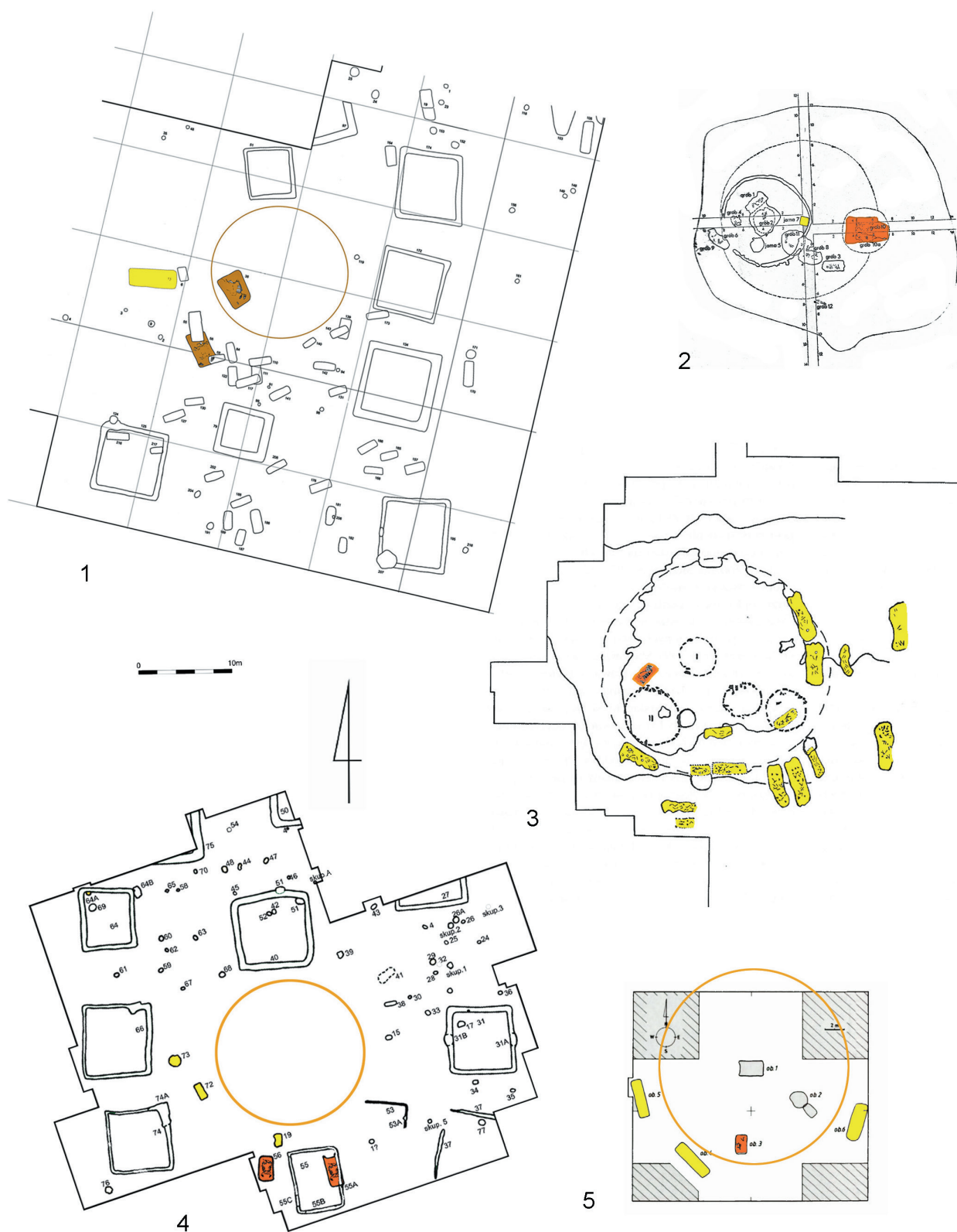


Fig. 17. Sepulchral complexes with centrally situated barrows within the extent of the Trzciniec Culture. Orange colour marks double horse burials. The yellow colour is for other features of the Trzciniec Culture. 1 – Morawianki; 2 – Miernów, Poland (acc. to Kempisty 1978, Fig. 5); Żerniki Górne, Poland (acc. to Kempisty 1978, Fig. 37); 4 – Michałowice (acc. to Zagórska-Telega *et al.* 2011, s. 203, Fig. 1); 5 – Gabułów, Poland (acc. to Górski, Jarosz 2006, Fig. 3)

