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THE MIDDLE AURIGNACIAN IN THE CARPATHIAN BASIN OF EASTERN CENTRAL EUROPE¹

YURI E. DEMIDENKO  – PETR ŠKRDLA  – SÁNDOR BÉRES –
BÉLA RÁCZ  – ADRIÁN NEMERGUT 

In the article a series of Middle Aurignacian *in situ* sites and surface loci situated in the Carpathian Basin of the Eastern Central Europe is analysed using industrial and geochronological criteria recently developed for the respective Middle Aurignacian materials in Southwestern France. As a result, there were not only recognized the respective materials for the Carpathian Basin but were also identified both common and specific techno-typological features for taken together Pan-European Middle Aurignacian materials. Geochronologically, the Carpathian Basin's sites (starting from GI-8a, ca. 36,300 cal. BP) are a little younger of the French materials (GI-8c, ca. 37,900–37,500 cal. BP). The realized study also demonstrated a possible series of various site types for Middle Aurignacian settlement pattern observations in the Carpathian Basin. The resulting analyses also allowed us to see on the new data and knowledge levels a basic Middle Aurignacian human dispersal from Europe into the East Mediterranean Levant.

Keywords: Eastern Central Europe, Carpathian Basin, Aurignacian, Middle Aurignacian.

INTRODUCTION

The present article is second item in the planned by us a series of articles dedicated to the presence of sites having artifacts belonging to various Aurignacian industry types in the Carpathian Basin of Eastern Central Europe. Although chronologically it should be article number three after the already published Proto-Aurignacian item (*Demidenko et al. 2021*) and then an Early Aurignacian subject, now it has been decided to work out with the Middle Aurignacian subject. It is explained by an enough clear situation for us with Middle Aurignacian site/loci and their finds data sets for the region now, while the respective data on the region's Early Aurignacian are still at a preliminary analysis stage. Accordingly, Middle Aurignacian is proposed to be viewed for a detailed analysis at the moment (Fig. 1). The importance of the present Middle Aurignacian study in Eastern Central Europe is basically connected to unclear view of Palaeolithic archaeologists what exactly Middle Aurignacian is in an industrial and geochronological sense there. Our position here is, first of all, based upon the use of respective criteria from the Western European Aurignacian data. As a result, it is offered a set of strict industrial and also chronological features for the Middle Aurignacian that is comparable to some Middle Aurignacian materials in Southwestern France. Furthermore, the defined by us Middle Aurignacian sites/loci and artifact assemblages are

also compared with similar Aurignacian materials in both neighbouring to the Carpathian Basin some European regions and the East Mediterranean Levant. The latter comparisons will help us to propose some ways of Middle Aurignacian human moves throughout Europe and Western Asia.

MIDDLE AURIGNACIAN WITHIN THE CLASSIC FRENCH AURIGNACIAN SCHEME

After the pioneering and very important Aurignacian studies of *H. Breuil (1912)* and *D. Peyrony (1933; 1936)* in Périgord (southwestern France) during the first third of the 20th c., it is probably possible to say, at least from our retrospective point of view, by Palaeolithic archaeologists from Eastern and Central Europe, not from France, the so-called classic French Aurignacian scheme was finally formed by *D. de Sonneville-Bordes* on archaeological materials from southwestern France in the late 1950s–early 1960s (e.g. *Sonneville-Bordes 1960*). Our modern view distinguishes among her several Aurignacian stages, stage II, that goes after Aurignacian I/Early Aurignacian with its most characteristic wide-fronted carinated endscrapers-cores and so-called Aurignacian blades of two sub-types bearing invasive and usually stepped lateral/bilateral retouch among lithic artifacts and split-based points among organic tools. The stage/industry II was usually considered

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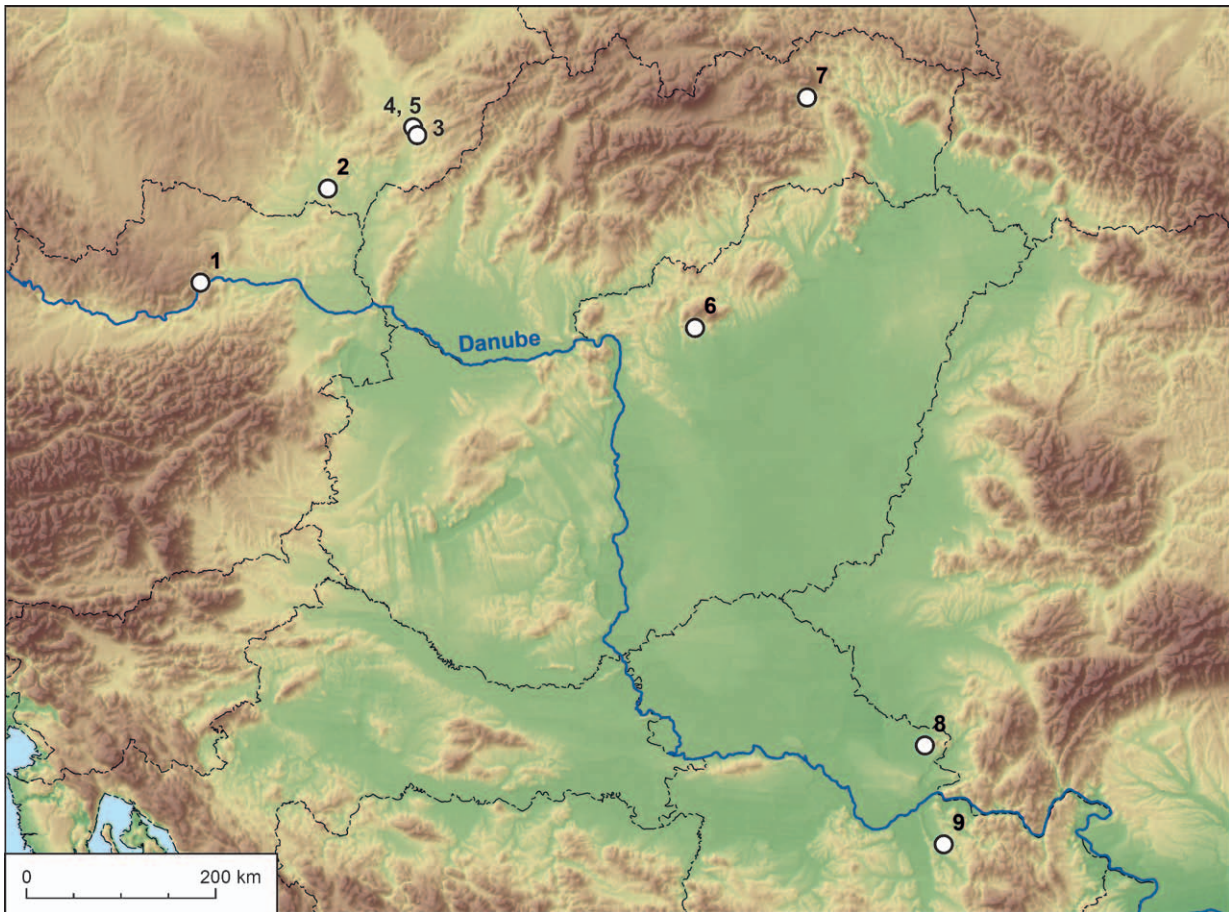


Fig. 1. Map of the key sites mentioned in the text. 1 – Willendorf II; 2 – Milovice I; 3 – Napajedla III; 4, 5 – Žlutava I and Nová Dědina I; 6 – Nagyréde 1, 2; 7 – Medzany I and II; 8 – Crvenka-At; 9 – Bukovac cave.

up to early 2010s representing a sort of Recent/Evolved/Late Aurignacian beginning (e.g. *Bon 2002; 2006; Bordes 2002; Chiotti 2000; 2005; Douka et al. 2011; Higham et al. 2011*) when shouldered/nosed endscraper-cores, carinated burin-cores with also its *busqué* sub-type and Dufour bladelets of Roc de Combe sub-type become the most indicative lithic types. Moreover, the 1960 D. de Sonneville-Bordes' Aurignacian III and IV stages were thought of the similar to stage II industrial character with numerically variable but still similar characteristic tool-core and tool types. Accordingly, in a simplistic and general way Aurignacian began to consist of three basic and temporally successive stages/industry types, Proto-Aurignacian Early Aurignacian and Recent/Evolved/Late Aurignacian (e.g. *Bon 2002; 2006; Bordes 2002*). One of us (Yu. E. Demidenko), using mainly 1960 D. de Sonneville-Bordes' Aurignacian industrial characteristics, independently from the French colleagues also grouped together Aurignacian II–IV into Late/Evolved Aurignacian c. 20 years ago (*Demidenko 2003; 2004*). Through time, however, it became certain for us that most of

Aurignacian II assemblages in southwestern France in fact represent a distinct industry type with absence or a few present carinated burin-cores, while most of all taken together carinated pieces compose shouldered/nosed endscraper-cores where wide-fronted carinated endscraper-cores are of much less quantity and importance. However, there was a problem with multi-layered sites, even containing Early Aurignacian materials. Distinct Aurignacian II industrial characteristics were sometimes rather clear for both some sites with the only present Aurignacian II layer and also some sites having together Early Aurignacian/Aurignacian I and Aurignacian II layers (see *Sonneville-Bordes 1960*, tab. I; IV; VI; XI). On the other hand, some sites again with both Early Aurignacian/Aurignacian I and Aurignacian II layers often show similar characteristics making Aurignacian II hardly different from Aurignacian I (see *Sonneville-Bordes 1960*, tab. X). The latter problematic cases should be probably explained by old excavation techniques leading to mixed 'industrial pictures' which prevented then distinguishing a real separate status for Aurignacian II.

Here it is also necessary not forgetting two separate attempts in France in the 1980s and 1990s to suggest an Aurignacian stage/industry between Early and Evolved/Recent Aurignacian stages/industries, 'Middle Aurignacian', with characteristic presence of shouldered/nosed endscrapers and burins on truncation (Delporte 1984; 1991; Djindjian 1993a; 1993b). But the proposed hypotheses were not accepted at that time. And as time shows it was done in vain. Now it is possible to say that namely since recent studies of A. Michel (2010; 2012) Aurignacian II became not a 'first stage' of Evolved Aurignacian but 'an intermediate phase between the early Aurignacian with a split-based point and the recent Aurignacian with busqued burins' (Michel 2012, 119). Therefore, Michel coined it 'Middle Aurignacian', noted validation by his work of the earlier H. Delporte's and F. Djindjian hypotheses (see Michel 2010, 152) and he proposed for the stage/industry an etalon-like artifact assemblage coming from Abri Pataud, level 8. As Michel's study for level 8 is a kind of mostly 'technological living water' for standard typological data, some the most traditional typological indications for level 8 tool-kit has to be first represented (Brooks 1995, tab. XXII; XXIX; XXXI). We are not going to recount level 8 artifact data with all already published details that is not an aim for our present article. We only want to note its basic and the most characteristic industrial features.

Endscrapers and endscrapers account 123 specimens with no 32 atypical simple and carinated examples. 76 items (61.8%) represent shouldered/nosed endscrapers (Fig. 2A) and 15 items (13%) are carinated endscrapers. It makes the two endscrapers types correlation in 5 to 1. At the same time, carinated burins (classified as 'burin *busqué*' type by A. Brooks) only approach six pieces. Grouping together all 98 tool-cores, the following shares of the three types appear: 77.6% of shouldered/nosed items endscrapers, 16.3% of carinated endscrapers and 6.1% of carinated burin-cores. This is indeed a strict pattern and in contrast to the above-mentioned problems with 1960 D. de Sonneville-Bordes' data for Aurignacian II assemblages, no one Early Aurignacian level at Abri Pataud (levels 11–14) shows the presence of even a single (!) burin-core, while, for example, stratigraphically above level 7 with Recent Aurignacian features demonstrates absolutely reverse picture with a significant prevalence of 85 carinated (*busqué*) burin-cores over 9 shouldered/nosed and 18 carinated endscrapers. These Aurignacian tool-core data indirectly once again confirm good excavation techniques applied during field investigations at Abri Pataud by H. L. Movius, Jr. in

the 1950s–1960s (see Movius 1977). Also, carinated (*busqué*) burin-cores compose only 9.2% of all level 8 burins in 1995 Brooks accounts where dihedral type is also the least represented among other burin types (15.8%) with a dominance of both burins on truncation/transversal on lateral preparation and then of angle/transverse on natural surface type (see also Chiotti 2000, tab. I). The shown minor part of dihedral burins is well understood by us as usually they are numerically well occurred only together with carinated burin-cores in Aurignacian industries and the latter tool-cores are nearly absent in level 8. Taking 1995 A. Brooks' blank data for all endscrapers, including not counted by us above 17 atypical carinated endscrapers, it is seen an overwhelming majority of flakes (72.1%), a moderate occurrence of cores and chunks (21.2%) and only 4.8% of blades with additionally 2% of indefinite pieces. Thus, flakes and namely thick flakes, taking into consideration thick (well over 1 cm) fronts/flaking surfaces of endscrapers on flakes, had to be an important part of purposefully produced debitage pieces within core reduction processes for level 8 humans, although they were rarely transformed by retouch into side-scraper-like pieces, with only identified four side-scrapers in the 1995 tool-kit. Finally, it is also worth noting absence of any Aurignacian blades and the presence of just a single endscraper on an Aurignacian blade for level 8, whereas the two characteristic Aurignacian tool types are numerically well occurring among Early Aurignacian levels 11–14 tool-kits at Abri Pataud.

Having such typological basics, the following technology features can be extracted from the A. Michel's studies of level 8 lithics. As his 2012 article was written in English, it will be also used for some citations for making clear some of his statements and suggestions in the present article also in English. Level 8 is characterized by several core reduction strategies and their data were additionally supported by many refits. Flake reduction prevails over blade one. Flakes were purposefully detached for getting thick blanks serving then for a shouldered/nosed endscraper-core bladelet production. Flakes and blades were removed in a similar unidirectional manner why some of the assemblage's cores are strictly speaking flake/blade examples (see Michel 2012, fig. 5) and 'laminar flakes' were specifically recognized. Here it is important to note the absence of any MP-looking core types, Levallois, discoidal and radial ones. Any carinated and shouldered/nosed tool-cores were not included by Michel into tool analyses. Respectively, it much lowered a share of flakes among tool-blanks. This is why 'tools are mainly produced on blades and rarely on

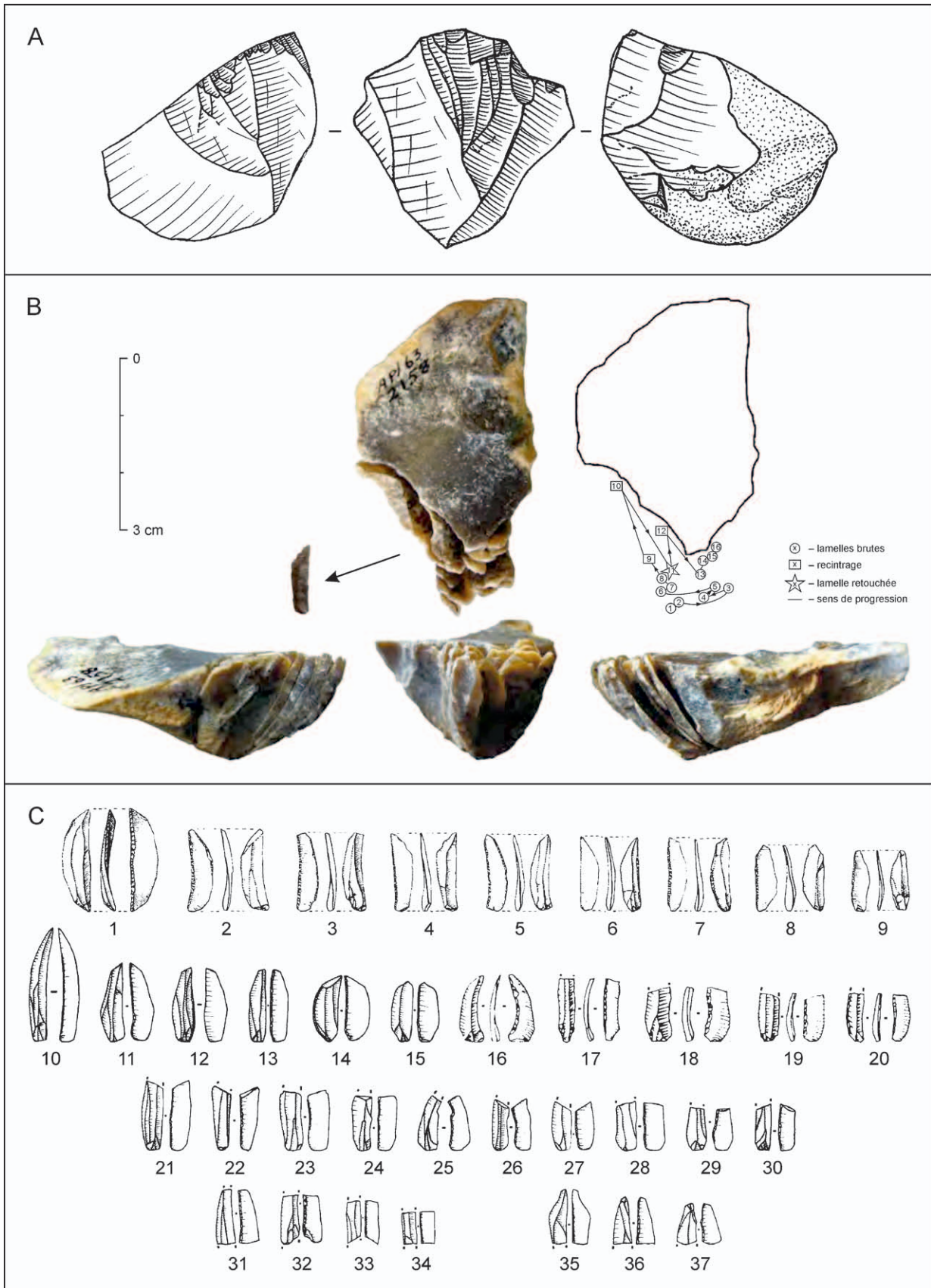


Fig. 2. Abri Pataud, level 8 (France). A – typical example of a shouldered/nosed endscraper-core; B – refits of a shouldered/nosed endscraper-core and a series of microblades; C – microliths (A–C – modified after Michel 2010, fig. 51; 59; 60).

Tab. 1. Willendorf II, AH 4 (Austria). Basic debitage type data.

	Willendorf II, AH 4	
	re-calculated from <i>Hahn 1977</i>	re-calculated from <i>Nigst 2012</i>
Flakes	187/56.8%	1356/85.1%
Blades	66/20.1%	56/3.5%
Bladelets	76/23.1%	181/11.4%
Total	329/100%	1593/100%

flakes' (Tab. 1; *Michel 2012*, 121). Taking a closer look at Tab. 2 with tool-blanks, we calculated the following identified blank types, excluding 43 retouched bladelets: 131/60.1% blades and 87/39.9%. Using these blank data for strict tools, A. Michel noticed the following tool-blank patterns: 'The blades are mostly used for making endscrapers, burins and retouched blades (only one blade with Aurignacian retouch). The flakes are

mostly used for making burins, mainly on truncation' (*Michel 2012*, 121). However, if we add to the 218 strict tool-blank data the respective identifiable 149 blank data for 167 defined by A. Michel 'nosed endscrapers' where he virtually included all carinated tool-cores (134/89.9% flakes, 11/7.4% blades and 4/2.7% nodules/plaquettes; Tab. 4; see *Michel 2010*, tab. 38; 2012, 124), the joint tool and tool-core blank-data appear to be with about exactly the reverse order shares of debitage blanks: 142/39.1% blades and 221/60.9% flakes. Remembering the traditional inclusion of the tool-cores into tool type-lists, it is seen a pattern with a dominance of flaky-blank based tools *sensu lato* within such Aurignacian assemblages (see below), especially taking into consideration tool-kits' data from both old excavations with no dry screening/wet sieving of artifact bearing sediments and surface collections where retouched microliths are at best, if ever, are represented by very few examples. Thus, blanks for tool-cores and so-called proper

Tab. 2. Willendorf II, AH 4 (Austria). Indicative tool and tool-core types.

	Willendorf II, AH 4		
	re-calculated from <i>Hahn 1977</i>	re-calculated from <i>Nigst 2012</i>	the present study's data
ENDSCRAPERS	87/76.3%	96/76.2%	95/78.5%
Carinated endscrapers	22/25.3%	21/21.9%	21/22.1%
Shouldered/nosed endscrapers	48/55.2%	64/66.7%	62/65.3%
Double-triple shouldered/nosed endscrapers	0	0	1/1.1%
Simple flat endscrapers	14/16.1%	10/10.4%	10/10.4%
Endscrapers on laterally/bilaterally retouched pieces	3/3.4%	1/1%	1/1.1%
Endscrapers on blades with Aurignacian-like retouch	0	0	0
Endscrapers on Aurignacian strangled blades	0	0	0
BURINS	26/22.8%	26/20.6%	22/18.2%
Carinated	0?	0?	1/4.5%
Dihedral	10/38.5%	1	10/45.5%
On truncation/transversal on lateral preparation	12/46.1%	?	7/31.8%
Angle/transverse on natural surface	4/15.4%	?	4/18.2%
LAMELLES with a fine lateral/bilateral retouch	1/0.9%	4/3.2%	4/3.3%
Dufour, lamelles with alternate/alternating retouch	0	?	?
Dufour, lamelles with ventral retouch	1/100%	?	1?
Pseudo-Dufour, lamelles with lateral dorsal retouch	0	?	?
Pseudo-Dufour, lamelles with bilateral dorsal retouch	0	?	?
FONT-YVES/KREMS points with a fine retouch	0	0	0
BLADES with Aurignacian-like strangled retouch	0	0	0
BLADES with Aurignacian-like retouch	0	0	0
Total	114/100%	126/100%	121/100%

tools significantly vary and it should be always kept in mind for not going in a possible ‘pseudo-trap’ of something like a Middle Palaeolithic (MP) tradition on using mainly flakes for Middle Aurignacian tools. Summing up the A. Michel’s core reduction data, it is seen no less than three apart from each other core flaking methods. It also differentiates Middle Aurignacian from chronologically earlier both Proto-Aurignacian and Early Aurignacian industries with no more two reduction methods for each of the two industries.

Taking the shouldered/nosed endscraper-core reduction (Fig. 2: B) where A. Michel also certainly added a few still existing wide-fronted carinated endscraper-cores and carinated burin-cores, it is said it was directed onto receiving of series of rather standardized microblades that were shown for retouched microliths (Fig. 2: C) with about uniform metrics (14 mm long, 3.7 mm wide, 1.1 mm thick) and morphology (from our point of view, a crescent-like shape formed by ‘a combination of a straight right edge and a convex left edge’; Michel 2012, 125) where usually ventral fine marginal retouch is the most characteristic for them (see Michel 2010, 129–140; 2012, 125). The latter secondary treatment was in a more detailed way summarized as follows: ‘The main type of transformation is an inverse retouched right edge opposite to a not retouched convex left edge (70% of retouched bladelets). This inverse retouch appears to serve only to enhance the straightness of the right edge. Retouching on the left edge mainly helps to straighten this edge. Whether the bladelets were used as part of a composite projectile point is still an unanswered question’ (Michel 2012, 125). Moreover, the dominant retouched microblade type was labelled Dufour bladelet of Pataud sub-type by A. Michel in his PhD thesis ‘*lamelles Dufour sous-type Pataud...: lamelle asymétrique présentant un bord gauche convexe et un bord droit rectiligne, de profil courbe à légèrement torse dans le sens antihoraire et présentant majoritairement une retouche inverse sur le bord droit opposé à un tranchant gauche laissé brut*’ (Michel 2010, 140). It is, however, interesting to note the absence of Dufour bladelet of Pataud sub-type in the A. Michel’s subsequent articles (e.g. Bordes et al. 2011; Michel 2012).

From our point of view, there are still some reservations for recognition of the newly proposed Dufour bladelet Pataud sub-type. First, the now classic definition of Roc-de-Combe sub-type of Dufour bladelet proposed more than by 30 years ago by P.-Y. Demars is enough ‘enveloping’ the discussing Abri Pataud microliths with their virtually the same crescent-like shape, small dimensions, twisted/significantly incurvate general profiles, retouch type and location (Demars/Laurent 1989, 102, 103, fig. 37: 12, 14–18, 20, 24–27). One of us (Yu. D.

Demidenko) studied and published the largest set of Recent/Evolved/Late Aurignacian retouched microliths coming from a single site, after 1990s excavations at Siuren-I rock-shelter, in Crimea, Ukraine (see Demidenko 2002; 2012a; 2014; 2017; Demidenko/Chabai 2012). In total, there are 77 laterally/bilaterally retouched microliths in Unit F at Siuren-I (¹⁴C dated to c. 31,000–30,000 uncal. BP) and most of them, 68 pieces, are of Roc-de-Combe sub-type bearing an alternate, ventral or just dorsal fine marginal retouch (e.g. Demidenko/Chabai 2012, 262, 263, 272, 273, 275, fig. 4B: 1–35, tab. 45–48). Their blanks, tiny twisted and off-axis microblades of a crescent-like shape, with a mean metrics for eight fully complete pieces in 18 mm length, 4.5 mm width, 1.4 mm thickness, were technologically connected to reduction of carinated endscraper-cores and burin-cores, including shouldered/nosed endscraper-cores. The function of Roc-de-Combe microliths was suggested to be arrowheads, used in pairs and mounted into mastic of a foreshaft for each composite arrow (see Demidenko 2012a, 301, 302; 2017, 191–195, fig. 1). Knowing so well the Roc-de-Combe sub-type of Dufour microliths from concrete Crimean Siuren-I *in situ* materials, it was also decided to group together the Crimean materials with also French finds from level 8 at Abri Pataud for a Pan-European scale c. 10 years ago (e.g. Demidenko/Noiret 2012, 352–357). In sum, Abri Pataud, level 8 retouched microliths are so far better to keep among Roc-de-Combe sub-type microliths with, however, a technological emphasis on their microblade blanks detachment from shouldered/nosed endscraper-cores. Most likely, Michel himself came to a similar conclusion on the Abri Pataud, level 8 microliths.

Finishing with lithic data from Abri Pataud, level 8, it is worth noting a raw material peculiarity known for shouldered/nosed endscrapers there. As a whole, level 8 Middle Aurignacians at Abri Pataud were very mostly using local lithic raw material resources, ca. 99.6% for all identifiable pieces (re-calculated from Michel 2010, tab. 26) but all with no exception shouldered/nosed endscraper-cores were on lithic that ‘... is primarily local and corresponds with materials which probably originated from the Vézère that flows a few dozen meters below the site...’ (Michel 2012, 121). At the same time, tools *sensu stricto* were made on local raw materials in a little lesser share, ca. 91.6% (re-calculated from Michel 2012, tab. 3). Thus, the Abri Pataud, level 8 tool-core reduction objects for bladelet reduction are of a ‘domestic character’ as all other artifact categories are. It allows us to suggest a base camp/residential/living site features with much emphasis on primary reduction processes at the site for the discussing Middle Aurignacian

occupation(s) at Abri Pataud. The few present organic artifacts further confirm the proposed site type suggestion.

Organic personal ornaments and tools are of a limited character at Abri Pataud, level 8. The former pieces are represented by a perforated red deer canine and an undrilled fossil mollusc shell fragment (Brooks 1995, 194, fig. 74: i, tab. XXV; Michel 2010, 87, fig. 28) and only two distal parts of bone awls/points and two bone 'coins/ciseaux' demonstrate the presence of the latter pieces (Brooks 1995, 200, fig. 78: a–c, tab. XXVI; Michel 2010, 88, fig. 30, tab. 24).

Geochronologically, level 8 was always virtually the same dated as level 7 above, ca. 32,000–31,000 uncal. BP 37,600–35,600 cal. BP (Higham et al. 2011, fig. 3, tab. 1; Michel 2010, tab. 23). New dating efforts for Abri Pataud Upper Paleolithic (UP) occupations, their results were not available yet for A. Michel during his PhD study, were realized in 2007–2008 and resulted with 31 new AMS dates for humanly-modified (cutmarks, retouchers, humanly smashed) ungulate bones (Higham et al. 2011, tab. 2). New results indicate dating of level 8 to 33,050 uncal. BP and it '... occurs between 37,550–36,960 cal. BP (68.2%) or 37,880–36,760 cal. BP (95.4%)... within... GIS-8, the long warmer interstadial that comes after the H4 event...' (Higham et al. 2011, 559, tab. 4). At the same time, level 7 was dated a little bit later, between 32,850–32,200 uncal. BP, during still GI-8 interstadial period (Higham et al. 2011, 559, tab. 4).

In short, the modern day French Middle Aurignacian based on Abri Pataud, level 8 data can be summarized as follows. In contrast to the dominating before hypotheses, Middle Aurignacian is a real distinct Aurignacian stage/industry geochronologically appearing in GI-8c, ca. 37,900–37,500 cal. BP (see Rasmussen et al. 2014, tab. 2). By lithic artifact data, it, first of all, differs from a part of the *D. de Sonneville-Bordes* (1960) Aurignacian II, as well as from Aurignacian III and IV and the recently defined three facies of Late Aurignacian (Bordes et al. 2011; Michel 2010), by a dominance of shouldered/nosed endscraper-cores for bladelet primary reduction and the absence/paucity of carinated burin-cores and a few in number wide-fronted carinated endscraper-cores. At the same time, it has no less than three distinct core reduction methods, flake, blade and bladelet ones with their own specific technological features, although MP-like specimens are absent among flake cores and a number of flake/blade cores are also present. It makes Middle Aurignacian the first much variable Aurignacian stage/industry in terms of core reduction methods while earlier Proto-Aurignacian and Early Aurignacian/Aurignacian I stages/industries 'could

not boast' of such a variety of primary flaking strategies. Due to the absence/paucity of carinated burin-cores, dihedral burins, which are usually an initial reduction stage of carinated burin-cores, are the least present in comparison to burins on truncation/transversal on lateral preparation and angle/transverse on natural surface type. Aurignacian blades and endscrapers on Aurignacian blades (a single example) can be said being about absent. The stated by A. Michel uniformity of Dufour microliths, either it is his of Pataud sub-type or still of Roc-de-Combe sub-type, does not seem to be of an absolute value. Looking at A. Michel's refits and technological reconstruction for shouldered/nosed endscraper-core and microblades (Fig. 2; Michel 2010, fig. 58; 2012, fig. 9), it is seen a series of morphologically variable detached microblades and it should be kept in mind some other retouch data for a part of microliths in level 8 of Abri Pataud as it is also well-known for Late Aurignacian having not only Roc-de-Combe microliths, like in the above-noted Siuren I rock-shelter (e.g. Demidenko/Chabai 2012, fig. 4: B: 1–35). From the technological point of view, it is also important to note that not all bladelets and microblades were detached exclusively from shouldered/nosed endscraper-cores or carinated tool-cores, being also flaked from some 'regular' bladelet and blade/bladelet cores on nodules/chunks why these bladelets/microblades do also morphologically vary. All in all, it means if there are more objects for bladelet/microblade reductions, then there are more morphologically different resulted products of these reductions. Therefore, retouched microliths should also have some variability. Organic artifacts are purely represented among level 8 of Abri Pataud with no any characteristic type pieces why they will be only discussed during analysis of Willendorf II, AH 4 artifacts, Austria (see below).

All the above-summarized Abri Pataud, level 8 artifact data will be used during subsequent analyses of assemblages from Eastern Central Europe proposed by us industrially related to Middle Aurignacian for now Pan-European scale, not just known in southwestern France.

SOME REMARKS ON LITHIC ARTIFACT ANALYSES

Basic principles on lithic artifact classifications and analyses were already established by us for a study of Proto-Aurignacian assemblages in the Carpathian Basin of Eastern Central Europe (Demidenko et al. 2021, tab. 1–5). The principles mostly follow the approach for classification of Aurignacian lithics

elaborated by one of us more than 10 years ago on a basis of many colleague's studies (*Demidenko 2012b*). At the same time, some minor but special additions were made.

As carinated *sensu lato* (including shouldered/nosed type pieces) pieces usually on debitage blanks are now functionally understood as both cores and tools, their each particular basic type is called tool-core, carinated endscraper-cores, shouldered/nosed endscraper-cores, carinated burin-cores. Shouldered/nosed pieces are with a dual 'first name' for special emphasis on unification of both pieces with a single made concavity and/or one-sided wide removal negative leading to a shouldered outlines for a piece's front/flaking surface and a double made concavity and/or two-sided wide removal negatives making a nosed-like front/flaking surface. Moreover, it is often not really possible to differentiate shouldered and nosed pieces one from another in a case with the presence of many such tool-cores in an assemblage why it is better to classify and keep them together. Still understanding the carinated *sensu lato* tool-cores with a two-fold function, it is also proposed to include them into both core-like pieces lists and tool lists for analyses of these two artifact categories. In doing so, it will be well seen shares of different carinated *sensu lato* pieces among both cores and tools. We will also escape a situation when now some colleagues (e.g. *Michel 2010*) put carinated pieces only into cores, fully erasing them from tool lists, why any reader of such text will have problems with understanding a tool-list and the entire site as an Aurignacian. Thus, we will follow both traditional (carinates within tools) and new technological (carinates among cores) approaches for better understanding of Aurignacian assemblages.

As a result, the core and tool lists are composed from the following most indicative classes and types.

Cores are subdivided into blade, blade/bladelet, bladelet 'regular', bladelet 'carinated' cores on nodules/chunks, bladelet carinated endscraper-cores, bladelet shouldered/nosed endscraper-cores, flake/blade, flake ones.

Tool-lists are made up of endscrapers (carinated, shouldered/nosed, double-triple shouldered/nosed, simple flat, on laterally/bilaterally retouched pieces, on blades with Aurignacian-like retouch, on Aurignacian strangled blades); burins (carinated, dihedral, on truncation/transversal on lateral preparation, angle/transverse on natural surface); *lamelles* with a fine lateral/bilateral retouch; Font-Yves/Krems points with a fine retouch; blades with Aurignacian-like strangled retouch; blades with Aurignacian-like retouch.

Regarding debitage pieces, it is worth reminding our subdivision of *bladelets sensu lato/lamelles* into bladelets *sensu stricto* (width between 7 to less than 12 mm) and microblades (width less than 7 mm; see *Demidenko 2012b*, 96, 97). The 7 mm 'metrical parameter Rubicon' between bladelets and microblades was proposed in dividing 12 mm into two halves excluding 1 mm wide hypothetical items that in reality do not occur in UP assemblages.

Having such the lithic artifact classification approach for assemblages representing different types of Aurignacian stages/industry types in the Carpathian Basin, it will be easy to see techno-typological characteristics of each stage/industry type in the end of our planned study, also summarizing their industrial similarities and differences.

MIDDLE AURIGNACIAN SITES AND THEIR ARTIFACT ASSEMBLAGES IN THE CARPATHIAN BASIN

A thorough observation of Aurignacian materials within the Carpathian Basin has led us to recognition 11 *in situ* sites and even surface find spots with artifact finds quite similar to the above-observed French Middle Aurignacian materials. These are Willendorf II in Lower Austria, Austria; Napajedla III, Žlutava I and Nova Dědina I, Milovice I in Moravia, Czech Republic; Nagyréde 1 and 2 in Hungary; Medzany I and II in Eastern Slovakia, Slovakia; Crvenka-At and Bukovac cave in Serbia (Fig. 1). Only the latter site in Serbia is a cave site, while all the rest sites are open-air sites and surface loci. It can be said that *in situ* and well published find complexes from Willendorf II, AH 4 (Archaeological horizon 4) and Napajedla III are the most reliable materials for understanding of Middle Aurignacian record in the study region. Therefore, analyses of the two sites' data will be represented in the most detailed way in the present article. At the same time, find complexes from each of the other sites and loci much add for insights of Middle Aurignacian variability in terms of both its industrial and human occupation characteristics and peculiarities.

WILLENDORF II, AH 4 (AUSTRIA)

Site location and research history

The site is situated in Wachau Valley on the left bank of the Danube River in Lower Austria, about 80 km west of Vienna (Fig. 1). This is north-western corner of the Carpathian Basin already at piedmonts of Bohemian Massif. Actually, Willendorf II is one of

the eight closely located UP sites, Willendorf I and Willendorf I/Nord to Willendorf VII (*Felgenhauer 1956–1959*, 3–6, fig. 1–11; *Nigst 2012*, fig. 13). At the same time, since the sites discovery and field studies starting from 1908, Willendorf II had been the best investigated site with as yet the longest known loess–paleosoil stratigraphy sequence and Initial UP (?)/Early UP–Middle UP multi-layered archaeological record within the site group. The site also has a long history of archaeological and geological investigations that can be grossly subdivided into four following stages:

1. between 1908 and 1927 during 1908, 1909, 1913 and 1927 archaeological campaigns realized by J. Szombathy, H. Obermaier and J. Bayer (*Bayer 1930; Szombathy 1909; 1910*);
2. in 1955 with new site's archaeological excavations added by a re-analysis of the previously discovered finds and data resulted in published book composed of three volumes by F. Felgenhauer and F. Brandtner (*Felgenhauer 1956–1959*);
3. in 1981 and 1993 with some limited site's lithological profile studies and sampling for mainly radiocarbon dating by P. Haesaerts, M. Otte and G. Trnka (*Damblon/Haesaerts/Van der Plicht 1996; Haesaerts et al. 1996*);
4. between 2006 and 2011 with the site's stratigraphy more understanding and dating aiming basically studies of Early UP archaeological horizons (AH) 3 and 4 and again some artifact re-analyses for Early UP AH 2–4 by P. R. Nigst and P. Haesaerts (e.g. *Nigst 2006; 2012; Nigst et al. 2014*).

The important for the present study AH 4 was excavated in 1908, 1909, 1913, 1927 and 1955 numbering almost 2,500 lithic and ca. 30 bone/antler/ivory artifacts thanks to P. R. Nigst's extra artifact sample added to the long-known collection in 1,120 more lithics found by him in 2007 in a wooden box after 1908–1909 excavations stored in the cellar of the Museum of Natural History Vienna (see *Nigst 2006*, 286, 287; *2012*, tab. 12; 77). It is needed to note a series of technologically important refits for some lithic artifacts P. R. Nigst and L. Moreau did for some AH finds (see below). Namely the P. R. Nigst's recent published AH 4 data will be basically used for our artifact analysis, although some important information coming from the 1950s records (*Felgenhauer 1956–1959*, 56–58, fig. 24–26), the 1970s personal artifact analysis by J. Hahn (1977) and some of the studies made by N. Teyssandier in the late 1990s (*Haesaerts/Teyssandier 2003*), and, finally, by one of us (Yu. E. Demidenko) some personal observations of AH 4 artifacts at Natural History Museum Vienna in May of 2019 will be also used for more artifact understanding. Due to these several and different

to a considerable extent from one another of artifact information sources, the following below AH 4 artifact data are represented in a very detailed way with many remarks and clarifications.

