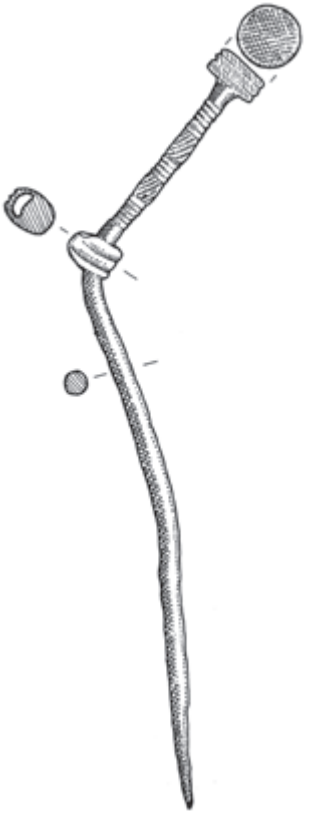
MATERIAŁY I SPRAWOZDANIA

RZESZOWSKIEGO OŚRODKA ARCHEOLOGICZNEGO



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'With a Weapon in Hand and a Horse by Side.' Weapons and Horse Harness in Graves of Vekerzug Culture from an Interregional Perspective[1]

'With a Weapon in Hand and a Horse by Side.' Weapons and Horse Harness in Graves of Vekerzug Culture from an Interregional Perspective

This study deals with graves of Vekerzug culture, which contained weapons and horse harness. These graves reflect an evident social differentiation of Vekerzug society. Special attention in the study was paid to the most accurate geographic and cultural determination of the origin of individual weapon types and horse harness components in the context of new knowledge about Vekerzug culture and answering the question to what extent these finds reflect its interregional contacts. Important is also definition of possible armament schemes of Vekerzug culture and their comparison with armament schemes in the neighbouring cultural regions, especially with the forest-steppe Western Podolian group, Ciumbrud culture and Ferigile culture. Cultural and spatial analyses of individual types of weapons and horse harness as well as of the armament schemes of Vekerzug culture show that the problem of interregional contacts of this culture, mainly the eastern ones, must be considered more differentially than it has been previously presented in scientific literature. At the same time, they confirm the recent knowledge that the effect of eastern influences on Vekerzug culture is in scientific literature without a reason constantly overestimated.

KEY WORDS: Eastern Hungary, Southern Slovakia, Hallstatt and Early La Tène periods, Vekerzug culture, weapons, horse harness, graves, armament schemes, interregional contacts, innovations.

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1. INSTEAD OF AN INTRODUCTION

Vekerzug culture (VC) undoubtedly counts among the most vividly discussed phenomena of the cultural-historical development during the Hallstatt and Early La Tène periods in East-Central Europe. Its material content exhibits polygenetic and syncretic characteristics with a distinct proportion of both local and foreign elements (Chochorowski 1998, 473). This character is given not only by a heterogeneous cultural base in the entire territory of VC, but also by contacts with neighbouring archaeological cultures/groups, which had different intensities and their participation in the development of VC was also different. Apart from several types of finds that have survived since the Late Bronze Age and Early Hallstatt period, the material content of VC shows evidence of contacts with the Eastern Hallstatt culture, Central and Eastern Balkans, Eastern Poland, the East European forest-steppe zone and probably the North Caucasus[2], and to a considerable extent also with the ancient Greek milieu in the western and north-western Black Sea regions. However, many types of finds without any closer analogies in the preceding Late Bronze Age and Early Hallstatt period cultures as well as in cultures/groups contemporaneous with VC are only typical of VC and represent its local specifics (see Kemenczei 2005; Tóth 2012, 74ff; Kozubová 2013a, 396–406; Tóth 2019, 486f; Kozubová 2019a, 154–157; Kozubová, Horváth 2019, 142, 145f, 150 for a recent overview). Nowadays it is particularly important to characterize the interrelations between VC and the neighbouring cultural regions and to find

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[2] Material content of VC does not comprise any finds whose origin and densest occurrence were associated exclusively with the East European steppe zone. For the time being, it is difficult to decide whether or not Caucasus had a direct impact on VC or on the contemporaneous Ciumbrud culture in Transylvania. The material content of Early Iron Age cultures and cultural groups in the Caucasus do not provide any clear proof of contacts between the Caucasian and East Carpathian regions (Kozubová 2019a, 159). Indisputable Caucasian origin in VC was only identified with iron battle axes of type I according to A. Kozubová (see below).

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out how the given regions participated in formation of its material content, because the effect of eastern influences on VC is without a reason constantly overestimated and, on the other hand, the importance of western and mainly southern influences and local Late Bronze Age traditions is underestimated (see Kozubová 2019a for a critique of eastern influences in VC). It is beyond any doubt that the impact of the Eastern Hallstatt culture and the Balkans on VC was not smaller than the eastern influences[3]. As shown by the recent results of a detailed analysis of material content, burial rites, structure of grave goods, costumes, social and settlement structure of VC (see Kozubová 2013a; Kmeťová 2014, 123–202, 250–257, 278–281; Bóka, Molnár, Pető, Stibrányi 2017; Kozubová 2018; 2019a; 2019b; 2019c; Romsauer 2019, 44–47; Bóka 2020), eastern influences on VC can be identified only in its material content[4], moreover, only in an extent and intensity which do not yet allow us to draw any reliable conclusions about the influx of new populations from the East European steppe and forest-steppe and/or the Caucasus to the Carpathian Basin[5]. Many artefacts of foreign provenance, including the so-called Scythian

[3] Eastern influences on the material content of VC are only recognisable during the earliest phase of this culture in Ha C2/D1 and Ha D1 and they completely disappeared in its Late Hallstatt and Early La Tène phases, whereas the eastern Hallstatt and Balkan influences can be identified during its whole existence (Kozubová 2013a, 403; 2019a, 159f).

[4] Detailed analysis of burial rites and grave goods in VC clearly shows that eastern influences are irrelevant for funerary customs of this culture. There are no phenomena and elements which could be indisputably interpreted to be of eastern origin or whose occurrence is exclusively related to the East European steppe and forest-steppe and to the Caucasus (Kozubová 2013a, 397). Despite this, some authors (e.g. Kemenczei 2001, 16; Hellmuth 2007, 83; Kemenczei 2009, 29–34; Scholtz 2010a; Fodor 2013, 836) associate the origin of several phenomena and elements of burial rites in VC, such as horse burials, existence of groove/ditch around the grave pits, stone lining of the graves and rare wood constructions of grave pits, without any cogent arguments with eastern influences or even with population migrations from the Ukrainian forest-steppe to the Carpathian Basin (see Kozubová 2013a, 246f, 283f; 2019a, 143–146, 158 for a critique). As an example, we can name the highly variable practice of horse burials. Its individual forms must be assessed separately because each of them has a different origin and underwent a different development. Recent research on this predominantly Late Hallstatt custom in Central and Southern Europe indicates a different than eastern origin, at least in the case of horses buried in separate grave pits within human cemeteries. This form of horse burials is dominant in VC (see Kmeťová 2014, especially 123–202, 250–275; 2018, 276–280; in summary Kozubová 2019a, 143f). The connection of groove/ditch around the grave pits (seven cases in VC) with burial mounds (see e.g. Kemenczei 2009, 32; Scholtz 2010a) is also questionable, because these objects could be as well related to other forms of funeral architecture (Kozubová 2013a, 284; 2019a, 144f). Even if groove/ditch around the grave pits were burial mound remains, there is no reason to look for their origin in VC in the East European steppe and forest-steppe zones, because burial mounds were also characteristic of the Eastern Hallstatt culture and Early Iron Age cultures/groups in the Northern Balkans (see Kozubová 2019a, 145 with other literature in it). Possible eastern origin has also been discussed by experts in the case of pit dwellings with quadrangular and circular or oval layouts in VC settlements in Slovakia and Eastern Hungary. Both types of dwellings have been spread in Eastern Europe since the Late Bronze Age, but in the case of pit dwellings with circular and oval layouts, the local origin in Eastern Europe and the eastern origin in the Carpathian Basin are quite disputable. In the Carpathian Basin, such archaeological features already appeared in settlements of the Late Bronze Age, not only in those of the VC period, and, as indicated by the most recent research results, their origin should be sought in the Lower Danube region and in the southern Carpathians in the course of the Ha A phase already. From there, they have spread further to the north and east, also to the East European forest-steppe, during the phase Ha B (see e.g. Czifra 2006, 173ff; Miroššayová 2009; Kashuba, Levitski 2012, 578f; Czifra 2018, 256; Romsauer 2019, 28). Pit dwellings with circular and oval layouts have been by many researchers (e.g. Bálint, Scard, Scholtz 2019, 34; Romsauer 2019, 25) incorrectly classified as archaeologically detectable relics of yurt-type tent dwellings or other utilitarian buildings, which connect the Carpathian region with the Scythian sphere in Eastern Europe. In technical terms, yurt is a portable (!) tent dwelling of light construction, which leaves no archaeologically detectable traces in terrain and it also cannot be built in a pit. The pit dwellings of VC with circular and oval layouts, in contrast to yurts, indisputably represented neither temporary nor portable structures.

[5] The presence of eastern elements among the material content of VC, whose occurrence in the Carpathian Basin has incorrectly been associated with East European equestrian nomads, does not automatically imply that Vekerzug people have also practised the nomadic or semi-nomadic way of life. As far as the economy of VC is concerned, many detections regarding the settlements and their structure, material content and an intensive occupation of its territory with more than two hundred and twenty evidenced settlements (for Eastern Hungary see Bóka, Molnár, Pető, Stibrányi 2017, 162; Bálint, Scard, Scholtz 2019, 33, footnote 2) indicate that the Vekerzug people preferred a sedentary way of life (Kozubová 2013a, 10, footnote 4; 2019b, 28, footnote 1; 2019c, 250f; Bóka 2020, 254f). In some parts of VC territory we cannot completely exclude the semi-sedentary way of life due to local climatic and natural conditions (Kemenczei 2009, 27; Kozubová 2019a, 56; Romsauer 2019, 47). However, this practice is only an adaptation of local VC communities to natural and climatic conditions in the eastern part of the Carpathian Basin and not an evidence for the presence of foreign nomadic populations (Kozubová 2019a, 56; 2019c, 250f). This assumption is also indirectly confirmed by archaeozoological analyses, which showed an increased proportion of pig bones in some settlements in the uplands and, on the other hand, horse bones in the lowland parts of Eastern Hungary (Bartosiewicz, Gál 2010, 118, 124, tab. 9.1.). Numerous storage pits, including those for storing grain (e.g. Vaday 2003, 31ff; Veres 2003, 85), that were found in many settlements show that agriculture played a key role in economy side by side with animal breeding, especially sheep/goats (Kozubová 2013a, 10, footnote 4; Romsauer 2019, 46). Several settlements have even yielded evidence for specialised production activity associated e.g. with iron production, metallurgy (e.g. Miroššayová 1994, 53ff; Vaday 2001, 213; 2003; Gačková, Miroššayová, Šimčík 2014, 87, 89, obr. 2:1; 3:2,2a) or weaving (e.g. Scholtz 2010b, 81). The assumption about a sedentary way of life of Vekerzug people is also supported by the local production of wheel-turned pottery, which from a technological point of view already demands highly specialised pottery workshops. As regards the settlement structure, it is necessary to remark that Vekerzug people predominantly occupied high floodplains and loess regions, whose fertile soils and vast grasslands make them suitable for both agriculture and cattle breeding at the same time (Bóka, Molnár, Pető, Stibrányi 2017, 164; Bóka 2020, 249f).

triad[6], were adopted by local Vekerzug elites as "exotic" goods. Together with other phenomena, such as the adoption of the knowledge of wheel throwing or several goldsmithing techniques (e.g. filigree, granulation), the objects of foreign origin should be considered as a manifestation of cultural contacts and transfer of technological innovations rather than an evidence of large--scale migrations.

The finds of eastern type in VC are used by some researchers as the only argument in a discussion about the theory that the occurrence of these objects in the eastern part of the Carpathian Basin, alternatively the origin and formation of VC, can be associated with migrations from East Europe and/or from the Caucasus (e.g. Chochorowski 1998, 487f; Patay, Kiss 2001–2002, 131f; Kemenczei 2009, 112, 114; Scholtz 2010b, 86; Chochorowski 2014, 27f; Miroššayová 2015, 61; Patay, Scholtz, Scard 2017, 472; Vaday, Szakos 2017, 317; Bruyako 2005, 286, 289ff; 2014, 43; Grechko 2016, 56; Nosova 2016). However, in this case the consideration of the given finds is from a purely typological perspective, regardless of their find contexts. In VC, these contexts are in many cases different from the find contexts of analogical finds in the East European and Caucasian regions and refer to different funerary practices in VC. Nevertheless, the cultural and spatial analysis of the material content of VC alone, i.e. without analysing and taking into consideration other aspects such as funerary customs, costumes, armament schemes, social and settlement structure, is absolutely insufficient for a complex assessment of the character and explanation of the mechanism of interregional contacts of VC as well as for answering the question how intensively and to what extent the foreign elements, including the eastern ones, participated in genesis of this culture. Important is that not all of the artefacts of eastern origin became an integral part of Vekerzug material culture. Those which did were often locally modified. The remaining objects of eastern type did not take roots in the spectrum of material content of VC. Their occurrence in the Carpathian Basin had only an episodic and temporary character and they did not underwent any local typological and chronological development (see Kozubová 2019a, 59–140). At the same time, the displays of eastern influences on VC are used as a commonplace argument to define the VC (not only) terminologically as a Scythian or Scythoid culture, or culture of the Scythian period (e.g. Kemenczei 2009; Bartosiewicz, Gál 2010; Hellmuth 2010; Scholtz 2010a; 2010b; Fodor 2011; Lantos 2011; Tóth 2012; Scholtz 2012; Fodor 2013; Botyánszki 2015; Czifra, Kreiter, Pánczél 2015; Fodor 2015; Scholtz 2015; Tankó 2015; Golec, Čermáková, Fojtík 2016; Czifra 2016; Czifra, Kreiter, Kovács-Széles, Tóth, Viktorik, Tugya 2017; Ilon 2017; Király 2017; Patay, Scholtz, Scard 2017; Vaday, Szakos 2017; Tóth 2017; Czifra 2018; Tóth 2018a; 2018b; Bálint, Scard, Scholtz 2019; Tóth 2019; Guba, Tankó 2019; Gutay, Rácz 2019; Gutay, Bernáth, Raáb, Rácz 2021; Tot 2015; Topal 2018a; 2018b). However, this argument is incorrect in the light of new knowledge about the VC. The designation "Scythian" not only does not reflect the current state of research on VC, but at the same time it also points the uncritical borrowing and constant usage of the inappropriate terms and older opinions in recent works associated with VC (see above). Such ethnically conditioned designations[7], together with terms like "culture under Scythian influence" or "culture influenced by equestrian nomads" are therefore quite confusing because they encourage considerations about a sort of cultural unity between VC and the Scythian culture. However, such a unity cannot be archaeologically proved – neither in the material culture nor in the funerary customs, costumes or armament schemes (see Kozubová 2019a). All this at the same time causes considerable generalisation and simplification of the knowledge and view of VC. Although VC is not a Hallstatt culture, it is certainly no Scythian, Scythoid or even eastern culture, either. It is a culture of the Hallstatt and Early La Tène periods with specific displays and with an independent development and position within the European Iron Age. Foreign cultural influences may have formed to a certain degree the overall image of VC, but the culture has adopted, modified and passed them over selectively (Kozubová 2019a, 159).

The graves of VC containing weapons and horse harness undoubtedly are the focal point of scientific discussion concerning the character of foreign influences, including the

[6] Eastern influences are also tightly associated with the so-called Scythian triad – characteristic Scythian weapons and horse harness together with artefacts decorated in the Scythian animal style. However, in VC this set did not appear in its complete form. Apart from a few bone and bronze drag decorations, decorative buttons with a loop and bone cheek-pieces (these were already locally modified; Kozubová, Golec 2020, 216), the horse harness components of eastern type are otherwise almost completely absent in VC (see below). Weapons also turn out to be not entirely "Scythian" with regard to their distribution. It is true that many of them (e.g. arrowheads and akinakai) count among typical examples of material culture of the historical Scythians and other more or less related equestrian nomadic peoples, but they represented technological novelties which became widespread in the Eurasian steppe and forest-steppe and in the Danube-Carpathian region (VC, Ciumbrud culture, Ferigile culture) and found their use in the armament and everyday life of many sedentary (alternatively semi--sedentary) non-Scythian communities, where they often underwent local modifications. The Scythian animal style appears on artefacts of VC in a distinctly altered form. The changes are visible not only in the choice of objects which were decorated in this zoomorphic style (only certain types of weapons, quiver decorations, cheek-pieces and so-called rattles), but also in the zoomorphic depictions themselves (eagle head and beak, other bird head, the so-called rolled predator, feline predator, hare, ungulates and hooves). The ornaments are strongly schematised, which clearly indicates that the local communities of VC did not comprehend the original symbolism of the Scythian animal style (Kozubová 2019a, 155).

[7] Although the term "Scythian" is also used in archaeological research in Eurasia a synonym for the Early Iron Age, i.e. for the period during which the Scythian culture has existed, the term "Scythian period" can be used only with those regions, where we are able to give a reliable evidence for a permanent presence of the Scythians or Scythian culture with the help of archaeological finds and/or historical written documents. But this is not the case with Central Europe. The territory occupied by VC is indisputably located outside the territory of both the Scythian culture and the Scythians themselves. Using the term "Scythian period", which is still common in Hungarian archaeological research to this day, is therefore scientifically unfounded in the case of the Hallstatt and Early La Tène periods in the Carpathian Basin (see Kozubová 2019a, 56f; Kozubová, Fojtík 2021, 77–80 for a critique).

eastern ones, and their possible role in formation of VC. Their detailed analysis could help to explain the genesis of this culture. Even though many weapons and horse harnesses in VC come from richly furnished graves, the accent on warrior aspect in burial rites of VC was not that significant as in the Iron Age communities in the East European steppe and forest--steppe and in the Caucasus[8] (see e.g. Feld 2000; Černenko 2006; Reinhold 2007; Burghardt 2015; Melyukova 1964; Mogilov 2008; Topal 2018b). Our main aim is to provide a complex and comprehensive overview of weapons and horse harness from graves of VC from Slovakia, Eastern Hungary and Northwestern Romania, laying focus primarily on the following two aspects:

1. the most accurate geographic and cultural determination of the origin of individual weapon types and horse harness components in the context of new knowledge about VC and answering the question to what extent these finds reflect the interregional contacts of VC,
2. definition of possible armament schemes of VC in its whole territory and their comparison with armament schemes in the neighbouring cultural regions, especially with the forest-steppe Western Podolian group, Ciumbrud culture and Ferigile culture.

2. WEAPONS AND HORSE HARNESS IN THE CONTEXT OF INTERREGIONAL CONTACTS OF VEKERZUG CULTURE

Although many types of weapons and horse harnesses in VC do not count among chronologically significant finds[9], their main importance consists in elucidation of the character of its interregional contacts. They greatly contribute to the understanding of processes which participated in the formation of its material culture. Weapons and horse harness of VC are by many researchers without any in-depth cultural and spatial analysis incorrectly classified as Scythian[10] and their occurrence in the Carpathian Basin with other types of artefacts (e.g. snake--shaped hairrings), is often inaccurately associated with the East European steppe or forest-steppe regions (literature see above). However, the problem with the genesis of VC cannot be solved without identifying what in the culture is of foreign origin, what of it is already locally modified, what is undoubtedly local and what is connected with preceding cultural development of the Late Bronze Age and Early Hallstatt period and finally without any detailed typological and chronological material analysis. It is also inevitable to determine, as accurately as possible, the geographic and cultural origin of individual types of artefacts in VC. This task is particularly important in the case of eastern influences, because the term "eastern" is very broad when seen from a territorial perspective and does not comprise only Eastern Europe but all regions lying to the east of the territory occupied by VC. These regions are heterogeneous not only with regard to cultural, but probably also with regard to "ethnical" characteristics. The term "eastern" in VC, but also in other archaeological cultures/groups of the Hallstatt and Early La Tène periods in Central and Southeastern Europe, is thus not synonymous with the term "Scythian" or "equestrian nomadic" (Kozubová, Fojtík 2021, 79f). Also problematic is the interpretation of the occurrence of finds of eastern type, including weapons, in VC. Some researchers associate their occurrence in the Carpathian Basin with an influx of new populations from Eastern Europe (e.g. Kemenczei 2009; Chochorowski 2014; Miroššayová 2015), but this opinion is not reliably proven. One of the reasons are the find contexts of these artefacts in VC, which are different from their find contexts in the regions of their origin (see below)[11].

The finds of arms in VC consist of arrows (and parts of quivers), battle axes, spears (and spear point protection caps), combat knives, short single-edged curved swords and akinakai (and scabbard chapes), while the armour (parts of scale armour and shields) is sporadically represented. Horse harness in VC is evidenced by relatively frequent iron horse bits and a less numerous group of decorations of the harness. Since the multi-aspect analyses of weapons and horse harness in VC have recently received an increased attention (Kozubová 2008; Kemenczei 2009, 35–61, 63ff; Kozubová 2009; 2010; 2011; 2013a, 87–119; 2019a, 61–97; Topal 2019; Kozubová 2020), this contribution offers only a summarizing overview of this category of finds from the perspective of their origin.

2.1. WEAPONS

Even though *arrowheads* represent the most numerous category of weapons in VC (about 570 pieces), their total number is much smaller than the number of arrowheads in the neighbouring regions to the east of VC. Almost all of them are bronze triblade (fig. 1:2–5,7–10,15–17,27,28) and trilobate--triblade arrowheads with an inner socket (fig. 1:6,11–14,25,26)[12],

[8] In the East it was reflected not only in a high number of such graves, but also in a wide typological spectrum of weapons and horse harnesses that were part of their equipment.

[9] On dating of individual types of weapons and horse harness in VC see most recently Kozubová 2013a, 87–119; 2019a, 61–97.

[10] On the problem of using the term Scythian in connection with VC and finds of eastern type from the Hallstatt period in Central Europe see e.g. Kozubová 2019a, 56ff; Kozubová, Fojtík 2021, 77–80.

[11] The occurrence of artefacts of foreign provenance in graves or in settlements does not necessarily indicate mobility of human groups or even migration of whole communities. Although the movements of objects are not possible without human mobility, these objects had not to cover the whole distance of their movement from the starting point to the final destination in the hands of one and the same person/group of persons, but their transfer may have been assisted by multiple persons from various different cultural regions.

[12] Trilobate arrowheads in VC are evidenced so far by only a few examples. Also the arrowheads with an outer socket are unique in VC (see Kozubová 2009, 81f; 2019a, 62f).

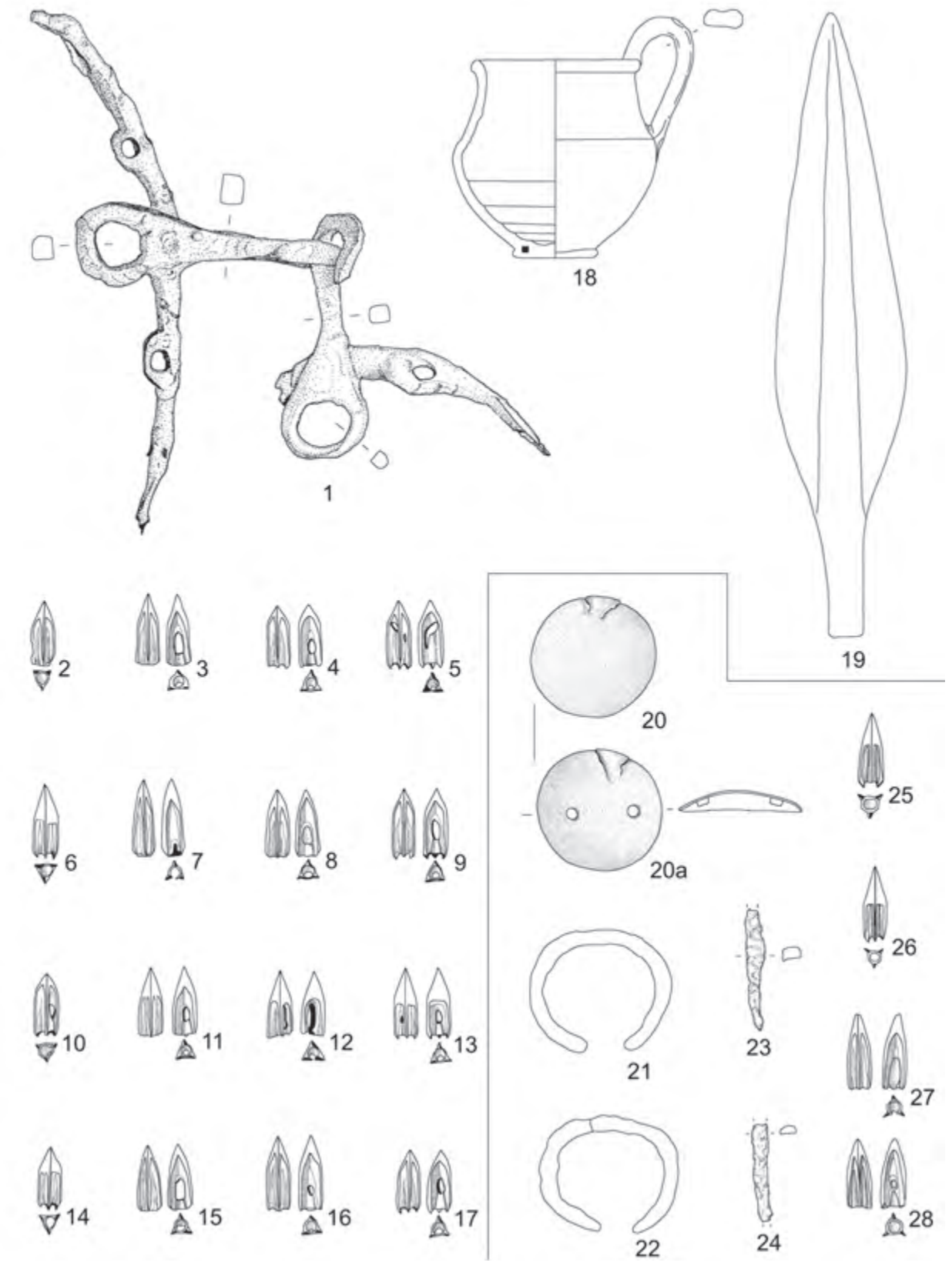

Fig. 1. Graves of the Vekerzug culture with weapons and horse harness. 1–19 – Chotín IA, inhumation grave 120/53. After Kozubová 2013b, tab. 50:1–19,20–28 – Chotín IB, inhumation grave 210/54. After Kozubová 2013b, tab. 73:8–16. Scale = 1:2 (1–17, 20, 23–28); 1:3 (18)

Ryc. 1. Groby kultury Vekerzug z bronią i uprzężą końską. 1–19 – Chotín IA, grób szkieletowy 120/53. Za Kozubovą 2013b, tab. 50:1–19, 20–28 – Chotín IB, grób szkieletowy 210/54. Za Kozubovą 2013b, tab. 73:8–16. Skala = 1:2 (1–17, 20, 23–28); 1:3 (18)

whose main distribution territory is located in the East European steppe and forest-steppe zones and in the Caucasus (see e.g. Hellmuth 2006, 15; Kozubová 2009, 66; Hellmuth 2010 with other literature in it). In VC, we can sporadically also find two types of iron flat arrowheads, each of them being of different origin: tanged arrowheads with pointed barbs (fig. 3:6), which are mainly found in individual regions of Hallstatt culture, and the almond-shaped Ferigile arrowheads without tang (Csallány, Párducz 1944–1945, 101, tábla XXXI:5; Párducz 1954, 31, pl. XV:19; Csalog, Kisfaludi 1985, 313, Abb. 4:3; Kisfaludi 2004, 171, tábla XIII:3; Stöllner 2002, 134; Kozubová 2009, 86f; Măndescu 2019, 189, 192). Although the eastern origin of arrowheads with an inner socket is indisputable, their developments in VC and in East Europe have mostly undergone their own way, which is indicated by the occurrence of local variants and by a relatively small typological variability of VC arrowheads compared to the wide spectrum of their types and variants in the East. Only one part of the variants of arrowheads of types I (triblade) and II (trilobate-triblade) according to A. Kozubová (2009, obr. 1) have direct analogies in the East European steppe and forest-steppe zones. This mainly applies to triblade arrowheads of variant I3 with a ogival shaped blade (fig. 1:2,7,8,10,15,17,27,28), which were very popular both in the East and in VC (Hellmuth 2010, Abb. 80; 81; 91; 265; Kozubová, Fojtík 2021, 70). On the other hand, arrowheads of variant I1 with a rhombus-shaped blade were rare both in VC and in Eastern Europe (Kozubová 2009, 70f). The arrowheads of variants I2[13] and II2 with a tower-shaped blade (fig. 1:3–5,9,13,14,16,26), which are characteristic of VC, have only few parallels among the arrowhead types/variants from East European sites[14], thus being an important indicator of local development of arrowheads of eastern type in the Carpathian Basin. The tower-like shape of arrowheads of eastern type can be considered as a local specific of VC (Kozubová 2019a, 63). A separate group is represented by trilobate-triblade arrowheads of variant II3 (fig. 1:25). Analogous arrowheads of similar shape may also be found on sites from Eastern Europe, but the examples from the above-mentioned two regions exhibit notable typological differences. The eastern arrowheads usually have a short blade in the form of an equilateral triangle or an ogival shaped blade with a broad base. The Vekerzug arrowheads, on the other hand, have a long, slim ogival form, only sporadically the form of an isosceles triangle with narrow base (Kozubová 2009, 80, 96–99; Daragan 2017, 77, рис. 2:18–43; 3:44–64; 8:1–13; 9:1–7; 10:12–51; 12:1–131; 14:1–11,14,16,17,36–43,48; 22:11–15; 29:14–24; Polin 1987, рис. 6:2–4,7,8,24,25,29–32; 7:1–19,32–34; 9:2–8,13–17,21,23–25,34,36; 10:11,13,22,27,28).

The arrowheads of eastern type point to a new tradition in production of efficient weapon types in the Carpathian Basin and are, above all, an indicator of innovations in warfare and not an evidence for the influx of foreign populations from Eastern Europe and their participation in the genesis of VC. They also are an illustrative example of how selectively the eastern influences were adopted by VC, how they were implemented in its material culture and subsequently modified (Kozubová 2019a, 64).

A problem arises with the interpretation of the origin of bronze and bone/antler *cross-shaped quiver decorations*, whose main distribution territory is located in the East Carpathian region (31 pieces from VC, Ciumbrud culture and Bîrseşti group; Dušek 1976, 404, Abb. 8:4; Benadik 1983, 20, Taf. II:4; Kemenczei 1986, 117f, 122, 127, Abb. 2:1–4; 3:1; 4:1; 6:1; 8:1–6; Kozubová 2009, 101–106 with other literature in it; 2013b, 35, 55, tab. 27:5; 43:3; Gačková, Miroššayová, Šimčík 2014, 87f, obr. 1:2; 2:1,2; Patay, Scholtz, Scard 2017, 472, fig. 4; Rustoiu, Balteş, Nagy 2017, pl. III:2; Hânceanu 2019, 86, fig. 3:1,2; Polidovich 2000, рис. 1:2,6; 2:4,6,7; 3:5–7), but a few pieces (10) were also found in Eastern Europe (Polidovich 2000, рис. 1:1,4,5,7,8; 2:1,2,3,9; Il'yukov 2016, рис. 2:3). The question of their origin is thus closely associated with identification of the oldest finds of these decorations. The majority of Russian and Ukrainian authors, who try to date these finds, almost dogmatically suppose that the metal quiver decorations in VC are of eastern origin, their ornaments and shape in VC were borrowed from examples from the Ukrainian forest-steppe, the East European finds are older than those of VC and one of the production centres of these quiver decorations was located in Pontic Olbia (e.g. Polidovich 2000, 38f; Nosova 2016, 260, 264; Grechko 2016, 47). The question of whether or not the East European metal quiver decorations are older than the finds from the Carpathian Basin, or vice versa, cannot be answered in recent. However, it is indisputable that the quiver decorations with zoomorphic ornaments of type I according to A. Kozubová were used in both regions during the whole 6th century to the beginning of the 5th century BC and they had no predecessors in the local material culture (Kozubová 2009, 102, 104ff, 110; 2019a, 67)[15].

Even though the origin of the metal and bone/antler quiver decorations still remains open, several facts mentioned below might indicate that their cross shape in VC was not necessarily inspired by some eastern originals. Except the horse's head, which represents a local specific of VC (Kozubová 2009, 109), it is only the decoration in Scythian animal style which drew inspiration from the East European steppe and forest-steppe:

1. In the Carpathian Basin, unlike Eastern Europe, we can observe a larger typological variability and quantitative representation of metal cross-shaped quiver decorations, and, moreover, the occurrence of local types and variants. In contrast to Eastern Europe, the cross-shaped quiver decorations in VC were an integral part of its material content with a well identified typological and chronological development.
2. The finds of a defective cast of a quiver decoration (variant I2 according to A. Kozubová) and a fragment of a clay casting

[13] Variant I2 can be even considered as a local specific of VC, which has not been used outside the territory of this culture (Kozubová 2009, 97f).

[14] The arrowheads with a tower-shaped blade were also relatively widespread in the East European steppe and forest-steppe zones in the 2nd half of the 6th and the 1th half of the 5th century BC, but they differ from the arrowheads of VK by very slim blade with pointed barbs and a short outer socket (e.g. Daragan 2019, карта 1; табл. 1; 2).

[15] The first appearance of the metal cross-shaped quiver decorations of the type I in VC from the second half of the 7th century BC (Hellmuth 2007, 73f, 83) their accompanying findings does not support (Kozubová 2009, 104).

mould for variant I3 from the settlement in Seňa-Pri lánoch provide evidence for local production of metal cross-shaped quiver decorations with zoomorphic ornaments (Gačková, Miroššayová, Šimčík 2014, 87ff, obr. 2:1; 3:2,2a).

3. The depictions of predatory animals on I2-variant quiver decorations of VC are made in openwork design but those on the Ukrainian examples are made in raised relief, which points to different production centres (Kemenczei 1986, Abb. 2:1,4; Polidovich 2000, рис. 1:4–8; 2:7).
4. Zoomorphic ornaments on several quiver decorations of VC (especially the variant I1) are already strongly schematised and simplified (Kemenczei 1986, Abb. 2:3; 2009, Taf. 185:1; Patay, Scholtz, Scard 2017, fig. 4; Rustoiu, Balteş, Nagy 2017, pl. III:2).
5. The occurrence of bone/antler zoomorphic quiver decorations of type III according to A. Kozubová from the beginning of Ha D1 phase indicates that the tradition of using quiver ornaments in VC might be older than in the East (Csalog, Kisfaludi 1985, 311, Abb. 2:13; Scholtz 2007, 58, kép 5:2; Kozubová 2009, 109f; 2020, 54f).

Aside from two iron javelinheads without analogies in the neighbouring regions[16], pointed weapons in VC are otherwise represented only by iron *spearheads* (about 121 pieces; fig. 8). Their fragmentary state of preservation and heavily corroded surface in many cases complicate to make accurate typological classification. The spearheads can be generally divided into five types according to the shape of their blade and the ratio of the socket length to the total length of the spearhead (see Kozubová 2013a, 95–98, obr. 31; 2019a, 90). Absolutely predominant are examples of type I – long spearheads with a narrow oval or lancet-shaped blade with the maximum width in its lower third and a smooth transition from socket to blade, with a midrib and a long socket without the reinforcing ring, which creates one-third to one-half of the spearhead's total length (fig. 2:1). Spearheads of type I represented a frequent and long used type of pointed weapons not only in VC, but also in the Eastern Hallstatt culture and in Central and Eastern Balkans. Their occurrence on sites of VC is connected either with the East Hallstatt milieu (especially with Transdanubia and Eastern Slovenia)[17], or with the southern Carpathian--Danube region (Ferigile culture), or with Northwestern Bosnia respectively (Kozubová 2013a, 97, 99; 2019a, 90 with other literature in it; Kozubová, Horváth 2019, 145f). On the other hand, the distribution of Late Hallstatt period medium long to long spearheads of types II, III and IV[18] with a short socket within VC is limited to Southwestern Slovakia, where they count among isolated finds. Only the spearheads of type IV find their direct analogies in neighbouring regions, particularly in Western Austria (fig. 1:19; Stöllner 2002, 132f, Abb. 53:3,4; Kozubová 2013a, 97f; 2019a, 90). The spearheads of VC definitely represent types of pointed weapons, which were commonly used in the armament of the Eastern Hallstatt culture and in the southern Carpathian--Danube region. Distinct similarities between the Carpathian--Danubian and the East Hallstatt regions are also accentuated by the absence of javelins and metal spear-butts and by the occurrence of iron and bronze trapezoidal point protection caps, which, on the other hand, were not used in the North Pontic-Caucasian region (Vulpe 1990, 97, 102, Taf. 32:222,228; 33:231,232; Tecco Hvala 2012, sl./fig. 48:5,6; Kozubová 2013a, 99ff). However, javelins were an integral part of the Early Iron Age armament in the East European steppe and forest--steppe regions and metal spear/javelin butts are typical finds from this territory (Melyukova 1964, 44 f, табл. 14:12–16; Kozubová 2013a, 99f with other literature in it). Very striking is the small resemblance in shape between the spearheads of VC and the Early Iron Age examples from the Ukrainian steppe and forest-steppe. Spearheads from the last mentioned area are characterised by a very short to medium short socket, sometimes equipped with a reinforcing ring, and a long oval blade with its maximum width in the middle (e.g. Melyukova 1964, 44f, табл. 14:12–16; Burghardt 2015, 151, fig. 5:1–8). From the above-mentioned facts can be concluded that the East European cultural region had only a minimal influence on the formation of armament schemes of VC, at least in the case of pointed weapons. An exception in VC is represented by sporadically occurring long spearheads of type V with a narrow oval blade of rhombic cross-section and a very short socket, which creates only one-fifth of the spearhead's total length. They were only found in the cemetery of Alsótelekes--Dolinka (Patay 1961, 29, tábla III: 1,2; Patay, Kiss 2001–2002, 87, ábra 9:1) and resemble in shape to several spearheads from the Ukrainian forest-steppe (Melyukova 1964, табл. 13:1,2,6; 14:6,8; Smirnova 1993, рис. 1:17; 4:6; Galanina 1997, табл./Taf. 12:8,9). However, the edge of the socket of several spearheads of type I from Alsótelekes-Dolinka is geometrically decorated (Patay 1961, 36, tábla III:4,5; IV:1,2; ábra 8; Kemenczei 2009, Taf. 135:31,33). This element does not appear on eastern specimens but, on the other hand, it is very frequent on the Hallstatt spearheads from the Southeast Alpine region (see Kozubová, Horváth 2019, 146 with other literature in it).

The third most numerous group of weapons in VC are iron *single-edged battle axes* (about 113 pieces; fig. 7). According to the location of the shaft hole, we can divide them into two basic types (according to A. Kozubová): more numerous battle axes with symmetrically located shaft hole as type I (fig. 2:6; 3:8; 5:1) and battle axes with asymmetrically located shaft hole as type II (fig. 4:3,3a). Both types can be then subdivided into several variants according to the shape of their butt (see Kozubová 2010; 2013a, 107ff, Abb. 34; 35).

Battle axes of type I have two main areas of distribution, namely the eastern part of the Carpathian Basin (VC and Ciumbrud culture), where all of their three variants were found (e.g. Vasiliev 1980, pl. 3:5–8; Kozubová 2010, 49–53; Ferencz, Barbu 2018, 143f, pl. II; III; Kozubová 2019a, 72f; Kozubová, Fojtík 2021, Abb. 16), and the North and Central Caucasus (Koban culture, protomaeotian and early Maeotian sites), where only examples of variant I1 with a flat and slightly thicker butt have appeared. Their oldest finds here are dated to the 2nd half

[16] Chotín IA (inhumation grave 197/54; Kozubová 2013a, 98f; 2013b, 88, tab. 71:4), Nyáregyháza (grave 42; Kisfaludi 2004, 172, tábla XVI:5).

[17] Several spearheads from VC are related with their analogies from Eastern Slovenia through the presence of an identical geometric decoration at the edge or at the upper end of the socket or at the lower end of the midrib (fig. 2:1,1a; Kozubová, Horváth 2019, 146, Abb. 2:1,1a,1b).

[18] Type II with a very narrow blade of rhombic cross-section, type III with a rhombic blade and type IV with a wide oval blade.

