

WARRIORHOOD AT THE END OF THE NEOLITHIC IN CENTRAL EUROPE. COMPARATIVE ANALYSIS OF WARRIOR TRADITIONS IN THE CHOSEN REGIONAL GROUPS OF THE CORDED WARE CULTURE*

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Abstract:

The goal of this paper is to examine the variety of customs associated with celebration and commemoration of warrior virtues among chosen Corded Ware culture communities from western and eastern parts of its ecumene. It also summarizes recent theoretical background of warriorhood and compares assemblages from warrior graves with traces of skeletal traumata, in order to at least partially reconstruct actual methods of fighting. The level of actuality of warrior identity is reflected by the quantity of warrior burials. The need for emphasizing power and military prowess through funerary rituals and material culture might represent a response for internal social conflicts, as well as external threats. The lack of uniformity in rituals associated with warriorhood demonstrates that it was a dynamic social construct, which adapted to changing socio-economic conditions.

Keywords: *Corded Ware culture; warriorhood; social identity; weaponry; skeletal traumata.*

INTRODUCTION

One of the most characteristic features of the Corded Ware Culture (later CWC) is the custom of burying the deceased with a wide array of grave goods, including clay vessels, bone and horn tools, copper ornaments, etc.¹. Those objects are often interpreted as personal belongings, but also material symbols representing ideas and beliefs essential for particular social groups or even whole communities.² However, some specific assemblages are associated exclusively with chosen individuals. This is especially evident in the case of adult men, who were often interred with stone and flint implements, most probably designed for warlike purposes³. It is likely that their identity, be it actual or idealised, was related to the activity of fighting. Stone battle-axes and archer's equipment represent its main material symbols. However, the latter of the categories is rarely found in graves from the western part of CWC ecumene⁴, while the former appears to be of less importance among populations from its eastern margins⁵. Therefore, the main aim of this paper is to examine whether the tradition of celebrating *warriorhood* represented an uniform custom in both eastern and western parts of the CWC settlement north of the Alps, or was it locally diversified, as well as how this diversification was related to the actual methods of fighting.

The notion of *warriorhood*, interpreted as particular type of social identity related to the actual physical activity of fighting and displayed through distinct behaviours and material symbols, is well-established in modern archaeological discourse⁶. The interest on this matter was reignited by recent publications addressing the possible migrations from the

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¹ CZEBRESZUK 2004; BOURGEOIS, KROON 2017; WŁODARCZAK 2017.

² THOMAS 1991; SØRENSEN 2004:173.

³ e.g. VANDKILDE 2006.

⁴ BOURGEOIS, KROON 2017.

⁵ KEMPISTY, WŁODARCZAK 2000; KŁOČKO 2001; MACHNIK *et al.* 2009; RAZUMOV 2011.

⁶ OTTO ET AL. 2006; RALPH 2013.

Steppe zone to the Central and Western Europe and its socio-cultural repercussions⁷. According to one of the interpretations, those groups of migrants were made up of juvenile males striving for adventure and prestige, and led by the older, more revered warriors. Their contact with the local communities occupying previously mentioned geographical areas stimulated the decline of large agricultural centres. The old, agrarian world founded on the idea of collectivity collapsed and was replaced with new ideology, masculine and individualistic in its essence⁸. In this particular narrative the CWC constitutes an epitome of this change. It clearly favours male activities and virtues, emphasizes individuality and is associated (at least in some areas) with pastoral, aggressive way of life. In the following sections of this article different categories of archaeological record will be used to examine how the ideal, warrior figure was conceptualized and commemorated by various local groups following this tradition.

THEORETICAL BACKGROUND

Warriorhood is a complex term encompassing many different phenomena, ranging from physiological responses to confrontation, to ritual ceremonies during which idealized image of a warrior is displayed and commemorated. Therefore it is suggested that its definition should include at least three complementary dimensions or aspects: physiological, social and cultural. The first one refers to warrior's physical and psychological reactions to battle conditions. Second to the issues associated with internal organisation and warriors' obligations towards their own community. The last, cultural dimension encompasses means of emphasizing and commemorating *warriorhood* through material culture. It is also the most archaeologically accessible aspect of identity under discussion. As for the two former dimensions, they provide a broad contextual background for understanding the latter⁹.

The study of past identities is often based on an assumption, that objects placed intentionally in the burial pit are associated in one way or another with the deceased individual¹⁰. According to M. Sørensen's view, such items were not just ordinary gifts. As an integral part of community socio-cultural milieu, they represented powerful statements about true or idealized identity of their "owner"¹¹. The nature of the relation between individual and his or her offerings may be metonymic or metaphoric¹². In the first case, particular categories of grave goods are associated with one's social roles and related responsibilities. Alternatively, the posthumous identity may be manipulated by the mourners by using objects with symbolic meaning. A suggestive example of this custom is represented by child burials furnished with weaponry or other categories of material culture usually restricted for adults¹³.

In her excellent work H. Vandkilde¹⁴ argued that the state of being a warrior goes far beyond fighting. As a social identity, *warriorhood* has its own complex logic, embedded in fundamental conceptions of selfness, such as sex, age, social rank, ethnicity, etc. Therefore studying warriors must not be restricted only to the analysis of weaponry and *traumata*. In order to fully understand its role, one has to keep in mind that institutionalised *warriorhood* was maintained not only during war, but also in times of peace. Therefore relations with non-combatants constituted an evenly important part of the warrior's way of life. And if we assume, that symbolic warrior virtues were transferred into the burial ritual, their complex meaning could be accessed only through the elaborate comparison with other social groups who had access to the burial ritual.

METHODS

Presented work is based on a doctoral thesis of one of the authors, concerning *warriorhood* in the chosen regions of Central European part of the CWC ecumene. Its main aim was to reconstruct its socio-cultural framework by examining whether the presence of weaponry in burial pits was associated with particular biological traits and categories of grave goods.

⁷ HAAK *et al.* 2015; SJÖGREN *et al.* 2016; KRISTIANSEN *et al.* 2017.

⁸ TREHERNE 1995.

⁹ SKRZYŃIECKI 2018.

¹⁰ MIZOGUCHI 1993; HEYD 2007.

¹¹ SØRENSEN 2004.

¹² VANDKILDE 2006.

¹³ WŁODARCZAK 2004.

¹⁴ VANDKILDE 2006: 393-422.

The region known as Małopolska Upland was chosen as a core area of this study (Pl. I). This decision was motivated by a fairly large number of burials, often with well- or at least partially preserved skeletons, as well as an open access to all necessary data including information about sex, age, spatial arrangement of skeletal remains, types and location of grave goods, etc. Furthermore, despite numerous finds of final Neolithic weapons, the notion of *warriorhood* in the local CWC societies did not receive much interest, except some brief remarks. Another important factor was the fact that the recently published work by Quentin Bourgeois and Eric Kroon¹⁵, concerning variations in burial rituals among different regions of the CWC, did not contain any objects from areas lying east to the Oder river. Therefore, it was authors' intention to compare "western" and "eastern" parts of the Corded Ware world in order to assess the level of integrity of burial customs regarding the commemoration of *warriorhood*.

The sample from Małopolska Upland consists of 154 funerary objects, containing 178 individuals. As it was previously emphasized, *warriorhood* was not an isolated part of past social reality. In order to uncover the social and cultural aspect of being a warrior in CWC communities all remaining social groups, that is women, men buried without weapons and children were incorporated into the analysis. For that reason, burials with preserved skeletons and anthropologically determined sex and age were chosen in the first place. Objects that did not meet the criteria were not taken into account, unless they contained intentionally deposited weaponry.

All objects incorporated into the analysis were recorded in two complementary databases – one storing information about categories and number of deposited grave goods, and the other about biological and cultural traits of burials. 31 categories of funerary equipment were distinguished and grouped into four classes: weaponry, tools, ceramic vessels and adornments. Database with bio-cultural traits was, in turn, filled with information regarding grave construction, number of individuals, anthropological determinations of their sex and age, body orientation in relation to cardinal directions, and arrangement of upper and lower limbs¹⁶.

At first glance the association of aforementioned variables (especially the ones belonging to the biological category) with the actual warrior activities does not seem to be self-explanatory and therefore might raise doubts. However, their incorporation into the analysis is necessary for better understanding of how *warriorhood*, defined not only as merely physical, but also social, as well as ideological representation of both individual and collective identity, was intertwined in all these spheres, and how they affected its construction and re-construction in different spatial-temporal settings. Their explanatory value becomes clear only when considered in association with the other category, i.e. cultural traits. Biological features of the deceased provide invaluable information about past populations, but in order to "delve deeper" into particular past activities, especially those with strong social background, must be compared with other available (in this particular case, archaeological) data. Such comparisons are usually easier to describe than to quantify, and therefore might be difficult to present in an objective way. However, this goal is possible to achieve by using the CA incorporated in this paper. In terms of *warriorhood*, individual biological traits seem to be the most important factor. A typical warrior is often considered strong, agile and well-built. By emphasizing these values we focus only on traits which are considered universal and are, in our opinion, easily "transmittable" into the past. But archaeological record often shows that things in the past were quite different from what we deem likely. By taking both biological and cultural characteristics into account, we were able to discover that *warriorhood*, even though associated with male sex, was gradually losing its robust connection with adult masculinity in favour of more symbolic relation, represented by the increasing number of weapons in graves with child burials. This is only a single example, but it demonstrates the explanatory power of the comparative approach, which requires both sets of variables in order to provide valuable insights.

Information from the databases was subsequently combined and introduced into a contingency table, which demonstrates the absence/presence of previously distinguished variables in objects, i.e. burial contexts of CWC taken into consideration, through a binary code (respectively 0 and 1). It was further used as the basis for correspondence analysis (CA) of the data. The latter was performed using CAPCA 2.1 software. The results of computations were depicted against the 1st and 2nd eigenvectors, accounting for the highest percentage of the total decomposition of chi-square statistic. Two charts were made: the first one depicting correspondence between the variables divided into a number of categories and the second showing associations between the objects – graves.

At first, biological and cultural characteristics of burials were analysed with CA in search for possible correlations. The analysis confirmed earlier conclusions, pointing that CWC burial ritual in Małopolska Upland was gender-

¹⁵ BOURGEOIS, KROON 2017.

¹⁶ Categorized according to the scheme originally published by A. HAÜSLER 1974.

differentiated. Correspondence between biological sex, position of head and trunk, as well as arrangement of lower limbs (males buried on right-hand side with heads towards south; women on their left-hand side, with heads towards north), was documented (Pl. II). Consequently, it is possible to divide the analysed objects – graves along the vertical axis (2nd eigenvector), into two groups potentially reflecting distinction into burials of individuals representing opposite sexes: males on the left side and females on the right (Pl. III). One can list series of traits/features indicative for burial rites applicable for both sexes, and interpret them as social norms. However, if what we observe on the CA plot reflects a general practice, then it must be underlined that it was not always strictly followed. A more detailed overview of the data reveals, for instance, that a number of male individuals were buried in a manner suggesting female burial, i.e. on the left-hand side with heads pointing north. This presumably means that the male burial ritual was also internally diversified in order to emphasize the difference in customs intended for representatives of two social groups: combatant and noncombatant males. To test this hypothesis it was decided to perform CA once more, this time using only burials of men.

