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INSTYTUT ARCHEOLOGII I ETNOLOGII POLSKIEJ AKADEMII NAUK



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Katarzyna Trybała-Zawiślak¹

THE CHOTYNIEC AGGLOMERATION AND ITS IMPORTANCE FOR INTERPRETATION OF THE SO-CALLED SCYTHIAN FINDS FROM SOUTH-EASTERN POLAND

ABSTRACT

Trybała-Zawiślak K. 2020. The Chotynicc agglomeration and its importance for interpretation of the so-called Scythian finds from south-eastern Poland. *Sprawozdania Archeologiczne* 72/2, 87-116.

Artefacts of eastern provenance, so-called Scythian ones, have been registered in Polish areas for a long time. In the western part of Polish lands, they were most often linked with Scythian invasions, and this explanation of finds was emphasized by destroyed settlements. In eastern Poland, the presence of similar artefacts, was interpreted rather in the context of contacts with the forest-steppe zone, and their almost neighbourly character was confirmed by characteristic decorations and parts of clothing. Discoveries related to the fortified settlement in Chotyniec (south-eastern Poland), together with accompanying settlements from the same time, allow for a slightly different view on the so-called Scythian finds recorded within the eastern groups of the Lusatian circle. The agglomeration should be treated as the farthest northwest enclave of the forest-steppe variant of the Scythian culture and as transmitter of certain cultural patterns. It is also a cultural phenomenon that plays a key role in the reception of the so-called eastern cultural elements.

Keywords: fortified settlement in Chotyniec, Chotyniec agglomeration, forest-steppe circle of Scythian cultures, Scythian artefacts

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1. INTRODUCTION

The discovery of a fortified settlement in Chotyniec, Jarosław district, was associated with the implementation of a research project aimed at characterizing and analyzing cultural and settlement changes in the Wisznia River basin in the Bronze Age and the Early Iron Age. These studies, carried out on a large scale (both on the Polish and Ukrainian side of the border) have resulted in a number of extremely interesting observations. The choice of the territory covered by the research was also strictly justified, because an area between the San and Dniester basins is a territory connecting two large cultural provinces - Central and Eastern European regions. This fact results in an extremely important observation – the area we are interested in (the so-called Przemyśl Gate) can certainly be treated as a kind of contact zone and a route of movement of population groups. The strategic importance of this territory is clearly confirmed by the discovery of the fortified settlement (a ring fort), which should be linked with the cultural patterns implemented in the forest-steppe zone. No less important is the identification of a settlement enclave connected exactly with the Scythian cultural circle. It concerns a number of sites – both very large and smaller settlements, which, together with the fortified settlement, were called "the Chotyniec agglomeration". The use of such a name seems to be fully justified – we are dealing here with the central location of the fortified settlement and the sites located around it, which were a kind of support area for this fortification. The research on the entire settlement complex is still in progress, therefore the current state of knowledge will be reported in this paper, as well as up-to-date discoveries and their impact on the interpretation of the so-called Scythian finds in south-eastern Poland. Implementation of this term (with reference to mentioned finds) is combined with two units of the Lusatian circle, for which various terms are currently encountered. These include the Tarnobrzeg Lusatian culture and the Lusatian culture in the Lublin region, also called the Lublin variant of the Lusatian culture (Kłosińska 2009). However, other entities may provide a broader background for the discussed issues from the east part of the Lusatian circle - the areas of Mazowsze and Podlasie and Chełm-no Land, *i.e.* in the traditional nomenclature – the Mazowsze-Podlasie group and Chełmno group of the Lusatian culture (see Dąbrowski 2009). Several naming systems are clearly visible in this division. They result partly from the state of research (a change of the out-of-date name "the Ulwówek group" for the Lublin variant of the Lusatian culture), partly from the highlighted combination of common elements of the Lusatian circle and clear regional distinctions (the best example would be the term "Tarnobrzeg Lusatian culture" - see Dabrowski 1980). They are also partly derived from the use of traditional taxonomic divisions (the Mazowsze-Podlasie group or Chełmno group), which still exist in the literature on the subject. Terminological issues undoubtedly have an ordering character, but in the context of the raised problem they are not of primary importance. That is why with the reference to the names of individual taxonomic units quoted below, although they reflect several different variants of archaeological systematics, they do not affect the general

understanding of the south-eastern zone of the Lusatian circle and the territorial context of the so-called Scythian finds in eastern Poland.

2. CHARACTERISTICS OF THE CHOTYNIEC AGGLOMERATION

As already mentioned, the concept of the Chotyniec agglomeration is connected not only with the fortified settlement, but also with the accompanying settlement sites, in which assemblages of sources were analogous to those discovered in Chotyniec. However, it should be remembered that this is basically just one of the simpler approaches to the topic of our interest. Therefore, it is worth reviewing this issue in greater detail.

Data on the settlements located closest to the fortification were already published (Czopek et al. 2018; Czopek 2019), but it is worth relating some of the most important information. The three largest sites - Hruszowice, sites 2 and 16, Przemyśl district, and Chotyniec, site 7, Jarosław district, were investigated on a large scale, as part of the motorway research program. Although they are multicultural settlements, we can certainly distinguish a very substantial set of sources related to the Early Iron Age. Such a chronology – despite some doubts related to, for example the flattening of the calibration curve – can also be attributed to radiocarbon dates originating from the settlement at site 2 in Hruszowice (see Czopek 2018c, 197). Unfortunately, their interpretation is not straightforward, due to the fact that one of the dates may also correspond to the pre-Scythian horizon, which (even though is possible) has not yet been confirmed by archaeological sources, even those recorded within the fortified settlement. A little further (about 6 km) southwest of Chotyniec, a vast settlement at site. 24 in Nienowice, Jarosław district, was recorded, where the discovered sources (ceramic and metal) fit typologically very well into the set of materials characteristic for the agglomeration. Furthermore, additional points located in the immediate vicinity of the fortified settlement are still being recognized – at least a dozen sites with ceramic materials of the type known from Chotyniec are known from surface surveys. It is very challenging to determine the eastern extent of the agglomeration. Although analogous sources are known from settlements located in Korczowa, a much broader surface survey of the entire Polish-Ukrainian border area is definitely needed (Trybała-Zawiślak 2019, 278). Therefore, it is necessary to return to the issue previously described, *i.e.* the extent of the Chotyniec agglomeration. So far, the clearly separated boundary between eastern groups, such as the Leznica or Cherepin-Lagodiv groups, and the western zone assigned to the Tarnobrzeg Lusatian culture seems to be increasingly problematic in light of recent discoveries related to the agglomeration. The similarity of ceramic materials is so great that it cannot be said without doubt whether they should be linked with the aforementioned eastern groups or with the Chotyniec agglomeration (see Czopek 2019, 135). In this context, defining the agglomeration as a fortified settlement and the closest few neighbouring settlements is only one possible option. A wider territorial and cultural context is most likely, although at the current stage of research (especially when we take into account the disproportion in the field research of sites on the Ukrainian side of the border) it is still quite difficult to prove.

Although the research on the Chotyniec microregion is still ongoing, undoubtedly it should be connected with the Scythian cultural circle. Its cultural "identity" becomes even more visible in the face of neighbouring, typical "Tarnobrzeg" sites. It must be remembered that the identification of the agglomeration opens a new chapter in studies of the Early Iron Age; it is the first in the territory of south-eastern Poland, and in a much wider area as well, where sources of the so-called eastern type have been identified. The declining phase of the Tarnobrzeg Lusatian culture is characterized by these elements in a special way; its specificity and difference to earlier stages is characterized mainly in context of sources of the eastern type. Such an approach is not surprising, owning to the fact that many years ago, when this taxonomic unit was just being recognized by researchers, it was believed that these eastern type elements provided its characteristic form (see Moskwa 1982; Gediga 1989; Gedl 1989), along with distinguishing a new phase in its development, so-called Phase III (Czopek 1989). Therefore, the mutual relations between the agglomeration and the Tarnobrzeg Lusatian culture can be quite difficult to define precisely, especially since the unification of material culture in the Early Iron Age applies to the very extensive territory of Central and Eastern Europe. There is no doubt that the Tarnobrzeg settlement is still a very important component of the cultural diversity of the Early Iron Age (Trybała-Zawiślak 2019, 363), although the differences between phases II and III of this cultural unit are so clear (Czopek 2007c) that the argument regarding the uninterrupted use of large cemeteries becomes essential in the context of the cultural continuity of this area. However, another important issue is the previously unrecorded identification of settlement processes, which are confirmed, on the one hand, by a newly-established necropolis with graves organized in clusters, and on the other hand, by the presence of very extensive settlements with separable functional structures indicating the chronological and spatial development of settlements (see Czopek 2014a, 2014b). The affiliation of these sites (despite the sources recorded there, especially pottery sherds in the foreststeppe type) with the Tarnobrzeg Lusatian culture is unquestionable. In this context, another interesting settlement (also extensive) at site 1 in Grabowiec, Jarosław district, is a very good example of the complicated "Chotyniec-Tarnobrzeg relationship". Eastern-type materials identified there are not very numerous, although the distance from the fortified settlement in Chotyniec is quite small. In this case, the cultural identification of the settlement should be unambiguously linked to the Tarnobrzeg Lusatian culture (Czopek 2018b; Trybała-Zawiślak 2019). Therefore, the Chotyniec agglomeration – understood as an enclave of the forest-steppe settlement variant of the Scythian culture - is now a very expressive and permanent element of the cultural image of Polish lands, and the adaptation of eastern stimuli in many cases leads not only to the unification, but also to a somewhat Scythization of material culture.