Stratigraphy and geochronology

AH 4 is the uppermost Early UP AH within the site's overall stratigraphy sequence underlying the lowermost Middle UP, Early Gravettian AH 5 (*Nigst 2012*, fig. 16; 18; 19). AH 4 is 'documented in the Stratigraphic Unit C4, corresponding to a distinct period of soil development' (*Nigst 2012*, 78), correlated by P. Haesaerts with Huneborg II/Schwallenbach II paleosoil and chronologically related to the strict period in ca. 32,100–31,200 uncal. BP/36,300–35,400 cal. BP based on three 1990s dates of charcoal samples (*Haesaerts/Teyssandier 2003*, fig. 4; *Nigst 2012*, 74, fig. 18; 19, tab. 11; *Nigst et al. 2014*, fig. 1, S17–S19) that is, high likely, geochronologically correlated with Greenland Interstadial (GI-7). From one of us (Yu. E. Demidenko) personal observations of Willendorf II artifacts from the Early UP AHs and reading of all available published stratigraphy data, it appears that AH 4 is the only AH among all four Early or even Initial UP AHs at the site that is truly characterized by both industrial and stratigraphy homogeneity with almost no occurrence of other UP industry's artifacts and/or stratigraphy integrity problems. Simultaneously, now Demidenko considers finds on silicic limestone and red radiolarite from AHs 2–3 are of definite Initial UP (?)/Early UP industrial heterogeneous (!) character with no, however, Szeletian and/or Bohunician features there, and AH 1 is with unclear at all industrial features for only three dubious lithics. There is only a single exception for the subject on possible artifact heterogeneity for AH 4. There is a backed bladelet piece among AH 4 tools (Fig. 8: 1; 9: 2; *Felgenhauer 1956–1959*, fig. 24: 8; *Hahn 1977*, pl. 98: 16). From the UP industrial point of view, such the piece personally seen by Yu. E. Demidenko in 2019 (this is probably a partial unfinished backed micro-Gravette point, 35 mm long, 6 mm wide, 3 mm thick) cannot belong to an Aurignacian tool-kit, although strangely enough both N. Teyssandier and P. R. Nigst just listed but not described and illustrated it in contrast to the F. Felgenhauer's and also J. Hahn's drawings among AH 4 tools (*Haesaerts/Teyssandier 2003*, tab. 3; *Nigst 2012*, tab. 115). Looking at the site's stratigraphy profiles (e.g. *Felgenhauer 1956–1959*, tab. 63; 82; *Nigst 2012*, fig. 19; *Nigst et al. 2014*, fig. 1), it is seen no more and even less than ca. 50 cm of loess sediments separating the discussing here AH 4 and above it AH 5 with Early Gravettian artifacts,

including among them backed bladelets and micro-points (e.g. *Felgenhauer 1956–1959*, fig. 29: 6–20). Although P. R. Nigst did not find any convincing stratigraphy problem signs on some possible artifact mixing for AHs 3 and 4 (see *Nigst 2012*, 78–80), it is still possible remembering understandably gross excavation methods during the site's studies in a period between 1908 and 1955. Here it is also worth looking at AH 5 Early Gravettian lithics where, as it was expected (*sic!*), we recognize a few carinated and shouldered/nosed endscraper-cores (e.g. *Felgenhauer 1956–1959*, fig. 28: 8; 29; 30), the most characteristic AH 4 Aurignacian tool-core types. Finally, L. Moreau made a refit for an AH 5 bladelet and an AH 2 bladelet core with a certain conclusion then that the two pieces have to belong to AH 5 (*Moreau 2009*, 279, 280, fig. 155: 2; *Nigst 2012*, 80, fig. 21). As a result, there was still mutual but minimal vertical 'artifact exchange' between AHs 4 and 5 why the above-discussed partial and unfinished micro-Gravette point should be removed from AH 4 tool-list and definitely considered belonging to AH 5.

Lithic artifacts

According to the most complete and detailed P. R. Nigst's data (*Nigst 2012*, tab. 77), AH 4 lithic assemblage accounts 2,452 pieces, although 23 natural 'manuports' were also included into these numbers.

Raw materials

By the identified raw materials for 2,402 artifacts, a great majority of pieces are represented by various hornstones (1,948/81.1%) and silicic limestones (416/17.3%; re-calculated from *Nigst 2012*, 138, fig. 94 left). Origin sources of the raw materials are not clear yet for us in terms of exact shares of local and non-local raw materials. On one hand, it is said: *'The majority of the objects belong to NUs whose raw material is attributed to exogenous sources. The intermediate and regional sources are represented by only a few pieces'*. But, on the other hand, it is continued this way: *'The local raw materials form the second largest group. A lot of these raw materials might have been transported to the site from further away, but as they might occur in the local available Danube gravels², they have been labelled as local raw materials'*. There was also an important note for some hornstone artifacts *'introduced to the site at already a reduced stage'* (*Nigst 2012*, 138) meaning for us from a distant source. At the same time, the Yu. E. Demidenko's personal look at AH 4 artifacts in 2019 has allowed him to

make the following basic raw material observations. It looked so that namely erratic flint items of Silesian origin from Northernmost Czech Republic and Southern Poland occupies a significant share in the assemblage. Moreover, many shouldered/nosed endscraper-cores, the most typical tool-core type in AH 4, are also on erratic flint. There are also many artifacts on chert of Krumlovský les-type and also radiolarite, the raw materials of non-local for Willendorf micro-area but of regional origin for Lower Austria. Local hornstones and silicic limestones are also represented. Here it is also worth noting the 'flint remark' from Teyssandier: *'nosed endscrapers... are generally made on small flakes of a high-quality flint'* (*Haesaerts/Teyssandier 2003*, 148). Having all these raw material uncertainties, it is still evident a very significant role of non-local and especially distant raw materials used by AH 4 human groups at the site with just some supportive role of the local lithic sources that will be additionally well seen through some debitage, core and tool data (see below).

Artifact descriptions

As the most detailed artifact data for AH 4 were also published by P. R. Nigst (2012), our description and analysis will basically follow his way of representing data with, however, a number of our reservations and considerations on proposed by him several very distinct one from the other primary reduction processes. This is why our data will start not from core-like pieces but with debitage as cores were strangely classified and analysed by P. R. Nigst in a limited descriptive way.

Debitage

Despite the known fact that each Willendorf II AH was excavated not only by shovels but also with knives (*Nigst 2012*, 79, fig. 20), however, there was not done any screening of the artifact-bearing sediments during the site's excavations in 1908–1927 and 1955. So, these were regular not bad but with no screening/sieving Palaeolithic excavations in the first half of last c. This is why it is surprising to see 181 bladelets *sensu lato* with a weird width criteria no more than 10 mm (microblades were not separately defined and analysed by *Nigst 2012*, 43) and 205 chips (tiny flaky items no exceeding 10 mm).

At the same time, 1,356 flakes compose more than a half of the entire assemblage (55.3%). Having flake size starting from 10–11 mm for Willendorf II, while it usually starts from 15 mm and all flaky speci-

² Yu. E. Demidenko – less than 1 km right below the site.

mens under 15 mm go to chips for most analyses of Eurasian UP assemblages (e.g. Demidenko 2012b, 96; Kaczanowska/Kozłowski/Sobczyk 2010, 144; Kozłowski et al. 1982, 122; Marks 1976, 374), there is a problem because a share of flakes would drop into chips with our regular artifact classification approach (with under 15 mm for chips) making respectively a number of chips higher and of flakes lower. Unfortunately, from the published flakes' metric data (Nigst 2012, tab. 110; 111) is impossible to re-calculate in a precise way numbers of chips and flakes. But still some re-calculations and considerations is possible to make. First, P. R. Nigst's notion '*... most of the flakes are quite small (10–30 mm)...*' (Nigst 2012, 163) is worth taking into consideration here. Second, of the 1,356 recognized flakes only a part, albeit a numerically significant part, was possible to measure, 825 pieces/60.8% (Nigst 2012, tab. 110; 111). All the measured flakes were subdivided into nine length intervals in 10 mm each up to 90 mm. The length intervals showed both no presence of any flake longer 90 mm and the strange-looking occurrence of 124 flakes less than 10 mm long. The latter pieces are probably not listed among chips due to their width larger 10 mm, although width and thickness data were not measured at all by P. R. Nigst. Anyway, flakes of three length intervals (0–30 mm) account together 737 items (including 10–20 mm – 484 pieces; 20–30 mm – 129 pieces), 89.3% of all the measured 825 flakes. At the same time, the longest flakes of three length intervals (60–90 mm) only account together 10 items, 1.2%. As a result, no less than 200–250 flakes would be re-classified as chips less 15 mm and it can make the flake number lower. Anyway, any accounts demonstrate really the great dominance of small flakes presence in the assemblage. Usually, it means a low significance of on-site and, at the same time, mostly off-site realized initial lithic primary reduction processes for AH 4 artifacts. Such the position is further supported by the P. R. Nigst's 'decortication and initial core preparation' data. He noted: '*Objects representing the decortication and initial core preparation phase (>66% cortex) are represented by 4.08% (n = 99) of the assemblage. The majority (72.53%; n = 1761) of the lithics belongs to the 0% cortex-class...*' (Nigst 2012, 144, tab. 78). Thus, most of on-site lithic reduction processes were done using pieces brought to the site in the already prepared and/or reduced forms. This is why again becomes understandable the presence of both a few flakes longer 6 cm (they could not be lost during the site's 'old fashioned' excavations) and the very most occurrence of small flakes (they were certainly well collected during the last century's 'primitive' excavations) within the AH 4 debitage. Furthermore, AH 4 flakes were likely a result of various reduction object's re-preparation

flaking processes and nearly any of large-sized flakes were not on-site detached (but see below one of the refitted blocks; Nigst 2012, fig. 74) and then used for carinated piece's production and then reduction. In sum, again the P. R. Nigst's 1,356 flake sample probably represents a nearly real sample of the particular debitage category, still keeping in mind that at least ca. 200–250 of them would be better to keep among chips.

Bladey debitage is numerically much less represented in comparison to the flakes, 56 blades and 181 bladelets (Nigst 2012, tab. 77). They make the entire debitage sample in 1,593 specimens as follows through the P. R. Nigst data where, it has to be remembered, tool-debitage blanks from the analysis beginning were included into the list of all artifact categories (Nigst 2012, tab. 77): 1,356 flakes (85.1%), 56 blades (3.5%), 181 bladelets (11.4%). While even a few of blades cannot be suspected being lost during the site's 'old fashioned excavations', bladelets were definitely under the main 'threat of loss' at that time, despite the fact that bladelets outnumber blades in proportion 3.2 to 1. Blades are represented by about usual for UP assemblages' shares of complete (15 items/26.8%) and variously fragmented their parts (13 proximal, 17 medial and 11 distal examples; Nigst 2012, tab. 80). No one blade is a primary cortical, while only a quarter of all blades bears some cortex (15 examples/26.8%; Nigst 2012, tab. 81). As most flakes (66%), blades are even characterized by more pieces with unidirectional scar pattern (43 items/89.6% among all recognized dorsal scar pattern types; Nigst 2012, tab. 86). Although triangular profiles at midpoint significantly dominate among the recognized by this attribute blades (30 examples/57.7%), trapezoidal profiles also deserve a special attention indicating their serial and systematic detachment (19 examples/33.9%). Remembering more than probable loss of at least several hundred and even a thousand of tiny bladelets (namely, microblades narrower 7 mm wide) during the site's excavations, a share of blades objectively should be even much lower in comparison to bladelets. It is, of course, poses a question on an independent blade reduction within AH 4 core reduction actions. P. R. Nigst (2012, 144, 145) stated '*there are no blade cores represented*' and they are indeed not seen among the cores. However, from our point of view, there are still some cores where some blade reduction was realized in a combination with some other debitage piece types, e.g. flake/blade and blade/bladelet cores (see below). Such the subordinate blade core reduction for the considering Carpathian Basin Middle Aurignacian is a common technological feature as it will be repeatedly shown for the region's other Middle Aurignacian assemblages.

Bladelets are different from the blades not only by a greater quantity. P. R. Nigst (2012, 149–162) has defined two kinds of such tiny debitage pieces: 171 bladelets themselves and 10 burin bladelets. The latter pieces from suggested burin-cores are mainly morphologically understandable for us through their non-twisted general profiles with some of them having left off-axis orientation. Much more numerous ‘regular’ bladelets are supposed to be removed from both ‘prismatic cores’ and ‘carinated/nosed endscraper-cores’. Such the reduction origins’ bladelets have in 46.2% twisted general profiles and in 65.5% off-axis orientation with prevalence of right over left off-axis data (Nigst 2012, fig. 92; 93, tab. 98). Here it should be noted that we use the traditional orientation system of naming right/left debitage pieces’ lateral edges looking from the butt area/proximal end (e.g. Debénath/Dibble 1994, fig. 2.3) in opposite to the P. R. Nigst’s (2012, fig. 8) approach with orientation of cores and debitage pieces from their distal ends. This is why we had to convert his right/left orientation for some pieces into the traditional system.

Going through all the P. R. (Nigst’s 2012) debitage data and proposed by him strict connection for each debitage type and sub-type with a definite and concrete reduction object, various cores and/or tool-cores, it looks indeed too rigorous, not reflecting technological flexibilities, problems and even mistakes during primary reduction processes. Here it is also worth noting that he really understands each core-like piece as serving for production of a single debitage type’s pieces while it is often (!) not that way but with several debitage types’ removed for each particular core in real UP assemblages (e.g. Demidenko 2012b, 93). All the related our concerns on the matter are listed below during core and core-tool piece reconsiderations. Moreover, all possible core-like pieces will be also discussed with technologically connected core maintenance products (CMP) demonstrating a variety of core preparation and especially re-preparation processes.

Core-like pieces and CMP

Blade-related pieces

Remembering the stated by P. R. Nigst absence of blade cores in AH 4 assemblage, this subject deserves a priority consideration. Although a list of cores and their types is absent in the P. R. Nigst (2012) book, it is possible to extract some core-related data from his each debitage type production dataset. Moreover, CMP are also of some help here. Coming to the so-called separate ‘blade production’, it is seen not only 56 blades there but also associated with

them five crested blades and 10 core tablets (Nigst 2012, 144). Having the CMP together with blades themselves is impossible not to have cores with blade reduction. In reality, they are present among the few of all numbered by P. R. Nigst 38 cores in a view of illustrated not just strictly speaking blade cores but of a flake/blade double-platform orthogonal sub-cylindrical core with refitted flakes, a blade and a core tablet interpreted by P. R. Nigst as a flake core (Fig. 3: 1; Nigst 2012, fig. 74), and two blade/bladelet single-platform unidirectional sub-cylindrical cores understood by P. R. Nigst as ‘prismatic unidirectional bladelet cores’ (Fig. 3: 2; 4: 1; Nigst 2012, fig. 96; 97). High likely, the above-noted three cores with some blade removal negatives are not the only such cores among the AH 4 core assemblage taking into consideration that of the listed 28 ‘flake cores’ no one was illustrated by P. R. Nigst and, at the same time, last of all three defined ‘prismatic bladelet cores’ was not illustrated either. These data allow us to suggest that some more flake/blade and one more blade/bladelet cores can be in reality present. Such the reduction situation with seeming only occurring cores bearing a combination of blade and flake or bladelet removal negatives probably indeed indicates a technological subordinate role of blades and their detachment from cores. It looks like blades were mainly serving for some convexity preparation and re-preparation on cores’ flaking surfaces for then striking off flakes or bladelets, being, however, not strictly speaking lateral/débordant blades. Five crested blades (Nigst 2012, fig. 72) were supplementary items for some core initial preparation actions. Looking also at tool-blank data (Nigst 2012, tab. 116), it is only seen eight tools and tool-cores on blade-blanks (4.8%). Accordingly, blades, the least numerically represented debitage type, were not purposeful core reduction target products for then some systematic tool making processes at the site for AH 4 humans but were only a sort of accompanying technological products. Therefore, it was no on-site and/or off-site ‘blade production’ at AH 4.

Flake-related pieces

Of all the declared 38 cores, not including among them carinated *sensu lato* tool-cores, 28 (73.7%) were recognized as flake core, although no one of them was illustrated. Their category classification was done on a very basic level and for 27 cores:

1. initial ‘cores with only one or two scars (type A; raw material testing?’ – 4 items;
2. so-called platform ‘type D cores’ – 21 items; ‘core type F (multidirectional cores)’ – 2 items (Nigst 2012, 162).

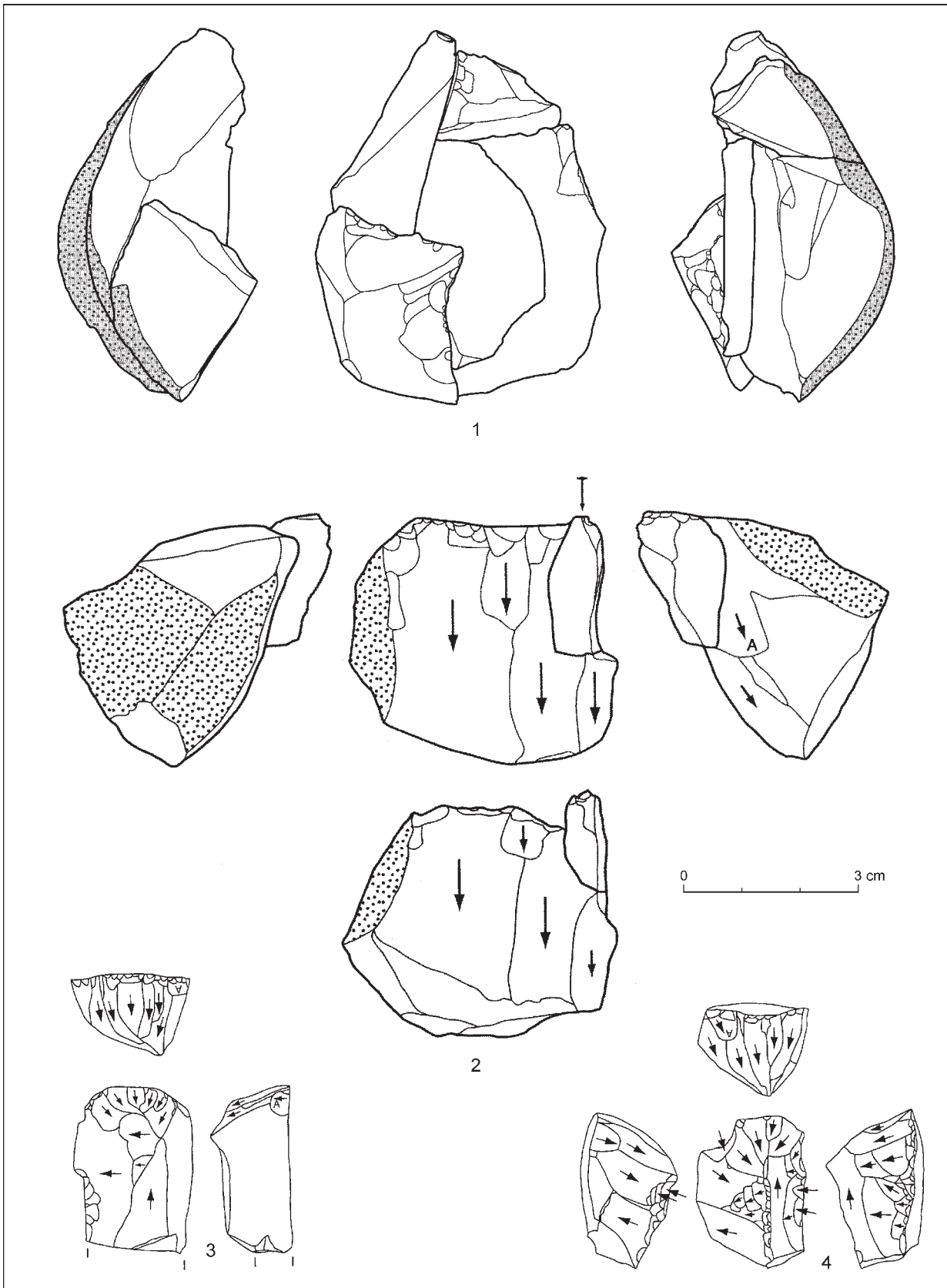


Fig. 3. Willendorf II, AH 4 (Austria). 1 – flake/blade core with refitted flakes, a blade, a shouldered/nosed endscraper-core and a core tablet; 2 – blade/bladelet core; 3 – carinated endscraper-core; 4 – shouldered/nosed endscraper-core (artifact illustrations modified after *Nigst 2012* with the present article authors' classification).

Having such more than scarce core data and no their illustrations, there is no any certainty in their understanding. Adding to the cores again not described 21 crested flakes, it is only possible to say that circa one mean and not initial but really flaked core correlates with circa one crested flake that possibly might indicate some intensive reduction with re-preparation of striking platforms and/or flaking surfaces. Flake data (Nigst 2012, 162–166) did not answer many technological questions and, first of all, to what reduction processes and/or stages certain flakes correspond. Having 484 (66%) flakes with unidirectional scar pattern among all 733 identifiable through this attribute flakes does not make much sense remembering that unidirectional flakes always dominate in any UP assemblage. Moreover, the provided core set analysis does not answer to what purpose namely flake cores, which greatly dominate, served. It is especially important remembering AH 4 industrial relation to namely Middle Aurignacian with a characteristic prevalence of both flake cores and flakes, such the single technologically exceptional industry type among all the known Aurignacian industry types, that is understandable through the serial presence of carinated and especially shouldered/nosed endscrapper-cores being basically prepared on thick flakes. The problem situation is not saved by some metrical data comparisons between flakes within the debitage and flakes as blanks for carinated and shouldered/nosed endscrapper-cores with many tiny chip-sized flakes among debitage.

'The carinated/nosed endscrapper-cores are produced predominantly on thick flakes. The second largest group of original forms/blanks of the carinated/nosed endscrapper-cores could not be identified without doubt due to heavy reduction, but it is thought that most of them also were flakes. ... When comparing the blanks with preserved proximal end it is evident that the platform width and thickness of the flakes used as blanks for carinated/nosed endscrapper-cores are significantly larger than the ones of the flake debitage (fig. 89 and tab. 101). Also, the length, width, and thickness measurements are significantly larger with the flakes used as blanks for carinated/nosed endscrapper-cores. These findings suggest a selection of large and thick flakes as blanks for the carinated/nosed endscrapper-core production. Although, the data does not allow to distinguish if there was a separate reduction sequence for the production of these flakes or the thick flakes were selected from the existing pool of flakes from core preparation and/or flake debitage...' (Nigst 2012, 158–160).

From the above-noted metrical comparisons it is, however, not clear at all the following important subjects. 1) All 90 initially large-sized tool-core blanks were probably detached on-site from

the assemblage's 24 'regular' flake cores. Then all the produced large debitage items were used as the tool-core blanks. And the further realized endscrapper-core reduction has led to flaking of many small-sized flakes now dominating among the flake debitage sample. 2) Or very most of the tool-core debitage blanks were brought to the site already somewhere off-site detached and it leads to a situation when the assemblage's flake cores and flake debitage samples do not correlate by numbers and size data with the tool-core blanks? Taking into consideration almost in four times numerical prevalence of the larger-sized tool-blanks over smaller-sized flake cores at AH 4, the latter suggestion appears to be more likely. Here it is also worth remembering that carinated and shouldered/nosed endscrapper-cores in various true Aurignacian industries and their assemblages, including the discussing Middle Aurignacian type, were most likely so-called 'curated pieces' with possibilities to carry them from one to other loci multiply and perhaps even differently and repeatedly using them from time to time. Therefore, some more studies of the AH 4 tool-core blanks, flake cores and flakes themselves and their correlation between each other are still needed.

Bladelet-related pieces

As was already mentioned above, P. R. Nigst proposed three reduction types of core-like pieces for bladelet production: burin-cores, carinated and shouldered/nosed endscrapper-cores, and prismatic cores (Nigst 2012, 148–162). Burin-cores, however, are of a problematic subject at AH 4. Although there is a single combined tool, a simple endscrapper + burin of unspecified type (Fig. 4: 2; 9: 1) which burin's part is proposed to be considered as a burin-core with refitted to it a single detached primary burin spall (Nigst 2012, fig. 81; 82), it is not a multi-faceted burin-core and usually only such burins are interpreted as burin-cores for some bladelet/microblade reduction. Thus, traditionally recognized burin-cores are absent in AH 4. The proposed to be connected with them 10 burin bladelets do not look convincing as such pieces either, especially looking at four of them illustrated (Nigst et al. 2014, fig. 75; 83). Instead, we would rather suggest the technological connection of these 10 bladelets with three blade/bladelet cores, the P. R. Nigst's 'bladelet prismatic cores', for which he did not find any technologically related bladelets in AH 4. Accordingly, the only burin-cores left are firstly defined by P. R. Nigst for actually more morphologically looking at least five shouldered/nosed endscrapper-cores with a lateral burin spall's

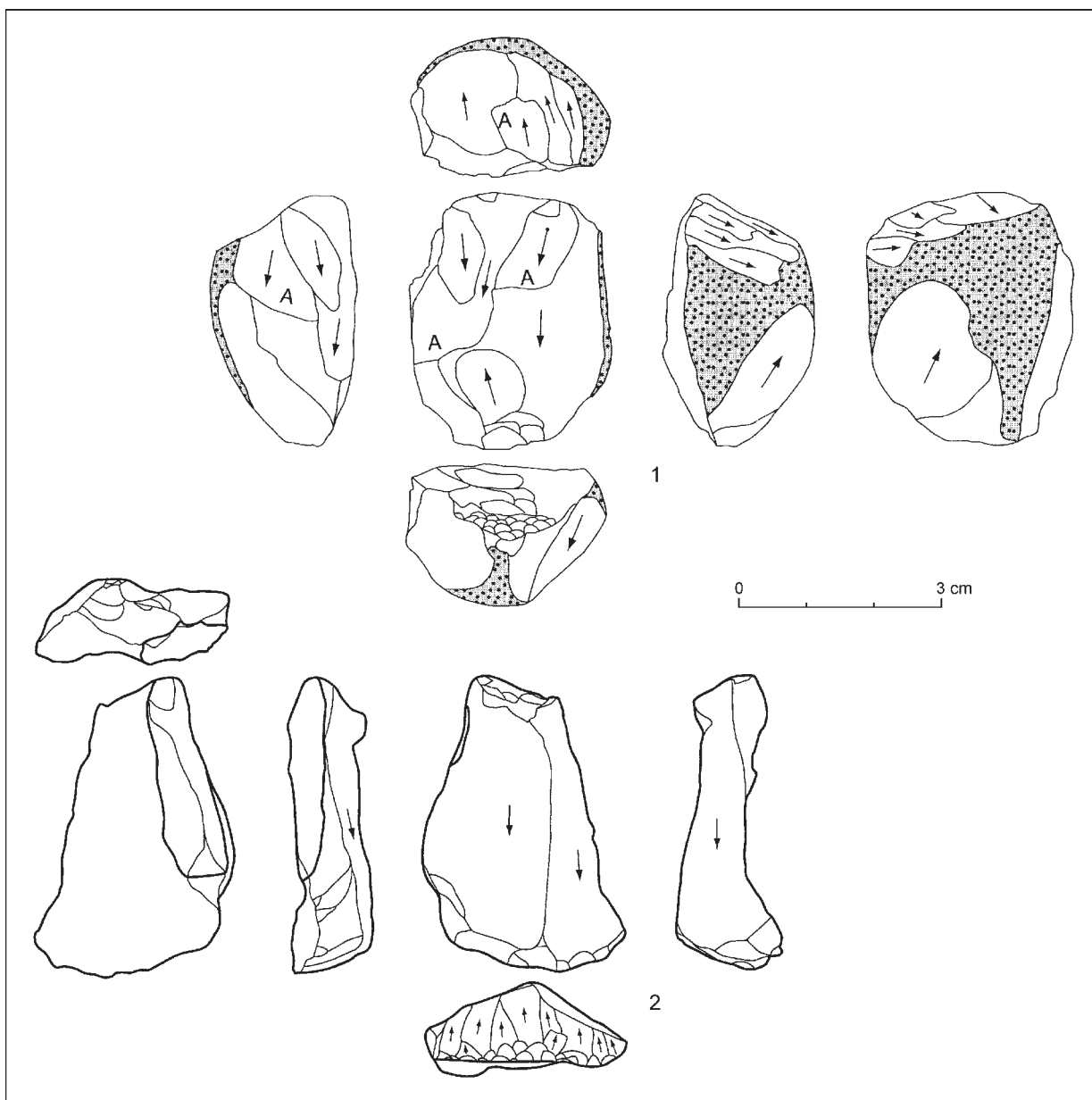


Fig. 4. Willendorf II, AH 4 (Austria). 1 – blade/bladelet core; 2 – simple endscraper + angle burin with a burin spall refitted (artifact illustrations modified after Nigst 2012 with the present article authors' classification).

removal negative coming from the shoulder/nose termination (Fig. 5; Nigst 2012, fig. 76–80). The pieces were before classified as burins on truncations (Fig. 6: 14–16; Hahn 1977, pl. 98: 6, 8). From our point of view, the P. R. Nigst's association of burin-like bladelet removals from shouldered/nosed endscraper-cores is very correct. There is, however, a reservation from our side on such, let us say, burin-endscraper-cores. It looks more likely that the pieces were first prepared as shouldered/nosed endscraper-cores, functionally used as tools and/or cores or not used at all in a case of an unsuccessful preparation (e.g. Fig. 6: 16), and only then the

pieces' shouldered/nosed termination was used in an *ad hoc* manner as a prepared striking platform for a burin spall detachment. The proposed interpretation of the burin-endscraper-cores is further strengthened by the fact that aside from a single such piece with refitted secondary burin spall demonstrating no less than two detached burin spalls (Nigst 2012, fig. 80), all other such pieces are characterized by removal of just one burin spall. Moreover, the detached burin spalls (e.g. Nigst 2012, fig. 79; 80) do not show any morphological standardization and were likely even often of an unsuccessful overpassed character. In addition, it

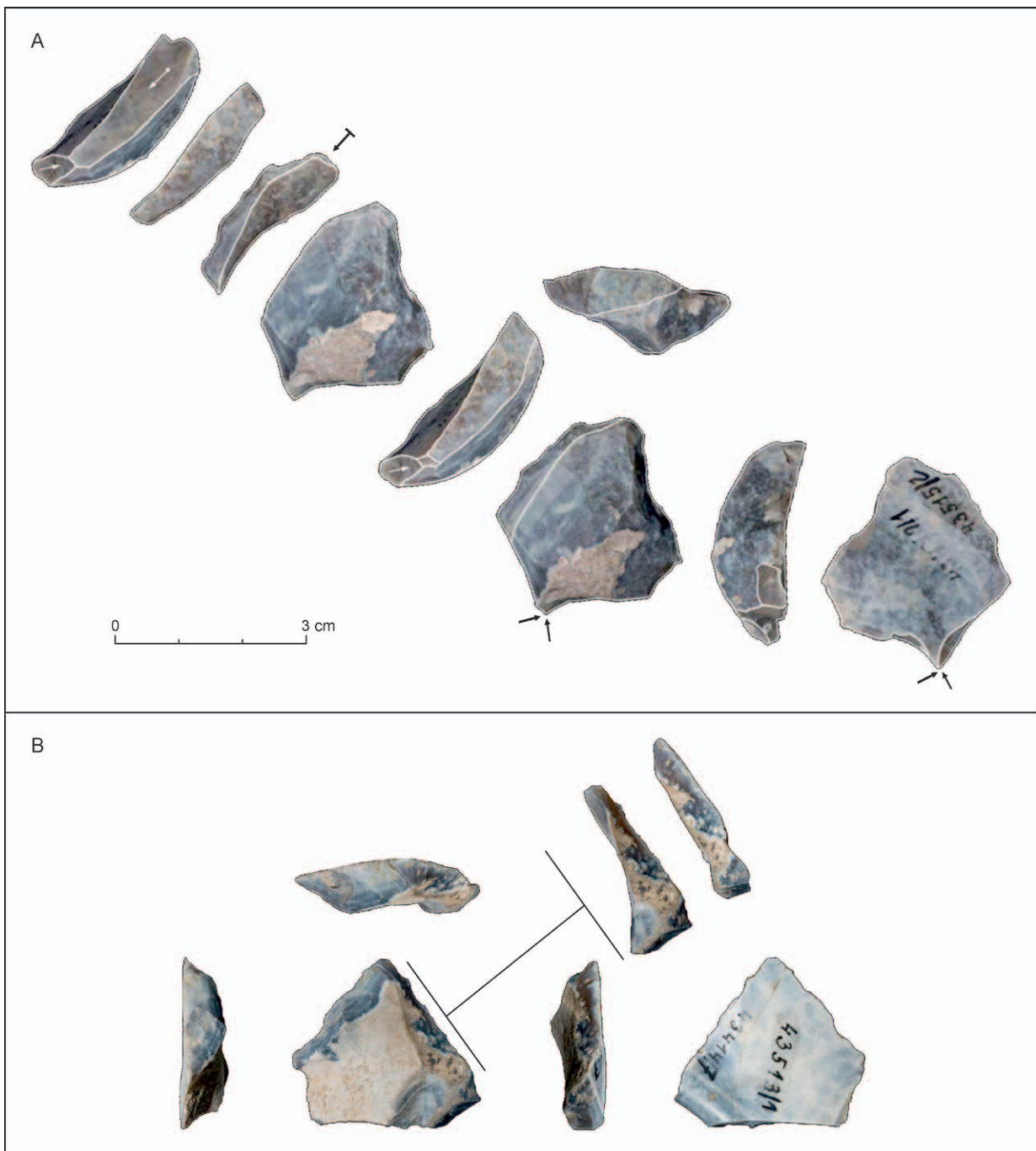


Fig. 5. Willendorf II, AH 4 (Austria). Shouldered/nosed endscraper-cores with refitted burin spall (modified after Nigst 2012, fig. 79; 80).

is also obvious that microblades from shouldered/nosed endscraper-cores themselves were much tinnier than coming then burin spalls. Therefore, the resulted burin spalls or burin bladelets are again of a random character, probably, appearing to be burin-related endscraper-cores by a chance.

In sum, having no real both bladelet cores on chunks/nodules and burin-cores but instead seeing the presence of a few blade/bladelet cores and

burin-endscraper-cores with no systematic and standardized at all just the *ad hoc* bladelet reductions, the only true bladelet (actually for very mostly microblades with width less than 7 mm) reduction was realized by AH 4 humans by using carinated and shouldered/nosed endscraper-cores (Fig. 6: 1–13). Here, however, plays some 'bad role' the site's 'old fashioned excavations' with no dry screening and/or wet sieving of artifact bearing

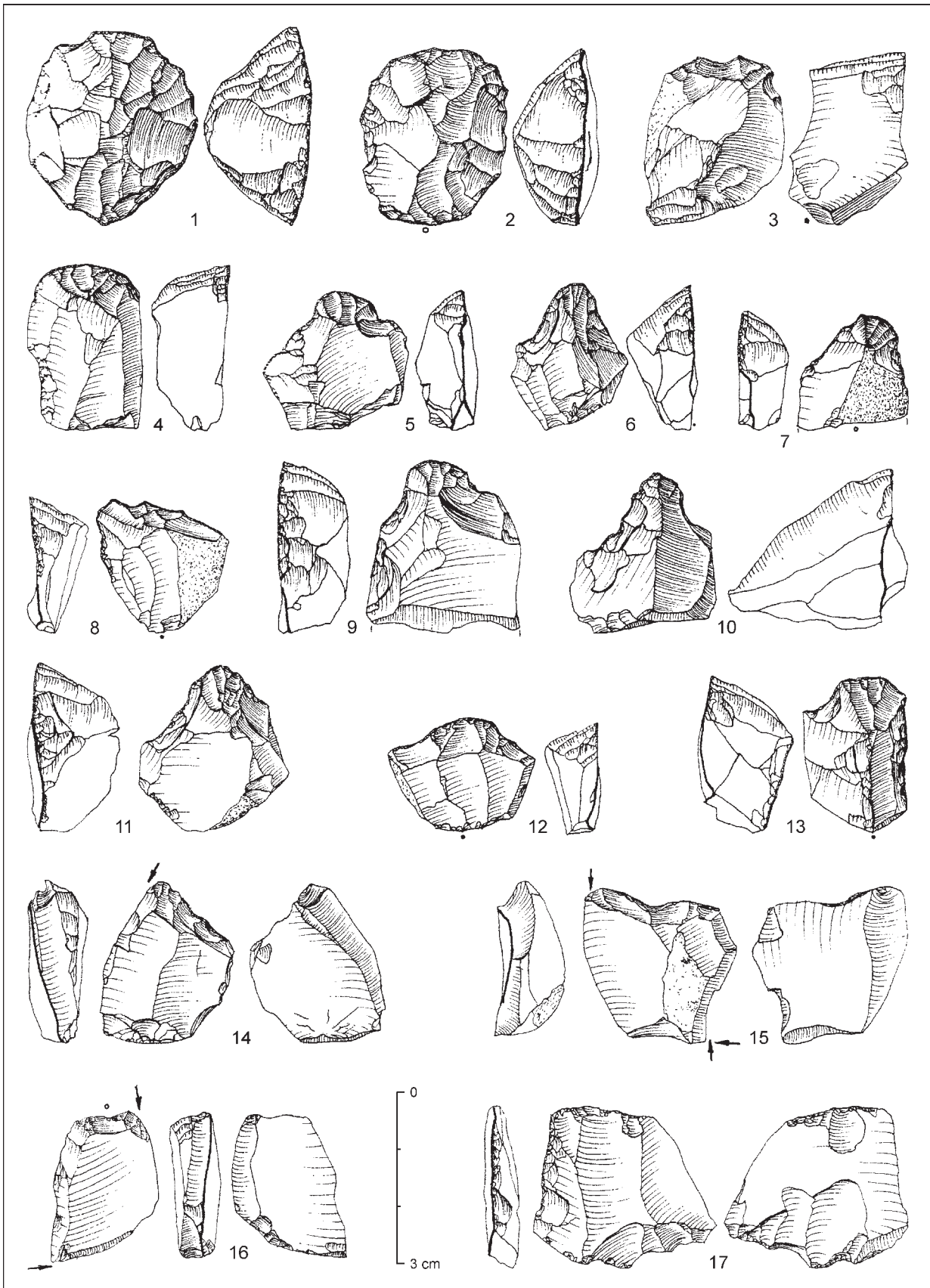


Fig. 6. Willendorf II, AH 4 (Austria). 1–4 – carinated endscraper-cores; 5–13 – shouldered/nosed endscraper-cores; 14–16 – burins; 17 – splintered piece (artifact illustrations modified after *Hahn 1977* with the present article authors' classification).