Due to uneven level of data characterizing analysed graves, especially in terms of the determination of the body arrangement or inventory, it was necessary to make preparatory steps that left out certain number of burials. The main criteria which had to be met when selecting graves for the analysis were determination of sex as male and arrangement of the body on either left or right side; any burial for which such information is lacking was not taken into consideration. Furthermore, graves with no inventory or characterized by a limited set of variables (less than three) were also omitted. Following graves were not included in the analysis: Bosutów 2; Koniusza 2/A; Miernów I; II/11; Mierzanowice 1/81 (2); Palecznica I; Pełczyska 6/21; Żerniki 1/34 (1); 1/42a; 1/42b; 1/66; 1/134.

Results of the analysis were again depicted on two charts: the first presenting correspondence between variables (Pl. IV), and the second between objects – graves (Pl. V). A brief examination of the second one reveals a clear separation of the analysed subset into two clusters: a smaller situated on the left side of the vertical axis (2nd eigenvector), and a larger predominantly concentrated between 0 and 1 values on the horizontal axis (1st eigenvector). Four burials (nos. 82, 83, 98 and 102) seem to be outliers from the bulk of objects. Switching to the chart displaying variables, the division into two clusters becomes less clear-cut. Still, it is possible to discern a structure which corresponds with the previously shown groupings of objects. On the extreme left end of the chart, between values -2 and -4 on the horizontal axis, are located variables related to body arrangement of the graves, i.e. position on the left-hand side and orientation with the head towards N, E and NE. These are the most characteristic features of the smaller groups of burials, to which can be added certain elements of inventory, such as metal and organic adornments, whetstones, or amphorae. In an opposition to the group of left-sided burials stands the other cluster of objects and the corresponding variables. It is concentrated around the arrangement of the body on the right side with the head pointing S, SW or NW. Thus it can be stated that the features related to the body arrangement and orientation decisively dichotomize the analysed data set, potentially being the most strictly applied customs involved in the burial practices of members of two different social groups. Judging by the corresponding elements of inventory – exclusive presence of battle-axes and lithic arrowheads, the second, larger group may be interpreted as the burials of combatant males – warriors (?). Other elements of inventory that apparently were the exclusive domain of the latter group are boar tusks, bone/antler batons, large whetstones and shells. Nonetheless, it has to be stressed that the remaining types of weapons/tools (e.g. flint axes or tools, bone awls), or various ceramic vessels were sometimes placed in the non-combatant male burials as well, as indicated by their more centred position on the chart. Still the division into two groups of burials, depending on the body arrangement and orientation on the one hand and inventory on the other, is evident.

GENERAL REMARKS ON WARRIORHOOD IN THE CWC COMMUNITIES FROM MAŁOPOLSKA UPLAND

Almost all individuals buried on their right-hand side were males. Exceptions occurred only in graves with remains of more than one individual. As for age, most of the deceased belonged to *maturus* category. However, a small number of children and adolescent boys were also interred according to this custom¹⁷.

The assortment of objects that could be linked to warlike activities was rather limited (Pl. VI). Stone adzes, or rather battle-axes, represent the most iconic CWC weapon. They were found exclusively in burial pits with right-hand sided interments. Due to the absence of material remains of bows, the incorporation of this type of weaponry into funerary sphere cannot be confirmed. Nevertheless, many graves contain non-organic arrowheads, mostly made of flint. Flint axes,

¹⁷ SKRZYŃIECKI 2018.

although well suited for basic self-defence or assault purposes, were not a specialized tool of war. Nevertheless, there is some controversy over their possible function¹⁸. On one hand, those items were deposited in graves of all three categories. On the other, only men buried on their right side were interred with two or more flint axes. In addition, “warrior axes” were often larger, heavier, and better crafted than specimens found in women and non-combatants’ graves¹⁹.

Apart from weaponry, warriors were often interred with a large array of tools made of bone, flint and stone (Pl. VII). Some of those objects, such as bone chisels, boar tusks, antler and bone batons, large flat whetstones, flint strikers and ample collections of flint half-products (probably a part of arrow maker's kit), were almost exclusively deposited in graves of males buried on their right-hand side. It is therefore possible that they constituted a part of a metonymic representation of activities associated with *warriorhood*.

CHRONOLOGICAL DIFFERENTIATION OF WARRIORHOOD IN MAŁOPOLSKA UPLAND

The idea of *warriorhood* among CWC communities from Małopolska Upland was dynamic and changed gradually over time. The oldest funerary objects associated with this tradition, dated roughly to 2800 BC, were represented by large, rectangular pits aligned W-E²⁰. They contained single male burials and were covered with round earth mounds. The deceased did not receive weapons and were interred only with a single ceramic vessel, sometimes accompanied by a flint blade. The lack of weaponry might indicate that the oldest CWC communities from the area of interest did not value warrior virtues enough to commemorate them in the burial ritual. The other explanation is that in the period under discussion access to burial was restricted only for chosen individuals – most probably males above the age of *adultus*. Their high social rank could have been associated with a leading political role, notable wealth or both²¹. The measure of their prestige was the amount of work necessary to prepare the burial pit and cover it with an earth mound. Due to the elitist nature of the burial there was no need for additional idealization of the deceased. Moreover, it is often suggested that the economy of Małopolska CWC communities from the first half of the 3rd millennium was of pastoral character²². In this case the lack of weaponry in funerary context becomes more understandable. Many ethnographic studies confirm that pre-state pastoral societies were of warlike nature²³. Therefore, violence constituted an everyday aspect of their reality and as such did not have to be additionally emphasized.

This situation changed radically shortly after 2700 BC. During approx. 150 to 200 years, the number of burials increased significantly. Not only adult males, but also women and children were interred. Moreover, men buried on their right-hand side received more elaborate sets of grave goods, including not only weaponry, but also particular types of tools, possibly associated with activities they had taken up before death. It might be assumed that in this period war-related virtues gained more symbolic meaning, and therefore were more eagerly emphasized by the mourners.

All „warrior graves” from this chronological horizon contained stone battle axes. It is worth noting that each individual was interred only with a single object of that type, which might indicate an exceptional, symbolic relation between weapon and its owner²⁴. Even more interesting is the fact, that they were placed not only in graves of adult males, but also in those containing remains of children. In case of grave 1 from Witów biological sex of *infans* II skeleton was not anthropologically determined, but its lower limbs and trunk were arranged in a manner clearly suggesting male burial²⁵. This peculiar example shows that, at least in the funerary sphere, *warriorhood* did not always constitute a strict metonymic representation of individual's real way of life. Instead it could have expressed a symbolic statement related to future expectations or a sign of kinship with actual warriors.

Another important feature is an almost total lack of lithic arrowheads in burial pits. It is surprising if one takes into account their growing abundance in objects dated to the period after 2500 BC²⁶. Apart from weaponry, graves also held flint axes. In fact, their presence in burial pits was quite common. In most cases, the deceased individual was granted

¹⁸ WŁODARCZAK 2006; BUDZISZEWSKI, WŁODARCZAK 2011.

¹⁹ e.g. BOROWSKA *et al.* 2016.

²⁰ WŁODARCZAK 2000; WŁODARCZAK 2006.

²¹ KEMPISTY 1978: 389.

²² MILISAUSKAS, KRUK 1999: 215-269; MACHNIK 2004.

²³ MOSZYŃSKI 1953; KEEGAN 1993; GAT 2006: 189-201; MCNEELY 2011: 46-49.

²⁴ SKRZYŃIECKI 2018.

²⁵ RYDZEWSKI 1973.

²⁶ SKRZYŃIECKI 2018.

with one, seldom two such objects. They were placed in various parts of the grave, which suggests their ordinary, utilitarian function. Another category of finds associated with warrior graves are large whetstones. In contrast to small stone chunks found in graves of all three analytical groups, those objects were always deposited in pair with battle-axes. This peculiar association might suggest that they were intended for re-sharpening large tools made of stone, and, presumably other materials, like bone and antler²⁷.

Another category of tools incorporated into the burial ritual during the first half of the 3rd millennium BC were large bone chisels. Their co-occurrence with weaponry indicates that warring and tool-making were both important activities of at least part of male CWC population from Małopolska Upland. The last type of particular grave goods found in warrior graves from that period are metal objects. Though rare, they constitute rather heterogeneous group. Some of them, because of their elongated, awl-like shape, are considered tools for precise flint knapping. Others, such as barely discernible copper artefact (found *in situ* near the neck, probably a pendant) from niche 3 of Chotelek Zielony²⁸, were used as adornments. It is striking that individuals interred with weapons were actually more often adorned with copper ornaments than females.

Additional changes in quality and quantity of warriors' equipment occurred around 2500 BC. For the sake of clarity, period spanning from 2550 to 2300/2200 BC will be divided into two parts, i.e. IIIA and IIIB, according to periodization originally published by P. Włodarczak²⁹.

Sub-phase IIIA, dated to 2550-2450 BC, although still embedded in the previously discussed, "battle-axe-oriented" variation of *warriorhood*, brought some new interesting features, which marked the gradual increase of importance of archery. Lithic arrowheads became more abundant in the funerary sphere. Stone shaft-hole axes lost their dominant symbolic status and were replaced with an additional flint axe. The deceased also received sets of flint half-products, probably representing resources for arrow-making in the afterlife.

Dead warriors were also interred with flint blades with regular, parallel edges and crushed, polished base and tip. Although their actual function is difficult to determine, it is suggested that they were used for making fire or as tritulators. These objects were found in a limited number of richly furnished "warrior graves". Their co-occurrence with weaponry, and sets of lithic arrowheads, indicates that they played an important part in the development of a new concept of *warriorhood*, associated with an increase of symbolic significance of archery. This new approach to commemoration of warrior virtues seems to be of Eastern provenience, and the areas populated by the communities of the Middle Dnieper culture are pointed out as the possible place of its origin³⁰. Some of the deceased from the warrior group were also adorned with impressively rich sets of jewellery made of organic materials, such as shell beads, however the number of such cases is limited³¹.