3. THE SO-CALLED SCYTHIAN FINDS – SOURCE CHARACTERISTICS

The concept of Eastern or Scythian elements in the literature on the subject has been known for a long time, thus these are obviously not new concepts. The interpretation usually tended to view such elements as the manifestation of references, influences, impulses, infiltration, or more widely understood relationships, though sometimes difficult to define. This mainly applied to finds from the eastern part of Poland, unlike western Lusatian groups, where the finds were primarily treated as evidence of military expansion and

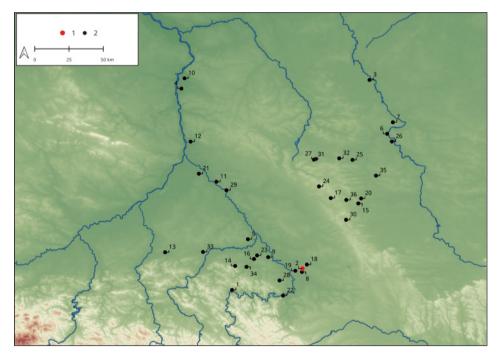


Fig. 1. Military items – finds from south-eastern Poland: 1 – Bachórz, Rzeszów district; 2 – Chotyniec, Jarosław district; 3 – Dorohusk, Chełm district; 4 – Głodno, Opole Lubelskie district; 5 – Grodzisko Dolne, Leżajsk district; 6 – Gródek, Hrubieszów district; 7 – Hrebenne, Hrubieszów district; 8 – Hruszowice, Przemyśl district; 9 – Jarosław, district Loco; 10 – Kłodnica, Opole Lubelskie district; 11 – Kłyżów, Stalowa Wola district; 12 – Kosin, Kraśnik district; 13 – Kozodrza, Ropczyce district; 14 – Lipnik, Przeworsk district; 15 – Machnów Stary, Tomaszów Lubelski district; 16 – Maćkówka, Przeworsk district; 17 – Maziły, Tomaszów Lubelski district; 18 – Młyny, Jarosław district; 19 – Nienowice, Jarosław district; 20 – Nowosiółki Kardynalskie, Tomaszów Lubelski district; 21 – Obojna, Stalowa Wola district; 22 – Przemyśl, district Loco; 23 – Rozbórz, Przeworsk district; 27 – Topornica; Zamość district; 28 – Trójczyce, Przemyśl district; 29 – Ulanów, Nisko district; 30 – Werchrata, Lubaczów district; 31 – Wieprzec, Zamość district; 32 – Wolica Śniatycka, Zamość district; 33 – Zaczernie, Rzeszów district; 34 – Żuklin, Przeworsk district; 35 – Żulice, Tomaszów Lubelski district; 36 – Żyłka, Tomaszów Lubelski district;

Scythian invasions. In addition, the researchers noted differences in the proportions of certain categories of artefacts – in the eastern part of the Polish lands they were mainly decorations or parts of clothing, whereas in the west, the vast majority were military items (Bukowski 1977). Today this view may still be supported, though not entirely. While Scythian invasions and their traces discovered in destroyed Lusatian settlements are beyond dispute (Chochorowski 2014, 37, 41), the proportions of individual types of artefacts (especially in terms of two basic groups, *i.e.* militaria and decorations) have changed slightly. Before we get into more detailed information, it is important to note what sources we consider to be "Eastern" or "Scythian" finds. In the group of military items (Fig. 1), arrowheads of several types are still the largest and most common group of artefacts. The category of materials related to armaments can also be supplemented with individual items of iron battle-axes or acinaces. The second group is quite diverse – these are objects related to, for example, horse harness and riding ware, as well as other artefacts such as whetstones or iron knives, although they are not represented by many examples. At the same time, these items are often treated as attributes and permanent equipment for Scythian warriors, so they could basically be included in a set that contains military items. Finally, the third, quite substantial group are ornaments and clothing items, primarily represented by nail-shaped earrings and small hoop ornaments, as well as pins and glass beads.

Let us look in detail at the individual groups of artefacts listed above. The set of arrowheads mainly consists of trilobate and trilateral solid items, but singularly bilobate points with fairly chronologically early metrics and those made of iron are also found. So far, the largest series of arrowheads comes from the fortified settlement in Chotyniec (see Burghardt 2020), where they were registered mainly within the so called *zolnik* (a ritual object with a rather complicated stratigraphy, with layers in which there are animal bones, fragments of ceramics and charcoal, which is also known by the name "ash-hill"). In the immediate vicinity of the settlement there are two other settlements with arrowheads -Nienowice, site 24, and Hruszowice, site 2. In total, we know 14 sites from south-eastern Poland, where the aforementioned objects were registered (see Trybala-Zawiślak 2019, Fig. 7.21). Recently, there has also been a significant increase in sources from the Lublin region (see Kłosińska 2013), which shows that Scythian arrowheads can now be considered in the category of mass artefacts, and at the same time they allow the possibility of dating. Their collation, covering not only the eastern part of Polish lands, but also the areas of western Ukraine, has already been published (Czopek et al. 2015, Table 1), so here let us focus on an attempt to systematize the current state of knowledge. In the first place, this concerns typological and chronological issues. Arrowheads from Chotyniec primarily represent the first chronological group, linked with the early Scythian period, *i.e.* the second half of the 7th century and the first half of the 6th century BC. It seems that they form a fairly coherent and homogeneous collection, and the items discovered in the vicinity of Chotypic also fit well in the above-mentioned time range, which can be assigned to types 1, 2, and 2-3 according to Melyukova (1964), III according to Petrenko (1967), or 36 according

to Chochorowski (1985). Thus it is possible to date the discussed artefacts to the 7^{th} -6th century BC and a little later, *i.e.* from the turn of the $6^{th}/5^{th}$ to the 3^{rd} century BC. Bilobate points are unique because of their relatively early chronological position, including items of the Kelermes type, known not only from the fortified settlement in Chotyniec, but also from the Lublin region (Kłosińska 2007b, 2007c), for example from Kłodnica, Lublin district, or Wieprzec, Zamość district (Kłosińska 2007a). Other arrowheads, dated to the second half of the 6th and the first half of the 5th century BC and later prove the permanent links of this territory with the forest-steppe zone, which remains under the dominance of Scythian culture (Kłosińska 2007c). Iron socketed points with a laurel leaf design are worth mentioning, though they do not fit into the group of small trilateral arrowheads, known from three sites from Mazowsze. Importantly early Scythian analogies are also indicated for them (Andrzejowska 2016, 301), which fits well with the dating of another artefact of this category - a small trilateral arrowhead from Czekanów, Sokołów district, with a rather archaic feature, *i.e.* the presence of a barb on the socket (Łoźny 1981; Gawlik 2009). Within the Chełmno group, the most famous site is still the defensive settlement in Kamieniec (Chudziakowa 1974), currently classified as Czarnowo, Toruń district (Gackowski 2012), where characteristic trilateral arrowheads with a socket are registered, dated between the mid-6th and mid-5th centuries BC (Bukowski 1977, 63-64).

The category of artefacts related to armaments is complemented by acinaces, of which one example is known from Rozborz, Przeworsk district, dated to the 5th century BC (Czopek 1995, 109), and another one from the vicinity of Przemyśl (Czopek 2005), along with a dagger blade from Ślipcze, Hrubieszów district (Kłosińska 2007a, 239). This last artefact is preserved in a poor condition, but there are some similarities to items of the so-called short weapons, which are characteristic for nomadic people of the pre-Scythian and Scythian periods (Kłosińska 2009, 254). We should also mention the iron battle-axes from Żuklin, Przeworsk district (Chochorowski and Gawlik 1997), and Werchrata, Lubaczów district (Kłosińska 2001). Both items (classified as the so-called Eger type) have close analogies in the Great Hungarian Plain, in collections of the Vekerzug culture, and their dating is linked with the period of the 6th-5th centuries BC (Chochorowski 1985). Transcarpathian analogies of narrow-bladed iron battle-axes from Mazowsze are also known, with a similar chronology connected with times no later than the third decade of the 6th century BC (Andrzejowska 2016, 298). However, another battle-axe, coming from the region of southeastern Lublin region (more precisely from the area of Eastern Roztocze or Grzeda Sokalska), was connected with a slightly different direction of ingress (the exact location is not known). This item does not have any equivalent in the south, but rather in the forest-steppe zone, in the upper Dniester River basin (Sadowski 2012, 389). As already mentioned, iron knives could also be included in the military group. They are known from two cemeteries of the Lusatian Tarnobrzeg culture - Kłyżów, Stalowa Wola district (Trybała-Zawiślak 2012), and Ulanów (Czopek 1992, Poradyło 1995) - and from Czerwonka, Sokołów district, in Mazowsze (Andrzejowska 2016, 301). These are quite slender, long and arched items, which, similar to

Katarzyna Trybała-Zawiślak



Fig. 2. Whetstone from Chotyniec (photo by T. Tokarczyk)

the aforementioned battle-axes, may have close equivalents in the materials of the Vekerzug culture, in which they are dated to the 5th-4th centuries BC (Chochorowski 1985, 80-81). Furthermore, the finds of whetstones are also interesting. Three examples are known from the Lublin region – Sobibór, Włodawa district, Koczów, Chełm district and Hrebenne, Tomaszów district (Kłosińska 2007a, 239). One whetstone was registered at the fortified settlement in Chotyniec (Fig. 2), among the layers of zolnik, and another item is known from the settlement in Gorzyce, Tarnów district (Szpunar et al. 2009), which indicates the significant spread of eastern impacts, reaching the areas of Lesser Poland. The presence of these artefacts in the Central European zone is considered a sign of adaptation of nomadic elements and extensive contact with the steppe population. They also have a specific place in funeral rites, becoming one of the basic elements of personal warrior equipment (Burghardt 2012, 133-134). Undoubtedly, the same social group should also be linked with the harness of a horseman. Apart from small items, such as the item from Lipnik, Przeworsk district (Blajer 2001), or the harness separator from Maćkówka, Przeworsk district (Czopek 2007c), it is also necessary to mention a large series of disks (phalerae) and knob-shaped snaffle bits from the Lublin region, namely from Puławy, from Gródek and Hrubieszów, Hrubieszów district, Swaryczów, Zamość district or Przewodów, Hrubieszów district (Kłosińska

2001; 2007a), and Głodno, Opole Lubelskie district (Kłosińska 2013, 11). The last three items are considered unique because of their ornitomorphic shape, which is also mentioned in the case of the item from Maćkówka (Kłosińska 2007a, 239; 2013, 11). Territorially, the closest analogies to these interesting artefacts relate to the West-Podolian group, and chronologically they merge with the early Scythian period, falling between the 7th and the first half of the 6th century BC. The location of these items is interesting because they do not cross the line of the Vistula River (Kłosińska 2013, 11). It is worth mentioning that Maćkówka would be the southernmost site, and at the same time it is a place situated only about 40 km away from Chotyniec. Therefore, we will return to this aspect later in the discussion.

Relatively rare finds include iron bits. Most of the items known from Eastern Poland can be undoubtedly regarded as imports from the Hallstatt circle (Niemiec 2007; 2009), except for items from the settlement in Hruszowice, site 2 (Fig. 3). These are the bits that have the closest connections with the eastern territories. The formation of cheek-rings suggests that we are probably dealing here with the so-called "stirrup-shaped" examples (Bandrivski 2014, 370), which are often found in the inventories of the West-Podolian group. The chronology of this type of artefact mainly falls into the early Scythian periods 2 and 3, *i.e.* within the 7th -6th centuries BC (Medvedskaya 1992). Sometimes it is established only into the early Scythian period 3, ranging from 650-600 BC (Mogilov 2003). Additionally, there

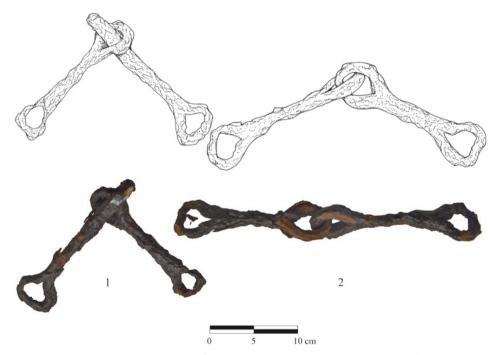


Fig. 3. Iron bits from Hruszowice (illustrated by K. Trybała-Zawiślak, photo by S. Czopek)

is an interesting issue related to the bits, which are to some extent intermediary, perhaps indicating the evolution of cheek-rings from stirrup-shaped to ring-shaped, and in this sense they can be considered even unique (Kowalski-Birokrylyy 2012). Such a find is known from the barrow in Ivahnivci (Bandrivski 2010). There is a certain probability that the bits from Hruszowice could also correspond to this type, but the condition of their preservation does not allow for such unambiguous determination. Despite this, it is important to be able to date these artefacts quite precisely (Kowalski-Birokrylyy 2012). The chronology of undisturbed deposits was determined on the basis of an analyses of the inventories of the West-Podolian barrows, in which the bits of our interest are determined to be from the middle of the 7th to the third quarter of the 6th century BC (Kowalski-Birokrylyy 2012). Unfortunately, such precise dating of the bits from Hruszowice is not possible, but in the context of all sources related to the Chotyniec agglomeration, it is important to note that they date to the mid-7th-6th century BC. Thus, they significantly broaden the group of sources with dating determinations, and they are also clear evidence of the links between the Chotyniec agglomeration and the eastern forest-steppe cultural environment. These cross-regional contacts have a much broader extent, which is evidenced by the bits from Mazowsze with early Scythian and West Podolian analogies. Therefore, it obviously implies their early dating in the range of the 7th to the beginning of the 6th century BC (Andrzejowska 2016, 298-300).

It is also important to bear in mind another, quite large group of artefacts, which can be described as decorations and parts of clothing (Fig. 4). Even when one of the first synthetic studies regarding Scythian monuments in Poland was being made, it was noted that this category of sources was mainly concentrated in the fork of the rivers Vistula and San. In addition, not all items were treated as imports, because a significant number of them were considered to be local imitations or local varieties (see Bukowski 1977). Today, we can only confirm the previously noted mass occurrence in the eastern zone of the Lusatian culture. There are already nearly 70 earrings from south-eastern Poland that fit well within a consistent time horizon covering the mid-7th/6th centuries BC (Trybała-Zawiślak 2019, 299, table 7), and in the Lublin region their number exceeded 30 copies (Kłosińska 2013, 6). In the literature on the subject we have noticed quite different views on the spread of earrings in Polish areas. The suggestion regarding the local production of these ornaments (understood primarily as the environment of the Tarnobrzeg Lusatian culture) seems to be correct, especially with regard to some copies that have no counterparts in the Scythian world (Gawlik 2007, 231-232). In this regard, there is still the important and long-known discovery of casting moulds from the settlement in Zawada (Michalski 1982). The area of the Sandomierz Basin was also indicated as the starting point for the spread of the nailshaped earrings further north, including those cases in which their non-local origin was pointed out (Andrzejowska 2016, 297-298). It has sometimes been suggested that even quite distant connections with the areas of central Transdnistria may come into play, as visible in some examples of earrings from south-eastern Poland as well as western Mazowsze

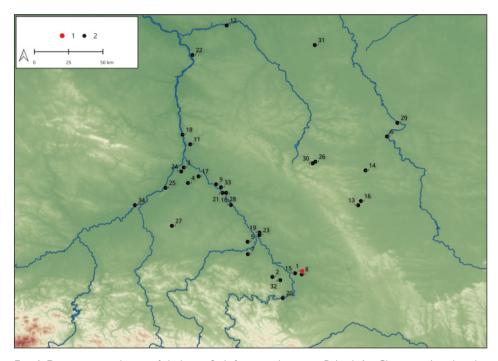


Fig. 4. Decorations and parts of clothing – finds from south-eastern Poland: 1 – Chotyniec, Jarosław district; 2 – Dobkowice, Jarosław district; 3 – Gorzyce, Tarnobrzeg district; 4 – Grębów, Tarnobrzeg district; 5 – Grodzisko Dolne, Leżajsk district; 6 – Gródek, Hrubieszów district; 7 – Grzęska, Przeworsk district; 8 – Hruszowice, Przemyśl district; 9 – Kłyżów, Stalowa Wola district; 10 – Kopki, Nisko district; 11 – Kosin, Kraśnik district; 12 – Krupy, Lubartów district; 13 – Machnów Stary, Tomaszów Lubelski district; 14 – Mikulin, Tomaszów Lubelski district; 15 – Nienowice, Jarosław district; 16 – Nowosiółki Kardynalskie, Tomaszów Lubelski district; 17 – Obojna, Stalowa Wola district; 18 – Opoczka Mała, Kraśnik district; 19 – Paluchy, Przeworsk district; 20 – Przemyśl, district Loco; 21 – Przędzel, Nisko district; 22 – Puławy Włostowice, Puławy district; 23 – Sieniawa-Pigany, Przeworsk district; 24 – Sokolniki, Tarnobrzeg district; 25 – Tarnobrzeg-Machów, Tarnobrzeg district; 32 – Zabłote, Jarosław district; 30 – Wieprzec, Zamość district; 31 – Wytyczno, Włodawa district; 32 – Zabłote, Jarosław district; 33 – Zarzecze, Nisko district; 34 – Zawada, Staszów district

(Gawlik 2009). The leading role of the environment of the Tarnobrzeg Lusatian culture in transmitting certain patterns was also emphasized in the case of some Kuyavian finds, especially when nail-shaped earrings in one of the grave inventories were found next to an ornament similar to a coiled wire of the Trzęsówka type (Andrzejowska 2016. 298), typical for the Tarnobrzeg materials of the declining period. Nevertheless, for some finds, these impacts are suggested not directly from the Tarnobrzeg environment, but through contacts with the Lublin region. For example, this applies to an interesting complex from the cemetery in Kolonia Bąkowiec, Kozienice district (Miraś and Twardowski 2009). The discussed inventory included two nail-shaped earrings, an iron pin (with the head curled up

into a loop, and therefore with small distinctive features), three Trzęsówka-type coiled wires and very distinctive ceramics – vessels with holes under the edge and incompletely pierced holes under the edge of the rim (*ibidem*, Table I). The authors of the study suggest that even though the elements of the grave inventory have the closest and most clear references to the materials of the Tarnobrzeg Lusatian culture, we should not assume direct influences but rather evidence of transmission by means of contact with the Lublin region, from where they penetrated the areas located in the lower estuary of the Wieprz river, and beyond – on the left bank of the Vistula (*ibidem*, 454). One argument for this would be, inter alia, the lack of vessels decorated with incompletely perforated holes, sometimes called "an ornament of knobs-pearls" or zhemczuzhin (see Klosińska 2007a, 235), in ceramics of the Tarnobrzeg Lusatian culture, as well as the presence coiled wires of the Trzęsówka type at the cemetery in Jakubowice Murowane, Lublin district (Miraś and Twardowski 2009, 453-454). This concept, in light of recent discoveries related to the Chotyniec agglomeration, obviously requires verification.

As already mentioned, the set of ornaments and parts of the clothing, which can represent an "eastern" origin, does not include only the nail earring. This group also includes other items known due to the latest discoveries. With regard to the artefacts from southeastern Poland, it includes primarily the pins with nail-shaped heads recorded at the settlement in Hruszowice and Chotyniec, as well as the pins with spiral-shaped heads, known both from the aforementioned sites and from another settlement - site No. 24 in Nienowice (Trybała-Zawiślak 2019, 283). All these finds have good references in the Scythian world, where we find close analogies (Fig. 5). Pins with nail heads represent type III according to Petrenko, and they are dated from the end of the 7th to the beginning of the 6th century BC or the end of 7th through the 6th century BC, while those with spiral heads were determined as type 22, and their chronology falls within the beginning of 7th-6th century BC (Petrenko 1978, 8, 18-19). Further items with nail heads, for which exemplars from the West-Podolian group are mentioned as prototypes, are known from the Lublin region, specifically Stary Machnów, Tomaszów district (Kłosińska 2008; 2013, 357). Speaking of the Transcarpathian zone, it is worth mentioning a find of a bronze pendant with a small head from the same place. In the materials of the Vekerzug culture, such artefacts are treated as among the more common or even flagship ones (Kłosińska 2007b, 277). One of the interesting examples of pins with clearly eastern connections was registered in Czerwonka, Sokołów district, which was already mentioned in the context of the iron knife (Andrzejowska 2016, Fig. 8, d). Further north, there is a site located on the Chełmno Land, where at the cemetery in Mała Kępa, Bydgoszcz district, nail earrings were discovered (Chudziakowa 1974), which have the closest analogies to the examples from the cemeteries in Drohiczyn and Trzęsówka (Bukowski 1977, 93).

It is impossible not to mention another category of sources, which seems to be gaining in importance in the context of the so-called "eastern" finds, namely ceramics, which until now have been rarely considered in this context. It is not a matter of pointing out specific



Fig. 5. Bronze pins from Chotyniec and Hruszowice (photo by T. Tokarczyk)

and faithful analogies associated with particular cultural entities, due to the fact that (in the traditional sense) there could be at least a few eastern groups developing under the influence of Scythian culture. On the other hand, the legitimacy of their separation or the arbitrary division of the territory they occupied is a separate issue, which in light of recent discoveries related to the Chotyniec agglomeration seems to be increasingly questionable. Therefore, it seems more proper (in the context of sources) to identify several distinctive features that would indicate unification of material culture in a fairly large territory. For our considerations, three elements that are most useful are a combination of specific ceramic forms and specific types of decoration (Fig. 6). First of all, it is necessary to mention pots with a highly placed plastic strip, which can be additionally decorated with holes just under the edge. The second form is represented by bowls with incompletely perforated holes forming the ornament of characteristic small knobs. Actually, these are two basic

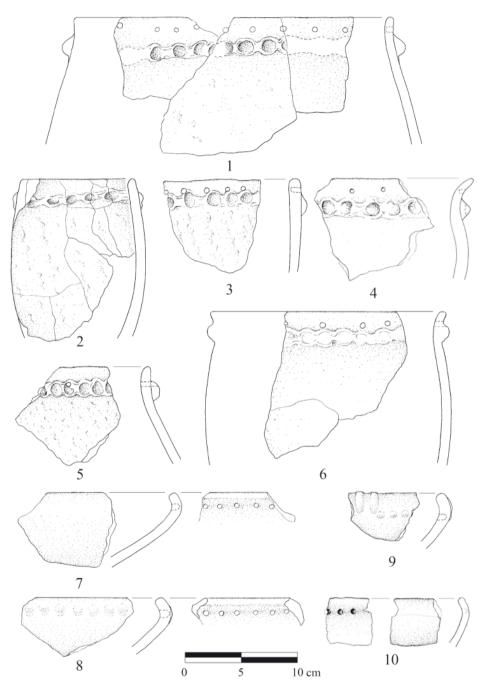


Fig. 6. Ceramics with an eastern context from the fortified settlement in Chotyniec (acc. to Czopek et al. 2018)

types forming an almost universal set in the world of forest-steppe Scythian groups (Gevko 2011, 135-139), but they can be supplemented by a third element – cups with high handles, which are relatively rarely seen in Polish lands, but quite unique. These ceramic elements together with the aforementioned metal artefacts, especially arrowheads and earrings, create a set of sources that seems to have the most features characteristic of indicating the Scythian culture. Of course, all these elements can be recorded at individual sites to varying degrees and they are not always included in the set. Therefore, it is necessary to return to the discussion regarding ceramics. The presence of the abovementioned materials is evident both at the fortified settlement and neighbouring sites, and hence – decisive in terms of belonging to the agglomeration itself. The detailed characteristics of these materials (see Trybała-Zawiślak 2019, 292-295) allow us to draw some synthetic conclusions. First, the extent of the agglomeration to the east and north-west of this fortified settlement cannot be determined more precisely at present. There are materials of our interest in that area, but they are known as sites only from surface surveys, so better recognition of them would be necessary. There is no doubt that such broader excavation studies should also be performed at sites that are located outside the administrative borders of our country. Regarding the area of the middle Wisznia River, *i.e.* relatively close, we have recorded the presence of the site Berehowe 2, which indicates many source relationships with the materials traditionally linked with the Cherepin-Lagodiv group (Czopek 2018a, 185), although in light of discoveries related to the Chotyniec agglomeration, it is probably necessary to consider the legitimacy of such a clear identification of its territorial borders, as well as the distinctive features of the inventory, which (according to the latest analyses) are simply very convergent in a vast area of Central and Eastern Europe (Czopek 2018c, 204-205). The situation is slightly different in the case of the Tarnobrzeg Lusatian culture. The eastern nature of its declining phase is unquestioned, but at the same time this unit is still present in the cultural image of south-eastern Poland. Furthermore, a completely new problem appears with regard to (sometimes complex) Tarnobrzeg-Chotyniec relations, which was already mentioned in the example of the settlement in Grabowiec. We can also mention here other quite extensive sites, of which hundreds ares have been excavated, such as two settlements in Rozborz, Przeworsk district. A very clear horizon of sources connected with the Tarnobrzeg Lusatian culture was identified there (Mazurek and Okoński 2013a, 2013b), but materials that could be associated with the Chotyniec agglomeration have only been found in trace amounts. On the other hand, there is a settlement at site No. 22 in Grodzisko Dolne, Leżajsk district, located almost in the centre of the Tarnobrzeg ecumene, where a whole set of artefacts that interest us was registered, *i.e.* ceramics and metal finds, including trilobate arrowheads and nail-shaped earrings. In the case of the latter, their spread is worth mentioning – in most cases they are present at cemeteries. At the same time, there is reason to believe that at least some of these graves (especially when other distinctive features are involved) should be treated as evidence of some kind of marital exchange, assuming the inclusion of a group from outside. The analyses of cemeteries

show that this is not a completely groundless concept (see Trybała-Zawiślak 2015), and if we take into account the "neighbourly" nature of contacts with eastern groups (see Czopek 2008, 165) and we also include the Chotyniec agglomeration, these relations certainly gain a stronger base. Mutual contacts and greater flow of people are also noted in the case of materials registered in the Lublin region. This applies to both metal and ceramic materials. With reference to the Early Iron Age, characteristic vessels appear here in great numbers, replacing the existing Lusatian style of manufacture. The greatest frequency of characteristic pots or bowls with rounded rims and the so-called "zhemchuzhin" ornament is observed in the eastern and south-eastern Lublin region as well as in the area of Powiśle Lubelskie and the upper Wieprz River (Kłosińska 2007a, 235). Eastern references in ceramics are also revealed in materials from Mazowsze and Podlasie. Until recently, it seemed that ceramics with forest-steppe features did not actually cross the Wieprz River line, and crossed the Vistula line only in the case of the aforementioned burial from Kolonia Bakowiec. The northernmost sites with the ceramics of our interest were isolated single points such as a cemetery in Płosków, Łosice district, a site at Drohiczyn "Kozarówka", Siemiatycze district, and a settlement in Jartypory, Wegrów district (Andrzejowska 2016, 292). Moreover, it is necessary to include quite numerous eastern references which should be linked with the pre-Scythian horizon. They relate to ceramics showing references to the stamp-circle cultures or the late-Chernoles environment, and their appearance is associated with influences flowing by means of the Tarnobrzeg Lusatian culture (see Dabrowski and Mogielnicka-Urban 2014; Andrzejowska 2016). Furthermore, the effect of cultural changes is visible not only in relation to the eastern settlement zone of the Lusatian circle, but also in a much wider territory. It is worth mentioning analogous processes observed in the Polish Lowlands. The suggested definition of Pontic-East European cultural patterns covers an entire package of characteristics with specific distinguishing features, established chronology and a defined style of ceramics (Ignaczak 2008, 2016). Therefore, several possible ways of reception of eastern patterns are indicated in the case of the Upper Silesian-Lesser Poland Lusatian culture zone, in which the Tarnobrzeg Lusatian community would be one of the potential transmitters (Dzięgielewski and Godlewski 2009).

It is also worth noting other manifestations of eastern influences that link with symbolic culture. In the first place, there are sites from the Lublin region – Bliskowice, Kraśnik district, Jakubowice Murowane, Lublin district, and Krupy, Lubartów district. The identification of inventories is unequivocal here, *i.e.* pots with holes under the edge and plastic strips, hemispherical bowls on feet, nail-shaped earrings and coiled wires of the Trzęsówka type. On the other hand, definitive argument is made by burials with traces of burning in situ, and with large burial pits or large wooden cists (Czopek 2007c; Kłosińska 2007a). It should be noted that the "eastern" nature of such burials is beyond doubt and is definitely different from the local funerary tradition, even if it is difficult to clearly indicate the "origin" or "starting" area for this type of ritual behaviour. Further north, we are dealing with a cemetery in Płosków, Łosice district with unusual burial features, and with a specific ar-

rangement of cremation and with vessels decorated with the "pearl" (zhemczuzhin) ornament (Dąbrowski 1961). Interestingly, we do not record such graves in the Tarnobrzeg Lusatian culture, although the frequency of eastern sources in this environment is very high. Perhaps a kind of response to changes in spiritual culture would be cemeteries with an orderly structure, in which clusters of graves become the almost universally binding rule for the organization of funeral space in the Early Iron Age (see Trybała-Zawiślak 2015). Moreover, inventories of some graves are also interesting, including those discovered in the immediate vicinity or even some within settlement areas, for example at Dobkowice, site 35, Jarosław district, Białobrzegi, site 2, Łańcut district or Łąka, site 11-16, Rzeszów district (Czopek 2011b; Florkiewicz and Strzyżowski 2012; Mazurek 2013). It is necessary to pay attention to their inventories and some features of the funeral rites. However, this is a complex issue that goes beyond the scope of this study, and at the same time, it may also be associated with the horizon of earlier, pre-Scythian interactions (Trybała-Zawiślak 2019, 210).

With reference to the space of spiritual culture, there are other aspects that manifest symbolic behaviour. Their representations are objects, such as a *zolnik*. Currently, we can describe two examples of such structures, among which the *zolnik* from the fortified settlement in Chotyniec is almost standard. The second one is a similar type from the settlement in Białobrzegi (Czopek 1989). The first one has already been the subject of studies and preliminary analyses (Czopek et al. 2017; Czopek 2019), so we will mention only the most important information. It is a large object, with a diameter of about 21 meters, and a preserved height reaching 40 cm. The different stages during the functioning of the *zolnik* are very clearly identifiable on the basis of the stratigraphy of individual layers, in which subsequent levels of use are visible. The most interesting here are the dark layers, rich in source materials - animal bones and ceramics, among which there are fragments of Greek amphoras, as well as metal artefacts (Trybała-Zawiślak 2019, 268). A zolnik from Białobrzegi was preserved only fragmentarily, but with legible layers of ash, in which characteristic artefacts were recorded, for example charcoal, ornithomorphic figures, animal bones and ceramics (Czopek 1989, 242, 245). This object, in the context of recent discoveries from Chotyniec, is perhaps an interesting example of the adaptation of some eastern features in the local Tarnobrzeg environment.

Currently, it seems that the situation is much more complex than was previously thought. We are certainly talking about an increasingly wider territory covered by eastern influences, for which the more or less emphasized echoes of the activity of the nomadic and steppe peoples (sometimes simply called "Scythians") are important contexts. Therefore, in such a situation, it is impossible not to ask questions about the place of the Chotyniec agglomeration in these important processes, filling a clearly culture-creating role. Chronology is another important aspect, and the phenomenon known as the Chotyniec agglomeration can be dated in two ways. The first alternative is a chronology determined by means of well-dated metal artefacts, while the second option is connected with the radiocarbon dates obtained so far. Among the artefacts, arrowheads and earrings and possibly some types of pins are most useful for dating. In the case of materials from south-eastern Poland, we already have a large collection of these artefacts, hence some generalizations are possible. Most of the nail-shaped earrings are linked with the 6th-5th century BC, but there are also items dated from the second half or the end of the 7th century BC. A relatively small portion is dated between the 6th and 4th centuries BC. With regard to arrowheads, three major chronological groups can be identified. The first group is connected with the 7th to the beginning of the 6th century BC, the second one with the 5th-4th century BC, and the third is dated to the middle of the 4^{th} to the 3^{rd} century BC. Interestingly, the oldest items are generally recorded only on the fortified settlement in Chotyniec (Trybała-Zawiślak 2019, 162). Similarly, a growing series of similar artefacts from the Lublin region is dated in the same way (Kłosińska 2007a, 2013), and in the case of materials from the Tarnobrzeg Lusatian culture, two waves of influence were pointed out – the first group is related to the area of the Ukrainian forest-steppe, dated between the 7th and 5th centuries BC, and the younger one from the 5th-4th, and perhaps also the 3rd century BC, flowing from the south, *i.e.*, from the Carpathian Basin and its outskirts (Czopek 2008, 162-163). All of this creates a coherent horizon of the so-called eastern impacts, and the discoveries related to the Chotyniec agglomeration perfectly fit in with the discussed time range. Additionally, radiocarbon dates can confirmation this determination. So far, the most numerous series of dates comes from the fortification in Chotyniec, and additional single data points come from settlements belonging to the agglomeration. These dates come from the base of the settlement rampart and from the layers of *zolnik*, and they are connected with the stage before this object was created.

The collation of dates leads us to the conclusion that they fall within a wide range of probabilities between the 9th and the 3rd or even the 2nd century BC (Fig. 7). However, we can also try to clarify the chronology based on the sources discussed above. One of the oldest dates is connected with the stage before the construction of the zolnik and indicates 2750±90 BP, which at the calibration level of 1 σ gives a result between the 10th and 9th centuries BC. The date obtained from the base of the settlement rampart (2679±30 BP) fits in a somewhat similar range, along with one date coming from the settlement in Hruszowice, which, at the same calibration level, sets the time frame between the 9th and 8th centuries BC as well as the 8th and 6th centuries BC. This may be associated with the presence of some pre-Scythian stage, which has already been mentioned, although it is quite difficult to establish its connection with the agglomeration via archaeological sources for now. However, another issue is related to the numerous series of sources (primarily ceramic material) connected with this horizon, which is present in increasing numbers in the vast territory of the eastern groups of the Lusatian circle (see Kłosińska 2007a; Andrzejowska 2016; Trybała-Zawiślak 2019). Probably it should be considered as an "introduction" to the changes observed in the younger part of the Early Iron Age. Nonetheless, this issue is so extensive that it would require a separate analytical study. Returning to the issue of dates related to the agglomeration, it should also be noted that the sample determining the

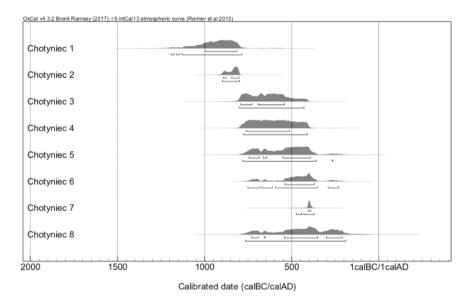


Fig. 7. Radiocarbon dates from the layers of zolnik from the fortified settlement in Chotyniec

chronology of the rampart was taken from the outer part of its base, and very fine charcoal was used in the analyses (Czopek et al. 2017, 299). The remaining dates from the fortified settlement in Chotyniec are generally established to be in the range of the 7th-5th centuries BC and are associated with individual phases of the *zolnik*, which in turn includes very good sources. Most of the discovered artefacts connected with the forest-steppe cultural environment, as already mentioned, should be dated just to this period. The problem of interpreting dates related to the Chotyniec agglomeration not only concerns the issue of its beginning, but also the decline of this cluster of sites, or more precisely – the fortification in Chotyniec. In light of the radiocarbon data, this stage would be associated with the 4th-3rd and even 2nd centuries BC. While the first scope could be considered possible, taking into account the cultural situation in Central and Eastern Europe, the longer functioning of these sites at the moment is rather difficult to imagine. With reference to the current state of research, questions about the decline of the agglomeration must therefore remain open, because we do not have a large enough pool of source data yet to be able to solve this problem. However, it seems that the discussed set of sites certainly functioned at the turn of the 7th and 6th centuries or even from the second half of the 7th century BC. This conclusion is confirmed, for example, by the chronology of Greek amphoras from the Chotyniec settlement, which can be quite precisely established to the 7th/6th or the beginning of the 6th century BC, as well as the dating established for bronze arrowheads, pins, earrings and bits.

4. FINAL CONCLUSIONS

The aforementioned connections with the eastern Scythian cultural circle concern several Lusatian groupings. Various concepts have existed until now in the literature regarding possible transmitted sources, and at the same time they have assumed the supra-regional dimension of these contacts. As for the potential cultural units, the West-Podolian group was mentioned (for example in the case of arrowheads of the older chronological group), as well as the issue of contacts with the Transcarpathian zone and the Vekerzug culture communities. The latter were associated not only with the finds of younger arrowheads, but also to other military items, even the narrow-bladed battle axes discussed earlier. Finally, in many cases, especially when we talk about the units of the eastern part of the Lusatian circle, the leading role of the Tarnobrzeg communities as a kind of transmitter of certain patterns was pointed out. It seems that in light of the latest research and discoveries, perhaps a change the direction of these interactions should be considered, or at least some of them, connecting them directly with the Chotyniec agglomeration. Acknowledgment of its significant stylistic influence on particular types of material culture does not preclude the flow of ideas and influence from other routes and directions. So far, two possibilities have been highlighted in previous analyses. The first concerns the Boh-Bug-Vistula route and emphasizes the secondary nature of the eastern elements present in Central Poland and Kujawy (Ignaczak 2011, 393; 2016, 180), as well as in the Lublin region (Kłosińska 2007a, 241), from where the already "filtered" patterns would go to Mazowsze (Andrzejowska 2016, 307). The second possibility concerns the Dniestr-San route, taking into account the broader cultural processes, in which we are dealing not with intra-Lusatian interactions with the 'starting' area of the Tarnobrzeg Lusatian culture as an intermediary in the transmission of specific patterns, but rather with (possibly multiple) extensive population shifts as their primary mode of transmission (Czopek 2011a, 460). This concept has another dimension, connected with the existence of a Neurian community that would explain such a wide spread of eastern elements from Lesser Poland, through the Lublin region, Central Poland, Kujawy and Greater Poland (Czopek 2011a, 460). This is how the assimilation of new elements of culture in the Lublin region was often explained, and the mixing of the population, for example in the form of exogamous marriages, could be of significant importance in this process (see Kłosińska 2007a, 240). In light of the research and archaeological sources discovered so far, speaking of the agglomeration in terms of structures of the Scythian environment seems to be fully justified. The migration of the Neurians from east to west not only explains the extensive evidence of links between the Vistula river basin and the Ukrainian forest-steppe zone, but it would also be consistent with the thesis about population transitions (Czopek 2007a, 120), which are more and more confirmed by archaeological sources. The area of Volhynia and Podolia is a wide contact zone in the Early Iron Age, whose characteristic feature is a specific "mixture" of various elements, both western, *i.e.* connected with the eastern part of the Lusatian cultural

trade and exchange contacts, mean that at least at some stage of development, these communities could fall within the scope of interests of the so-called Great Scythia (Kozak 2012, 35), especially since, according to Herodotus's records, the Neurians were located on the borders of this extremely dynamic political organism. Great Neurida, so called by some researchers, is placed on the right-bank side of the forest-steppe zone, and at the same time is considered a unique phenomenon (Bandrivski 2014). Analyses of Herodotus's text of *The Histories* (see Czopek 2007b), as well as the thesis of Kazimierz Moszyński (1954) regarding the migration of Neurians from west to east, are very inspiring – therefore, it is difficult to resist the notion that, in light of these interpretations, the location of the fortification in Chotyniec is extremely meaningful.

There is no doubt either way that, regardless of the flow routes - each of which could play an individual role – the original area for the discussed elements is that of the foreststeppe. It seems, however, that in the context of the Chotyniec agglomeration, the aforementioned Dniestr-San route, which appears to be the most natural and convenient route, is gaining special significance. The vast area located in the Dniester basin presents a kind of cultural syncretism at the time of our interests; this is where the forest-steppe influences of Eastern Europe and the Carpathian Basin intersect with the entire Danube area. In a global sense, therefore, it is a "passageway" between the Black Sea and Danube zones, as well as the route of relocation of various population groups (Czopek 2010, 364-365). Therefore, if we are to look for the directions of flow of these cultural elements and sources that we register on the San River, they should be located in the area of the Przemvśl Gate, and the Chotyniec agglomeration is the regional centre of their reception, and probably also their further transmission. To some extent, the concept of "centre-periphery", which has been successfully used by many researches for different periods, eras and areas, could be an illustration of this state of affairs (see for example Kristiansen 1998; Kadrow 2001; Valde-Nowak 2004; Pelisiak 2018). Analyzing all the relationships related to contacts, interactions, and socio-political transformations, as well as the spatial range of contacts between the Chotyniec agglomeration (understood as "the centre") and other areas (understood as "the periphery") is rather not possible at this stage of research. We are dealing here not only with neighbouring areas, *i.e.* those directly adjacent to the agglomeration, but also with those located further away. In both cases, the likelihood that they were within the range of its impacts (though not fully defined yet at this stage) is very high. At this point, it is worth relating an extremely interesting concept that concerns the destruction of settlements and fortified settlements (ring forts) in Central Europe from the turn of the 7th /6th to the end of the 6th century BC (Chochorowski 2014, 32, 41). This horizon includes the fall of the fortified settlement in Wicina, which has been viewed as the effect of a Scythian invasion due to characteristic finds of military items of eastern origin (Michalak and Jaszewska 2011). The latest chronological findings, obtained using dendrochronology,

indicate the possibility of placing these events after 571 BC (Krapiec and Szychowska-Krapiec 2013, 373-374). Most important for us is the possibility of identifying in these expeditions "contingents of warriors recruited from the environment of the West-Podolian group" (Chochorowski 2014, 41, 43), which raises the question about the possible presence of warriors from Chotyniec in these raids (Czopek *et al.* in print). At the same time, the issue of the previously discussed arrowheads, registered at the fortified settlement in Chotyniec, is extremely interesting. Of particular interest are the iron-socketed items with four-sided (square) heads, which are known (so far) only from the fortified settlement in Chotyniec and from the destructive layers of the fortified settlement in Wicina (Burghardt 2020). The convergence of these forms does not have to be treated as a key argument, but it can certainly be a premise indicating the possibility of the participation of Chotyniec warriors in the invasions of Central Europe.

In discussing the crucial importance of forest-steppe groups in the creation of the cultural situation in the vast areas of Central and Eastern Europe, it is necessary to ask the question about the cultural affiliation of the fortified settlement in Chotyniec, as well as that of the entire Chotyniec agglomeration. Unfortunately, this question must remain without unambiguous answer at this stage of research. It is difficult to assume that the appearance of the agglomeration is associated with the transformations of the local (Tarnobrzeg) cultural environment, which is still a separate entity, although it certainly remains with the agglomeration in certain relations. One interesting hypothesis refers to the possibility of linking the agglomeration with the Western-Podolian group of the Scythian cultural circle. On one hand, this thesis can be supported by a similar chronology, spanning the end (fourth quarter) of the 8th century to the beginning (first quarter) of the 6th century BC (Bandrivski 2010; Kowalski-Bilokrylyy 2012), which additionally can be quite accurately confirmed by metal artefacts (arrowheads, bits). On the other hand, the distance separating the fortified settlement in Chotyniec from the integrated range of the Western-Podolian group is quite significant, and radiocarbon dates indicate the much greater duration (beyond the limits established for the decline of the Western-Podolian group) of the fortified settlement in Chotyniec. Therefore, field research of the wide Polish-Ukrainian border area is certainly necessary, although new sources have appeared recently, which shed light on the issue we are interested in, for example a very large collection of Scythian arrowheads of various types from the area of Mościska and Arłamowska Wola and Berehowe. These finds could provide evidence of the local activity, including potential population movements. Their chronology falls within the 7th to 5th-4th centuries BC (Czopek 2018c, 203-204). However, other materials, known only from surface research, indicate the continuity of settlement in the Wisznia River basin, where ceramic materials with eastern features are recorded. With reference to sources, many analogies between the Chotyniec agglomeration zone and sites located east of the current national border could be provided, but perhaps it is not justified to search for arguments confirming the continuity of settlement in the entire forest-steppe zone (Czopek 2019, 140). In this sense, there could

be another possibility, according to which we assume the separateness of the agglomeration as an "independent" regional structure within the broadly understood forest-steppe variant of Scythian culture, and thus its northwest enclave. Another important question concerns north-south connections, in which the location of the settlement in Chotyniec may also play a significant role. Considering artefacts of a nomadic type, known from the southern part of the Carpathians, we can say that specific mixed components concern many regions of central and eastern Europe. This interesting issue is certainly worth a broader analyses that could be the subject of separate studies.

Regardless of these concepts and their future confirmation or refutation based on new sources, we are certainly able to speak about the entry of the south-eastern part of Poland into the orbit of broad cultural changes in the Early Iron Age. These processes are an integral part of the changes so clearly visible in the entire border region of Central and Eastern Europe, the fact of which allows us to treat the fortified settlement in Chotyniec as an unquestionable transmitter of certain patterns. Therefore, the functioning of the Scythian enclave in Polish territories can be seen as a cultural phenomenon that plays a fundamental role in the reception of the so-called eastern cultural elements.

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References

- Andrzejowska M. 2016. Niektóre elementy obrazu kulturowego Mazowsza i Podlasia we wczesnej epoce żelaza w świetle oddziaływań "wschodnich". In B. Gediga, A. Grossman and W. Piotrowski (eds), *Europa w okresie od VIII wieku przed narodzeniem Chrystusa do I wieku naszej ery* (= *Biskupińskie Prace Archeologiczne* 11). Biskupin-Wrocław: Muzeum Archeologiczne w Biskupinie, Polska Akademia Nauk-Oddział we Wrocławiu, Instytut Archeologii i Etnologii Polskiej Akademii Nauk, 279-322.
- Bandrivski M. 2010. Pamyatki serednodnistrovskoy (zahidnopodilskoy) grupi rannozaliznogo viku v centralnoevropeyskiy khronologichniy shkali ta problemi periodizacii. *Materyiali i Doslidzhennya z Arheologii Prikarpttya i Wolini* 14, 76-113.
- Bandrivski M. 2014. Kulturno-istorychni procesi na Prikarpatti i Zakhidnomu Podili v pizniy period epokhi bronzi – na pochatku dobi rannogo zaliza. Lviv: Prostir-M.
- Blajer W. 2001. Trzeci sezon ratowniczych badań wykopaliskowych na stanowisku 5 w Lipniku, pow. Przeworsk. *Rocznik Przemyski* 27/1, 17-25.
- Bukowski Z. 1977. The Scythian influence in the area of Lusatian Culture. Wrocław, Warszawa, Kraków, Gdańsk: Wydawnictwo Polskiej Akademii Nauk.

- Burghardt M. 2012. Oselki z otworem do podwieszania w kulturach stepowych późnej epoki brązu i wczesnej epoki żelaza (= Collectio Archaeologica Ressoviensis 16). Rzeszów: Instytut Archeologii Uniwersytetu Rzeszowskiego.
- Burghardt M. 2020. Classification and chronology of the collection of arrowheads from ash-hill found in hillfort of the Scythian Cultural Circle in Chotyniec, site 1, Jarosław district. *Sprawozdania Archeologiczne* 72/2, 327-355.

Chochorowski J. 1985. Die Vekerzug-Kultur. Charakteristik der Funde. Kraków: Uniwersytet Jagielloński.

- Chochorowski J. 2014. Scytowie a Europa Środkowa historyczna interpretacja archeologicznej rzeczywistości. *Materiały i Sprawozdania Rzeszowskiego Ośrodka Archeologicznego* 34, 9-58.
- Chochorowski J. and Gawlik A. 1997. Żelazny czekan kultury Vekerzug z Żuklina, gm. Kańczuga. Materiały i Sprawozdania Rzeszowskiego Ośrodka Archeologicznego 18, 173-179.
- Chudziakowa J. 1974. *Kultura łużycka na terenie międzyrzecza Wisły, Drwęcy i Osy*. Warszawa, Poznań: Towarzystwo Naukowe w Toruniu.
- Czopek S. 1989. Z badań nad schyłkową fazą grupy tarnobrzeskiej. In A. Barłowska and E. Szałapata (eds), *Grupa tarnobrzeska kultury łużyckiej. Materiały z konferencji 12-14 listopada 1986 w Rzeszowie.* Rzeszów: Muzeum Okręgowe w Rzeszowie, 241-261.
- Czopek S. 1992. Zabytki żelazne w materiałach grupy tarnobrzeskiej. In S. Czopek (ed.), Ziemie polskie we wczesnej epoce żelaza i ich powiązania z innymi terenami. Materiały z konferencji – Rzeszów, 17-20.09.1991. Rzeszów: Muzeum Okręgowe w Rzeszowie, 111-126.
- Czopek S. 1995. Żelazny akinakes z Rozborza, woj. przemyskie, w kontekście innych znalezisk tzw. scytyjskich z południowo-wschodniej Polski. *Archeologia Polski* 40/1-2, 107-123.
- Czopek S. 2005. Zur kulturgeschichtilichen Sonderstellung der polnischen Karpatenzone in der Bronzeund frühen Eisenzeit. *Acta Archaeologica Carpathica* 40, 39-61.
- Czopek S. 2007a. Środkowoeuropejska rubież kulturowa między wschodem a zachodem w epoce brązu i wczesnej epoce żelaza. In M. Dębiec and M. Wołoszyn (eds), Uźródeł Europy Środkowo-Wschodniej: pogranicze polsko-ukraińskie w perspektywie badań archeologicznych (= Collectio Archaeologica Ressoviensis 5). Rzeszów: Instytut Archeologii Uniwersytetu Rzeszowskiego, 109-125.
- Czopek S. 2007b. Uwagi o możliwościach archeologicznej identyfikacji Neurów. In P. Berdowski and B. Blahaczek (eds), *Haec mihi in animis vestris templa. Studia Classica in Memory of Professor Lesław Morawiecki*. Rzeszów: Instytut Historii UR, 407-422.
- Czopek S. 2007c. Związki dorzecza Wisły z terenami lasostepu ukraińskiego w epoce brązu i wczesnej epoce żelaza. In L. Bakalarska (ed.), *Wspólnota dziedzictwa archeologicznego ziem Ukrainy i Polski. Materiały z konferencji zorganizowanej przez Ośrodek Ochrony Dziedzictwa Archeologicznego, Łańcut (26-28 X 2005 r.).* Warszawa: Krajowy Ośrodek Badań i Dokumentacji Zabytków, 213-225.
- Czopek S. 2008. Uwagi o sytuacji kulturowej we wczesnej epoce żelaza na terenie południowo-wschodniej Polski. In M. Mogielnicka-Urban (ed.), Opera ex aere. Studia z epoki brązu i wczesnej epoki żelaza dedykowane profesorowi Janowi Dąbrowskiemu przez przyjaciół, uczniów

i kolegów z okazji siedemdziesięciolecia urodzin. Warszawa: Instytut Archeologii i Etnologii Polskiej Akademii Nauk, 159-167.

- Czopek S. 2010. Naddniestrzańskie rubieże kulturowe w epoce brązu i wczesnej epoce żelaza. In S. Czopek and S. Kadrow (eds), *Mente et rutro. Studia archaeologica Johanni Machnik viro doctissimo octogesimo vitae anno ab Amicis, collegis et discipulis oblata*. Rzeszów: Instytut Archeologii Uniwersytetu Rzeszowskiego, 357-368.
- Czopek S. 2011a. Rola szlaku Dniestr-San w epoce brązu i we wczesnej epoce żelaza. In M. Ignaczak, A. Kośko and M. Szmyt (eds), *Między Bałtykiem a Morzem Czarnym. Szlaki międzymorza IV-I tys. przed Chr.* Poznań: Wydawnictwo Poznańskie, 453-463.
- Czopek S. 2011b. Zwischen der Chronologie und Funktion. Horizont (?) der Gräber mit Glasperlen auf den Gräberfeldern der späten Phase der Tarnobrzeg-Lausitzer Kultur. *Sprawozdania Archeologiczne* 63, 115-134.
- Czopek S. 2014a. Osada tarnobrzeskiej kultury łużyckiej. In S. Czopek, D. Niemasik, W. Pasterkiewicz and A. Pelisiak, *Rzeszów, stanowisko 117 – osada wielokulturowa*. Rzeszów: Muzeum Okręgowe w Rzeszowie, 79-201.
- Czopek S. 2014b. Stanowisko 158 w Jarosławiu, woj. podkarpackie. Część II. Osadnictwo od starszej epoki brązu do okresu rzymskiego. Rzeszów: Fundacja Rzeszowskiego Ośrodka Archeologicznego.
- Czopek S. 2018a. Podsumowanie. In S. Czopek, K. Trybała-Zawiślak, N. Wojceszczuk, O. Osaulczuk, D. Bobak, P. Gębica, A. Jacyszyn, W. Pasterkiewicz, D. Pawliw, W. Petehyrycz, M. Połtowicz-Bobak and A. Wacnik, *Przemiany kulturowo-osadnicze w dorzeczu rzeki Wiszni w epoce brązu i we wczesnej epoce żelaza w kontekście zmian prahistorycznej i wczesnośrednio-wiecznej ekumeny*. Rzeszów: Wydawnictwo Uniwersytetu Rzeszowskiego, 185-191.
- Czopek S. 2018b. Środkowa, młodsza i późna epoka brązu. In S. Czopek, K. Trybała-Zawiślak, N. Wojceszczuk, O. Osaulczuk, D. Bobak, P. Gębica, A. Jacyszyn, W. Pasterkiewicz, D. Pawliw, W. Petehyrycz, M. Połtowicz-Bobak and A. Wacnik, *Przemiany kulturowo-osadnicze w dorzeczu rzeki Wiszni w epoce brązu i we wczesnej epoce żelaza w kontekście zmian prahistorycznej i wczesnośredniowiecznej ekumeny*. Rzeszów: Wydawnictwo Uniwersytetu Rzeszowskiego, 156-185.
- Czopek S. 2018c. Zmienność kulturowa w epoce brązu i we wczesnej epoce żelaza w dorzeczu Wiszni na tle przemian kulturowych w Europie Środkowo-Wschodniej. In S. Czopek, K. Trybała-Zawiślak, N. Wojceszczuk, O. Osaulczuk, D. Bobak, P. Gębica, A. Jacyszyn, W. Pasterkiewicz, D. Pawliw, W. Petehyrycz, M. Połtowicz-Bobak and A. Wacnik, *Przemiany kulturowoosadnicze w dorzeczu rzeki Wiszni w epoce brązu i we wczesnej epoce żelaza w kontekście zmian prahistorycznej i wczesnośredniowiecznej ekumeny*. Rzeszów: Wydawnictwo Uniwersytetu Rzeszowskiego, 193-210.
- Czopek S. 2019. Enklawa scytyjskiego kręgu kulturowego w południowo-wschodniej Polsce. *Przegląd Archeologiczny* 67, 119-148.
- Czopek S., Pawliw D., Trybała-Zawiślak K. and Wojcieszczuk N. 2015. New discoveries of arrowheads of Scythian type from Polish-Ukrainian borderland (San, Bug and upper Dniester grainage basin). *Acta Archaeologica Carpathica* 50, 191-216.

- Czopek S., Trybała-Zawiślak K., Tokarczyk T., Ocadryga-Tokarczyk E., Burghardt M., Adamik-Proksa J. and Rajpold W. 2017. Pierwsze sprawozdanie z weryfikacyjnych badań na grodzisku z wczesnej epoki żelaza w Chotyńcu. *Materiały i Sprawozdania Rzeszowskiego Ośrodka Archeologicznego* 38, 291-306.
- Czopek S., Trybała-Zawiślak K., Bobak D., Wojceszczuk N., Osaulczuk O. 2018. Katalog stanowisk. In S. Czopek, Katarzyna Trybała-Zawiślak, Natalia Wojceszczuk, Oleg Osaulczuk, Dariusz Bobak, Piotr Gębica, Andrij Jacyszyn, Wojciech Pasterkiewicz, Dmytro Pawliw, Wołodymyr Petehyrycz, Marta Połtowicz-Bobak and Agnieszka Wacnik, *Przemiany kulturowo-osadnicze w dorzeczu rzeki Wiszni w epoce brązu i we wczesnej epoce żelaza w kontekście zmian prahistorycznej i wczesnośredniowiecznej ekumeny*. Rzeszów: Wydawnictwo Uniwersytetu Rzeszowskiego, 245-677.
- Czopek S., Trybała-Zawiślak K. and Tokarczyk T. Hotyneckaya aglomeracya skifskogo kulturnogo kruga i yee znachenye dlya interpretacyi kulturnyh svyazey ranney epohi zheleza na pograniche Sredney i Vostochnoy Evropi. *Stratum plus* 3/2020, 233-250.
- Dąbrowski J. 1961. Materiały kultury łużyckiej z Podlasia. Materiały Starożytne 7, 23-46.
- Dąbrowski J. 1980. Przydatność ceramiki łużyckiej dla podziałów kulturowych. In M. Gedl (ed.), Zróżnicowanie wewnętrzne kultury łużyckiej. Kraków: Instytut Archeologii Uniwersytetu Jagiellońskiego, 33-55.
- Dąbrowski J. 2009. Polska przed trzema tysiącami lat. Czasy kultury łużyckiej. Warszawa: TRIO.
- Dąbrowski J. and Mogielnicka-Urban M. 2014. Zespół osadniczy kultury łużyckiej w Maciejowicach, pow. garwoliński, woj. mazowieckie (= Archeologia Mazowsza i Podlasia. Studia i Materiały 5). Warszawa: Instytut Archeologii i Etnologii Polskiej Akademii Nauk.
- Dzięgielewski P. and Godlewski K. 2009. Wschodnie oddziaływania kulturowe na terytorium zachodniej Małopolski we wczesnej epoce żelaza – źródła i interpretacje. In S. Czopek and K. Trybała-Zawiślak (eds), *Tarnobrzeska kultura lużycka – źródła i interpretacje* (= *Collectio Archaeologica Ressoviensis* 11). Rzeszów: Instytut Archeologii Uniwersytetu Rzeszowskiego, 191-225.
- Florkiewicz I. and Strzyżowski L. 2012. Materiały tarnobrzeskiej kultury łużyckiej. In I. Florkiewicz (ed.), Opracowanie ratowniczych badań archeologicznych na stanowisku nr 2 w Białobrzegach (nr autostradowy: 85) I, II. Rzeszów, 381-415. Unpublished materials. Archive of the Rzeszów Foundation of Archaeological Centre. Rzeszów.
- Gackowski J. 2012. Przestrzeń osadnicza Pojezierza Chełmińskiego i przyległych dolin Wisły, Drwęcy i Osy w młodszej epoce brązu i na początku epoki żelaza. Toruń: Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika.
- Gawlik A. 2007. Geneza zausznic gwoździowatych. In J. Chochorowski (ed.), Studia nad epoką brązu i wczesną epoką żelaza. Księga poświęcona Profesorowi Markowi Gedlowi na pięćdziesięciolecie pracy w Uniwersytecie Jagiellońskim. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego, 219-240.
- Gawlik A. 2009. Elementy miłogradzkie w środowisku kultury łużyckiej Polski południowo-wschodniej. In S. Czopek and K. Trybała-Zawiślak (eds), *Tarnobrzeska kultura lużycka – źródła i in*-

terpretacje (= *Collectio Archaeologica Ressoviensis* 11). Rzeszów: Instytut Archeologii Uniwersytetu Rzeszowskiego, 177-190.

- Gediga B. 1989. Podstawy wyróżniania grupy tarnobrzeskiej. In A. Barłowska and E. Szałapata (eds), Grupa tarnobrzeska kultury łużyckiej. Materiały z konferencji 12-14 listopada 1986 w Rzeszowie. Rzeszów: Muzeum Okręgowe w Rzeszowie, 15-26.
- Gedl M. 1989. Problemy grupy tarnobrzeskiej. In A. Barłowska and E. Szałapata (eds), Grupa tarnobrzeska kultury lużyckiej. Materiały z konferencji 12-14 listopada 1986 w Rzeszowie. Rzeszów: Muzeum Okręgowe w Rzeszowie, 27-42.
- Geyko A. 2011. Goncharstvo naselennya skifskogo chasu Dniprovskogo Lisostepnovogo Livoberezhzhya. Poltava: ASMI.
- Ignaczak M. 2008. Wzorce kulturowe lasu/lasostepu strefy pontyjskiej w niżowych zespołach kręgu łużyckiego. In J. Bednarczyk, J. Czebreszuk, P. Makarowicz and M. Szmyt (eds), *Na pograniczu* światów. Studia z pradziejów międzymorza bałtycko-pontyjskiego ofiarowane Profesorowi Aleksandrowi Kośko w 60. rocznicę urodzin. Poznań: Wydawnictwo Poznańskie, 141-165.
- Ignaczak M. 2011. Rola szlaków międzymorza w rozwoju społeczeństw kultury łużyckiej u schyłku epoki brązu i w początkach wczesnej epoki żelaza. In M. Ignaczak, A. Kośko and M. Szmyt (eds), *Między Bałtykiem a Morzem Czarnym. Szlaki międzymorza IV-I tys. przed Chr*. Poznań: Wydawnictwo Poznańskie, 387-396.
- Ignaczak M. 2016. Elementy kulturowe lasostepu pontyjskiego we wczesnej epoce żelaza na Niżu Polskim w świetle materiałów ceramicznych (650-520/470 BC). Poznań: Wydawnictwo Naukowe UAM.
- Kadrow S. 2001. U progu nowej epoki. Gospodarka i społeczeństwo wczesnego okresu epoki brązu w Europie środkowej. Kraków: Instytut Archeologii i Etnologii Polskiej Akademii Nauk.
- Kłosińska E. M. 2001. Czekan żelazny z miejscowości Werchrata, pow. Lubaczów. Archeologia Polski Środkowowschodniej 6, 219-221.
- Kłosińska E. M. 2007a. Issues of the East- and Central-European contacts of the Lublin Region in the younger Bronze Age and the early Iron Age in the light of existing research and sources. In J. Baron and I. Lasak (eds), Long distance trade in the Bronze Age and Early Iron Age. Materiały z Konferencji we Wrocławiu 19-20 kwietnia 2005 (= Studia Archeologiczne 40). Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego, 269-290.
- Kłosińska E. M. 2007b. Lubelszczyzna i Ukraina w młodszych odcinkach epoki brązu i we wczesnej epoce żelaza – pytania o losy wspólne i niewspólne. In L. Bakalarska (ed.), Wspólnota dziedzictwa archeologicznego ziem Ukrainy i Polski. Materiały z konferencji zorganizowanej przez Ośrodek Ochrony Dziedzictwa Archeologicznego, Łańcut (26-28 X 2005 r.). Warszawa: Krajowy Ośrodek Badań i Dokumentacji Zabytków, 226-249.
- Kłosińska E. M. 2007c. Nowe zabytki brązowe wschodniej proweniencji z Lubelszczyzny. Archeologia Polski Środkowowschodniej 9, 273-278.
- Kłosińska E. M. 2007d. Unknown artefacts from Topornica and Wieprzec, Zamość commune, obtained from private collections and from archaeological institutions in the Lublin region. *Sprawozdania Archeologiczne* 59, 345-391.

- Kłosińska E. M. 2008. Nowe znaleziska brązowe ze Starego Machnowa, pow. tomaszowski. Archeologia Polski Środkowowschodniej 10, 237-248.
- Kłosińska E. M. 2009. Kilka uwag na temat militariów ludności kultury łużyckiej na Lubelszczyźnie. In H. Taras and A. Zakościelna (eds), *Hereditas praeteriti. Additamenta archaeologica et historica dedicata Ioanni Gurba Octogesimo Anno Nascendi*. Lublin: Instytut Archeologii Uniwersytetu Marii Curie Skłodowskiej w Lublinie, 245-258.
- Kłosińska E. M. 2013. Research problems of the Lusatian culture in the Early Iron Age in the Lublin region in the light of new archaeological findings. In J. Kolendo, A. Mierzwiński, S. Moździoch and L. Żygadło (eds), Z badań nad kulturą społeczeństw pradziejowych i wczesnośredniowiecznych. Księga Jubileuszowa dedykowana Profesorowi Bogusławowi Gedidze w osiemdziesiątą rocznicę urodzin przez przyjaciół, kolegów i uczniów. Wrocław: Instytut Archeologii i Etnologii Polskiej Akademii Nauk, 349-364.
- Kowalski-Bilokrylyy J. 2012. Chronologia grupy zachodniopodolskiej scytyjskiego kręgu kulturowego. *Materyiali i Doslidzhennya z Arheologii Arkheologii i Volini* 16, 160-189.
- Kozak D. 2012. *Poselennya Nevriv, Slovyan ta Germantsiv na Stiri*. Kiiv: Natsionalna Akademiya Nauk Ukraini, Instytut Arkheologii.
- Krąpiec M. and Szychowska-Krąpiec E. 2013. Analiza dendrochronologiczna drewna z badań grodziska w Wicinie w latach 2008-2012. In A. Jaszewska and S. Kałagate (eds), Wicina. Badania archeologiczne w latach 2008-2012 oraz skarb przedmiotów pochodzących z Wiciny (= Biblioteka Archeologii Środkowego Nadodrza 5). Zielona Góra: Wydawnictwo Fundacji Archeologicznej, 371-417.

Kristiansen K. 1998. Europe before history. Cambridge: Cambridge University Press.

- Łoźny L. 1981. Grocik scytyjski z Czekanowa, woj. Siedlce. *Wiadomości Archeologiczne* 46(2), 241-242.
- Mazurek M. 2013. Tarnobrzeska kultura łużycka. In J. Okoński and M. Mazurek (eds), Opracowanie ratowniczych badań wykopaliskowych na stanowisku 11-16 (A4/68-73) w Łące, gm. Trzebownisko. 2: Analiza. Wybór fotografii. Unpublished materials. Archive of the Rzeszów Foundation of Archaeological Centre. Rzeszów, 42-57, 87-89.
- Mazurek M. and Okoński J. 2013a. Wstęp. In M. Mazurek and J. Okoński (eds), Opracowanie ratowniczych badań wykopaliskowych na stanowisku 28 (A4/9) w Rozborzu, gm. Przeworsk I(1).
 Unpublished materials. Archive of the Rzeszów Foundation of Archaeological Centre. Rzeszów, 4-7.
- Mazurek M., Okoński J. 2013b. Wstęp. In M. Mazurek and J. Okoński (eds), Opracowanie ratowniczych badań wykopaliskowych na stanowisku 42 (A4/8) w Rozborzu, gm. Przeworsk I(1). Unpublished materials. Archive of the Rzeszów Foundation of Archaeological Centre. Rzeszów, 3-5.
- Medvedskaya I. N. 1992. Periodizaciya skifskoy arhaiki i Drevniy Vostok. *Sovetskaya Arheologiya* 3(1992), 86-107.
- Melyukova A. I. 1964. *Vooruzhenie Skifov. Arheologiya SSSR* (= *Svod Arheologicheskih Istochnikov,* v. D 1-4). Moskva: Nauka.

- Michalak A. and Jaszewska A. 2011. Katalog zabytków metalowych. In A. Jaszewska (ed.), *Wicina. Katalog zabytków metalowych*. Zielona Góra: Stowarzyszenie Naukowe Archeologów Polskich, Oddział Lubuski, 55-291.
- Michalski J. 1982. Pracownia odlewnictwa brązu w Zawadzie, woj. tarnobrzeskie. In Z. Bukowski (ed.), *Pamiętnik Muzeum Miedzi 1*. Legnica: Wydawnictwa Przyjaciół Nauk w Legnicy, 199-207.
- Miraś I. and Twardowski W. 2009. Pochówek z zausznicami gwoździowatymi z Kolonii Bąkowca, pow. Kozienice, stan. 1. In S. Czopek and K. Trybała-Zawiślak (eds), Tarnobrzeska kultura łużycka – źródła i interpretacje (= Collectio Archaeologica Ressoviensis 11). Rzeszów: Instytut Archeologii Uniwersytetu Rzeszowskiego, 449-458.
- Mogilov O. 2003. Detali kinskogo sporyadzhennya u pamiatkakh Zakhidnopodilskoy grupi Skifskogo chasu. *Arkheologiya* 2, 74-83.
- Moskwa K. 1982. Tendencje rozwoju grupy tarnobrzeskiej kultury łużyckiej. In M. Gedl (ed.), *Południowa strefa kultury łużyckiej i powiązania tej kultury z południem*. Kraków, Przemyśl: Instytut Archeologii Uniwersytetu Jagiellońskiego, 301-315.
- Moszyński K. 1954. O Neurach Herodota. Lud 41, 134-152.
- Niemiec Ł. 2007. Żelazne kiełzno z cmentarzyska w Wierzawicach, pow. Leżajsk, stan. 18 na tle podobnych metalowych zabytków z terenu Polski we wczesnej epoce żelaza. *Materiały i Sprawozdania Rzeszowskiego Ośrodka Archeologicznego* 28, 45-58.
- Niemiec Ł. 2009. Niektóre elementy rzędu końskiego w materiałach tarnobrzeskiej kultury łużyckiej. In S. Czopek and K. Trybała-Zawiślak (eds), *Tarnobrzeska kultura łużycka – źródła i interpretacje* (= *Collectio Archaeologica Ressoviensis* 11). Rzeszów: Instytut Archeologii Uniwersytetu Rzeszowskiego, 407-413.
- Pelisiak A. 2018. Centrum i peryferia osadnictwa w neolicie i wczesnej epoce brązu na wschodnim Podkarpaciu i we wschodniej części polskich Karpat (= Collectio Archaeologica Ressoviensis 38). Rzeszów: Instytut Archeologii Uniwersytetu Rzeszowskiego.
- Petrenko W. G. 1967. Pravoberezhe Srednego Pridneproviya v V-III vv. do n.e. (= Arkheologiya SSSR D. 1-4). Moskva: Nauka.
- Petrenko W. G. 1978. Ukraschenya Skifii VII-III vv. do n. e. (= Arkheologiya SSSR D. 1-4). Moskva: Nauka.
- Poradyło W. 1995. Materiały z dawnych badań na cmentarzyskach grupy tarnobrzeskiej, przechowywane w muzeach w Przemyślu i Krakowie. *Materiały i Sprawozdania Rzeszowskiego Ośrodka Archeologicznego* 16, 23-118.
- Szpunar A., Szpunar B. and Kuś M. 2009. Osada z wczesnej epoki żelaza w Gorzycach, pow. Tarnów, stan. 3, w świetle dotychczasowych badań. In S. Czopek and K. Trybała-Zawiślak (eds), *Tar-nobrzeska kultura lużycka – źródła i interpretacje* (= *Collectio Archaeologica Ressoviensis* 11). Rzeszów: Instytut Archeologii Uniwersytetu Rzeszowskiego, 415-440.
- Sadowski S. 2012. Nowe znalezisko czekana typu scytyjskiego z południowo-wschodniej Polski. In
 W. Blajer (ed.), *Peregrinationes archaeologicae in Asia et Europa Joanni Chochorowski dedicatae*. Kraków: Instytut Archeologii Uniwersytetu Jagiellońskiego, 385-390.

- Trybała-Zawiślak K. 2012. *Kłyżów, stan. 2 i Mokrzyszów, stan. 2 cmentarzyska ciałopalne z wczesnej* epoki żelaza (= Collectio Archaeologica Ressoviensis 21). Rzeszów: Instytut Archeologii Uniwersytetu Rzeszowskiego.
- Trybała-Zawiślak K. 2015. Przestrzeń i czas cmentarzyska tarnobrzeskiej kultury łużyckiej w kontekście rozplanowania grobów (= Collectio Archaeologica Ressoviensis 35). Rzeszów: Instytut Archeologii Uniwersytetu Rzeszowskiego.
- Trybała-Zawiślak K. 2019. Wczesna epoka żelaza na terenie Polski południowo-wschodniej dynamika zmian i relacje kulturowe. Rzeszów: Wydawnictwo Uniwersytetu Rzeszowskiego.
- Valde-Nowak P. 2004. Neolit. Lessowe centra i górskie peryferia. In D. Abłamowicz and Z. Śnieszko (eds), *Zmiany środowiska geograficznego w dobie gospodarki rolniczo-hodowlanej. Studia z obszaru Polski*. Katowice: Muzeum Śląskie w Katowicach, 383-394.