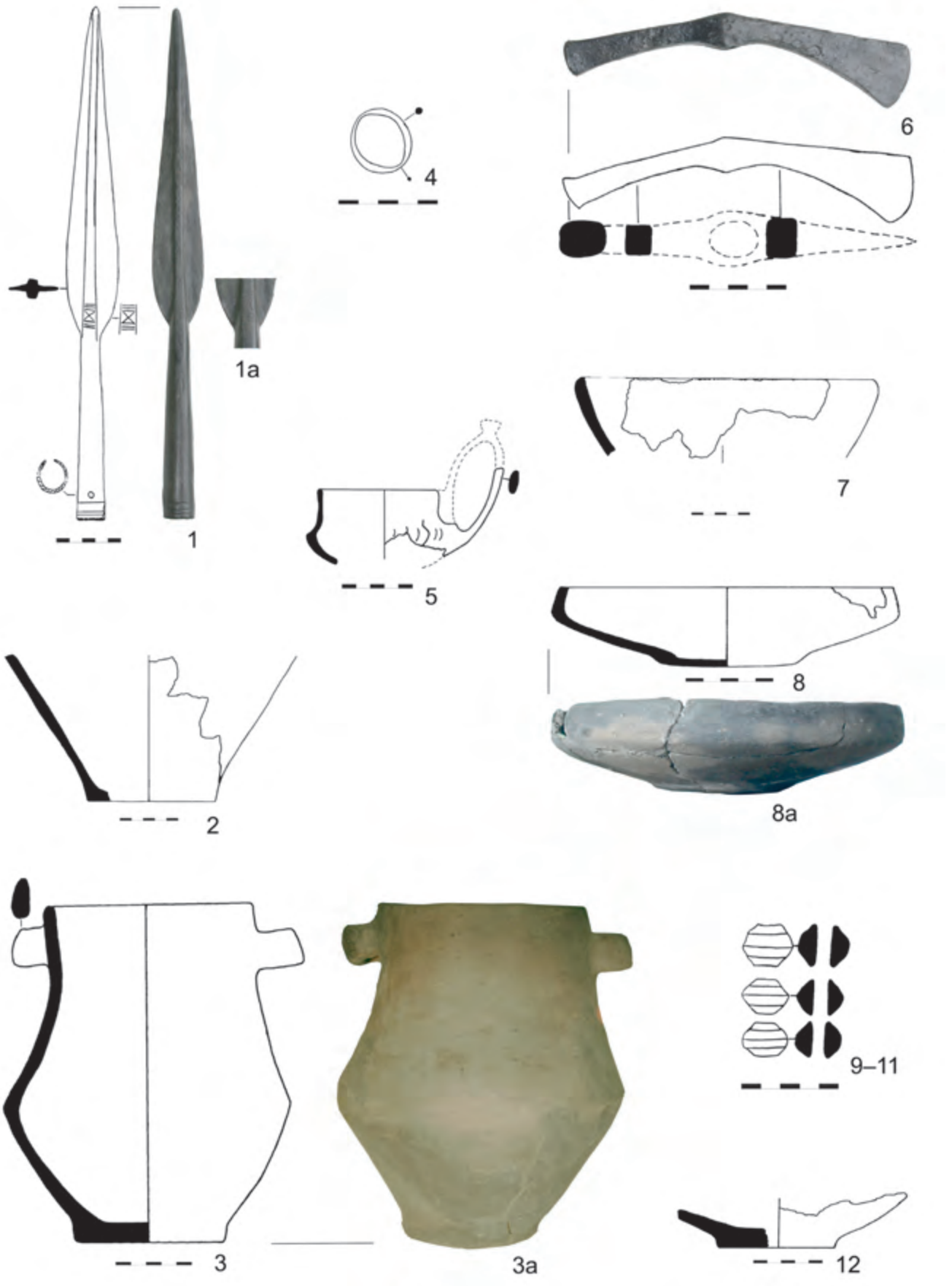

Fig. 2. Weapon grave 50 from Eger-Nagy Eged. After Kozubová, Horváth 2019, Abb. 2
Ryc. 2. Grób z bronią 50 z Eger-Nagy Eged. Za Kozubovą, Horváth 2019, Abb. 2

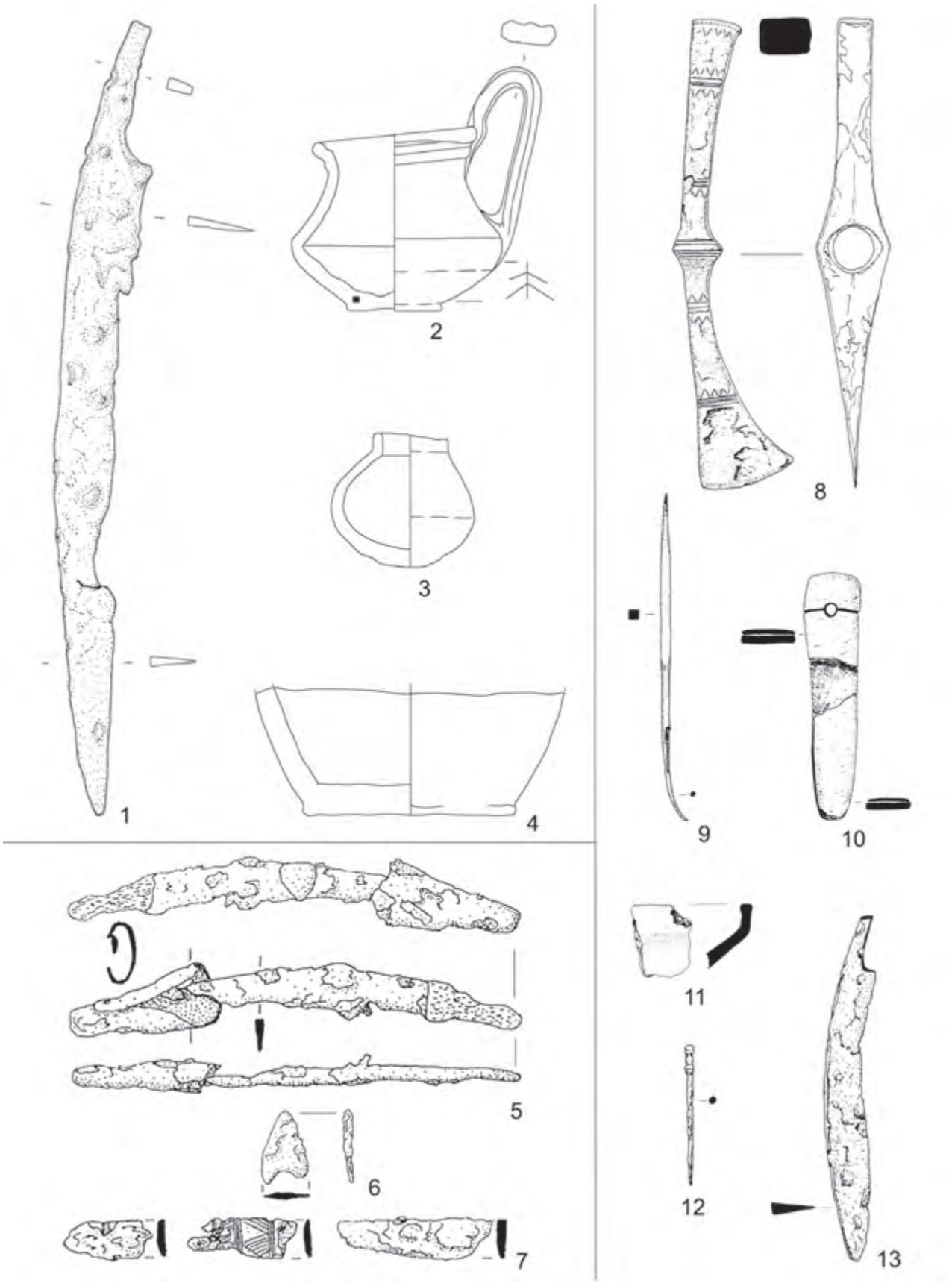

Fig. 3. Graves of the Vekerzug culture with weapons. 1–4 – Chotín IB, inhumation grave 81/62. After Kozubová 2013b, tab. 112:1–4, 5–7 – Nyáregyháza, inhumation grave 36. After Kisfaludi 2004, tábla XIII:2–6,8–13 – Alsótelekes-Dolinka, cremation grave 109. After Patay, Kiss 2001–2002, ábra 7:1–4,6,7. Scale = 1:2 (1, 3); 1:3 (2, 4)

Ryc. 3. Groby kultury Vekerzug z bronią. 1–4 – Chotín IB, grób szkieletowy 81/62. Za Kozubovą 2013b, tab. 112:1–4,5–7 – Nyáregyháza, grób szkieletowy 36. Za Kisfaludi 2004, tabl. XIII: 2–6. 8–13 – Alsótelekes-Dolinka, grób ciałopalny 109. Po Patay, Kiss 2001–2002, ábra 7:1–4,6,7. Skala = 1:2 (1, 3); 1:3 (2, 4)

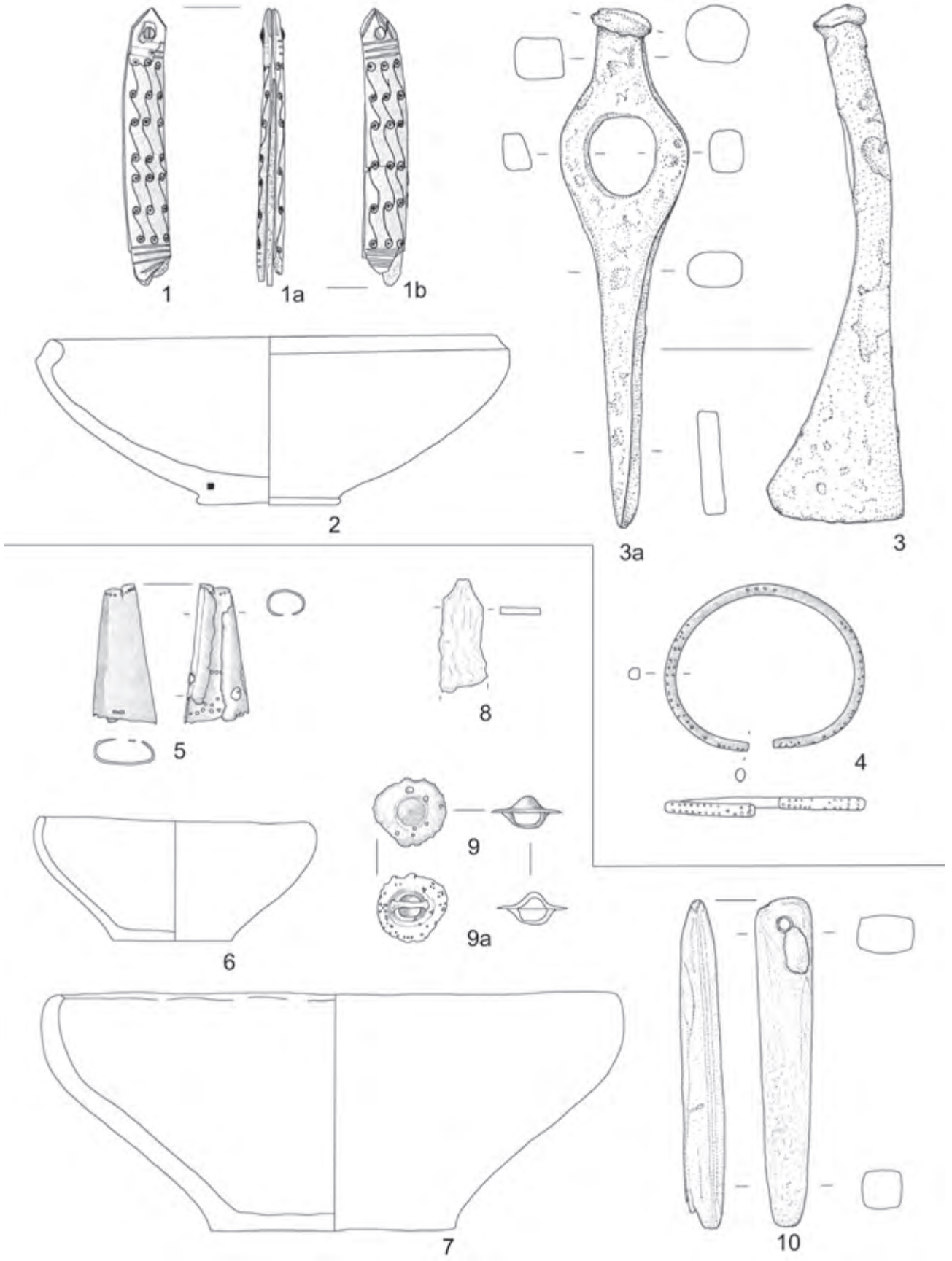

Fig. 4. Graves of the Vekerzug culture with weapons and horse harness. 1–4 – Chotín IB, inhumation grave 46/61. After Kozubová 2013b, tab. 101:1–6,5–10 – Chotín IB, inhumation grave 44/61. After Kozubová 2013b, tab. 100:1–6. Scale = 1:2 (1, 3–5, 8–10); 1:3 (2, 7)

Ryc. 4. Groby kultury Vekerzug z bronią i uprzężą końską. 1–4 – Chotín IB, grób szkieletowy 46/61. Za Kozubovą 2013b, tab. 101:1–6, 5–10 – Chotín IB, grób szkieletowy 44/61. Za Kozubovą 2013b, tab. 100:1–6. Skala = 1:2 (1, 3–5, 8–10); 1:3 (2, 7)

of the 8th century BC. These battle axes were found in graves with local and not with Scythian equipment (e.g. Reinhold 2007, 51, 150, 262f, Taf. 49; 50; Kozubová 2010, 48, 50ff with other literature in it; Tekhov 1985, рис. 117:3; 123:4; 135:3; Kozenkova 1995, табл. 19:2,7,8; Tekhov 2002, табл. 9:1; 54:1; 136:1). The battle axes of type I, similarly as type II, find no analogies in Central Europe: neither among older types of axes (from the Late Bronze Age) nor among the axes of Hallstatt culture (see e.g. Metzner-Nebelsick 2002, 377ff). The absence of close analogies in Eastern Europe proves to have crucial importance for answering the question of their origin in VC. From the Ukrainian forest-steppe region (including the Western Podolian group) come so far only about thirty iron battle axes of two basic types: massive axes with a very broad hammer-shaped butt and slim axes with a distinctly narrowed neck, discoid butt and shaft hole thickened on both sides (e.g. Burghardt 2015, 152ff., fig. 6; Melyukova 1964, табл. 21:8–23; Shelekhan 2012, 5ff., рис. 1–3). However, both of these basic types are notably different from not only the Vekerzug-type battle axes of type I but also from the identical axes from Caucasian sites[19]. So, it is indisputable that the iron Vekerzug-type battle axes find their direct prototypes in the Caucasian examples of the Early Iron Age and, considering their Caucasian origin, in VC they cannot be classified as Scythian or Scythoid (Kozubová 2019a, 73). Unlike their territory of origin in the Caucasus, where the battle axes of type I are very homogeneous from a typological point of view, in VC we can follow up an independent development of this form of blunt weapons. This development resulted in local variants as well as in geometric decoration on the heads of several axes from Alsótelekes-Dolinka, Eger-Nagy Eged or Meszes-Barakonyi lejtő (Leszih 1939, 79, tábla IV:20,27; Chochorowski, Gawlik 1997, 175; Patay, Kiss 2001–2002, 81, ábra 7:1; Kemenczei 2009, Taf. 157:1,7; Kozubová 2010, 49, footnote 4; Kozubova, Horvat 2018, рис. 1:3).

Battle axes of type II show much fewer typological similarities with finds from the Caucasus (fig. 4:3,3a). In Central Europe, they were found only on sites of VC and can be therefore considered to have resulted from local development of weapons of eastern type (Kozubová 2010, 53ff, 60)[20]. Although the Caucasian origin of Vekerzug-type battle axes is beyond any doubt, the way of their implementation in VC still remains unknown. They might have been introduced either directly from the Caucasus or indirectly through the medium of Ciumbrud culture. The role of the Ukrainian forest-steppe region as a mediator in this process appears little likely in view of the differences in shape (Kozubová 2019a, 73).

Besides battle axes, Vekerzug people also used *other types of blunt weapons*, but they had no influence on the armament schemes of this culture. Iron lugged axes (Ärmchenbeile) have the main distribution territory in Central and Southeastern Europe as well as in the East European forest-steppe. According to A. Wesse, one of the regions of their origin was located in the Carpathian Basin, from where they have spread as far as to Eastern Europe (Wesse 1990, 153–157, 177, Karte 1; 15). The occurrence of lugged axes in VC (six pieces; fig. 5:13)[21] is connected with influences from the East Hallstatt milieu, where they often belonged to warrior equipment, above all in the Early Hallstatt period (Metzner-Nebelsick 2002, 384). Among the finds of VC we can identify only three examples of iron flat--butted shaft-hole axes[22], which have no direct analogies in the neighbouring regions (fig. 5:3). Some similarities with Vekerzug finds are only visible in a specific massive axe from Popovka/Поповка in the Middle Dnieper region, dating from the 2nd half of the 7th to the beginning of the 6th century BC (Il'inskaya 1968, табл. LI:3; Topal 2018a, 56f). The miniature iron double-edges axe with symmetrically located shaft hole from Vámosmikola--Istvánmajor (grave 27; Laczus, Párducz 1969, 221, fig. 3) has its direct analogies among the finds of Ferigile culture and points herewith to southern contacts of VC (Vulpe 1967, pl. XIX:12–14; XXVII:1–6,7–16; 1990, 16).

Cutting weapons in VC can be divided into three groups according to their origin and frequency of occurrence. The eastern origin of daggers and short swords of type akinakes from sites in the Carpathian-Danube region may be indisputable[23], but this type of double-edged weapons did not become part of local armament schemes in VC. All of the five *akinakai* from sites of VC are stray finds[24], or finds with unclear circumstances of finding[25]. With regard to the sporadic occurrence of akinakai in the Western Podolia group[26] and the concentration of finds

[19] Considering the absence of Late Bronze Age predecessors, it is beyond any doubt that the occurrence of battle axes in the Ukrainian forest-steppe is connected with some external cultural impulse, however, not with the Scythians but with the (North and Central) Caucasian non-Scythian milieu. These axes therefore cannot be classified as "Scythian". The Scythians, in contrast to domestic Caucasian cultures/cultural groups of the Early Iron Age, did not commonly use battle axes. Moreover, these axes were not widely used in the armament patterns of local communities in the East European forest-steppe zone, either. The differences in shape between the axes from the Caucasus and those from Ukraine indicate that the Ukrainian examples probably represent local products (Kozubová 2019a, 73).

[20] The only exception is variant II3 with a discoid butt and tubular shaft hole, which was rare not only in VC (only two finds from Alsótelekes-Dolinka and Hatvan-Boldog; Patay 1961, 29, tábla IV:4; Kemenczei 2009, 122, Taf. 20:4), but also in Eastern Europe and in the Caucasus (Kozubová 2010, 55).

[21] Bátmonostor-Szurdok (grave; Gyucha, Gulyás, Török, Bárkoczy, Kovács 2015, 182, fig. 5:5), Gyöngyös (stray find; Kemenczei 2009, 169, Taf. 147:17), Miskolc-Diósgyőr-Kerekdomb (stray find; Kemenczei 2009, 171, Taf. 160:5), Nagyhalász-Homoktanya (stray find; Párducz 1952, 155, pl. LXVI:7), Nižná Myšľa (hoard; Miroššayová 1987, 125, tab. II:13), Tiszabercel (stray find; Kemenczei 2009, 140, Taf. 95:9).

[22] Bátmonostor-Szurdok (grave; Gyucha, Gulyás, Török, Bárkoczy, Kovács 2015, 181, fig. 3:5), Kunmadaras-Hajcsár utca (grave find; Kemenczei 2009, 124, Taf. 30:1), Szentes-Vekerzug (grave 8; Csallány, Párducz 1944–1945, 106f, tábla XLVI:3a,3a).

[23] In Eastern Europe and in the Caucasus, minimal 1150 akinakes finds are known so far (Topal 2018b, 168f).

[24] The talk is of two iron short swords of type Shumeyko/Шумейко according to D. Topal (or type Piliny according to T. Kemenczei) from Timár-Aranyosdomb and Piliny, one iron dagger of type Vettersfelde according to D. Topal from Szirmabesenyő and one bimetallic dagger of type Posmuş according to A. Vulpe from Tiszabercel (Kemenczei 1991, 70f, Taf. 62:275–278).

[25] The fragmentarily preserved akinakes from Tarpa (grave?) cannot be typologically specified (Kemenczei 1990, 75, Taf. 63:289).

[26] In the Western Podolian group, we know so far only three finds of akinakai, all of them belonging to type Vettersfelde (Burghardt 2015, 151f, fig. 5:9,10).

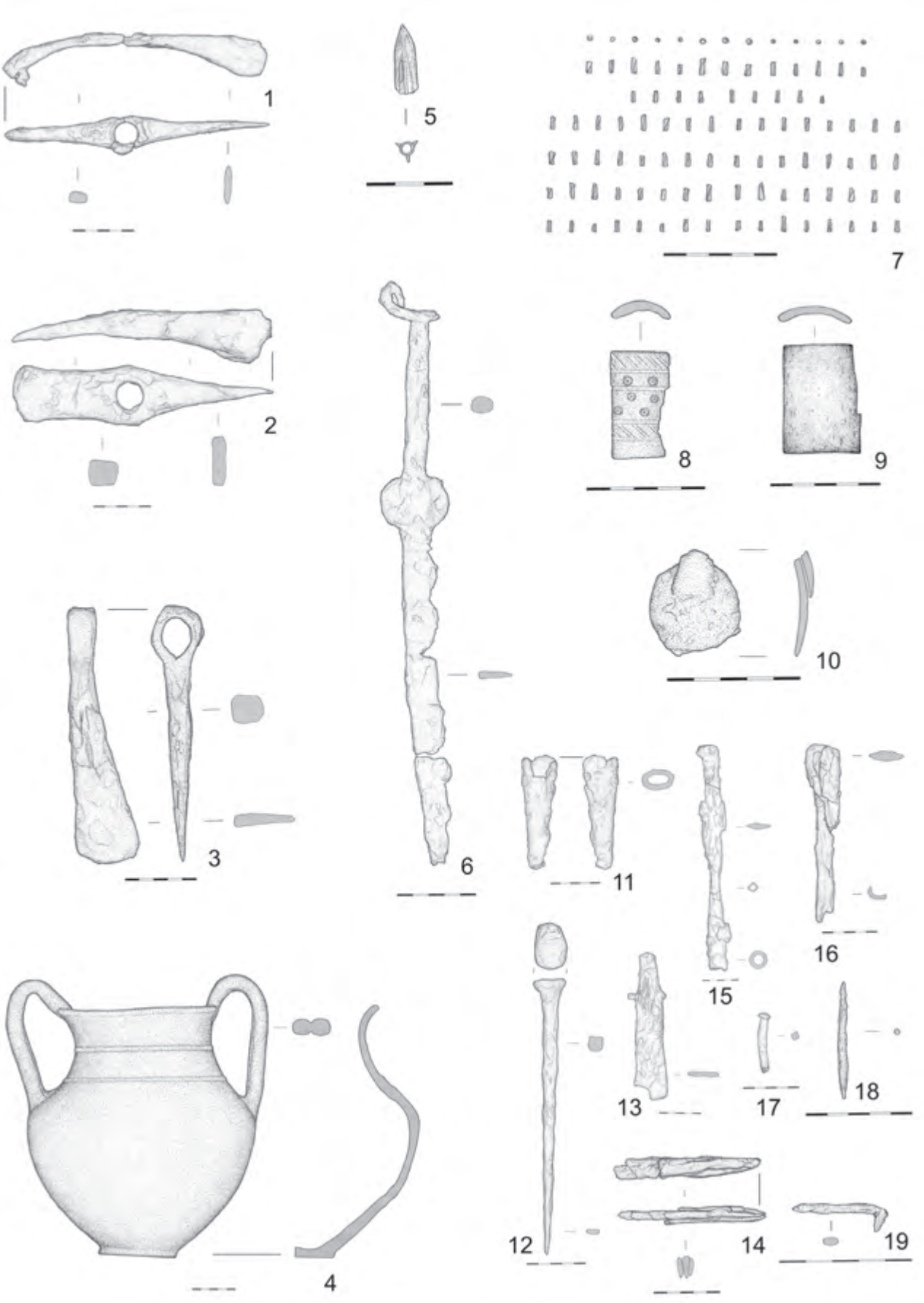

Fig. 5. Weapon grave from Bátmonostor-Szurdok. After Gyucha, Gulyás, Török, Barkóczy, Kovács 2015, fig. 2–5
Ryc. 5. Grób z bronią z Bátmonostor-Szurdok. Za Gyucha, Gulyás, Török, Barkóczy, Kovács 2015, ryc. 2–5

of short swords of type Shumeyko/Шумейко[27] and daggers of type Vettersfelde[28] on sites in the Moldavian forest-steppe (see Topal 2018a, рис. 21; 22; 2018b, рис. 5:1,2), the occurrence of the two last mentioned types of akinakai in VC[29] can be associated with the Moldavian rather than with the Ukrainian forest-steppe zone. The mostly bimetallic daggers of type Posmuş represent a specific type of weapons. Their main distribution territory is located in Transylvania and they count among the oldest finds of the akinakes-type cutting weapons in Central and Southeastern Europe (Vulpe 1990, 23–30, Taf. 1:2–6; 2:7–10; Gawlik 1997–1998; Rustoiu, Balteş, Nagy 2017, 211; Kozubova, Skakov 2016; Topal 2018a, 48f)[30]. The presence of a dagger of this type in VC is a result of contacts with Ciumbrud culture.

The most frequent type of cutting weapons in VC are iron *combat knives* (about 62 pieces; fig. 3:1; 9)[31], which have two main distribution areas: in VC and in the southern Carpathian-Danube region, where combat knives already occurred on sites of Basarabi culture and mainly of the subsequent Ferigile culture (Vulpe 1990, 81–91, Taf. 24:129–133; 25:134–142; 26:143–151; 27:152–168; 28:169–183; 29:184–191; Kozubová 2013a, 103ff, obr. 32). The armament schemes in these two distribution areas of combat knives also exhibit other similarities, e.g. the occurrence of identical iron and bronze trapezoidal scabbard chapes of combat knives and spear point protection caps (fig.3:5; 4:5). The distribution of this group of finds, similarly as that of combat knives, is limited to the territory of VC and Ferigile culture. The dating of finds from sites of VC has revealed that combat knives and scabbard chapes were implemented into VC under the influence of Ferigile culture (Vulpe 1990, 97–102, Taf. 32:211–221,223–227,229; 33:230,233–235; Kozubová 2013a, 105f, obr. 33). A specific group of long combat and work knives is represented by a few examples[32] with a flat tang and bone mount decorated with geometric and/or zoomorphic ornaments in a considerably schematised and locally modified Scythian animal style. Despite their zoomorphic decoration, such objects belong to local specifics of the material content of VC because in the North Pontic-Caucasian region they were quite rare (Kemenczei 2005, 182, 185, Abb. 5:1–5,10,11; Kozubová 2013a, 105, footnote 211; 2020, 57f, footnote 11, Abb. 3:1–8).

The second most numerous group of cutting weapons in VC is composed of the typologically uniform iron *short single-edged curved swords* (eight pieces)[33], which combine several features of double-edged akinakes-type weapons with a single-edged blade (fig. 5:6). Their main distribution territory is located in the western part of the Carpathian-Danube region in VC, Ciumbrud culture and Ferigile culture (Vulpe 1990, 92–95, Taf. 29:192–195; 30:196–198; 39B; 40; 41:7–10; Kemenczei 1991, 71, Taf. 63:283–287; 2009, 177, Taf. 184:6; Gyucha, Gulyás, Török, Bárkoczy, Kovács 2015, 181, fig. 4:3; Topal 2019; Topal 2018a, 77). Single-edged curved swords of type Nográd according to D. Topal (or type Tiszadob according to A. Vulpe), similarly as arrowheads, indicate a new tradition of weapon making in the Carpathian Basin and represent an important indicator of ability of Vekerzug people to adapt and modify objects of foreign origin into local forms. Single-edged swords of VC are related with the eastern akinakai, above all with those of type Shumeyko/Piliny, only through the presence of a massive kidney-shaped crosshair. The remaining parts of handle of single-edged curved swords differ from the handles of akinakai in multiple local specific features. On the other hand, prototypes for the blades of single-edged curved swords of VC can be sought in Southeastern Europe, mainly in northwestern Bosnia, in older iron single-edged curved swords with T-shaped handle (Kozubová 2019a, 85f).

Components of armour, which are rare in VC, are evidenced by bronze and iron parts of scaled armour as well as by one bronze and four iron shield bosses from Ártánd-Zomlin puszta (Párducz 1965, 139, 145f, fig. 12; pl. XIV; XXI:1–15). These articles were probably manufactured in production centres in the Greek colonies on the coasts of the Ionian and Adriatic Seas and were imported to Eastern Hungary through the territory of Central Balkans (Teržan 1995, 87, 126, Abb. 22). The interpretation of scale-shaped objects as armour components is not entirely clear. The finds from Tarnabod-Téglásdomb (about 230 pieces; Párducz 1969, 38, tábla III; IV) and Ártánd-Zomlin puszta (about 700 pieces; Párducz 1965, 145, pl. XI:1–22; XII:1–26; XIII:1–28) can with no doubts be considered as parts of scale

[27] The main territory of their distribution includes the forest-steppe zone on the right bank of Dnieper River, the Central Caucasus and the Moldavian forest-steppe. A numerous group of finds also comes from the Pontic Olbia (Topal 2018a, 63f, 69, 75, рис. 21).

[28] This type of akinakai was mainly spread in the forest-steppe region on the left bank of Dnieper River, in the Northwest Caucasus, in Crimea and the Moldavian forest-steppe (Topal 2018a, 66, 69, рис. 22).

[29] While in VC only two types of akinakai were identified, the typological spectrum of these weapons in Ciumbrud culture and particularly in Ferigile culture is more variegated. Besides the types Shumeyko and Vettersfelde, it also comprised other types (see Vulpe 1990). If VC were influenced by the Scythians, we would also expect a wider typological variety of akinakai in its material culture because akinakai count among the most characteristic displays of Scythian culture.

[30] Seen from a typological point of view, these daggers represent a sort of interlink between the Late Bronze Age bimetallic daggers of Kabardino-Pyatigorsk-type/or type Gamów with openwork handle and the early akinakai of type Kelermes (Kozubova, Skakov 2016, 88).

[31] Combat knives are defined to be more than 20 cm long. It is this length that distinguishes combat knives from ordinary iron knives, which were commonly used as tools. Both of these find categories are otherwise characterised by the same morphological features (type and shape of the handle, shape of the spine and cutting edge of the blade).

[32] Abony-Blaskó-dűlő (grave 110; Polgár 2007, 318, kép 26), Csárdaszállás-Hanzélitanya (grave 17; Kemenczei 2009, 119, Taf. 16:10), Chotín IA (cremation grave 67/53, inhumation grave 13/52; Kozubová 2013b, 29, 48, tab. 19:12,12a,12b; 38:14,14a), Mužla-Čenkov (feature 823; Kuzma 2011, Abb. 10:2,6), Lajosmizse (settlement find; Kemenczei 2009, 124f, Taf. 30:6), Nyíregyháza-Mandabokor (feature 446; Istvánovits 1997, 78, katalógus XI/7), Szentes-Vekerzug (grave 120; Párducz 1955, 5, fig. 3:2,2a,3,3a), Tápiószele-Szumrák (grave 238; Párducz 1966, 56), Veľký Grob (feature 2/82; Farkaš 1986, 169, obr. 4:1,2).

[33] Bátmonostor-Szurdok (grave; fig. 5:6; Gyucha, Gulyás, Török, Bárkoczy, Kovács 2015, 181, fig. 4:3), Gyöngyös (grave 7; Kemenczei 1991, 75, Taf. 63:283), Nagykáta (grave; Kemenczei 1991, 75, Taf. 63:284), stray finds from Nógrád County, Tarnabod-Báb dűlő, Tarnabod, Tiszadob and Želiezovce (Kemenczei 1991, 75, Taf. 63:285–288; 2009, 177, Taf. 184:6).

armour, but the remaining five assemblages of finds[34] do not enable such indisputable interpretation (see Kozubová 2013a, 110f; 2019a, 91f). Each of these assemblages contained one to five scale-shaped objects, whose interpretation as components of scale armour might rather indicate their symbolic deposition in the grave. However, it is evident that the usual armament schemes of VC did not comprise scale armour or other types of armour which were widely used in Eastern Europe (see e.g. Černenko 2006). Their occurrence in the Carpathian Basin had only an episodic character, chronologically delimited by the Ha D1 phase (Kozubová 2013a, 111f; 2019a, 92). The above statement at the same time again confirms that the armament schemes of VC differ significantly from the armament schemes in the East European steppe and forest-steppe regions (see below)[35].

2.2. HORSE HARNESS

Horse harness from the sites of VC can be divided into three groups according to their origin. The iron horse bits of type Szentes-Vekerzug (about 62 pieces)[36] represent a local product of VC and decorations of the harness have their analogies either in the Central European Hallstatt culture, or in the North Pontic-Caucasian region.

All *bits of type Szentes-Vekerzug* belong to a unified construction type, where the cheek-pieces are fixed to the central part of bit (mouthpiece) by rivets (fig. 1:1)[37]. The criteria of typological classification of these bits comprise the type of two threading openings on cheek-pieces (holes or loops), shape of cheek-pieces (with or without plate-like central part) and their endings (e.g. button-like, conikal, zoomorphic, looped, circular or tapered). However, when we try to answer the question of their genesis, we must take into consideration only their construction (i.e. the principle of a unmovable connection of cheek-piece with mouthpiece of the bit by rivet) and not the shape of individual parts, including the cheek-piece endings (see Chochorowski 1985, 116; Kozubová 2013a, 113ff, obr. 36; 2019a, 92f). The effort of some researchers (e.g. Párducz 1965, 155ff; Kemenczei 2009, 51) to solve the problem of their genesis with the help of zoomorphic and hoof-like endings and their resemblance to bone/antler cheek-pieces with similarly shaped endings for example from Celldömölk-Sághegy or Mátraszele is thus unsubstantiated, similarly as the effort to search for their prototype in two corroded and incomplete iron cheek-pieces from Ártánd-Zomlin puszta (Párducz 1965, 139, fig. 6:a–c; 7:1; pl. VI:2,3; Kemenczei 2009, 170, Taf. 154:3). As regards the construction, the bits of type Szentes-Vekerzug differ not only from the horse bits of Hallstatt culture, where only the bits with movable cheek-pieces were used, but also from the bits from the Late Bronze Age and Early Iron Age sites in Eastern Europe and in the Caucasus (e.g. Dietz 1998; Metzner-Nebelsick 2002, 291ff; Trachsel 2004, 41ff, 463ff, 479ff; Reinhold 2007, 61–72, Abb. 28; 29; Mogilov 2008, 16–39, рис. 3–84). Two different construction principles according to U.L. Dietz (1998, 14f) were used here, but both of them included a movable connection of the mouthpiece with cheek-pieces[38]. In the Late Bronze/Early Iron Age, bronze horse bits with movable cheek-pieces also were used in multiple distribution areas[39], but they were likewise different from iron bits of VC. Their cheek-pieces were cast together with the mouthpiece of the bit[40]. Among all of the above-mentioned horse bits with unmovable connection of the mouthpiece with cheek-pieces, the riveted attachment of cheek-pieces was only detected with bits of type Szentes-Vekerzug. This fact probably indicates their autochthonous development, in which the regions to the west and east of VC[41] and the domestic base played no role (Kozubová 2011, 74).

[34] Csárdaszállás-Hanzélitanya (grave 17; Oláh, Szenánszky 1982, 294), Csanytelek-Újhalastó (2 graves; Galántha 1986, 72), Chotín IA (cremation grave 86/54; Kozubová 2013b, 35, tab. 26:22,23), Törökszentmiklós-Surján (grave 90; Csalog, Kisfaludi 1985, 315, Abb. 8:13–15).

[35] Protective armour composed of hundreds of similar metal scales, as we know them from Tarnabod and Ártánd, was commonly found in graves in the East European steppe and forest-steppe zones and in the North Caucasus during the whole Scythian period. The finds of such armour, often in association with warrior belts, are known here from at least 350 sites (see Černenko 2006).

[36] For a distribution of iron horse bits in VC see Kozubová 2019a, Abb. 19 with the addition of Budapest-Soroksár-Akácos-dűlő (Bencze, Böröczky, Szigeti 2010, 163, kép 2), Szurdokpüspöki (Tankó 2015, 435, Abb. 2:4,5) and Tápiószele-Szumrák (Párducz 1966, 50, 74, pl. LXVI:3a,3b).

[37] Apart from iron bits, the functional parts of horse harness in VC were also represented by five bone/antler cheek-pieces with zoomorphic endings: Aldebrő-Ilona-tábla (two settlement finds; Gutay, Bernáth, Raáb, Rácz 2021, ábra 25; 26), Mátraszele (grave; Kemenczei 1986, 122, Abb. 3:2), Pusztataskony-Ledence 1 (feature 484; Tot 2015, рис. 2), Budapest-Rákospalota-Újmajor (feature 128; Horváth 2002, 106, kép 10:6). These components are typically associated with cultures/cultural groups of the early Scythian period in the East European forest-steppe region and partly also in the North Caucasus (Ha C2 and Ha D1), but they were used in VC only sporadically. Moreover, the finds from settlements of VC are morphologically different from the East European specimens, which clearly indicates their local origin. On the other hand, a cheek-piece from Celldömölk-Sághegy in Transdanubia exhibits distinct similarities in shape with the East European finds (Kozubová, Golec 2020, 215f; Kozubová, Fojtík 2021, 94f).

[38] The so-called β-principle, where the cheek-pieces were attached to the mouthpiece of the bit with the help of organic material, is characteristic of horse bits from the Late Bronze Age and the early Scythian period. In the 5th century BC, this construction was replaced by the so-called γ-principle, where the cheek-piece with two threading openings and a distinctly narrowed central part was passed through the looped end of the mouthpiece (Dietz 1998, 14f, Abb. 3).

[39] The South Caucasus, Iran and Urartu, as well as Northern Italy, Austria, Switzerland, Hungary, the North Caucasus, the East European forest-steppe and the Eastern Balkans (see Kozubová 2011, 74 with other literature in it).

[40] There is a time hiatus between the oldest horse bits of type Szentes-Vekerzug and the latest bits with unmovable cheek-pieces from Europe (such as type Konstantinovka-Endže). Their geographic distribution does not overlap, either (Kozubová 2011, 74).

[41] Besides VC, the mentioned horse bits also occurred in the Eastern Hallstatt culture (especially in Eastern Slovenia) and Ferigile culture (see Werner 1988). In the territory east of VC we currently know a single find of such bit from Perebykivtsi/Перебиківці (Smirnova 1993, рис. 7:4), which appears isolated in the Ukrainian forest-steppe and is certainly no prototype for the bits of type Szentes-Vekerzug but an evidence of contacts with VC. Also the find from Kelermes/

Seen from a typological perspective, bronze and bone *decorations of the harness* in VC represent a very variable group of finds. However, their sporadic occurrence indicates that in VC they were used much less frequently than the bits of type Szentes-Vekerzug (about 75 pieces). Moreover, many decorations of the harness represent special forms, which occurred in VC in just one or two pieces each. The contacts with the Eastern Hallstatt culture are evidenced by numerous bronze phalerae with one or two loops (fig. 1:20,20a; see e.g. Szentes-Vekerzug; Párducz 1952, pl. XLVI:1–4,7–10; XLV:1–3,5–7; LIV:1–3; LV:1–3), many types of bronze and bone buttons with a loop (such as basket-like buttons from Chotín IA, inhumation grave 40/52, buttons of type Rvenice according M. Trachsel from Chotín IB, grave 44/61 or Tiszavasvári-Csárdapart, grave 3 or relatively numerous smaller flat circular buttons with one or two loops from Szentes-Vekerzug, graves 12, 13 and 17; fig. 4:9,9a; Kemenczei 2009, 152, Taf. 66:1–7,10; 68:1–12; 69:5, 6; 113:24; Kozubová 2013b, 55, tab. 43:6,7) and bone drag decorations with circular or quadratic cross-threated ring and a mushroom-like top from Mátraszele, Mezőkövesd-Mocsolyát or Muhi-Kocsmadomb (see Leszih 1939, tábla II:15; Kemenczei 1986, Abb. 3:3, 4; 2009, 52–55, Taf. 35:1; Kozubová 2011, 86f, 89ff, 92f; 2019a, 94). Interesting is the detection of differences in the frequency of occurrence of decorations of the harness in VC and in Hallstatt culture. In VC they were used only sporadically, whereas in Hallstatt culture the drag decorations and especially the buttons with a loop represent a very frequent group of finds, which is mainly typical of the older phase of this culture (see e.g. Metzner-Nebelsick 2002, 302ff; Trachsel 2004, 41ff, 467ff, 524ff). In the case of eastern influences we can observe the same tendencies as with the influences from the Hallstatt milieu. Only a few types of bronze buttons with a loop (two trefoil buttons with a loop from Nitra-Dolné Krškany, grave 1/76 and one rhombic button from Chotín IA, inhumation grave 220/54; Romsauer 1993, 12, obr. 10:1,2; Kozubová 2013b, 94, tab. 75:25) and bone and bronze drag decorations (one bone cylindrical drag decoration from Budapest-Rákospalota-Újmajor, four bronze pieces in shape of a bird's beak from Aldebrő-Ilona-tábla and Sajószentpéter; Horváth 2002, kép 10:3; Kemenczei 2009, 133, Taf. 59:5–7; Gutay, Bernáth, Raáb, Rácz 2021, ábra 16) find their close parallels mainly in the early Scythian find complexes from the East European forest-steppe and from the North Caucasus (Kozubová 2011, 87, 89f, 92f; 2019a, 94; Mogilov 2008, рис. 90:30–64; 31:1–4; 127:1–51; 128:1–15; 129; 130; 131:1–42). In VC, some of them already occur in a modified, strongly simplified form (e.g. a drag decoration from Nagyszénás; Tóth 2018b, kép 5). Surprisingly enough, VC exhibits only a sporadic occurrence of drag decorations, which is in notable contrast to Eastern Europe and the North Caucasus, where drag decorations of various shapes were frequently represented by group of horse harness during the whole Early Iron Age (see e.g. Reinhold 2007, 73ff, Abb. 30; Mogilov 2008, 39–73, рис. 84–117; 126–135).

On the basis of bits of type Szentes-Vekerzug and decorations of the harness we can say that the homogeneity of horse harness components in VC is in striking contrast to their typological heterogeneity in territories to the west and east of VC.

3. ARMAMENT SCHEMES OF VEKERZUG CULTURE

Weapon graves occurred in all three regional groups of VC according to J. Chochorowski (fig. 6)[42], where some one of the types of weapons exhibit certain concentrations in their distribution. A distinct concentration of battle axes was identified in the north-eastern regional group of VC (fig. 7), spears are also numerous in the southern group (fig. 8) and ranged weapons (arrows) are more frequent on sites of the north-western and southern regional groups than in the north-eastern part of the territory of VC (Kozubová 2019b, 84). Combat knives were spread evenly throughout the Vekerzug area (fig. 9). Completely different is a case with horse harness components, which were rarely deposited in graves of VC. In many cemeteries they were absent at all, or, if present, then almost always in association with weapons (fig. 6)[43]. The graves with horse harness and without any associated weapon/s usually contained only decorations of the harness (buttons with a loop, drag decorations or phalerae), rein rings or parts of riding whips (see Kozubová 2008), which might indicate a symbolical meaning of this type of grave goods in funerary practices of VC (Kozubová 2019b, 84). Horse bits count among rare finds in graves without weapons (e.g. Nitra-Dolné Krškany, grave 1/76, Algyő-Bartók Béla utca, grave 59, Nyékládháza-Kavicsbánya or Chotín IA, inhumation grave 40/52; Romsauer 1993, 12, obr. 10:1–3; Bende 2003, 67, kép 4–6; Kemenczei 2009, 130; Kozubová 2013b, 54f, tab. 43:1–7). Weapons are evidenced in almost all cemeteries of VC (fig. 6). Their absence on several cemeteries (e.g. Medgyesháza,

Келермес, in which the cheek-pieces were attached to the mouthpiece with the help of organic material (so-called β-principle; Galanina 1997, 246, табл./Taf. 25:346), has been interpreted by several researchers (e.g. Hellmuth 2007, 81; Kemenczei 2009, 51) incorrectly as a horse bit of type Szentes-Vekerzug (Kozubová 2011, 77).

[42] According to J. Chochorowski, these three regional groups also represented three main distribution areas of VC. However, the author based himself only on certain attributes of funerary customs (more precisely on a different percentage of inhumation and cremation burials on cemeteries) and disregarded other aspects such as the other elements of burial rites, characteristic material content of these groups, structure of grave goods, costumes, armament schemes, settlement structure, social structure or specifics of interregional contacts (Chochorowski 1984, 103; 1985, 153; 1998, 473ff). His suggested territorial division of VC must be therefore reassessed with regard to the above-mentioned aspects (Kemenczei 2009, 15f; Kozubová 2013a, 207ff, 291f; 2019a, 141f).

[43] The relatively sporadic occurrence of horse harness in graves of VC is surprising, all the more that the Great Hungarian Plain offers an ideal living space for horses and the archaeozoological finds from settlements and cemeteries indicate that horses played a significant role in the life of Vekerzug people (see e.g. Bartosiewicz, Gál 2010; Kmeťová 2014).

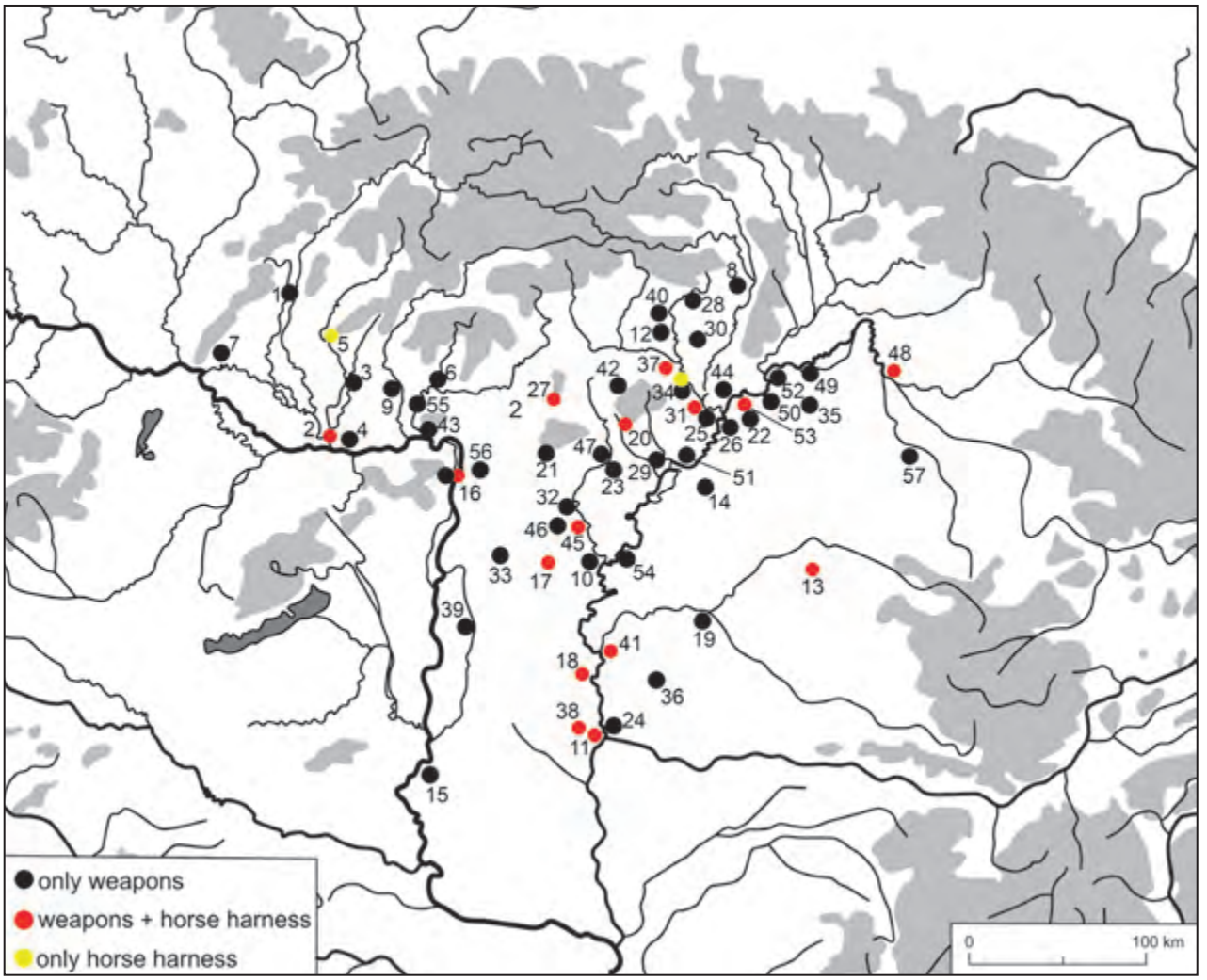

Fig. 6. The distribution of graves with weapons and horse harness in the Vekerzug culture. **Slovakia:** 1 – Bučany; 2 – Chotín IA, Chotín IB; 3 – Maňa; 4 – Modrany; 5 – Nitra-Dolné Krškany; 6 – Preseľany nad Ipľom; 7 – Senec-Štrková kolónia; 8 – Ždaňa-Doboky; 9 – Želiezovce. **Hungary:** 10 – Abony-Blaskó-dűlő; 11 – Algyő-Bartók Béla utca; 12 – Alsótelekes-Dolinka; 13 – Ártánd-Zomlin puszta; 14 – Balmazújváros-Hortobágy-Árkus puszta; 15 – Bátmonostor-Szurdok; 16 – Budapest-Békásmegyer-Északi városkapu, Budapest-Soroksár-Akácos-dűlő; 17 – Cegléd-Hordógyár; 18 – Csanytelek-Tömörkényi utca, Csanytelek-Újhalastó; 19 – Csárdaszállás--Hanzélitanya; 20 – Eger-Nagy Eged; 21 – Gyöngyös; 22 – Hajdúnánás-Tedej, Hajdúnánás-Verestenger-járás; 23 – Heves-Semelweis utca; 24 – Hódmezővásárhely-Kishomok; 25 – Kesznyéten-Szérűskert; 26 – Kunmadaras-Hajcsár utca; 27 – Mátraszele; 28 – Meszes--Barakonyi lejtő; 29 – Mezőkeresztes-Zöldhalompuszta; 30 – Monaj; 31 – Muhi-Kocsmadomb; 32 – Nagykáta-Egreskáta; 33 – Nyáregyháza; 34 – Nyékládháza-Kavicsbánya, Nyékládháza-Ónodi utca 17; 35 – Nyíregyháza-Közvágóhíd; 36 – Orosháza-Gyopáros; 37 – Sajószentpéter; 38 – Sándorfalva-Eperjes; 39 – Szabadszállás-Józan; 40 – Szendrő-Temetődomb; 41 – Szentes-Vekerzug; 42 – Szilvásvárád; 43 – Szob-Gregersen-kert; 44 – Taktaszada; 45 – Tápiószele-Szumrák; 46 – Tápiószentmárton; 47 – Tarnabod-Téglásdomb; 48 – Tarpa; 49 – Tiszabercel; 50 – Tiszaeszlár-Kunsírpart; 51 – Tiszakeszi-Fáy-kert; 52 – Tiszalök-Börtön, Tiszalök-Fészckalja; 53 – Tiszavasvári--Csárdapart, Tiszavasvári-Dózsa-telep, Tiszavasvári-Kapusz-lapos; 54 – Törökszentmiklós-Surján; 55 – Vámosmikola-Istvánmajor; 56 – Veresegyháza-Szent Imre utca. **Romania:** 57 – Sanislău-Nisipăria. After Kozubová 2019b, Abb. 1; 2 with the addition of Budapest--Soroksár-Akácos-dűlő, Nyékládháza-Kavicsbánya, Nyíregyháza-Közvágóhíd and Sanislău-Nisipăria

Ryc. 6. Rozmieszczenie grobów z bronią i uprzężą w kulturze Vekerzug. **Słowacja:** 1 – Bučany; 2 – Chotín IA, Chotín IB; 3 – Maňa; 4 – Modrany; 5 – Nitra-Dolne Krškany; 6 – Preseľany nad Ipľom; 7 – Senec-Štrková kolónia; 8 – Ždaňa-Doboky; 9 – Želiezovce. **Węgry:** 10 – Abony--Blaskó-dűlő; 11 – Algyő-Bartók Béla utca; 12 – Alsótelekes-Dolinka; 13 –Ártánd-Zomlin puszta; 14 – Balmazújváros-Hortobágy-Árkus puszta; 15 – Bátmonostor-Szurdok; 16 – Budapest-Békásmegyer-Északi városkapu, Budapest-Soroksár-Akácos-dűlő; 17 – Cegléd-Hordógyár; 18 – Csanytelek-Tömörkényi utca, Csanytelek-Újhalastó; 19 – Csárdaszállás-Hanzélitanya; 20 – Eger-Nagy Eged; 21 – Gyöngyös; 22 – Hajdúnánás-Tedej, Hajdúnánás-Verestenger-járás; 23 – Heves-Semelweis utca; 24 – Hódmezővásárhely-Kishomok; 25 – Kesznyéten-Szérűskert; 26 – Kunmadaras-Hajcsár utca; 27 – Mátraszele; 28 – Meszes-Barakonyi lejtő; 29 – Mezőkeresztes-Zöldhalompuszta; 30 – Monaj; 31 – Muhi--Kocsmadomb; 32 – Nagykáta-Egreskáta; 33 – Nyáregyháza; 34 – Nyékládháza-Kavicsbánya, Nyékládháza-Ónodi utca 17; 35 – Nyíregyháza--Közvágóhíd; 36 – Orosháza-Gyopáros; 37 – Sajószentpéter; 38 – Sándorfalva-Eperjes; 39 – Szabadszállás-Józan; 40 – Szendrő-Temetődomb; 41 – Szentes-Vekerzug; 42 – Szilvásvárád; 43 – Szob-Gregersen-kert; 44 – Taktaszada; 45 – Tápiószele-Szumrák; 46 – Tápiószentmárton; 47 – Tarnabod-Téglásdomb; 48 – Tarpa; 49 – Tiszabercel; 50 – Tiszaeszlár-Kunsírpart; 51 – Tiszakeszi-Fáy-kert; 52 – Tiszalök-Börtön, Tiszalök-Fészckalja; 53 – Tiszavasvári-Csárdapart, Tiszavasvári-Dózsa-telep, Tiszavasvári-Kapusz-lapos; 54 – Törökszentmiklós-Surján; 55 – Vámosmikola-Istvánmajor; 56 – Veresegyháza-Szent Imre utca. **Rumunia:** 57 – Sanislău-Nisipăria. Po Kozubovej 2019b, ks. 1; 2 z dodatkiem Budapest-Soroksár-Akácos-dűlő, Nyékládháza-Kavicsbánya, Nyíregyháza-Közvágohíd i Sanislău-Nisipăria

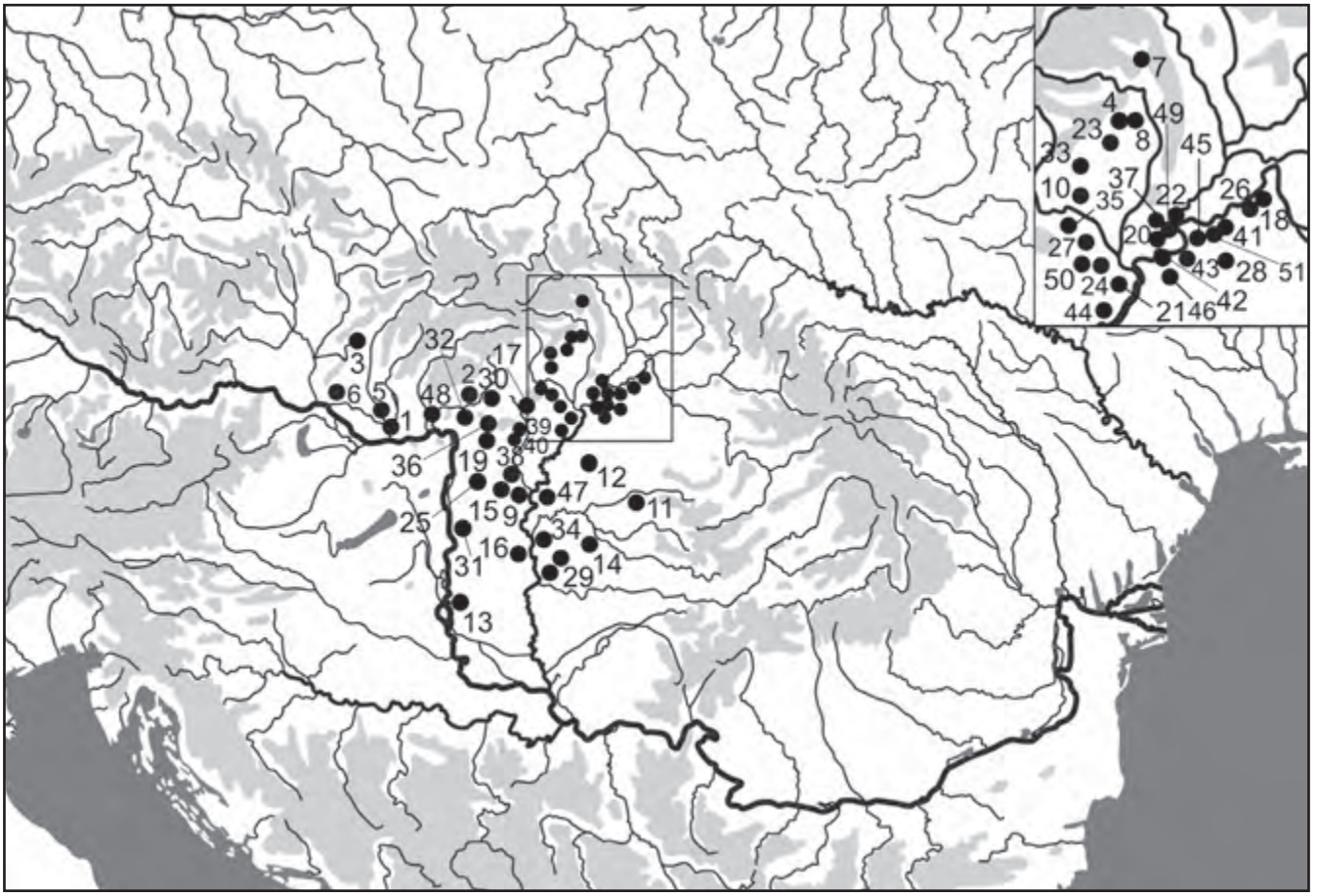

Fig. 7. The distribution of iron battle axes in the Vekerzug culture (types I and II according to A. Kozubová). **Slovakia:** 1 – Chotín IB; 2 – Malé Zlievce-Veľká Dolina; 3 – Marhát; 4 – Nižná Myšľa; 5 – Nové Zámky-Ragoňa; 6 –Senec-Štrková kolónia; 7 – Šarišské Michaľany-Stredné pole; 8 – Ždaňa-Doboky. **Hungary:** 9 – Abony-Blaskó-dűlő; 10 – Alsótelekes-Dolinka; 11 – Ártánd-Zomlin puszta; 12 – Balmazújváros-Hortobágy-Árkus puszta; 13 – Bátmonostor-Szurdok; 14 – Békéscsaba-Fényes; 15 – Cegléd-Hordógyár; 16 – Csanytelek-Tömörkényi utca, Csanytelek-Újhalastó; 17 – Eger-Nagy Eged; 18 – Gégény; 19 – Hatvan-Boldog; 20 – Hejőkeresztúr; 21 – Kesznyéten-Szérűskert; 22 – Mád-Szilvásvölgy; 23 – Meszes-Barakonyi lejtő; 24 – Muhi-Kocsmadomb; 25 – Nyáregyháza; 26 – Nagyhalász-Homoktanya; 27 – Nyékládháza-Ónodi utca; 28 – Nyíregyháza-Bródi halom, Nyíregyháza-Pazonyi utca; 29 – Orosháza-Gyopáros; 30 – Piliny; 31 – Szabadszállás-Józan; 32 – Szanda; 33 – Szendrő-Temetődomb; 34 – Szentes-Vekerzug; 35 – Szirmabesenyő; 36 – Szurdokpüspöki; 37 – Taktaszada; 38 – Tápiószele-Sumrák; 39 – Tarnaörs-Rajna-dűlő; 40 – Tarnabod-Téglásdomb; 41 – Tiszabercel, Tiszabercel-Pálinkás-part; 42 – Tiszadob; 43 – Tiszaeszlár-Kunsírpart; 44 – Tiszakeszi-Fáy-kert; 45 – Tiszalök-Börtön; 46 – Tiszavasvári-Csárdapart, Tiszavasvári-Dózsa-telep; 47 – Törökszentmiklós-Surján; 48 – Vámosmikola-Istvánmajor; 49 – between Gesztely and Hernádkak; 50 – between Ónod and Muhi; 51 – between Timár and Balsa. After Kozubová 2019a, Abb. 5; Kozubová, Fojtík 2021, Abb. 16

Ryc. 7. Rozmieszczenie żelaznych toporów bojowych w kulturze Vekerzug (typ I i II wg A. Kozubovej). **Słowacja:** 1 – Chotín IB; 2 – Malé Zlievce-Veľká Dolina; 3 – Marhát; 4 – Nižná Myšľa; 5 – Nové Zámky-Ragoňa; 6 – Senec-Štrková kolónia; 7 – Biegun Szaryski Michatany--Stredne; 8 – Ždaňa-Doboky. **Węgry:** 9 – Abony-Blaskó-dűlő; 10 – Alsótelekes-Dolinka; 11 – Ártánd-Zomlin puszta; 12 – Balmazújváros--Hortobágy-Árkus puszta; 13 – Bátmonostor-Szurdok; 14 – Békéscsaba-Fényes; 15 – Cegléd-Hordógyár; 16 – Csanytelek-Tömörkényi utca, Csanytelek-Újhalastó; 17 – Eger-Nagy Eged; 18 – Gégeny; 19 – Hatvan-Boldog; 20 – Hejőkeresztúr; 21 – Kesznyéten-Szérűskert; 22 – Mád-Szilvásvölgy; 23 – Meszes-Barakonyi lejtő; 24 – Muhi-Kocsmadomb; 25 – Nyáregyháza; 26 – Nagyhalász-Homoktanya; 27 – Nyékládháza-Ónodi utca; 28 – Nyíregyháza-Bródi halom, Nyíregyháza-Pazonyi utca; 29 – Orosháza-Gyopáros; 30 – Piliny; 31 – Szabadszállás-Józan; 32 – Szanda; 33 – Szendrő-Temetődomb; 34 – Szentes-Vekerzug; 35 – Szirmabesenyő; 36 – Szurdokpüspöki; 37 – Taktaszada; 38 – Tápiószele-Sumrák; 39 – Tarnaörs-Rajna-dűlő; 40 – Tarnabod-Téglásdomb; 41 – Tiszabercel, Tiszabercel-Pálinkás--part; 42 – Tiszadob; 43 – Tiszaeszlár-Kunsírpart; 44 – Tiszakeszi-Fáy-kert; 45 – Tiszalök-Börtön; 46 – Tiszavasvári-Csárdapart, Tiszavasvári-Dózsa-telep; 47 – Törökszentmiklós-Surján; 48 – Vámosmikola-Istvánmajor; 49 – między Gesztely i Hernádkak; 50 – między Ónod i Muhi; 51 – między Timárem a Balsą. Za Kozubovą 2019a, Abb. 5; Kozubová, Fojtík 2021, Abb. 16

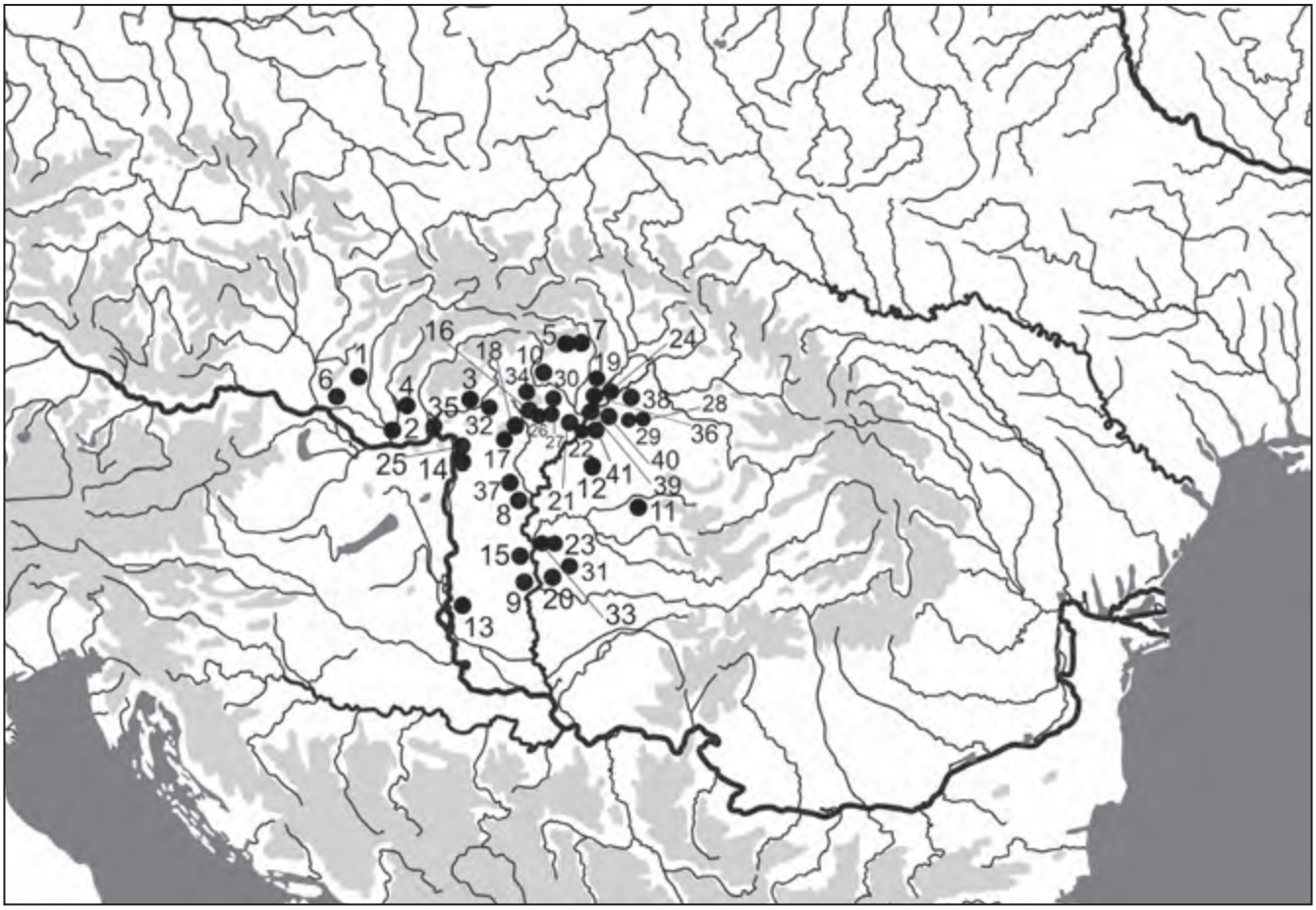

Fig. 8. The distribution of iron spearheads in the Vekerzug culture. **Slovakia:** 1 – Bučany; 2 – Chotín IA; 3 – Malé Zlievce-Veľká Dolina; 4 – Maňa; 5 – Nižná Myšľa; 6 – Senec-Štrková kolónia; 7 – Ždaňa-Doboky. **Hungary:** 8 – Abony-Blaskó-dűlő; 9 – Algyő-Bartók Béla utca; 10 – Alsótelekes-Dolinka; 11 – Ártánd-Zomlin puszta; 12 – Balmazújváros-Hortobágy-Árkus; 13 – Bátmonostor--Szurdok; 14 – Budapest-Soroksár-Akácos-dűlő; 15 – Csanytelek-Tömörkényi utca, Csanytelek-Újhalastó; 16 – Eger-Nagy Eged; 17 – Gyöngyös; 18 – Heves-Semelweis utca; 19 – Hejőkeresztúr; 20 – Hódmezővásárhely-Kishomok; 21 – Kesznyéten-Szérűskert; 22 – Kunmadaras-Hajcsár utca; 23 – Kunszentmárton-Jaksor; 24 – Mád-Szilvásvölgy; 25 – Maglód; 26 – Miskolc-Diósgyőr--Kerekdomb; 27 – Nyékládháza-Mezőnyék; 28 – Nyírbátor; 29 – Nyíregyháza-Pazonyi utca; 30 – between Ónod and Muhi; 31 – Orosháza-Gyopáros; 32 – Piliny; 33 – Szentes-Vekerzug; 34 – Szilvásvárád; 35 – Szob-Gregersen-kert; 36 – Taktaszada; 37 – Tápiószele-Szumrák; 38 – Tiszabercel-Pálinkás-part; 39 – Tiszadob; 40 – Tiszaeszlár-Kunsírpart; 41 – Tiszavasvári--Csárdapart, Tiszavasvári-Dózsa-telep

Ryc. 8. Rozmieszczenie grotów włócznich żelaznych w kulturze Vekerzug. **Słowacja:** 1 – Bučany; 2 – Chotín IA; 3 – Malé Zlievce-Veľká Dolina; 4 – Maňa; 5 – Nižná Myšľa; 6 – Senec-Štrková kolonia; 7 – Ždaňa-Doboky. **Węgry:** 8 – Abony-Blaskó-dűlő; 9 – Algyő-Bartók Béla utca; 10 – Alsótelekes-Dolinka; 11 – Ártánd-Zomlin puszta; 12 – Balmazújváros-Hortobágy-Árkus; 13 – Bátmonostor-Szurdok; 14 – Budapest-Soroksár-Akácos-dűlő; 15 – Csanytelek-Tömörkényi utca, Csanytelek-Újhalastó; 16 – Eger-Nagy Eged; 17 – Gyöngyös; 18 – Heves-Semelweis utca; 19 – Hejőkeresztúr; 20 – Hódmezővásárhely-Kishomok; 21 – Kesznyéten-Szérűskert; 22 – Kunmadaras--Hajcsár utca; 23 – Kunszentmárton-Jaksor; 24 – Mád-Szilvásvölgy; 25 – Maglód; 26 – Miskolc-Diósgyőr-Kerekdomb; 27 – Nyékládháza--Mezőnyék; 28 – Nyírbátor; 29 – Nyíregyháza-Pazonyi utca; 30 – między Ónod a Muhi; 31 – Orosháza-Gyopáros; 32 – Piliny; 33 – Szentes-Vekerzug; 34 – Szilvásvárád; 35 – Szob-Gregersen-kert; 36 – Taktaszada; 37 – Tápiószele-Szumrák; 38 – Tiszabercel--Pálinkás-part; 39 – Tiszadob; 40 – Tiszaeszlár-Kunsírpart; 41 – Tiszavasvári-Csárdapart, Tiszavasvári-Dózsa-telep

Nógrádkövesd or Nyíregyháza-Mandabokor II; Kőrös 1945; Patay 1955; Botyánszki 2015) is probably due to the fact that their areas were not completely investigated.

Typological differences between weapons and horse harness from individual cemeteries are barely detectable because weapons and horse harness in VC are typologically very homogeneous during the whole existence of this culture. On the other hand, the armament schemes in individual cemeteries of VC are very different. The proportion of weapon burials to graves without weapons in individual cemeteries is not constant either. Moreover, it varies a lot (see below). However, this detection may be again caused by the fact that many cemeteries of VC were only partly investigated (see Kozubová 2019b, 28f).

On the basis of a combination of individual weapon types in graves[44] and their joint occurrence with horse

[44] The weapon graves contained besides weapons also work tools – lugged axes (Ärmchenbeile), which have been considered both weapons and tools (see Wesse 1990), awls, work knives and whetstones. Whetstones with or without suspension hole were also used to sharpen weapons and knives and are therefore classified as weapon accessories.

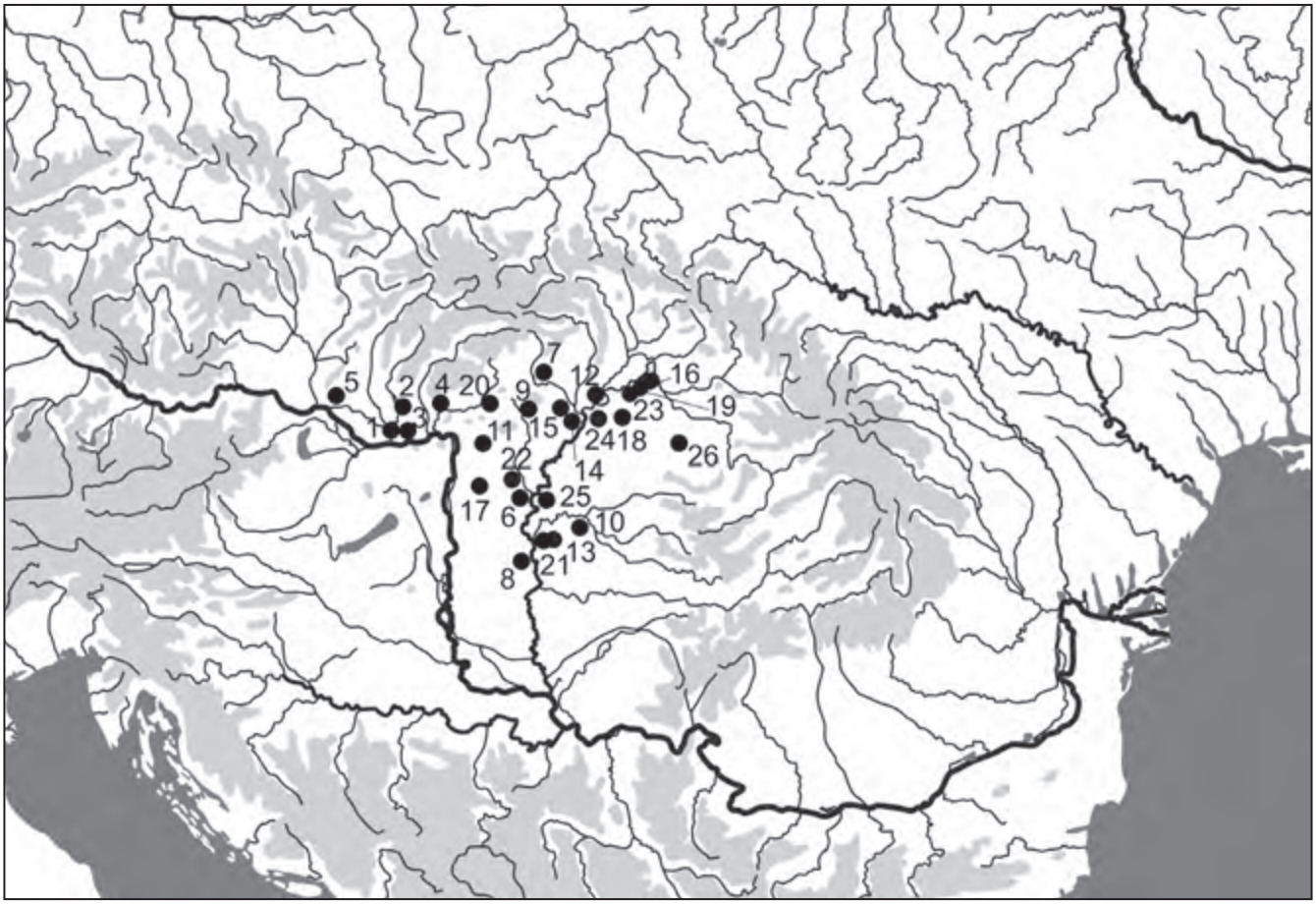

Fig. 9. The distribution of iron combat knives in the Vekerzug culture. **Slovakia:** 1 – Chotín IA, Chotín IB; 2 – Maňa; 3 – Modrany; 4 – Preseľany nad Ipľom; 5 – Senec-Štrková kolónia. **Hungary:** 6 – Abony-Blaskó-dűlő; 7 – Alsótelekes-Dolinka; 8 – Csanytelek-Újhalastó; 9 – Eger--Nagy Eged; 10 – Csárdaszállás-Hanzélitanya; 11 – Hatvan-Boldog; 12 – Hejőkeresztúr; 13 – Kunszentmárton-Jaksor; 14 – Mád-Szilvásvölgy; 15 – Muhi-Kocsmadomb; 16 – Nagyhalász-Homoktanya; 17 – Nyáregyháza; 18 – Nyíregyháza-Közvágóhíd, Nyíregyháza-Mandabokor; 19 – Petneháza-Bogda; 20 – Piliny; 21 – Szentes-Vekerzug; 22 – Tápiószele-Szumrák; 23 – Tiszabercel, Tiszabercel-Pálinkás-part; 24 – Tiszavasvári-Csárdapart, Tiszavasvári-Dózsa-telep; 25 –Törökszentmiklós-Surján. **Romania:** 26 – Sanislău-Nisipăria

Ryc. 9. Rozmieszczenie żelaznych noży bojowych w kulturze Vekerzug. **Słowacja:** 1 – Chotín IA, Chotín IB; 2 – Maňa; 3 – Modrany; 4 – Preseľany nad Ipľom; 5 –Senec-Štrková kolónia. **Węgry:** 6 – Abony-Blaskó-dűlő; 7 – Alsótelekes-Dolinka; 8 – Csanytelek-Újhalastó; 9 – Eger-Nagy Eged; 10 – Csárdaszállás-Hanzélitanya; 11 – Hatvan-Boldog; 12 – Hejőkeresztúr; 13 – Kunszentmárton-Jaksor; 14 – Mád-Szilvásvölgy; 15 – Muhi-Kocsmadomb; 16 – Nagyhalász-Homoktanya; 17 – Nyáregyháza; 18 – Nyíregyháza-Közvágóhíd, Nyíregyháza-Mandabokor; 19 – Petneháza-Bogda; 20 – Piliny; 21 – Szentes-Vekerzug; 22 – Tápiószele-Szumrák; 23 – Tiszabercel, Tiszabercel-Pálinkás--part; 24 – Tiszavasvári-Csárdapart, Tiszavasvári-Dózsa-telep; 25 –Törökszentmiklós-Surján. **Rumunia:** 26 – Sanislău-Nisipăria

harness, we can define six basic armament groups of VC, which reflect not only different combat techniques (hand-to--hand combat, distance combat, mounted combat), but also non-uniform standards of how the armament of a Vekerzug pedestrian or mounted warrior should look like: single weapon without horse harness (armament group 1), single weapon with horse harness (armament group 2), combination of two weapon types without horse harness (armament group 3: combination of arrow(s) and spear(s) as armament group 3A, combination of spear(s) and combat knife as armament group 3B, combination of arrow(s) and combat knife as armament group 3C, combination of spear(s) and battle axe as armament group 3D), combination of two weapon types with horse harness (armament group 4), combination of three weapon types without horse harness (armament group 5) and combination of three weapon types with horse harness (armament group 6). A special group is represented by sporadically occurring graves without weapons, containing only horse harness (fig. 10; 11).

On the basis of a combination of various weapon types and their joint occurrence with horse harness, we can relatively clearly define the armament schemes of individual burial communities in VC, which generally correspond to three groups of individuals: pedestrian warriors, mounted warriors and unarmed horsemen. Most weapon graves in VC contained equipment represented by a single weapon (armament group 1; fig. 10). In several cemeteries, such as Bučany (Bujna, Romsauer 1983)[45], Heves-Semelweis utca (Szabó

[45] Only one out of the four graves of VC contained weapons: one spearhead was found in cremation grave 37 (Bujna, Romsauer 1983, 291, Taf. XI:8).

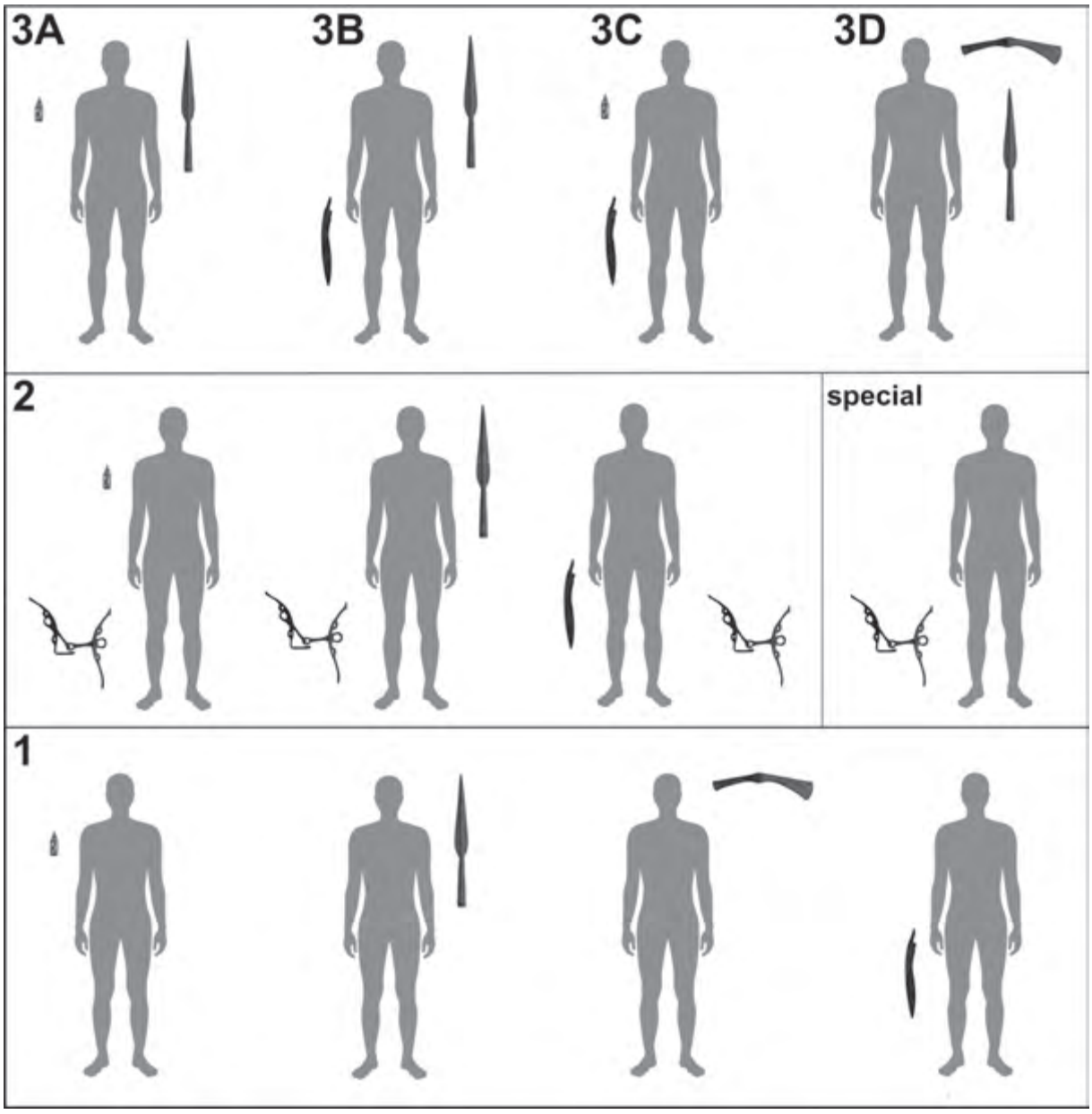

Fig. 10. Armament schemes of the Vekerzug culture: groups 1, 2, 3 and a special group
Ryc. 10. Schematy uzbrojenia kultury Vekerzug: grupy 1, 2, 3 i grupa specjalna

1969)[46], Kesznyéten-Szérűskert (Hellebrandt 1988; 2001, 59–63)[47], Orosháza-Gyóparos (Juhász 1972; 1976)[48], Szob--Gregersen-kert (Ilon 1985)[49] or Vámosmikola-Istvánmajor (Laczus, Párducz 1969)[50], only this particular armament schema was identified. Differences between individual cemeteries of VC can be also observed in the preference for a particular weapon

[46] Among twenty-eight graves, the weapon (spearhead) was only found in cremation grave 21/B (Szabó 1969, 61f, tábla XIV:2).

[47] From this only pre-published cemetery with 89 burials are known weapons in two graves: grave 26 contained one battle axe and a part of inventory of probably female grave 13 with rich jewelry (two bronze bracelets, two bronze snake-shaped hairrings, thirty-nine beads and three cowrie shells) was also one arrowhead, undoubtedly with a secondary function as an amulet/talisman (B. Hellebrandt 1988, kép 7; 2001, 59).

[48] Only about 3% of graves in this cemetery contained weapons, and all of them are inhumation graves. Horse harness did not appear among grave goods. Three graves contained one battle axe each, one grave contained a spearhead (Juhász 1976, 231, 245f, kép 2:3a,3b; 6:1,2a,2b,4a,4b; 13:4). The child's grave 63 (Juhász 1976, 243, kép 4:4–6) has yielded an arrowhead which was not used here as a weapon but as a neck ornament/amulet (Kozubová 2019b, 72, 75, Abb. 29).

[49] Among the group of nine graves, only one grave contained weapons: two spearheads were found in cremation grave 5 (Ilon 1985, 77f, tábla III; IV).

[50] Weapons occurred here in five graves (8% of graves), but probably only in one of them as true weapons (three arrowheads in grave 5; Laczus, Párducz 1969, 217, pl. LIII:2–4). The arrowheads in child's grave 29 and female grave 48 (Laczus, Párducz 1969, 222f, pl. LVI:1; LVII:2) were rather used as costume accessories, and the function of a miniature iron battle axe of type I from the female grave 27 as a weapon is disputable (Laczus, Párducz 1969, 221, fig. 3; Kozubová 2019b, 51).

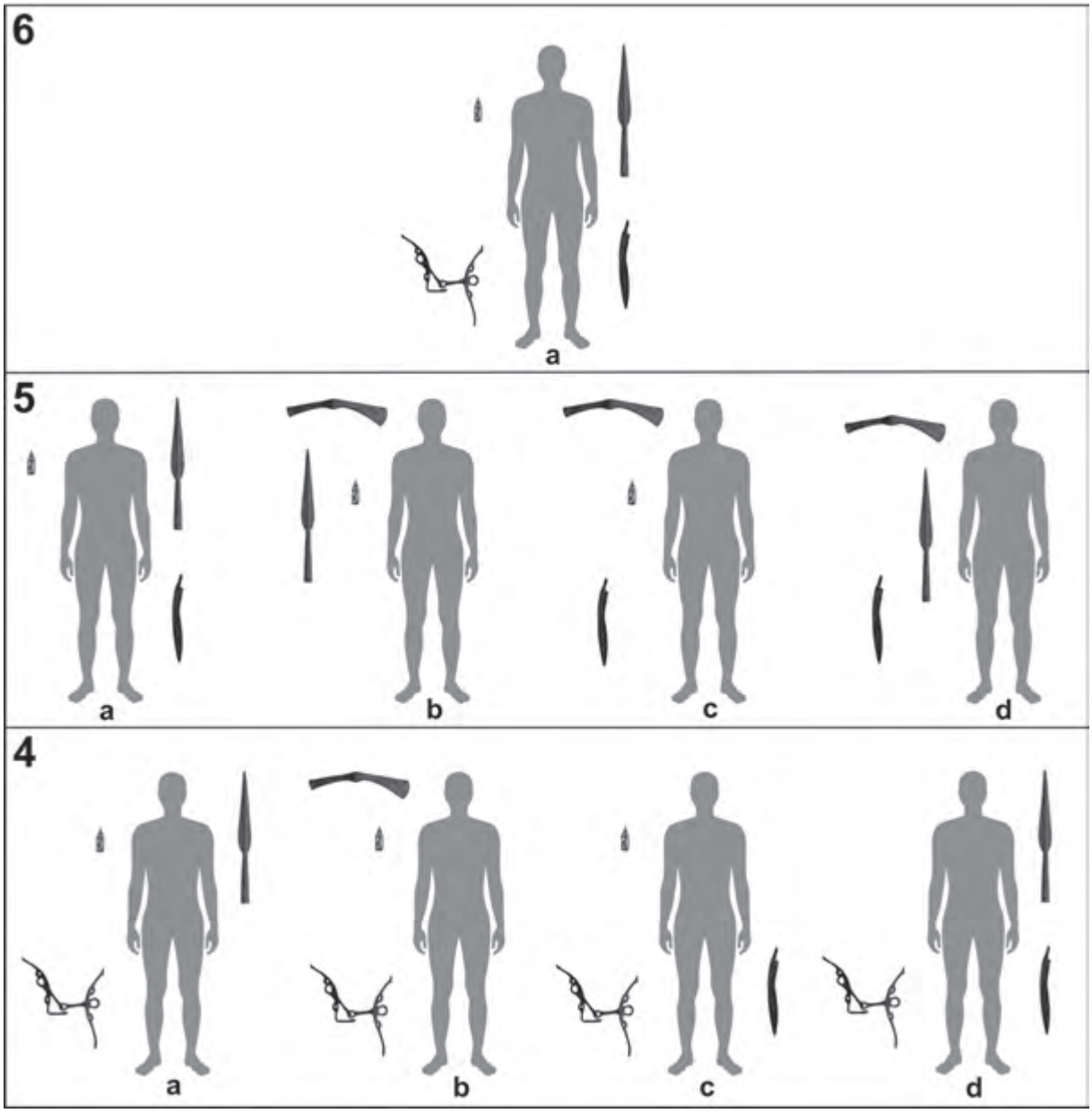

Fig. 11. Armament schemes of the Vekerzug culture: groups 4, 5 and 6. 4a – Cegléd-Hordógyár (grave), Chotín IB (inhumation grave 49/61), Tiszalök-Börtön (cremation grave 320), Tiszavasvári-Csárdapart (cremation grave 32). 4b – Chotín IA (inhumation grave 120/53). 4c – Tiszavasvári-Csárdapart (cremation grave 39). 4d – Szentes-Vekerzug (cremation grave 142), Tiszavasvári-Dózsa-telep (cremation grave 49). 5a – Senec-Štrková kolónia (cremation grave 7/1957). 5b – Szentes-Vekerzug (inhumation grave 8). 5c – Bátmonostor-Szurdok (grave). 5d – Tiszavasvári-Dózsa-telep (cremation grave 48), Ždaňa-Doboky (cremation grave 21/06). 6a – Tiszavasvári-Dózsa-telep (cremation grave 38)

Ryc. 11. Schematy uzbrojenia kultury Vekerzug: grupy 4, 5 i 6. 4a – Cegléd-Hordógyár (grób), Chotín IB (grób szkieletowy 49/61), Tiszalök-Börtön (grób ciałopalny 320), Tiszavasvári-Csárdapart (grób ciałopalny 32). 4b – Chotín IA (grób szkieletowy 120/53). 4c – Tiszavasvári-Csárdapart (grób ciałopalny 39). 4d – Szentes-Vekerzug (grób ciałopalny 142), Tiszavasvári-Dózsa-telep (grób ciałopalny 49). 5a – Senec-Štrková kolónia (grób ciałopalny 7/1957). 5b – Szentes-Vekerzug (grób szkieletowy 8). 5c – Bátmonostor-Szurdok (grób). 5d – Tiszavasvári-Dózsa-telep (grób ciałopalny 48), Ždaňa-Doboky (grób ciałopalny 21/06). 6a – Tiszavasvári-Dózsa-telep (grób ciałopalny 38)

type as a basic component of the armament. Arrows represent the most frequent weapon type in VC, but their quantitative distribution in all cemeteries of this culture is not balanced. On several sites they are either absent at all, such as Heves-Semelweis utca, Nyíregyháza-Mandabokor II (Botyánszki 2015) or Ždaňa-Doboky (Miroššayová 2015), or do not belong to basic armament, such as Alsótelekes-Dolinka (Patay 1961; 1962; Patay, B. Kiss 2001–2002), Balmazújváros-Hortobágy-Árkus puszta (Kemenczei 2009, 116), Orosháza-Gyopáros or Tápiószele-Szumrák[51] (Párducz 1966). On the other hand,

[51] Arrows represent here the most frequent weapon type, but they occurred in only six graves and their total number of fourteen pieces is much lower than e.g. in Chotín IA and Chotín IB with eighty-seven pieces (Kozubová 2009, tab. 1). Moreover, most arrowheads were found

arrows were basic components of armament in the cemeteries at Chotín IA and IB (Kozubová 2013b)[52], Nyáregyháza (Kisfaludi 2004), Szentes-Vekerzug (Csallány, Párducz 1944–1945; Párducz 1952; 1954; 1955)[53], Tiszavasvári-Csárdapart (Kemenczei 2009, 152–157)[54] and Vámosmikola-Istvánmajor, whereas battle axes were dominant in Alsótelekes-Dolinka, Eger-Nagy Eged (Fodor 2001; Kozubová, Horváth 2019; Kozubova, Horvat 2018) and Orosháza-Gyopáros (Kozubová 2019b, 86). Basic armament components in Tápiószele-Szumrák and Ždaňa-Doboky were spear and battle axe[55], in Tiszavasvári-Dózsa-telep a spear and arrow(s) and in Törökszentmiklós-Surján (Csalog, Kisfaludi 1985) a battle axe together with arrow(s). The combinations of two different weapon types (armament group 3; fig. 2; 10) in graves of VC are much more seldom than single weapons, but surprisingly, they are more frequent than the combination of a single weapon with horse harness (armament group 2; fig. 1:20–28; 10). Above-standard armament in VC is represented by the joint occurrence of two weapon types together with horse harness (armament group 4; fig. 1:1–19; 11)[56] and by a combination of three weapon types with or without horse harness (armament groups 5 and 6; fig. 5; 11). However, the latter examples are very rare and known solely from elite graves (Kozubová 2019b, 85f). A combination of three different weapon types without horse harness is evidenced on cemeteries in Szentes-Vekerzug (grave 8; Csallány, Párducz 1944–1945, 107, tábla XLIV:14–26; XLV:3–7; XLVI:1,3,5,6; Kozubová 2019b, Abb. 32), Senec-Štrková kolónia (grave 7/1957; Kozubová 2013b, 272f, tab. 119:1–18), Tiszavasvári-Dózsa-telep (grave 48; Kemenczei 2009, 151, Taf. 110:1–3; Kozubová 2019b, Abb. 34), Ždaňa-Doboky (grave 21/06; Miroššayová 2015, 76f, tab. XVIII; XIX) and Bátmonostor-Szurdok (grave; fig. 5; Gyucha, Gulyás, Török, Bárkoczy, Kovács 2015, fig. 2–5). Cremation grave 38 in Tiszavasvári-Dózsa-telep contained three different weapon types (arrows, spear and combat knife) in association with three horse bits (Kemenczei 2009, 150, Taf. 106:14–16; 107:1–15). The custom of depositing multiple specimens of the same weapon type in graves of VC was evidenced not only with arrows but sporadically also with spears (e.g. Alsótelekes-Dolinka, Szentes-Vekerzug, Szob-Gregersen-kert, Chotín IA, Senec-Štrková kolónia or Ždaňa-Doboky; Csallány, Párducz 1944–1945, 107, tábla XLVI:5,6; Patay 1961, 29, 36, tábla III:1,2,4,5; Ilon 1985, 78, tábla III:2,3; Kozubová 2013b, 41, 273, tab. 34:1,2; 119:3; 120:6; Miroššayová 2015, 76, tab. XVIII:6,7). Exceptional in this regard is the equipment of a grave in Bátmonostor-Szurdok, which even comprised three different iron battle axes in combination with a lugged axe (fig. 5:1–3,13).

Certain differences can be observed in the structure of armament between individual cemeteries of VC. Although the battle axe, combat knife and spear undoubtedly counted among typical weapons of local communities within this culture, these melee weapons were not very often combined with one another. On the other hand, akinakai, short single-edged curved swords and scale armour did not take roots in the armament schemes of VC. Ranged weapons were an integral part of the armament of VC and were often combined with melee weapons, but we can observe some differences in their occurrence between individual cemeteries of VC (see above). Arrowheads in VC occurred in different find contexts when compared to the territories of their origin in the East, where their mass occurrence was detected (see e.g. Chernenko 1981).

in graves with jewellery and spindle whorls, which might indicate that they had some other function than weapons. The basic component of warrior equipment in Tápiószele were either spears (seven pieces) or battle axes (four pieces), but they were not combined with one another. Except for the grave 348 with a combination of arrows and a combat knife (Párducz 1966, 69, pl. LII:1–3,5–9), all the other weapon graves belong to armament group 1 (Kozubová 2019b, 75ff, Abb. 30).

[52] In both cemeteries at Chotín, arrows belong to the most frequent weapon types and they occurred in graves either separately or in combination with some other weapon or with horse harness. Most weapon graves belong to the first armament group with a single weapon, usually arrow(s), rarely a combat knife, spear and in Chotín IB also a battle axe. Less frequent is the group of graves with two weapon types, where the basic component was again a bow combined either with a combat knife or a spear, in Chotín IB also with a battle axe. Above-standard armament in the form of two weapon types in a combination with horse harness was detected in only two (inhumation) graves: 120A/53 and 49B/61 (Kozubová 2019b, 55f, 68, 70ff, Abb. 13; 14; 19; 23; 24).

[53] Arrows as the basic components of warrior armament were found here in one-half of all weapon graves. An important role in local armament was also played by spears, unlike battle axes and combat knives which occurred only sporadically. However, many "archers" were equipped with numerous jewellery, therefore it is well possible that the presence of arrowheads in graves containing jewellery has some other than military background. Graves with other weapon types contained much fewer personal ornaments than the graves with arrowheads (Kozubová 2019b, 51f, 77–80, Abb. 32).

[54] Most weapon graves here contained only a single weapon type each, mainly arrows. Battle axes and spears are less frequent. Arrows also represented the basic armament in two graves (32 and 39) which contained two weapon types and horse harness each. Interesting is that all graves containing arrow/s as the only weapon in their equipment at the same time also contained typical female grave goods (e.g. jewellery, spindle whorls or clay stamps). With regard to the fact that these are cremation burials without anthropological determination, it is well possible that they were originally double graves (Kozubová 2019b, 81f, Abb. 33). Also in the nearby cemetery of Tiszavasvári-Dózsa-telep (Kemenczei 2009, 142–152), graves with a single weapon type are the most frequent ones. However, in this case there are solely arrowheads and the occurrence of jewellery in these graves is less frequent than in Csárdapart. Basic armament consisted of arrow(s) and spear(s). Combat knives are relatively frequent as well. Both weapon types occurred only in a double combination with or without horse harness (Kozubová 2019b, 82ff, Abb. 34).

[55] In the hitherto unpublished cemetery at Balmazújváros-Hortobágy-Árkus, four graves contained spearheads and one grave contained a battle axe (Kemenczei 2009, 179f). The key components of local armament in Abony-Blaskó-dűlő was spear, which was found in four graves (49, 54, 114, 203), whereas three other graves (47, 138, 179) have yielded only five arrowheads in total (Polgár 2007, 318).

[56] Graves of the armament group 4 are known from Cegléd-Hordógyár (inhumation grave; Kemenczei 2009, 118, Taf. 12:5–9; 13:1–9), Chotín IA (inhumation grave 120/53; fig. 1:1–19; Kozubová 2013b, 63f, tab. 50; 2019b, Abb. 23), Chotín IB (inhumation grave 49/61; Kozubová 2013b, 130f, tab. 102; 103; 2019b, Abb. 24), Szentes-Vekerzug (grave 142; Párducz 1955, 9, pl. X:16; XI:3; XII:12; XIII:1,3,8; Kozubová 2019b, Abb. 32), Tiszavasvári-Csárdapart (graves 32 and 39; Kemenczei 2009, 155f, Taf. 119:15,18–22; 120:1–18; 121:24–26; 122:1–14; Kozubová 2019b, Abb. 33), Tiszavasvári-Dózsa-telep (grave 49; Kemenczei 2009, 151, Taf. 106:1–6; 107:1–15; Kozubová 2019b, Abb. 34) and Tiszalök-Börtön (grave 320; Scholtz 2007, 57f, kép 5).

In several cemeteries of VC, arrowheads are either absent at all or evidenced by only one or a few pieces (see above). VC exhibits a distinct predominance of graves with only one arrowhead (about 60%)[57], graves with two to six pieces are more rarely found (about 30%) and graves with whole sets of more than six arrowheads represent less than 10% of all graves with arrowheads. Twelve graves contained seven to twenty arrowheads each (fig. 1:2–17)[58] and two thirds of these graves were part of the two cemeteries at Chotín[59] and Csanytelek-Újhalastó. Sets of more than twenty arrowheads were only found in four graves[60]. The small number of graves with arrowheads together and the small number of arrowheads in individual graves of VC are in striking contrast to the situation in the East European steppe and forest-steppe zones. Graves in this area commonly contained several dozens of arrowheads each, some of them even representing a reserve armament of the buried warrior (see e.g. Chernenko 1981). This fact clearly shows the differences in structure of grave goods and in the related funerary customs of VC in comparison to Early Iron Age communities in Eastern Europe. It also is a convincing argument against the hypotheses of an eastern or Scythian origin of VC and of large-scale migrations from Eastern Europe to the Carpathian Basin during the Early Iron Age. The total number of arrows in quivers reflects in VC either the real situation (their small number in the quiver for practical reasons, with the aim of easier usage of arrows in combat or as an evidence for a low degree of militarisation of local population) or the custom of *pars pro toto* deposition (especially in the case of one arrow in the grave), as it can be supposed with Hallstatt culture and Ferigile culture (see e.g. Eckhardt 1996, 148f; Măndescu 2019, 196)[61]. Unlike the two last mentioned cultures, in VC small numbers of arrowheads also occurred in graves of children and women, where they evidently (judging from their location in the grave) were used as neck and hand ornaments (composite bracelets) and not as weapons. Arrowheads in these graves might have been intended for magical protection of their owners (amulets and talismans). This assumption could be also supported by their frequent occurrence in association with glass layered eye beads and cowrie shells (Kozubová 2013a, 379f; 2019b, 51f). On the other hand, the higher number of arrowheads in graves is in VC a characteristic attribute of male graves and it can be associated with the prominent social status of buried individuals. Horse harness in VC is almost exclusively related to male sphere (Kozubová 2009, 89; 2013a, 352–359, 378ff)[62].

Also surprising is the small number of graves with weapons and horse harness in individual cemeteries of VC, which only rarely exceeds 10% with weapons and 1% with horse harness. An exception is represented by only a few cemeteries: Tiszavasvári-Dózsa-telep (about 13%), Szentes-Vekerzug (15,4%), Tiszavasvári-Csárdapart (17%) and Csanytelek-Újhalastó (22%)[63], in the case of horse harness the cemeteries at Algyő-Bartók Béla utca (3,8%), Chotín IA and IB (about 2%), Csanytelek-Újhalastó (1,8%), Tiszavasvári-Dózsa-telep (about 5%) and Tiszavasvári-Csárdapart (5,6%) (Kozubová 2019b, 85). At the same time, only 8% of all graves of VC contained weapons and/or horse harness[64], which also clearly speaks against the hypothesis of a high degree of militarisation of the Vekerzug society in comparison to the East European steppe and forest-steppe zones. This assumption is also confirmed by very few anthropologically determined female graves of VC with weapons, which in most cases cannot be interpreted as warrior graves. Apart from a few exceptions[65], these graves contained

[57] Among them also are graves of juvenile individuals and adult females, where the arrowheads usually had some other function than weapons (see Kozubová 2019b, 51f).

[58] Chotín IA (inhumation 120/53 grave with 16 pieces, inhumation grave 269/54 with 8 pieces; Kozubová 2013b, 63f, 108, tab. 50:4–19; 85:13–20), Chotín IB (grave 1/61 with 13 pieces, grave 49/61 with 8 pieces; Kozubová 2013b, 116, 130, tab. 90:3–15; 102:5–12), Csanytelek-Újhalastó (grave 9 with 12 pieces, grave 72 with 16 pieces, another grave with 16 pieces; Gálantha 1986, 71 f), Hajdúnánás-Tedej (grave with 15 pieces; M. Nepper 1968, 58, tábla I:1), Maňa (grave 17 with 7 pieces; Benadik 1983, 20, Taf. II:2,3), Nyékládháza-Ónodi utca (grave 7 with 12 pieces; Kemenczei 2009, 130), Szentes-Vekerzug (grave 8 with 13 pieces; Csallány – Párducz 1944–1945, 107, táb. XLIV:14–26), Tiszalök-Börtön (grave 320 with 7 pieces; Scholtz 2007, 58, kép 5:1).

[59] The distinct concentration of arrowheads in the cemeteries at Chotín IA and IB (87 pieces; Kozubová 2010, tab. 1) might indicate the existence of one or more centres of arrowhead production in the close or more distant neighbourhood of Chotín.

[60] Cegléd-Hordógyár (grave with 24 pieces; Kemenczei 1986, 118, Abb. 4:2), Mátraszele (grave with 35 pieces; Kemenczei 1986, 122, Abb. 3:5); Monaj (grave with 20 pieces; Kemenczei 2009, 171, Taf. 162:5), Senec-Štrková kolónia (grave 7/1957 with 29 pieces; Kozubová 2013b, 273, tab. 119:4–18).

[61] In the case of VC, the former possibility we consider more likely.

[62] In VC, nowadays only two anthropologically identified exceptions from this rule are known: cremation grave 59 from Algyő-Bartók Béla utca with one horse bit, four phalerae, jewellery, two spindle whorls and no weapons, in which an adult female was buried (Bende 2003, 67, kép 4–6), and inhumation grave 220/54 from Chotín IA with one horse bit, five looped straps, two arrowheads, one razor and no jewellery (Kozubová 2013b, 93f, tab. 75:1–28; 76:1–6), containing the burial of probably a female individual in the age of 12–14 years (anthropological determination by Alena Šefčáková, Slovak National Museum – Natural History Museum, Bratislava). The anthropologically undetermined cremation grave 10 from Muhi-Kocsmadomb contained a combination of typical male (button with a loop of type Rvenice and two arrowheads) and typical female grave goods (costume accessories in the form of a bracelet, a snake-shaped hairring and beads; Kemenczei 2009, 126, Taf. 37:3,4,6–13).

[63] In the unpublished cemetery at Balmazújváros-Hortobágy-Árkus, weapons were found in at least five graves, which represent at least 12% of all graves (Kemenczei 2009, 116, 179f).

[64] Almost 3550 graves are known so far in VC. About 279 of these graves are mentioned in literature to have contained weapons and/or horse harness (Kozubová 2019b, 96, footnote 124, Liste 1; 2). However, the real number of graves in VC had to be higher. In the case of many destroyed cemeteries (e.g. Hatvan, Piliny) or cemeteries published only in the form of short preliminary reports (e.g. Battonya), the total number of graves is either unknown or not reported (Kemenczei 2009, 117, 122, 172f). From such cemeteries also come a smaller number of weapons and horse harness components.

[65] Cremation grave 74 from Tápiószele-Szumrák with no jewellery and with a spear, a spear point protection cap and a whetstone (however, anthropological determination of the buried individual as female is disputable due to cremation) and the anthropologically undetermined inhumation grave 27 from Vámosmikola-Istvánmajor with plenty of jewellery and a miniature iron battle axe (Párducz 1966, 42, pl. XVII:3,5–7; XXVII:5; XXXIII:12; Laczus, Párducz 1969, 221, fig. 3, pl. LIV:15–18; LV:1,4–11; Fóthi, Bernert, Évinger 2006, 70).

only arrowheads – usually one, very rarely multiple arrowheads (maximum six pieces) – and are characterised by grave goods of standard quality and average quantity. Their equipment comprised a small number of jewellery and/or spindle whorls/clay stamps/work knives (Kozubová 2013a, 197)[66]. On the other hand, a high proportion of female graves with weapons during the whole Iron Age was detected in the forest-steppe and mainly the steppe zones of Eastern Europe, where their number increased particularly since the 5th century BC. The armament in these graves, unlike the graves of VC, usually consisted of ranged weapons (arrows, slingshots) and spears or javelins, sporadically also of akinakai and scale armour[67]. These indisputably female warrior graves and other phenomena might indicate the existence of a specialised warrior class within the local communities (see e.g. Gulyayev, Savchenko 1995, 101f; Makhortykh 2011; Fialko 2011).

The chronological development of individual armament schemes in VC can be observed only in some cemeteries (e.g. Chotín IA and IB or Szentes-Vekerzug), because most of the weapon types are not chronologically significant. Arrows as the basic components of warrior armament in Chotín and also horse harness were found in graves from all three burial horizons (from Ha D1 to LT A). On the other hand, occurrence of battle axes, spears and combat knives with iron and bronze trapezoidal scabbard chapes in graves seems to be limited to the second burial horizon in Ha D2 (Kozubová 2019b, 70). Graves with only a single weapon type occurred in the cemetery of Szentes-Vekerzug during its whole existence, but graves with a combination of two or three weapons with or without horse harness are chronologically limited to the Ha D1 phase (ibidem, 78, 80).

Provided that individual weapon types in VC reflect various combat techniques, a different status of individual warriors in military activities and the acquired fighting experience, then these aspects should be also reflected in a different structure of equipment in individual weapon graves (see e.g. Ulf 1990, 138–153). An important aspect of the visualisation of social identities in VC was a standardised choice of individual elements of armament and costume, but also of other grave goods. We can identify two types of finds in the equipment of graves of VC with weapons and horse harness: objects that are common to most of these graves (work tools: knives, awls, whetstones) and others, such as jewellery[68] and pottery, which did not occur regularly as grave goods. The number of graves in all six basic armament groups is different (see above), which might indicate some degree of social stratification of individuals buried in weapon graves of VC. This assumption is also supported by horse harness, which occurred in only a few weapon graves and was probably intended to visualise social identities of male and sometimes also female individuals. At the same time, the number of male graves with weapons in VC is too low and the number of male graves without weapons is too high to identify the social role of Vekerzug men only as warriors and/or horsemen. In VC, these roles were reserved for only one part of its population. Since the male sphere is closely related to war and warfare as a possibility to demonstrate the positions of power, the issue of social structure of the male population in VC is associated with the existence of warrior elite(s) or even elite(s) of horsemen. While most burials with horse harness undoubtedly belonged to elite graves, in the case of weapon graves we can follow up some differences in the social status of buried individuals (see Kozubová 2013a, 376–386). Unlike the female costumes in VC, which were also influenced by other than only social factors (e.g. age and family status of their bearers), individual armament schemes of VC mainly reflected the social differentiation of society or also the military hierarchy of warriors and horsemen (Kozubová 2013a, 378ff; 2018, 51ff). Graves with only a single weapon type as well as those with a combination of two weapons without horse harness usually fall within the group of graves with average equipment. On the other hand, above-standard armament in the form of two weapon types in a combination with horse harness as well as a combination of three different weapon types with or without horse harness[69] is typically found only in graves of the higher middle class and in the richest (elite) graves[70]. However, not only particular combinations of weapons, but also their individual types (e.g. battle axes or sets of arrows) demonstrate a high social status of warriors in VC (Kozubová 2009, 90f; 2010, 54f; 2019a, 157f).

Some researchers suppose that the genesis of VC was tightly associated with activities of the Western Podoliann group in the Middle Dniester region and probably also with those of Ciumbrud culture (e.g. Kemenczei 2009, 112; Chochorowski 2014, 27f). However, in this regard we must point to the very poor similarities in the material content of Western Podolian group and VC as well to many distinct differences in their burial rites, structure of grave goods and armament schemes. From the above facts arises that the participation of Western Podolian group in formation of the (not only) material content of VC was negligible. The armament of Western Podolian group is characterised by a combination of arrow sets, which occurred

[66] An exception from this rule is represented by several richly furnished graves with plenty of jewellery and/or fibulae (e.g. graves 30 and 114 from Szentes-Vekerzug or grave 48 from Vámosmikola-Istvánmajor; Párducz 1954, 31, fig. 7; 1955, 3f, pl. III:16,17; IV:1–4; Laczus, Párducz 1969, 223, pl. LX:5; LXI:5; LVI:14–16; LVII:1–5). An identical situation as in VC is also observed in Ciumbrud culture, where in small numbers of females graves with weapons were only arrowheads in combination with numerous jewellery and spindle whorls, eventually with mirrors (Kozubová 2013a, 384; 2019b, 52, footnote 49).

[67] Female graves in the forest-steppe zone sometimes contained horse bits as well (Gulyayev, Savchenko 1995, 97).

[68] Even though most male graves with weapons and/or horse harness do not contain jewellery, these grave goods, if present, indicate a standardised set of costume accessories composed of a bracelet and/or several beads, sporadically also a circular earring/hairring (costume groups 3a, 3b, 3c and 2c according to A. Kozubová). In several cemeteries, such as Alsótelekes-Dolinka or Meszes-Barakonyi lejtő, the male costume comprised only one bronze/iron pin (costume group 4) (Leszih 1939, 79, tábla IV:22,23; Patay 1961, 30, tábla VII:12; 1962, 13, tábla IV:5; Patay, B. Kiss 2001–2002, 81, 83, 88, 90, ábra 7:2; 11:2; Kozubová 2018, 47, 53, Abb. 21; 22; 2019b, 86).

[69] Above-standard equipment in VC can be also represented by a joint occurrence of a horse bit with decorations of the harness in a grave.

[70] On the social structure of VC and on individual distinguished "social" grave groups, see Kozubová 2013a, 351–386.

in almost 90% of all graves with weapons and horse harness, and spears. Arrows and spears at the same time represent the most frequent weapon types in this group (Burghardt 2015, 143, 151). Other weapon types, such as battle axes[71], but mainly akinakai (daggers and short swords)[72] occurred only sporadically in weapon graves of this group (ibidem, 151f). On the other hand, very frequent are various parts of horse harness, including cheek-pieces and mouthpieces, decorations of the harness and rein rings. Horse harness occurred here in as much as 22% of all weapon graves (ibidem, 156). Even though the components of scale armour in the Middle Dniester region are not that frequent as in the rest of the East European forest-steppe zone, their occurrence in 14% of all weapon graves of Western Podolian group (ibidem, 155, table 3) is incomparably higher than in VC (only 0,15%). The occurrence of weapons in as much as 39% of all graves of Western Podolian group indicates a high degree of militarisation of local population, which is also characteristic of other Early Iron Age cultural groups in the forest-steppe zone (ibidem, 143, 162f, table 3–5). The typological variability of weapons and horse harness together with the percentage proportion of warrior and horsemen graves are not significantly different from other communities in the East European forest-steppe. The elite graves of Western Podolian group, unlike VC, refer to their connection with "eastern" immigrants. Particularly the male graves with weapons and horse harness let us suppose that the elites of Western Podolian group probably belonged to the sphere of influence of eastern elites from the Middle Dnieper region (Burghardt 2015, 162; Kozubová 2019a, 157ff). Ranged weapons were a compulsory part of armament also in Early Iron Age communities from the Middle Dnieper region, where they usually were combined with spears/javelins and armour, less frequently with akinakai. The similarities with Middle Dniester region are also indicated by the low representation of battle axes in local armament schemes and frequent occurrence of horse harnesses in weapon graves (see e.g. Burghardt 2015, 159–162, fig. 8, table 3–5; Mogilov 2008; Shelekhan 2012). Also interesting is the very small number of human graves containing horse skeletons, since the VC is mainly characterised by horse burials in separate pits without any relation to graves of human individuals. In contrast to the East European steppe and forest-steppe zones, in VC horses did not belong to status or prestige attributes and were not owned by individuals but by whole communities (see Kozubová 2013a, 279f; Kmeťová 2014, 162–165, 199–202, 226ff, 266f; Ochir-Goryayeva 2012).

The armament schemes of VC are different not only from the armament of the Western Podolian group and contemporaneous cultural groups in the Middle Dnieper region, but also from the armament schemes of Ciumbrud culture and Ferigile culture. The armament of Ciumbrud culture is characterised by a typical combination of a dagger or a short sword (akinakai) with arrow sets, sometimes supplemented by a Vekerzug--type battle axe or a spear (Vulpe 1990, 17f; Teržan 1998, 513f; Kozubová 2013a, 384f; Topal 2018b, 178ff). The armament of Ferigile culture is dominated by a combination of a spear with a combat knife/single-edged curved sword, but short swords (akinakai) and a local type of double-edged battle axes are relatively frequent here as well. Arrows occurred in graves of this culture only sporadically, but horse harness (especially typological highly variable horse bits) is relatively often found in weapon graves (Werner 1988; Vulpe 1990, 15ff; Măndescu 2019, 195f). Both of the above-mentioned cultures, similarly as VC, are characterised by an almost total absence of scale armour and a very low number of female weapon graves, which is in contrast to the situation in Eastern Europe (Werner 1988, 7f; Kozubová 2013a, 384f; Măndescu 2019, 196).

4. CONCLUSIONS

Cultural and spatial analyses of individual types of weapons and horse harness as well as of the armament schemes of VC show that the problem of interregional contacts of this culture, mainly the eastern ones, must be considered more differentially than it has been previously presented in scientific literature. The results of an in-depth analysis of weapons, horse harness and armament schemes and a recent analysis of burial rites, structure of grave goods, costume and material content of VC does not support the hypotheses of strong eastern influences and their significant participation in the genesis of this culture, or even those of an influx of new populations from Eastern Europe to the Carpathian Basin[73]. Weapons and horse harness may not be found in VC as frequently as e.g. jewellery, pottery or tools, but they undoubtedly count among the most interesting elements of its material content. Many of them come from richly furnished burials and the graves with weapons and/or horse harness reflect an evident social differentiation of Vekerzug society. In VC, weapons and horse harness as well as jewellery made from metal and other materials were used for visualisation of social identities. They testify to high technological skills of Vekerzug people, mainly in the fields of iron metallurgy[74] and goldsmithing, and at the same time provide evidence not only for the contacts of VC with neighbouring cultural regions and its involvement in interregional trading and communication networks (including the so-called Tarnobrzeg-Vekerzug Amber

[71] Battle axes are known so far from only eight graves (Burghardt 2015, 152, fig. 6:1–9). All specimens are typologically different from battle axes of VC and fall within the group of battle axes with the main distribution territory in the East European forest-steppe (see above).

[72] For the time being, only three akinakai are known (Burghardt 2015, 151, fig. 5:9,10).

[73] For example, the horse burials in separate grave pits within human cemeteries in VC exemplify well that even the "indisputably" eastern elements can be reinterpreted on the basis of a detailed analysis and that anything that seems to be eastern at the first glance (i.e. without any detailed analysis) eventually must not necessarily be of eastern origin.

[74] This is clearly pointed out by e.g. battle axes, spearheads and knives from the cemetery in Eger-Nagy Eged, which are characterized by an excellent state of preservation with minimal surface corrosion (Kozubová, Horváth 2019, 145, Abb. 2:1,3; Kozubova, Horvat 2018, рис. 1:1–7).

Road; Kozubová 2019a, 101f), but also for a vivid exchange of technologies. Since almost all ceramic vessels of VC are undecorated, the geometric and zoomorphic ornaments on some weapons[75] represent an important source of knowledge for possible conclusions regarding the attitudes and mentality of Vekerzug people.

The armament of VC is composed of such types of weapons and horse harness, which occurrence is either limited to several cultural-geographic regions and these types are particularly characteristic of VC, or have several main distribution areas (sometimes even with a mass occurrence) in Eurasia, in the Eastern Hallstatt culture or in the Balkans. The first group includes iron combat knives with iron and bronze trapezoidal scabbard chapes with two main distribution areas (VC, Eastern Balkans), and iron Vekerzug-type battle axes with symmetrically located shaft hole, which were spread in the eastern part of the Carpathian Basin and in the North Caucasus. The combination of combat knives and battle axes undoubtedly represents a local specific in the armament schemes of VC. The first group also contains iron horse bits of type Szentes-Vekerzug, which are of local origin (they are not related to eastern regions). Their not very frequent occurrence outside the territory occupied by VC[76] is an evidence for active contacts of the neighbouring cultural regions with Eastern Hungary and Southwestern Slovakia. This group also comprises very specific forms of weapons and weapon accessories, whose distribution, apart from a few exceptions, is limited to the territory of VC (iron single-edged swords, bronze and bone/antler cross-shaped and zoomorphic quiver decorations). The types of weapons and horse harness belonging to the second group were a common part of the spectrum of material content in neighbouring cultures/cultural groups, such as bronze arrowheads with inner socket, which were spread throughout the Eurasian territory, and iron spearheads of type I according to A. Kozubová with one of their main distribution areas in the East Hallstatt region.

The armament schemes of VC are different from the armament of both Ciumbrud culture and Ferigile culture, and the Western Podolian group with contemporaneous forest-steppe cultural groups in the Dnieper basin (fig. 10; 11). At the same time, they show that the importance of eastern influences on VC has been groundlessly overvalued in scientific literature. The objects of eastern type in VC can be divided into two basic groups according to their find contexts. Some of the types became part of the material content and armament schemes of VC and some of them were locally modified (e.g. battle axes or arrowheads with inner socket). They are more likely as evidence of innovations in warfare than of the presence of foreigners from Eastern Europe in the Carpathian Basin. However, in VC some of these weapon types already appeared in different find contexts than in their eastern regions of origin, which clearly refers to differences in funerary practices between these two cultural regions. Finds of the second group, such as akinakai, scale armour or the so-called rattles (see e.g. Kemenczei 2004), were not integrated into the spectrum of material content of VC and their occurrence in the Carpathian Basin indicates only a chronologically limited, episodic character without any clues of their chronological and typological development. Provided that the interregional distribution of individual types of finds is a reflection of particular communication networks, then the interregional networks for typical female-specific and male-specific grave goods in VC are only partly corresponding. The networks for jewellery and costume accessories refer to the Hallstatt culture, Eastern Poland, Central Balkans and even to the western Black Sea region[77], whereas the networks for weapons are related not only to the Hallstatt culture and the Central and Eastern Balkans, but also to the North Caucasus and the Moldavian forest-steppe (Kozubová 2019b, 95).

The example of weapons, horse harness and armament schemes clearly shows that the overall character of VC resembles neither the Eastern Hallstatt culture nor the Early Iron Age cultural groups in the East European steppe and forest-steppe zones. Also the general characteristic of eastern influences does not allow to classify the VC as an eastern or Scythian culture. VC can be regarded as a sort of cultural bridge between the Eastern Hallstatt culture, Iron Age cultures in the Carpathian-Danube region and the East European forest-steppe cultural groups.

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[75] Seen from a stylistic point of view, geometric motifs are more or less uniform, whereas zoomorphic motifs are rather individual, less frequent and they mainly occur on quivers and bone or horn mounts of combat and work knives. Dominant zoomorphic motifs are the heads of eagles and horses. When applied to weapons, they might have symbolised some inevitable skills of warriors/horsemen, such as courage and quickness.

[76] For example, in Ferigile culture, in the Dolenjska group in Slovenia or in cemeteries in Szentlőrinc, Atenica and Donja Dolina (Werner 1988, 15–21, 23f, Taf. 1:7; 2:13,14,17; 4:21–23; 5:24–25,26; 7:35,37,38; 8:42–45; 9:50–52; 10:54; 11:63,65,66; 13:75–78,80; 14:84–86,89).

[77] E.g. the glass layered eye beads from Mezőtúr (Osváth, Fórizs, Szabó, Bajnóczi 2018).

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Anita Kozubová

„Z bronią w ręku i koniem u boku". Broń i uprząż konna w grobach kultury Vekerzug z perspektywy międzyregionalnej

Streszczenie

Artykuł porusza zagadnienie grobów kultury Vekerzug (dalej KV) z terenów wschodnich Węgier, południowych regionów Słowacji i północno-zachodniej Rumunii, które zawierały broń i uprząż końską (ryc. 6). Skupiono się na kompleksowym przeglądzie tych pochówków, koncentrując się na analizie kulturowej i przestrzennej wspomnianych artefaktów oraz na zdefiniowaniu schematów uzbrojenia KV (ryc. 10; 11).

Analiza kulturowo-przestrzenna zabytków militarnych, części uprzęży końskiej oraz standardu uzbrojenia KV wskazuje, że problem kontaktów międzyregionalnych tej kultury, głównie wschodnich, należy rozpatrywać odmiennie niż to dotychczas przedstawiano w literaturze. Wyniki dogłębnej analizy tej grupy zabytków oraz najnowsze omówienie obrzędów pogrzebowych, struktury dóbr grobowych, stroju i kultury materialnej KV nie potwierdzają hipotez o silnych wpływach wschodnich i ich znaczącym udziale w genezie tej kultury, a tym bardziej nie powinno być tutaj mowy o napływie społeczności kultur wschodnioeuropejskich do Kotliny Karpackiej.

Co prawda, broń i elementy uprzęży mogą nie być tak często spotykane w KV jak np. biżuteria, ceramika czy narzędzia, ale niewątpliwie zaliczają się one do najciekawszych elementów jej materialnej spuścizny. Wiele z nich pochodzi z bogato wyposażonych pochówków, a groby z bronią i/lub uprzężą końską odzwierciedlają wyraźne zróżnicowanie społeczne populacji KV. To właśnie te elementy, wraz z wykonaną z różnych materiałów – w tym szlachetnych – biżuterią, posłużyły do wizualizacji tożsamości społecznej jej nosicieli. Zabytki te świadczą o wysokich umiejętnościach technologicznych, głównie w dziedzinie hutnictwa żelaza i złotnictwa, a jednocześnie są dowodem kontaktów KV z sąsiednimi regionami kulturowymi i zaangażowaniu w międzyregionalne sieci handlowe i komunikacyjne, ale także intensywnej wymiany technologii.

Uzbrojenie KV składa się z takich rodzajów broni i elementów uprzęży końskich, których występowanie jest albo ograniczone do kilku regionów kulturowo-geograficznych i typy te są szczególnie charakterystyczne dla KV, albo które mają kilka głównych obszarów rozmieszczenia w Eurazji, w kulturze wschodniohalsztackiej czy na Bałkanach. Do pierwszej grupy należą żelazne noże bojowe z żelaznymi i brązowymi pochewkami o trapezoidalnych kształtach (głównie KV i Bałkany Wschodnie; ryc. 3:1, 5; 4:5) oraz żelazne czekany typu Vekerzug z symetrycznie umieszczonym otworem do osadzenia drzewca (wschodnia część Kotliny Karpackiej, Kaukaz Północny; ryc. 2:6; 3:8). Połączenie noży bojowych i czekanów niewątpliwie stanowi lokalną specyfikę w schematach uzbrojenia KV. W pierwszej grupie znajdują się również wędzidła żelazne typu Szentes-Vekerzug, które mają miejscowe podłoże (nie są związane z regionami wschodnimi; ryc. 1:1). Ich niezbyt częste występowanie poza terytorium zajętym przez KV świadczy o aktywnych kontaktach sąsiednich regionów kulturowych ze wschodnimi Węgrami i południowo-zachodnią Słowacją. Do tej grupy należą również bardzo specyficzne formy broni i akcesoriów do broni, których występowanie, poza nielicznymi wyjątkami, ogranicza się do terytorium KV (żelazne miecze jednosieczne, brązowe i kościane ozdoby kołczanów w kształcie krzyża, zoomorficzna dekoracja kołczanów; ryc. 5:6).

W drugiej grupie znajdują się rodzaje broni i uprzęży końskich, które można traktować jako część wspólną z sąsiednimi jednostkami kulturowymi: brązowe groty strzał z wewnętrzną tulejką, rozprzestrzenione w całym regionie euroazjatyckim (ryc. 1:2–17,25–28; 5:5) i żelazne groty włóczni typu I (ryc. 2:1,1a), których jednym z centrów rozprzestrzeniania się był region wschodniohalsztacki.

Standardowe uzbrojenie ludności KV różni się od uzbrojenia zarówno grup Ciumbrud, Ferigile, czy zachodniopodolskiej wraz z kulturami leśno-stepowymi w dorzeczu Dniepru (ryc. 10; 11). Jednocześnie pokazuje, że znaczenie wschodnich wpływów dla KV zostało bezpodstawnie przewartościowane w literaturze naukowej. Obiekty typu wschodniego w KV można podzielić na dwie podstawowe grupy, w zależności od kontekstu ich znalezienia. Niektóre typy są stałą składową uzbrojenia i kultury materialnej KV, a niektóre zostały lokalnie zmodyfikowane (np. topory bojowe czy groty strzał z wewnętrzną tulejką). Są one bardziej świadectwem innowacyjności w zakresie uzbrojenia i sposobów walk, niż dowodem obecności społeczeństw wschodnioeuropejskich w Kotlinie Karpackiej. Zwrócić jednak należy uwagę, iż między poszczególnymi regionami kulturowymi odnajdujemy różne zwyczaje pogrzebowe i różne schematy w wyposażeniu grobowym. Znaleziska z drugiej grupy, takie jak akinakesy, zbroja łuskowa czy tzw. grzechotki, nie zostały włączone do szerokiego spektrum kultury materialnej KV, a ich występowanie w Kotlinie Karpackiej ma charakter epizodyczny i ograniczony chronologicznie.

Warto zwrócić również uwagę, iż elementy biżuterii i wyposażenia stroju nawiązują do kultury halsztackiej, terenów Polski wschodniej, centralnych Bałkanów, a nawet zachodnich obszarów Morza Czarnego. Tymczasem elementy uzbrojenia łączą się z i z kulturą halsztacką, i Bałkanami środkowo-wschodnimi, a także obszarami północnego Kaukazu i mołdawskich terenów leśnostepowych.

Zabytki militarne, elementy uprzęży końskiej i ogólny standard uzbrojenia wyraźnie pokazują, że charakter KV nie przypomina ani kultury wschodniohalsztackiej, ani grup kulturowych wczesnej epoki żelaza ze wschodnioeuropejskiego stepu i obszarów leśno-stepowych. Również ogólna charakterystyka elementów wschodnich nie pozwala zakwalifikować KV do kultur Wschodu lub do kultury scytyjskej. Kulturę Vekerzug można uznać za rodzaj pomostu kulturowego między kulturą wschodniohalsztacką, kulturami epoki żelaza w regionie karpacko-dunajskim i wschodnioeuropejskimi grupami kultur leśno-stepowych.