It seems that in the territory of western Little Poland, a collective horse grave was an immanent feature of a sepulchral complex, the centre of which was constituted by a barrow. This is very well exemplified by recently discovered sites, such as Michałowice, Morawianki, Gabułów, Kazimierza Wielka, and thanks to renewed analysis of archival sources (Miernów II, Żerniki Górne). During earlier explorations of TC barrows in western Little Poland, horse burials had not been discovered. However, we must keep in mind that in most cases their explorers focused exclusively on the barrow mounds (e.g. Rosiejów – Reyman 1934, 49–51). Most likely this was the reason why human and animal graves surrounding the mound had not been revealed. The pattern of the functioning of horse graves within a sepulchral complex, with a barrow in its centre, seems to be very clear. Horse burials, like human graves, were situated at the foot of the barrow, within a zone adjacent to the mound in the south. Graves could have also been established under the barrow mound. In the latter case they were aligned along the W-E axis of the barrow or in its southern part. These rules are strikingly similar to the analogical rules discernible in establishing graves in the steppe zone. The SM cemetery in Sintashta was situated at the foot of the Great Barrow, on its south-western side. The rule under scrutiny is also clearly legible in the previously discussed barrows in the steppe zone from Utevkа, Komarovka, Kamennyi Ambar or Stepnoe, as well as in the case of locating horse burials in relation to human graves in the cemeteries of the Mycenaean Culture in Dendra.

Recently obtained dates from graves with chariots (established under the mounds or surrounding them), encountered at cemeteries of the Sintashta Culture such as those known from the sites in Sintashta, Krivoe Ozero, Utyovka, are enclosed within the time frame of 1950 and 1750 BC (Kuznetsov 2006, 643). According to other authors, the beginning of the Sintashta Culture should be dated to even as early as ca. 2100 BC (Anthony 2009, 59; Outram *et al.* 2011). Consequently, the earliest emergence of the above-mentioned set of features (barrow – horse burial – cheekpieces) must have taken place in the steppes of the Volga River and the Ural Mountains. Shortly afterwards, these elements also occurred in Central Europe and in the Balkans, however, their reception was not identical in all these regions. With regard to Helladic Greece, horse graves were scarce, while horse harness was represented by plate cheekpieces. Riding a chariot must have been common in those times, an assertion supported by the occurrence of images of horses har-

nessed to a chariot decorating the stelae of shaft graves in Mycenae (Harding 2005, 297), and also present on frescoes, pottery and gems (Littauer 1972).

In the Carpathian Basin, the most legible element coming from the Pontic environment was the occurrence of plate cheekpieces, and consequently, the popularity of chariots (obviously, not to mention influences of other sorts, such as earrings of the Sibin type – Ginalska *et al.* 2019, 468–469; Lichardus and Vlášar 1996: 31). Whereas, in the Trzciniec environment Pontic influences are manifested by the spreading of the tradition of erecting barrows, and the emergence of horse burials. What is interesting, plate cheekpieces are practically absent in this region (except for the easternmost site in Kozarovyky, and possibly another one in Trachtemirov). All of the other finds of cheekpieces within the TCC reveal very close connections with the Carpathian Basin.

The function of antler cheekpieces within the Trzciniec Cultural Circle

Having analysed the emergence of horses and elements of their harness, we must ask ourselves a question about the function they played in the communities that used them. They seem to undoubtedly confirm the utilisation of chariots pulled by two horses, which is strongly supported by the common occurrence of double horse burials. The emergence of antler elements of horse harness in Central Europe is frequently associated with the emergence of chariots, together with the new opportunities they brought in the practical zone (military), as well as prestigious and ideological spheres (Boroffka 1998, 117). Nevertheless, doubts have been in the existing literature referring to the potential utilisation of horse harness for riding on horseback as well (Harding 2005, 296; Kadrow 2001, 142). In cultural units developed in the steppe zone a horse burial, mostly accompanied by a four-wheeled cart or chariot, was one of the ways to express the high position and status of the dead (Outram *et al.* 2011, 119). Very numerous graves equipped with carts, wheels or models of carts were discovered within the context of the Pit Grave Culture. They are believed to have been burials of individuals with high social status (Ivanovaa and Tsimidanov 1993, 23–34). This tradition was continued by the communities of the Catacomb Grave Culture (Shishlina *et al.* 2014, 378, 391), and in the younger cultural units of the Bronze Age (Outram *et al.* 2011, 119). However, in this cultural environment there are no graves that could be considered burials of riders. This was due to

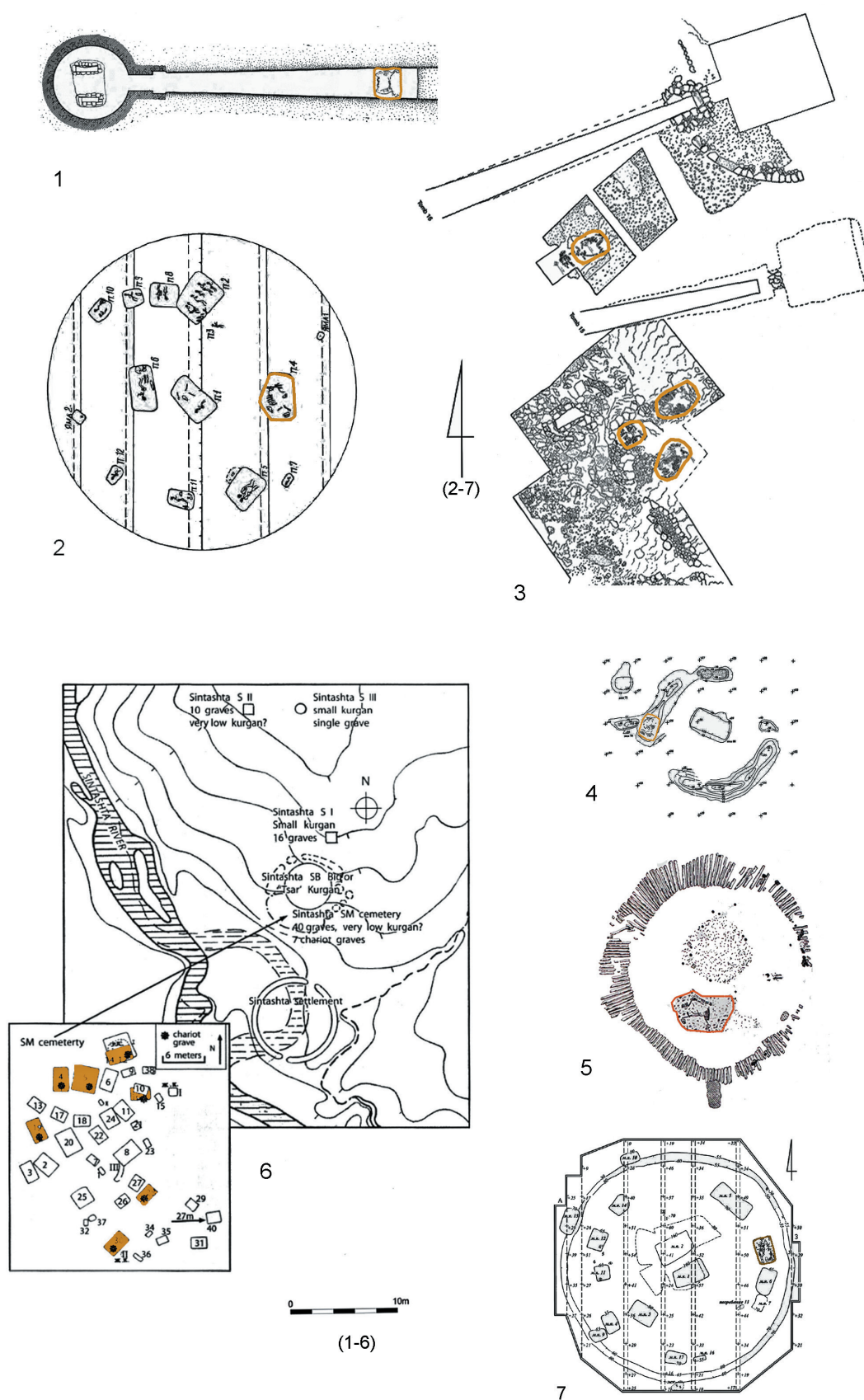


Fig. 18. Sepulchral complexes with double horse burials (marked with an orange colour): 1 – Marathon, Greece (acc. to Stikas 1958, Fig. 22); 2 – Utyovka, Russia (acc. to Lichardus, Vladar 1996, Tab. 15); 3 – Dendra, Greece (acc. to Pappi, Isaakidou 2015, Fig. 1); 4 – Stepnoe, Russia (acc. to Kupriyanova, Zdanovich 2015, 135; Fig. 106); 5 – Komarovka, Russia (acc. to Penner 1998, 78, Tab. 22); 6 – Sintashta, Russia (acc. to Hanks et. al. 2012, Fig. 20.4); 7 – Kamennyi Ambar, Russia, (acc. to Chechushkov, Epimakhov, 2018, Fig. 5)

Middle East, quoted in this paper as analogues (often containing remains of donkeys, instead of horses), are different in terms of their form and chronology from those discovered in Greece.

When searching for the region where collective horse burials which can be dated to the times under scrutiny are the most numerous, one should take into consideration the Sintashta Culture, which developed in the steppes of the Volga River and the Ural Mountains, on the borderland of present day Russia and Kazakhstan. The largest number of collective horse graves was delivered by investigations carried out at the SM site, namely a flat cemetery situated at the foot of the Great Barrow in Sintashta, Russia, adjacent to the latter in the south-west (Fig. 18: 6; Hanks *et al.* 2012, Fig. 20.4). At this cemetery, horse graves of various configurations were encountered, containing either two (Fig. 16: 3) or several skeletons. The horse skeletons were very often accompanied by antler plate cheekpieces and the burials were frequently multi-storeyed. In the successive storeys relics of sacrificial rites were found (hearths, remains of consumables, like in the grave no. 38 in Morawianki), horse burials, human graves and relics of chariots. Chariots were often placed at the bottom of the grave chambers or in one storey (Fig. 16: 5) altogether with the skeletons of humans and horses (Gening *et al.* 1992, 111–241). Amongst the horse graves one can highlight those that formally resemble the symmetrical alignments known from the Trzciniec and Helladic Cultures (e.g. graves nos. 19 and 29; Fig. 15: 3, 4), or the burials of a single horse in an anatomical order, accompanied by displaced remains of another individual (grave no. 26, Fig. 14: 3; Gening *et al.* 1992, fig. 90, 102, 109). Identical burials of horses or humans and horses are being recorded at successive sites of the Sintashta Culture, for instance, in Utyovka, Krivoe Ozero and Potapovka in Russia (Kuznetsov 2006, 641). At the site in Utyovka a double, symmetrical burial of horses was found, placed in the eastern part of the barrow (Fig. 18: 2), along the W-E axis of the mound (Lichardus and Vladar 1996, tab. 15), like in barrow no. II in Miernów. Under a large barrow mound of the Sintashta Culture in Kamennyi Ambar, Russia, there was discovered a grave containing the remains of two horses, a chariot and three humans (Fig. 16: 2). The above-mentioned grave was situated in the eastern part of the mound, along the W-E axis of the barrow (Fig. 18: 7; Chechushkov and Epimakhov, 2018, fig. 5). At the site in Stepnoe, Russia, a barrow of the Petrovka Culture was discovered, closely associated with the Sintashta Culture. The barrow contained

a double, symmetrical burial of horses, aligned along the N-S axis (Fig. 16: 4), and situated in the western part of the sepulchral complex (Fig. 18: 4; Kupriyayeva, Zdanovich 2015, 135; fig. 106, 111). Similar alignments within graves are also known from other regions of the steppe. In barrow no. 5 in Komarovka, Russia, ascribed to the Timber-grave (Srubnaya) Culture, a symmetrical grave of two horses was recorded (Fig. 18: 5), placed at a distance of a few meters to the south of the barrow's centre (Penner 1998, 78, tab. 22), analogically to the case of the barrow from Gusyatin.

The impact of the steppe environment on both the cultural units of the Early Bronze Age in the Carpathian Basin as well as the Mycenaean Culture, with the significant contribution of the Sintashta Culture, has already been widely discussed in the related literature (Diamant 1988; Lichardus and Vladar 1996; Penner 1998; Anthony 2009). However, these opinions have met with the criticism of some authors (Kadrow 2001, 199–201). In recent years, additional arguments for the occurrence of the steppe-related elements in the Mycenaean Culture have been provided by genetic studies, which indicated that certain genes of “steppe” origins could be found in individuals of the Greek elites of the Bronze Age (Lazaridis *et al.* 2017).

The occurrence of steppe-related elements was also noted in the TCC, discernible in the particular details of burial rites and ceramic vessel stylistics (Makarowicz *et al.* 2013, 164–184). It seems that the emergence of horse graves is further evidence supporting the existence of the eastern trend within the TCC. In the period A2-B of the Bronze Age in some areas within the TCC extent, enclosing Little Poland and western Ukraine, a triad of specific traits evolved. This triad consisted of barrows, collective horse graves and the occurrence of antler cheekpieces. The attempts to explain the genesis and function of the barrows in the Trzciniec Culture have been addressed in many publications (Górski 1996; Makarowicz 2011). The origins of erecting earthen mounds are most frequently seen in the local tradition deriving from the environment of the Corded Ware Culture, possibly complemented by the influences of other cultural units from Central Europe, such as Únětice, Tumuli or Iwno Cultures (Makarowicz 2012, 155). If we include the element of horse burials into our considerations on the genesis of barrows, suggesting their local origins is simply insufficient. This is due to an absolute lack of a tradition of burying horses under mounds in the Corded Ware Culture and the other cultural units that developed in the Early Bronze Age in Central Europe.

the fact that a high level of prestige was expressed by riding a chariot (Levine *et al.* 1999, 7), but also that the skill of horse riding was unknown in the Early and Middle Bronze Age. Having analysed the history of the domestication of horses, one can state that the skill of riding a horse developed much later than the skill of driving a chariot. The domestication of horses took place in the steppe regions of Eastern Europe and Central Asia. According to some studies, based mostly on the osteological analysis of horse teeth revealing traces of the utilisation of snaffle bits in the Botai and Tersek Cultures, humans rode on horseback as early as in ca. 3500 BC, or even earlier (Anthony and Brown 2011, 152–155). These opinions are, however, strongly criticised (e.g. Kosintsev and Kuznetsov 2013). In addition, it should be stressed that the utilisation of horse harness does not necessarily indicate riding on horseback exclusively, since the bridle used for driving a chariot is practically identical (Fig. 5: 6). With great certainty, the domestication of horses is dated to the end of the third millennium BC (Levine *et al.* 1999, 7). With regard to the Sintashta Culture, there are no doubts that chariots were already in use, with evidence in that environment from the 20th century BC (Kuznetsov 2006), or even earlier than 2000 BC (Anthony 2009, 59). They might have derived from even older two-wheeled carts of the Catacomb Grave Culture, dated to the period between 2400 and 2200 BC (Chechushkov and Epimakhov 2018, 478). The earliest images of two-wheeled chariots are known from the region of the Middle East and Iran no sooner than the years 1900–1800 BC (Anthony 2009, 59–61). The Hyksos introduced them in Egypt in ca. 1800 BC, in Mycenaean Greece they appeared before 1600 BC (Chondros *et al.* 2016, 230), while evidence for riding on horseback is significantly younger. Excluding an enigmatic horse skeleton from the Egyptian fortress Buhen in Nubia, dated to ca. 1675 BC, there is some evidence for the practice of riding on horseback in Egypt, Syria and the Hittite Kingdom since the 15th century BC, demonstrated by images of riders, although the role they played in contemporary military forces was absolutely marginal (Kelder 2012, 8, 10–12). The oldest images of riders on horseback in the art of the Mycenaean Greece are dated to the 13th century BC, while the popularisation of horse riding took place no sooner than in the 11th–8th century BC (Anthony and Brown 2011, 155; Kelder 2012, 1). It is noteworthy that a very similar rhythm of changes in the utilisation of horses was recorded in eastern Eurasia. According to the results of studies conducted in Mongolia, chariots were supposed to have been used there in the Early

and Middle Bronze Age, in the years 3000–1500 BC, while riding on horseback became more common in the Late Bronze Age and the Early Iron Age, after 1200 BC (Taylor 2020 *et al.*, fig. 8).

With regard to the Trzciniec Culture, there is no direct evidence of the utilisation of chariots confirmed by the occurrence of carriages of this type in burials. However, particularly noteworthy is the somewhat untypical organisation of a grave containing human and horse remains in barrow no. II in Miernów. In the central part of a large grave chamber, a burial of horses was placed accompanied by the bones of a human while the entire western part of the pit, with dimensions of ca. 120 × 310 cm, was empty. It seems that this space could have originally been occupied by a chariot. The alignment of the remains in the grave from Miernów strikingly resembles the plans of burials known from the Sintashta Culture (Fig. 16: 2, 3, 5). The maximum length of a chariot from the Bronze Age, including the drawbar, amounted to 330 cm (the box itself had a length of ca. 50 cm), and the maximum width reached 205 cm (Chechushkov and Epimakhov 2018, tab. 3). Thus, it is obvious that the space left in the above-mentioned grave chamber would not have been enough for a carriage of this type. Chariots might have also been placed in other horse burials, for instance, in grave no. 38 in Morawianki, with dimensions of 350 × 200 cm and a depth of more than 160 cm. As indicated by various examples known from the Sintashta Culture (Fig. 16: 3), in certain cases the remains of horses and a chariot took up a common space; it was possible that the chariot was placed above the horse corpses.

There is also evidence of another sort proving that chariots were used in North and Central Europe in the Middle Bronze Age since they are represented by a few iconographic images of chariots. The closest images of this kind in terms of geographical location were recorded on a vessel of the Suciú de Sus Culture in Veľké Raškovce, Slovakia (Fig. 19: 1; Vladár 1981, tab. 22). This image displayed multiple chariots pulled by two horses. The dating of this find is slightly controversial; most likely it should be associated with phase D of the Bronze Age (Furmanek 1997, 156–159). Some very suggestive images are known from southern Scandinavia. A collective image of a dozen or so chariots, to all of which two horses were harnessed, decorated a rock block in Frännarp, Sweden, in the form of an engraving (Fig. 19: 3). This engraved image is dated to the period between 15th and 13th century BC. Similar dating (period II–III of the Bronze Age) was determined for a famous image of the “chariot of

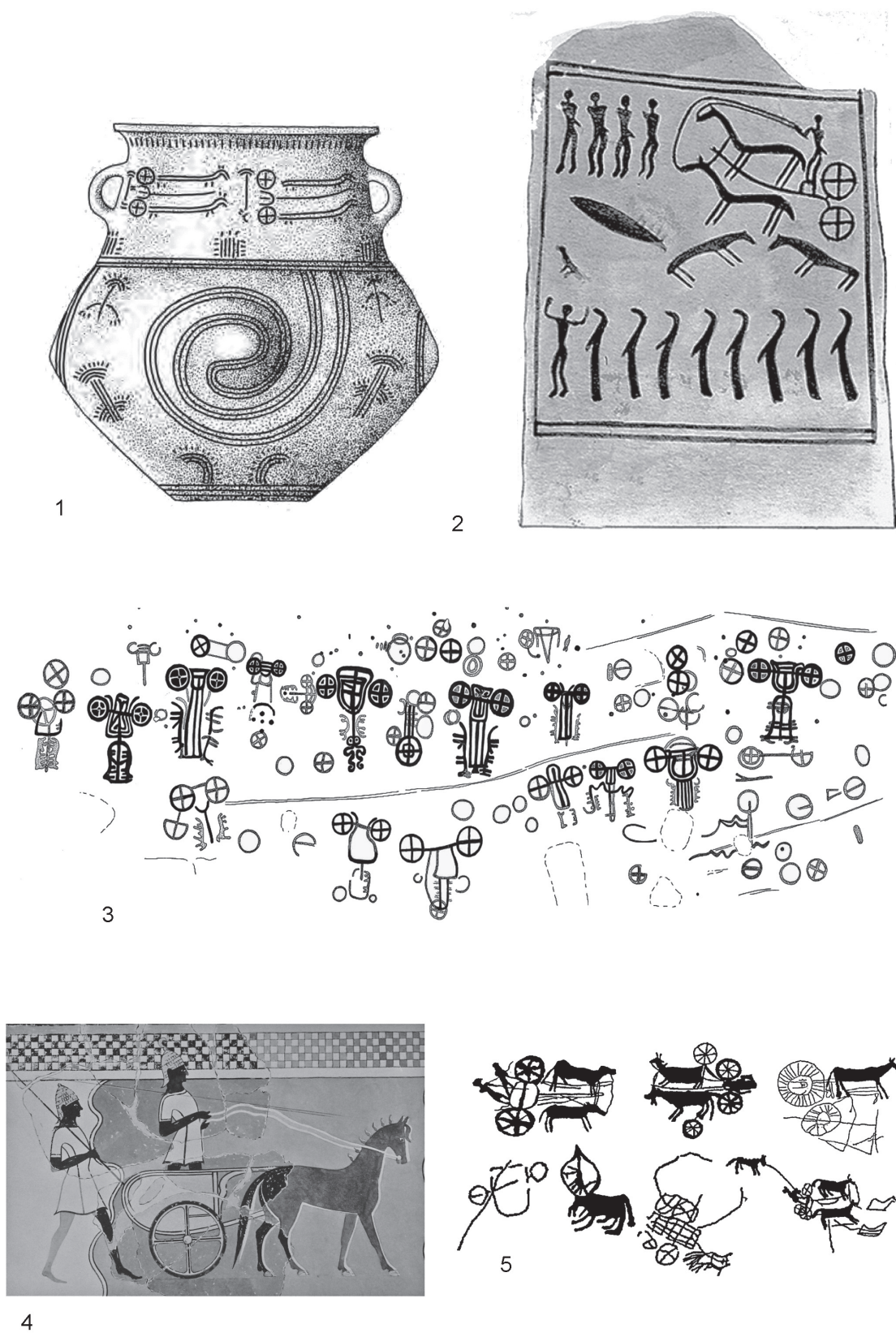


Fig. 19. Images of chariots from the Bronze Age. 1: Velké Raškovce, Slovakia (acc. to Vladár 1981, Tab. 22); 2 – Kivik, Sweden (acc. to Goldhahn 2009, Fig. 7); 3 – Frännarp, Sweden (acc. to Coles 2002, Tab. 1); 4 – Pylos, Greece (acc. to Lang 1969; Tab. 123); 5 – various sites, Kazakhstan (acc. to Chechushkov, Epimakhov, 2018, Fig. 8).

the Sun” in the form of a bronze statue from Trundholm (Coles 2002, 242, tab. 1). Another image of two horses harnessed to a chariot comes from a tomb in Kivik, Sweden, where it decorated one of the walls of the tomb (Fig. 19: 2). Its chronology was placed between the years 1400–1300 BC (Goldhahn 2009, 368, fig. 7). Formally, these images are close to the pictures of chariots pulled by a pair of horses from Kazakhstan that have been dated to the Bronze Age (Fig. 19: 5; Chechushkov and Epimakhov, 2018, 444, fig. 8).

Further analysis of the figural expressions in the territory of North and Central Europe adds weight to the conclusion that the popularisation of riding on horseback took place no earlier than in the Iron Age. This is the period from which, also in the territory of Poland, images of riders decorating ceramic vessels of the Lusatian Culture are known (Gediga 1970, 137). Nevertheless, the popularisation of horseback riding did not necessarily involve the abandonment of chariots, a fact confirmed, among others, by the find of two clay models of spoke wheels encountered in the grave no. 1287 in Zbrojewsko, dated to the period V of the Bronze Age (Gedl 2004, 69, 74, Tab. 15), and an image of a chariot decorating a vessel from Sobiejuchy and dated to the period HaC (Gediga 1970, 136–139).

Conclusion

The emergence of horse burials, horse harness and chariots, associated with the former, must have been connected with the organisational changes that took place within the communities of the Trzciniec Culture. In the existing literature there appear opinions, based mostly on the analysis of grave furnishing, that the communities of the Trzciniec Culture were egalitarian and poorly stratified, and that this cultural unit had an outstandingly “non-military” character (Makarowicz 2010, 322, 335). However, it seems that in western Little Poland there evolved more complicated social structures than those recorded in other regions within the TCC. In the younger period A2 of the Bronze Age, an extremely stable and permanent settlement network developed in the loess zone around Cracow (Górski 2017, 100). This region was situated outside of the settlement zone of the Transcarpathian cultural units in Poland, though, it was characterised with an extremely strong contribution of their influences that became even more intense after 1650 BC. Political and economical impact of the latter must have led to formation of the local elites (Górski 2017, 105–108).

It was here also that considerably numerous, usually very large, defensive settlements emerged (Przybyła *et al.* 2019, 331–332), and which are not encountered in other parts of the TC ecumene. In terms of economy, the strength of the local elites could have been based on the production of salt obtained from brine springs (Przybyła 2017, 374–375). The emergence of cheekpieces and horse graves in this area, proving the use of chariots, seems to be a significant sign confirming the existence of a distinct group of warriors/aristocrats, which has its analogues in the Danubian, Mycenaean and Pontic environments. Vandkilde indicated that a community formed conjoining the elites of the Nordic Bronze Age with the cultural units that developed in the Carpathian Basin in the 17th century BC. This was the period which saw the emergence of warriorhood, fighting techniques, a common cosmology, and when significant social changes took place. The message bearing all this content came from the south (Mycenae), and spread through the Carpathian Basin, finally reaching Northern Europe as well. The influence of Carpathian stylistics are clearly legible in the Scandinavian metallurgic craft. The most crucial compounds of the warrior’s rank were horses, chariots, horse harness and weapon; these elements constituted their high position in the hierarchy. One piece of evidence supporting the above-formulated theory is the occurrence of cheekpieces (found in Østrup Bymark) and fittings of a riding crop of the Carpathian type in Scandinavia (Vandkilde 2014). Therefore, it seems that the occurrence of numerous cheekpieces in the context of the Trzciniec Culture (a dozen or so specimens from several sites) must be considered proof that a local military elite had also evolved in this environment, and was included into the above-mentioned community. The utilisation of chariots pulled by horses must have required the existence of a group of warriors who had developed the requisite skills essential to use those means, as well as resources to create them and ensure their maintenance.

During the development of the Trzciniec Culture, western Little Poland was characterised by a great abundance of finds of horse harness elements and double horse burials. The issue of the existence of the traits discussed in this paper within the Trzciniec Culture environment has only been outlined in this paper. It is certainly an issue which requires further study, in particular research which engages complementary methods, such as microwear analysis of traces preserved on cheekpieces, and the archaeozoological examination of horse skeletons.

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