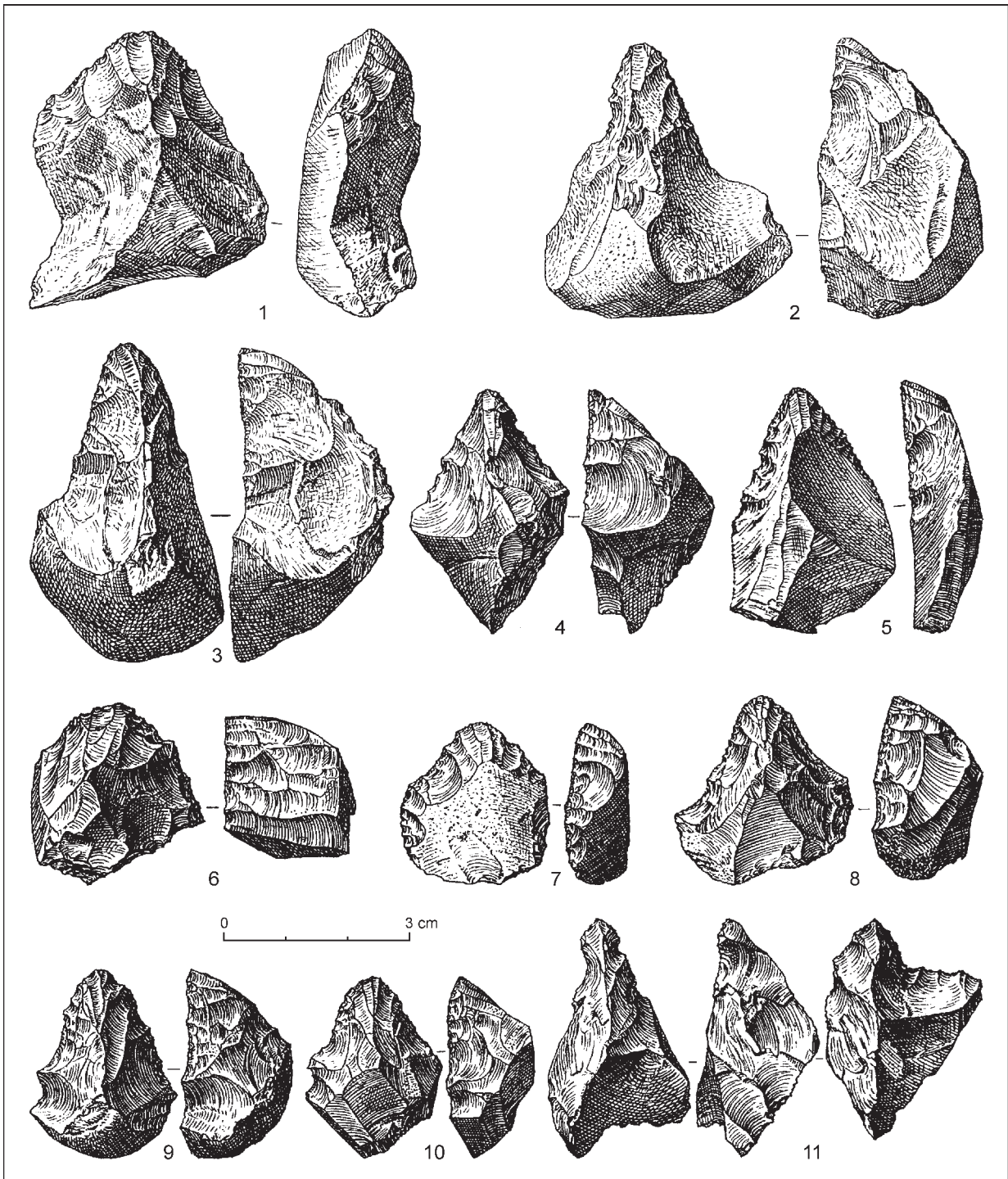


Fig. 7. Willendorf II, AH 4 (Austria). 1, 6 – carinated endscraper-cores; 2–5, 7–10 – shouldered/nosed endscraper-cores; 11 – double alternate shouldered/nosed endscraper-core (artifact illustrations modified after Felgenhauer 1956–1959 with the article authors' classification).

sediments why at least 90% of resulted microblades from the endscraper-cores were certainly lost. This is because microblades are really tiny that is well demonstrated by various metrical data with mean indices as follows: 13.8 mm long, 5.6 mm wide, 1.7 mm thick (Nigst 2012, tab. 92). Such the micro-

blade metrics also indicates that the recognized 21 carinated endscraper-cores are still with rather narrow fronts/flaking surfaces and mainly having convergent order of microblade removal negatives (Fig. 3: 3, 4; Nigst 2012, fig. 85: 1). By these morphologies, the carinated pieces are similar to much more

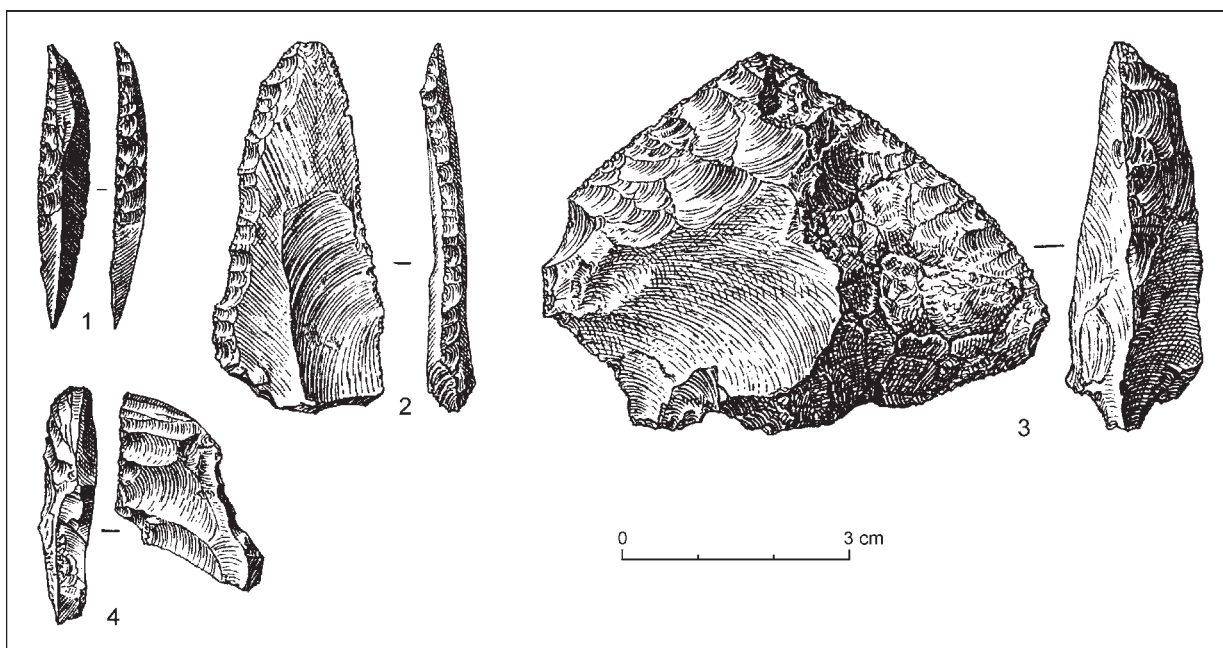


Fig. 8. Willendorf II, AH 4 (Austria). 1 – unfinished partial backed bladelet; 2 – retouched blade; 3 – side-scraper; 4 – carinated burin-core (artifact illustrations modified after *Felgenhauer 1956–1959* with the article authors' classification).

numerous 59 shouldered/nosed endscraper-cores (but adding to them the above-analysed five burin-endscraper-cores a number of the shouldered/nosed items increases up to 64 examples) which even in some cases have so narrow terminations that someone not knowing well carinated pieces would name them as 'carinated pointed items', or something like that (Fig. 7: 2–5, 7–11; *Nigst 2012*, fig. 86–89). Three times numerical prevalence of the shouldered/nosed pieces over the carinated ones (Fig. 7: 1, 6) with still rather narrow fronts allow us a suggestion that the latter items might represent, at least partially, a sort of initial reduction stage for shouldered/nosed items (Fig. 3: 3, 4). In addition to the carinated and shouldered/nosed endscraper-cores, P. R. Nigst very correctly and firstly for AH 4 also recognized 131 specific lateral/front-lateral core maintenance small-sized flakes (*Nigst 2012*, fig. 94, tab. 90) technologically serving for re-shaping/rejuvenation of carinated/shouldered/nosed endscraper-cores' fronts/flaking surfaces. This numerically well represented for AH 4 type of CMP shows intensive and multiple microblade reduction processes from some endscraper-cores with the respective mean correlation 131 : 85/1.5 : 1. Finally, regarding the carinated piece presence within AH 4 assemblage, it is important to note that no one carinated burin-core or a multi-faceted burin of any type was ever identified there, although one of the pieces illustrated by *F. Felgenhauer (1956–1959, fig. 24: 12)* could be

a single carinated burin-core in AH 4 (Fig. 8: 4). Anyway, about exclusively presence of endscraper-cores among carinated pieces is notable for AH 4 lithic collection.

Some concluding technological considerations

All the above-represented data and their analysis allow us to sum up the following definite numerical and technological records and considerations.

According to our *P. R. Nigst's (2012)* re-analysis data and leaving aside technologically unclear both four 'initial cores' and some other defined cores yet, core-like pieces (116 specimens) are represented by the following all possible reduction objects (Tab. 3):

- carinated sensu lato pieces – 85 examples/73.3%:
 - shouldered/nosed endscraper-cores – 59 examples/50.9%;
 - shouldered/nosed endscraper-cores with an additional lateral burin verge – 5 examples/4.3%;
 - carinated endscraper-cores – 21 examples/18.1%.
- blade/bladelet cores – 3 examples/2.6%.
- flake/blade cores – 1 example/0.8%.
- flake cores – 27 examples/23.3%.

Adding the *P. R. Nigst's (2012)* debitage data (1,356 flakes/85.1%, 56 blades/3.5%, 181 bladelets/11.4%; see Tab. 1) and remembering that a part (no less than 200–250) of flakes with size between 10 and 15 mm should better go into chips and

Tab. 3. Willendorf II, AH 4 (Austria). Basic core type data.

	Willendorf II, AH 4	
	re-calculated from <i>Hahn 1977</i>	re-calculated from <i>Nigst 2012</i>
Blade cores	5/6.1%?	0?
Blade/bladelet cores	0?	3/2.6%
Bladelet 'regular' cores	0?	0?
Bladelet 'carinated' cores	0?	0?
Bladelet carinated endscraper-cores	22/26.8%	21/18.1%
Bladelet shouldered/nosed endscraper-cores	48/58.6%	64/55.2%
Flake/blade cores	0?	1/0.8%
Flake cores	7/8.5%?	27/23.3%
Total	82/100%	116/100%

a share of bladelets should be much higher keeping in mind a loss of up to 1,000 pieces during the site's excavations between 1908 and 1955, it is, first of all, seen a very subordinate role of blades. Their detachment is seen only for three blade/bladelet and a flake/blade cores where they likely only served a supportive preparation/re-preparation role for some core flaking surface uplifting and primary reduction change of orientation. Some more blades could be also possibly flaked from some initial formation and re-shaping of some carinated *sensu lato* endscraper-cores and flake cores. Five crested blades do correspond to on-site such core reduction. Absence of a separate large-sized blade core reduction is also traced through not seen in the real presence of any illustrated such blades (more than 20 mm wide) in AH 4 (Fig. 8: 2; 9: 3, 5; *Nigst 2012*, fig. 71–73) with, unfortunately, not actually useful here P. R. Nigst metrics for blades with minimal blade width in 9.59 mm that is in a width range for bladelets (*Nigst 2012*, tab. 89). The blades' supplementary technological role is additionally supported by their similar part for tool manufacture with just a few tools made on blades (8/4.8% tools and tool-cores on blade-blanks). Flakes with the most numerous sample among the debitage types due to 'not survived' for us bladelets, most likely, played the two-fold tasks. On one hand, flakes were the main technological by-product during shaping and re-shaping of both carinated *sensu lato* endscraper-cores and also a few blade/bladelet cores. This is why very most of the P. R. Nigst's (2012) flakes (737/89.3%) are under 3 cm long. On the other hand, a few large-sized flakes had been also serving as blanks for on-site production of some, just some, carinated *sensu lato* endscraper-cores (see *Nigst 2012*, fig. 74), while as it also goes from raw material data, most of carinated *sensu lato* endscraper-cores, probably

at an initial stage of formation and reduction, were already brought to the site either from workshops at raw material outcrops and/or some base-like camps for an intensive bladelet and very mainly microblade primary flaking from these tool-core pieces. At the same time, taking tool and tool-core data (*Nigst 2012*, tab. 116), flakes were also the basic blank data for also 'regular' tools (see below). Thus, namely carinated *sensu lato* endscraper-cores and, first of all, their shouldered/nosed variety types were very main reduction objects for on-site bladelet/microblade primary flaking processes, whereas strictly speaking bladelet cores on chunks/nodules do not occur and only a few microblades were detached from blade/bladelet cores, too. In sum, all the technological information points out mainly on-site microblade production based on reduction objects (very mostly shouldered/nosed endscraper-cores) being off-site already prepared and then brought to the site.

All the above-discussed P. R. Nigst (2012) core reduction and debitage data can be also checked by going through the 1970s J. Hahn's data. He studied a part of AH 4 assemblage composed of 924 artifacts (*Hahn 1977*, 105, tab. 1; 2). Cores number 16 specimens and, aside from four fragmented pieces, all other 12 cores were subdivided into two main categories: seven flake and five blade items (Tab. 3; *Hahn 1977*, tab. 7). Absence of any blade cores in the P. R. Nigst (2012) data might indicate the J. Hahn's five blade cores being likely blade/bladelet and flake/blade cores as our analysis showed above, although it is still an open question due to the fact that J. Hahn did not illustrate any cores in his book. Debitage sample in 329 pieces is composed of 66 blades (20%), 76 bladelets (23.1%) and 187 flakes (56.9%; Tab. 1; *Hahn 1977*, tab. 2). The J. Hahn's debitage types' representation significantly differs from P. R. Nigst

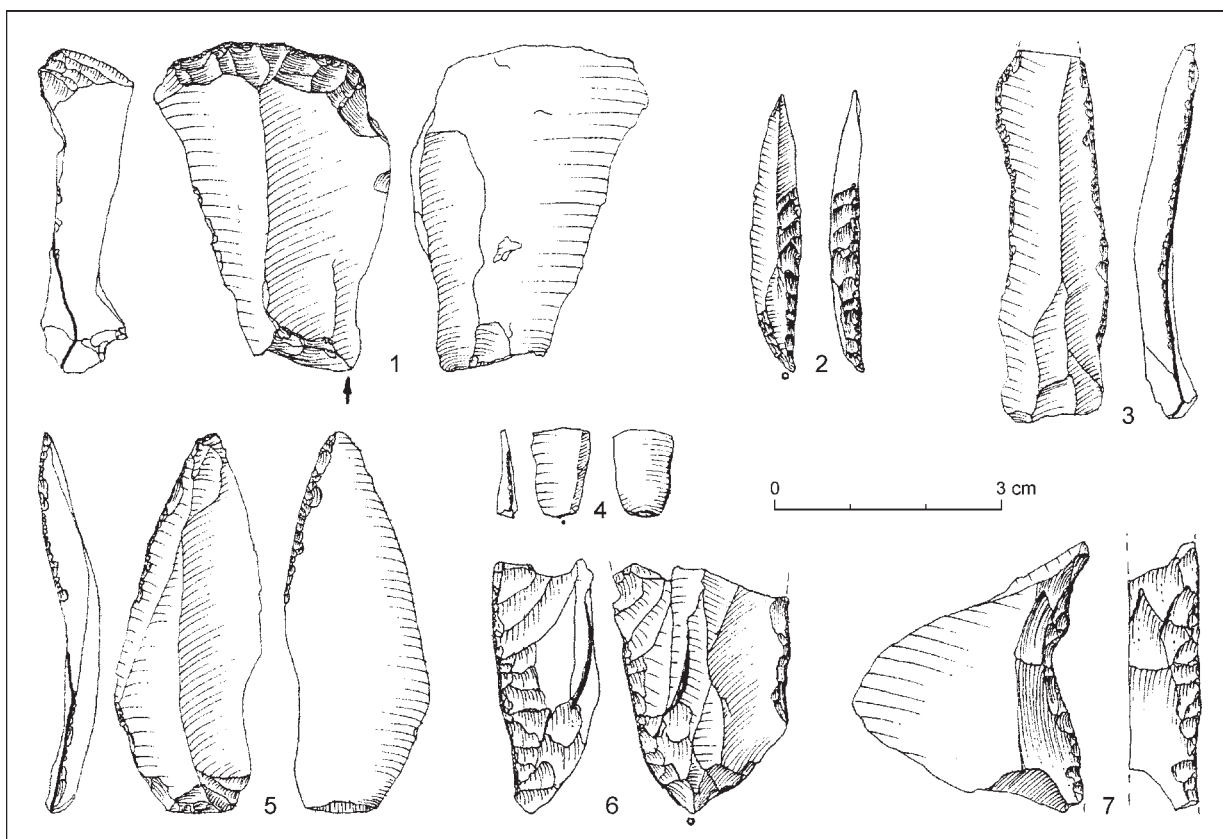


Fig. 9. Willendorf II, AH 4 (Austria). 1 – simple endscraper + angle burin; 2 – unfinished partial backed bladelet; 3, 5 – blades with a partial marginal retouch; 4 – Dufour bladelet with a ventral marginal retouch; 6, 7 – side-scrappers (artifact illustrations modified after *Hahn 1977* with the present article authors' classification).

(2012) respective debitage data having in about 1.5 times higher share of flakes (85.1%), in about twice lower bladelet occurrence (11.4%) and in about six times lower presence of blades (3.5%). From our point of view, the debitage differences are reasoned by the following two factors. First, it should not be forgotten a sample in 1,120 lithics after 1908–1909 excavations added by P. R. Nigst to AH 4 since 2007 where small-sized lithic pieces overwhelmingly prevailed. Second, *J. Hahn (1977, 45)* used a larger 'metrical border' between flakes and chips in 20 mm than P. R. Nigst did with 10 mm. At the same time, debitage types' numerical order is still the same for the two studies samples with a dominance of flakes, a moderate number of bladelets and a subordinate position of blades. While using *P. R. Nigst (2012)* data we recognized 21 carinated and 64 shouldered/nosed endscraper-cores, *J. Hahn (1977, tab. 1)* classification resulted in identification of 22 carinated and 48 shouldered/nosed endscraper-cores. The tool-core data demonstrate the 'technological source' of bladelets within debitage.

In sum, remembering different in quantity used artifact samples, both the most detailed of P. R.

Nigst and basics of *Hahn* produce still similar data. Regarding the *J. Hahn's* dataset with no much of small-sized lithics in it, it appears that his debitage data might well correlate with some systematically collected artifacts for surface loci of Middle Aurignacian in our region (see below).

Tool-kit data and considerations

According to P. R. Nigst tool and tool-core data (excluding the single AH 5 intrusive backed bladelet and five not illustrated and unclear for us type of 'nosed endscraper + burin'), there are 161 related items (*Nigst 2012, tab. 115; 116*). The taken together 85 carinated/shouldered/nosed endscraper tool-cores do constitute more than a half of all the tool-kit's specimens, 52.8%. Taking into consideration that the tool-cores were basically cores and only a part of them also possibly served as actual tools, only strictly speaking 76 (47.2%) tools with retouch and burin facets are of a tool interest and significance. These tools are composed of simple endscrapers, just a single endscraper on a laterally retouched flake, unspecified by types burins,

laterally retouched debitage pieces with no data on retouch applied for their secondary treatment, a single truncation, a few of both not described retouched bladelets and composite tools. Along with this, the dominant presence of carinated/shouldered/nosed endscraper tool-cores were still always easily letting all archaeologist to name from the typological point of view the site's AH 4 assemblage Aurignacian. Here it is needed to note that the P. R. Nigst's (2012) tool data are basically characterized by statistics and accompanying descriptive data are too short for a detailed understanding of tools' morphology (Nigst 2012, 166). However, the providing AH 4 tool list (see also Tab. 2) will include both tools and tool-cores for a traditional strict typological view. Aside from the P. R. Nigst (2012) respective data, J. Hahn's (1977) will be also listed due to the fact that his artifact classification data are used by us as one of the traditional typological standards known for Aurignacian artifact assemblages in Central Europe (Demidenko et al. 2021) and very basic with no types some tool class classification (e.g. burins) in the P. R. Nigst's data.

P. R. Nigst's (2012, 166, tab. 115; 116) data can be re-structured as follows (Tab. 2). Simple flat endscrapers count eight items. Additionally, two more simple endscrapers' fronts can be added here from two combined tools, an 'endscraper + truncation' and an 'endscraper + burin'. Double endscrapers do not occur in the tool-kit. So, the entire simple endscraper sample is in 10 specimens (10.4%). At the same time, type of simple flat endscrapers with lateral and/or bilateral retouch is only represented by the above-noted single specimen on a laterally retouched flake (1%).

Carinated and shouldered/nosed endscraper-cores, as was already shown, are much higher in numbers: 21 (21.9%) and 64 (66.7%) examples, respectively. Again, no one double carinated/shouldered/nosed endscraper-core was recognized by P. R. Nigst. Altogether, the carinated *sensu lato* endscraper-cores number 88.6% of all endscrapers and endscraper-cores.

Burins number 23 items and only a single dihedral burin is distinguished by type among all the other burins. With also three burin terminations at some combined tools (an 'endscraper + burin', a 'carinated endscraper + burin', two 'burin + truncation'), the burin sample reaches up 27 examples. Like the endscrapers and endscraper-cores, burins are not present in a view of any double pieces in the P. R. Nigst data.

Aurignacian blades with either just stepped lateral/bilateral retouch or a strangled retouch do not occur at all.

Retouched bladelets, as was also already mentioned, were not classified with details because it is not even understandable the exact number of the microliths in AH 4 (see Nigst 2012, 166).

In sum, P. R. Nigst tool and tool-core lithic types show a characteristic Middle Aurignacian type structure with much dominance of carinated *sensu lato* endscraper-cores where shouldered/nosed pieces in about three times outnumber wide-fronted specimens and where some of the latter examples still can be initial forms of then further reduced shouldered/nosed items. The absence of carinated burin-cores, as well as of any type of Aurignacian blades is also typical for the considering Aurignacian industry type. The paucity of retouched microliths is the permanent problem here due to a tiny size of most of bladelets, mainly microblades smaller 7 mm in width, detached from the shouldered/nosed endscraper-core why almost all of them are usually lost during non-modern excavations.

Finally, it is needed to note that P. R. Nigst did not pay attention to bone/antler artifacts at AH 4 at all and it is especially surprising remembering that Willendorf II, AH 4 is the only artifact assemblage with such serial (!) non-lithic artifacts analysed by him for his PhD thesis published then as a book in 2012 among all other Initial UP and Early UP assemblages in the Middle Danube region of Central Europe.

J. Hahn's (1977, 105, tab. 1–3; 7) typological data show the following main indicative tool class and type representations for AH 4 Middle Aurignacian attribution (Tab. 2). Carinated and shouldered/nosed endscraper-cores well dominate among all endscrapers and endscraper-cores (80.5%), although the narrow-fronted pieces (48/55.3%) prevail over the wide-fronted specimens (22/25.3%) only in about two times. Simple endscrapers are still serial (14/16.1%) but they do not, however, outnumber taken separately carinated or shouldered/nosed endscraper-cores. Simple endscrapers with lateral/bilateral retouch account three examples (3.4%). Burins show some prevalence of pieces on truncation/transversal on lateral preparation (12/46.1%) over dihedral ones (10/38.5%) with a subordinate share of angle/transverse on natural surface type (4/15.4%). However, it is worth remembering the P. R. Nigst's very correct re-classification of at least five J. Hahn's burins on truncation in 'nosed endscraper + burin' type. In this case, the new resulted J. Hahn's burins typological structure would be with a prevalence of dihedral type (see Tab. 2). There is a single microlith of Dufour type, a bladelet's proximal part with a continuous ventral marginal abrasion retouch (Fig. 9: 4). Taking into consideration width

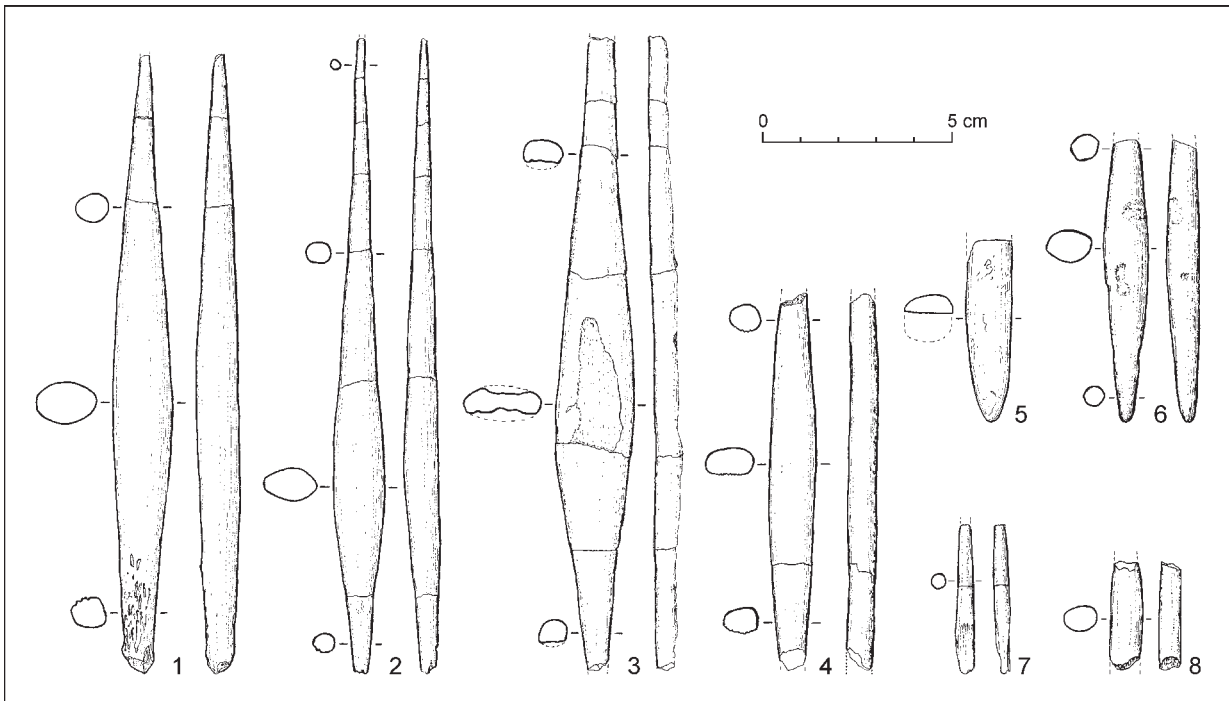


Fig. 10. Willendorf II, AH 4 (Austria). Projectile bone/antler points and their various fragments with a thick oval cross-section and extended distal part (artifact illustrations modified after Hahn 1977, 'Geschößspitzen aus Geweih mit dickovalem Querschnitt und ausgezogenem Distalteil').

of the microlith in 9 mm, it is likely the bladelet-blank was detached from a wide-fronted carinated endscraper-core and not from a shouldered/nosed piece producing tinier microblades. J. Hahn also listed and illustrated bone/antler artifacts (Fig. 10).

Having the above-analysed two AH 4 artifact classification data sets, it is possible to make additionally of some our own tool and tool-core data reconsiderations below (see Tab. 2). Endscraper and endscraper-core data were already re-structured by us for P. R. Nigst (2012) data, although a single addition should be done using F. Felgenhauer's (1956–1959) illustrations. One of the shouldered/nosed endscraper-cores (Fig. 6: 11) is definitely a double alternate one. It demonstrates at least for one piece more than one formed 'shoulder/nose' on two terminations on both dorsal and ventral sides of a flake-blank (?) for twice done technologically specific microblade reductions and also possibly a tool use as well. It is also important noting absence of endscrapers made on any blades with Aurignacian lateral/bilateral stepped retouch. Burins are re-structured a bit more radically (Tab. 2). Following their classification presented by J. Hahn (1977) and F. Felgenhauer's (1956–1959) illustrations, it appears the following type occurrence for burins. On one hand, J. Hahn's five burins on truncation are understood as shouldered/nosed endscraper-cores with a lateral burin spall removed, why now

dihedral burins (10/45.5%) predominate over burins on truncation/transversal on lateral preparation (7/31.8%) with still low amount of angle/transverse on natural surface type (4/18.2%) and the single proposed to be defined among shouldered/nosed endscraper-cores a carinated burin-core (1/4.5%; Fig. 8: 4). The presence of a single carinated burin-core does not change much for the typological structure of all AH 4 carinated tool-cores with a great dominance of namely shouldered/nosed endscraper-cores. It probably only shows some extreme reduction of some nosed endscraper-cores into very narrow carinated burin-core looking pieces. Also, the single illustrated yet retouched bladelet by J. Hahn (Fig. 9: 4) possibly indicates that all four recognized by P. R. Nigst retouched bladelets could be with an Aurignacian marginal, not backed retouch. The absence in any AH 4 artifact classification of both endscrapers on any types of Aurignacian blades and Aurignacian blades themselves is one better 'typological absence index' for Middle Aurignacian industrial attribution. Finally, two more tool classes in AH 4 being just mentioned before deserve some special attention now. On one hand, only J. Hahn before noted the presence of two splintered pieces (*ausgesplitterte Stücke*; Fig. 6: 17; Hahn 1977, 105, tab. 1, pl. 98: 12) in AH 4, while such pieces were not mentioned by both F. Felgenhauer and P. R. Nigst. Looking

at one of the illustrated pieces and remembering that often splintered pieces were serving as bipolar anvil cores, such the use of two splintered pieces cannot be excluded, especially remembering some certain peculiarities of raw material use at the site. On the other hand, both *F. Felgenhauer's* (1956–1959, fig. 25: 8, 9) and *J. Hahn's* (1977, 105, tab. 1, pl. 98: 14, 15) data show the definite presence of some (four pieces in the J. Hahn's accounts) real side-scrapers in AH 4, not just retouched flakes (Fig. 8: 3; 9: 6, 7). The particular tools are understood by us (e.g. *Demidenko/Škrdla/Nejman 2017, 30*) through the basic dominance of flakes among non-bladelet related debitage with their subsequent use for carinated *sensu lato* tool-cores and laterally retouched pieces where some of the heavily retouched examples among the latter pieces are of Middle Palaeolithic-like side-scraper character. Therefore, such the MP-like side-scrapers within Middle Aurignacian archaeological context should not be regarded as a true MP admixture or 'generic influence' among the Aurignacian artifacts but an inherent part of Middle Aurignacian assemblages.

All in all, now it is the well-established the namely Middle Aurignacian industrial attribution for Willendorf II, AH 4 lithic assemblage with all still existing some misunderstanding and uncertainties of artifact classification.

Bone/antler and some other non-lithic artifacts

The above-described artifacts should be added by some remarks on non-lithic pieces first really described and published by *F. Felgenhauer* (1956–1959, 57, fig. 26: 1–12). These pieces (Fig. 10) were also studied and illustrated by *J. Hahn* (1977, 105, pl. 99; 100). The most numerous and typologically important pieces are projectile bone/antler points with a thick oval cross-section and extended distal part of a lancet-like form: six nearly complete examples (Fig. 10: 1–3) and no less than 20 their various fragments (Fig. 10: 4–8). There are also five rather simple bone awls and four of them are on splintered ungulate bone fragments (*Felgenhauer 1956–1959, fig. 26: 5–7; Hahn 1977, pl. 100: 2–4*). It is also worth noting among the rest of bone/antler pieces a rather large (ca. 70 mm long) bone fragment with unsystematic crossing lines (*Felgenhauer 1956–1959, fig. 26, 11; Hahn 1977, pl. 99: 5*). These bone/antler artifacts are added by two more specific pieces: a large-sized (ca. 110 mm long, 50 mm wide, 15 mm thick) stone *retoucher* with two working terminations (*Hahn 1977, pl. 100: 6*) and a fossil mollusk shell with a hole (*Felgenhauer 1956–1959, fig. 26: 12*), although the shell

was not studied up to now for establishing a nature of the hole in it.

The importance of AH 4 bone/antler points is in their similarity to defined yet by D. Peyrony three distinct Aurignacian bone point types as early as in the 1930s: '*pointe losangique aplatie*' for Aurignacian II stage, '*pointe losangique à section ovale*' for Aurignacian III stage and '*pointe biconique*' with also an ovoid section for Aurignacian IV stage (*Peyrony 1933, 553, fig. 11; see also Leroy-Prost 1975, 117–121, fig. 14*). Although five Aurignacian stages were proposed to be distinguished by D. Peyrony on the basis of bone/antler point types that later were not considered to be precisely marking each of the distinct Aurignacian industry type (e.g. *Sonneville-Bordes 1960*), he also noted and illustrated the most characteristic lithic tool types for each stage and the following types are of our interest: Aurignacian II – '*burin busqué, grattoir à museau et épaulement, grattoir épais à museau*'; Aurignacian III – '*burin derive du busqué, grattoir épais à museau*'; Aurignacian IV – '*burin derive du busqué, grattoir épais à museau*' (*Peyrony 1936, 618*). As it is seen, the D. Peyrony's Aurignacian II lithics are characterized by carinated burin-cores and the industry type's points are with a flattened section because both the lithic and bone/antler types do not match the AH 4 respective data, being instead more correlating with Late/Evolved – Aurignacian III–IV now. On the other hand, both D. Peyrony's Aurignacian III and IV are characterized by the same lithic types with the notable uncharacteristic occurrence of carinated burin-cores and typical presence of thick nosed endscraper-cores with the bone/antler points having an ovoid section. All these features well match with Willendorf II, AH 4 respective data. As a result, AH 4 lithic data pointing out namely the modern Middle Aurignacian industrial affinity are now well added by bone/antler projectile point characteristics.

Willendorf II, AH 4 site human occupation specificity

Taking together all lithic and non-lithic artifacts, it is possible to make some suggestions for so-called 'living characteristics' of AH 4 human occupation(s). First of all, it appears to be very important that not much of local raw materials from Danube River gravels situated right below the site were used by site's human visitors for their various on-site lithic treatment processes. Indeed, most of the identified raw materials belong to either very distant or regional rocks. This is why very most of all on-site primary core and tool-core flaking processes were

concentrated on bladelet/microblade reduction using almost exclusively carinated *sensu lato* endscrapers with a great dominance among them of shouldered/nosed specimens. As a technologically 'support source', on-site flake core reduction was also intensively realized with a likely aim to get some additional thick flakes from both local raw materials and brought to the site initially prepared/flaked cores on regional and distant raw materials for some more carinated endscrapper-core reduction and making some real tools (e.g. endscrapers, burins). A separate blade reduction was not done at all. A few blade/bladelet and flake/blade cores rather demonstrate only a technological supportive role during some bladelet and flake core reductions. At the same time, strictly speaking 'regular' bladelet cores on nodules/chunks seem to be missing either. Consequently, it is needed to underline again that primary core reduction processes were mostly based upon flaking of carinated *sensu lato* endscrapper-cores and flake cores in the above-described raw material situation because the carinated pieces and flake cores were 'curated pieces' with their easy transports between both various raw material outcrops and living site types. Therefore, the on-site primary flaking processes data do not indicate a base camp 'living characteristics' for AH 4 human occupation(s). Coming to tool-kit data with no tool-cores and remembering that the latter pieces well outnumber the former specimens, it is seen about a double prevalence of burins over endscrapers (21 versus 11). Such importance of burins among tools could be functionally connected to some definite on-site bone/antler piece production and, first of all, of projectile points seen through the occurrence of many their fragments. Awls are also worth mentioning here. At the same time, keeping in mind an intensive reduction character of many carinated *sensu lato* endscrapper-cores, not only bladelets and microblades are underrepresented within AH 4 lithic assemblage but their retouched examples also occur in a few examples. This is well understandable due to tiny size of the discussing pieces and most of them definite loss during the long ago done 'old fashioned' excavations with no realized any dry screening or wet-sieving of artifact bearing sediments at the site. Anyway, bladelets/microblades and their retouched examples had to be very well present at the site. They were really composing all basics of the AH 4 artifact assemblage. Considering also from the functional point of view retouched bladelets/microblades as components of hunting projectile weaponry and the weaponry was also added by a good series of bone/antler points, the following site type pattern for Willendorf II, AH 4 can be proposed below.

Humans visited the site's area because of its location within narrow and hidden Wachau Valley of Danube River being characterized by steep and cliffy slopes of the valley's eastern/right bank. On the other hand, the site was set up at the valley's western/left bank with its rather flat slope, on top of the river's lower terrace (see Nigst 2012, fig. 13). The surrounding micro-area was probably attractive not only for humans but also for many ungulates with an easy access to the river. Accordingly, it had to be a good hunting locus for UP humans. The known bone remains of reindeer (*Rangifer sp.*) and Alpine ibex (*Capra ibex prisca*) for AH 4 (Thenius 1956–1959, tab. 10; 11) evidence some AH 4 humans hunting activities near the site. Knowing ahead the Wachau micro-area for having a site with good hunting possibilities and some available local raw materials at the river's gravels for some lithic production and treatment support, Middle Aurignacian humans were coming to the site with some already made hunting projectile weapons in a view of bone/antler points and some mounted in them lithic microliths, and also bringing initially prepared flake cores and carinated *sensu lato* endscrapper-cores, as well as already prepared tools, probably mostly some burins for renewal of both some lithic microliths and bone/antler point on-site production needed to replace some lost during hunts respective pieces. A few flake/blade and blade/bladelet cores and some other tools, first of all, retouched blades, sidescrapers, simple endscrapers and some burins might reflect both some additional on-site flake, blade and bladelet productions for getting not only bladelets/microblades but also some larger debitage pieces for making some other tools needed for dismembering of killed during hunts ungulates for meat consumption, hide and bone/antler processing. The latter core reduction processes were, however, limited. In sum, Willendorf II, AH 4 looks like one of planned ahead basic hunting stopovers on the way of Middle Aurignacian human group moves among some other sites and their settlement types in the region (see below).

NAPAJEDLA III/NAPAJEDLA-ZÁMORAVÍ SITE (CZECH REPUBLIC)

Site location and field research history

Geographically, the site is situated on the cadastral territory of the town of Napajedla near Napajedla Gate (about 700 m wide), a passage connecting upper and lower Morava River valleys in Eastern Moravia. The site was identified in a colluvial

sediment quarry in the field of Zámoravi (*Demidenko/Škrdla/Nejman 2017*, photo 4) on the western slope of Makova elevation, which reaches 338 m at its highest point. The Napajedla III *in situ* site (initially named ‘Napajedla III-Brickyard, Zámoravi’) was actually discovered in the autumn of 2004 in a course of one of us (P. Škrdla) project in 1996–2004 for systematic field investigations of UP sites in Uherské Hradiště area within the middle course of the Morava River Valley (*Škrdla 2005*, 116–118). Within the quarry, the site was recognized at the bottom of a slope between altitudes 205–220 m (25–40 m above the current Morava River level) where it was probably redeposited in entire sediment blocks within an uneven gleyic lens, which was a maximum of 50 cm thick, by land sliding from upslope, higher parts of the slope and included Tertiary admixtures (*Demidenko/Škrdla/Nejman 2017*, photo 5). It was then excavated between 2004 and 2006 (*Škrdla 2007; 2017*) when some quarrying activities were renewed in a former brickyard pit. Three separate excavation blocks A, B and C were systematically dug for a total area of ca. 9 m². The blocks were uncovered in a line 35 m long with a sondage placed every 5–7 m. Thus, there was no a solid area excavated for the noted area at that time. Although these were only rescue excavations, trowels and knives were used for digging. Dry screening and wet sieving of artifact bearing sediments was, however, realized only in 2006 during the excavation of block B. Approximately 150 l of sediment were wet sieved and about 300 small-sized lithic pieces and 7 g of burnt bones were recovered in a course of screening and sieving processes. No faunal remains were recovered except for a single weathered mammoth tusk that was dated then.

Geochronology

The site’s dating is based on several samples of organic materials from excavation block B that were ¹⁴C dated at Groningen and Oxford ¹⁴C labs (*Škrdla 2007; 2017*): GrA-32566 (charcoal sample) – 29,820 ± 180/– 170 uncal. BP or 33,940 ± 150 cal. BP; GrA-32568 (burnt bone fragments) – 30,620 ± 190/– 180 uncal. BP or 34,550 ± 190 cal. BP; GrA-28280 (mammoth tusk, residual charcoal) – 32,330 ± 900 uncal. BP or 36,540 ± 1100 cal. BP; OxA-18304 (burnt bone fragments) – 32,230 ± 190 uncal. BP or 36,110 ± 210 cal. BP; OxA-18305 (*Picea/Larix* charcoal fragment) – 32,540 ± 200 uncal. BP or 36,470 ± 240 cal. BP. The uncalibrated BP dates range between ca. 30,000–29,600 and 32,730–32,700, accordingly, the calibrated BP dates range be-

tween ca. 34,100–33,800 and 36,700–36,200. These Napajedla III absolute dates are comparable to the above-noted ¹⁴C Willendorf II, AH 4 dates, ca. 32,000–31,200 uncal. BP/36,300–35,400 cal. BP that is in geochronological sense GI-7.

Lithic artifacts

Three short field excavation campaigns yielded in total ca. 970 lithic artifacts. Relatively few artifacts were found in trench A. Trenches B (5 m² with the ¹⁴C dated charcoal samples) and C (ca. 2 m², northern part of the brickyard) yielded most of the lithic pieces recovered at this site. The collection of artifacts from block B consists of 70 items longer than 1.5 cm and 595 micro-debitage pieces. Artifacts from block C include 240 specimens longer than 1.5 cm and 60 chips. Techno-typologically, the lithics from excavation blocks B and C, only spatially separated by no more than 5 m, are very similar and were analysed together. Here it should be noted that after initial field campaign at the site in 2004 its lithic assemblage was very preliminary ‘attributed to the Willendorf-Kostenki phase of the Gravettian’ (*Škrdla 2005*, 118). However, a closer look at the larger in number recovered then lithic assemblage has definitely showed its Aurignacian and particularly Middle Aurignacian industrial affinity (*Demidenko/Škrdla/Nejman 2017*). Namely, the 2017 publication will be summarized below for purposes of the present article. Finally, it is also needed to remark the absence of any organic artifacts and tools that is understandable due to poor bone preservation at the site. As a result, only lithic artifacts are available for an analysis.

Raw materials

Most artifacts are made on imported erratic flint with the nearest outcrops approx. 60 km to the northeast. Other raw materials including radiolarite, silicified sandstone, quartz and unspecified chert/weathering products are present, but only by a few pieces each. The radiolarite and probably silicified sandstone outcrops are located in the White Carpathians about 45 km easterly from the site. Quartz and cherts were collected in the local river terraces. Some burnt lithics were probably also manufactured from erratic flint. The Napajedla III raw material spectrum with mainly distant and regional used rock types and only some supportive role of local rocks is similar to the Willendorf II, AH 4 respective data, although the Napajedla III case is characterized by truly very minor role of local rocks.

Lithic artifact composition

The entire assemblage is composed of 965 items which are subdivided into the following basic categories:

- core-like pieces – 9/0.9%/4.7%;
- core maintenance products (CMP) – 27/2.8%/14.2%;
- debitage – 100/10.4%/52.6%;
- tools and tool-cores – 51/5.3%/26.9%;
- tool shaping and rejuvenation waste – 3/0.3%/1.6%;
- debris (604 chips, five uncharacteristic debitage pieces, five chunks, 161 heavily burnt pieces) – 775/80.3%/–.

Core reduction data

Core-like pieces

Such nine core-like pieces were identified: eight on erratic flint and a single specimen on radiolarite (a bladelet core). The cores' technological variability is high and no pre-cores are present. Also, a single not classified in details core fragment on erratic flint is burnt. The cores' raw material data demonstrate no use of any local rocks for on-site primary flaking processes which were exclusively based upon the use of distant rocks why pre-cores are understandably absent.

Eight cores are classified as follows (Tab. 4):

- blade/bladelet cores – 2;
- bladelet core – 1;
- microblade core – 1;
- flake cores – 4.

The blade/bladelet cores on nodule are single-platform volumetric with plain striking platforms

Tab. 4. Napajedla III (Czech Republic). Basic core type data.

	Napajedla III after Demidenko et al. 2017
Blade cores	0
Blade/bladelet cores	2/8.3%
Bladelet 'regular' cores	0
Bladelet 'carinated' cores	2/8.3%
Bladelet carinated endscraper-cores	1/4.2%
Bladelet shouldered/nosed endscraper-cores	14/58.3%
Bladelet carinated burin-cores	1/4.2%
Flake/blade cores	0
Flake cores	4/16.7%
Total	24/100%

ones bearing a combination of both blade and bladelet removal negatives (Fig. 11: 1). Due to a fragmentation of one of these cores, it is hard to evaluate if detached blades were of a technological supportive role during a purposeful bladelet reduction (but see then blade data within debitage). The cores are rather small, no more 50 mm in size.

A complete bladelet core on a nodule is only 30 mm long (Fig. 11: 2) being a carinated single-platform sub-pyramidal example with a roughly-prepared striking platform.

The defined single microblade core is also a small reduction object on a nodule, 28 mm long, 34 mm wide, 30 mm thick. It is double-platform, bidirectional-alternate item with two flaking surfaces, and two plain striking platforms. Actually, it more morphologically looks a double shouldered/nosed endscraper-core with two flaking attempts to realize a shouldered/nosed endscraper-core short microblade reduction. It is, however, still classified as a core *sensu stricto* due to its nodule blank.

Four flake cores are morphologically very variable due damage of three of them. Two cores are fragmented. One is single-platform, plain striking platform on a nodule (34 mm long, 33 mm wide, 17 mm thick). The second is a core fragment on a nodule (30 mm long, 43 mm wide, 15 mm) with missing the whole upper part with the platform. The last damaged flake core is unidentifiable because it is heavily burnt and again fragmented (32 mm long and wide, 40 mm thick). Accordingly, only a single flake core demonstrates a 'stable morphology' – a small flake sub-radial core (25 mm long and wide, 13 mm thick) possibly on a flake-blank with roughly-prepared striking platform. In sum, it can be only said that the flake cores are, high likely, of exhausted character after much on-site reduction that is seen through their small size and fragmentation.

At the same time, a number of all taken together carinated tool-cores (16 examples) with a significant prevalence of shouldered/nosed endscraper-cores over carinated endscraper-cores and only a single occurrence of carinated burin-core where some of the shouldered/nosed/carinated endscraper-cores are double (four specimens) and even triple (one specimen) examples (see below) demonstrates an overall dominance of namely carinated piece reduction over a 'regular' core reduction at the site (the double dominance with 16 versus 8 reduction objects, respectively; Tab. 4).

Core maintenance products (CMP)

These 27 items are composed of one technologically undiagnostic core trimming flake, three crested

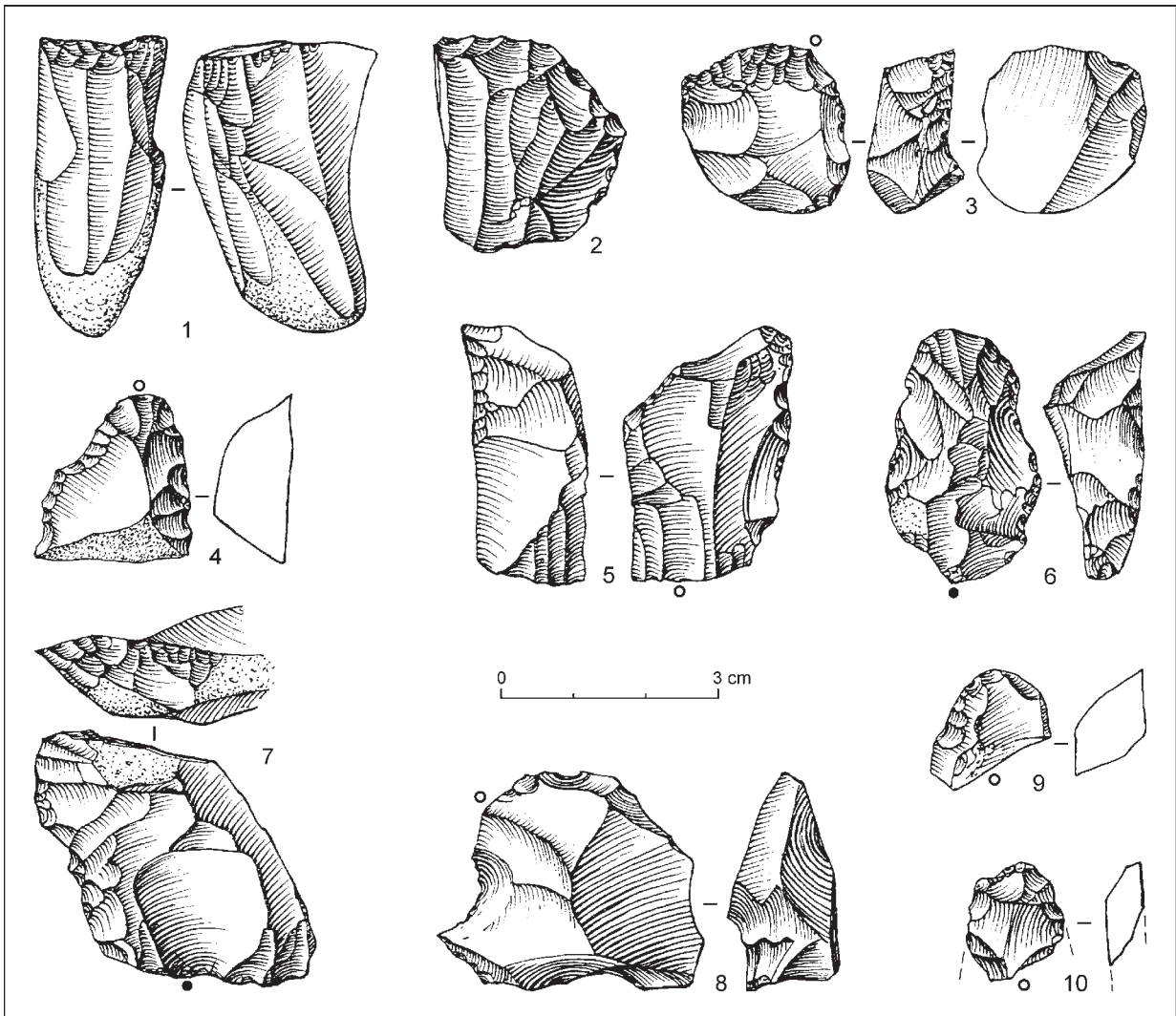


Fig. 11. Napajedla III/Napajedla-Zámoraví (Czech Republic). 1 – blade/bladelet core; 2 – bladelet core; 3–8 –shouldered/nosed endscraper-cores; 9, 10 – shouldered/nosed endscraper-cores – fragments; the presence of only nosed terminations with retouched notched shoulders (artifact illustrations modified after Demidenko/Škrdla/Nejman 2017).

items, four core tablets and 19 lateral/front-lateral carinated *sensu lato* endscraper-core maintenance flakes. Such CMP diversity indicates intensive on-site core reduction processes.

All three crested pieces (a bladelet, a microblade and a flake) are technologically associated with bladelet/microblade reduction, from either shouldered/nosed endscraper-cores or bladelet/microblade cores. A true crested bladelet (just distal part) with a two-sided ridge and no cortex is 17 mm long, 7 mm wide, 4 mm thick. A non-cortical microblade (29 mm long, 6 mm wide, 3 mm thick) is a secondary crested specimen (a distal part) with a one-sided ridge. Its presence demonstrates a continuous and multiple '*lamelle à crête technique*' application during an on-site bladelet/microblade core reduction processes. A non-cortical flake (32 mm long, 30 mm wide, 18 mm thick) is also re-crested with a one-

sided ridge showing rather radical core flaking surface re-preparation during *lamelle* flaking. It appears that all the crested pieces are associated with on-site bladelet/microblade core reduction processes.

Four core tablets are all on flakes which indicate an absence of systematically applied carinated burin-core technology (there is only one carinated burin-core in the assemblage) usually associated with core tablets on blades and bladelets. It seems that the core tablets and blade/microblade core reduction are technologically connected at this site.

The absence of crested blades (there is only a single crested blade-blank with a one-sided ridge and no cortex for a shouldered/nosed endscraper-core + angle burin from undated C area; Fig. 12: 6) and crested flakes from the initial reduction of blade cores clearly indicating that the preparation of blade and blade/bladelet cores took place elsewhere before

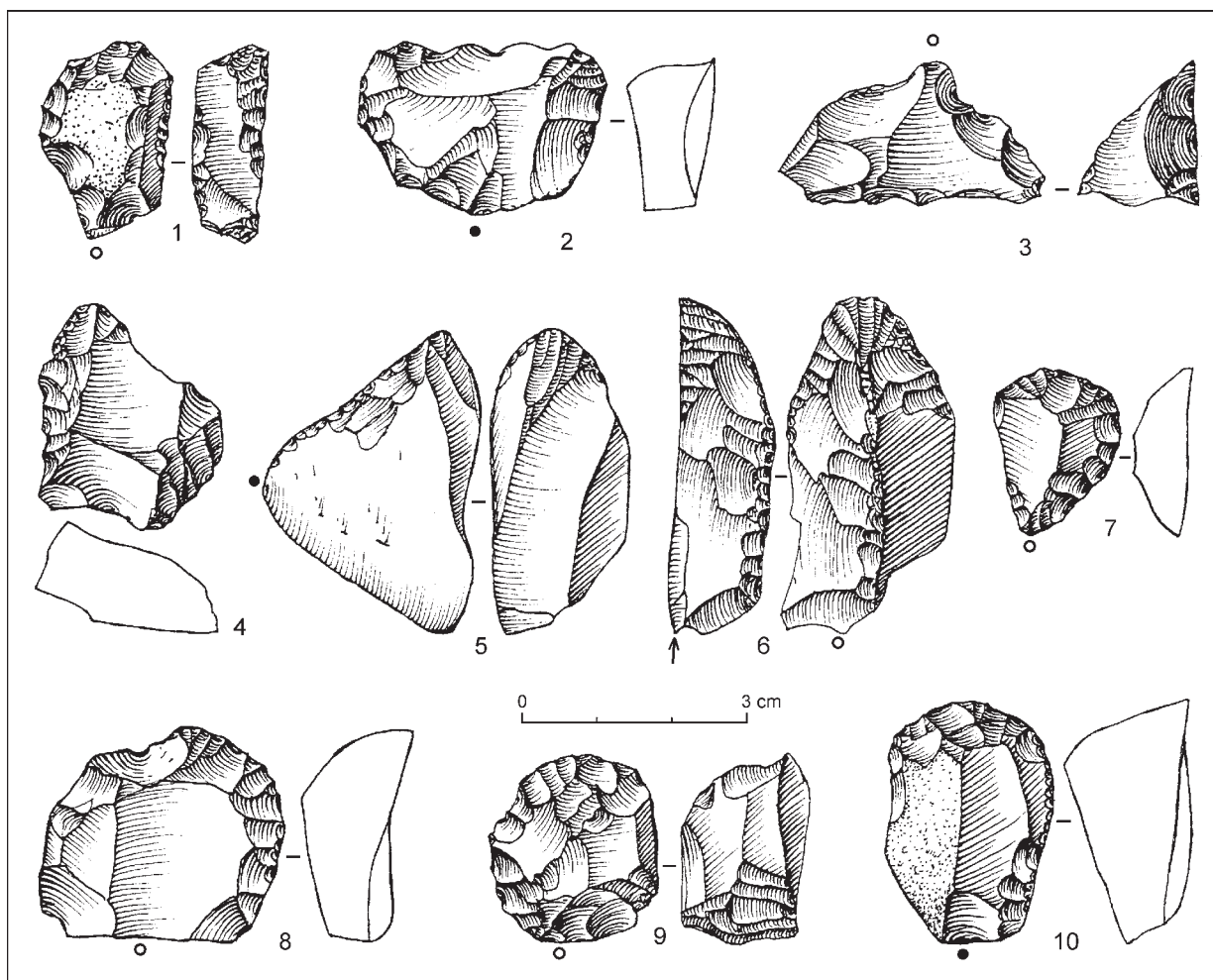


Fig. 12. Napajedla III/Napajedla-Zámoraví (Czech Republic). 1, 2, 4 – double shouldered/nosed endscraper-cores; 3 – triple shouldered/nosed endscraper-core; 5 – carinated burin-core; 6 – shouldered/nosed endscraper + burin angle; 7 – shouldered/nosed + carinated terminal endscraper-core; 8 – thick shouldered endscraper-core; 9 – carinated sub-circular endscraper-core; 10 – thick shouldered endscraper-core + lateral retouch (artifact illustrations modified after Demidenko/Škrdla/Nejman 2017).

they were brought to the site for more reduction when, most probably, they became blade/bladelet reduction objects. On the other hand, the presence of crested and re-crested bladelets and respective core tablets points to intensive on-site preparation and multiple bladelet and/or microblade core reductions, including shouldered/nosed endscraper-cores.

19 lateral/front-lateral carinated *sensu lato* endscraper-core maintenance flakes strengthen the above-indicated intensive character of endscraper-core microblade reduction at the site. These CMP are subdivided into two sub-categories – 14 items with on-axis reduction and five items with off-axis reduction (see details in Demidenko/Škrdla/Nejman 2017, 23). These pieces demonstrate a dominance of on-axis microblade reduction from shouldered/nosed endscraper-cores and a few carinated endscraper-cores where some off-axis but non-twisted

in profile lateral/front-lateral maintenance flakes are mostly re-preparation items from edges of the on-axis nosed flaking extremities.

Debitage

100 debitage pieces are composed of the following four types (Tab. 5):

- flakes (≥ 15 mm) – 51/51%;
- blades – 14/14%;
- bladelets – 13/13%;
- microblades – 22/22%.

The already noted partial wet sieving of the site's artifact bearing sediments explains a higher share of all taken together bladelets and microblades (35%) than it was twice recognized for Willendorf II, AH 4 debitage (23.1% and 11.4%).

Tab. 5. Napajedla III (Czech Republic). Basic debitage type data.

	Napajedla III after Demidenko et al. 2017
Flakes	51/51%
Blades	14/14%
Bladelets	13/13%
Microblades	22/22%
Total	100/100%

Flakes can be characterized as follows. By primary cortex data, there are two primary pieces (3.9%), 10 partially-cortical pieces (19.6%), 39 non-cortical pieces (76.5%). By raw material data, 39 non-cortical flakes are made up of seven examples/17.9% local pieces (silicified siltstones, sandstones and various weathering products) and of 32 examples/82.1% 'imported' pieces (mostly erratic flints and some radiolarites). The flakes on local rocks have no cortex and there are no cores or tools on them. High likely, these flakes appear to represent *ad hoc* reduction of easily available local rocks quick utilization ('expedient items') by humans stopped at Napajedla III. Such indeed very minor role of local flakes is in a striking contrast with the known important role (e.g. for reduction of some cores and tool-cores) of local rocks for Willendorf II, AH 4 humans. At the same time, flakes on 'imported' rocks are of a different 'reduction nature'. Apart from one artifact, none of the 'imported' flakes indicate on-site production of thick flakes for shouldered/nosed/carinated endscraper-cores. Technologically, these non-cortical flakes are just core and carinated *sensu lato* reduction preparation and re-preparation pieces, demonstrating an 'import' to the site of previously detached thick flakes for on-site shouldered/nosed/carinated endscraper-core reduction.

Blades are composed of a single primary (7.1%), five partially-cortical (35.7%) and eight non-cortical (57.2%) items and all of them, as well as bladelets and microblades are on non-local rocks. The share of blades with cortex is even higher than the respective data for flakes. Remembering the absence of primary crested blades and blade cores *per se*, it is, therefore, possible to suggest flaking of blades with some cortex from blade/bladelet cores where they were doing a technologically supplementary role within a basic bladelet/microblade reduction. At the same time, a single blade with a little of central cortex is 'technologically connected to a nosed endscraper-core initial preparation that took place at the site' (Demidenko/Škrdla/Nejman 2017, 24). Eight

non-cortical blades are morphologically diverse, although it seems that large-sized blades (mostly a few pieces wider 20 mm) 'were produced elsewhere and brought to the site' (Demidenko/Škrdla/Nejman 2017, 24). Thus, blades are certainly of a variable and minor reduction origin at the site.

Bladelets are characterized by much less cortex occurrence in comparison to blades, two partially-cortical (15.4%) and 11 non-cortical (84.6%), while primary cortical bladelets are missing. The bladelet data allow us to suggest their basic detachment not from shouldered/nosed/carinated endscraper-cores but from blade/bladelet cores on nodules/chunks where they were actually removed from central areas of core flaking surfaces already uplifted from the cores' edges by already struck blades, while the presence of a single bladelet core on nodule also explains why so few bladelets were produced at the site.

Microblades outnumber bladelets (22 versus 13) and all of them are non-cortical pieces. The microblade data allow us to come to the following considerations. 'It is reasonable to suggest that they were the main goal of nosed endscraper-core reduction. Also, it is possible that some tiny microblade fragments have not been identified and classified as chips instead. The number of complete microblades produced from nosed endscraper-cores may have been small and this explains the high number of nosed/shouldered endscraper-cores in such small Aurignacian assemblages. The trapezoidal midpoint profiles for microblades indicate systematic reduction. There is some variability in shape and converging microblades are dominant. There are also irregular pieces which are a result of reduction mistakes' (Demidenko/Škrdla/Nejman 2017, 25).

In sum, Napajedla III core, CMP and debitage data demonstrate the following several primary flaking reductions realized by the site's human visitors both off-site and on-site.

First of all, any of the above-observed and prepared on non-local raw materials reduction objects were initially prepared at the site and all of them were brought to the site from somewhere in an already initially prepared and/or even flaked way. The double numerical dominance of carinated *sensu lato* tool-cores over 'regular' cores on nodules/chunks indicates a main primary flaking orientation on production of serial bladelets and namely microblades at the site. So, it is seen a sort of very curated and 'mobile' set of reduction objects for mainly microblade production with only a supportive role of four flake cores, probably, serving for some debitage tool-blank flaking with an aim to make a few tools at the site. At the same time, a rather few recognized blades are products of some technological supportive role during detachment of

bladelets and microblades from blade/bladelet cores, and brought to the site a few already produced somewhere large-sized pieces and tools on them. Keeping in mind the above-analysed respective Willendorf II, AH 4 data, it becomes about obvious more accent on microblade reduction from carinated *sensu lato* tool-cores based on exclusive exploitation of 'imported' raw material types at Napajedla III.

Tool-kit data and considerations

There have been identified 51 pieces with the respective flaking and/or secondary treatment traces. They are subdivided into the following seven tool-core and tool groups (Demidenko/Škrdla/Nejman 2017, 25–29):

- I. Carinated *sensu lato* tool-cores – 16 items/31.3%;
- II. Simple endscrapers and burins – 3 items/5.9%;
- III. Various tools with a well-developed and/or regular continuous retouch – 11 items/21.5%;
- IV. Combined tools – 6 items/11.8%;
- V. Microliths – 3 items/5.9%;
- VI. Pieces with marginal and/or irregular retouch – 6 items/11.8%;
- VII. Tool fragments – 6 items/11.8%.

Excluding from the tool-core and tool groups last groups VI and VII which are often not included into some typological considerations in UP assemblages' analyses, carinated *sensu lato* tool-cores become not only the most numerous group (31.3%) among all 51 specimens but it accounts 41% for the left typologically well definable 39 tools. Moreover, it is also worth keeping in mind two combined tools with shouldered/nosed endscrapper-core parts (see below). It, finally, would make a share of all taken together carinated *sensu lato* tool-cores in 18 pieces and 46.2%.

Carinated *sensu lato* tool-cores typological variability is as follows (see for more details Demidenko/Škrdla/Nejman 2017, 25–27):

- shouldered/nosed endscrapper-cores – 6 pieces (Fig. 11: 3–8; blank types: five flakes, one exhausted bladelet core on a flake);
- shouldered/nosed endscrapper-cores – fragments (the presence of only nosed terminations with retouched notched shoulders) – 2 pieces (Fig. 11: 9, 10; blank types: two flakes);
- double shouldered/nosed endscrapper-cores – 3 pieces (Fig. 12: 1, 2, 4; blank types: three flakes);
- triple shouldered/nosed endscrapper-core – 1 piece (Fig. 12: 3; blank type: one flake);
- thick shouldered endscrapper-core – 1 piece (Fig. 12: 8; blank type: one flake);
- carinated sub-circular endscrapper-core – 1 piece (Fig. 12: 9; blank type: one flake);

- shouldered/nosed + carinated terminal endscrapper-core – 1 piece (Fig. 12: 9; blank type: one flake);
- carinated burin-core – 1 piece (Fig. 12: 5; blank type: one flake).

The two related combined tools are the following ones:

- shouldered/nosed endscrapper + burin angle (Fig. 12: 6; blank type: one crested blade);
- thick shouldered endscrapper-core + lateral retouch (Fig. 12: 10; blank type: one flake).

These carinated *sensu lato* pieces show about the absolute dominance of shouldered/nosed items (16 specimens), while carinated terminations only occur for two specimens with one of them being a combination of a carinated and a nosed piece, and carinated burin-cores are characterized by a single specimen. Remembering the suggestion proposed for Willendorf II, AH 4 on carinated endscrapper-cores being often initial, first stage of reduced then down to a view of shouldered/nosed endscrapper-cores with double (Hahn's 1977 data)/triple (Nigst's 2012 data) prevalence of the latter pieces over the former items, it is reasonable to speak about much more reduction of carinated *sensu lato* endscrapper-cores at Napajedla III site. At the same time, both Austrian and Czech lithic assemblages do show the presence of just a single carinated burin-core occurrence that speaks about a consistent endscrapper-like microblade reduction for the two discussing Middle Aurignacian sites. The tool-cores also feature very mostly use of flakes as blanks, (17 examples) with a single exception in a view of a crested blade. Location of shouldered/nosed terminations at debitage-blanks is also notable. Only a single specimen, a combined tool (Fig. 12: 6), has a shouldered/nosed termination at the blade's distal end, whereas it significantly varies for all other endscrapper-cores with, for example, a *déjeté* position of the shouldered/nosed areas at the intersection/angle between the lateral edge and the distal end of the flake (Fig. 11: 7) and the core (Fig. 11: 5), and three more endscrapper-cores possess 'noses' at proximal parts of flake-blanks (Fig. 11: 3, 4, 8). Such the shoulder/nose termination variability is actually explained by a fact that the thickest measured parts of the flake-blanks have been indeed chosen for formation of a shouldered/nosed extremity formation. Taking mean metrical data of the endscrapper-cores, it demonstrates an overall small size under 30 mm – 29.3 mm long, 25.7 mm wide, 12.3 mm thick. The thickness parameter also indirectly indicates a small length of removed microblades from the endscrapper-cores. Finally, out of 16 pieces, not including two combined tools here,

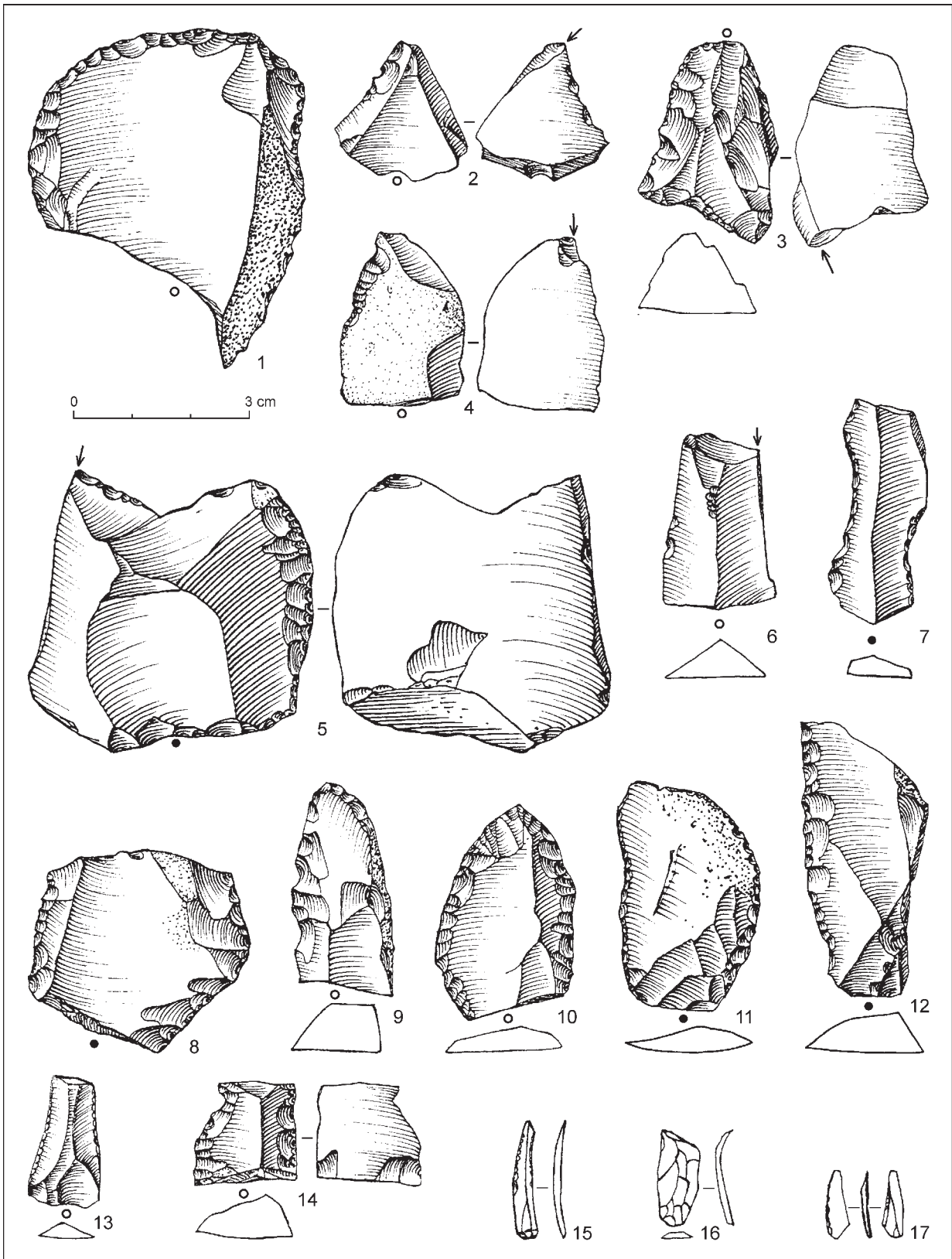


Fig. 13. Napajedla III/Napajedla-Zámoraví (Czech Republic). 1 – simple endscraper; 2 – burin on lateral retouch of a rather atypical value; 3 – broken burin + lateral retouch; 4 – angle burin + lateral retouch; 5 – burin on oblique truncation and lateral retouch; 6 – burin unidentifiable with a broken termination; 7, 9, 12–14 – retouched blades; 8 – double straight-convex dorsal side-scraper; 10 – Aurignacian pointed blade; 11 – retouched flake; 15–17 – microliths (artifact illustrations modified after *Demidenko/Škrdla/Nejman 2017*).

tree double (Fig. 12: 1, 2, 4) and a single triple (Fig. 12: 3) examples are noteworthy. These pieces once again demonstrate a consistent intention to use thick parts of flake-blanks for creation of a shouldered/nosed area. All the above-described carinated *sensu lato* endscraper-core data certainly testify a primary use of these pieces as cores and not tools, at least a tool (scraping?) function was a subordinate and not occurring for each of the pieces.

Having the carinated pieces as a basic part for Napajedla III tool-core and tool inventory and, at the same time, about the only Aurignacian related part, other tools are briefly discussed below.

Simple flat endscrapers (one item – Fig. 13: 1) and burins (two items) are noteworthy by the absence of any simple flat endscrapers with lateral/bilateral retouch and the occurrence of only one typologically identifiable burin, a burin on lateral retouch of a rather atypical value (Fig. 13: 2), when second burin is unidentifiable with a broken termination (Fig. 13: 6). At the same time, if combined tools are additionally used for the discussing tool group, it is seen the presence of four more burins, a burin on oblique truncation + lateral retouch (Fig. 13: 5), an angle burin + lateral retouch (Fig. 13: 4), two broken burins + lateral retouch (Fig. 13: 3). Only a broken burin and an angle burin + lateral retouch are on blade-blanks, while all the rest five tools are on flakes. The burin simple is also typologically indicative by the absence of dihedral burins that is in accord with a single occurrence of carinated burin-core, a ‘derivative’ of dihedral burin type. Furthermore, like it was observed for Willendorf II, AH 4, Napajedla III also features a prevalence of burins over simple endscrapers but in its extreme value with the recognition of only a single endscraper. Accordingly, the two Middle Aurignacian sites are again similar.

Various tools with a well-developed and/or regular continuous retouch are very mostly represented by lateral retouch pieces (nine items) and a single occurrence of pointed blade and notched piece.

The lateral retouch pieces are differentiated according to their debitage blanks: four flakes and five blades. The pieces on flakes are classified as a double straight-convex dorsal side-scraper (a complete flake; Fig. 13: 8), a double concave alternate side-scraper (distal part of a flake), a simple convex dorsal side-scrapers (a complete flake), and a retouched complete flake. Basic difference between the side-scrapers and the retouched flake is in retouch characteristics where the former pieces are with a continuous and well-made retouch and the latter piece is with a rather light retouch (Fig. 13: 11). All the pieces on flakes are less than 40 mm in size. The pieces on blades (Fig. 13: 7, 9, 12–14)

are four fragmented items and a single complete specimen. By retouch treatment, all five blades are different one from other and do not show even two similar pieces why it can be said they are of *ad hoc* secondary treatment character.

The only pointed blade (Fig. 13: 10) deserves a special attention being actually an Aurignacian blade (a distal part) with a well-retouched pointed end. At the same time, the particular Aurignacian tool type does not belong to only one particular Aurignacian industry type and actually sporadically occurs in a view of a few pieces presence in each Aurignacian industry type.

A notched piece is a complete flake 40 mm long with a scalar + semi-steep retouched lateral dorsal notch.

Combined tools are the already above-mentioned only combinations of carinated *sensu lato* endscrapers, burins and lateral retouch.

Microliths are two microblades and a bladelet with a significant variability of their retouch type and placement data. There is a Dufour complete bladelet (12 mm long, 3 mm wide, 1 mm thick) with a bilateral alternate retouch placement (Fig. 13: 17), although it is not a Proto-Aurignacian Dufour sub-type microlith due to the presence of only a fine marginal for the discussing piece. Second microlith (Fig. 13: 15) is a so-called pseudo-Dufour complete microblade (20 mm long, 4 mm wide, 1 mm thick) with a bilateral dorsal fin marginal retouch. Third microlith (Fig. 13: 16) is again a sort of pseudo-Dufour complete bladelet (15 mm long, 7 mm wide, 2 mm thick) bearing a lateral dorsal partial fine marginal retouch. The microliths attest to the wide range of microliths. Due to the morphologically and metrically variable their blanks, the site’s microliths represent a random sample, maybe caused by a partial screening/sieving done at the site yet.

Pieces with marginal and/or irregular retouch are characterized by only blade-blanks occurrence. Such blank type regularity may suggest targeted selection of blanks for the considering tools in a situation when most of the tool-core and tool blanks are flakes.

Tool shaping and rejuvenation waste

These are two primary burin spalls with no crest and a chip from the working edge of a simple endscraper. These specimens indicate on-site tool production and re-shaping. There are only a few of them recognized but most likely it is again due to the only partial screening/sieving of artifact bearing sediments during the site’s excavations why some of these tiny items may not have been recovered.

Some on-site production and rejuvenation processes might be also evidenced through the occurrence of six recognized tool fragments.

Tool-core and tool summary

Excluding unidentifiable tool fragments, the remaining 45 tool-core and tool blanks are subdivided into the following types:

- flakes (including a single core on flake) – 27/60%;
- blades – 15/33.4%;
- bladelets – 1/2.2%;
- microblades – 2/4.4%.

There is a notable regularity here. On one hand, all 16 tool-cores (35.6%) are on flake-blanks. Two more endscrapers-cores of the six combined tools are on a blade and on a flake. It makes a total of 17 tool-cores (37.8%) on flake-blanks with only one piece on a blade-blank (2.2%). Other flake-blanks are classified as a simple flat endscrapper (the only such endscrapper in the tool-kit), a burin on lateral retouch (the only identifiable burin type with a single burin termination and/or other tool extremity in the tool-kit), four out of nine lateral retouch pieces, one notched piece and three out of other five combined tools (one burin on oblique retouch + lateral retouch and two burin broken + lateral retouch). Apart from the shouldered/nosed endscrapper-core + angle burin, there is one more combined tool on a blade (a burin angle + lateral retouch), as well as the following other tool classes and types: one broken burin, five out of nine lateral retouch pieces, one pointed tool, all six pieces with marginal and/or irregular retouch.

The following flake- and blade-blank characteristics can be proposed for the Napajedla III tool-cores and tools. The presence of almost exclusively short flake-blanks for tool-cores, serving basically as cores for microblade production is most relevant for the 'debitage blank subject' as thick blanks are required for these microblade cores. The presence of two simple endscrapers and burins on flakes (the only 'non-combined' types in the tool-kit), also emphasizes the flaky character of the tool-kit. The occurrence of four lateral retouch pieces and three burins + lateral retouch combined tools are again consistent with the flaky character of the tool-kit. At the same time, the number of tools *sensu stricto* on flakes (nine pieces) is less than tool-cores on flakes (17 pieces). Thus, if the 'tool-cores' are removed from the tool type list, the tool-kit does not have as many flakes. These considerations mean that some Aurignacian industries with many shouldered/nosed/carinated endscrapper-cores and a few if any burin-cores that appear to be flake-blank based do

not have as many flakes as may first appear. Looking at tool blade blanks, a tendency for their use for regularly and irregularly lateral retouch pieces (11 out of 15 pieces/73.3%) is apparent. It seems logical to use more elongated blanks for cutting and scraping tools. That's probably also why such Aurignacian assemblages with many shouldered/nosed/carinated endscrapper-cores and serial flake cores also contain some blade and blade/bladelet cores, present independently from the flake and microblade core reduction strategies. The common proportion of *lamelle*-blanks as 6.6% is most likely an underestimate. The partial dry screening and wet sieving of the artifact bearing sediments has likely resulted in some loss of small-sized pieces, including the retouched microliths. In summary, the finding that flake blanks dominate is a robust finding, but excluding the flake- (17) and blade-blanks (1) for all tool-cores (16) and their combinations with other tool classes and types (two), and functionally considering them as specific microblade cores, the entire tool blank type structure would rather change radically with far fewer flake-blanks for the remaining 27 tools:

- flakes – 10/37%;
- blades – 14/51.9%;
- bladelets – 1/3.7%;
- microblades – 2/7.4%.

Although the new tool sample is statistically very small, there is a lack of flake-blank utilization in Napajedla III for the tools *sensu stricto* production – when the tool-cores are excluded. Probably, it is also true for the entire range of such possible 'pseudo-flaky' Middle Aurignacian tool-kits and assemblages containing a great number of typologically easily definable shouldered/nosed endscrapers basically used for specific microblade production. Moreover, the great diversity of tool blanks for the fourdebitage types is in a good correspondence with the core reduction data which presents several distinct reduction strategies, making the Middle Aurignacian assemblages a mosaic of technological features. The core reduction variability also explains the presence of both 'hard and soft hammer techniques' applications in such lithic assemblages. From a technological point of view, the Middle Aurignacian is like a 'multifunctional attack airplane' featuring a diversity of core reduction strategies. The shouldered/nosed endscrapper-cores are also present in Aurignacian I/Early Aurignacian lithic assemblages (e.g. *Chiotti 2012*), which, however, in contrast to the Middle Aurignacian is characterized by a reverse order for shouldered/nosed and wide-fronted carinated endscrapper-cores with the dominance of the latter type.

Tab. 6. Napajedla III. Indicative tool and tool-core types.

	Napajedla III
	after Demidenko et al. 2017
ENDSCRAPERS	16/66.7%
Carinated endscrapers	1/6.25%
Shouldered/nosed endscrapers	10/62.5%
Double-triple shouldered/nosed endscrapers	4/25%
Simple flat endscrapers	1/6.25%
Endscrapers on laterally/bilaterally retouched pieces	0
Endscrapers on blades with Aurignacian-like retouch	0
Endscrapers on Aurignacian strangled blades	0
BURINS	5/20.8%
Carinated	1/20%
Dihedral	0
On truncation/transversal on lateral preparation	2/40%
Angle/transverse on natural surface	2/40%
LAMELLES with a fine lateral/bilateral retouch	3/12.5%
Dufour, lamelles with alternate/alternating retouch	1/33.3%
Dufour, lamelles with ventral retouch	0
Pseudo-Dufour, lamelles with lateral dorsal retouch	1/33.3%
Pseudo-Dufour, lamelles with bilateral dorsal retouch	1/33.3%
FONT-YVES/KREMS points with a fine retouch	0
BLADES with Aurignacian-like strangled retouch	0
BLADES with Aurignacian-like retouch	0
Total	24/100%

Regarding the presence of specific Aurignacian tool-core and tool types and also some indicative UP tools in Napajedla III assemblage (Tab. 6), the most characteristic types are shouldered/nosed endscrapers and variable tiny microliths with a fine marginal retouch. The microliths are also morphologically variable due to their technological connection, removing from a set of carinated *sensu lato* tool-cores and not just from a single and/or two but morphologically similar reduction objects. At the same time, wide-fronted carinated endscrapers and carinated burin-cores are known by a single example each. No any sort of Aurignacian blades or endscrapers on such blades occur as well. Coming to endscrapers and burins, the presence of a single simple endscrapers and absence of any endscrapers on laterally/bilaterally retouched flake or blade with in total six burins (two angle, two on truncation/lateral retouch, two unidentifiable with broken terminations) shows even the worse situation with 'simple'

endscrapers and burins than it was already observed for Willendorf II, AH 4. The same can be said about both the complete absence of dihedral burins at Napajedla III, while they are serially occurring at Willendorf II, AH 4 and a single finding of a carinated endscrapers-core at Napajedla III, whereas they compose a good set of pieces at Willendorf II, AH 4. At the same time, just the single recognized carinated burin-core example is characteristic for both these Moravian and Austrian sites. Accordingly, all these data, still representing a definite example of Middle Aurignacian industry type, indicate an extreme example of the industry's basic typological indices.

Napajedla III site and some probable human activities at the site

From our point of view, the above-discussed specific character of Napajedla III lithic assemblage

within the known typological criteria of Middle Aurignacian industry, as well as basic human activity characteristics seen for the site should be, first of all, understood through a lithic raw material situation. The site is not located at or near a rich raw material outcrop used then by its Middle Aurignacian human visitors. There are few artifacts made on local materials (silicified sandstone, quartz and unspecified chert/weathering products) and none of them are cores or tools. At the same time, almost 90% of all artifacts (chips not included) are produced on imported erratic flints sourced to an area ca. 60–100 km to the northeast. A radiolarite source is located approximately 45 km from Napajedla III site, but there are only a few artifacts on it – a core (Fig. 11: 2), some debitage pieces, a shouldered/nosed endscraper-core (Fig. 11: 4), a shouldered/nosed + carinated endscraper-core (Fig. 12: 7) and some tools (Fig. 13: 7, 13). Thus, most of the techno-typologically important artifacts are on long distance imports erratic flint and radiolarite. Our realized refitting efforts have not been successful and only a few artifacts were conjoined. This was partly due to the fact that the artifacts were recovered from three different areas and only some of the artifact bearing sediments were dry screened and wet sieved. The refit failures are also due to some intensive ‘artifact history movements’. A significant number of core-like pieces, endscraper-cores and even tools *sensu stricto* have been brought to the site in an already prepared condition (too few debitage pieces and chips with some primary cortex), then intensively flaked and/or used at the site. In addition, some pieces were subsequently transported away from the site. The proposed intensive and multiple lithic primary and secondary on-site reductions are clearly discernible: the few exhausted cores, their small size and absence of any prepared nodules/pre-cores, the presence of a series of fragmented shouldered/nosed endscraper-cores, double and even triple shouldered/nosed endscraper-cores, a combination of carinated and shouldered/nosed endscraper-core, as well as a diversity of nosed front/flaking edge locations on the endscraper-cores (terminal, *déjéte*, double *dejete* on a piece), as well as the occurrence of some nosed but ‘irregular/exhausted’ endscraper-cores. The presence of several heavily modified so-called combined tools including two pieces with shouldered/nosed terminations and a burin and laterally retouched edge, variously retouched side-scrappers on flakes and retouched blades, etc. Additionally, all the shouldered/nosed endscraper-core data do definitely testify not only to very intensive specific microblade reduction, but also suggests shortage of raw material at the site.

There is an additional peculiarity of the site (keeping in mind the raw material deficit), the presence of many heavily burnt pieces numbering ca. 200 specimens. That is more than 20% of the entire lithic assemblage that was recovered. Combining these observations (distance to high quality flint and radiolarite outcrops in relation to the site location, an intensive and multiple character of lithic primary and secondary reduction and use at the site, the presence of some large-sized and/or long lasting fireplaces/hearths) raises questions about the nature of human occupation at this site. The most logical explanation is that this site acted as a transitory camp (distance from raw material), with specific tasks being performed at this site. The topography of the surroundings (the narrow passage of the Napajedla Gate is often quoted in literature as a migration route for game animals) is also consistent with hunting being an important activity at this site, although fauna remains almost did not preserve at the site why also probably any bone/antler tools were not found during excavations. But still keeping in mind the presence of many burnt lithic pieces, it becomes evident successful (!) hunting events near the site why then Middle Aurignacian humans had fireplaces for hunted ungulate meat consuming. The absence of known sites that are industrially similar in southern Poland (erratic flint source) and the Váh River valley in western Slovakia (near radiolarite outcrop) prevents us from forming conclusions about settlement patterns of these human groups. However, it is clear that similar find assemblages occur in the discussing Moravian microregion (see below).

Comparing the human occupation characteristics for two key and *in situ* sites with Middle Aurignacian artifact assemblages, Willendorf II, AH 4 and Napajedla III, we also would like to propose the following considerations. The Austrian site looks like the planned ahead and the well-known loci for its good hunting possibilities and some available local lithic raw material sources, why it was probably already multiply visited before, being a sort of basic hunting stopover. On the other hand, the Moravian site is rather an *ad hoc* hunting stopover at random loci for an occasional hunting with no any lithic raw material supply around. This is why there are just a few domestic tools, simple endscrapers and burins at the Moravian site and the seen main emphasis on microblade production from carinated *sensu lato* tool-cores supplying a hunter group by some more microliths. Thus, it is suggested having two different hunting sites for the two keys in situ Middle Aurignacian sites with well representative artifact assemblages.

ŽLUTAVA I AND NOVÁ DĚDINA I
SURFACE LOCI
(CZECH REPUBLIC)

A few kilometres to the north from Napajedla III site still along the Morava River at Napajedla Gate area were already long ago known at least 20 UP surface loci around villages of Žlutava and Nová Dědina. Two of the loci, Žlutava I and Nová Dědina I were always published as Aurignacian sites and usually most attention was paid to Žlutava I assemblage being, for example, considered belonging to 'Krems facies of Aurignacian' (Kozłowski 1965, 37–40), 'Aurignacian with Dufour bladelets' (Hahn 1977, 113, 114, 243, 244), 'Typical Aurignacian'... a strong presence of carinated and nosed endscrapers and a lack of Aurignacian burins where 'Žlutava I industries, with finely retouched bladelets have been classified as a Dufour facies' (Oliva 1993, 42, 43). Žlutava I and Nová Dědina I are also of particular our Middle Aurignacian interest. However, taking a closer look at the really published some artifact data (Hahn 1977, tab. 3; 4; pl. 134–136; Oliva 1987, 46–66; 2005, 45, 46, 50), three not mentioned before and/or undervalued artifact characteristics appear. First, a clear Gravettian component is present within collected Žlutava I and Nová Dědina I surface lithic finds (e.g. Oliva 1987, fig. 18: 24–27; 19: 17–22; 21: 21, 22; 25: 4; 1993, fig. 5: 15–19). The noted feature, surface sites at Napajedla Gate area were often mixed with Gravettian artifacts, was already mentioned by one of us (Škrdla 2007). Second, the two loci demonstrate the presence of serial shouldered/nosed endscraper-cores (e.g. Hahn 1977, 7–9, 12; Oliva 1987, fig. 17: 5, 14–16, 22, 23; 18: 22; 26: 11–13, 16; 27: 18, 20, 21, 23). Third, the recovered microliths with a fine marginal retouch demonstrate a significant their morphological variability caused by blank detachment from different reduction objects, and retouch placement (e.g. Hahn 1977, pl. 135: 3–5; 136: 12–16; Oliva 1987, fig. 21: 6–18; 27: 1–14) that was already noted for Napajedla III microliths. Finally, like Napajedla III site, many of the collected Žlutava I and Nová Dědina I lithics are on erratic flint and radiolarite (Oliva 1987, 50, 62). All the above-enumerated lithic artifact features for Žlutava I and Nová Dědina I allow us to suggest their industrial affinity with Middle Aurignacian industry type too. They together with Napajedla III *in situ* site (there is still good field perspectives to continue excavations at the site) can indeed represent a cluster of the particular Aurignacian industry in Eastern Moravia. Moreover, remembering about the presence of many UP surface find loci in that microregion when some of them could be potentially recognized as *in situ* sites during a future work, Eastern Moravia could potentially serve a centre for studies of Middle Aurignacian in Eastern Central Europe.

MILOVICE I/MILOVICE I-MIKULOVSKO
SITE (CZECH REPUBLIC)

Site location and field research history

This site, as it can be said that way, is a neighbourhood of very famous Gravettian sites of Dolní Věstonice and Pavlov in the microregion of the Pavlov Hills in Southern Moravia. It is located on a north-eastern slope in a small, dead-end side valley penetrating into the Mikulov Highlands from the Dyje River Valley. The altitude of the site reaches 225–240 m a.s.l.

Milovice as a UP site was recognized in 1949 by B. Klíma. Later on, he also found some more animal bone and lithic artifacts identifying *in situ* UP archaeological layers. Since 1986 M. Oliva had been systematically excavating the site until 1990 and then published a collective monograph on the site's Gravettian context and findings, as well as some information on Aurignacian artifact bearing sediments and absolute dates (Oliva 2009). Like Gravettian site clusters at Dolní Věstonice and Pavlov, now Milovice I is also well known for its rich *in situ* Gravettian occupations excavated within pseudo-gleyed loess deposits. But Gravettian horizons are underlined by a lithological stratum of Interplaniglacial soil sediment (up to 60 cm thick) disturbed by slope processes. This soil sediment contains *in situ* Aurignacian artifacts in sectors A, C, D, G, L, M. However, in contrast to the Gravettian finds, the excavated much less numerous Aurignacian materials have not been published yet in detail and only some data is available (e.g. Oliva 1989). Aside from some fragments of horse and mammoth teeth, animal bones have not been found among Aurignacian finds.

Geochronology

Dating of Aurignacian occupations in two different site's sectors is based on the following uncalibrated radiocarbon dates made on charcoal samples (Oliva 2009, 24):

- Sector L – 28,780 ± 230 BP (GrN-22107) 'from upper horizon of Aurignacian layers in superposition of several fireplaces' and 32,030 ± 370 BP (GrN-22108) on a charcoal sample from 'lower horizon of Aurignacian, same superposition of fireplaces'.
- Sector D – 29,200 ± 950 BP (GrN-14826) 'upper level of charcoals in soil sediment with occasional Aurignacian finds'.

Accordingly, it could be an Aurignacian period between ca. 36,000–35,000 and 33,000–32,000 cal. BP for Milovice I. Such the geochronology fits well

into the above-described dates for Willendorf II, AH 4 and Napajedla III.

Studied by Oliva multiple superposition of fireplaces/hearths at Milovice I (see *Oliva 2017*, fig. 63) probably indicates not a single but multiple Middle Aurignacian human occupations at the site.

Lithic artifacts

Due to limited published information on Aurignacian lithic artifacts with no even given statistic data for recovered finds and their artifact categories, the data will be summarized in a very general way.

Regarding the used lithic raw materials, local ‘various types of Jurassic and Cretaceous hornstones probably obtained from the near-by environs’ (*Oliva 1989*, 269–271) at ‘gravel banks and from weathered Jurassic limestone’ dominate (*Oliva 2005*, 49), supplemented by distant for the site erratic flint and radiolarite (*Oliva 1989*, 269–271).

Core reduction data are only limited to the following notes: ‘both blades and prismatic cores with parallel scars are very rare, however, bladelet-like retouch can be found on carinated and nosed scrapers representing the fundamental part of retouched types’ (*Oliva 1989*, 268). The cited single sentence fits about perfect into the above-discussed primary flaking technological traits for the Middle Aurignacian sites. Taking tool-core and tool data, it is also already clear a dominance of carinated and nosed endscraper-cores among tool-cores where, for example, carinated burin-cores were not noted due to the stated overall burin characteristics: ‘usually simple variants’ occur (*Oliva 1989*, 268). Although Oliva never mentioned shares of carinated and nosed endscraper-cores separately one from other, looking through his Aurignacian-related artifact illustrations for sector L finds (*Oliva 1989*, fig. 5; 6), it is seen only a single carinated item (Fig. 14: 12), while all other endscraper-cores are actually shouldered/nosed pieces (Fig. 14: 1–8, 10, 11) with two of them even representing a double (Fig. 14: 10) and a triple (Fig. 14: 11) examples. Strictly speaking tools, apart from the mentioned burins (Fig. 15: 1, 2), are said to be represented by the following classes and types that ‘do not occur so often: flat endscrapers (Fig. 14: 13), retouched blades (Fig. 14: 9), notches and denticulates’ and of special attention for Oliva were ‘finely worked small side-scrapers and abruptly retouched flakes’ (*Oliva 1989*, 268). The latter tools presence was explained as follows: ‘the occurrence of characteristic Middle Palaeolithic types... is a locally surviving specific feature’ (*Oliva 1989*, 271). However, as was shown by us for all the described Middle Aurignacian assemblages, the serial occurrence

of side-scrapers (Fig. 15: 3–5) should be better explained by a great dominance of flakes over blades within non-bladelet debitage samples why production of many tools *sensu stricto* was realized on flakes and many laterally retouched flakes with an elaborated retouch look like Middle Palaeolithic types of side-scrapers. At the same time, microliths were not reported and reasons for their absence are unclear. It could be because of some redeposition of the site’s Aurignacian bearing sediments and/or absence of systematic dry screening and/or wet sieving during the site’s excavations in the late 1980s.

Milovice I site and its human occupation type

Having scarce information for the site’s data on Aurignacian human occupation events, it is still possible to make some observations and suggestions on the subject. The prevalence of artifacts made on local raw materials, various hornstones, does differentiate Milovice I from the Middle Aurignacian sites in the area of Napajedla Gate with mainly use of distant raw materials, erratic flint and radiolarite. The latter two raw materials, however, are said to be just supplementary ones at Milovice I. Having no information on burnt lithics, there is still an important fact on multiple superpositions of some fireplaces/hearths at the site. It evidently indicates some repeated visits of Middle Aurignacian human groups to the site during an overall short time period with fireplaces/hearths construction/re-construction at about the same places. The fireplaces/hearths themselves also probably indicate a consumption of ungulate carcasses (horse teeth findings should not be forgotten here) hunted near the site. It is also indicative a rarity of carinated endscraper-cores and numerous occurrences of shouldered/nosed endscraper-cores that is, from our point of view, a technological feature indicating serial reduction of only one morphological type of microblades for on-site microlith manufacturing processes, as well as the presence of series of simple flat endscrapers, burins, retouched blades and flakes, side-scrapers. The latter ‘domestic tools’ evidence some ‘living site characteristics’ in addition to hunting features (many shouldered/nosed endscraper-cores) for Milovice I. It potentially makes the site a sort of either a planned ahead basic hunting station, like it is suggested by us for Willendorf II, AH 4, or even a kind of a base camp. The base camp assumption could be reinforced by the known fact on the presence of some other sites in close proximity to Milovice I, at the nearby sites of Pavlov and Dolní Věstonice (*Oliva 2005*, 49; 2017, 82; *Škrdla 2017*, 124; *Svoboda/Novák/Sázellová 2016*, 47).

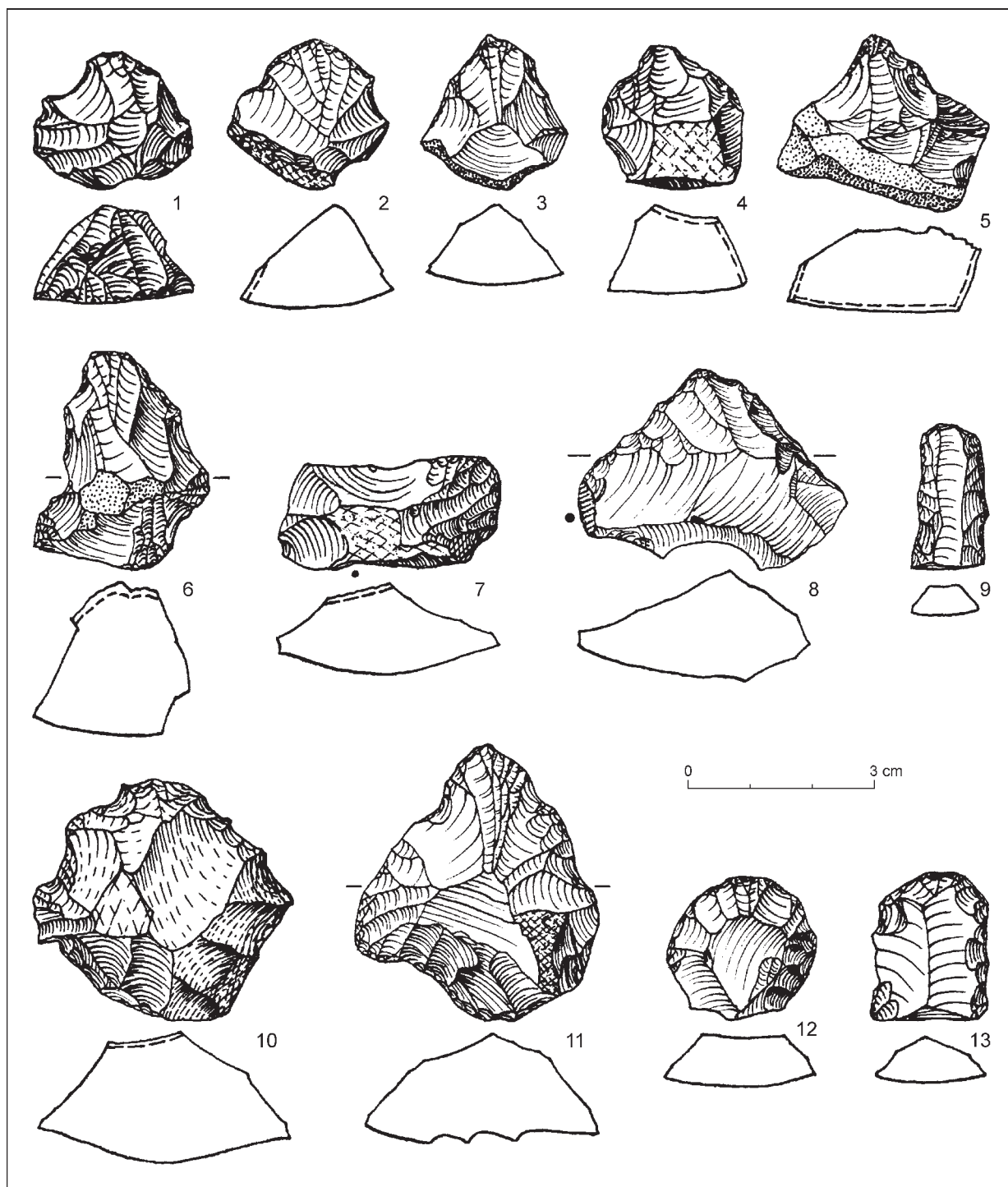


Fig. 14. Milovice I/Milovice I-Mikulovsko (Czech Republic). 1–8, 10, 11 – shouldered/nosed endscraper-cores; 9 – bilaterally retouched blade; 12 – carinated endscraper-core; 13 – simple flat endscraper (artifact illustrations modified after *Oliva* 1989).

Although Aurignacian artifact bearing sediments below Gravettian levels at various loci of Pavlov and Dolní Věstonice sites were up to now just recognized on limited excavated areas with only a few indicative artifacts found and Aurignacian data for Milovice I are not really published yet, it is still possible to put forward a hypothesis on Middle Aurignacian site

cluster with both base camps/residential/living sites and some hunting stations at Milovice I, Pavlov and Dolní Věstonice site areas in the microregion under the Pavlov Hills. Remembering also about base camp and hunting station features for the same site cluster during later, Gravettian time, the proposed hypothesis sounds promising. Finally, recently

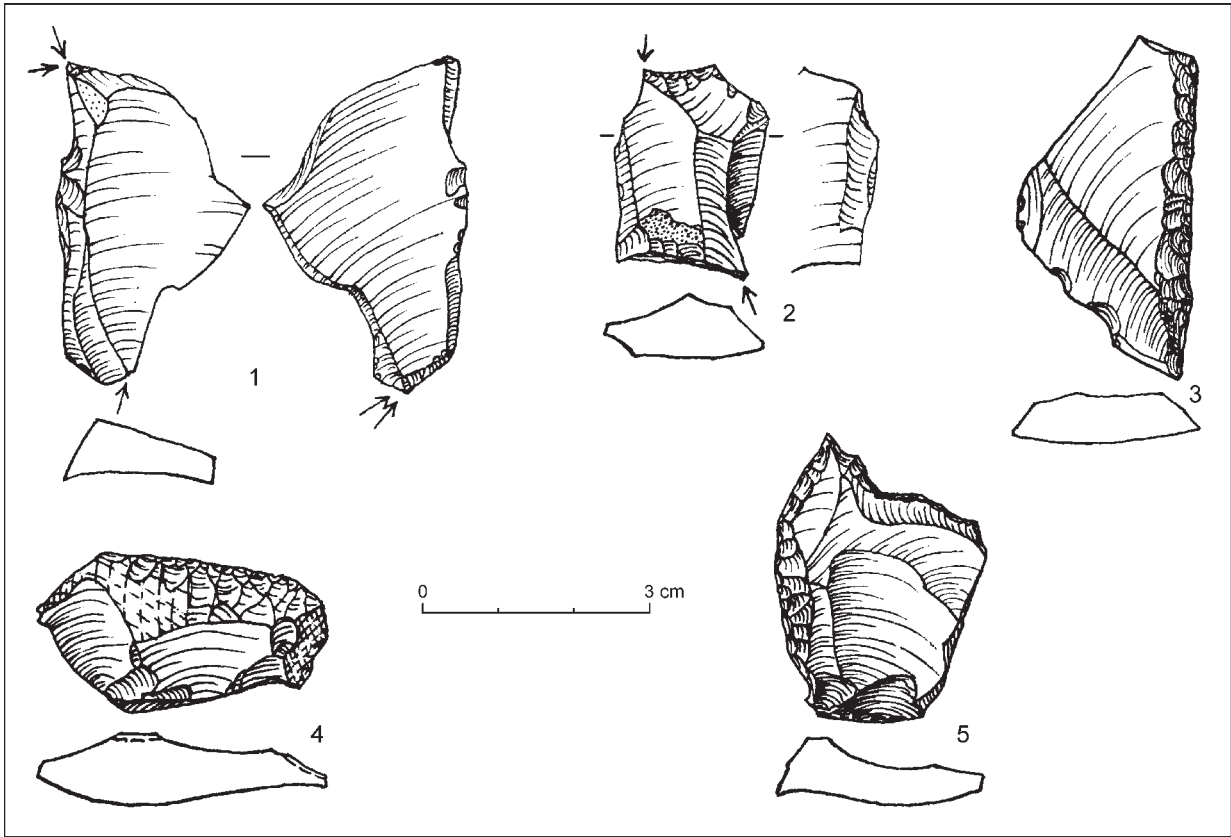


Fig. 15. Milovice I/Milovice I-Mikulovsko (Czech Republic). 1, 2 – burins; 3–5 – side-scrapers (artifact illustrations modified after *Oliva 1989*).

M. Novák initiated new excavations at Milovice I site excavating both Gravettian and Aurignacian artifact bearing deposits and it is hoped to have more data for further Aurignacian studies.

NAGYRÉDE 1 AND 2 SURFACE LOCI (HUNGARY)

Sites location and field research history

Now it is proposed to take a look at two most closely geographically situated loci to the Moravian and Austrian sites, Nagyréde 1 and 2 surface find spots in North-Central Hungary. They are situated about 70 km to north-east from Budapest in southern part of Mátra Mountains. It is on the right bank of Rédei-Nagy-patak stream at Öreg-hegy (Old hill) that is a dominant height for the surrounding areas. There is a great panoramic view from the hill to the southeast on vast territories of the near-by plain. The stream itself is located ca. 1 km from Nagyréde 1 and ca. 1.5 km from Nagyréde 2. Nagyréde 1 (187 m a.s.l.) is ca. 1 km away from Nagyréde 2 (200 m a.s.l.). Vast vineyards have been occupying the loci areas for many years until now.

After many years of Palaeolithic research in Hungary when Aurignacian *sensu stricto* artifacts have been exclusively suggested for cave sites (e.g. Istállóskő), finally, first undoubtedly Aurignacian homogeneous lithic finds were recently found at two surface find spots in north-central part of the country. The discovery of Nagyréde 1/Nagyréde-Öreg-hegy loci was done by L. Fodor in 2002. Since than one of us (S. Béres) joined L. Fodor for studies of the found loci in 2002, 2003 and 2005. One more Aurignacian loci near-by, Nagyréde 2/Nagyréde-Vájsz, was then recognized in 2005. Starting from 2005 the two loci were simultaneously under studies by S. Béres and L. Fodor with repeated annual visits in 2005, 2006, 2009, 2015. Taking found lithic artifacts during first field campaigns and inviting for artifact analysis G. Lengyel, who was already one of the leading UP specialists in Hungary at that time, G. Lengyel, S. Béres and L. Fodor published a good article on Nagyréde 1 and 2 and their find (*Lengyel/Béres/Fodor 2006*). Their basic conclusions and suggestions were as follows at that time: 'Nagyréde sites with the 24–25% of Aurignacian endscrapers in the tool kits resemble the Aurignacian II in Périgord (Djindjian 1993b) or the 'classic' Aurignacian phenomenon across Europe (Kozłowski/

Otte 2000). Although *Istállóskő* upper layer and *Peskő* are also designated Aurignacian II (Vértes 1955; 1965), the Nagyréde assemblages signify a different and still unique Aurignacian lithic appearance in Hungary. Future excavations will clarify the position of the Nagyréde assemblages among the Hungarian Aurignacian context' (Lengyel/Béres/Fodor 2006, 84). Now it is already planned by two of the present article's authors (Yu. E. Demidenko and S. Béres) to make a new study for Nagyréde 1 and 2 lithics which numbers significantly enlarged after collecting events in between 2006 and 2015 years. For purposes of the present article, it was decided to stay on the 2006 published data adding to them just a few remarks that will mainly show some perspectives on more lithic artifacts' analyses.

Lithic artifacts

More than 15 years ago the quantity of lithic artifacts found at the two loci were as follows: 1,305 items at Nagyréde 1 and 1,885 items at Nagyréde 2. In spite of the more numerous overall artifact sample from Nagyréde 2, actually, the sample from Nagyréde 1 was more informative, regarding the most technologically indicative data (see below).

Raw materials

The prevailing lithic raw material for the two loci artifacts was limnosilicite that was named 'hydroquartzite' in the 2006 article. The two names for the particular rock are actually synonyms (see for example Mester/Faragó 2016). Most important, however, that limnosilicite was a local raw material for Nagyréde Middle Aurignacian humans. Nearest to the two loci limnosilicite outcrops are situated ca. 5–6 km to the north. At the same time, numerous some other limnosilicite sources are well known within a radius of 25 km from the loci. Thus, it is understandable why 95.9% and 90.8% of all artifacts found at Nagyréde 1 and 2 occur on limnosilicite (Lengyel/Béres/Fodor 2006, tab. 1). The rest artifacts were made on a few still local for Mátra Mountains andesite (0.6% and 0.1% for Nagyréde 1 and 2, respectively), while all other raw material types can be regarded as either regional (Southern Bükk hornstone) or distant (Carpathian 1 Zempén obsidian, Southern Poland erratic flint, Western Slovakia radiolarite) still numbering usually a few pieces each, aside from erratic flint and radiolarite. The latter two raw material types are not only at little more numerous (2.2% and 0.9% at Nagyréde 1, 8.4% and 0.3% at Nagyréde 2) but show particularly more significant roles within the discussing assemblages'

tool-kits (see below). In sum, it is well seen a reliance on local limnosilicite with supplementary roles of some other but non-local, regional and distant raw materials for the two loci Middle Aurignacian human visitors where the latter raw materials indicate some network connections with some other Middle Aurignacian humans who both probably left behind them already above-mentioned sites in Moravia and Austria, and some unknown yet sites in Hungary and Slovakia.

Lithic artifact composition

The two assemblage basic artifact categories can be represented as follows, restructuring the respective 2006 data (Lengyel/Béres/Fodor 2006, tab. 2) and providing all the data first for Nagyréde 1 and then for Nagyréde 2:

- Core-like pieces – 105/8%/13.2% and 71/3.8%/5.9%;
- Core maintenance products (CMP) – unknown, the artifact category was not defined;
- Debitage – 581/44.5%/72.8% and 1,057/56%/87.6%;
- Tools and tool-cores – 112/8.6%/14% and 79/4.2%/6.5%;
- Tool shaping and rejuvenation waste – unknown, the artifact category was not defined;
- Debris – 507/38.9%/– and 678/36%/–.

The above-represented first analysed artifact data for the two loci indicate some variability of artifact categories where the more numerous samples of tool-cores and tools, as well as cores are known for Nagyréde 1.

Core reduction data

Core-like pieces

As was done for all the above-discussed Middle Aurignacian assemblages, tool-cores are also considered among total core samples for Nagyréde 1 and 2. At the same time, cores *sensu stricto* classification is given according to the 2006 article classification approach where, like P. R. Nigst did for Willendorf II, AH 4, blade/bladelet cores were not recognized. The resulted overall core lists can be listed by us as follows (see also Tab. 7).

- Nagyréde 1 are with 132 specimens:
- pre-cores – not defined during the 2006 article study;
 - blade cores – 31/23.5%;
 - blade/bladelet cores – not defined during the 2006 article study;
 - bladelet 'regular' cores – 14/10.6%;
 - bladelet 'carinated' cores – ?;
 - bladelet carinated endscraper-cores – 5/3.8%;

Tab. 7. Nagyréde 1 and 2 (Hungary). Basic core type data.

	Nagyréde 1	Nagyréde 2
	re-calculated from <i>Lengyel et al. 2006</i>	re-calculated from <i>Lengyel et al. 2006</i>
Blade cores	31/23.5%	12/13.2%
Blade/bladelet cores	0?	0?
Bladelet 'regular' cores	14/10.6%	2/2.2%
Bladelet 'carinated' cores	0?	0?
Bladelet carinated endscraper-cores	5/3.8%	3/3.3%
Bladelet shouldered/nosed endscraper-cores	22/16.7%	17/18.7%
Flake/blade cores	0?	0?
Flake cores	60/45.4%	57/62.6%
Total	132/100%	91/100%

- bladelet shouldered/nosed endscraper-cores – 22/16.7%;
- flake/blade cores – not defined during the 2006 article study;
- flake cores – 60/45.4%.

Nagyréde 2 with 91 specimens:

- pre-cores – not defined during the 2006 article study;
- blade cores – 12/13.2%;
- blade/bladelet cores – not defined during the 2006 article study;
- bladelet 'regular' cores – 2/2.2%;
- bladelet 'carinated' cores – ?;
- bladelet carinated endscraper-cores – 3/3.3%;
- bladelet shouldered/nosed endscraper-cores – 17/18.7%;
- flake/blade cores – not defined for the 2006 article study;
- flake cores – 57/62.6%.

Data on the two core sets allow us to speak about a newly recognized Middle Aurignacian core features among all the under observations Austrian, Moravian and Hungarian sites. On one hand, there are some already well-known characteristics as co-occurrence of serial both flake cores and bladelet carinated and shouldered/nosed endscraper-cores, and also a few examples of either blade/bladelet and bladelet 'regular' cores. For Nagyréde 1 and 2, however, we have the entire possible core type spectrum, if we forget not defined during the 2006 article study pre-cores and blade/bladelet cores that have to be present there. Taking a closer look at the listed cores, it is first time seen significant shares of blade cores (23.5% and 13.2%), while before there was no one real blade core among the Eastern Central European Middle Aurigna-

cian assemblages. Also, if Willendorf II, AH 4 and Napajedla III do show a good presence of flake cores (23.3% and 16.7%), Nagyréde 1 and 2 cores are characterized by a great dominance (45.4% and 62.6%) of flake cores. At the same time, shares of carinated and shouldered/nosed endscraper-cores among all taken together cores at Nagyréde 1 and 2 are the lowest among the above-analysed sites in Austria and Moravia. On the other hand, the Hungarian loci show the permanent Middle Aurignacian trend in multiple prevalence of bladelet shouldered/nosed endscraper-cores over bladelet carinated endscraper-cores. Keeping in mind a great reliance on local limnosilicite for all-around primary flaking processes at Nagyréde 1 and 2, there is no other way than to suggest a dominance of 'domestic cores' there, when flake and blade cores compose a 'home basis' for both on-site preparation on thick flake-blanks of shouldered/nosed and carinated endscraper-cores and also on-site production and then use on blade-blanks of many 'domestic tools', first of all, simple endscrapers and burins. Such the core data and their understanding also lead us to a hypothesis on a base camp/residential/living site features for both Nagyréde 1 and 2 loci.

Debitage

The artifact category was composed of three debitage type pieces when microblades were not defined among bladelets during the 2006 article study. They are as follows providing all the data first for Nagyréde 1 (all 581 debitage items) and then for Nagyréde 2 (all 1,057 debitage items; Tab. 8):

- flakes (≥ 15 mm) – 488/84% and 960/90.8%;
- blades – 79/13.6% and 84/8%;
- bladelets – 14/2.4% and 13/1.2%.

Tab. 8. Nagyréde 1 and 2 (Hungary). Basic debitage type data.

	Nagyréde 1	Nagyréde 2
	re-calculated from <i>Lengyel et al. 2006</i>	re-calculated from <i>Lengyel et al. 2006</i>
Flakes	488/84%	960/90.8%
Blades	79/13.6%	84/8%
Bladelets	14/2.4%	13/1.2%
Total	581/100%	1057/100%

The above-represented internal structure of debitage pieces shows about an absolute prevalence of flakes over all taken together bladey pieces. Flakes show more shares among debitage than flake cores do for all cores. Remembering collecting lithics on modern surface during two loci field studies, it is understandable the received 'debitage picture'. Having much more cores and tool-cores with bladelet removal negatives (41 for Nagyréde 1 and 22 for Nagyréde 2) than bladelets, it is clear a great loss of bladelets at the surface find spots. At the same time, the also seen a great predominance of flakes over blades can again indicate all-around on-site primary flaking processes from pre-core stages to

exhausted cores when flakes played many roles in preparation and re-preparation of various blade, blade/bladelet and bladelet core flaking surfaces, striking platforms processes in addition to proper flake core reductions for thick flake detachment. The abundance of flakes also explains why shares of tools on flakes are higher than tools on blades (see below).

Tool-kits and some remarks on their data

112 and 79 tool-cores and tool are listed for Nagyréde 1 and 2 tool-kits (*Lengyel/Béres/Fodor 2006*, tab. 4). These pieces are re-structured by us with a loss of some items (e.g. various atypical endscrapers and *raclettes* that certainly could be simple naturally damaged pieces at surface find spots) in the following way (see Tab. 9).

Endscrapper-cores and endscrapers – 58 for Nagyréde 1 and 35 for Nagyréde 2:

- carinated endscrapper-cores – 5/8.6% for Nagyréde 1 and 3/8.6% for Nagyréde 2 (Fig. 16: 1, 2);
- shouldered/nosed endscrapper-cores – 22/37.9% for Nagyréde 1 and 17/48.5% for Nagyréde 2 (Fig. 16: 3–6; 17: 1–7);

Tab. 9. Nagyréde 1 (Hungary). Indicative tool and tool-core types.

	Nagyréde 1	Nagyréde 2
	re-calculated from <i>Lengyel et al. 2006</i>	re-calculated from <i>Lengyel et al. 2006</i>
ENDSCRAPERS	58/82.8%	35/87.5%
Carinated endscrapers	5/8.6%	3/8.6%
Shouldered/nosed endscrapers	22/37.9%	17/48.5%
Double-triple shouldered/nosed endscrapers	0	0
Simple flat endscrapers	19/32.8%	12/34.3%
Endscrapers on laterally/bilaterally retouched pieces	12/20.7%	3/8.6%
Endscrapers on blades with Aurignacian-like retouch	0	0
Endscrapers on Aurignacian strangled blades	0	0
BURINS	12/17.2%	5/12.5%
Carinated	0	0
Dihedral	6/50%	0
On truncation/transversal on lateral preparation	1/8.3%	2/40%
Angle/transverse on natural surface	5/41.7%	3/60%
LAMELLES with a fine lateral/bilateral retouch	0	0
FONT-YVES/KREMS points with a fine retouch	0	0
BLADES with Aurignacian-like strangled retouch	0	0
BLADES with Aurignacian-like retouch	2?	3?
Total	70/100%	40/100%

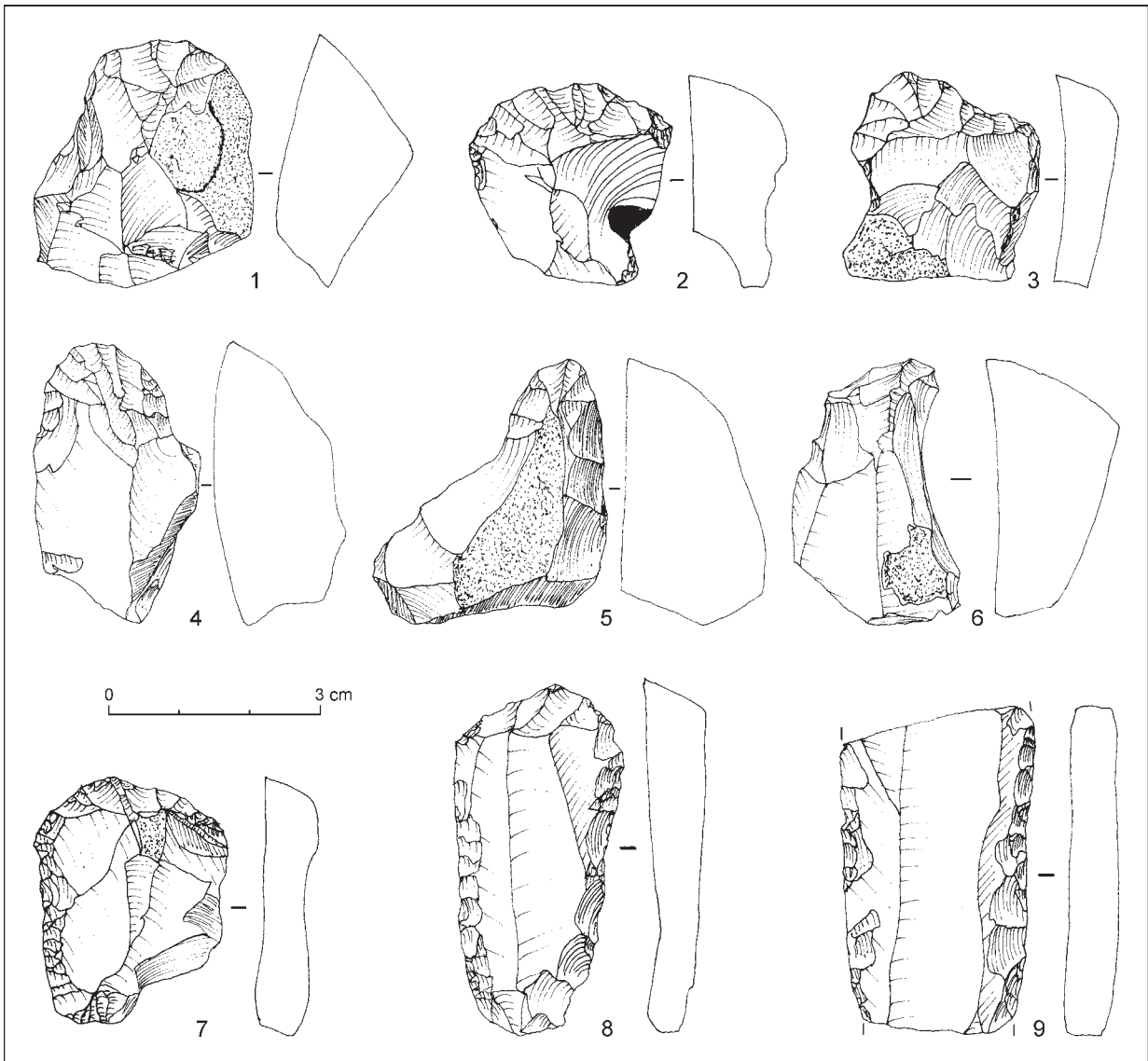


Fig. 16. Nagyréde 1/Nagyréde-Öreg-hegy (Hungary). 1, 2 – carinated endscraper-cores; 3–6 – shouldered/nosed endscraper-cores; 7, 8 – simple endscrapers on laterally/bilaterally retouched flake and blade; 9 – retouched blade (artifact illustrations modified after Lengyel/Béres/Fodor 2006).

- simple endscrapers – 19/32.8% for Nagyréde 1 and 12/34.3% for Nagyréde 2 (Fig. 17: 8);
- simple endscrapers on laterally/bilaterally retouched flakes and blades – 12/20.7% for Nagyréde 1 and 3/8.6% for Nagyréde 2 (Fig. 16: 7, 8).

Such the total endscraper set composition is, like core data, very different from the respective endscraper types' representation for the Austrian and Moravian sites with low shares of two types of simple endscrapers and high representation of endscraper-cores, having either more than a half (Nagyréde 1) or close to a half (Nagyréde 2) of all simple endscrapers. Such the great representation of all simple endscrapers can serve as one more indica-

tion on base camp/residential/living site features for the discussing two surface find spots.

- Burins – 12 for Nagyréde 1 and 5 for Nagyréde 2:
- carinated burin-cores – no one for two tool-kits;
- dihedral – 6/50% for Nagyréde 1 and 0 for Nagyréde 2;
- on truncation/transversal on lateral preparation – 1/8.3% for Nagyréde 1 and 2/40% for Nagyréde 2;
- angle/transverse on natural surface – 5/41.7% for Nagyréde 1 and 3/60% for Nagyréde 2 (Fig. 17: 10).

The two burin sets are, first of all, characterized by absence of any carinated burin-cores and some variability of burin types' representation (see a series of dihedral burins at Nagyréde 1 and no one

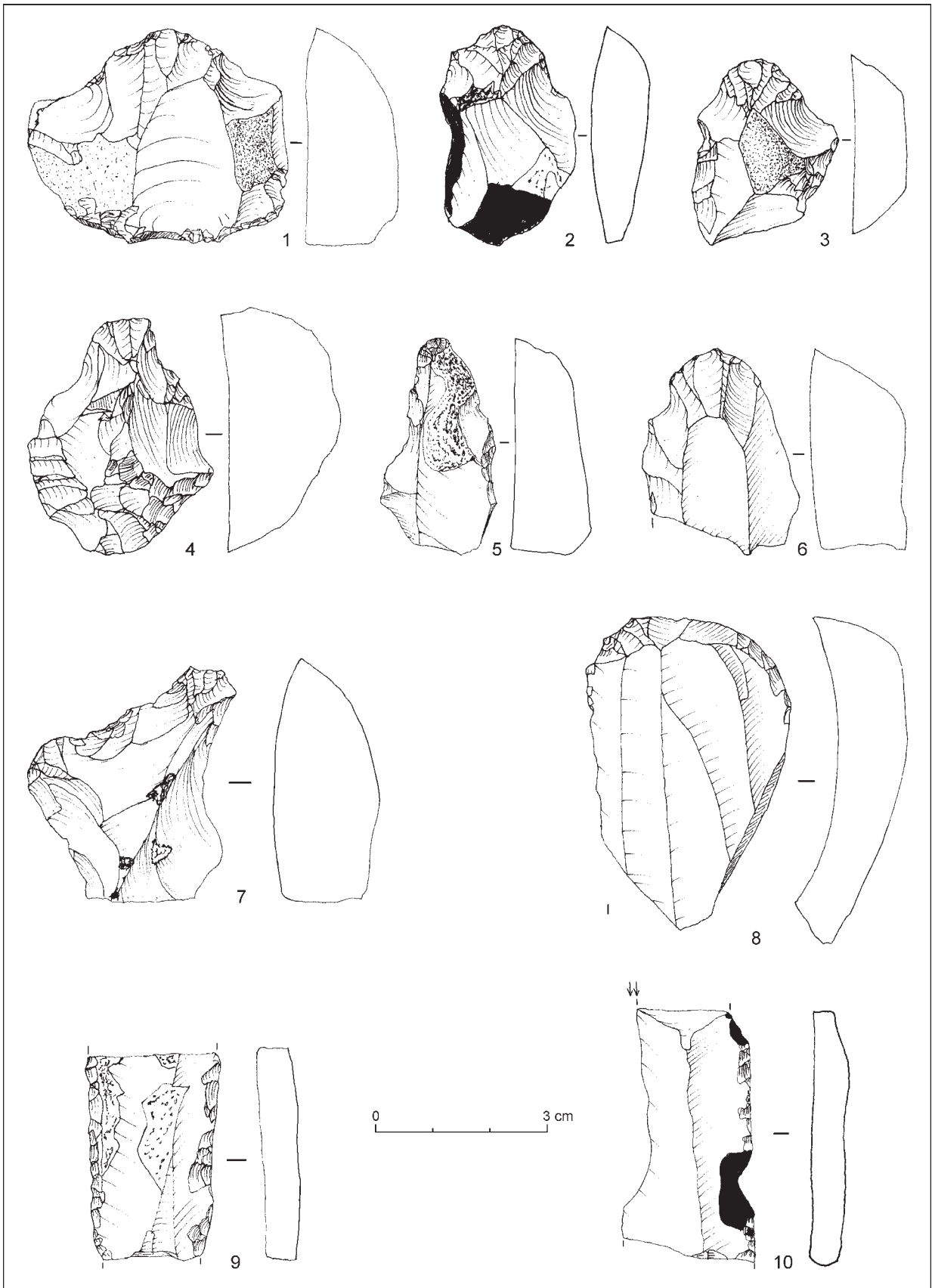


Fig. 17. Nagyréde 2/Nagyréde-Vájsz (Hungary). 1–7 – shouldered/nosed endscraper-cores; 8 – simple endscraper; 9 – retouched blade; 10 – angle burin (artifact illustrations modified after Lengyel/Béres/Fodor 2006).

such burin at Nagyréde 2), although angle type is well occurring at both loci.

'Retouched items' are, as it seems, laterally retouched flakes and blades where the latter pieces were said to 'have scaled retouch in both assemblages, situated frequently partially on the edge' (Fig. 16: 9; 17: 9), although retouch types for retouched flakes were not mentioned, aside from a remark retouch 'often is continuous'. At the same time, it was also noted that '*in Nagyréde 1 and Nagyréde 2, there are respectively two and three specimens that resemble Aurignacian blades with two retouched edges*' (Lengyel/Béres/Fodor 2006, 82). Absence of any illustrated Aurignacian-like blades does not allow us to agree with their recognition yet and only a new look at the two assemblages' retouched blades will clarify their presence or absence. Finally, microliths are, of course, not present due to collecting lithics on the two spots' modern surfaces.

Apart from some 'truncations', 'notches', 'denticulates', a 'raclette', a 'rabort', an 'endscraper/burin', a series of 'sidescrapers' deserves a special attention. There are six in Nagyréde 1 and two in Nagyréde 2 that was respectively 7.1% and 2.6% of all the 2006 article's defined tools. At the same time, 'retouched items' on flakes were not classified as side-scrapers why they probably bear a marginal and/or irregular retouch. Anyway, the defined series of side-scrapers fits well into the known tool features of Middle Aurignacian assemblages.

Nagyréde 1 and 2 loci and suggested human activity data at the loci

Despite the fact that the lithic artifacts from the two Hungarian loci come from a surface, not from excavated *in situ* archaeological artifact bearing sediments, all the above-described data on the find spots' dominant position within the surrounding topography, raw materials (a clear emphasis on local raw material limnosilicite use), core data (a great spectrum of many core types with a significant prevalence of 'domestic cores', both flake and blade cores, over 'mobile cores', both carinated and shouldered/nosed endscraper-cores) and tool data (a prevalence/significant share of all simple endscrapers over endscraper-cores and serial burins) point out that we are dealing with a sort of base camps or residential/living sites. Two of us (Yu. E. Demidenko and S. Béres) still hope to make a new study for numerically large samples of Nagyréde 1 and 2 assemblages for producing more data that might prove or disprove the proposed settlement type characteristics.

MEDZANY I AND II SURFACE LOCI (SLOVAKIA)

Location and research history

The two surface find spots are geographically situated ca. 190 km to northeast from Nagyréde 1 and 2, in northern part of Eastern Slovakia, in Prešov district of the Prešov region, about 14 km to northwest from Prešov town. It is an area in the middle course of Torysa River of south-eastern part of Spiš-Šariš Highlands. The loci are within Medzany village at a high elevated Kamenec terrace ca. 320 m a.s.l. above the near running stream named Pat'ovský potok. There were recognized first archaeological lithic artifacts at Medzany since the 1980s (e.g. Klčo 1988). However, only in 2006 A. Karabinoš found first UP artifacts at Kamenec terrace in Medzany and since then (Derfiňák/Karabinoš/Vizdal 2009) four surface find spots were recognized there. Two spots, Medzany I (Medzany-Kamenec I) and Medzany II (Medzany-Kamenec II), were recognized being characterized by many Aurignacian type finds. Then Medzany I and II lithic artifacts became a core of A. Voľanská's PhD thesis prepared and then defended in August of 2016 at Prešov University (Voľanská 2016). In 2016 Y. E. Demidenko was an official opponent for A. Voľanská PhD thesis defense, was then shown the Medzany I and II lithics and brought to the find spots together with Polish colleague K. Sobczyk by A. Voľanská and her PhD dissertation supervisor M. Vizdal. Accordingly, we know the two loci Aurignacian finds not only from literature but also from the personal knowledge of one of us. It preliminary allows us to suggest that Medzany I and II spots might represent a similar set to Nagyréde 1 and 2 Middle Aurignacian loci.

Raw materials

The dominant lithic raw material for the two loci artifacts were radiolarites of basically reddish colour being very well numerically represented below Kamenec terrace. These local numerous radiolarite pebbles are considered to be of a sort of secondary outcrops connected to Torysa River natural transporting events from their various sources in Eastern Slovakia (Kaminská 1991, 29; Voľanská 2016, 79). Medzany I have 87% artifacts produced on radiolarite and Medzany II is characterized by 89.6% of radiolarite artifacts (re-calculated from Voľanská 2016, tab. I; VIII). Numerically next raw materials are various limnosilicites. They are supposed to be non-local but regional raw materials mainly originating from Slanské hills area, ca. 50 km from Medzany and ca. 10 km to southeast from Košice

town in South-Eastern Slovakia, and a minor part of it possibly coming from Korlát area in North-Eastern Hungary, ca. 80 km to the south from Medzany (Volánská 2016, 79). Limnosilite artifacts account 9.4% at Medzany I and 7.1% at Medzany II (re-calculated from Volánská 2016, pl. I; VIII). All the other raw materials, either of regional or distant origin (flint, quartz, quartzite, andesite, obsidian, opal), are usually represented by a few pieces each (see Volánská 2016, pl. I; VIII). At the same time, there are some deviations in raw material type representation for some artifact categories. On one hand, radiolarite is even more occurring for core-like pieces (92.9% for Medzany I and 90.2% for Medzany II) than for all taken together lithic pieces, whereas it is significantly less represented among tools (71.7% for Medzany I and even with 52.6% for Medzany II). Regarding limnosilite artifacts, there is an opposite pattern with only 5.3% for Medzany I and 4.9% for Medzany II core-like pieces and 14.5% Medzany I and even 36.8% for Medzany II tools (re-calculated from Volánská 2016, pl. I; VIII). A similar to limnosilite pattern is traced for other non-local raw material types. Here it is only has to be noted that the A. Volánská's tools include both tools and tool-cores, while defined by her core-like pieces do not involve tool-cores.

Thus, the considering two Eastern Slovakian surface find spots are of a similar raw material pattern with Nagyréde 1 and 2 in Hungary where one local raw material type, radiolarite, was very basic rock for all on-site intensive primary flaking processes and also for production of many tools, while significant tool numbers are also on other regional and distant raw materials which are, however, much rarely, if ever, occur for core-like pieces. The tools' raw material pattern indicates mainly off-site tool production for regional and distant rocks and *ad hoc* on-site core reductions. As a result, it is already possible to put forward a hypothesis that Medzany I and II loci can represent a sort of regional base camp for Middle Aurignacian human groups in Eastern Slovakia.

Lithic artifact composition

The two spots' assemblages are represented by the following basic artifact categories, following the A. Volánská's (2016, pl. I; VIII) data, and presenting all the data first for Medzany I and then for Medzany II:

- raw material pieces – 39/2.2%/2.8% and 19/1.7%/2.1%;
- core-like pieces – 476/27.4%/34.9% and 246/22.7%/27.4%;
- core maintenance products (CMP) – unknown, the artifact category was not defined;

- debitage – 693/39.8%/50.7% and 577/53.2%/64.2%;
- tools and tool-cores – 159/9.1%/11.6% and 57/5.3%/6.3%;
- tool shaping and rejuvenation waste – unknown, the artifact category was not defined;
- debris – 375/21.5%/– and 185/17.1%/–.

The above-listed artifact category data basically show similar patterns for the two assemblages, although it is worth noting a higher share of tool and tool-cores for Medzany I and more presence of debitage at Medzany II. At the same time, very high shares of core-like pieces, about a quarter and even more, among all lithics pieces for two assemblages deserve some special explanations.

A special note has to be added regarding the industrial homogeneity of the Medzany I and II lithic artifacts. A quick observation of the two assemblages' finds in 2016 by Y. E. Demidenko revealed only a few 'intrusive non-Aurignacian lithics' like, for example, two flint small-sized endscrapers of likely Mesolithic/Neolithic affinity and two radiolarite semi-products of bifacial leaf points. At the same time, all the rest numerous artifacts look of a homogeneous Middle Aurignacian character. In 2016 Y. E. Demidenko also suggested a possibility to find an *in situ* Middle Aurignacian artifact bearing sediments at Medzany. The suggestion was done on a basis of two factors. First, it is seen the good conservation of most lithic artifacts' edges with the low degree of rolling on them that indicates the good preservation of the collected artifacts and the low post-depositional alteration. Accordingly, it means a recent (!) appearance of the Middle Aurignacian artifacts at Kamenec terrace modern surface due to the activity of agricultural machinery why L. Bánesz, who realized systematic surveys for UP sites finding in Eastern Slovakia including Prešov region in the 1950s–1980s with, of course, finding some archaeological loci near Medzany (e.g. Bánesz 1961), never reported any UP finds from Medzany area. Second, a few dug sondages at Kamenec terrace did not lead to recognition of an *in situ* UP level. However, the sondages had been put on a top of the terrace where Quaternary sediments were significantly blown out and/or washed out and thinned throughout the time, why new sondages have to be put on the slopes of the Kamenec terrace where Quaternary sediments likely well preserved with hopefully still intact Middle Aurignacian lithics at some areas. The similar situation was well traced by one of us for Moravian IUP and EUP loci where 'aeolian deposits (losses)... are deposited on leeward and backward sides of elevations while the top of elevations are most often missing' (Škrdlá 2014, 132). Finally, it has to be noted that all classifications of Medzany I

and II concrete core and especially tool types done by A. Voľanská have to be taken with some caution. It is because Medzany artifacts were first lithics she ever classified and her supervisor is not a Palaeolithic archaeologist why there are some problems in this regard that will be noted for some concrete artifact types below. Therefore, the ‘classification caution subject’ do not allow us to use her artifact data for our classification tables and directly compare them with some other Middle Aurignacian assemblages and, first of all, with Nagyréde 1 and 2. But it is still possible to extract many useful data from the A. Voľanská’s (2016) data using the Yu. E. Demidenko’s personal lithic observations in 2016.

Core reduction data

Core-like pieces

Core-like pieces were subdivided by A. Voľanská into two main categories: cores and core fragments (*zvyšky jadier*) where the former pieces were a little outnumbering the latter pieces, respectively 240 and 236 items at Medzany I, and 141 and 105 pieces at Medzany II (Voľanská 2016, pl. I; VIII). Here it is also needed not to forget the presence of some raw material pieces with no flaking removal negatives, very mostly radiolarite pebbles and chunks, in the assemblages (39 and 19 pieces at Medzany I and Medzany II, respectively), showing an abundance of easily available rocks for the find spots’ Middle Aurignacian human visitors. Having these three basic categories of pieces for understanding of on-site core reduction processes, it is possible to speak about the entire *chaîne opératoire* for primary flaking processes starting with ‘raw flaking objects’ and finishing with exhausted cores when many cores were fragmented. Taking the core and debitage data, there is a little prevalence of debitage items over cores (693 vs 476 and 577 vs 246 for Medzany I and Medzany II respectively). Aside from the understandable loss of some small-sized debitage pieces during collecting artifacts at modern surfaces of the two loci, why debitage samples are numerically underrepresented in comparison to core-like pieces, it is also possible to put forward a hypothesis that the loci were serving for two basic purposes keeping in mind Middle Aurignacian humans, while visiting the spots, were about sitting on high quality radiolarite source there. On one hand, adding a dominating view on the surrounding areas, Kamenec terrace was a good place for having a sort of base camp/residential/living site. On the other hand, such a base camp had a good option to be a workshop as well for production of many and various both cores and debitage pieces

not only for a reduction and/or use at the two loci but also for some their ‘export’. The main two-fold purposes make the two loci of multi-functional character base camps.

Excluding from classification efforts core fragments, the left so-called proper and complete cores were also classified by A. Voľanská (2016, pl. VII; XIV) into several types and adding to them carinated *sensu lato* endscraper-cores (identified by A. Voľanská some carinated burins were rejected by us being in reality burins of other types and a few cores *sensu stricto*, see details below for tool-core and tool data), the following core structures can be listed below.

Medzany I all 277 cores *sensu lato*:

- carinated and shouldered/nosed endscraper-cores – 37/13.4% (Fig. 18: 1–3; 19: 2, 3; 20: 1–6);
- bladelet carinated cores – 69/25% (Fig. 18: 4, 5);
- discoid cores – 7/2.5%;
- prismatic cores – 2/0.7%;
- flake irregular cores – 53/19.1%;
- blade irregular cores – 45/16.2%;
- bladelet irregular cores – 64/23.1%.

Medzany II all 157 cores *sensu lato*:

- carinated and shouldered/nosed endscraper-cores – 16/10.2%;
- bladelet carinated cores – 26/16.6%;
- discoid cores – 0;
- prismatic cores – 0;
- flake irregular cores – 28/17.8%;
- blade irregular cores – 20/12.7%;
- bladelet irregular cores – 67/42.7%.

Still keeping in mind some reservations on possible not correct classifications for some cores, it is still possible to trace several main primary flaking processes’ tendencies seen for the above-enumerated reduction pieces.

The carinated *sensu lato* endscraper-cores still occupying either about one quarter (Medzany II) or a little more than one third (Medzany I) of all primary reduction objects is worth noting, especially in a context when only Nagyréde 1 and 2 suggested base camps have similar related indices, while at other Middle Aurignacian sites with mostly use of non-local raw materials such ‘mobile’ endscraper-cores account well over a half of all reduction objects. Accordingly, various ‘domestic’ cores prevail at the Slovak spots. In addition to strictly defined blade and bladelet cores, there are also some blade/bladelet cores (Fig. 19: 1). Also, like in all other Middle Aurignacian assemblages, flake cores have a notable share in ca. 20% and they always outnumber blade cores. On the other hand, two more groups of bladelet cores (carinated and irregular examples)

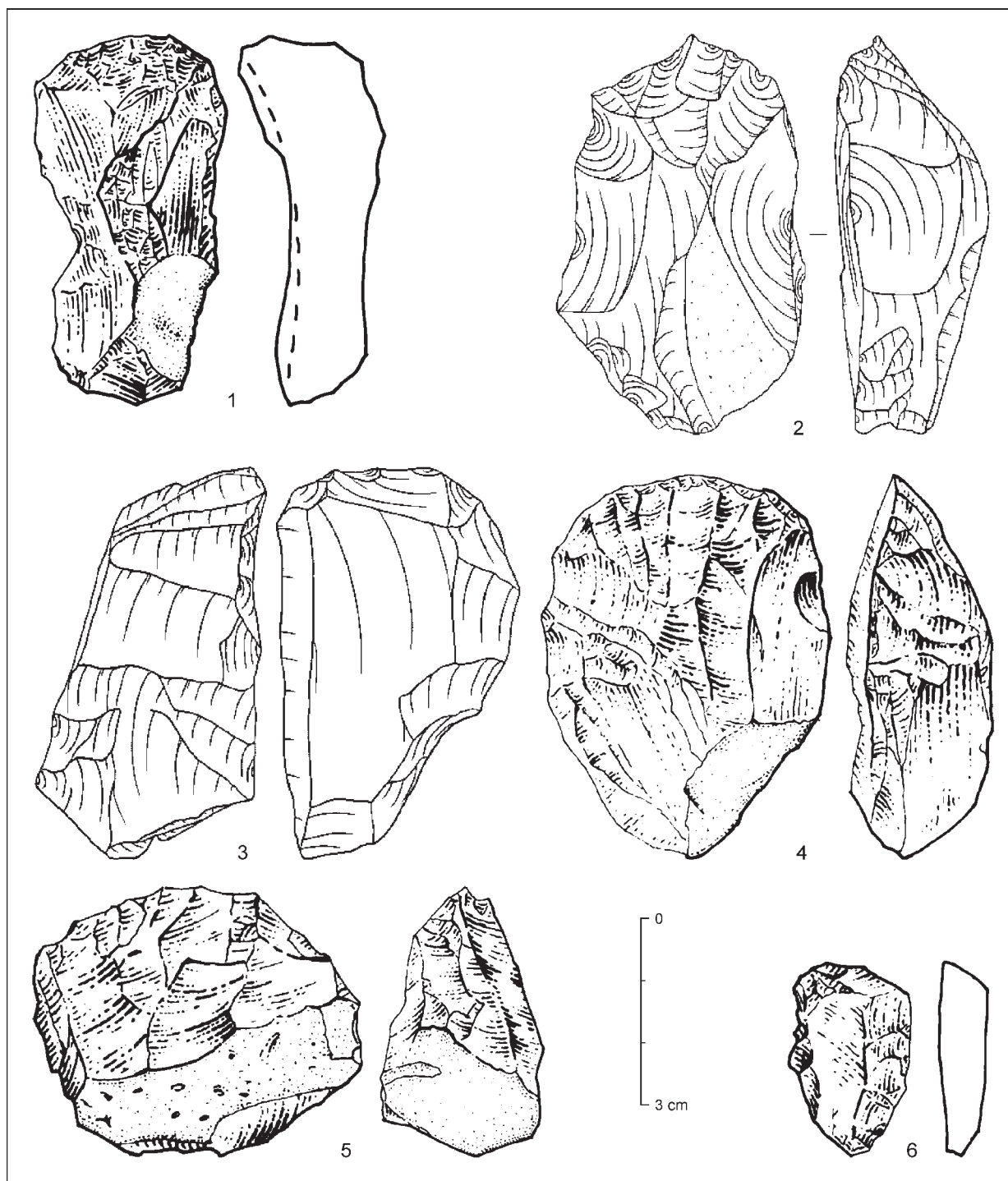


Fig. 18. Medzany I (Slovakia). 1–3 – carinated endscraper-cores; 4, 5 – bladelet carinated cores; 6 – simple endscraper on a bilaterally retouched flake (1, 4–6 – artifact illustrations modified after *Derfíňák/Karabinoš/Vizdal 2009*; 2, 3 – artifact illustrations modified after *Voľanská 2016*).

numerically dominate among all taken together reduction objects. Taking a closer look at all these morphologically and technologically variable bladelet cores on pebbles/nodules/chunks and also tool-cores mainly on flakes producing different bladelets and microblades, it again well corresponds to the known

Middle Aurignacian features. Some more notes can be added from the Yu. E. Demidenko's lithic observations in 2016. Aside from cores themselves and not flaked at all raw material pieces defined by A. Voľanská, there are many tested raw material pieces (pebbles, blocks and chunks of radiolarite)

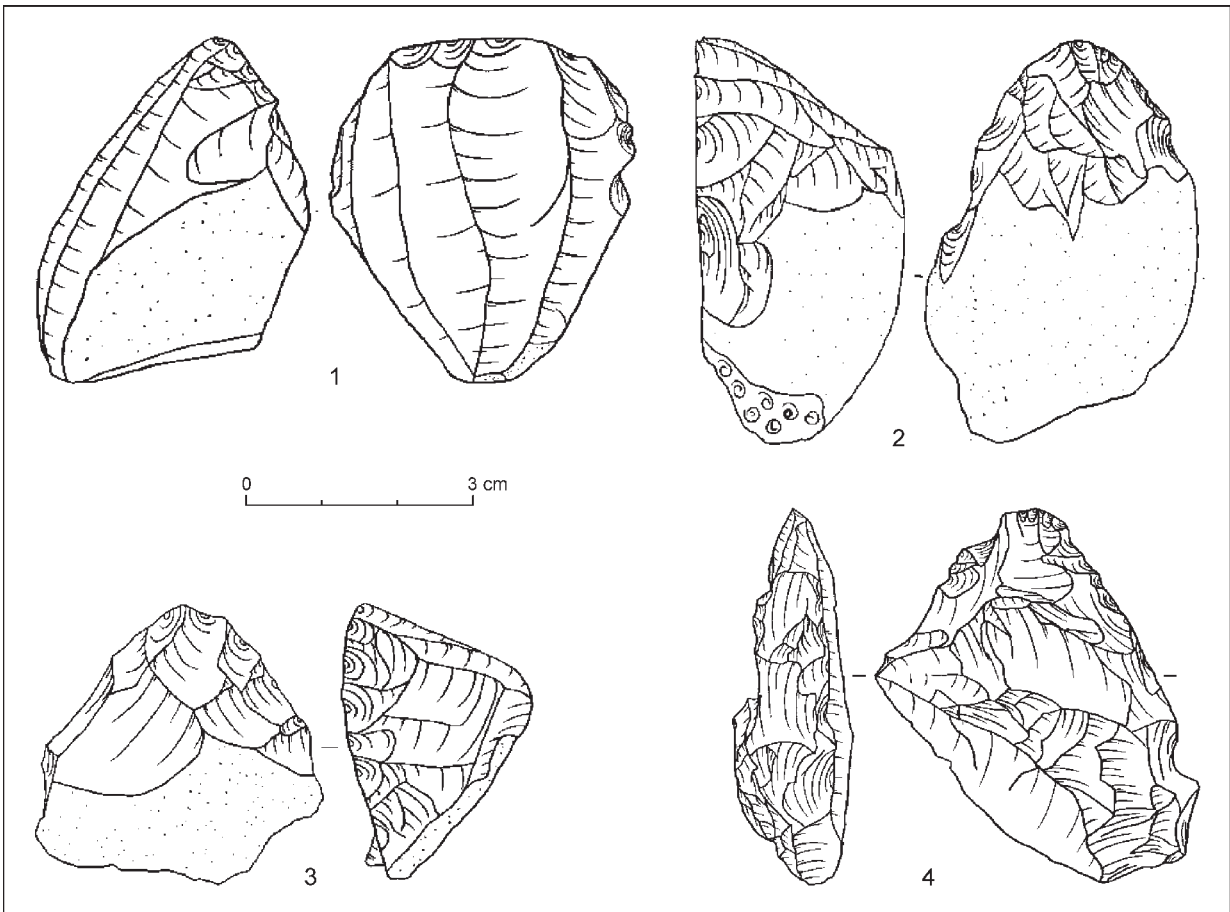


Fig. 19. Medzany I (Slovakia). 1 – blade/bladelet core; 2, 3 – shouldered/nosed endscraper-cores; 4 – side-scraper (artifact illustrations modified after *Volanská 2016*).

and various pre-cores. Numerous pre-cores can be also subdivided into ‘initial pre-cores’ of two types, having two-three removal negatives from either unprepared or prepared striking platform, and also of third ‘developed pre-core’ type with a formed crested ridge. Each of the types is well quantitatively represented. Thus, the pre-cores once again demonstrate intensive on-site core reduction processes from very beginning and a variety of initial flaking directions.

The debitage pieces and data on blanks of both tool-cores and proper tools also well correlate with the reduction object information, again not forgetting loss of many bladelets and microblades on the spots’ modern surface. Identifiable tool-cores’ and tools’ debitage blanks are as follows (*Volanská 2016*, pl. IV; VIII): 55/77.5% on flakes and 16/22.5% together on blades and bladelets for Medzany I; 28/77.8% on flakes and 8/22.2% together on blades and bladelets for Medzany II. The debitage pieces alone with differentiation of blades and bladelets look this way: 609 flakes (87.9%), 47 blades (6.8%) and 37 bladelets (5.3%) for Medzany I 693 specimens; 487 flakes

(84.4%), 55 blades (9.5%) and 35 bladelets (6.1%) for Medzany II 577 specimens. In total with non-tool-related debitage blanks, the debitage pieces can be represented in the following way: 664 flakes (86.9%) and 100 blades/bladelets (13.1%) for Medzany I 764 specimens; 515 flakes (84%) and 98 blades/bladelets (16%) for Medzany II 613 specimens. Such the overwhelming majority of flakes have the following main implications. Flakes show initial flaking of raw material pebbles/nodules/chunks for formation of pre-cores, some re-preparation of the already flaked cores of different types and also purposeful detachment of thick flakes from flake and discoidal cores for planned then endscraper-cores at the two loci. Numerically minor prevalence of blades over bladelets should not hide a loss of many bladelets at modern surface of the two loci why bladelets have to be much more quantitatively represented at Medzany I and II. Thus, although bladelet/microblade production is still well traced through the debitage data, flakes dominance once again points out a significance of workshop characteristics for the two loci.

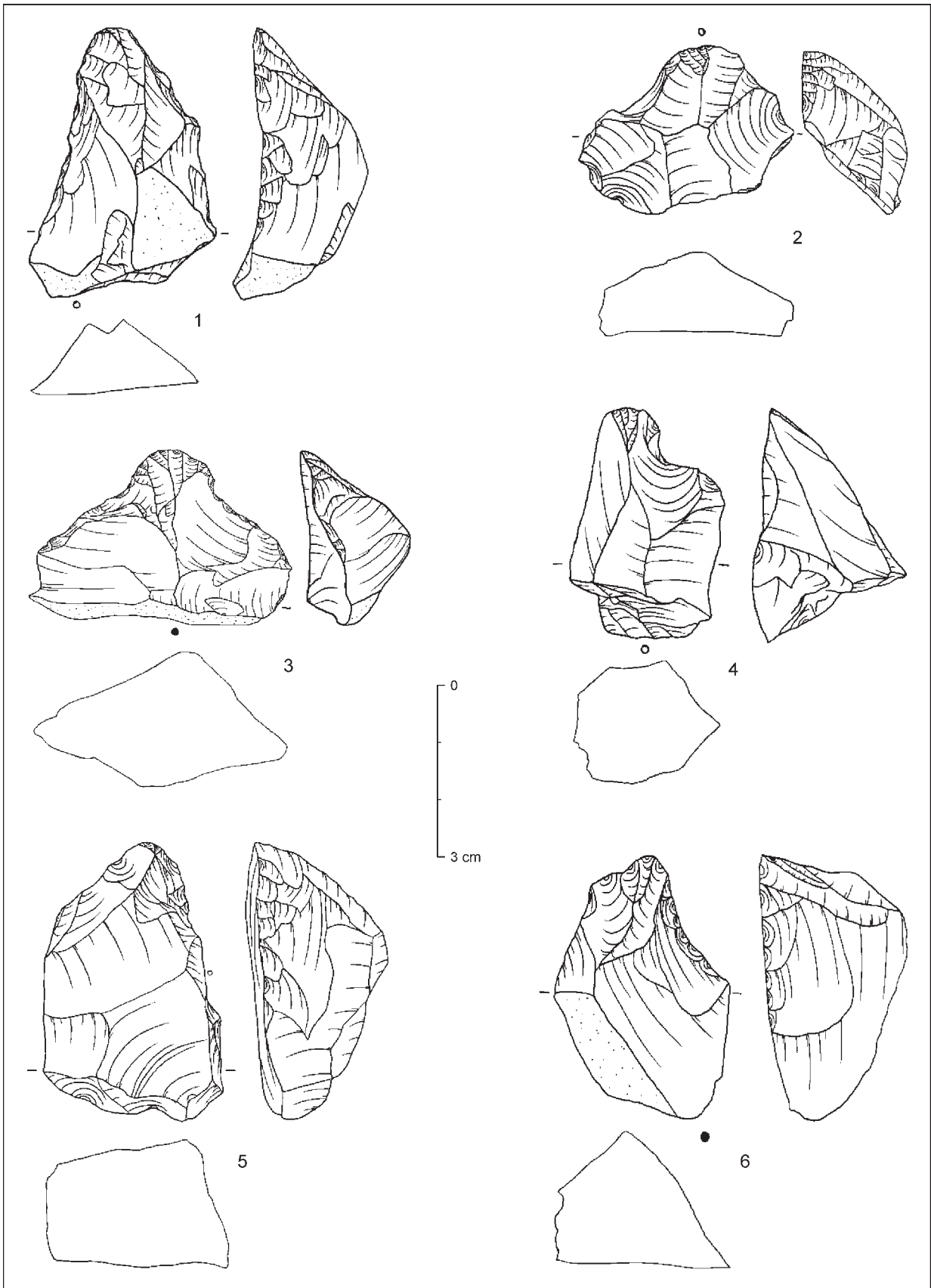


Fig. 20. Medzany I (Slovakia). Shouldered/nosed endscraper-cores (artifact illustrations modified after *Volanská* 2016).

Tool-kits data

159 and 57 tool-cores and tool were classified among Medzany I and II lithics (Volánská 2016, 84–86, 88, pl. II–IV; IX–XI). These pieces are re-organized with firstly removing from Medzany I tool-list 13 ‘denticulates’ and ‘notches’ (possibly, naturally damaged debitage pieces), two ‘thumbnail endscrapers’ (probable, Mesolithic/Neolithic intrusion), seven ‘carinated burins’ (being either blade/bladelet cores or dihedral burins; see Volánská 2016, pl. XXX: 1, 2), two ‘choppings’ (likely pre-cores), two ‘tools with flat retouch’, three ‘borers’ (actually, fragmented and unevenly retouched unidentifiable tools; see Volánská 2016, pl. XXXI: 1, 2), 14 ‘fragmented tools’, 11 ‘hammerstones’ and also from Medzany II tool-list three ‘notches’, four ‘fragmented tools’, one ‘hammerstone’ and one ‘retoucher’. Grouping together then under a basic term ‘retouched pieces’ a series of the following tool types ‘knives’, ‘retouched blades/bladelets’, ‘retouched flakes’ (10 for Medzany I and 10 for Medzany II), the following tool classes and types ‘survive’ for our tool-core and tool list (100 for Medzany I and 37 for Medzany II):

- endscrapper-cores and endscrapers – 47/47% for Medzany I and 22/59.5% for Medzany II;
- burins – 17/17% for Medzany I and 5/13.5% for Medzany II;
- endscrapper-burins – 1/1% for Medzany I and 0 for Medzany II;
- borers – 1/1% for Medzany I and 1/2.7% for Medzany II;
- side-scrappers – 30/30% for Medzany I and 9/24.3% for Medzany II;
- points – 1/1% for Medzany I and 0 for Medzany II;
- splintered pieces – 3/3% for Medzany I and 0 for Medzany II.

The shown tool-core and tool internal class structures are characterized by: an overall dominance of endscrapper-cores and endscrapers, a moderate occurrence of burins with no carinated burin-cores, the presence of a single endscrapper-burin and point at Medzany I and their total absence at Medzany II, a single finding of real borers for both Medzany I and II, significant shares of sidescrappers. Some remarks on each tool class are given below.

Endscrapers are composed of the following types (Volánská 2016, pl. III; X):

Medzany I – 25/53.2% carinated endscrapper-cores (Fig. 18: 1–3), 12/25.5% shouldered/nosed endscrapper-cores (Fig. 19: 2, 3; 20: 1–6), 4/8.5% simple endscrapers, 6/12.8% endscrapers on laterally/bilaterally retouched pieces (Fig. 18: 6);

Medzany II – 10/45.5% carinated endscrapper-cores, 6/27.3% shouldered/nosed endscrapper-cores,

4/18.2% simple endscrapers, 2/9% endscrapers on laterally/bilaterally retouched pieces.

The striking feature about the endscrapper-cores is about double prevalence of wide-fronted carinated pieces over shouldered/nosed items while it was always observed a reverse their representation for all the above-analysed Middle Aurignacian assemblages. There are some possible explanations for the particular Medzany endscrapper-core feature. First, some of the A. Volánská’s carinated pieces look more as shouldered/nosed specimens (Volánská 2016, fig. 13: 9, pl. XXVIII: 3, 4) why the above-noted very significant predominance of carinated pieces could actually be lower. Moreover, some of the rather wide-fronted carinated items have one and/or two side notches limiting fronts of their flaking surfaces (Fig. 18: 2, 3). Accordingly, these pieces, being still at an initial stage of wide-fronted reduction well could be then flaked for their narrow fronts during a later reduction stage for still the same pieces. Keeping in mind the well seen workshop character for on-site Medzany I and II lithic reduction processes, it could be the most plausible explanations on the endscrapper-core subject. Furthermore, the Yu. E. Demidenko’s Medzany lithic observations in 2016 actually have led him to a note on the presence of many shouldered/nosed endscrapper-cores at Medzany I and II anyway.

Burins, by types, look as follows (Volánská 2016, pl. III; X):

- Medzany I – 9/52.9% possible dihedral burins, 1/5.9% burin on truncation, 7/41.2% possible angle burins;
- Medzany II – 1/20% dihedral burin, 4/80% possible angle burins.

Excluding carinated burin-cores, it is seen a variable occurrence of both dihedral and angle burins for the two discussing tool-kits. On the other hand, a single burin on truncation is notable remembering that we are dealing with Middle Aurignacian where they are typical in the French related materials.

Apart from other not numerically at all well represented tool classes, side-scrappers deserve a special note (Fig. 19: 4). Although A. Volánská was inclined to consider sidescrappers representing a ‘Middle Palaeolithic intrusion’ among the dominating Aurignacian items for the two loci, such unifacially treated side-scrappers and their notable number well fits the known Middle Aurignacian tool characteristics technologically caused by the occurrence of many flakes among debitage pieces. Remembering the microlith subject, it should be noted their understandable absence among surface finds of the two assemblages.

More studies of Medzany I and II lithic assemblages are surely needed and the noted good field perspectives on finding in future some areas with *in situ* artifact bearing sediments for the loci really cannot but inspire us. In this regard the basic problem is that A. Voľanská left archaeology five years ago and there is nobody in Prešov to continue a work with Medzany I and II but we hope it will be soon somebody for doing such the important scientific job.

Medzany I and II and possible site types

There are two aspects for Middle Aurignacian human activity that are about clear for us so far. First, it is a good topography location on an elevated terrace near a stream and rich radiolarite source that makes the two loci suitable places for having a sort of base camp/residential/living site. The presence of artifacts produced on several other local and regional raw materials only strengthen the suggestion on a base camp/residential/living site and even a regional Middle Aurignacian occupation centre in Eastern Slovakia. Second, the abundance of easily available radiolarite additionally makes the two loci of an evident workshop character with numerous cores, endscraper-cores and various debitage pieces where samples of each of these three artifact categories were also probably made for some 'export' outside the Medzany microregion to some possible hunting station situated far from lithic raw material outcrops. As a result, in addition to a series of the above-shown possible Middle Aurignacian hunting stations and base camps, Medzany I and II loci represent a base camp with a 'strong accent' of lithic workshop characteristics. To some extent the Slovak pair of loci is similar by lithic artifact data (first of all, by all core reduction types occurring at only base camps as it clearly appears now) to the Hungarian Nagyréde 1 and 2 loci but Medzany I and II with Middle Aurignacian humans literally about 'sitting at a radiolarite source' is likely a combination of a base camp and a workshop. If it is true, then the revealed Middle Aurignacian settlement and mobility characteristics approach sorts of pattern and system.

CRVENKA-AT SITE AND BUKOVAC CAVE (SERBIA)

The two sites are located in another from Eastern Slovakia 'corner' of the Carpathian Basin, in Serbia, the Carpathian Basin's south-eastern part. One of the sites, the already well-known in the Balkan

Palaeolithic archaeology Crvenka-At site complex, was discussed in our previous article but mainly within a Proto-Aurignacian context (Demidenko *et al.* 2021). On the other hand, another site, Bukovac cave, the only yet Middle Aurignacian cave site in the study region, represents the recently discovered site. However, both sites are similar each other in a rather limited real data on their Middle Aurignacian context. Therefore, it will be given below only some restricted information set.

Crvenka-At site

It is situated in Serbian Vojvodina part of Banat. First UP lithic artifacts have been known and periodically collected near Crvenka town since end of 19th c. but real archaeological studies, surveys and some limited excavations were only realized in ca. 100 years, in the 1980s. Namely, thanks to a field work of I. Radovanović in the 1980s and then MA study D. Mihailović performed on all for a long time collected data with an emphasis on I. Radovanović's materials (Mihailović 1992; Radovanović 1986), D. Mihailović established a bipartite Aurignacian context of Crvenka-At site complex finds. The two find sets were thought to be related to 'Aurignacian of Krems type' related to layer IIb Crvenka site with industrial similarities to Romanian Banat Aurignacian sites and to a more chronologically recent 'Typical Balkan Aurignacian' characteristic for layer IIa lithics at At site with industrial comparisons to Aurignacian sites in the Balkans (Mihailović 1992, 49). However, in a course of new multidisciplinary studies at Crvenka-At realized by German-Serbian colleagues in the 2010s (Chu 2018; Chu *et al.* 2016; Chu/Hauck/Mihailović 2014; Nett *et al.* 2021) an 'archaeological paradigm' for the site was changed. It was only claimed the presence of just Banat-like (well-known in the neighbouring Romanian Banat) Aurignacian materials with no mentioning any later the previous D. Mihailović's 'Typical Balkan Aurignacian' finds. Our considerations on the site's archaeological context (Demidenko *et al.* 2021, 156–158) are, however, fully on the side of 1992 D. Mihailović study results. The 2010s research also objectively agrees with it. New excavations at Crvenka-At confirmed the presence of two *in situ* Early UP levels with some lithics of Aurignacian character. Recovery of a few ungulate bones with not enough collagen for a radiocarbon dating did lead to a successful use of OSL dating with the following results: 'the sediments of the upper artifact level deposited at $35,300 \pm 3,600$ (2σ), while the lower level deposited between $35,300 \pm 3,600$ (2σ) and

37,800 ± 4,200 (2σ) (Nett et al. 2021, 8). However, suggesting the same Aurignacian archaeological character of the found rare lithic artifacts, it was calculated 'an overall modelled average timing of 36,400 ± 2,800 (2σ)' (Nett et al. 2021, 8) for the two archaeological levels six and eight separated (!) by an archaeologically sterile 35 cm thick layer seven for 2014 trench profile at At II loci (Chu/Hauck/Mihailović 2014, fig. 2; tab. 1). As it was said for the At II stratigraphy, the same stratigraphy with two archaeological levels was established during yet the 1980s excavations. As a result, stratigraphically and chronologically, there are two distinct archaeological layers (sets of layers?) at Crvenka-At. Due to a few found lithics during the 2010s excavations with only single Aurignacian endscraper-cores, industrial character of the two layers' assemblages can be only established yet on a basis of 1992 D. Mihailović's publication. Stratigraphically lower lithic assemblage with OSL dating around Heinrich Event 4 (HE-4), ca. 40,000 cal. BP (37,800 ± 4,200 uncal. BP) was already assigned by us to European Proto-Aurignacian that is a broader term for the used by D. Mihailović 'Aurignacian of Krems type' definition (Demidenko et al. 2021, 157, 158). Stratigraphically upper lithic assemblage is said to be characterized by the following indicative techno-typological features: 'typical Aurignacian nosed endscrapers' being 'the most common finds in layer Ila at At', 'Aurignacian blades and burins' with also a notable notion that 'there are few Middle Palaeolithic elements and they are to be found only in Phase II' (Mihailović 1992, 49, 50). Going through the respective illustrations 'Middle Paleolithic elements' and, first of all side-scrappers, well numerically occur within layers Ila at both the At and Crvenka sites (Mihailović 1992, pl. XII; XIII; XXIII).

In sum, it is clear for us the Middle Aurignacian attribution for the Crvenka-At Aurignacian upper find complex. More details of it can be made through such two approaches. First, it should be certainly useful to re-analyse all artifacts found before the 2010s field studies, actually, to make a new upgraded version of the D. Mihailović 1992 study using many appeared Aurignacian techno-typological criteria during last 30 years. Second, some more field work at Crvenka-At is possible with an aim to find rich in artifacts area for systematic excavations.

At last, Crvenka-At newly performed multidisciplinary studies showed the site complex location at 'fluvial deposition close to a river mouth draining into a paleolake in the Alibunar Depression' (Nett et al. 2021,

12) where different Aurignacian human groups, including Middle Aurignacian ones, hunted some herd ungulates also using as an 'economic basis' local and regional lithic raw material resources (mainly radiolarites). Accordingly, the site might be again an example of a hunting station at low elevations in ca. 86–87 m a.s.l. but near the river flowing into the lake.

Bukovac cave

The cave site is one of over 40 caves and rock-shelters discovered by T. Dogandžić in her 2012 initial survey for new sites in not systematically explored before by Palaeolithic archaeologists Valley of Resava River, a tributary to Velika Morava River in Central Serbia. Two of the found caves, Orlovača and Bukovac, T. Dogandžić selected for excavations then where she found *in situ* Palaeolithic archaeological layers. Orlovača cave was already discussed by us in a context of Proto-Aurignacian subject for the Carpathian Basin (Demidenko et al. 2021, 164, 165).

Bukovac (Dogandžić/McPherron/Mihailović 2014)³ is a cave ca. 250 m a.s.l. with a small sheltered part (7 × 6 m) and a wide terrace in front. In addition to a Gravettian level 2c (with a ¹⁴C date ca. 25,000 uncal. BP), level 3 with sub-levels 3a and 3b being uncovered for an area in ca. 3 m² yet small artifact assemblage still showed the presence of bladelet cores, shouldered/nosed endscraper-cores, microblades with a marginal retouch. A single ¹⁴C date in ca. 28,000 uncal. BP was already obtained for sub-level 3b. Despite the very preliminary and limited excavations at Bukovac cave and its Aurignacian data context yet, from our point of view, level 3 deserves much attention during further field studies at the site. Being the only cave site with Middle Aurignacian *in situ* finds in the southwestern corner of the Carpathian Basin at a 'gate to Balkans', Bukovac cave could be potentially one of the key such Aurignacian sites in the study region connecting the Basin's Aurignacian with the related sites and their Aurignacian assemblages in the Balkans (see below).

CONCLUDING CONSIDERATIONS

The conducted analyses of Middle Aurignacian sites and their artifact assemblages allow us to put forward a series of some new observations and hypotheses structured into the following subjects.

³ Yu. E. Demidenko – personal communication with T. Dogandžić, December of 2013; September of 2019.

Middle Aurignacian industrial features

The used French Abri Pataud, level 8 artifacts as an industrial basis for recognition of the related Middle Aurignacian materials in the Carpathian Basin of Eastern Central Europe proved to be the right choice. At the same time, the recognized Central European sites and their finds have shown both their great similarities and also some peculiarities with respect to the French 'industrial standards'. The common and specific features are summarized as follows.

Common data

Technologically, taking the Central European assemblages as a whole, the region's Middle Aurignacian shows the presence of about all core reduction strategies and core types known for the Aurignacian techno-complex. By the core variability, Middle Aurignacian seems to be the only such technologically variable industry stage/type in Aurignacian among all the known its stages/types. These are systematic mainly unidirectional or, when in depth flaked, multiply-unidirectional but almost never bidirectional reductions of 'regular' (on nodules/chunks) blade, blade/bladelet, bladelet cores, as well as flake/blade, flake, bladelet 'carinated' cores, additionally added by tool-core reductions (mainly on thick flakes) with a great dominance of shouldered/nosed endscrapper-cores among also found but much less occurring wide-fronted carinated endscrapper-cores and single, if ever present at all, carinated burin-cores for a specific microblade reduction processes. The tool-core data allowed us a suggestion on wide-fronted carinated endscrapper-cores representing mainly an initial stage of microblade reduction morphologically ended up in a view of shouldered/nosed endscrapper-cores. In this case it is possible to say that the latter reduction objects represent a basic tool-core type for a microblade production that well corresponds to the *A. Michel's* (2010) data and technological observations for Abri Pataud, level 8 'nosed endscrapper-core reduction'. Actually, flake cores and shouldered/nosed endscrapper-cores do constitute the most indicative technological interdependent reduction objects where the former pieces were producing thick flakes serving then as blanks for the latter endscrapper-cores' preparation and proper microblade reduction. Moreover, the two core types and their reductions might in fact serve as the most indicative technological features for recognition of Middle Aurignacian assemblages even for not numerous lithic assemblages coming from surface loci. The two core and tool-core types'

pieces numerous occurrences also leads to the presence of many flakes within debitage samples, while microblades are poorly present in the considering assemblages coming from both long ago excavated (e.g. Willendorf II, AH 4) or recently but partly excavated with a limited use of dry screening and wet sieving of artifact bearing sediments (e.g. Napajedla III) and surface find spots. More work should be done yet for a better understanding of Middle Aurignacian core reduction features. For example, it is not yet studied an important technological aspect on reduction of all the above-enumerated cores in terms of a use of soft- and hard-hammers for their flaking.

Typologically, again taking *summa summarum* of tool-kit data with included tool-cores for the discussing Carpathian Basin assemblages, it is seen a significant occurrence of shouldered/nosed endscrapper-cores with much fewer recognized wide-fronted carinated endscrapper-cores and at best single found carinated burin-cores, some simple flat endscrapers with also some of them on laterally/bilaterally retouched debitage pieces with, however, absent endscrapers on any type of Aurignacian blades, a diverse type occurrence for burins with the notable absence of any type examples with multi-faceted verges why real burin-cores for a systematic bladelet/microblade reduction are not found there, a notable quantitative occurrence of various retouched pieces both on blades and flakes where the latter pieces usually compose significant shares connected to a fact on the presence of many flakes in debitage, although Aurignacian blade types are not found, microliths are actually securely known by a few examples and only for excavated Willendorf II, AH 4 and Napajedla III materials and their basic common feature is a marginal fine retouch with variable retouch placement and blank types used.

Specific data

Technologically, it is seen a variable occurrence of almost all core types and their reduction processes for some sites and loci. On one hand, Nagyréde 1, 2 and Medzany I, II assemblages in Hungary and Slovakia indeed show the entire known variability of core reductions with such notable shares of the following main core types: a prevalence of flake cores and a moderate occurrence of both blade cores and carinated *sensu lato* endscrapper-cores. On the other hand, all other loci (first of all, sites with clear data, Willendorf II, AH 4 and Napajedla III) demonstrate the absence of blade cores, a significant prevalence of carinated *sensu lato* endscrapper-cores

and a moderate presence of flake cores. The realized analysis of these core type and reduction differences are explained by us through various site type patterns (see below). Finally, flake cores and shouldered/nosed endscraper-cores being a sort of ‘domestic core-like objects’ produced on local raw materials at Abri Pataud, level 8, show ‘two-fold qualities of technological properties’ for the Carpathian Basin’s sites being for some loci again ‘domestic objects’ on local raw materials (e.g. Nagyréde 1, 2 and Medzany I, II) and being for some sites ‘mobile/highly curated objects’ basically on distant and regional raw materials. These technological properties for the two reduction objects definitely allowed a high degree of technological flexibility to Middle Aurignacian humans and their survival strategies within topographically different landscapes and varying availability to lithic raw materials.

Typologically, the technological variability trend is continued for endscraper-cores and endscrapers *per se*. Nagyréde 1, 2 and Medzany I, II demonstrate a dominant position of both carinated *sensu lato* endscraper-cores and all taken together simple flat endscrapers with shares around 50% each. However, Willendorf II, AH 4 and Napajedla III are indicative by a great predominance of carinated *sensu lato* endscraper-cores (ca. 90% and 70%) over all taken together simple flat endscrapers (ca. 10% and 30%). Remembering the poor presence of dihedral burins and an emphasis on a dominance of burins on truncation for level 8 at Abri Pataud in France, burin types’ occurrences are of ‘diving nature’ for the Carpathian Basin’s Middle Aurignacian tool-kits for both surface loci in Eastern Slovakian and Hungarian loci (52.9% possible dihedral burins, 5.9% burin on truncation, 41.2% possible angle burins at Medzany I and 20% dihedral burins and 80% possible angle burins at Medzany II; 50% dihedral burins, 8.3% burins on truncation/transversal on lateral preparation, 41.7% angle burins/transverse on natural surface at Nagyréde 1 and 40% burins on truncation/transversal on lateral preparation and 60% angle burins/transverse on natural surface at Nagyréde 2) and for *in situ* sites in Austria and Czech Republic [4.5% carinated burin-cores (one piece), 45.5% dihedral burins, 31.8% burins on truncation/transversal on lateral preparation, 18.2% angle burins/transverse on natural surface at Willendorf II, AH 4, and 20% (one piece) carinated burin-cores, no dihedral burins, 40% burins on truncation/transversal on lateral preparation and 40% angle burins/transverse on natural surface at Napajedla III]. The shown typological differences, first of all, already obvious for endscraper-cores and endscrapers are again proposed to be seen through

understanding of site type variability (see below). Microliths, due to the above-noted their poor ‘recovery origin’ in the discussing assemblages, are of a random character why it is not possible to say about the real presence of a series of Roc-de-Combe sub-type of Dufour microblades yet that are well-known for the French materials. Therefore, a need in modern excavations of *in situ* Middle Aurignacian sites in our region is obvious from the microlith subject, too.

Organic artifacts are only exclusively known for Willendorf II, AH 4 and they are more numerous than at Abri Pataud Middle Aurignacian. The most indicative among them are projectile bone/antler points with a thick oval cross-section and extended distal part of a lancet-like form. They well correlate with the *D. Peyrony’s* (1933; 1936) ‘*pointe losangique à section ovale*’ for his Aurignacian III stage and ‘*pointe biconique*’ with also an ovoid section for his Aurignacian IV stage being also characterized in that time by the uncharacteristic occurrence of carinated burin-cores and typical presence of thick nosed endscraper-cores. Accordingly, the Carpathian Basin’s site demonstrates the presence of one more artifact feature for understanding of Pan-European Middle Aurignacian data.

Finally, there are some techno-typological elements in the Carpathian Basin’s materials that are not present at all in Abri Pataud, level 8 assemblage. The uniting all Middle Aurignacian assemblages flake cores and many flakes within debitage samples do feature the absence of any MP-like radial and/or discoidal cores in the French core sample, while they are sporadically occurred for core assemblages from Napajedla III, Medzany I and II, and, most likely, Willendorf II, AH 4 where they have to be recognized yet. More special core studies are expected for the subject for clarification of the MP-like cores presence in Middle Aurignacian, being, for example, an exhausted and multiply re-shaped/re-flaked variant of just UP parallel cores and/or an intentional technological trait of a centripetal reduction for detachment of some special thick flakes aiming namely getting a number of blanks for endscraper-tools. From the typological point of view, the presence of a series of MP-like side-scrappers on flakes in the Eastern Central European tool-kits is notable (Willendorf II, AH 4; Napajedla III; Milovice I; Nagyréde 1 and 2; Medzany I and II; Crvenka-At) and is anyway understood through an abundance of flakes within the sites’ debitage pieces, although they are represented by only four examples/0.98% among level 8 tools at Abri Pataud (*Brooks 1995*, tab. XXII). Here it is needed to underline once again that the MP-like side-scrappers are not a ‘surviving trait’ from the time of MP but a flake-connected

technologically reasoned trait within the Middle Aurignacian. Regarding the UP side differences, of particular interest is a habit on utilization/rejuvenation of some shouldered/nosed endscrapers-cores as burins and/or *ad hoc* burin-cores for Willendorf II, AH 4. Such the secondary use/re-use of a series of the tool-core pieces could be explained seeing some problems with available high quality raw materials and, at the same time, some intensity of lithic treatment processes at Willendorf II, AH 4. The habit is a remarkable feature that is known yet for us only for some Aurignacian materials in the East Mediterranean Levant (see below).

Thus, the Carpathian Basin's Middle Aurignacian materials do not only confirm the validity of the recent recognition of Middle Aurignacian in Southwestern France but add to them some more notable techno-typological features.

Middle Aurignacian geochronological data

All so far dated Middle Aurignacian sites in the Carpathian Basin are of a little younger geochronology in comparison to the French Abri Pataud, level 8 related to GI-8c, ca. 37,900–37,500 cal. BP/33,050 uncal. BP. Indeed, they seem to be corresponding to a time interval between GI-8a and GI-6 with the following concrete dates: ca. 36,300–35,400 cal. BP 32,100–31,200 uncal. BP for Willendorf II, AH 4; between ca. 36,700–36,200 and 34,100–33,800 cal. BP 32,700–32,300 and 30,000–29,600 uncal. BP for Napajedla III; between ca. 36,000–35,000 and 33,000–32,000 cal. BP 29,200 and 28,700 uncal. BP for Milovice I. Of course, more absolute dates are needed for the Carpathian Basin sites for more confirmation of their younger age and now the most promising among the region's sites is Milovice I where new excavations are under the way.

Middle Aurignacian settlement pattern observations for the Carpathian Basin's sites

The analysed several sites and loci with attributed by us Middle Aurignacian artifacts allow us to propose several types of site/loci based upon lithic primary and secondary treatment features.

Base camps (residential/living sites) – Nagyréde 1 and 2 loci, are located at a dominant height for the surrounding areas with a great panoramic view and 'hunting ungulate perspectives' from the hill on vast territories of the near-by plain and a water supply in a view of an easy reach stream. Probably, the most important for the loci is also situation at a close

distance to rich lithic raw material outcrops but not their location right at a raw material source. The loci are, first of all, characterized by a basic use of local limnosilicite for the entire known Aurignacian core reduction variability with a dominance of 'domestic cores' when flake and blade cores composed a 'home basis' for both on-site preparation of many thick flake-blanks for shouldered/nosed and carinated endscrapers-cores and also on-site production and then use for blade-blanks of many 'domestic tools' manufacture, first of all, simple endscrapers and burins. At the same time, more occurrence than for cores of tools *per se* on regional and distant raw materials indicates that the Hungarian loci were in a centre of some regional Middle Aurignacian human groups activities. Accordingly, the base camp hypothesis is seen as the best choice for Nagyréde 1 and 2 loci site type recognition.

Base camps (residential/living sites) with also a great aspect of workshop activity – Medzany I and II loci, are again characterized by a good topography location on an elevated terrace near a stream with rich secondary radiolarite sources right under the loci. By core reduction, tool-core and tool data, the Eastern Slovak loci are much alike Nagyréde 1 and 2 loci. But 'sitting at a radiolarite source' allowed Middle Aurignacian humans to use the Slovakian loci as also workshops for some likely 'export' of many cores, endscrapers-cores and debitage outside the Medzany microregion to some possible hunting station located far from lithic raw material outcrops. Moreover, the presence of artifacts produced on several other local and regional raw materials probably make the two loci as a regional Middle Aurignacian centre in Eastern Slovakia. As a result, Medzany I and II allow us to see a base camp sub-type with a workshop accent.

Hunting stations, planned ahead basic hunting stopovers – Willendorf II, AH 4 (Lower Austria), do represent sites in hidden topographic areas near a river with good hunting possibilities and availability of some local lithic raw materials. It seems Middle Aurignacian humans were coming to such places with some already made hunting projectile weapons in a view of bone/antler points and some mounted in them lithic microliths, and also bringing initially prepared flake cores and carinated *sensu lato* endscrapers-cores, as well as already prepared tools, probably mostly some burins for renewal of both some lithic microliths and bone/antler point on-site production needed to replace some lost during hunts respective pieces. A few flake/blade and blade/bladelet cores and some other tools, first of all, retouched blades, sidescrapers, simple endscrapers and some burins might reflect both some additional on-site flake, blade and bladelet productions for getting not only

bladelets/microblades but also some larger debitage pieces for making some other tools needed for dismembering of killed during hunts ungulates for meat consumption, hide and bone/antler processing. Most of Aurignacian archaeological levels at sites of Milovice I, Pavlov and Dolní Věstonice in Southern Moravia (Czech Republic) might represent similar to Willendorf II, AH 4 hunting stations, although it cannot be excluded the presence of a base camp there in addition as well. Crvenka-At in Serbian Vojvodina part of Banat also probably belongs to planned ahead hunting stations.

Hunting stations, transitory hunting camps – Napajedla III in Eastern Moravia (Czech Republic), demonstrate *ad hoc* hunting stopovers at random loci within the ‘natural route’, Napajedla Gate, for occasional but needed ungulate hunting events with no local lithic raw material supply. It explains the presence of only a few domestic tools, simple endscrapers and burins, and an emphasis on microblade production from carinated *sensu lato* tool-cores supplying hunters by some more microliths.

Accordingly, there were possibly two different sub-types of hunting stations, planned ahead (e.g. Willendorf II, AH 4) and by chance organized for a hunting need (e.g. Napajedla III).

Cave sites with unclear yet site type characteristics. Bukovac (Central Serbia) is the only yet known cave with Middle Aurignacian artifact bearing sediments but only at an initial phase of its archaeological investigations.

As a result, the above-represented Middle Aurignacian site type variety probably represents about the entire spectrum of functionally different sites where the absence of pure workshops can be explained by the presence of base camps with some workshop activities as well (Medzany I and II that look similar in this aspect to Abri Pataud, level 8 occupation(s) that we also consider as a base camp with much workshop characteristics too). It is also very probable that Middle Aurignacian *Homo sapiens* groups had some regional centres within the Carpathian Basin, like Nagyréde 1 and 2 in North-Central Hungary and Medzany I and II in Eastern Slovakia.

In addition, there are also some data for speculations on a migration route for Middle Aurignacian human groups for the discussed sites in Austria and Czech Republic connecting Napajedla III, Žlutava I and Nová Dědina I sites at Napajedla Gate area in Eastern Moravia and Willendorf II site in Wachau Valley of Lower Austria through Milovice I, Pavlov and Dolní Věstonice sites in Southern Moravia. The route was probably functioning in both directions, from northeast to southwest and *vice versa*. It followed courses of Morava River

(with the sites at Napajedla Gate) and its right and longest tributary Dyje River (with the sites under the Pavlov Hills) with the confluence of the two rivers located in the southernmost part of Moravia. At the same time, Willendorf II site Middle Aurignacian humans in Wachau could be connected to the Moravian sites via Danube River Valley in west – east direction where the confluence point of Morava and Danube Rivers is at the modern outskirts of the Slovak capital Bratislava city. Taking additionally into consideration that Eastern Moravian and Austrian sites were various hunting sites, while sites in Southern Moravia, being located in between the above-noted Moravian and Austrian sites, could represent some central aggregation sites with perhaps one of them with base camp functions, it is further proposed to understand it as an entire Middle Aurignacian hunters network representing a logistic/foraging/radiating settlement mobility system.

Middle Aurignacian human diffusions throughout the Western Eurasia

Adding to the French Middle Aurignacian the discussed in the present article sites and surface loci in the Carpathian Basin, the Pan-European Middle Aurignacian record becomes much richer and important for geographically wider comparisons within the Western Eurasia where Aurignacian techno-complex is about entirely only known in the Old World. Relying on the present day known geochronology, it is possible to guess carefully that Middle Aurignacian may have had its industrial roots and origin in Southwestern France, in the Western Eurasian ‘*cul-de-sac*’, in Early Aurignacian, geochronologically appearing in GI-8c, ca. 37,900–37,500 cal. BP. On the other hand, the Carpathian Basin sites seem to be a little younger starting from GI-8a, ca. 36,700–36,300 cal. BP. One of us (Yu. E. Demidenko) already proposed some years ago that European Middle Aurignacian (Abri Pataud, level 8; Willendorf II, AH 4; Napajedla III) and the so-called Classic Levantine Aurignacian/Ksar Akil Phase 5 Early UP industry – 1930s excavations levels VIII–VII/1940s excavations levels Xb–IXc in the East Mediterranean Levant (see Bergman 1987; Williams/Bergman 2010) are industrially and chronologically connected (Fig. 21; 22; Demidenko/Hauck 2017, 93, fig. 3). The hypothesis actually rejects an old idea on a supposedly striking similarity between Early Aurignacian/Aurignacian I in Southwestern France and the Classic Levantine Aurignacian ‘*that one tempted to view them literally as well as figuratively having just disembarked from*

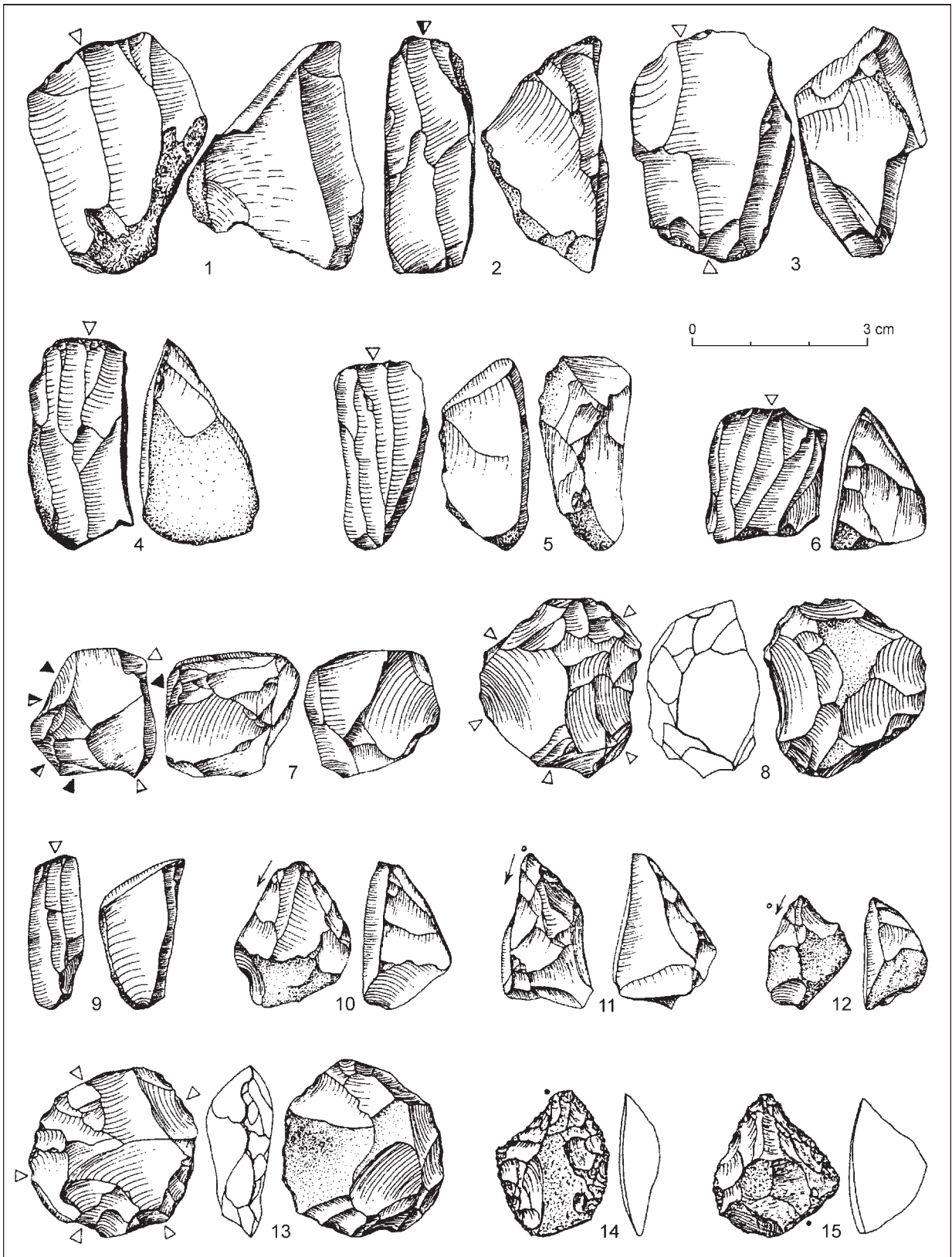


Fig. 21. Yabrud II, layer 1 (Syria). Classic Levantine Aurignacian/Phase 5 Early UP industry. 1-3 – blade cores; 4, 5 – blade/bladelet cores; 6, 9 – bladelet cores; 7, 8, 13 – flake cores; 10-12 – burins on shouldered/nosed endscrapers; 14, 15 – shouldered/nosed endscrapers (artifact illustrations modified after Rust 1950, pl. 93; Bagdach 1982, pl. 51-63).

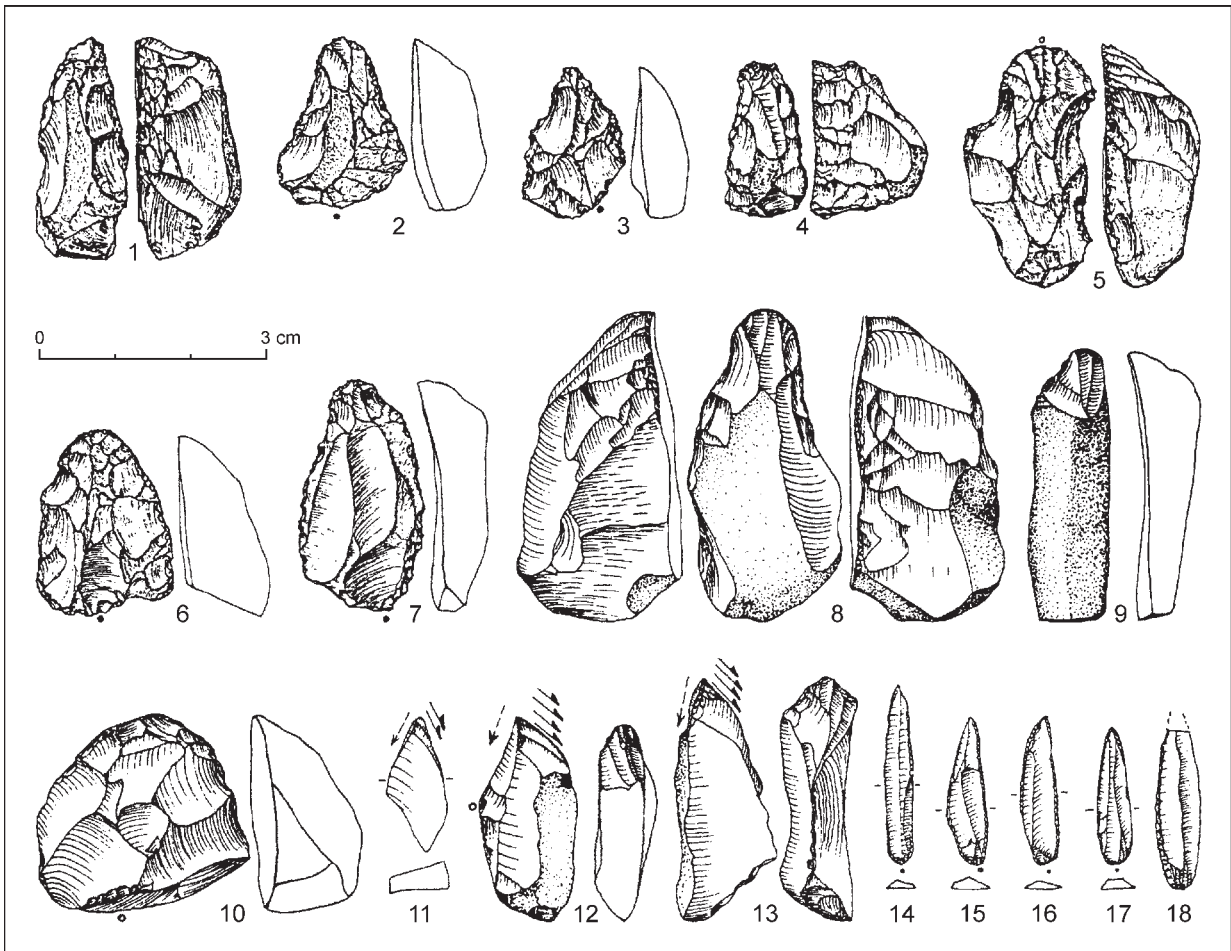


Fig. 22. Yabrud II, layer 1 (Syria). Classic Levantine Aurignacian/Phase 5 Early UP industry. 1–9 – shouldered/nosed endscraper-cores; 10 – wide-fronted carinated endscraper-core; 11–13 – carinated burin-cores; 14–18 – microliths (artifact illustrations modified after Rust 1950, pl. 93; Bagdach 1982, pl. 51–63).

the boat!' (e.g. Goring-Morris/Belfer-Cohen 2006, 307, 308). The newly obtained ^{14}C dates for Levantine sites further support that suggestion when the most securely dated and recently well excavated Classic Levantine Aurignacian materials at Manot Cave, layers VIII–IV in Israel are dated now to ca. 37,000–35,000 cal. BP (Alex *et al.* 2017, 3; Marder *et al.* 2021, 19). From our point of view, the Balkan Peninsula proposes an intriguing 'intermediate' rich in Aurignacian finds site between the Eastern Central Europe and the Levant, Klissoura Cave 1, layers IV–IIIg-d in the Argolide of Peloponnese, Greece with very similar to the present article's Middle Aurignacian artifacts, 'the middle phase of the Aurignacian in the northern Mediterranean' (Kaczanowska/Kozłowski/Sobczyk 2010, 159) and ^{14}C dates between ca. 33,000–31,000 uncal. BP 37,500–35,000 cal. BP (Kuhn *et al.* 2010, 38–40), having even also recognized by us for the Greek site some specific for Willendorf II, AH 4 and Yabrud II, layer 1 (Fig. 21: 10–12) burins on shouldered/nosed endscraper-

cores (see Kaczanowska/Kozłowski/Sobczyk 2010, pl. 23: 6; 46: 17). Moreover, Aurignacian finds from Franchthi Cave, lower units of stratum R (H1B210–208) again in the Argolide of Peloponnese in Greece (Douka *et al.* 2011) and probably Salitreña Cave, layer 5 in Western Serbia (Marrin-Arroyo/Mihailović 2017; Plavšić/Dragosavac/Mihailović 2020) also belong to the discussing Middle Aurignacian. As a result, there is a site chain from Southwestern France via Central Europe and the Balkans to the East Mediterranean Levant. All these data really support a pioneering work of D. Garrod in the East Mediterranean Levant and her Aurignacian hypothesis for the Levantine Aurignacian/R. Neville's UP stage III on 'the close resemblance on the Aurignacian in both' Western Europe and South-West Asia and 'the Aurignacian... providing good evidence for cultural diffusion when found at about the same time in separated areas – an assemblage of very distinctive artefacts, identical or closely similar in both regions, and produced by the same methods' why it is

'most unlikely to have been invented independently in Europe and the Middle East' (Garrod 1953, 24). Accordingly, she came to a conclusion that 'the Aurignacian is a relatively late arrival in Palestine and the Lebanon by comparison with its position in Europe, and that the direction of its diffusion must therefore have been from West to East' (Garrod 1953, 32). In sum, all the above-analysed data allow us on a new data and

knowledge levels to see a Middle Aurignacian human dispersal from Europe into the East Mediterranean Levant.

As it often happens with some scientific subject studies, a seemingly comprehensive study effort should be then added by some more research. It also relates to our Middle Aurignacian studies which continuation is apparent.

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Stredný aurignacien Karpatskej kotliny východnej časti strednej Európy

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SÚHRN

Štúdia sa zaoberá definíciou stredného aurignacienu východnej časti strednej Európy, Karpatskej kotliny, s ohľadom na geochronologické kritériá, v kontexte príslušných industrií, podrobne spracovaných v juhozápadnom Francúzsku. Porovnanie menovaných regiónov, spolu s ostatnými európskymi regiónmi a Levantou na Prednom východe umožňuje navrhnúť modely šírenia človeka v období stredného aurignacienu naprieč Európou a západnou Áziou.

Kamenná industria stredného aurignacienu

Výber kamenných artefaktov z francúzskej lokality Abri Pataud (vrstva 8), ako základných pre rozpoznanie príbuzných industrií stredného aurignacienu v Karpatskej kotlině sa ukazuje ako kľúčové. V kolekciami sa okrem podobných črt vyskytli aj niektoré odlišnosti.

Spoločné črty

Z technologického hľadiska sa v kolekciami stredného aurignacienu v strednej Európe vyskytujú všetky redukčné stratégie a typy jadier, ktoré sú známe pre celý aurignacieny technologický komplex. Ako v jedinom stupni sa v jeho strednej fáze nachádzajú všetky typy jadier. Ide najmä o unipolárne, prípadne viacnásobne unipolárne, nie však bipolárne varianty. Karenoidné škrabadlá – jadrá zjavne predstavujú počiatočné štádium redukcie mikročepelí, ktorých ťažba bola ukončená v podobe zanechaných vyčnených škrabadiel – jadier. Tie tvoria základný typ nástroja – jadra pre produkciu mikročepelí, čo korešponduje so závermi A. Michela (2010) z Abri Pataud (vrstva 8). Úštepové jadrá a vyčnené škrabadlá – jadrá reprezentujú najcharakteristickejšie technologické redukčné objekty, kde pôvodné kusy produkovali hrubé úštepy, ktoré ďalej slúžili na prípravu škrabadiel – jadier a následnú produkciu mikročepelí. Mimoriadne dôležitá je ich prítomnosť v málopočetných kolekciami z povrchových zberov ako technologického znaku, resp. príslušnosti k strednému aurignacienu. Iná situácia je v kolekciami získaných počas archeologických výskumov, najmä vďaka plaveniu sedimentov, kde sú početne zastúpené úštepy, ojedinele dokonca aj mikročepielky (napr. Willendorf II, AH 4).

Z typologického hľadiska dominujú v súboroch Karpatskej kotliny vyčnené škrabadlá – jadrá, menej zastúpené sú široké karenoidné škrabadlá – jadrá, taktiež karenoidné rydlá – jadrá, jednoduché ploché škrabadlá, pričom niektoré z nich sa nachádzajú na laterálne alebo bilaterálne

retušovaných polotovarocho. Na druhej strane, absentujú napr. škrabadlá na typických aurignacienských čepeliach, prípadne niekoľkonásobné rydlá. Mikrolity pochádzajú výlučne z lokalít Willendorf II, AH 4 a Napajedla III. Ich spoločným znakom je marginálna jemná retuš, situovaná variabilne, v rôznych častiach jednotlivých exemplárov.

Špecifické črty

Na niektorých lokalitách sú z technologického hľadiska prítomné takmer všetky typy jadier a to v rôznych štádiách ťažby. Súbory Nagyréde 1, 2 a Medzany I, II jednoznačne vykazujú známu variabilitu jadier, prevahu úštepových jadier a mierny výskyt čepelových jadier, ako aj karenoidné škrabadlá – jadrá *sensu lato*. Na druhej strane ostatné kolekcie, predovšetkým Willendorf II, AH 4 a Napajedla III, poukazujú na absenciu čepelových jadier, výraznú prevahu karenoidných škrabadiel – jadier *sensu lato* a miernu prevahu úštepových jadier. Tieto rozdiely možno pripísať variabilite typov lokalít. Zaujímavé je využitie úštepových jadier a vyčnených škrabadiel – jadier, ktoré sú akýmsi druhom „domácich jadrovitých predmetov“, vyrábaných z miestnych surovín v Abri Pataud (vrstva 8). V Karpatskej kotlině poukazujú na dvojaké technologické využitie. Na niektorých lokalitách opäť predstavujú „domáce predmety“ vyrábané z miestnych surovín (Nagyréde 1, 2 a Medzany I, II), na iných zase akési „mobilné predmety“, vyrábané zo surovín zo vzdialenejších zdrojov.

Z pohľadu typológie pokračuje trend väčšej variability škrabadiel – jadier a škrabadiel ako takých. V súboroch z Nagyréde 1, 2 a Medzany I, II dominujú karenoidné škrabadlá – jadrá *sensu lato* a jednoduché ploché škrabadlá (spolu 50 %). Na lokalitách Willendorf II, AH 4 a Napajedla III prevažujú karenoidné škrabadlá – jadrá *sensu lato* (90 % a 70 %) nad ostatnými jednoduchými plochými škrabadelami (približne 10 % a 30 %). Čo sa týka rydiel, pre lokalitu Abri Pataud (vrstva 8), je príznačné dominantné postavenie hranových variantov na úkor klinových. Situácia je mierne odlišná na východnom Slovensku (Medzany I – 52,9 % klinových rydiel; 5,9 % hranových rydiel; 41,2 % uhlových rydiel. Medzany II – 20 % klinových rydiel; 80 % uhlových rydiel), Maďarsku (Nagyréde 1 – 50 % klinových rydiel; 8,3 % hranových rydiel; 41,7 % uhlových rydiel. Nagyréde 2 – 40 % hranových rydiel; 60 % uhlových rydiel), Rakúsku (Willendorf II, AH 4 – 4,5 % resp. jedno karenoidné rydlo – jadro; 45,5 % klinových rydiel; 31,8 % hranových rydiel; 18,2 % uhlových rydiel) a na Morave (Napajedla III – 20 % resp. jedno karenoidné rydlo – jadro; žiadne klinové rydlá; 40 % hranových rydiel; 40 % uhlových rydiel). Mikrolity sa

v predmetných súboroch vyskytujú ojedinele, a preto nie je možné hovoriť o reálnej prítomnosti tzv. Roc-de-Combe, podtypu mikročepelí Dufour, známeho výhradne z francúzskych lokalít. Z tohto dôvodu je v Karpatskej kotline nevyhnutná realizácia nových výskumov.

Organické artefakty, v rámci predmetného regiónu, pochádzajú iba z Willendorfu II, AH 4 a sú početnejšie ako v Abri Pataud. Najcharakteristickejšie sú kostené/parohové hroty s hrubým oválnym prierezom a predĺženou distálnou časťou lancetovitého tvaru. Korešpondujú s tzv. „*pointe losangique à section ovale*“ stupňa aurignacien III D. *Peyronyho* (1933; 1936) a „*pointe biconique*“, rovnako s oválnym prierezom, stupňa aurignacien IV, v tom čase s výskytom atypických karenoidných rydiel – jadier a typickou prítomnosťou vyčnených škrabadiel – jadier.

V zbierkach kamenných industrií Karpatskej kotliny sa nachádzajú aj elementy, ktoré naopak neboli zistené vo vrstve 8 na lokalite Abri Pataud. Ide predovšetkým o rôzne „stredopaleolitické“ varianty radiálnych a diskovitých jadier, vyskytujúcich sa v kolekciami Medzany I, II a Napajedla III. V budúcnosti je potrebná podrobnejšia analýza týchto jadier, ktoré by mohli byť napr. výsledkom vyťaženia mladopaleolitických jadier a ich následného pretvarovania za účelom získania špeciálnych hrubých úštepov a polotovarov pre prítomné škrabadlá. Pozoruhodná je aj prítomnosť driapadiel, ktoré sa len v minimálnom množstve zistili aj vo vrstve 8 v Abri Pataud (Brooks 1995, tabela XXII).

Geochronológia stredného aurignacieniu

Všetky doteraz datované lokality stredného aurignacieniu Karpatskej kotliny sú o niečo mladšie v porovnaní s francúzskou lokalitou Abri Pataud (vrstva 8), radenou do GI-8c, konkrétne 37 900–37 500 cal. BP/33 050 uncal. BP. Zodpovedajú totiž časovému intervalu medzi GI-8a a GI-6 s dátumami: 36 300–35 400 cal. BP/32 100–31 200 uncal. BP pre Willendorf II, AH 4; medzi 36 700–36 200 a 34 100–33 800 cal. BP/32 700–32 300 a 30 000–29 600 uncal. BP pre Napajedla III; medzi 36 000–35 000 a 33 000–32 000 cal. BP/29 200 a 28 700 uncal. BP pre Milovice I. Pre jednoznačné potvrdenie ich mladšieho veku je v Karpatskej kotline potrebné získať viac absolútnych dát. V súčasnosti sú najperspektívnejšie Milovice I, kde aktuálne prebieha nový archeologický výskum.

Sídelná štruktúra stredného aurignacieniu v Karpatskej kotline

Predmetné lokality stredného aurignacieniu možno na základe primárnej a sekundárnej úpravy kamenných industrií rozdeliť do viacerých typov:

Základné tábory (rezidenčné/obytné lokality) – Nagyréde 1, 2

Situované sú na mieste s dominantným prevýšením nad okolitou oblasťou, s výborným panoramatickým výhľadom na rozsiahle územia blízkej roviny a ľahko dostupného potoka. Pre lokality je s najväčšou pravdepodobnosťou dôležitý neďaleký zdroj surovín na výrobu kamennej industrie. Ide predovšetkým o limnosilit, zastúpený v celej redukčnej schéme jadier, s ojedinelým zastúpením ďalších regionálnych surovín, či vzdialenejších zdrojov, ktoré vypovedajú o ľudských aktivitách v predmetnej oblasti.

Základné tábory (rezidenčné/obytné lokality) s dielenskou aktivitou – Medzany I, II

Taktiež sa vyznačujú dobrou topografickou polohou, na vyvýšenej terase v blízkosti potoka, s bohatými sekundárnymi zdrojmi rádiolaritu. Na základe redukcie jadier, jadrovitých nástrojov a nástrojov sa východoslovenské lokality podobajú lokalitám Nagyréde 1 a 2. Blízkosť zdrojov rádiolaritu umožnila nositeľom stredného aurignacieniu využívať lokality aj ako dielne na pravdepodobný vývoz väčšiny jadier, škrabadiel – jadier a debitaže mimo mikroregión Medzian.

Lovecké stanice, vopred plánované lovecké základné zastávky – Willendorf II, AH 4

Ďalšie lokality sú umiestnené v skrytých topografických podmienkach, v blízkosti rieky s dobrými možnosťami lovu a dostupnosťou miestnych kamenných surovín. Lovci na takéto miesta zrejme prichádzali už s vyrobenými loveckými zbraňami v podobe kostených/parohových hrotov a do nich vsadenými mikrolitmi. Prinášali tiež úštepové jadrá, karenoidné škrabadlá – jadrá *sensu lato*, ako aj hotové nástroje, najmä niektoré typy rydiel, využívaných na obnovu mikrolitov a kostených/parohových nástrojov stratených počas lovu. Niekoľko ďalších nálezov reflektujú stopy po spracovaní ulovenej zveri, napr. ich rozštvrtienia, spracovaní kože, kostí, parožia, či ich konzumáciu. Väčšina aurignacienských archeologických kontextov z Milovic I, Pavlova a Dolných Věstoníc na južnej Morave by mohla predstavovať, podobne ako Willendorf II, AH 4, lovecké stanice, hoci nemožno vylúčiť, že išlo aj o základné tábory. Crvenka-At, v srbskej časti Vojvodiny v Banáte, pravdepodobne tiež patrí medzi plánované lovecké stanice.

Lovecké stanice, prechodné lovecké tábory – Napajedla III

Ide o lovecké zastávky na náhodných miestach v rámci prirodzenej trasy, v tomto prípade Napajedelskej brány, pri príležitostných, ale potrebných lovoch kopytníkov, bez prítomnosti lokálnych kamenných surovín v regióne. Vysvetľuje to prítomnosť len niekoľkých domácich nástrojov, jednoduchých škrabadiel, rydiel a dôraz na výrobu mikročepelí z karenoidných nástrojov – jadier *sensu lato* zásobujúcich lovcov niekoľkými ďalšími mikrolitmi. Podľa toho zrejme existovali dva rôzne podtypy loveckých staníc, vopred plánované (napr. Willendorf II, AH 4) a náhodne organizované pre potrebu lovu (napr. Napajedla III).

Jaskynné lokality s nejasnou charakteristikou typu lokality

Bukovac (stredné Srbsko) je zatiaľ jedinou známou jaskyňou so sedimentmi obsahujúci artefakty zo stredného aurignacieniu. Archeologický výskum sa však nachádza v počiatočnej fáze.

Absenciu čistých dielní v rámci uvedených typov lokalít stredného aurignacianu možno vysvetliť prítomnosťou základných táborov s určitými dielenskými aktivitami (Medzany I a II), ktoré sa v tomto aspekte podobajú na Abri Pataud (vrstva 8). Je tiež veľmi pravdepodobné, že v Karpatskej kotline existovali niektoré regionálne centrá, ako napríklad Nagyréde 1, 2 v severnom Maďarsku a Medzany I, II na východnom Slovensku.

Šírenie človeka stredného aurignacianu v západnej Eurázii

Na základe aktuálnej geochronológie je možné s istou dávkou opatrnosti skonštatovať, že stredný aurignacien mohol mať svoj pôvod v juhozápadnom Francúzsku, vo včasnom aurignaciane, objavujúcom sa v GI-8c, približne 37 900–37 500 cal. BP. Na druhej strane, lokality Karpatskej kotliny sa zdajú byť o niečo mladšie, so začiatkom GI-8a, zhruba 36 700–36 600 cal. BP. J. E. Demidenko a Th. C. Hauck (2017, 93, obr. 3) už dávnejšie navrhli, že stredný aurignacien v Európe (Abri Pataud, vrstva 8; Willendorf II, AH 4; Napajedla III) a tzv. klasický levantský aurignacien (Ksar Akil, fáza 5 – EUP industria; výskum z 30. rokov 20. stor., vrstvy VIII–VII/1940 a vrstvy Xb–IXc) z východnej časti stredomorskej Levanty (Bergman 1987; Williams/Bergman 2010) sú prepojené chronologicky a prostredníctvom industrie (obr. 21; 22). Nové C^{14} dáta levantských lokalít tento predpoklad ešte viac podporujú, nakoľko materiál klasického levantského aurignacianu z nedávneho výskumu v jaskyni Manot, vrstvy VIII–IV, v Izraeli je najnovšie datovaný do 37 000–35 000 cal. BP (Alex et al. 2017, 3; Marder a i. 2021, 19). Z balkánskeho polostrova pochádzajú „medzistanice“, medzi východnou časťou strednej Európy a Levantou, ktoré sú bohaté na nálezy stredného

aurignacianu. Ide napr. o Peloponézsku jaskyňu Klisoura, vrstvu IV-IIIg-d, v Grécku (Kaczanowska/Kozłowski/Sobczyk 2010, 159), s C^{14} dátami v rozpätí 33 000–31 000 uncal. BP, resp. 37 500–35 000 cal. BP (Kuhn a i. 2010, 38–40) s prítomnými rydlami na vyčnených škrabadlách – jadrách (Kaczanowska/Kozłowski/Sobczyk 2010, tab. 23: 6; 46: 17), identifikovaných aj na lokalite Willendorf II, AH 4 a Yabrud II, vrstva 1 (obr. 10: 11, 12). Podobné nálezy boli nájdené aj v jaskyni Franchthi v spodnom kontexte vrstvy R (H1B210–208), na Peloponéze v Grécku (Douka a i. 2011) a pravdepodobne aj v jaskyni Šalitrena (vrstva 5) v západnom Srbsku (Marrin-Arroyol/Mihailović 2017; Plavšić/Dragosavac/Mihailović 2020).

Z uvedených pozorovaní je možné vyčleniť sieť lokalít od juhozápadného Francúzska cez strednú Európu, Balkán, až po východnú časť stredomorskej Levanty. Podporuje zároveň priekopnícku prácu D. A. E. Garrodovej (1953) o mladopaleolitickom stupni III R. Neuvilla/levantského aurignacianu a jej hypotézy o podobnosti aurignacianu západnej Európy a juhozápadnej Ázie. Aurignacien podľa nej poskytuje vhodný dôkaz kultúrnej difúzie, nakoľko sa v približne rovnakom čase vo vzdialených geografických oblastiach našli súbory s identickými alebo veľmi podobnými artefaktmi, vyrobené rovnakými metódami a bolo by veľmi nepravdepodobné, aby boli vynájdene nezávisle od seba v Európe a na Strednom východe (Garrod 1953, 24). Autorka dospela k záveru, že aurignacien sa v Palestíne a Libanone objavil relatívne neskoro, v porovnaní s Európou a smer jeho šírenia musel byť preto zo západu na východ (Garrod 1953, 32). Na záver preto možno skonštatovať, že aj nami vyhodnotené údaje potvrdzujú šírenie človeka stredného aurignacianu z Európy do východnej časti stredomorskej Levanty. Keďže ide o pomerne rozsiahlu problematiku, budúci výskum by sa mal zamerať na získanie ďalších doplnujúcich údajov.

METAL ARTEFACTS OF ZRUBNA/TIMBER-GRAVE CULTURE OF THE NORTH AZOV AREA AS CHRONOLOGICAL INDICATORS*

VIACHESLAV ZABAVIN 

The article deals with the problems of relative and absolute chronology of Zrubna/Timber-grave culture of the North Azov Area of the Paleo-metallic epoch. Successfully addressing these questions to understand the regional specificities of the cultural-historical process, but also to correctly describe the nature of inter-regional connections in terms of their dynamics and direction. To date the Zrubna/Timber-grave culture we used the results of comparative-typological analysis. With a significant distance of the Northern Azov Area from the centres of civilizations, such dating acquires the character of a multi-step procedure, the results of which directly depend on the accuracy of the construction of numerous typological comparisons. In determining the absolute dates of Zrubna/Timber-grave culture of the North Azov Area the author is mainly guided by the more adjusted chronological scales, constructed with the help of natural-scientific dating methods. To resolve questions of relative chronology and synchronization of horizons of Zrubna/Timber-grave culture in the North Azov Area with the cultures of the Carpathian-Danube Region the author used so-called chronological indicators – bronze and antimony products. This eventually made it possible to construct a version of the relative and absolute chronology scheme.

Keywords: North Azov Area, Late Bronze Age, Zrubna/Timber-grave culture, relative chronology, absolute chronology.

INTRODUCTION

Problems of absolute dating of Paleo-metallic cultures, including the Circum-Pontic Region, are constantly in the focus of research, as their successful solution allows not only to understand the regional characteristics of the cultural-historical process, but also to correctly describe the nature of inter-regional relations in terms of their dynamics and direction. The use of historical chronology to date cultures, including the Zrubna/Timber-grave culture (hereinafter referred to as ZC), is usually based on the results of comparative typological analysis. With a significant distance of the Northern Azov Area from the centres of civilizations, such dating acquires the character of a multi-step procedure, the results of which directly depend on the accuracy of the construction of numerous typological comparisons.

Comparative analysis of regional periodization schemes increases the reliability of such dating, but is not an independent way of verifying its results. In this situation, the results of absolute dating of cultural heritage, including radiocarbon dating, are of particular importance (Trifonov 2001, 71). In determining the absolute dates of ZC of the North Azov Area we will mainly be guided by more adjusted chronological scales, constructed with the help of natural-scientific dating methods. While leaving aside the so-called traditional chronological system, researchers are mainly guided by the

fact, that the absolute chronology of Bronze Age Europe has been determined precisely on the radiocarbon dating scale for the past three decades. As the researchers point out, no absolute chronology other than that determined using radiocarbon, dendrochronological and other natural methods exists for modern European Bronze Age archaeology (Lytvynenko 2009b, 317). In addition, the authors draw attention to the need for a deeper analysis of the currently available material to draw more conclusions about the synchronization and therefore the absolute chronology of the heritage of ZC. According to R. O. Litvinenko, the systematization and full publication of these materials, as well as their careful comparison with similar artefacts from the Carpathian-Danube Region, Peloponnese and Asia Minor would allow a more reliable development of the issue of the relative chronology of Late Bronze Age cultural formations near the Circum-Pontic Region (Lytvynenko/Sanzharov/Usachuk 2013, 194).

METAL ARTEFACTS OF ZRUBNA/TIMBER-GRAVE CULTURE OF THE NORTH AZOV AREA

Metal artefacts are one of the most studied categories of archaeological sources, with fairly extensive literature on their finds, typology and chronology. Metal objects have traditionally attracted the most research attention compared to the evaluation of

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Fig. 1. Distribution map of Zrubna/Timber-grave culture burials of the Northern Azov Area containing metal artefacts.

their production. For a long time, research interest was directed solely towards the study of metalwork and the most mass-produced and expressive category of fixtures – foundry forms. This trend is no longer decisive today, but there remains a sustained interest in the characterization of the most metal-intensive categories of tools of various functional groups and other metalwork, with research in recent decades paying the closest attention to issues of typology and chronology.

Although the range of bronze artefacts in the Late Bronze Age is quite broad, it is a relatively rare category of finds in settlements and burials of ZC in the region under study. The material from the burial grounds of ZC of the North Azov Area can give some information about the development of metal production, especially metalworking. Bronze objects were found only in 44 burial complexes among the massif of 1,515 burials studied, which is about 2.9% of the total. The metal saturation of burials of the ZC in adjacent areas can be shown by the results of cartography (Fig. 1) and the figures given in Tab. 1.

The general trend of decline in the proportion of burials with metal when moving from north to south can be clearly seen in the cartography of the ZC burials, even for the territorially limited North Azov Area (Fig. 1). Indicative of the frequency of placement in the burials of ZC of the North Azov Area is such a relatively metal-intensive and rare item as a dagger (Fig. 2). According to our revised data, these figures are equal to 0.19 % for the burial grounds of the North Azov Area.

Cartography of the North Azov Sea Region ZC burials containing metal products (especially daggers) has clearly demonstrated a downward trend in the proportion of burials with metal as they move south towards the Sea of Azov (Fig. 3). Thus, the vast majority of burials with metal were concentrated in the southern spurs of the Donetsk Range, in the upper reaches of the Azov Sea Basin, while the burial grounds of the Azov Area proper (Azov Lowland and Upland) are full of bronze artefacts to a much lesser extent. Thus, the very fact of presence of metal objects in the burial inventory of ZC burials in relation to the territory under study can be regarded as a sign of social eccentricity.

Our observations fully confirm the assumption expressed earlier by R. O. Lytvynenko that the population of ZC of the Azov Region in their everyday life felt a certain shortage of metal, in contrast to the populations of the ZC of the Donetsk Range, which had access to the local cuprous sandstones. It was in the copper-ore deposits of the Donetsk Range during the Late Bronze Age that the mining and metallurgical centre associated with the activities

Tab. 1. Metal saturation of Zrubna/Timber-grave culture burials (specific weight %).

Region	Metal-ware	Knives
Lower Dnieper Region	–	2.2%
North Azov area	2.9%	
Interfluve of the Dnieper and the Molochna	3.5%	–
Crimea	4.6%	3.5%
Interfluve of the Orel and Samara	5.5%	3.0%
Eastern Ukrainian forest-steppe	6.0%	–
Lower Don Region	6.4%	0.2%
Siverskyi Donets Region	7.8%	3.3%
Middle Don Region	13%	4.6%
Middle Volga Region	13%	–
Siverskyi Donets (Pokrovsk deposits)	19%	–
Volga-Don Interfluve forest-steppe	–	2.7%
Dnieper-Donets Interfluve	–	1.8%

of local ZC populations functioned. Obviously, the population of ZC of the Azov Region was not among those who controlled this deposit and therefore was alienated or limited in their ability to produce metal from this raw material base (*Lytvynenko/Andriienko 2013, 163*).

The Azov burials with bronze daggers have already been considered in detail in our previous studies (*Zabavin 2014*). Let us only note that from all burial mounds of ZC of the Northern Azov Region originate 11 daggers of various types (Fig. 4). According to E. Chernich's typology, they are divided into three groups: with rhombic crosshair (7 examples) – types H-28, H-30, H-32; leaf-shaped without crosshair (2 examples) – types H-8, H-10 (*Chernykh 1976, tab. XXXIV; XXXV*); with massive ribbed blade and marked with a hammered petiole crosshair (2 examples). In E. Chernykh's classification, the latter variety is not distinguished as a special type.

An awl and a needle were found once each in the tombs of ZC of the Northern Azov Region (southern spurs of the Donetsk Range). Bronze awl – pointed at both ends, inserted in a handle made of a tubular bone. Bronze needle – round in cross-section, thin pointed rod with an oval eye formed by a bent countersunk loop. The tools in these categories have not been classified typologically (*Chernykh 1976, 125*). In addition, we can mention the products that belong to the structural elements of wooden utensils: bronze or copper overlays or shackles (sometimes with the remains

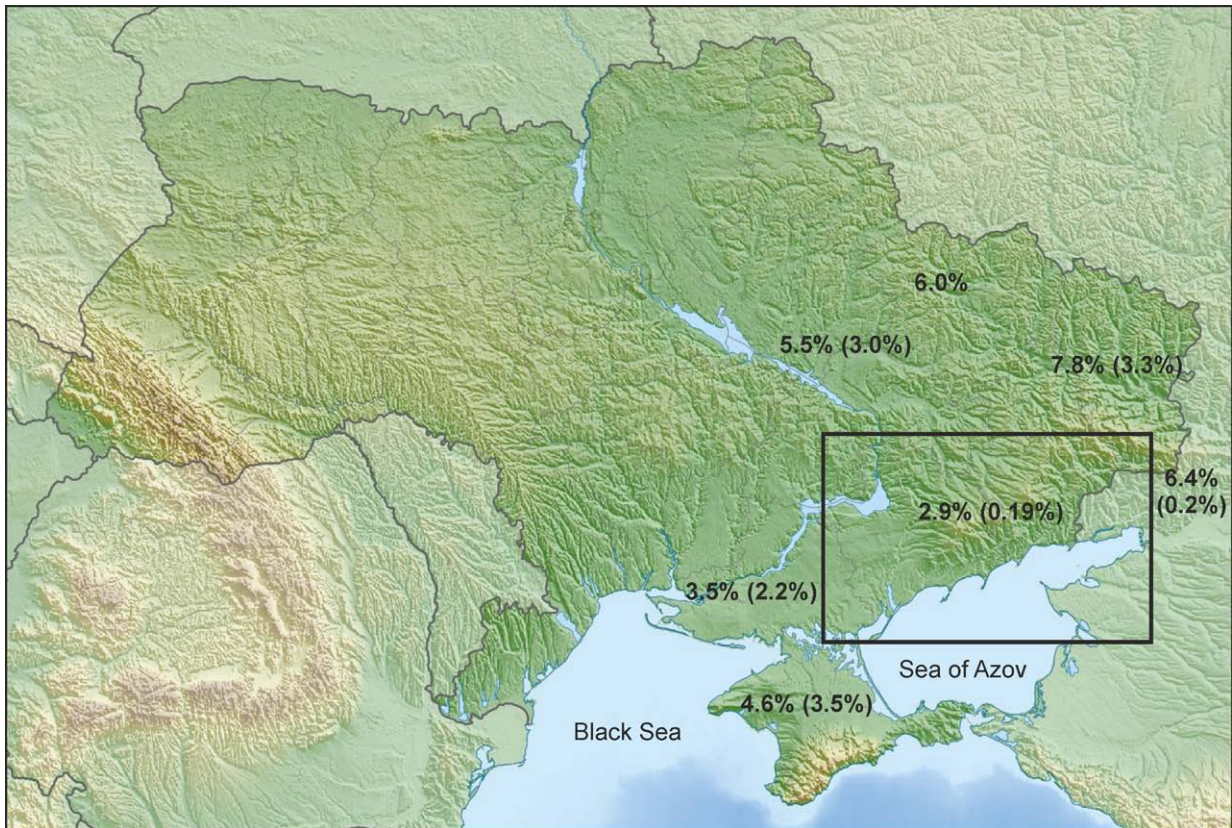


Fig. 2. Saturation with metal (daggers) of the burials of Zrubna/Timber-grave culture of the Northern Azov Region in comparison with the mono-cultural heritage of the adjacent territories (specific weight %).

of wood), nails or rivets, possibly ears for hanging, brackets or staples, which were intended for connecting and fastening wooden parts (Fig. 5: 9). Wooden utensils in funerary complexes are most often identified by these metal elements, which is why they are used the most often for a number of technological and cultural-chronological questions (Zabavin/Nebrat 2021, 76, 77).

Various metal jewellery was found in 25 graves. Bronze lock rings are a serial category of funerary equipment. Most of them can be categorised as one type – oval in a turn and a half with curved ends, semi-circular in cross-section. Lock rings may differ somewhat in morphological details and in their size, but in European historiography such items are widely known as so-called Sibirian or Transylvanian-type lock rings (Bátora 2015, 67). Out of the total mass of 1,356 burials, which were distributed by chronological horizons, the bronze lock rings were found in 19 complexes (1.4%): I (early) horizon – 7 (10.9%), II (advanced) horizon – 14 (1.7%), III (late) horizon – 1 (0.2%). A total of 28 lock rings of varying degrees of preservation were recorded (Fig. 5: 2, 5–7).

A single pendant is most often found on the deceased, less often a pair. In four graves a necklace (beads) of bronze and antimony was found (Fig. 5: 1, 4), a bronze ring (Fig. 5: 3), a drop-shaped pendant (Fig. 5: 8), a bronze cross piece and a lead ring at the neck were found once each. In two graves lock rings were found together with beads, once a combination of beads and a ring. Special attention should be paid to the bronze ring with spiral flat plates, which was found in burial 10 of barrow 3, investigated near the village Pokrovka, Donetsk Region. The product is made of round wire, the spirals are twisted in opposite directions (Lytvynenko 1999, fig. 9: 10).

In 10 cases, graves containing metal jewellery were the main ones in the barrows. In nine cases, the graves with lock rings are identified as adult graves, once they were found in a child and adolescent grave. Only one burial with this category of burial inventory is anthropologically defined as female. The presence of jewellery in the form of bronze bracelets, rings, lock rings, antimony and glass beads in the grave was regarded by R. O. Lytvynenko as purely characteristic of women's burials (Lytvynenko 1996, 63).

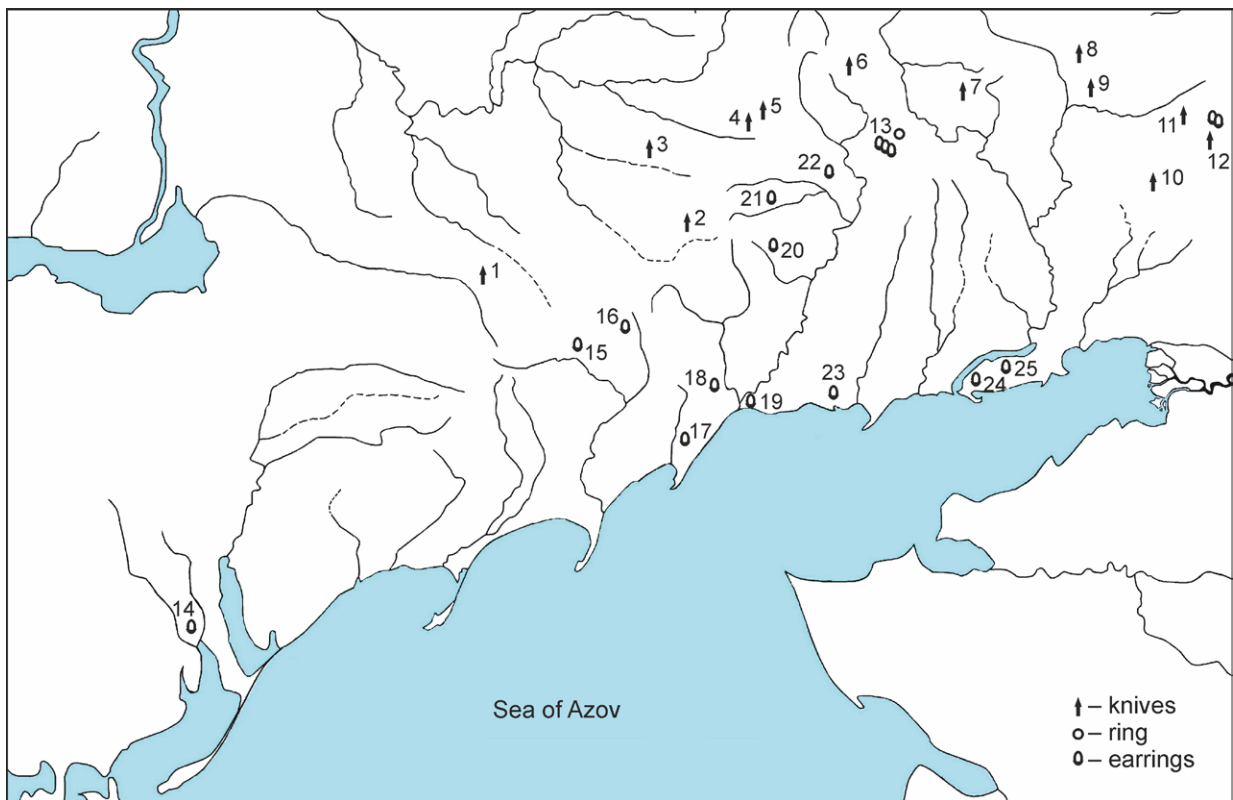


Fig. 3. Distribution map of Zrubna/Timber-grave culture burials of the Northern Azov Area with daggers, earrings and rings: 1 – Basan; 2 – Ivanivka; 3 – Vuhledar; 4 – Tekstylnyk (Donetsk); 5 – Hladkivka; 6 – Khanzhenkove; 7 – Shakhtarsk; 8 – Dubovskiy; 9 – Kalynove; 10 – Klunnikove; 11 – Blahivka; 12 – Astakhove; 13 – Pokrovka; 14 – Davydivka; 15 – Poporizivka; 16 – Kamiani Mohyly; 17 – Ohorodnie; 18 – Saryi Krym; 19 – Azovstal; 20 – Balashivka; 21 – Malyi Kut; 22 – Pishchane; 23 – Bezimenne; 24 – Behlytsia; 25 – Haivka-Kaimakchy.

ISSUES OF RELATIVE CHRONOLOGY AND SYNCHRONIZATION OF THE HORIZONS OF ZRUBNA/TIMBER- GRAVE CULTURE OF THE NORTH AZOV AREA WITH THE CULTURES OF THE CARPATHIAN-DANUBE REGION AND MYCENAEAN GREECE

To establish absolute chronology and to synchronise the horizons of the ZC with the cultures of the Carpathian-Danube Region and Mycenaean Greece, researchers have traditionally drawn attention to western parallels (*Berezanskaya* 1990, 106, 110; *Brovender* 2007, 225, 230–232; *Brovender/Otroschenko* 1996; *Cherednichenko* 1977; 1986, 63–77; *Hüttel* 1981, 28–30; *Kovaleva* 1981, 32; *Lytvoynenko* 1994, 147–153; *Lytvoynenko/Sanzharov/Usachuk* 2013, 189; *Müller-Karpe* 1980; *Penner* 1998; *Smirnov/Kuz'mina* 1977, 146–150; *Terenozhkin* 1965; *Vangorodskaya/Bychkov* 1987, 44).

For the study of absolute chronology and synchronization of the Late Bronze Age cultures of the Black Sea Region with the antiquities of South-Eastern Europe and Asia Minor, the key diagnostic

complexes are of great importance. Thus, for example, the analysis and comparison of a rare find – an ornamented bone disc, coming from a burial of ZC, studied in a barrow of the Bronze Age on the right bank of the Siverskyi Donets (Shypylyvka, barrow 1, burial 1), allowed a number of conclusions. The observation of the kurgan stratigraphy allowed the authors to testify to the chronological succession of this complex after the burial with Pokrovsk features, the ritual-inventory characteristics allow us to attribute the burial with the disk to the burials of the second (middle) chronological horizon of ZC. The closest parallels to the disk found in the Donets burial gave the authors the opportunity to synchronize it with the horizon of LH IIA/SH IIA, or Reinecke BA1 period, which now dates no later than the second half of the 16th c. BC (*Lytvoynenko/Sanzharov/Usachuk* 2013, 195).

To determine the absolute and relative chronology of ZC burial grounds, including the heritage of the Northern Azov Region, researchers have traditionally attracted complexes containing metal objects.

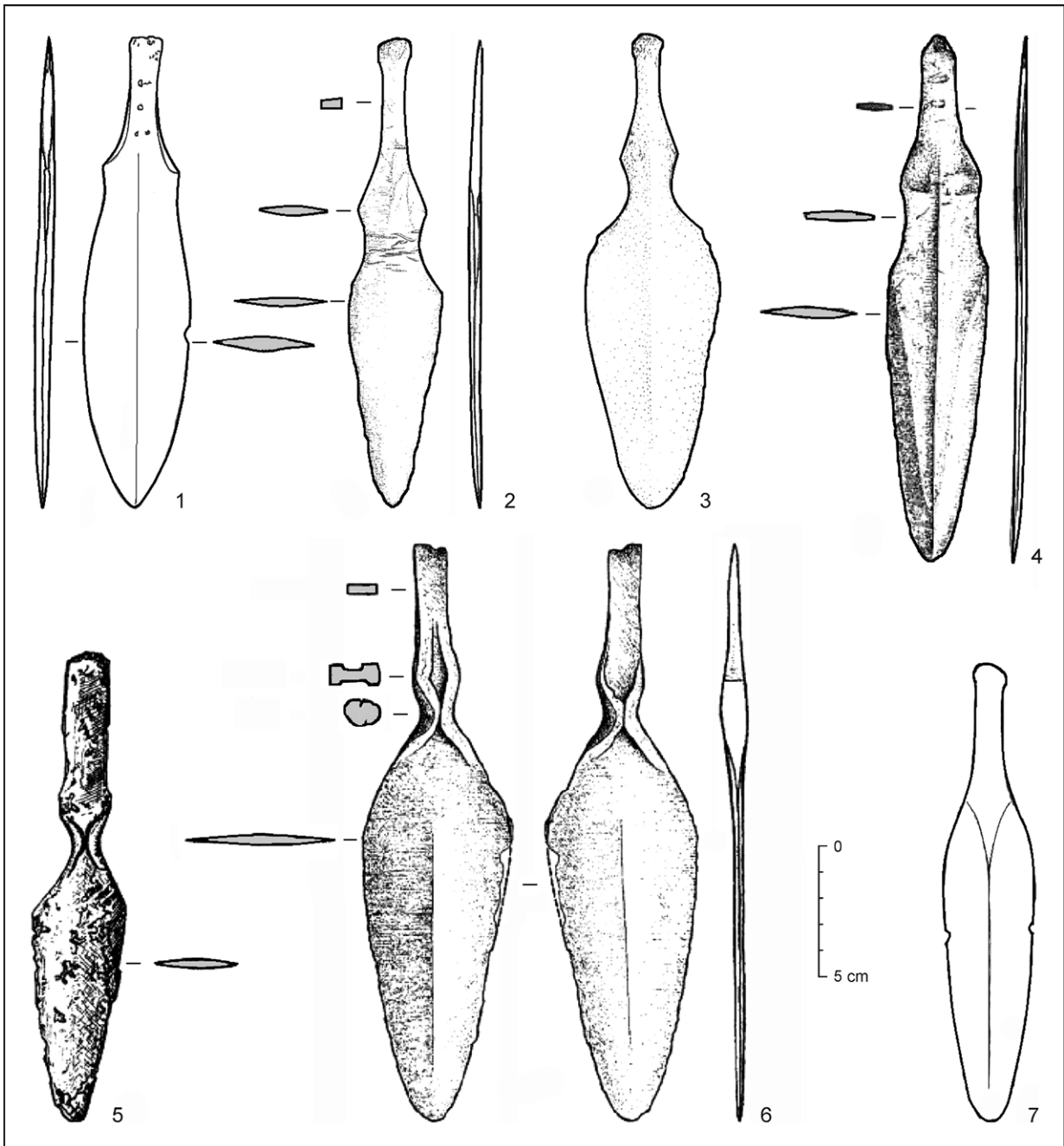


Fig. 4. Metal products of Zrubna/Timber-grave culture of the North Azov Area. 1 – Khanzhenkove; 2 – Vuhledar, barrow 1; 3 – Donetsk 2-3/1; 4 – Shakhtarsk 9/1; 5 – Babakova Mohyla 3/5; 6 – Ivaniivka 1/1; 7 – Astakhove 22/8 (1–6 after Lytvynenko 1999; 7 after Evdokimov 1992).

Daggers

Thus, Ya. P. Gershkovich regarding the daggers, originating from the excavations on the Donetsk Ridge (the interfluvium of the Lozova and Vilkhova rivers), with a leaf-shaped blade with the largest extension at its base, separated from the petiole by an interceptor, notes that such products are typical for the centre of metalworking of ZC. The author also

mentions the closest analogies of the clay moulds for their manufacture, which originate from the ZC settlements in the Siverskyi Donetsk and Don basins (Gershkovich 1996, 165).

A foundry form with a negative of a similar knife was found in dwelling 11 at Usov Lake settlement. A ^{14}C date of 1270 ± 50 BC was obtained for this dwelling (Berezanskaya 1990, 107, fig. 15: 2). Foundry forms with negatives of similar daggers were also

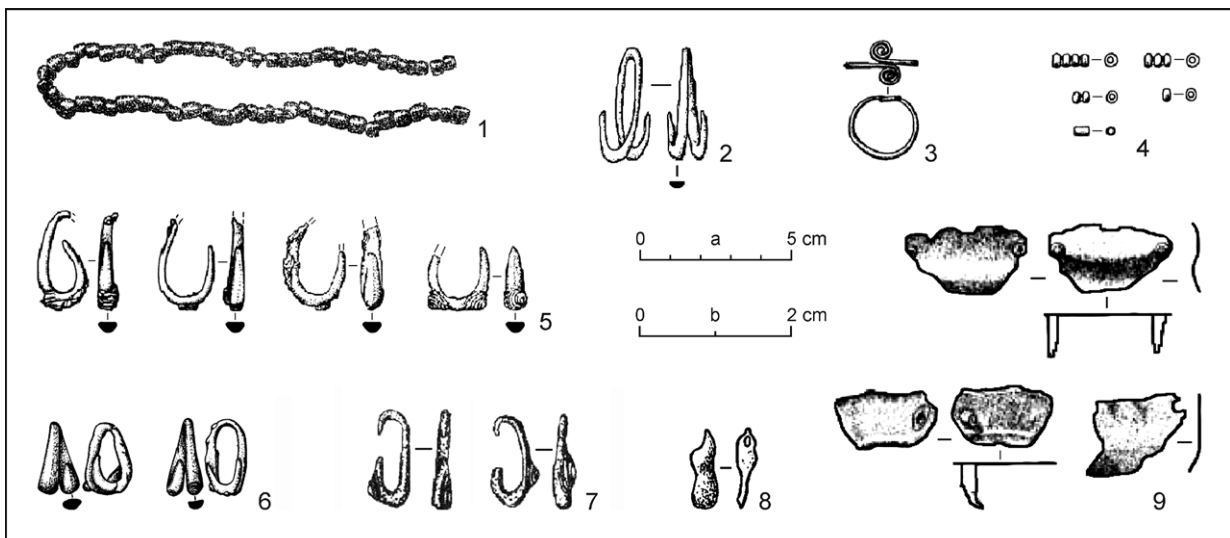


Fig. 5. Metal products of Zrubna/Timber-grave culture of the North Azov Area. 1, 2 – Astakhove 19/5; 3, 4 – Pokrovka 3/10; 5 – Pokrovka 3/2; 6 – Bezimmenne 4/2; 7 – Malyi Kut 2/2; 8 – Pishchane 2/1; 9 – Novoukrainka 3/7 (1, 2 after *Evdokimov* 1992; 3–7 after *Lytvynenko* 1999; 8 after *Bratchenko* 1997; 9 after *Tarasenko* 2012). Scale: a – 1–7; b – 8.

found in the settlement of Mosolovka (*Priakhin/Savrasov* 1989, fig. 16: 5). Analysis of wood from the base and filling of the pit of one of the dwellings here gave two dates ^{14}C – 1530 ± 40 and 1370 ± 40 BC (*Priakhin* 1993, 91). Thus, Ya. P. Gershkovich, taking into account these dates, determines the age of such daggers within the late 16th/early 15th–late 14th/early 13th c. BC (*Gershkovich* 1996, 166).

The chronological framework of the developed stage of ZC of the Siverskyi Donets basin R. O. *Lytvynenko* in earlier works, based on the time of existence of daggers with a flat stop and citing the relevant parallels, determines the 15th–the beginning of the 14th c. BC. In general, correlates with the antiquities of late Hellas and the Central European period BB2 (BC1) according to Reinecke's scheme (*Lytvynenko* 1994, 167).

Rings

To date, in the steppe zone of Ukraine, in the area of the ZC community, only five complexes are known that contained rings with spiral shields (*Lysenko* 2005, 32, 33; *Lytvynenko* 1999, 14). