

Jaroslav Peška¹

FOLLOWING THE TRACES OF THE EARLIEST CORDED WARE IN MORAVIA AND STEPPE ELEMENTS IN ITS CONTENT

ABSTRACT

Peška J. 2023. Following the traces of the earliest Corded Ware in Moravia and steppe elements in its content. *Sprawozdania Archeologiczne* 75/1, 141-174.

The earliest Corded Ware is very poorly represented in Moravia (several type A, Moravian-type, hammer-axes, settlements with the so-called Wellenleistentöpfe: Olomouc-Slavonín, Horní lán) and the situation is not much better even in the earlier Moravian Corded Ware Culture (MCWC) period (the Palonín settlement, graves at: Dub nad Moravou, Hradisko u Kroměříže, Němetice). Among the local MCWC (over 90%; 2700/2600-2400/2200 calBC) we find a number of components linking this to Eastern Europe both in the burial ritual (grooves around graves, internal construction, burials in the frog position, graves of metallurgists) and in the material content (daggers/razors with a tang, hammer-shaped pins, a beaker decorated with a cord and a fishbone motif) with numerous analogues in the Yamna and Catacombna cultures of the Carpathian, Balkan and northern Pontus.

Most surprising is a group of MCWC graves with grooves at the bottom, interpreted as burials on all-wood four-wheeled ceremonial wagons with direct counterparts in the Maikop, Yamna, and Catacombna cultures of eastern Europe.

Keywords: Moravia, Moravian Corded Ware Culture, Eastern European elements, Yamna culture, Catacombna culture, wagon burials

Received: 19.06.2023; Revised: 22.08.2023; Accepted: 30.08.2023

¹ Archaeological Center Olomouc, U Hradiska 42/6, 779 00 Olomouc, Czech Republic; peska@ac-olomouc.cz; ORCID: 0000-0002-0827-4255

INTRODUCTION

Since the origin of the Corded Ware civilization in Eastern Europe is generally accepted, the range of Eastern elements in its content in Moravia is not surprising. The question remains, however, as to which part of them can be associated directly with the steppe elements appearing in the interior of Europe at the beginning and during the 3rd millennium BC.

At the turn of the Late and Final Eneolithic, several cultures with different origins appear in the field of Moravian prehistory (Postbaden Jevišovice Culture, Bošáca, Globular Amphora Culture, Makó/Kosihy-Čaka?, Strachotín-Držovice horizon) (Fig. 1). The relationships to the earliest Moravian Corded Ware Culture (MCWC) are particularly evident in the late phase of Jevišovice Culture with a noticeable interference of the Coțofeni III and even more Livezile cultures from western Transylvania (air distance 450 km) in the period 2780-2560 calBC (Peška 2011; Ciugudean *et al.* 2022). To these is added a specifically equipped skeletal burial of a young child (Kroměříž 3 – Miňůvky) in a large grave pit with a double-sided decorated lublan bowl and an askoid jug (Peška 2011, fig. 1). We are able to map the path of the shift of part of the population across Eastern Slovakia in the Late Baden environment (Zemplín, Spiš, Šariš: Horváthová and Chovanec 2006), but also, for

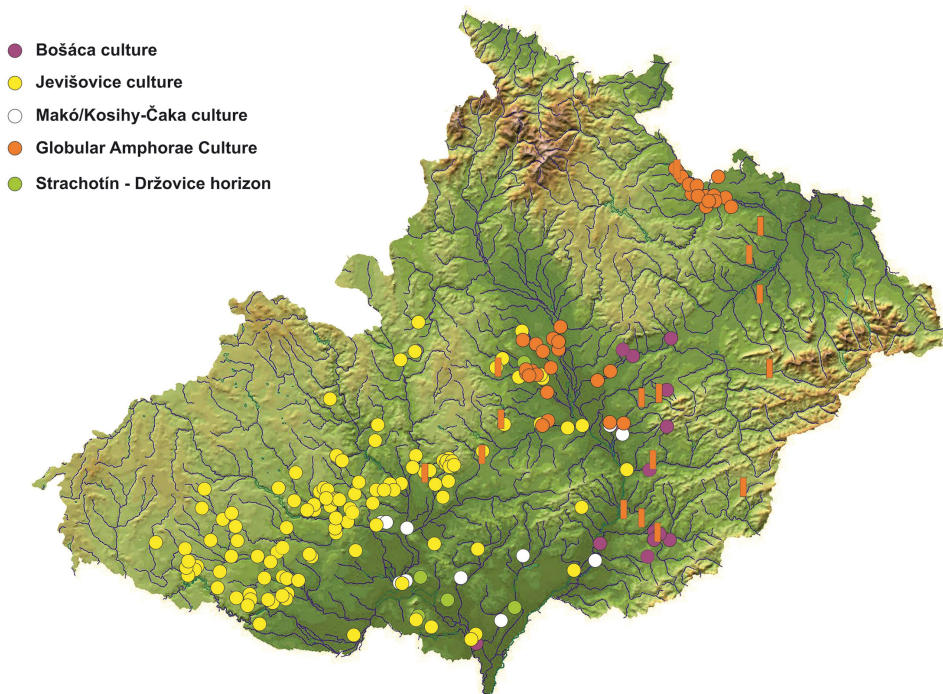


Fig. 1. Map of cultural representation of the Late Eneolithic period in Moravia. Map by P. Grenar

example, by material and a cremation (?) at Trebatice in via SW Slovakia (Němejcová-Pavůvková and Klčo 1986), and echoes can even be seen in the content of the Řivnáč culture in Central Bohemia (Zápotocký and Zápotocká 2008, fig. 65: 171, 172; tab. 34: 1; 78: 2). Important is the fact that this happened in the period 3000/2900-2800/2600 calBC, which is the time of the ongoing invasion of the holders of the Yamna culture (Yamna Culture) into the interior of Europe (Ciugudean *et al.* 2023). The relatively strong settlement at the end of the Jevišovice Culture may then account for the absence or only sporadic presence of the earliest and earlier CWC in Moravia.

THE EARLIEST CORDED WARE IN MORAVIA

The earliest corded ware according to the traditional Buchvaldek classification – find group I (FG I) – is very poorly represented in Moravia and is represented by finds of A-type hammer-axes, or Moravian type with the possibility of a longer lifetime (graves of local development: Velešovice I, 1985, H 1, Vážany nad Litavou), coming mostly from isolated finds (Fig. 2). The easternmost evidence of the A-horizon settlement are fragments of

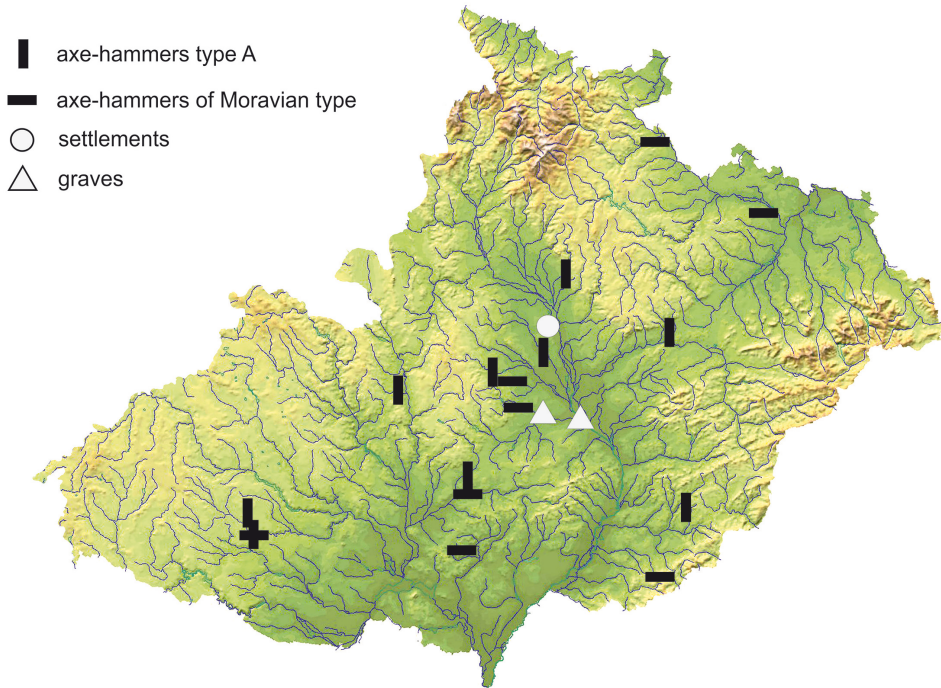


Fig. 2. Map of Moravia with distribution of A-type hammer-axes, Moravian-type hammer-axes, earliest settlements and graves of the MCWC. Map by P. Grenar

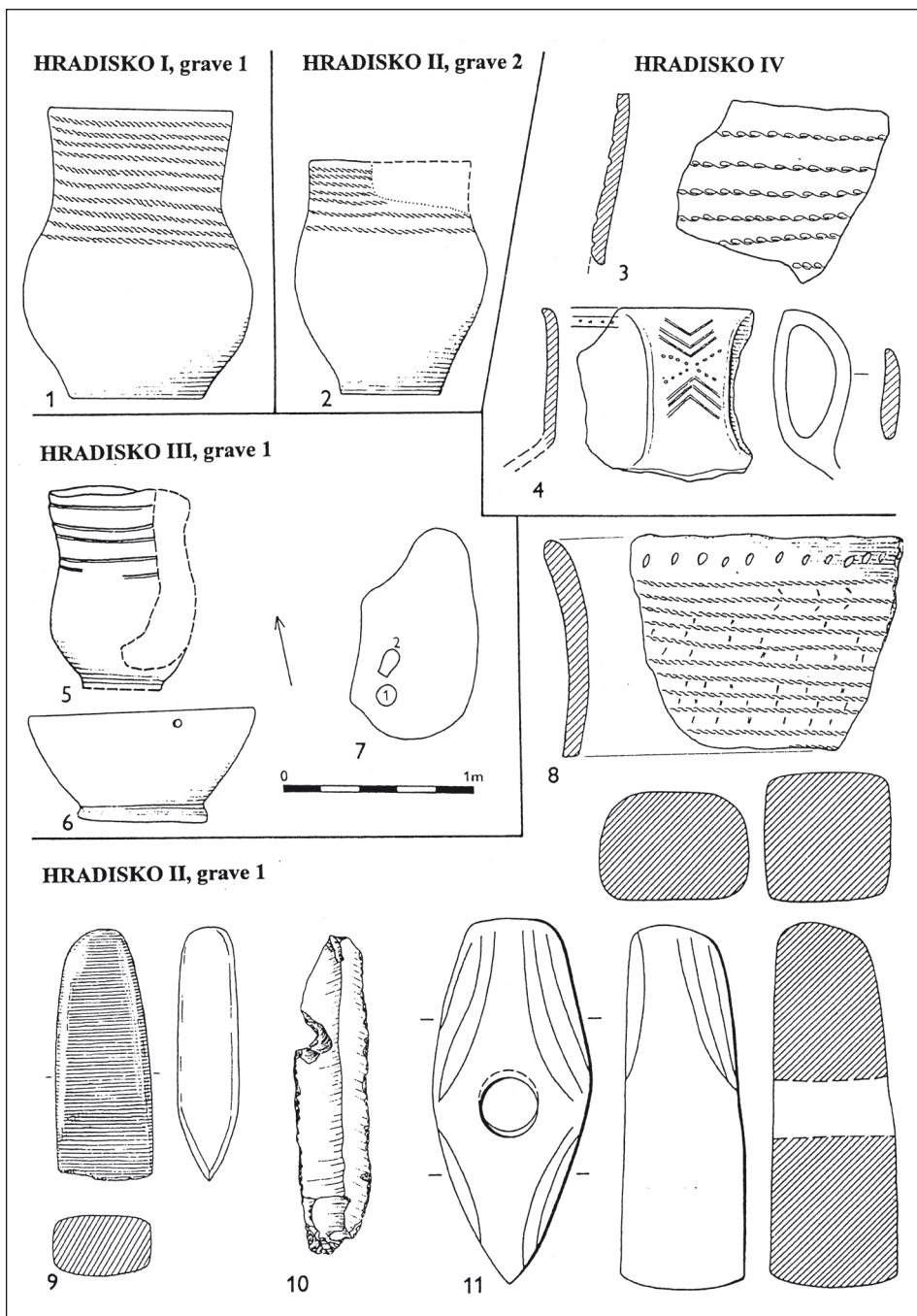


Fig. 3. MCWC representatives (FG I) according to L. Šebela (Šebela 1999)

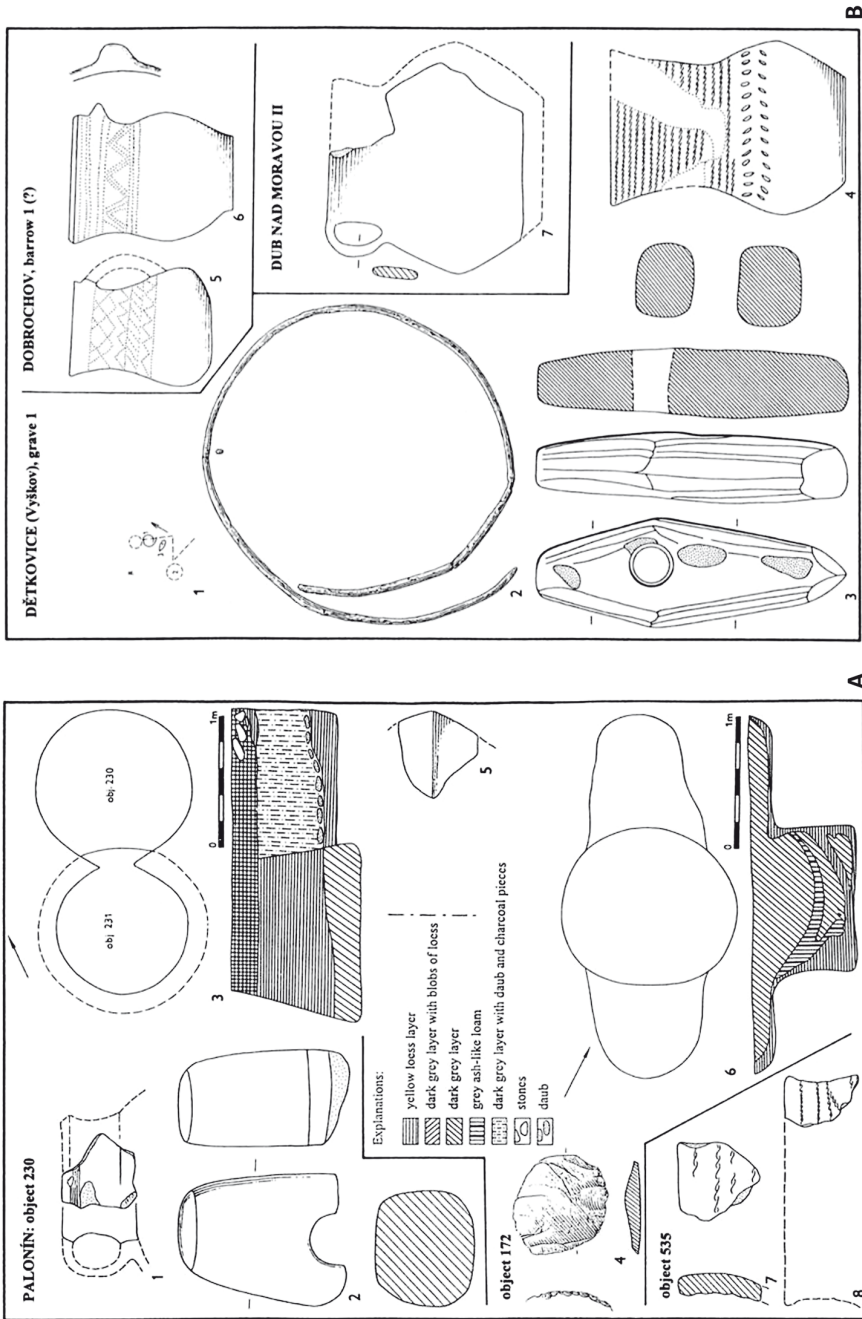


Fig. 4. Representatives of the earlier MCWC period (FG II) according to L. Šebela. A – the settlement in Palonín, Dist. Šumperk; B – graves of Dětkovice, Dist. Prostějov, Dobrochov, Dist. Prostějov, Dub nad Moravou II, Dist. Olomouc (Šebela 1999)

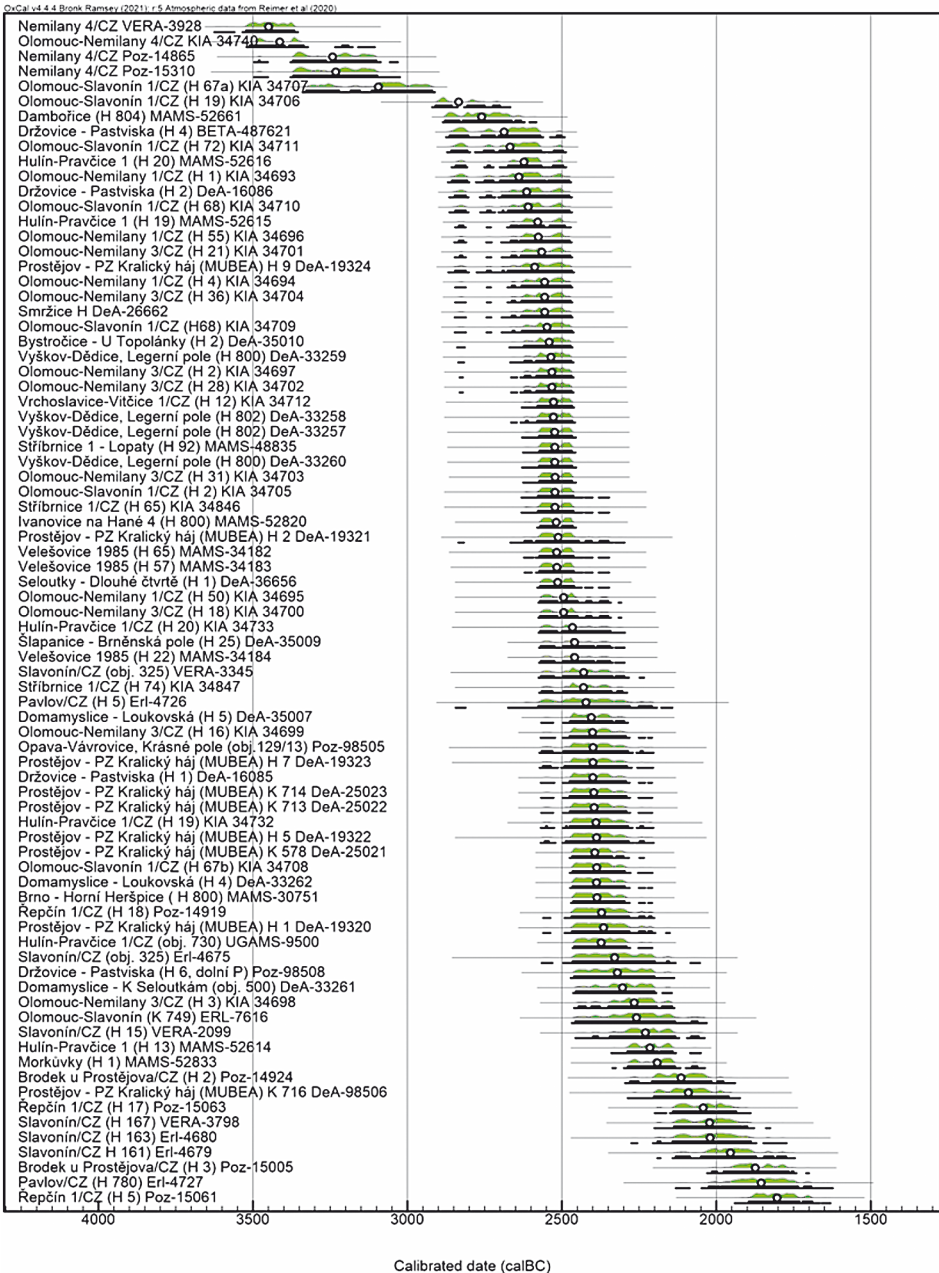


Fig. 5. Summary of absolute MCWC data. OxCal calibration vers. 4.4.4.

the so-called Wellenleistentöpfe and corded beakers from Olomouc-Slavonín (Peška 2000) as intrusions in chronologically younger features. Of special note is the collection of A-type and Moravian-type hammer-axes from layer B in Jevišovice, including blanks indicating local production (Šebela 1997). It is a significant evidence of the synchronization of the MCWC with the Jevišovice culture. Sporadic grave units with simple equipment of corded beakers and bowls are available from Central Moravia (Hradisko u Kroměříže III, H1; Němčice nad Hanou (Fig. 3). The absence of A-amphorae as well as the new excavations documenting grave complexes of the Early Corded Horizon in Moravia testify to the gradual colonization of the area.

The situation is not much better even in the earlier MCWC (FG II), which perhaps includes the settlement with a pair of pits from Palonín, graves from Dub nad Moravou, Hradisko I H1, Hradisko II, H2, Uhřice u Kyjova, mounds from Němetice (no. 7 and 1 with a Silesian hammer-axe) and a grave with a faceted hammer-axe and copper necklace from Dětkovice in the Vyškov region, accompanied by an ancient beaker (Fig. 4). Neither of the above-mentioned find groups is a full-fledged form of settlement activity, so we must expect a gradual infiltration into the existing structure of the domestic settlement.

More than 90% of the MCWC inventory belongs to the local development, where corded beakers (except for type B1) together with classical Dřevohostice jugs, but also beakers decorated with a fish bone motif (Fischgrätenbecher), considered older in the western CWC groups, but surviving at least during Phase IIIa in Moravia, are common in the graves at the beginning. We have hundreds of grave units from smaller group, originally mound-type, chronologically rather closed burials with rich ceramic production of their own (amphora-shaped jugs, amphorae, derivatives of Dřevohostice jugs), but more with designs in the Carpathian Basin (Balkan and Ökörhalom jugs, egg-shaped pots, Moravian-type bowls, other types of amphorae, *etc.*). The division of the local development into three phases, IIIa-IIIc according to L. Šebela is still a subject of discussion (the separate appearance of distinctive ceramic types in Moravia does not apply to the Carpathian Basin, *etc.*).

Recent excavations have repeatedly provided evidence of the existence of agricultural settlements from the period of local development (Peška *et al.* 2021) with sunken pits, yet without evidence of dwellings (Olomouc-Slavonín, Horní lán, Vřesovice, Hulín-Pravčice 1, Prostějov – industrial Zone: Fojtík 2019; Peška *et al.* 2021). The Makó/Kosihy/Čaka influence is also strongly present in the settlement component. The first series of absolute data are available (Fig. 5), which indicate the presence of a local MCWC in the period 2700/2600-2400(2200) BC. No data are available from earlier periods (unlike, for example, Bohemia).

CONTACTS WITH EASTERN EUROPE

Elements linking our region with Eastern Europe appear in the MCWC funeral ritual and inventory. The number of graves with ring ditches is slowly increasing (Holubice VII, Babice u Šternberka, Archlebov), where a burial from Babice equipped only with a chipped tool could be a „candidate“ to represent the earliest period of corded ware (absolute dating unfortunately failed) (Fig. 6). It is not difficult to find a number of analogues to them across the Yamna Culture range from Serbia to Ukraine (*e.g.*, Bugaj *et al.* 2018; Sava *et al.* 2019; Dergachev 2023, pl. 7: B1; 9: C1; 21: 1; 27: G1; 30: C1 *etc.*). However, as we can see from examples in Bohemia, the hypothesis of the earliest non-ceramic graves may not be valid more generally (Dobeš *et al.* 2021). Outside the Central Moravian specificity of graves with grooves or other internal arrangements, which will be discussed later, there is an interesting full-circuit construction of one grave from Olomouc-Slavonín, Horní lán (H 164) with analogies in the environment of, for example, the Yamna or Catacombna cultures (Fig. 7; Dergachev 2023, pl. 2: B2; 15: B5; 36: B18; 61: D8 *etc.*). The so-called frog position of the lower limbs in burials is known in the CWC *e.g.*, Silesia (Kietrz), eastern Slovakia (Lesné), Bell Beaker Culture in Lesser Poland (Samborzec), but also in the Nitra culture in Slovakia (Jelšovce) and the Únětice culture in Moravia (Suchohrdly) or in SW Slovakia (Nitra-Dolné Krškany), in Bohemia (Kbely, Cerhenice) and from eastern Germany (Nohra). It has direct analogies in the graves of the Yamna Culture in Hungary (Kétegyháza), Balkan, Ukraine and southern Russia (Bátora 2021; Włodarczak 2021; Dergachev 2023, pl. 10: 12; 13: C6; 14: C10; 15: B6 *etc.*). Apparently it is only a matter of time before it appears in the contents of the MCWC.

To a lesser extent than in the Bell Beaker Culture, we encounter metallurgists' graves in the MCWC (Fig. 8). For example, graves from Tešetice and Velešovice (Fig. 9) contained metalworking kits (anvils, hammers) that were positive for copper, gold and silver (!) flakes under the SEM microscope. They have their clear antecedents in the environment of Yamna and Catacombna cultures (Kaiser 2019 with older literature; Dergachev 2023, pl. 5: C12-14; 193: A3-6).

From the rich grave of the metallurgist from Velešovice I H 1, H 2 from Kroužek, Letonice and more recently also from Vyškov-Dědice (Fig. 10) come copper daggers with a tang, or daggers/razors with a blade-shaped tang, morphometrically different from Bell Beaker Culture daggers (slimmer blade and more elongated tang), strongly resembling daggers (daggers/razors) in the area of the northern Pontus and the Caucasus (Fig. 11; Dergachev 2023, pl. 34: C10; 47: B3; 87: D10; 99: C3 *etc.*), for which the closest Central European analogue is found in the Bleckendorf grave (KIA-162: 4080±20 BP; 2631-2577 1 sigma, 2678-2568 2 sigma calBC), together with a bone hammerhead pin, a typical product of the eastern steppes (Hammerkopfnadel) (Fig. 12; Dergachev 2023, pl. 29: 8; 44: C16). Unlike in Bohemia, this type of pin initially passes by Moravia and only appears here later (Fig. 13) (Proto-Únětice C).

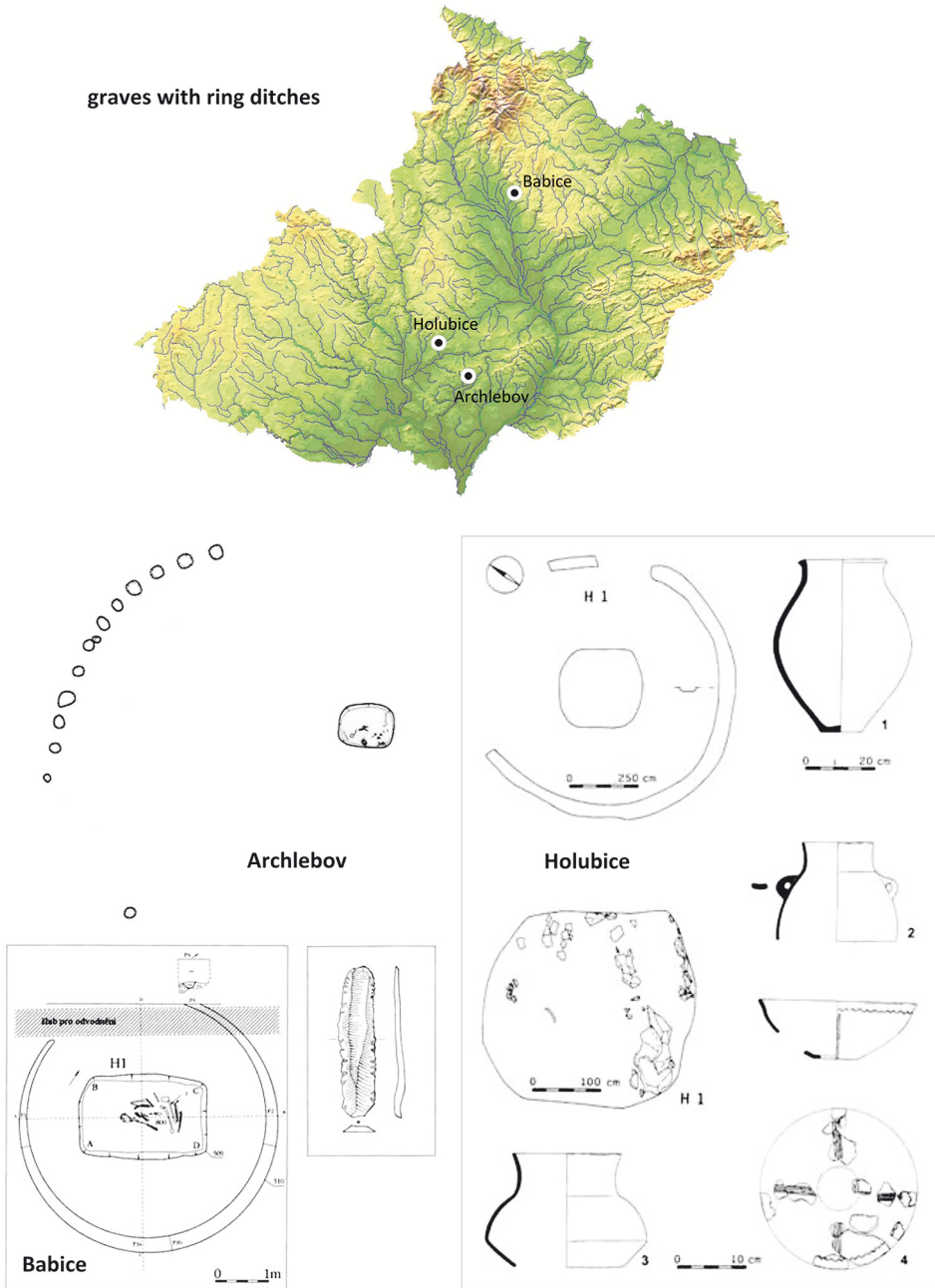


Fig. 6. Graves with ring ditches in the MCWC
(Geislerová – Parma *et al.* 2018; Kalábek *et al.* 2016; Čížmář 1985)

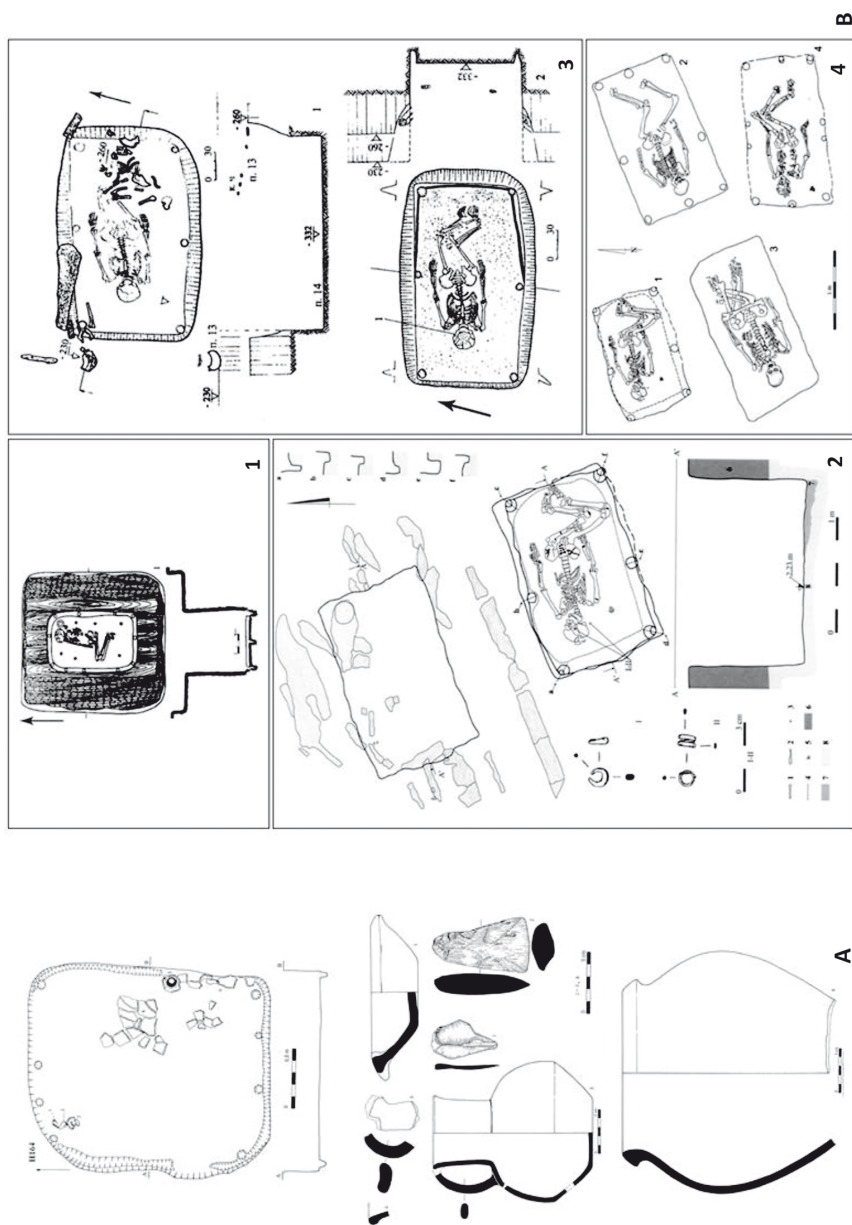


Fig. 7. A – MCWC grave from Olomouc-Slavonín, Horní lán (H 164) and B – its analogue in the Yamna Culture area: 1 – Cazaclia, Kurgan 17; 2 – Pysariivka, Kurgan 5, Grave 2; 3 – Bráviceni, Kurgan 1, Grave 1; 4 – Pysariivka, Graves 5/1, 7/2, 8/2 and 6/2 (Peška 2021; Agulnikov 2011; Harat et al. 2014; Larina et al. 2008; Włodarczak 2017)

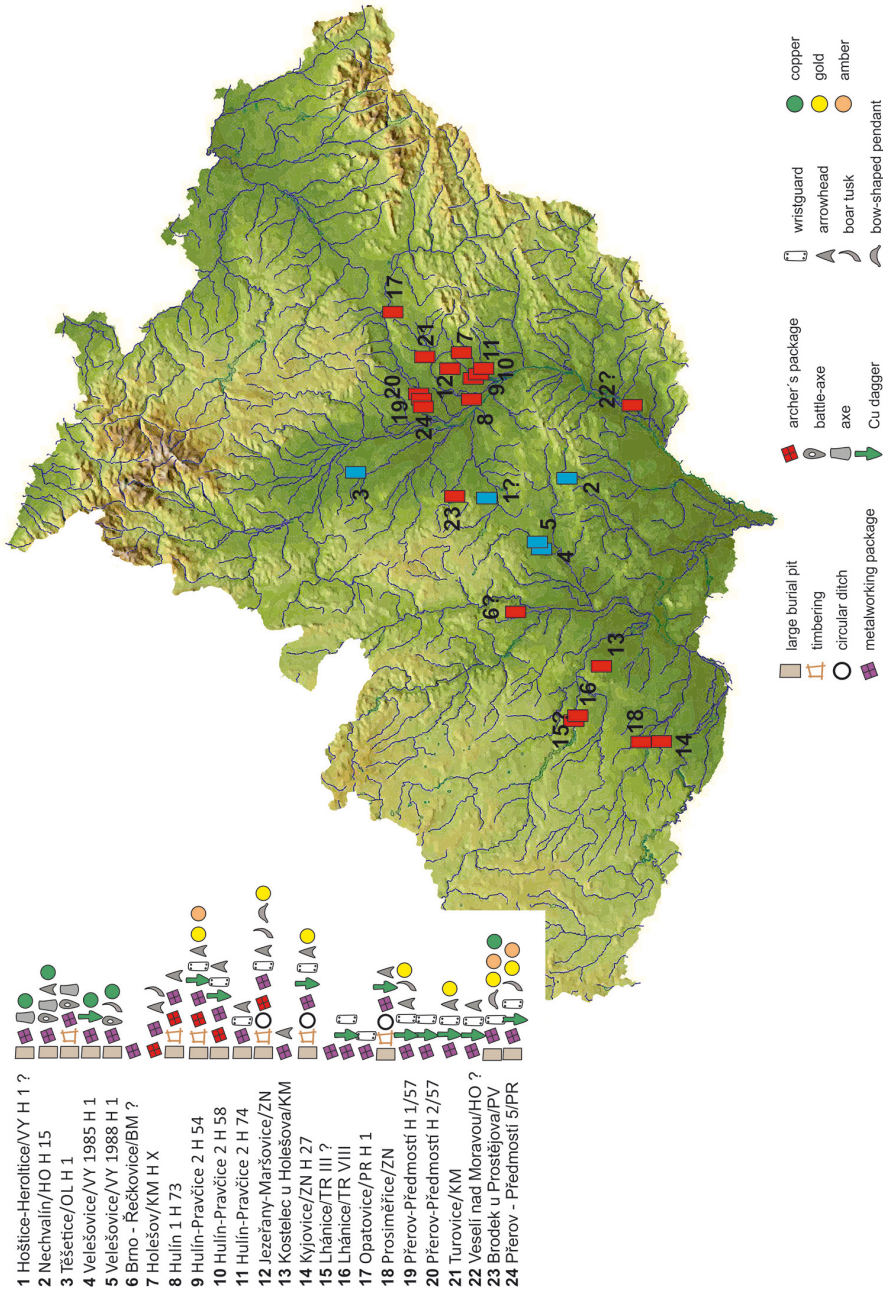


Fig. 8. Map of Moravia with MCWC (blue) and Bell Beaker Culture (red) metallurgists' graves and their equipment. Map by P. Grenar

A pan-European occurrence and a relatively long period of use (c. 800 years) are observed for carefully worked (sometimes decorated) bone tubes (decoys) with a top in Epichorded Culture Complex, while representative in CWC graves (Lesser Poland, Bohemia, Moravia, Lower Austria) with examples in the Ukraine and the Bajkal region already in the Dnipro-Donets culture, but mainly in the Yamna Culture (Volga, Lower Don) and also in

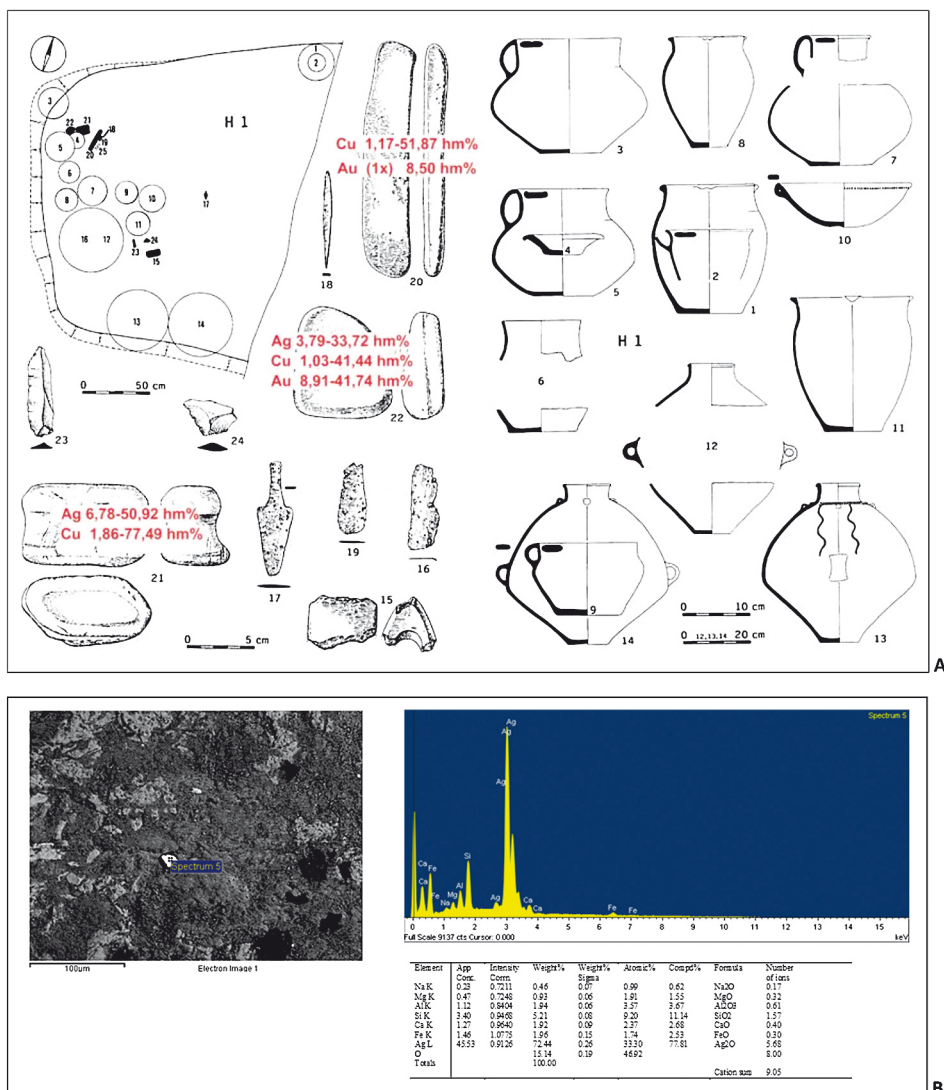


Fig. 9. Velešovice I 1985, H1 – a metallurgist's grave, containing, among other things, also a copper tanged dagger of eastern type, with measurement results of SEM analysis of the surface of stones that were part of the metallurgical toolkit with results of analysis of one of the artefacts (Peška 2021, supplemented)

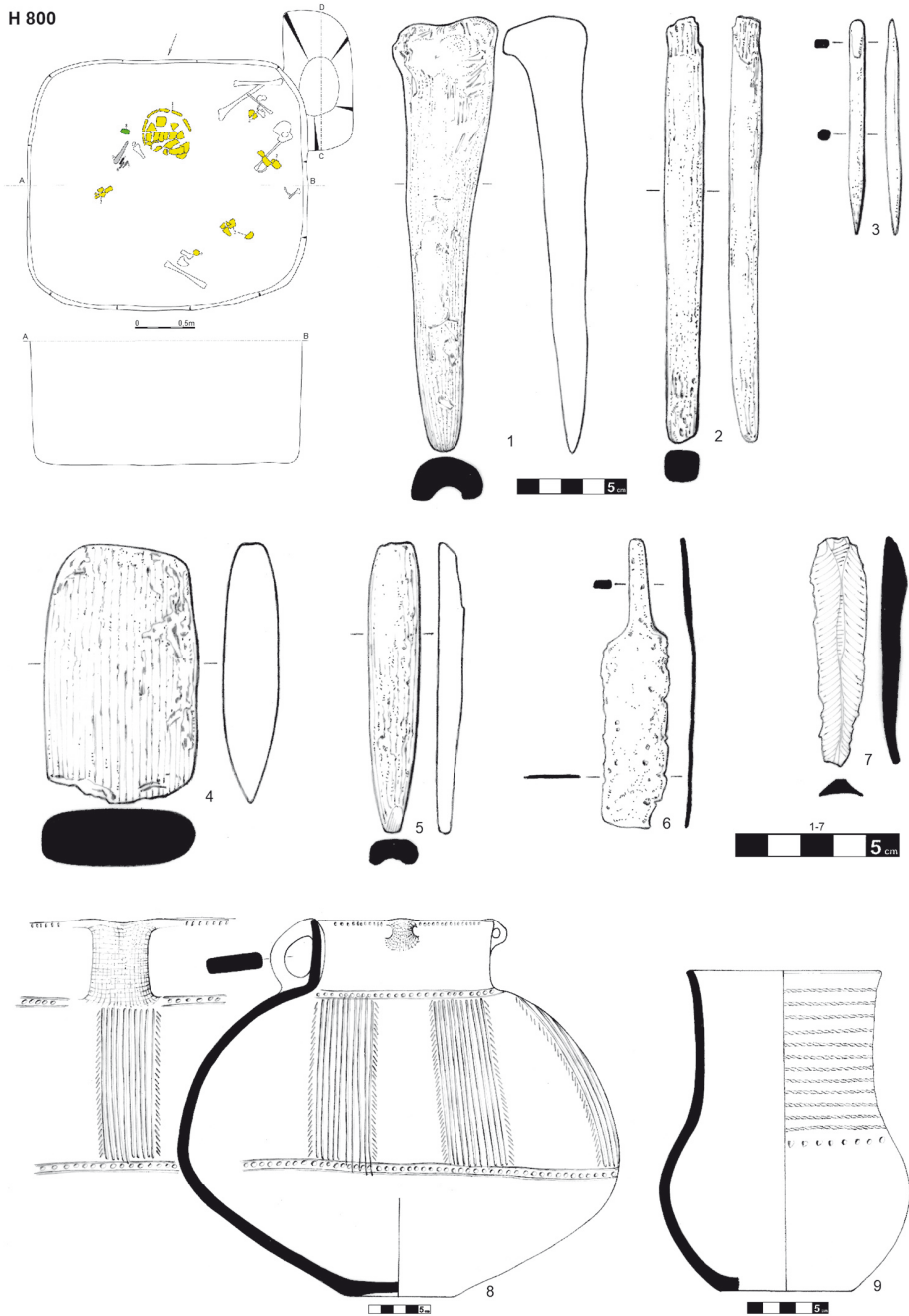


Fig. 10. Vyškov-Dědice, Legerní pole, Dist. Vyškov. MCWC grave (H 800) with copper dagger/razor and awl/chisel (?). Drawings by B. Mikulková and A. Pešková

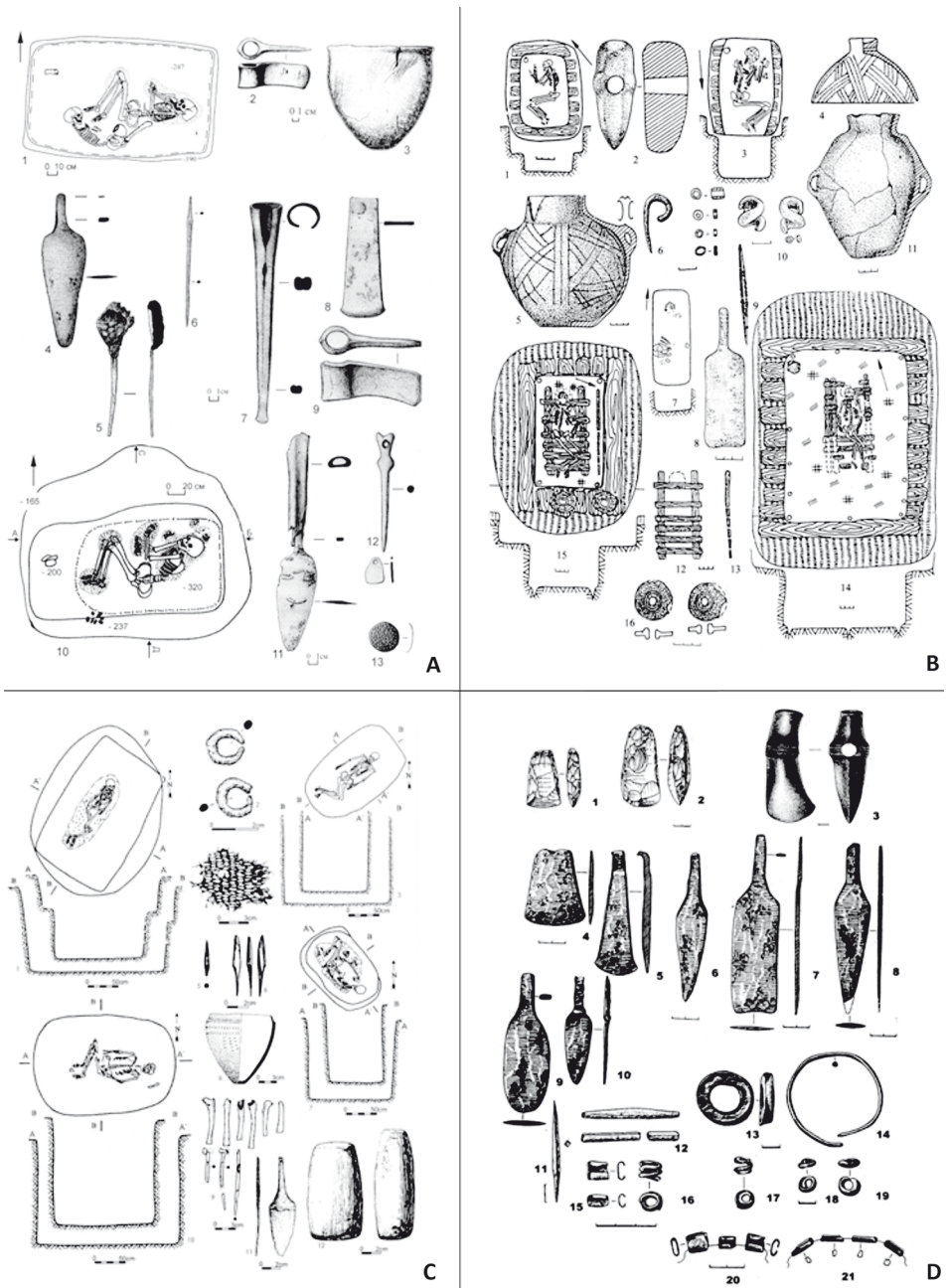


Fig. 11. Graves of the Yamna culture in the Pontus and Caspian region with similar equipment as the MCWC graves. A Tamar – Utkal VII; B Taraclia; C KVCH 56, 53; D Glinnoe, Taraclia, Friska, Primorskoe, Căușeni (Morgunova 2011; Agulnikov 2008; Shishlina 2008; Ivanova 2010)



Fig. 12. Bleckendorf, Prov. Sachsen.
CWC grave with copper dagger, awl and bone needle of East European type (Kaiser 2019)

the early Catacombna culture, in the Volga-Urals region and from settlements. Here a comparison with Moravian finds like the MCWC grave from Držovice or the late Jevišovice Culture settlement from Kroměříž 3 – Miňůvky with absolute dating (VERA: 3929 4070±35 BP, 2835-2497 1 sigma and 2851-2476 2 sigma calBC) is offered (Kučera *et al.* 2018; Peška 2011, fig. 6: 18).

A clear symbol of the Corded Ware Complex or phenomenon in the whole territory is the pottery and beaker decorated with the imprint of a twisted cord, which also has numerous parallels in Eastern Europe (Heyd 2021, fig. 4, 5; Dergachev 2023, pl. 45: B8; 57: E2; 132: 18; 144:C10; 192:E3 *etc.*), including beakers decorated with a fish bone motif (Dergachev 2023, pl. 75: A2; 96: B12; 121: A4; 124: A6; 147: A3 *etc.*). We can also find many types of decorated and undecorated amphorae (Koško 2011; Ivanova 2013; Ivanova *et al.* 2018), and decorated footed bowls, accompanying pit burials also in the Carpathian Basin, probably having their secondary focus in the area of the Vučedol and Ljubljana Moors cultures (Korošec and Korošec 1969, T. 37-47; Frînculeasa *et al.* 2017; Kaiser 2019, 245-257; Bátorá 2021, fig. 16; Dani and Szeverényi 2021, fig. 3), are probably of eastern origin.

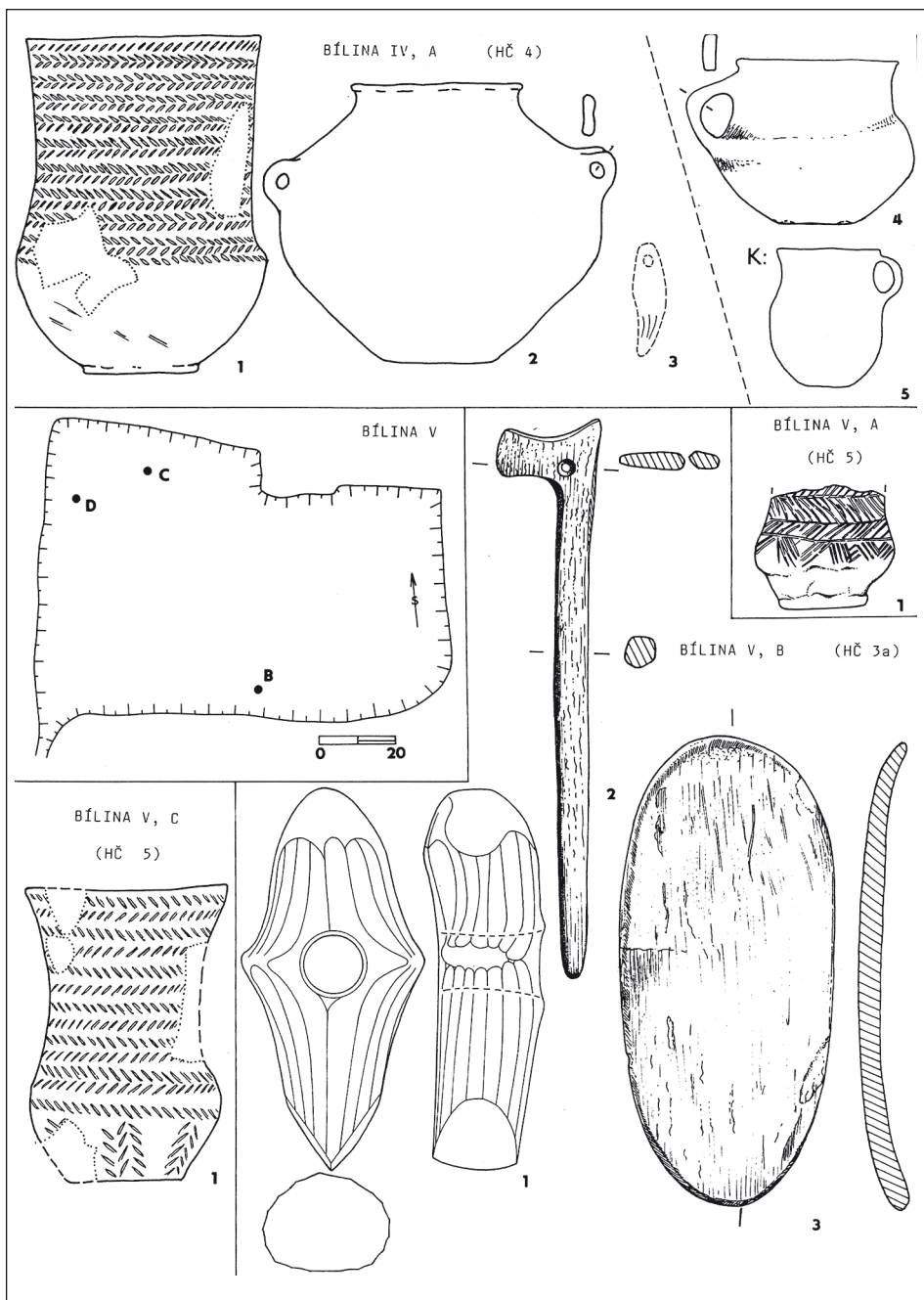
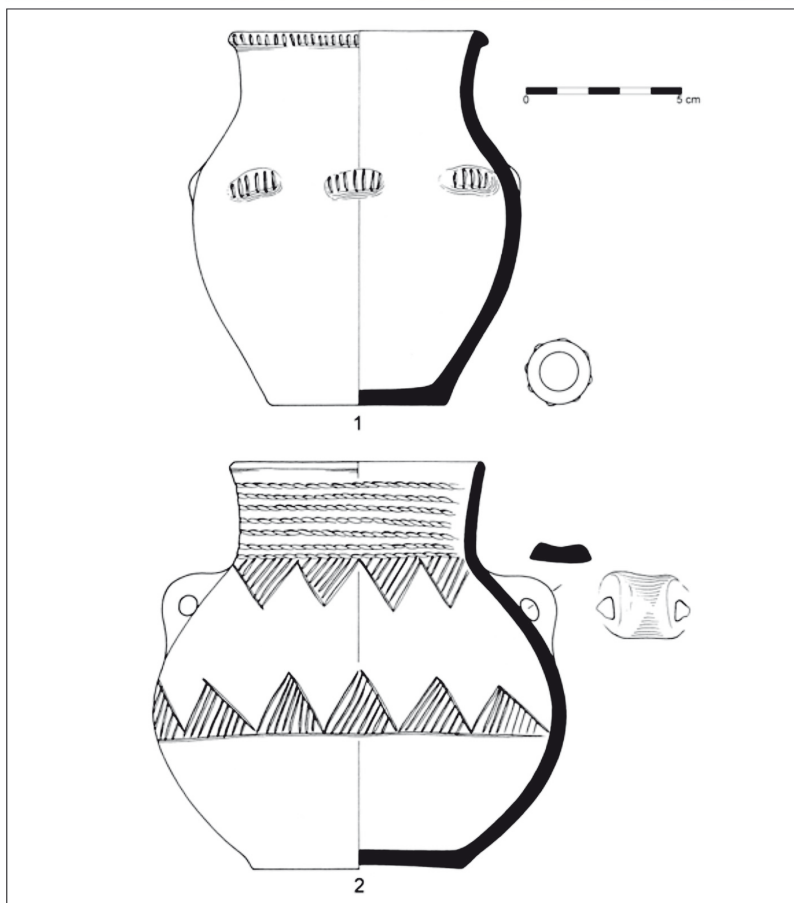


Fig. 13. Bílina V, B CWC grave in Bohemia containing bone hammerhead pin (Hammerkopfnadel) (Dobeš et al. 1991)



1



2

Fig. 14. Viceměřice – Kratiny 2022, Dist. Prostějov. MCWC grave with pottery with analogues in the environment of the Cernavodă II/Foltești culture. Photo by M. Kršková, drawing by A. Pešková

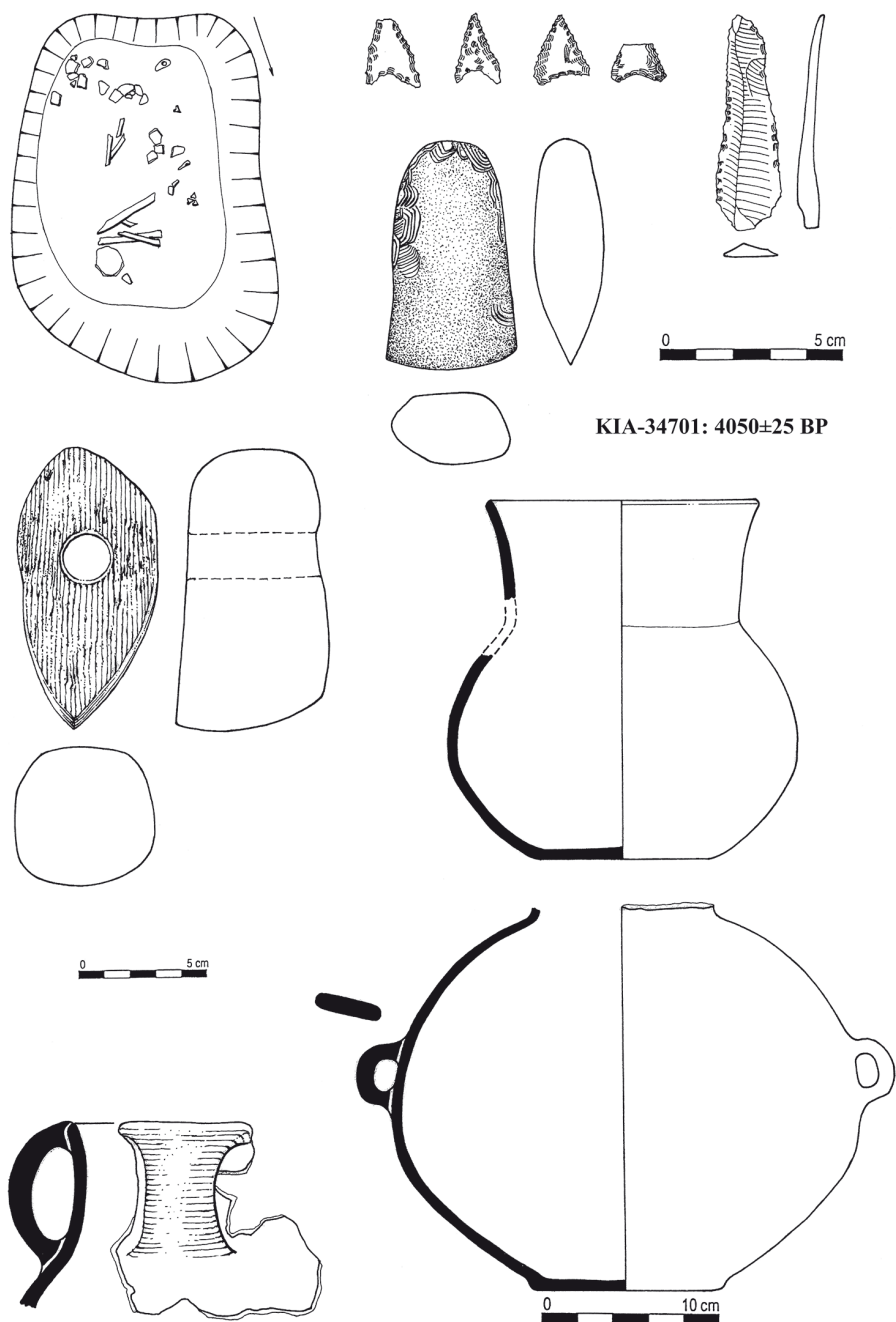


Fig. 15. Olomouc – Nemilany 3, Pravá a Levá k Nedvězí Grave 21. The grave with typically male equipment, including stone arrowheads, relatively rare for MCWC. Photo by M. Kršková, drawing by A. Pešková

A newly discovered grave from Víceměřice in Central Moravia produced (Fig. 14), besides an engraved and cord-decorated amphora, a small beaker in shape and sculptural application, not far from the beakers in the Cernavodă II/Foltești culture and further in the Yamna Culture area of the eastern steppes (Frînculeasa *et al.* 2017, fig. 7, pl. 62:1-2; Frînculeasa 2020, fig. 6: a; 2021, fig. 2: 4-6; Dergachev 2023, pl. 252: A6; 255: 23).

Similarly, the custom of depositing stone axes, split axes and arrowheads with male burials also appears to a lesser extent in the MCWC (Fig. 15) with numerous counterparts in the Yamna Culture (Agulnikov and Sava 2004, fig. 55: 5, 59: 3, 6; Agulnikov 2008, fig. 4: 2-5; Klochko *et al.* 2015, fig. 24: 1; Agulnikov and Popovich 2022, fig. 31; Dergachev 2023, pl. 12: E1; 39: B9; 96: B5; 53: H5; 104: 10; 4:A2-4; 6: B4; 11: A3 *etc.*).

LOCAL OR NONLOCAL?

We can thus ask ourselves what in the material content of the MCWC is actually of domestic or Central European origin? First of all, the local pottery (amphora-shaped jugs, Dřevohostice jugs, Nagyrév jugs, un/decorated two- and four-eared amphorae, egg-sha-

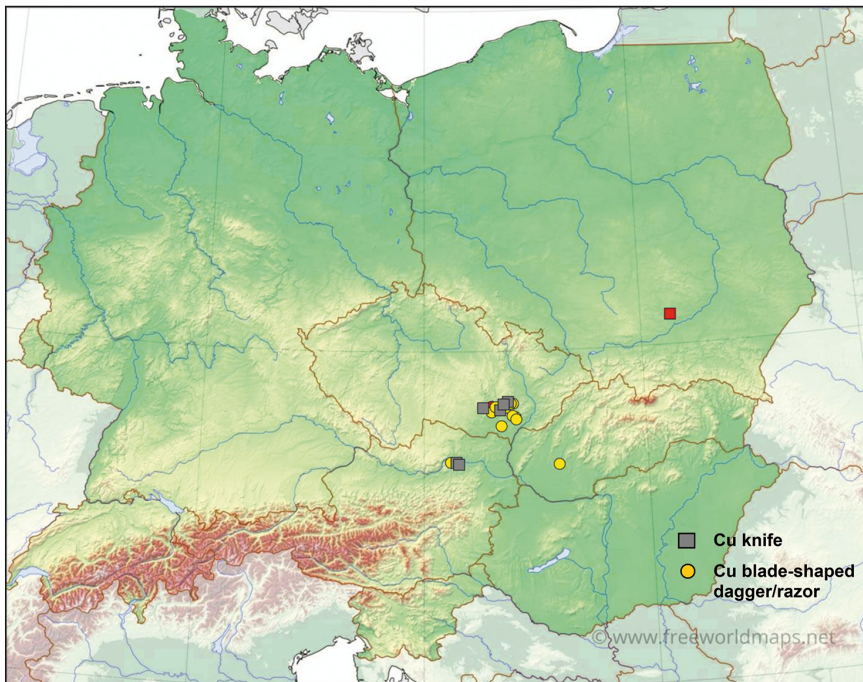


Fig. 16. Distribution of copper knives and daggers/razors in Central Europe (red uncertain typological classification). Map by P. Grenar

ped pots, sharply profiled bowls, Moravian-type bowls) are mainly of Carpathian origin. A southern origin (Vučedol, Ljubljana Moors) may be claimed for the chip-carved decorated footed bowls (so far only in Lower Austria) (Kern 2011, fig. 2), the Ig-type bone belt hook, or their imitations from the Jevišovice Culture (Brno – Líšeň: Šebela 1999, pl. 3: 1), the Czech-type of belt hook have a north-eastern origin (Baltic), but they are directly related to the corded environment.

The prevalence of polished axes could be attributed to a domestic origin, but we cannot forget their less frequent occurrence in Eastern European areas (Dergachev 2023, pl. 5: C11; 43: A4; 55: E6; 80: D5 *etc.*). Typical sheet copper knife blades are cumulated in the territory of narrower central Europe (Fig. 16). The question remains open as to the origin of the wire neckrings, featured in the content of the CWC as well as in the Yamna Culture in the Balkans and Black Sea (Frînculeasa *et al.* 2019, pl. 9: 5; Häusler 1976, Taf. 34: 12; Dergachev 2023, pl. 20: C4-5; 57: B7; 64: 9, 10; 141: F5). Massive bone chisels appear in both male corded ware graves and GAC graves (Włodarczak 2006, pl. 25: 1; 32: 1; 34: 8; 37: 8; 38: 22; 40: 14; 63: 2; 69: 7; Nosek 1964, pl. 65: 3; 1967, fig. 68: 5; 167: 6; pl. 18: 5, 14; Bronicki 2000, fig. 4: 8; 2021a, fig. 8: B3; 2021b, fig. 13: 5; 14: 1; 177: 1; 243: B3; Włodarczak *et al.* 2021, fig. 12: 2), but seem to be outside the eastern group, rare in the Yamna Culture (Dergachev 2023, pl. 15: E12).

YAMNA PACKAGE IN MCWC?

Looking at the (especially non-ceramic) inventory of the MCWC, we find that only a small proportion are not associated with Eastern European origins, or are not part of the „Yamna package“ (Harrison and Heyd 2007). The frequent representation of multiple types of selected artefacts in the North Pontus area (for example, the Budzhak Culture) found its reflection precisely in the content of the MCWC. In addition to the grave structures already mentioned, the graves of metallurgists, bone pins and tubes (decoys), and pieces of metalwork include interesting finds of clay funnels (Fig. 17; Häusler 1974, Taf. 17: 15; 24: 18; 28: 18; Shishlina 2008, fig. 40: 5; 44: 9; 83: 1-3; Peška and Vrána 2017, 60, 61, fig. 8, 10; Frînculeasa *et al.* 2017, pl. 88, 89; Šmíd and Přichystal 2021, 48, 49, fig. 18: 18, 19; pl. 63: 1; 134: 8; 153: 1; Dergachev 2023, pl. 57: A4), linking the environment of the Yamna Culture in the Caspian steppes and Pontus with the GAC and Jevišovice Culture, the Carpathian Basin (Somogyvár-Vinkovci: Horváth *et al.* 2013, fig. 3), Kostolac Culture (Sravaš: Balen 2005, 49, Cat. Nos 187-193; pl. 50: 187-190; 51: 191-193), the Western Balkans (Vučedol: Schmidt 1945, Taf. 43: 1-3) and even with the rich princely graves on the Adriatic coast of Montenegro (Gruda Boljevića: Baković and Govedarica 2009, 11, 15, 16, fig. 10; Govedarica 2010, Abb. 5) (Fig. 18). A strong accent of the Caucasian metallurgical circuit is seen in the occurrence of shaft-hole-axes in graves of the CWC (Klochko 2017; Włodarczak 2021, fig. 11: 2, 3) and deposits; in the settlements of the Makó/Kosihy-Čaka culture

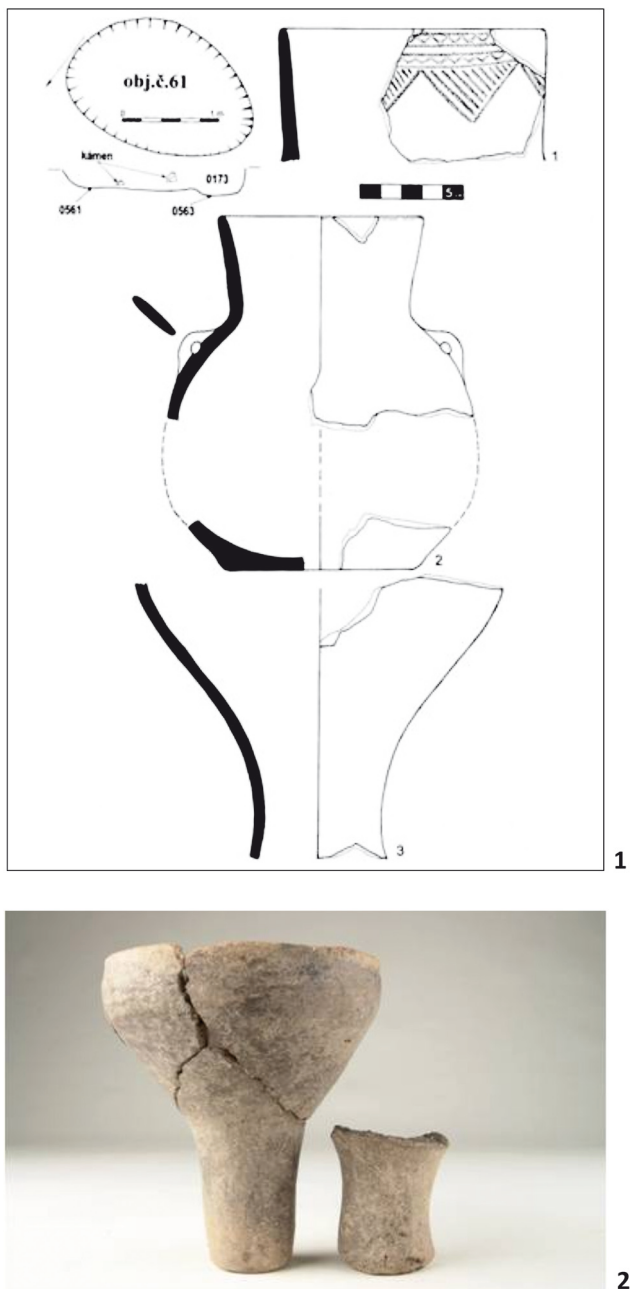


Fig. 17. Clay funnels appear in our environment at the sites of the Globular Amphora Culture (GAC) and the Jevišovice Culture (JeC). A Radvanice Feature no. 61 (GAC), B Modřice – Rybníky 2015, Features nos. 16642 and 19610 (JeC)

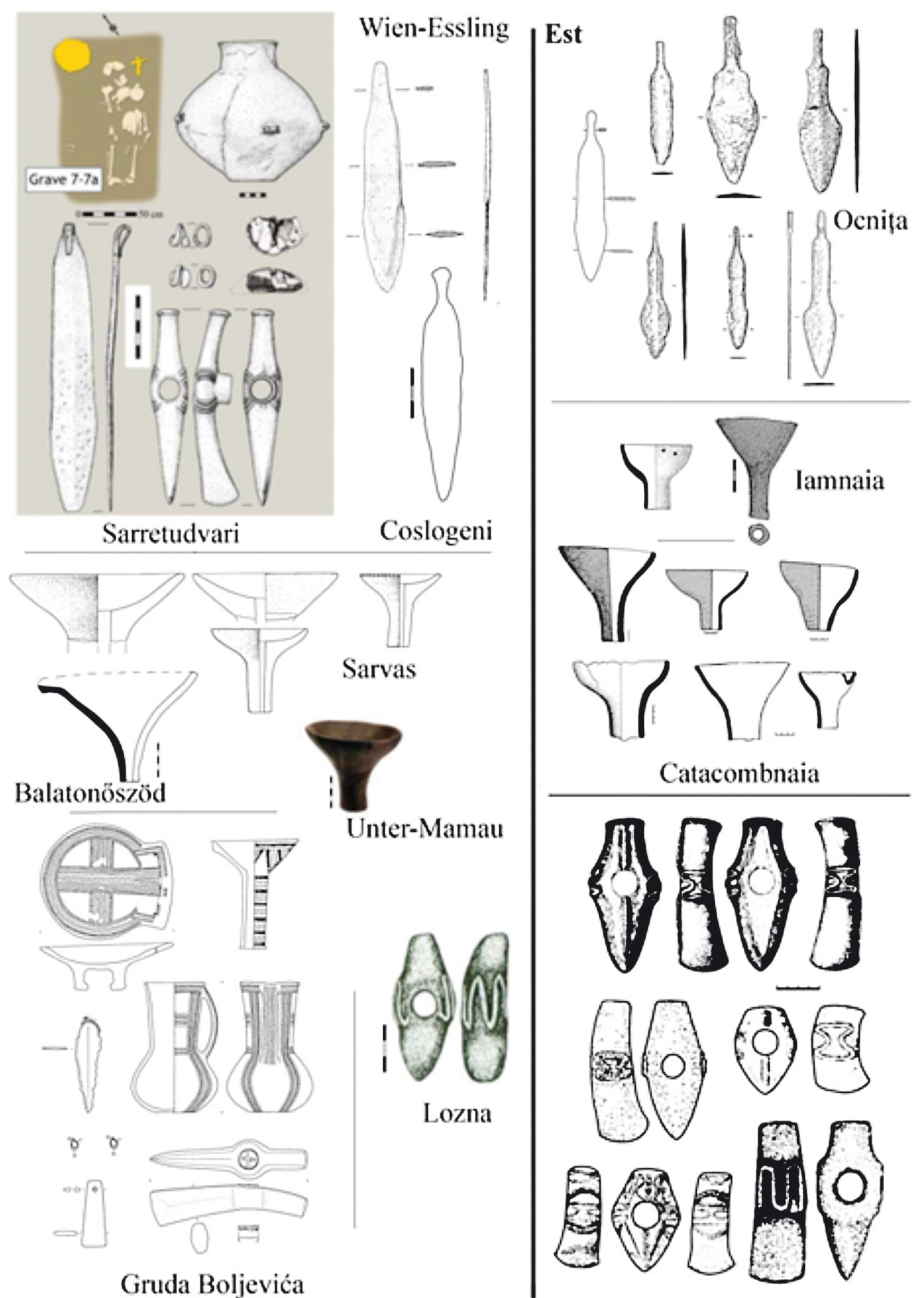


Fig. 18. Examples of analogous finds of clay funnels from the Yamna and Catacombna Culture in Eastern Europe to the so-called princely graves of the Early Bronze Age in the territory of Montenegro (Frînculeasa *et al.* 2017)

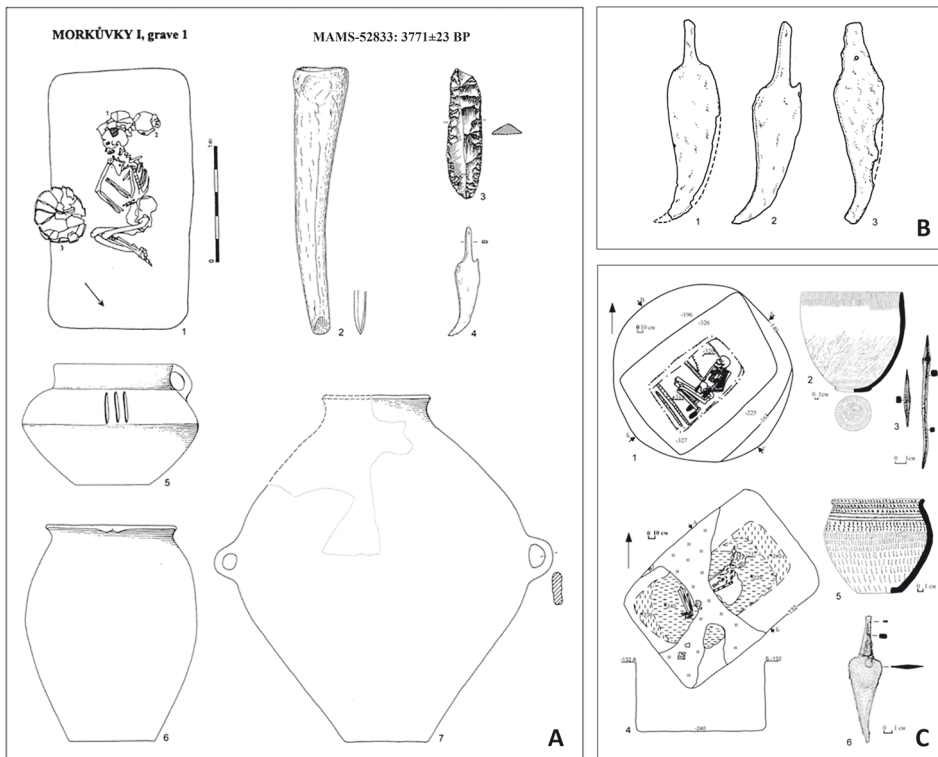


Fig. 19. Absolutely dated MCWC male grave from Morkůvek with a copper „razor“ find (A), analogous finds from Ukraine/Sviatovo and Syria/Tell Chazna 1 (B) and from pre-Ural Yamna Culture/Skvortsovka (C) (Šebela 1999, supplemented; Bátorá 2006)

we find relics of metallurgy associated with casting (Zók-Várhegy, Űlló, Velký Meder). The aforementioned daggers or knives with a tang show striking similarities, as does the „razor“ from Morkůvky (Fig. 19). Massive hair spirals of gold or silver, so typical of the steppe and Carpathian-Balkan region, end their presence in Burgenland (Neusiedl am See). In Lower Austria, Moravia, Bohemia and Poland, spiral hair ornaments, which also have their counterparts in the East, dominate (Peška and Fikrlé 2017; Sava *et al.* 2019, fig. 32: 4; 67: 2; 81: 9-10; Dergachev 2023, pl. 25: B2-3; 42: A3; 43: A2-3 *etc.*). Unlike the MCWC, they do not appear with flattened ends, but in a solid precious metal design (similar to the solid single ones mentioned above) (Dergachev 2023, pl. 178: 9-10; 196: A8-9; 208: A5; 209: C3).

Despite the clear connotations to Eastern Europe, the results of palaeometallurgical analysis (Fig. 20) of part of the metal potential point to sources in the Carpathian region (central Slovakia) from ores of the Fahlerzmetall type, where the composition with higher contents of arsenic, nickel and lead most resemble the tetrahedrite ores of the Early Bronze Age.

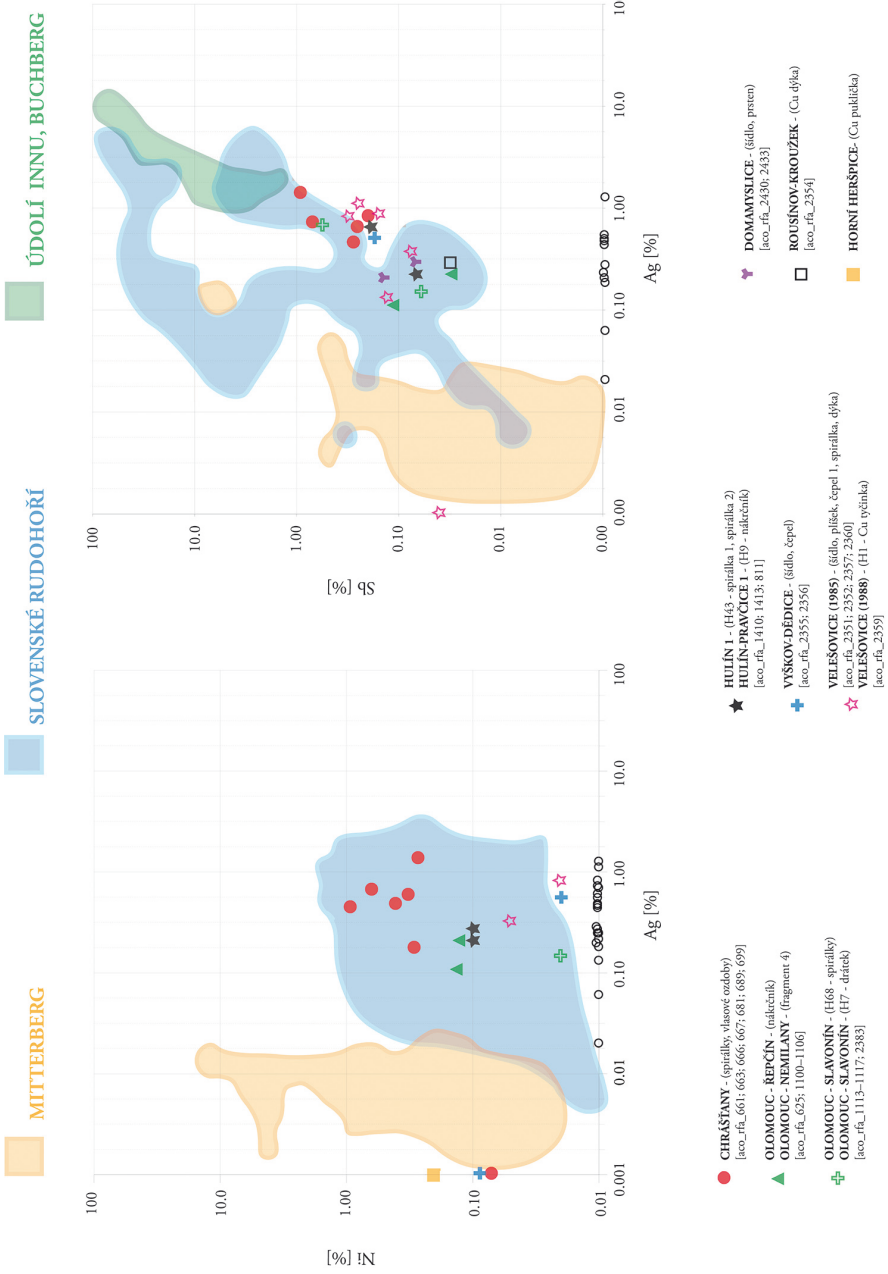


Fig. 20. PCA analysis of the elemental composition of selected MCWC copper artefacts (analysis and graph by F. Ondrkál)

BURIALS ON WAGONS IN THE MCWC?

The biggest surprise for us is a group of MCWC graves with grooves on the bottom with a clear concentration in Central Moravia (Fig. 22) with a new interpretation. Such a construction is unprecedented in our country (Fig. 21). The dimensions, the spatial projection of the reconstructed prehistoric wagons (Figs. 23) convince us that we are dealing with grooves as traces of the placement of a four-wheeled wagon, or with burials on an all-wood ceremonial wagon with clear counterparts in Maikop, Yamna and Catacombna cultures (Gej 2004; Novozhenov 2012; Dergachev 2023, pl. 2: A3; 47: B2; 52: A1-2; 153: E3-4 *etc.*). The average to below-average equipment illustrates the social significance of the burial itself in an elevated and centralized location, carrying a stamp of social prestige over other graves. Placement in the grave may have been preceded by a ceremonial journey with the

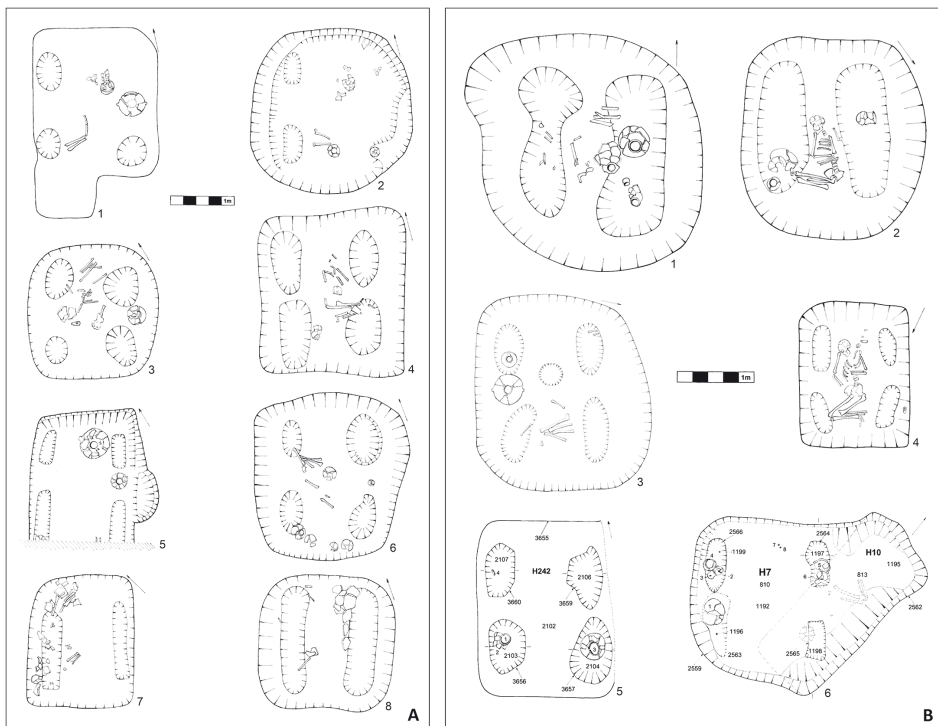


Fig. 21. MCWC graves with internal construction in the form of troughs. A: 1 – Hulín 1, U Isidorka Gr. 43; 2 – Bezměrov 1, Dily Gr. 13; 3 – Olomouc-Slavonín 1, U hvězdárky Gr. 19; 4 – Olomouc-Nemilany 1, Na kopci a Kapitulní Gr. 50; 5 – Seloutky, Dlouhé čtvrtě Gr. 1; 6 – Šlapanice, Brněnská pole Gr. 25; 7 – Bystročice, Na krátkých Gr. 1; 8 – Olomouc-Nemilany 3, Pravá a Levá k Nedvězí Gr. 4; B: 1 – Olomouc-Nemilany 3, Pravá a Levá k Nedvězí Gr. 18; 2 Olomouc-Nemilany 3, Pravá a Levá k Nedvězí Gr. 28; 3 – Vyškov-Dědice, Legerní pole Gr. 802; 4 – Hulín-Pravčice 1, U obrázku Gr. 19; 5 – Olomouc-Slavonín, Arbesova ulice Gr. 242; 6 – Olomouc-Slavonín, Arbesova ulice Gr. 7. Drawings A. Pešková



Fig. 22. Map of Europe with the occurrence of wagon burials in Yamna and MCWC. Map by P. Grenar

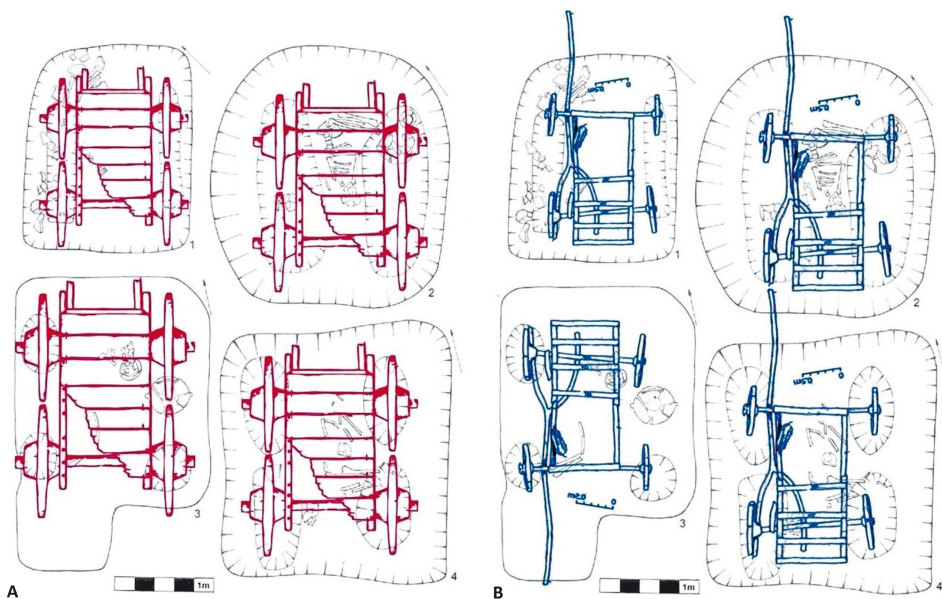


Fig. 23. Projection of the reconstruction of all-wooden wagons in the plan of the burials with troughs in the MCWC. A Trialeti, Barrow 5 (Sintašta culture), B Ostanniy Kurgan 1, Grave 150 (Yamna Culture). Projection by P. Grenar

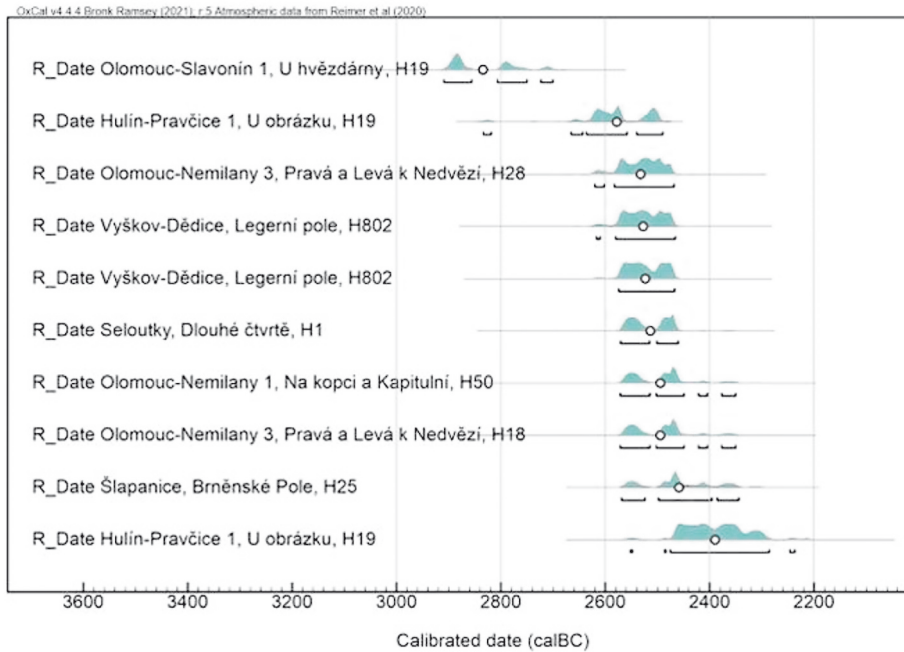


Fig. 24. Absolute dating (^{14}C) of MCWC graves with wagon burials in Moravia. Graph by P. Grenar

corpse, *e.g.*, from his house, which may have already been made on a cart. Wagon burials are encountered in Central Europe so far only in Central Moravia (local MCWC) at a time approximately at the level of the Late Yamna Culture and Early Catacombna cultures (mid-3rd millennium BC) (Fig. 24). As in the intact area of the Yamna Culture, they can be considered an integral part of the so-called Yamna package. Yet, with one exception (Plachidol in Bulgaria), wagon burials are not encountered elsewhere than in the North Pontic and Caucasian areas at that time (Fig. 22). This is an Eastern European phenomenon transmitted during the 3rd millennium BC to the interior of Europe (the question remains which way exactly?) and one of the clearest pieces of evidence of direct contact with the Eastern European area.

CONCLUSION

We have to remember that we are spatially not that far from the recognized boundary of the Yamna Culture intrusion in Transdanubia (Görnyü, Környe) and in Burgenland (Neusiedl am See) (Harrison and Heyd 2007, fig. 49), a light influence in the content of the Polish CWC (Koniusza, Balice, Święte: Koško *et al.* 2018; Włodarczak 2021, fig. 10). Similarly

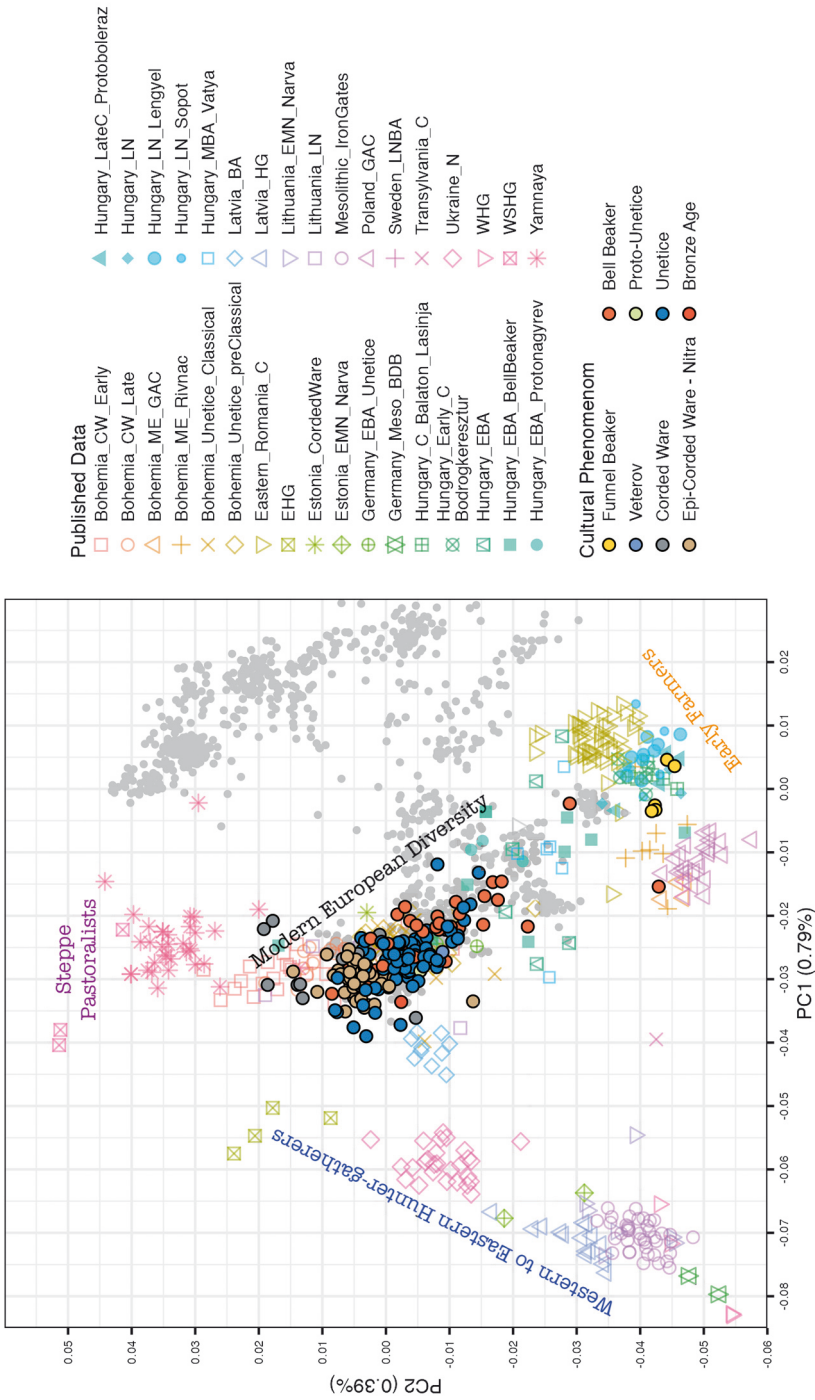


Fig. 25. PCA visualising genetic variation of modern European diversity (grey) with published data of cultural phenomena as indicated in the legend. Graph by W. Haak

to Moravia, a number of eastern – steppe elements are also seen in Lower Austria in the makeup of the local group of Corded Ware culture (Kern 2012). Another example is a grave from Wien-Essling with a Manych-type dagger of North Pontic-Caucasian form made of copper with elevated arsenic content, the westernmost find of its kind in Europe (Zimmermann 2003; 2007, 53-58, fig. 34). The contents of the already mentioned grave from Bleckendorf have a general eastern provenance, and wagon graves in central Germany are also associated with the eastern European steppe region (Profen), but the question is whether they are not more likely to be related to the GAC, the custom of chariot burials being clearly of eastern European origin.

From the genetic analyses so far, we know that the MCWC matches the genetic profile known so far (mainly from Bohemia) with the highest proportion of steppe genes compared to contemporary and subsequent cultures. By comparing Y haplogroups, we can conclude that partially contemporary groups of individuals (CWC, Bell Beaker Culture, Únětice Culture), despite their geographical proximity, remain genetically distinct (Fig. 25).

Everything points to the fact that Moravia, with the exception of the changes at the end of the Jevišovice Culture and the arrival of the two beakers cultures, remained aloof from the direct penetration of the people of the Yamna Culture into the centre of Europe, since the invasion of probably part of the foreign population to the Jevišovice Culture holders cannot be directly linked to these migrations (the background lies in the environment of the Coțofeni and Livezile cultures), but an indirect consequence of the migration waves caused by the events in the North Pontic area up to Tisza cannot be excluded either. Nevertheless, we are able to trace a number of links and contacts with Eastern Europe and, more specifically, with the North Pontic-Caucasian region in the content of cultures at the turn of the 4th/3rd millennium BC. The archaeological findings so far, in the form of individual (mound) burials and a selection of artefacts, demonstrate the interpenetration of individuals (or small groups) rather than the direct intervention of steppe nomads, but better still the influence of progressive commodities as part of the “Yamna package” in the regions lying west of the Tisza. While we cannot rule out the possibility that the foreign intervention at the end of the Jevišovice Culture in Moravia was not triggered by general changes and movements in the more southern patrimonies of central Europe and, as a consequence, that the appearance of CWC in our area itself is not originally and partly genetically related to shifts in the Yamna region, we must continue to look for direct evidence for these claims.

Acknowledgements

I am grateful to Wolfgang Haak and Ben Rohrlach for providing and interpreting the aDNA data.

References

- Agulnikov S. 2008. Arkheologicheskoe nasledie Budzhaka, Kratkiy ocherk archeologicheskikh pamiatnikov Budzhakskoy stepi. *Revista de etnologie și Culturologie* 3, 227-243.
- Agulnikov S. 2011. Razkopki kurgana 17 v s. Kazakliya v 1985 godu. *Revista Arheologică*, serie Nou 7, 129-156.
- Agulnikov S. and Popovich S. 2022. *Raskopki kurganov v rayone Shtefan Vode, Respublika Moldova (1989, 1990, 1991)*. Kishineu: Natsionalnoe Agentstvo Arkheologii.
- Agulnikov S. and Sava E. 2004. *Issledovaniya kurganov na levoberezhze Dnestra*. Kishineu: SER USM.
- Baković M. and Govedarica B. 2009. Nalazi iz kneževskog tumula Gruda Boljevića u Podgorici, Crna Gora. *Godišnjak Centra za Balkanoška Ispitivanja Akademije nauka i Umjetnosti Bosne i Hercegovine* 36, 5-23.
- Balen J. 2005. *Sarvaš, Neolitičko i eneolitičko naselje (= Musei Archaeologici Zagrabienensis Catalogi et Monographiae 2)*. Zagreb: Arheološki muzej u Zagrebu.
- Bátora J. 2006. *Štúdie ku komunikácii medzi strednou a východnou Európou v dobe bronzovej*. Bratislava: Petrus Publishers.
- Bátora J. 2021. Infiltration of Yamnaya culture into the north-Carpathian region – Assessing our preliminary knowledge. In V. Heyd, G. Kulcsár and B. Preda-Bălănică (eds), *Yamnaya Interactions. Proceedings of the International Workshop held in Helsinki in 25-26 April, 2019 (= The Yamnaya Impact on Prehistoric Europe 2)*. Budapest: Archaeologia, 2021, 361-382.
- Bronicki A. 2000. Grób kultury amfor kulistych w Kolonii Czulczyce, stan. 6, gm. Sawin, pow. Chełm, woj. Lublin. *Archeologia Polski Środkowowschodniej* 5, 181-195.
- Bronicki A. 2021a. Chronology and periodization of the Globular Amphora Culture East Lublin subgroup. *Baltic-Pontic Studies* 25, 221-263.
- Bronicki A. 2021b. *Pierwsi pasterze III tysiąclecia p. Chr. Groby podgrupy wschodniolubelskiej kultury amfor kulistych. Obrządek pogrzebowy*. Chronologia. Chełm: Muzeum Ziemi Chełmskiej im. Wiktora Ambroziewicza w Chełmie.
- Bugaj U., Włodarczyk P., Jarosz P., Koledin J. and Podsiadlo M. 2018. Istraživanja eneoliskog kurgana z Šajkaši, opština Titel. *Glasnik Srbskog Arheološkog društva* 34, 7-22.
- Ciugudean H., Quinn C. and Uhnér C. 2022. Considerații privind evoluția culturii Coțofeni în lumina noilor date radiocarbon. *Apulum, series Archaeologica et Anthropologica* 59, 23-54.
- Ciugudean H. I., Quinn C. P., Uhnér C. and Beck J. 2023. From West to East and East to West: Yamnaya Migration and Interaction with Copper Age/Early Bronze Age Carpathian Communities in Transylvania. In B. Preda-Bălănică and M. Ahola (eds), *Steppe Transmissions (= The Yamnaya Impact on Prehistoric Europe 4)*. Budapest: Archaeolingua, 2023, 205-245.
- Čížmář M. 1985. Hroby kultury se šňůrovou keramikou z Holubic a Tvarožné. *Archeologické rozhledy* 37, 403-410.
- Dani J. and Szeverényi V. 2021. Archaeological Evidence for Steppe and Caucasian Connections in the Carpathian Basin between the 4th and mid-3rd Millenia BC. Is There a „Yamanaya Package“. In

L. Giemsch and S. Hansen (eds), *Proceeding of Conference „The Caucasus-Bridge between the urban centres in Mesopotamia and the Pontic steppes in the 4th and 3rd millenium BC (= Schriften des archäologischen Museums Frankfurt 34)*. Frankfurt am Main: Verlag Schnell & Steiner GmbH, 259-272.

- Dergachev V. A. 2023. *Yamnaja kultura Karpato-Podunavya. Yamnaya culture of the Carpathian-Danube region*. Kichinev: CEP USM.
- Dobeš M., Budinský P., Buchvaldek M. and Muška J. 1991. Katalog šňůrové keramiky v Čechách V. Bílinsko. *Praehistorica* 17, 75-150.
- Dobeš M., Pecinová M. and Ernée M. 2021. On the earliest Corded Ware in Bohemia. In V. Heyd, G. Kulcsár and B. Preda-Bălănică (eds), *Yamnaya Interactions. Proceedings of the International Workshop held in Helsinki, 25th–26th April 2019 (= The Yamnaya Impact in Prehistoric Europe 2)*. Budapest: Archaeolingua, 487-511.
- Fojtík P. 2019. *Prostějov (okr. Prostějov). Přehled výzkumů 60/1, 198*.
- Frînculeasa A. 2020. Cultura Cernavodă II la Dunărea Inferioară. Relevanța cronologieri și a înmormântărilor tumulte. *Studii de Preistorie* 17, 135-193.
- Frînculeasa A., Preda-Bălănică B., Garvăn D., Negrea O. and Soficaru A. 2019. Towards a better understanding of the end of the Fourth Millenium BC in Northern Muntenia: The case of the Burial mound in Ploiești – Gara de vest. *Ziridava. Studia Archaeologica* 33, 55-90.
- Frînculeasa A., Simalcsik A., Preda B. and Garvăn D. 2017. *Smeeni – Movila Mare. Monografia unui sit arheologic regăsit*. Târgoviște: Muzeul Județean Buzău.
- Geislerová K. and Parma D. et al. 2018. *Výzkumy 2011-2016 = Ausgrabungen 2011-2016*. Brno: Ústav archeologické památkové péče Brno.
- Gej A. N. 2004. Die Wagen der Novotitarovskaja-Kultur. In M. Fansa and S. Burmeister (eds), *Rad und Wagen. Der Ursprung einer Innovation Wagen im Vorderen Orient und Europa (= Archäologische Mitteilungen aus Nordwestdeutschland 40)*. Mainz am Rhein: Philipp von Zabern, 177-190.
- Govedarica B. 2010. Grab- und Opferfunde aus dem Hügel Gruda Boljevića in Montenegro (erste Hälfte des 3. Jahrtausend v. Chr.). In J. Šuteková, P. Pavúk, P. Kalábková and B. Kovár (eds), *Panta Rhei. Studies on the chronology and cultural development of South-Eastern and Central Europe in earlier prehistory. Presented to Juraj Pavúk on the occasion of His 75th birthday*. Bratislava: Comenius University Bratislava, 179-188.
- Harat K., Potupezzyk M. and Razumow S. 2014. Charakterystyka źródeł archeologicznych pozyskanych w latach 1984-1993. In A. Koško, M. Potupezzyk and S. Razumow (eds), *Naddniestrzańskie kompleksy cmentarzysk kurhanowych społeczności z III i z pierwszej połowy II tysiąclecia przed Chr. w okolicach Jampola, obwód winnicki. Z badań nad północno-zachodnią rubieżą osadnictwa społeczności kręgu kultur „wczesnobrzozowych“ strefy pontyjskiej: badania z lat 1984-2014 (= Archaeologia Bimaris Monografie 6)*. Poznań: Wydawnictwo Nauka i Innowacje, 45-204.
- Harrison R. and Heyd V. 2007. The Transformation of Europe in the Third Millenium BC: the example of „Le Petit-Chasseur I + III“ (Sion, Valais, Switzerland). *Prähistorische Zeitschrift* 82, 129-214.

- Häusler A. 1974. *Die Gräber der älteren Ockergrabkultur zwischen Dnepr und Ural* (= Wissenschaftliche Beiträge des Martin-Luther-Universitäts Halle-Wittenberg 9). Berlin: Akademie-Verlag.
- Häusler A. 1976. *Die Gräber der älteren Ockergrabkultur zwischen Dnepr und Karpaten* (= Wissenschaftliche Beiträge des Martin-Luther-Universitäts Halle-Wittenberg 12). Berlin: Akademie-Verlag.
- Heyd V. 2021. Yamnaya, Corder ware, and Bell Beaker on the move. In V. Heyd, G. Kulcsár and B. Preda-Bălănică (eds), *Yamnaya Interactions. Proceedings of the International Workshop held in Helsinki, 25th–26th April 2019* (= *The Yamnaya Impact in Prehistoric Europe* 2). Budapest: Archaeolingua, 383-414.
- Horváth T., Gherdán K., Kulcsár G., Sipos G. and Tóth M. 2013. An Enigmatic Funnel Find of the Somogyvár-Vinkovci Culture from Balatonőszöd-Temetői dulo in Transdanubia, Hungary. *Interdisciplinaria Archaeologica Natural Sciences in Archaeology* 4/1, 23-38.
- Horváthová E. and Chovanec J. 2006. Nálezy kultúry Čotofeni v prostredí badenskej kultúry na východnom Slovensku. *Študijné zvesti Archeologického ústavu Slovenskej akademie ved* 40, 129-140.
- Ivanova S. V. 2010. Torgovye puti i migratsii v Jugo-Voskochnoy Evrope v rannem bronzovom veke. *Materialy po arkeologii severnogo Prichernomoria* 11, 163-253.
- Ivanova S. V. 2013. Kulturno-istoricheskie kontakty naseleniya Severo-Zapadnogo Prichernomoria v rannem bronzovom veke: Zapad-Vostok. *Stratum Plus* 2, 1-59.
- Ivanova S. V., Nikitin A. G. and Kiosak D. B. 2018. Majatnikovje migracii v Cirkum-Pontijskoj stepii centralnoj Evrope v epokhu paleometalika i problema genezisa Yamnoy kultury. *Arkheologia i davnja istoria Ukrajin* 1/26, 101-145.
- Kaiser E. 2019. *Das dritte Jahrtausend im osteuropäischen Steppenraum, Kulturhistorische Studien zu prähistorischer Subsistenzwirtschaft und Interaktion mit benachbarten Räumen* (= *Berlin Studies of the Ancient World* 37). Berlin: Topoi.
- Kalábek M., Šín L., Vaněček Z. and Moník M. 2016. Hrob s vnějším kruhovým žlábkem z Babice (okr. Olomouc). In M. Kršková and J. Peška (eds), *Ročenka 2015*. Olomouc: Archeologické centrum Olomouc, 37-49.
- Kern D. 2011. Ostösterreich im Endneolithikum – Am Ende der Welt? In T. Doppler, B. Ramminger and D. Schimmelpfennig (eds), *Grenzen und Grenzräume? Beispiele aus Neolithikum und Bronzezeit* (= *Fokus Jungsteinzeit. Berichte der AG Neolithikum* 2). Kerpen-Loogh: Welt und Erde Verlag, 25-36.
- Kern D. 2012. Migration and mobility in the latest Neolithic of the Traisen valley, Lower Austria: Archaeology. In E. Kaiser, J. Burger and W. Schier (eds), *Population Dynamics in Prehistory and Early History: New Approaches Using Stable Isotopes and Genetics*. Berlin, Boston: De Gruyter. <https://doi.org/10.1515/9783110266306.213>
- Klochko V. I. 2017. Yamnaya culture hoard of metal objects, Ivanivka, lower Murafa: autogenesis of „Dniester copper/bronze metalurgy. *Baltic-Pontic Studies* 22, 226-245.
- Klochko V. I., Koško A., Razumow S. M., Włodarczak P. and Żurkiewicz D. 2015. Eneolithic, Yamnaya and Noua culture cemeteries from the first half of the 3rd And the middle of the 2nd millenium BC,

- Porohy, site 3A, Yampil region, Vinnytsia oblast: archaeometric and chronometric description, ritual and taxonomic topogenetic identification. *Baltic-Pontic Studies* 20, 78-141.
- Korošec P. and Korošec J. 1969. Najdbe s količarskih naselbin pri Igu na ljubljanskem barju. Fundgut der Pfahlbausiedlungen bei Igu am Laibacher Moor. *Catalogi archaeologici sloveniae* 3. Ljubljana: Narodni Muzej v Ljubljani.
- Koško A. 2011. Z badań nad kontekstem kultur wczesnobrązowych strefy pontyjskiej w rozwoju społeczności środkowoeuropejskich obszaru dorzecza Wisły w III tys. BC. In U. Stankiewicz and A. Wawrusiewicz (eds), *Na rubieży kultur. Badania nad okresem neolitu i wczesną epoką brązu*. Białystok: Muzeum Podlaskie w Białymstoku, 183-193.
- Koško A., Klochko V. I., Olszewski A., Włodarczak P. and Goslar T. 2018. Święte 11, feature 1149: sennence of funerary rites practiced by Corded Ware peoples and Early Bronze north Pontic cultures. *Baltic-Pontic Studies* 23, 69-92.
- Kučera L., Peška J., Fojtik P., Barták P., Sokolovská D., Pavelka J., Komárková V., Beneš J., Polcerová L., Králik M. and Bednář P. 2018. Determination of Milk Products in Ceramic Vessels of Corded Ware Culture from a Late Eneolithic Burial. *Molecules* 2018, 23(12), 3247.
- Larina O., Manzura I. and Khakhey V. 2008. *Brevichenskie kurgany*. Kishinev: Akademiya Nauk Respubliki Moldova, Institut Kulturnogo Naslediya, Tsentr Arkheologii.
- Morgunova N. L. 2011. Pit-Grave culture of the south Nera the Ural Mountains. In A. Petö and A. Barczi (eds), *Kurgan Studies: An environmental and archaeological multiproxy study of burial mound in the Eurasian steppe zone (= BAR International Series 2238)*. Oxford: Archaeopress, 133-143.
- Němejcová-Pavůvková V. and Klčo M. 1986. Žiarový hrob z Trebatíc. *Archeologické výskumy a nálezy na Slovensku v roku 1985*, 169-170.
- Nosek S. 1964. *Civilisation des amphores sphériques (= Inventaria Archaeologica Corpus des ensembles archéologiques Pologne 12: Pl. 64-69)*. Łódź, Warszawa: PWN.
- Nosek S. 1967. *Kultura amfor kulistych w Polsce*. Wrocław, Warszawa, Kraków: Zakład Narodowy im. Ossolińskich.
- Novozhenov V. A. 2012. *Communications and earliest wheeled transport of Eurasia*. Moscow: TAUS Publishing.
- Peška J. 2000. Otázka sídlišť kultury se šňůrovou keramikou na Moravě. In In memoriam Jan Rulf. *Památky archeologické – Supplementum* 13, 341-348.
- Peška J. 2011. Nové poznatky o jevišovickém osídlení v regionu střední Moravy. In M. Popelka and R. Šmidtová (eds), *Otázky neolitu a eneolitu našich zemí. Sborník referátů z 28. zasedání badatelů pro výzkum neolitu a eneolitu (nejen) Čech, Moravy a Slovenska, Mělník 28.9. – 1. 10. 2009 (= Acta Instituti Praehistorici Universitatis Carolinae Pragensis: Praehistorica 29)*. Praha: Univerzita Karlova v Praze, Nakladatelství Karolinum, 297-322.
- Peška J. 2021. East European Elements in Burial Rites of Moravian Corded Ware Culture. Wagon Burial in Moravia in the 3rd Millennium BC? In V. Heyd, G. Kulcsár and B. Preda-Bălănică (eds), *Yamnaya Interactions. Proceedings of the International Workshop held in Helsinki, 25th-26th April 201 (= The Yamnaya Impact in Prehistoric Europe 2)*. Budapest: Archaeolingua, 2021, 513-541.

- Peška J., Fojtík P. and Daňhel M. 2021. Settlements of Local Phase of Corded Ware Culture in Moravia. *Acta Archaeologica Carpathica* 56, 193-220.
- Peška J. and Fikrle M. 2017. Hrob ženy kultury se šňůrovou keramikou s měděnými šperky z Brna-Horních Heršpic. *Pravěk* 25, 27-52.
- Peška J. and Vrána J. 2017. Menší sídliště nositelů kultury kulovitých amfor na katastru Radvanic, okres Přerov. In M. Kršková and J. Peška (eds), *Ročenka 2016*. Olomouc: Archeologické centrum Olomouc, 57-74.
- Sava E., Agulnikov S. and Manzura I. 2019. *Issledovaniya kurganov v budzhakskoy stepi (1980-1985 gg.)* (= *Biblioteca „Tyragetia“* 30). Chisinau: Muzeul Național de Istorie a Moldovei.
- Shishlina N. I. 2008. *Reconstruction of the Bronze Age of the Caspian Steppes: Life Styles and Life Ways of Pastoral Noma* (= *BAR Internationales Series* 1876). Oxford: BAR.
- Schmidt R. 1945. *Die Burg Vučedol*. Zagreb: Kroatisches archäologisches Staatsmuseum.
- Šebela L. 1997. Zur Problematik und chronologischen Stellung des A-Horizontes der mährischen Schnurkeramikultur. In P. Siemen (ed.), *Early Corded ware Culture. The A-Horizon – fiction or fact? International symposium in Jutland, 2nd-7th May 1994*. Esbjerg: Esbjerg Museum, 185-198.
- Šebela L. 1999. *The Corded Ware Culture in Moravia and the adjacent Part of Silesia (Catalogue)*. (= *Fontes Archaeologiae Moravicae* 23). Brno: Archeologický ústav AV ČR Brno.
- Šmíd M. and Přichystal A. 2021. Sídlištní areál jevišovické kultury. In M. Šmíd et al., *Eneolitické osídlení lokality Modřice – Rybníky (okr. Brno-urnkov)* (= *Pravěk Supplementum* 36). Brno: Ústav archeologické památkové péče Brno, 30-62.
- Włodarczak P. 2006. *Kultura ceramiki sznurowej na wyżynie Małopolskiej*. Kraków: Instytut Archeologii i Etnologii PAN.
- Włodarczak P. 2017. Kurgan rites in the Eneolithic and Early Bronze Age Podolia in light of materials from the funerary-ceremonial centre of Yampil. *Baltic-Pontic Studies* 22, 246-283.
- Włodarczak P. 2021. Eastern impulses in cultural and demographic change during the end of the south-eastern Polish Eneolithic. In V. Heyd, G. Kulcsár and B. Preda-Bălănică (eds), *Yamnaya Interactions. Proceedings of the International Workshop held in Helsinki, 25th–26th April 2019* (= *The Yamnaya Impact in Prehistoric Europe* 2). Budapest: Archaeolingua, 435-5461.
- Włodarczak P., Szczepanek A. and Przybyła M. M. 2021. Grave of the Globular Amphora Culture from Koszyce in the chronological perspective. *Baltic-Pontic Studies* 25, 189-219.
- Zápotocký M. and Zápotocká M. 2008. Kutná Hora-Denemark. Hradiště řívnáčské kultury (ca 3000–2800 př. Kr.). *Památky archeologické – Supplementum* 18, Praha: Archeologický ústav Akademie věd České republiky.
- Zimmermann T. 2003. Zwischen Karpaten und Kaukasus – Anmerkungen zu einer ungewöhnlichen Kupferklinge aus Wien-Essling. *Archäologisches Korrespondenzblatt* 33, 469-477.
- Zimmerman T. 2007. *Die ältesten kupferzeitlichen Bestattungen mit Dolchbeigabe* (= *Monographien des Römisch-Germanischen Zentralmuseums* 71). Mainz: Verlag des Römisch-Germanischen Zentralmuseums.