During the sub-phase IIIB, dated to 2500 – 2300/2200 BC, symbolic transition from the close-combat warrior ideal to its archery-based counterpart was finally brought to completion. From 30 "warrior" graves dated to this period which were chosen for further analysis, only 11 contained stone battle axes, whereas lithic arrowheads were deposited in 23 burial pits. This radical change in funerary customs is additionally marked by the growing presence of flint axes located in the zone previously restricted for stone weapons only. However, those objects were also found in graves of females and men buried on their left-hand side, which indicate their multifunctionality³². On the other hand, none of them was interred with more than one object of this type. The gradual exclusion of stone battle axes from the funerary sphere, followed by their replacement with less sophisticated, more tool-weapon-like objects, could mark the actual shift in perception of power and its material representations.

Equally important trait corresponding with this shift is the incorporation of large sets of flint half-products into the funerary sphere (Pl. VIII). They were likely intended as resources for arrow-making, and therefore constitute another category of finds that demonstrate the increasing importance of archery in local groups of CWC before their contact with Bell Beaker tradition. Again, similar arrow-maker's toolkits were often deposited in contemporary male burials of the Stepe zone³³. Symbolic connection between *warriorhood* and arrow-making is further emphasized by the growing

²⁷ WŁODARCZAK 2006: 39-40.

²⁸ PYZIK 1982.

²⁹ WŁODARCZAK 2006; WŁODARCZAK 2013.

³⁰ WŁODARCZAK 2006; RAZUMOV 2011.

³¹ BARGIEŁ *et al.* 2001.

³² BUDZISZEWSKI, WŁODARCZAK 2011.

³³ KLOČKO 2001; WŁODARCZAK 2014.

number of bone chisels used for flint processing. As in earlier phases, the deceased from the warrior group were sometimes buried with metal jewellery such as earrings made of copper wire, found near the skull bone. In spite of that it has to be stated that those objects did not form a part of a warrior set – more elaborate adornments were deposited in graves of women, as well as men buried on their left-hand side.

CATEGORISATION OF *WARRIORHOOD* BASED ON THE ASSESSMENT OF WEALTH

As it has been demonstrated, the warrior ideal, honoured by the mourners during mortuary ceremonies, was not static. Its development lasted approx. 600 years, during which the concept of *warriorhood* evolved from the praise of strength and power utilized in close-combat to the emphasis on dexterity and skill necessary for being a competent archer. The presence of status symbols related to violence and power in some male burials might indicate that their social rank was higher than that of individuals interred without weaponry. However, the results of wealth assessment, calculated for all objects taken into account, only partially corroborate this assumption.

The value of wealth was assessed according to the method originally developed by Sławomir Kadrow and Anna & Jan Machnikowie³⁴ and adjusted to CWC inventories using Piotr Włodarczak's³⁵ and Anna Zakościelna's³⁶ systems, with some minor adjustments. Spatial relation between particular individuals buried in collective graves and their "possessions" was often difficult to determine, therefore the assessment of wealth was based primarily on single burials. The most important observation is that weaponry was also placed in graves with relatively "poor" equipment.

On the basis of quality and quantity of weaponry found in burial pits, at least four types of warrior graves could be distinguished: objects containing only lithic arrowheads; objects only with stone battle axes; objects with battle axes and archer's equipment and objects with archer's equipment and two or more flint axes. As shortly stated above, these categories do not seem to correspond with wealth classes distinguished on the basis of differences in value of particular sets of grave goods. It appears that different types of *warriorhood*, or at least its various funerary representations, were very loosely associated with wealth. On the other hand, two most richly furnished objects from the examined sample belong to "warrior grave" category³⁷. However, their equipment was not standardized in a manner characteristic for a distinctive social group. On the contrary, it is more likely that grave goods were carefully selected by the mourners in order to at least partially emphasize the individuality of the deceased.

COMPARATIVE ANALYSIS OF *WARRIORHOOD* FROM ADJACENT AREAS OF SOUTH-EASTERN POLAND

In order to develop a more generalized view on how *warriorhood* was celebrated in the CWC's Eastern margin, the sample from Małopolska Upland was compared to the chosen adjacent Corded Ware communities from South-Eastern Poland. It appears that warrior ideal in the whole area of interest was praised according to a peculiar set of common rules, such as the association of military prowess and masculinity, as well as right-hand-sided orientation of the individual's body. However, the celebration of warrior virtues was also affected by various local traditions, which is especially evident in terms of quality and quantity of deposited grave goods, as well as their location in the burial pit.

THE SOKAL RIDGE

CWC communities from the Sokal Ridge³⁸ were only partially affected by the transition from close-combat to archery-based ideal of *warriorhood* (Pl. IX). Stone battle-axe remained the most iconic, and therefore important symbol of power and military prowess. On the contrary, the number of lithic arrowheads is rather low in comparison to the Małopolska Upland. There are also no direct indications of using flint axes as a substitute for a stone battle-axe. Moreover, the association between weaponry and particular type of tools is far less marked. This situation bears some resemblance to that from the end of the 2nd/beginning of the 3rd chronological phase in the Małopolska Upland. The absence of weaponry in children burials suggests that this particular type of *warriorhood* was celebrated in a metonymical, rather than metaphorical way.

³⁴ MACHNIKOWIE, MACHNIKOWIE, KADROW 1992.

³⁵ WŁODARCZAK 2006.

³⁶ ZAKOŚCIELNA 2011.

³⁷ WŁODARCZAK 2006: 145.

³⁸ MACHNIK *et al.* 2009.

THE LUBLIN UPLAND

In contrast to the previously discussed group, CWC communities from the Lublin Upland were more eager to mark the importance of archery by incorporating arrows, as well as parts of arrow maker's kit into the funerary sphere³⁹. Another feature worth mentioning is the presence of peculiar weapon sets consisting of two flint axes and arrows. Similar combinations of weaponry were documented in chosen warrior graves dated to the sub-phase IIIB in the Małopolska Upland. In addition, an association of weaponry with particular types of tools, i.e. bone chisels, boar tusks and bone/antler batons is also evident (Pl. X). The absence of weaponry in graves of children bears resemblance to the situation from the Sokal Ridge. At the same time weapons were placed in graves of *senilis* individuals. Therefore it is likely that one's social rank established during lifetime didn't lost its actuality with age, as was the case in Vikletice, Moravia⁴⁰.

THE KAŃCZUCKA UPLAND

The comparative sample for this region consists of two recently excavated cemeteries located near Szczytna and Mirocin, Jarosław district, podkarpackie voivodeship (Pl. XI).

Similarly to the Małopolska and Lublin Uplands, dead warriors were equipped with stone battle axes and arrows. In addition, one of the graves from Szczytna, site 6 contained an extraordinary shaft-hole battle axe made of arsenic bronze⁴¹. The custom of placing more than one flint axe in the burial pit, characteristic for later phases of CWC development in South-Eastern Poland, is also present. In two cases the deceased were interred with a full warrior set, consisting of a stone battle-axe, arrows and two axes made of flint. In addition, one of the aforementioned weapon-bearers was given a large flat whetstone, which represents a peculiar combination of old (stone battle axe, whetstone) and new (archer's toolkit, two flint axes) material symbols of *warriorhood* and other associated activities.

In contrast to the Sokal Ridge and Lublin Upland, weaponry was also deposited in graves of children, thus indicating more metaphorical dimension of emphasizing warrior identity: two young individuals of *infans* age were interred with smaller, individually shaped battle-axes relevant for their size. However, this by all means symbolic representation of their (future?) identity does not include archer's equipment. This rule was also followed by CWC communities from the Małopolska Upland. Given these examples, it may be concluded that battle-axes functioned as a material symbol of the distinct, social group privileged to carry and display their weapons, while bows represented more pragmatic and brutal way of fighting, restricted only to the actual warriors. In case of the examined sample, presence of weaponry seems to be associated more with biological sex, than age of the deceased. The custom of placing stone battle-axes in graves containing remains of children suggest that *warriorhood* was an important, but rather symbolic than actual, part of collective identity of a particular social group. If one takes into account that limited number of females from Szczytna were also buried with very rich inventory, we might assume that some CWC communities from the region under discussion were internally diversified according to a social rank system, as was suggested by H. Vandkilde in case of the Vikletice cemetery in Moravia⁴².

Fairly large number of prestigious grave goods made of metal might be a result of intensified contacts with communities of the Steppe zone. The most spectacular example of a richly furnished warrior grave is the object no. 4 from Szczytna, site 6⁴³. It contained an arsenic bronze shaft-hole battle-axe and a cooper tool for flint processing, as well as four pieces of metal jewellery, non-organic remains of archer's kit and previously mentioned flint half-products for arrow-making. Quite surprisingly, a man buried with such remarkable gifts was a young individual of *adultus* age. Judging by his equipment, he must have played an important role in his community. The presence of weaponry and metal adornments indicates that his exceptional status was related to the ideal of *warriorhood*. On the other hand, it may as well represent an important step into the elitisation of *warriorhood*, which occurred in a fully developed form in the succeeding age of bronze⁴⁴.

³⁹ JAROSZ *et al.* 2016.

⁴⁰ WIERMANN 1998; WIERMANN 2002.

⁴¹ HOZER *et al.* 2017: 44-46.

⁴² VANDKILDE 2006.

⁴³ HOZER *et al.* 2017.

⁴⁴ VANDKILDE 2013.

WARRIORHOOD IN OTHER PARTS OF THE CWC ECUMENE

In general, all of the examined Corded Ware communities from South-Eastern Poland celebrated warrior identity according to a very similar pattern, encompassing the presence of both, stone-battle axes and bows, as well as tools for flint processing and non-organic remains of an archer's kit. Some minor deviations from these rules are visible in the region of Sokal Ridge, where the custom of incorporating material symbols of archery into the funerary sphere is far less evident.

Nevertheless the tradition of commemorating warrior virtues in the burial ritual in South-Eastern Poland seems to be unified, despite some minor, previously discussed deviations. In order to assess the level of its coherence in a wider geographical scope, mortuary celebrations of *warriorhood* from the Western part of CWC ecumene must be taken into account.

WARRIORHOOD AMONG CWC COMMUNITIES FROM BOHEMIA

The burial ritual of the CWC communities from Bohemia was similarly gender-differentiated, with males buried on their right-hand- and women on their left-hand side. Some particular types of grave goods, such as bone chisels, metal tools and stone axes, were deposited only in pair with weapons⁴⁵. The presence of weaponry was also strictly associated with male sex. However, some part of male population was interred according to different rules, i.e. on a left-hand side and without weaponry. This praxis corresponds to the burial rituals from the Małopolska Upland. There are, though, some considerable differences, and an almost total lack of archer's equipment is by no doubt one of the most intriguing. Moreover, the symbolic significance of close-combat is emphasized by the presence of additional categories of arms, i.e. stone maceheads.

Warriorhood in Bohemia seems to be associated with particular age division, spanning from *iuvenis* to *maturus*. At the cemetery of Vikletice, burials with rich inventories, such as weaponry or metal adornments, were clearly clustered, thus reflecting the existence of privileged groups/lineages⁴⁶. The number of prestige goods deposited in burial pits decreases with the growth of distance from particularly richly furnished male burials with weaponry. This peculiar dependence might suggest that warrior identity was associated with leading political roles, e.g. a headman.

The lack of weaponry designed for middle-range combat may be an important hint on the actual methods of fighting. Of course an idea that CWC warriors from Bohemia, for some unknown reasons gave up using one of the most versatile weapons of all time is not convincing and should be neglected. It is definitely more likely that bows were used only for pragmatic purposes, while stone battle-axes and maces were additionally incorporated into symbolic, funerary sphere. Some researchers claim that this practice points at ritual, duel-like nature of CWC *warfare*. Similar customs were recorded for modern pre-state societies⁴⁷, as well as Mycenaean military organisations of the late Bronze Age⁴⁸. The purpose of this mechanism is, of course, difficult to determine. It could be a way of establishing internal hierarchy among young warriors, as well as a method of settling down matters without unnecessary bloodshed. Needless to say, expertise gained in such controlled duels was invaluable during encounters with real enemies.

WARRIORHOOD IN THE WESTERN AND NORTHERN PARTS OF THE CWC ZONE

Association between grave inventory, biological sex and body arrangement in CWC communities from Western and Northern parts of Europe was recently examined by Bourgeois and Kroon⁴⁹. Their sample included 1161 burials, from which 279 were used for further analyses regarding, inter alia, spatial relation between body and particular categories of grave goods.

Similarly to the Eastern part of the CWC range, weaponry was placed only in graves of males buried on their right-hand side. This particular feature appears to be universal in the whole CWC ecumene. Stone battle-axe was the primary symbol of *warriorhood*. Its symbolic significance was additionally emphasized by placing the weapon in front of the upper part of the body of the deceased. This specific custom is also evident in the Małopolska Upland and adjacent

⁴⁵ WIERMANN 1998; WIERMANN 2002; KOLAŘ 2016.

⁴⁶ WIERMANN 1998; WIERMANN 2002.

⁴⁷ CHAGNON 2013.

⁴⁸ KRISTIANSEN 1999; MOLLOY 2007.

⁴⁹ KROON 2017.

areas, although the battle-axe was usually located behind the individual, at the level or slightly above his arms⁵⁰. More surprisingly, flint axes from Bourgeois and Kroon's sample were located in the same zone of the burial pit, as stone battle-axes. This practice bears some resemblance to that from the Małopolska and Lublin Uplands, where flint axes were sometimes deposited in graves instead of a stone battle-axe. However, these objects were usually placed in other, less representative zones of the burial pit, often in the vicinity of tool-like objects intended for everyday use. Another major difference is the lack of archer's equipment, characteristic also for the previously discussed groups from Bohemia. Most likely the bow was considered a hunting weapon, well suited for shooting the game, but not hurting humans. However, burials of the victims from Eulau⁵¹ clearly indicate that ranged weapons were used for killing people in the time when Corded Ware tradition was still present.

RELATIONS BETWEEN POSTHUMOUS WARRIOR IMAGE AND METHODS OF FIGHTING

Remains of arrows and large deposits of flint half-products intended for arrow-making constituted an important part of posthumous warrior image among CWC communities from Vistula and, most likely, also the Dnieper basin. According to a metonymic interpretation of warrior equipment, objects interred with the deceased are connected to personhood and therefore reflect certain part of his/her social identity. A steady increase in numbers of middle-range weaponry deposited in CWC graves from South-Eastern Poland during the second half of the 3rd millennium BC might indicate the occurrence of changes both in ideological, as well as practical approach to *warriorhood*. A significant number of examples demonstrating the socio-ideological importance of archery comes from late Yamnaya and Catacomb cultures funeral contexts⁵². Despite considerable geographical distance, communities from the Małopolska Upland, as well as other adjacent regions, were affected by the Steppe tradition and adopted new ideal of manhood and power, symbolized by expertise in archery and other associated activities, such as flint processing, and probably also hunting.

Incorporation of archer's equipment into the funerary sphere clearly indicates that effective use of this weapon was considered one of the important aspects of idealized image of manhood. What is more, some burials from the South-Eastern Poland bear traces of arrow wounds, which obviously suggests that bows, apart from their symbolic role, were also actively used in real combat. One of the cases of skeletal *trauma* was identified in a female burial from large, flat cemetery in Żerniki Górne, site 1. Among the pelvis bone of an adult woman a single flint arrowhead was found. This observation demonstrates that both males and females were treated as potential targets.

Similar association between weaponry interred with the deceased and the character of skeletal *traumata* could be observed in Germany and Bohemia. Skulls of some adult males bore traces of blunt traumata, located predominantly on the left side of their parietal bones. It is likely that they took part in ritualized duels, during which contestants attacked each other with heavy implements such as stone adzes or maces. According to Neubert *et al.*⁵³, the purpose of this activity was not to kill, but rather to stun an opponent, presumably in order to gain prestige and confirm or renegotiate one's social position. Taking into account all presented data, it might be assumed that the difference in means of commemoration of warrior identity in Western and Eastern zones of the CWC settlement were to some degree related to the nature of actual fighting. Use of bows, as well as the presence of possible female victims indicate, that *warfare* in SE Poland was less ritual and probably more brutal. This observation is particularly interesting when compared to R. Shulting's idea of eneolithic *warriorhood*, which, in his opinion, marks the transition between voluntary and professional organisation of warrior's craft⁵⁴. It seems that CWC communities from Eastern Europe were under the influence of the previously mentioned Steppe cultural traditions, and adjusted their combat techniques to warlike and aggressive neighbours. The killing of women also suggests that the rule of *social substitutability* could have been partially restored.

CONCLUSIONS

Comparative analysis of burial rituals from the chosen parts of CWC ecumene demonstrates that customs associated with celebration and commemoration of *warriorhood* were not uniform. Very limited numbers of archer's

⁵⁰ SKRZYNIECKI 2018.

⁵¹ MEYER *et al.* 2009.

⁵² RAZUMOV 2011.

⁵³ NEUBERT *et al.* 2014.

⁵⁴ SHULTING 2013.

equipment in burials from Denmark, Germany and Bohemia stand in contrast to its large quantity recorded in graves from the south-eastern Poland. However, the incorporation of middle-range weaponry into the funerary sphere became widespread slightly before or shortly after the beginning of the 2nd half of the 3rd millennium BC. Male burials from the earlier period did not contain arrows and were predominantly furnished with stone battle-axes. It appears that between 2800 and 2600 BC warrior identity and its funerary representations were more coherent. After that period, the older, close-combat oriented pattern of *warriorhood* was still present in the west, but not in the east.

The change that occurred in the conception of warrior's identity in south-eastern Poland is difficult to interpret. The oldest barrow graves of the CWC did not contain any symbols of military prowess, which bears some resemblance to the description of the funerary customs of the oldest Yamnaya migrants published by Kristiansen *et al.*⁵⁵. On the other hand, no evidence of direct Yamnaya migration to the areas of today's south-eastern Poland has been found so far, which weakens the allochthonic line of interpretation.

It is striking that the "explosion" of military symbolism in the funerary sphere occurred in the second half of the 3rd millennium BC. During that time, a major change in mortuary rituals took place. Older customs, emphasizing the dominant role of adult male headmen-patriarchs, were replaced with more "liberal" approach, in which individuals of both sexes and all age categories were granted the right for being interred after death. However, a great emphasis was put on the differences between male and female burials, not only in terms of body position, but also assemblages of grave goods. This rule does not pertain to previously mentioned group of adult males interred on their left-hand side. Despite the constant growth of archaeogenetic and bioarchaeological data, the meaning of this peculiar practice still remains obscure. Further assumptions on this matter are possible only from the broader, cross-cultural perspective.

Some male individuals from North American indigenous tribes deliberately renounced their male responsibilities in order to live a life of *berdache* – a two-spirit being free from restrictions and able to benefit both from male and female social roles. This social category was proposed as a possible explanation for the presence of similar burials among CWC communities from Bohemia⁵⁶. In case of south-eastern Poland, it does not appear to be adequate, mostly because of a complete lack of grave goods that could be associated with masculine activities, such as hunting, flint processing, warring, etc. This observation leads to an assumption, that those individuals, as well as women, were presumably excluded from certain social and, perhaps, also economic activities. The latter possibility seems to be of particular interest. During the second half of the 3rd millennium BC, CWC communities from SE Poland, and especially from Małopolska Upland, underwent changes in settlement patterns. The appearance of large cemeteries of flat graves indicate the growth of stability, possibly associated with rising importance of agriculture in contrast to the previous domination of animal husbandry, or even pastoralism⁵⁷. Certain groups of men accustomed to the old ways of living were still responsible for animal rearing, and therefore maintained the idealized pattern of manhood based on ideas of power and warrior prowess⁵⁸. Others were engaged in different economic activities, probably also taken up by women, and, in consequence, could not share the social and symbolic identity of their male counterparts. The considerable growth of quantity, as well as quality of weaponry and associated grave goods deposited in *warrior* graves could represent an ideological reaction of pastoralists for the previously mentioned re-introduction of agriculture. Reaction aimed at emphasizing their social and ideological distinctiveness, especially in contrast to individuals who did not share their activities and beliefs. The actuality⁵⁹ of social identity of a warrior, as well as other associated roles, might also have increased as a response for the threat represented by the pastoralists from Eastern Europe, who, due to the lack of natural borders, were able to penetrate regions of south-eastern Poland. The growing presence of *traumata* associated with arrow wounds demonstrates that the nature of *warfare* changed from ceremonial to more lethal, presumably as a consequence of an adaptation to more effective fighting techniques utilized by the communities of the Steppe zone.

⁵⁵ KRISTIANSEN *et al.* 2017.

⁵⁶ WIERMANN 1988; TUREK 2014.

⁵⁷ MACHNIK 2004.

⁵⁸ ELIADE 1988: 26-27.

⁵⁹ KOROSTELINA 2007:15-32.

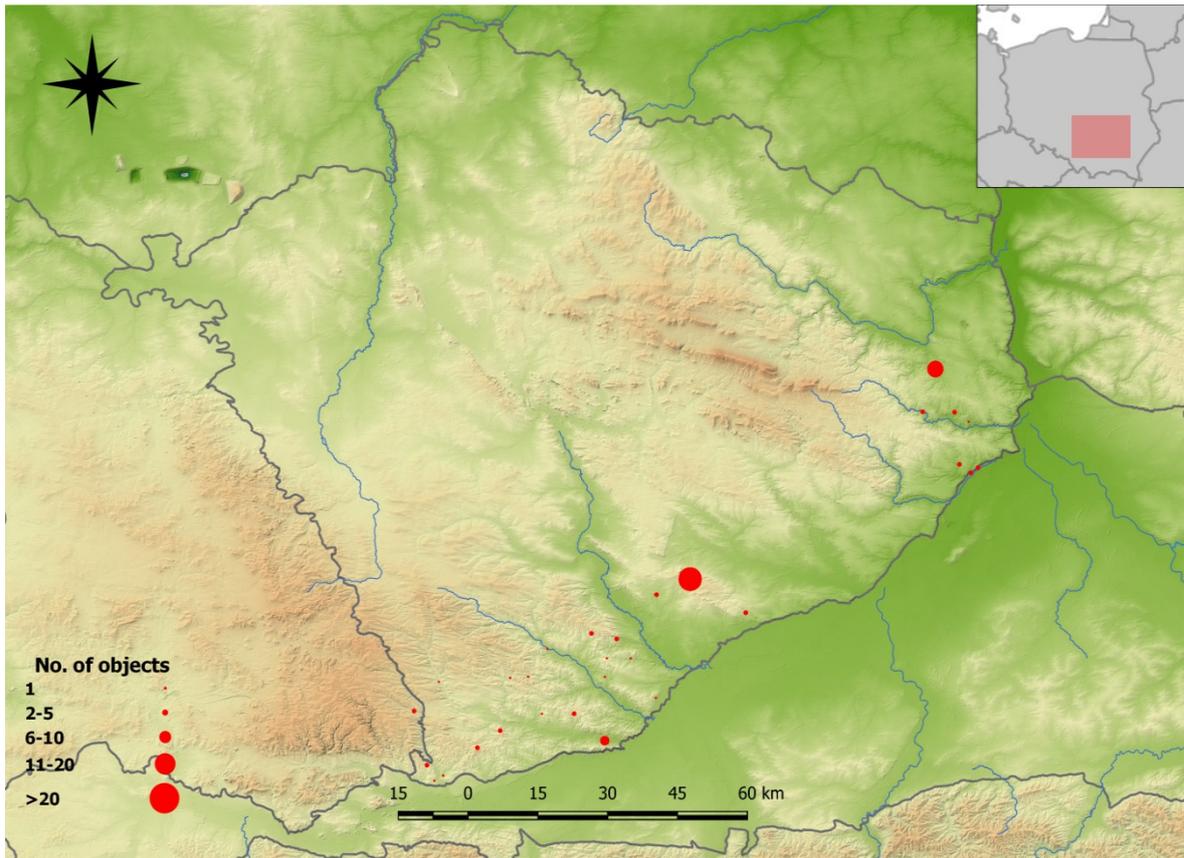
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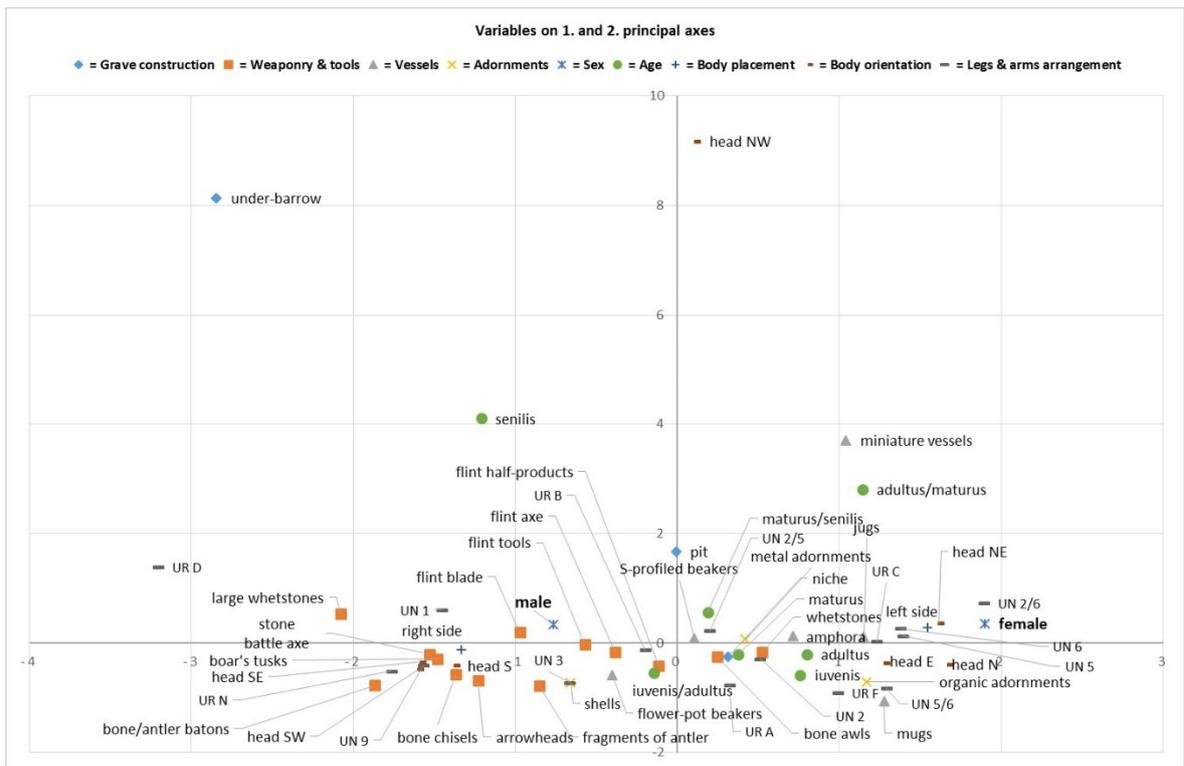
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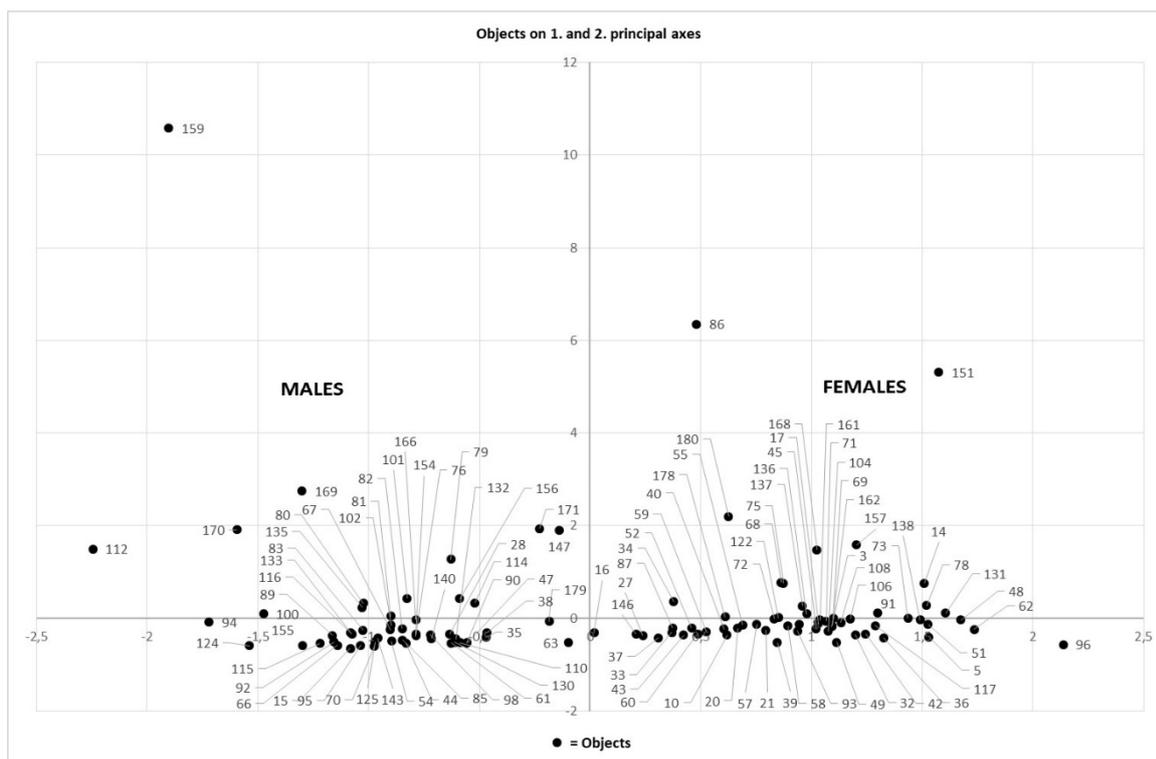
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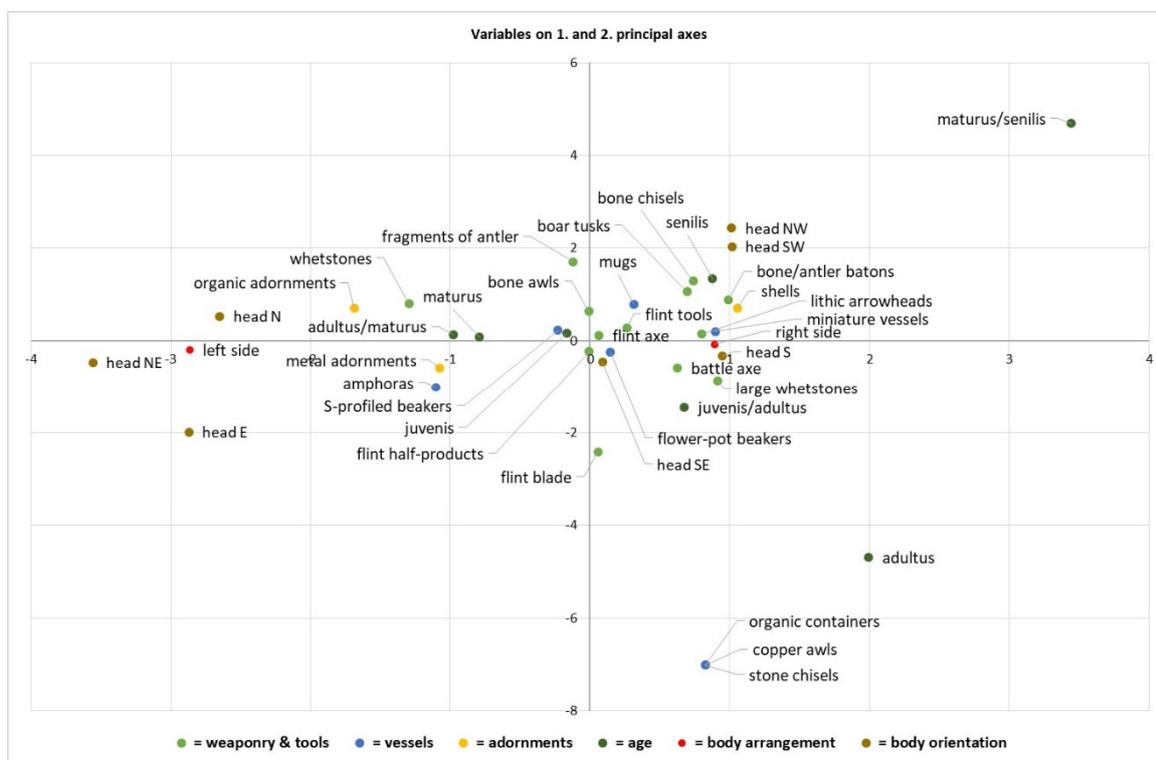
Pl. I. Małopolska Upland – core analytical region of the presented study (map by R. Skrzyńiecki).



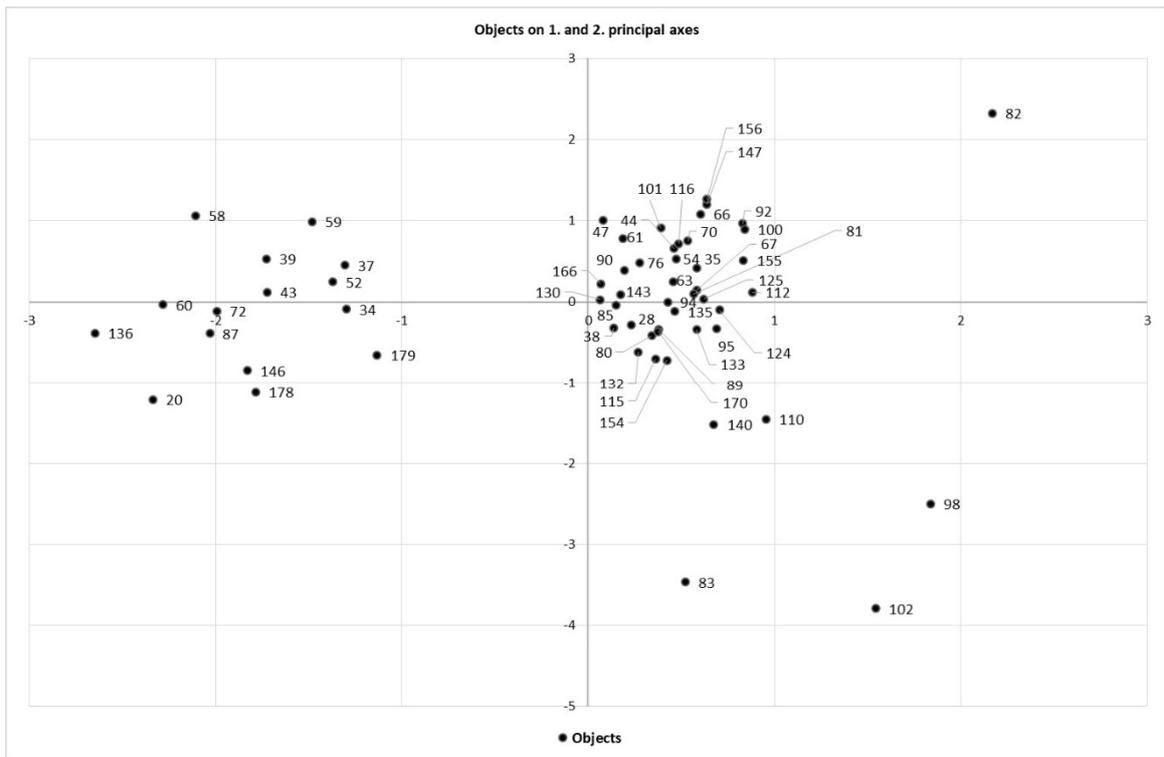
Pl. II. Correspondence analysis results for all burials, relative to the first and second axis (1st and 2nd eigenvector): associations between variables divided into particular categories (graph by Mateusz Cwaliński).



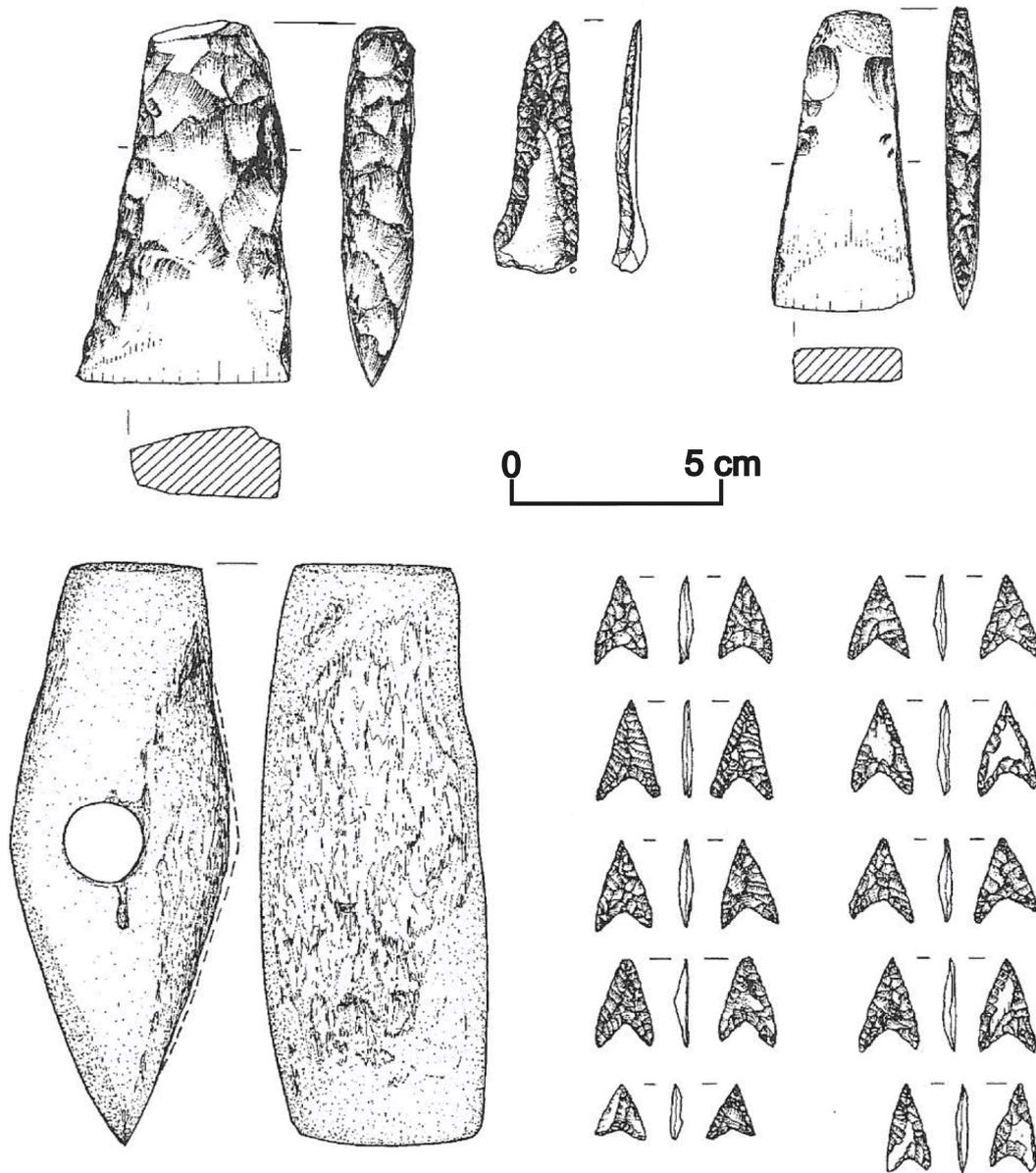
Pl. III. Correspondence analysis results for all burials, relative to the first and second axis (1st and 2nd eigenvector): associations between objects-graves (graph by Mateusz Cwaliński). Numbers on the plot refer to grave objects' IDs (see List 1).



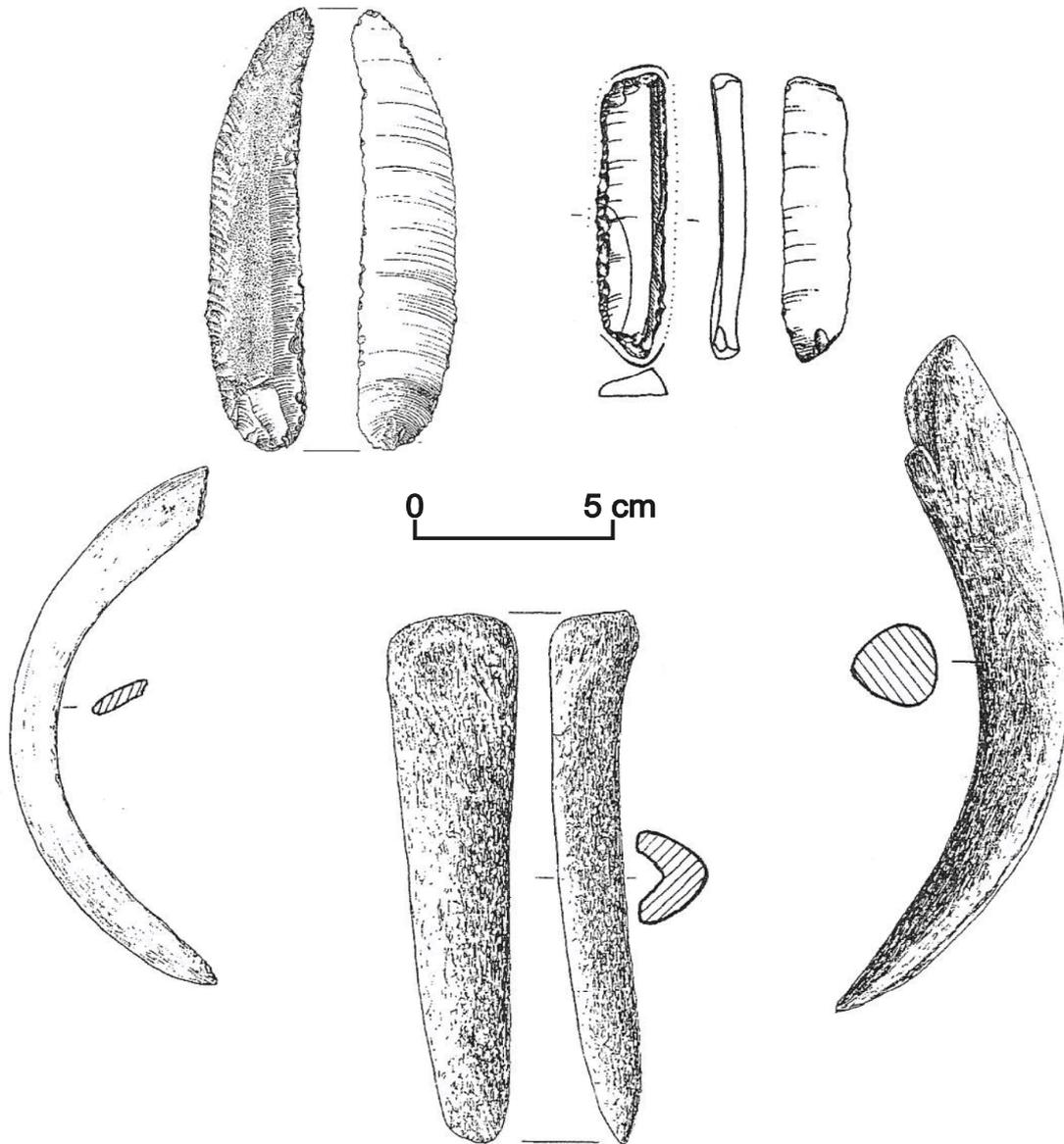
Pl. IV. Correspondence analysis results for male burials, relative to the first and second axis (1st and 2nd eigenvector): associations between variables divided into categories (graph by Mateusz Cwaliński).



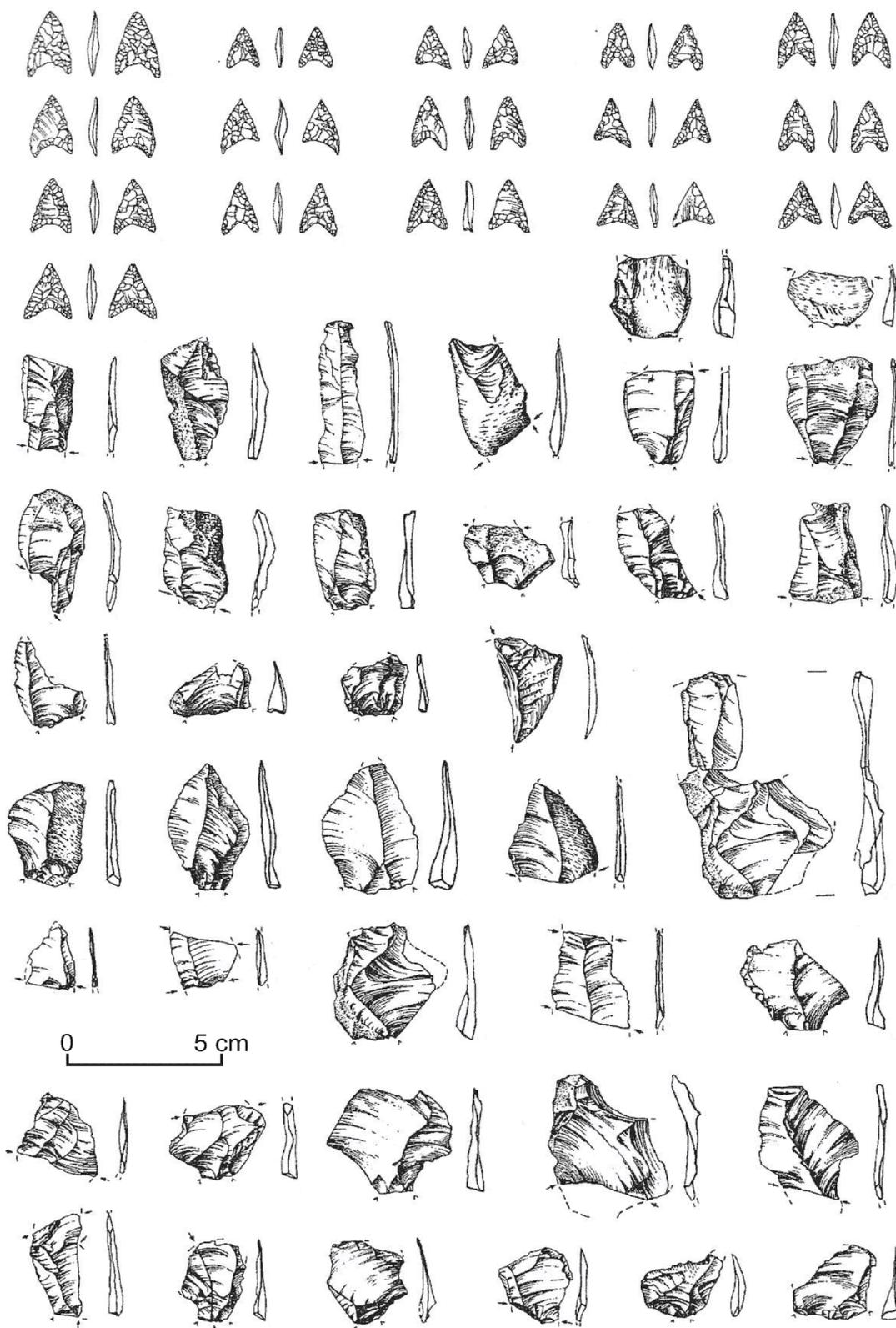
Pl. V. Correspondence analysis results for male burials, relative to the first and second axis (1st and 2nd eigenvector): associations between objects-graves (graph by Mateusz Cwaliński). Numbers on the plot refer to grave objects' IDs (see LIST I).



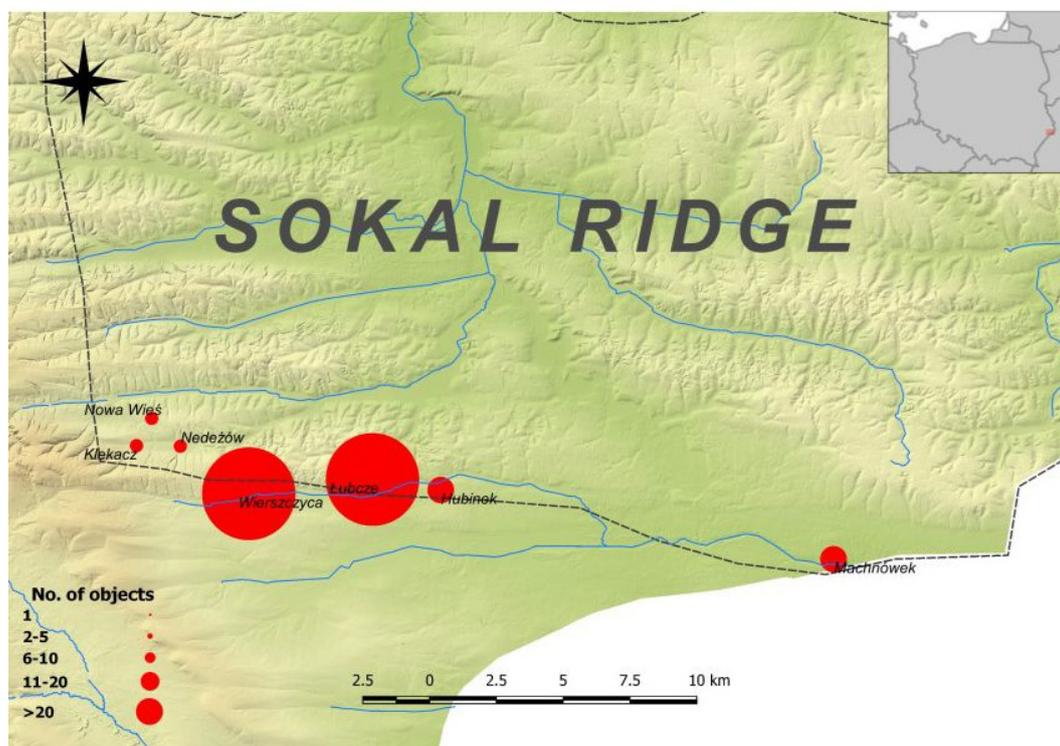
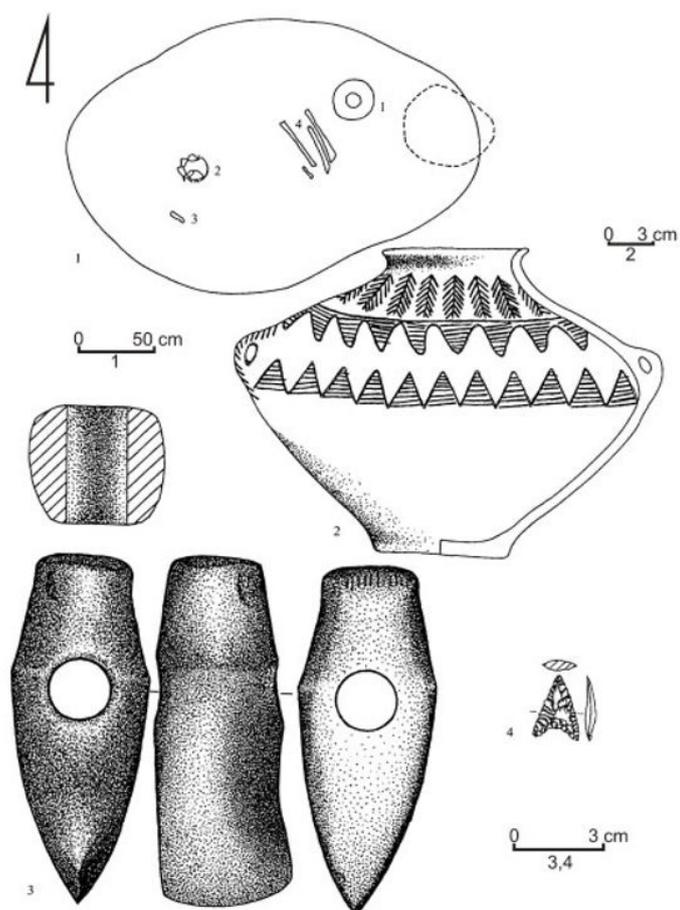
Pl. VI. Potential weapons from the CWC warrior graves from south-eastern Poland
(after WŁODARCZAK 2004).



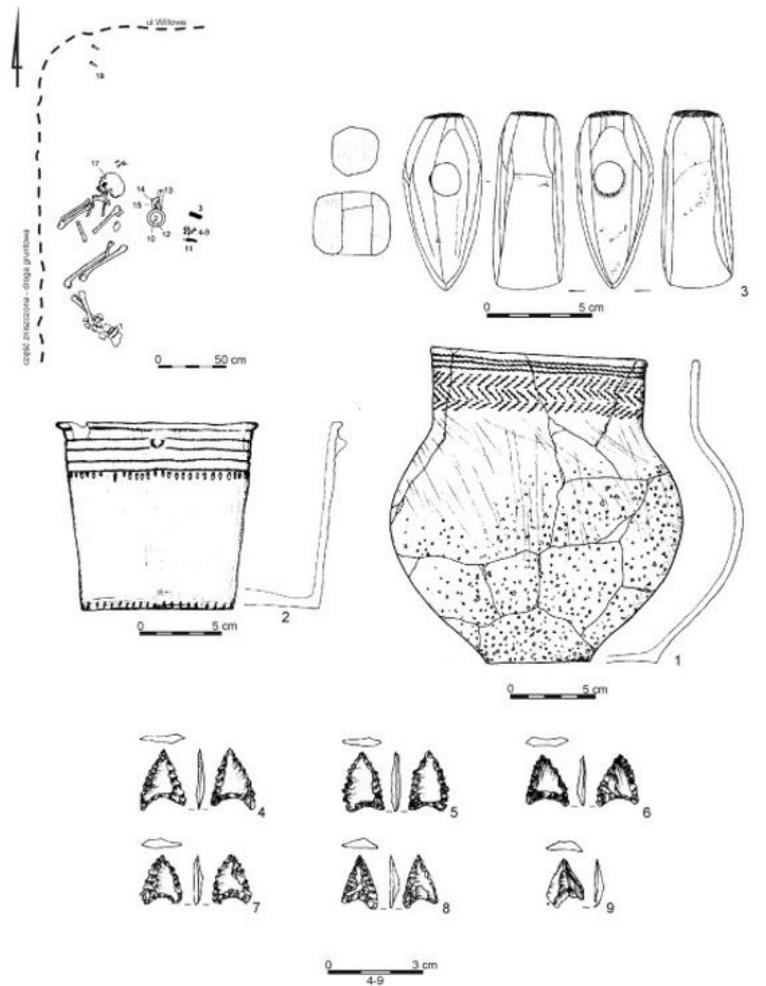
Pl VII. Bone and flint tools from CWC male burials from south-eastern Poland (after various authors).



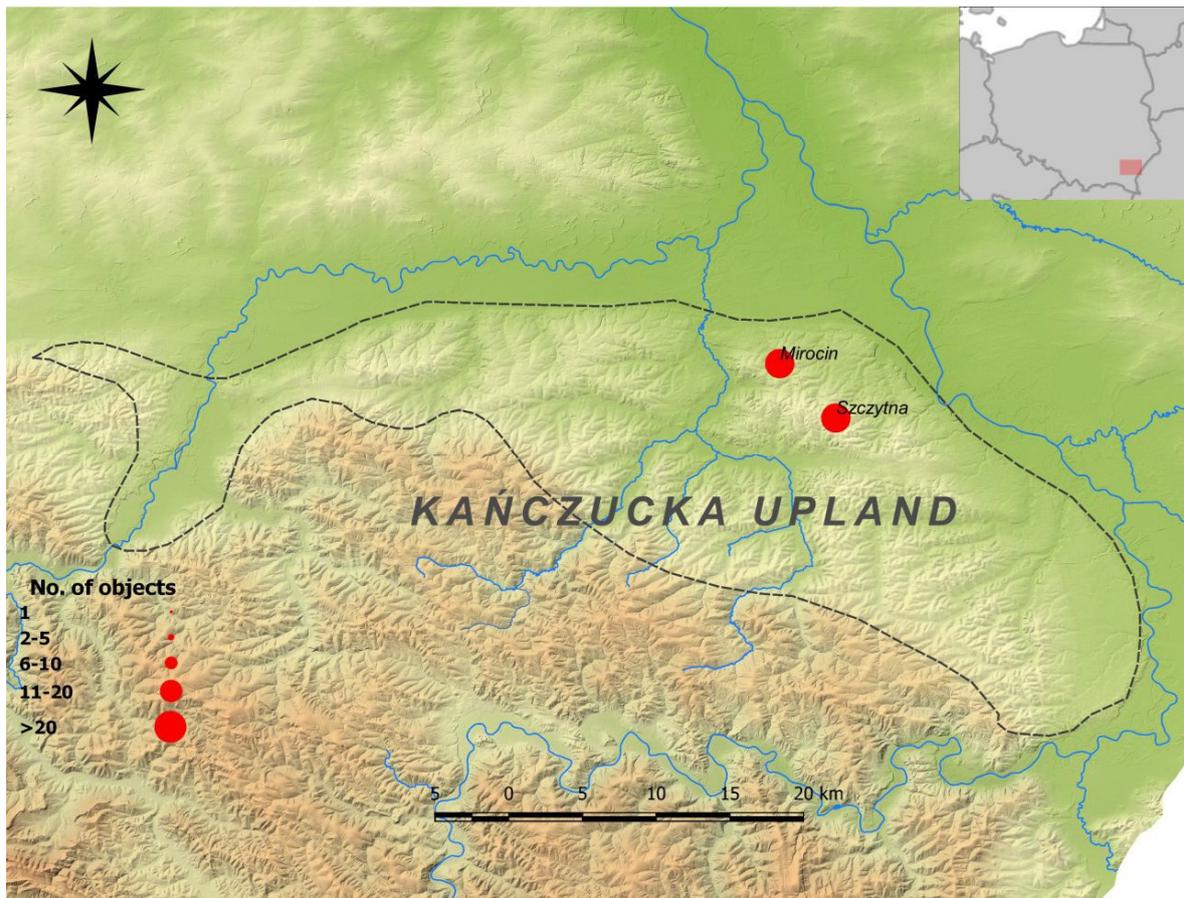
Pl. VIII. Arrowheads and various flakes, presumably representing part of the so-called arrowmaker's toolkit. Assemblage from grave no. 3 in Korusza, site 1, south-eastern Poland (after BUDZISZEWSKI, TUNIA 2000 and WŁODARCZAK 2006).



Pl. IX. Grave goods from chosen warrior graves from the Sokal Ridge (map by R. Skrzyniecki; drawings after MACHNIK *et al.* 2009).



Pl. X. One of the warrior graves from Lublin Upland. After JAROSZ *et al.* 2016 (map by R. Skrzyński).



Pl. XI. Mirocin and Szczytna cemeteries, Kańczucka Upland, south-eastern Poland (map by R. Skrzyński).

LIST I. List of grave objects incorporated into the analysis.

Burials	ID	Reference
Żemiki Góme 1/34 (1)	10	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/42a	15	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/42b	16	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/48	20	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/66	27	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/67 (1)	28	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/81	34	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/82	35	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/85 (1)	37	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/85 (2)	38	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/89	39	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/94	43	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/95	44	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/100	47	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/113	52	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/115	54	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/125	58	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/126	59	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/127	60	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/128	61	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/130 (1)	63	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/132	66	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/133	67	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/134	68	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/136	70	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/138	72	KEMPISTY, WŁODARCZAK 2000
Żemiki Góme 1/141	76	KEMPISTY, WŁODARCZAK 2000
Bosutów/2	79	KRAUSS 1960
Bosutów/3	80	KRAUSS 1960
Bronocice/1	81	MILISAUSKAS, KRUK 1984
Zielona 3/2	82	WŁODARCZAK 2004
Zielona 3/3	83	WŁODARCZAK 2004
Mierzanowice 1/81 (1)	85	UZAROWICZOWA 1970
Mierzanowice 1/81 (2)	86	UZAROWICZOWA 1970
Mierzanowice 1/83	87	UZAROWICZOWA 1970
Mierzanowice 1/98	89	UZAROWICZOWA 1970
Mierzanowice 1/100	90	UZAROWICZOWA 1970
Mierzanowice 1/108	92	UZAROWICZOWA 1970
Mierzanowice 1/199	94	UZAROWICZOWA 1970
Mierzanowice 1/200	95	UZAROWICZOWA 1970
Mierzanowice 1/209	98	UZAROWICZOWA 1970
Książnice Wielkie/2	100	MACHNIK 1966
Książnice Wielkie/3	101	MACHNIK 1966

Burials	ID	Reference
Książnice Wielkie/4	102	MACHNIK 1966
Łękawa 15/3	110	TUNIA 1999
Koniusza 14	112	TUNIA 1979
Koniusza 2/A	114	TUNIA 1979
Koniusza 2/B	115	TUNIA 1979
Koniusza 3	116	MACHNIK 1966
Nowy Daromin/3	124	MACHNIK 1966
Nowy Daromin/4	125	MACHNIK 1966
Malice Kościelne/1(30)	130	BARGIEŁ <i>et al.</i> 2001
Malice Kościelne/3(24)	132	BARGIEŁ <i>et al.</i> 2001
Witów/1	133	RYDZEWSKI 1973
Samborzec/19	135	WŁODARCZAK 1999
Samborzec/21	136	WŁODARCZAK 1999
Samborzec/22	137	WŁODARCZAK 1999
Gabułów/2(1)	140	GÓRSKI, JAROSZ 2006
Małżyce 30/10	143	JAROSZ ET AL. 2009
Złota, Nad Wawrem/279	146	KRZAK 1970
Złota, Nad Wawrem/297	147	KRZAK 1970
Smroków 17/1	154	WŁODARCZAK <i>et al.</i> 2003
Żuków/1	155	MARCINIAK 1960
Żuków/3	156	MARCINIAK 1960
Pałecznicza/1	159	LIGUZIŃSKA-KRUK 1988
Pełczyska 6/21(1)	161	RUDNICKI, WŁODARCZAK 2007
Pełczyska 6/50(2002)	166	RUDNICKI, WŁODARCZAK 2007
Miernów I	169	KEMPISTY 1978
Miernów II/2	170	KEMPISTY 1978
Miernów III/11	171	KEMPISTY 1978
Chotelek Zielony 2	178	PYZIK 1982
Chotelek Zielony 3/A	179	PYZIK 1982
Żemiki Górne 1/15	3	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/26	5	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/33 (1)	8	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/40	14	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/43	17	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/49	21	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/78 (1)	32	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/78 (2)	33	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/84	36	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/90 (1)	40	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/93	42	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/97 (1)	45	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/103	48	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/106	49	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/112	51	KEMPISTY, WŁODARCZAK 2000

Burials	ID	Reference
Żemiki Górne 1/120 (1)	55	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/123	57	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/129	62	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/135	69	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/137	71	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/139 (1)	73	KEMPISTY, WŁODARCZAK 2000
Żemiki Górne 1/140	75	KEMPISTY, WŁODARCZAK 2000
Bosutów/1	78	KRAUSS 1960
Mierzanowice 1/105	91	UZAROWICZOWA 1970, BABEL 1979
Mierzanowice 1/157	93	UZAROWICZOWA 1970, BABEL 1979
Mierzanowice 1/131	96	UZAROWICZOWA 1970, BABEL 1979
Książnice Wielkie/6	104	MACHNIK 1966
Książnice Wielkie/8	106	MACHNIK 1966
Łęka 15/1	108	TUNIA 1999
Koniusza 4	117	TUNIA 1979
Nowy Daromin/1	122	MACHNIK 1966
Malice Kościelne/2(20)	131	BARGIEŁ <i>et al.</i> 2001
Samborzec/23	138	WŁODARCZAK 1999
Złota 59/1(1)	151	KRZAK 1970
Żuków/4	157	MARCINIAK 1960
Pelczyska 6/21(2)	162	RUDNICKI, WŁODARCZAK 2007
Wilczyce 10/28	168	WŁODARCZAK <i>et al.</i> 2016
Chotelek Zielony 3/B	180	PYZIK 1982

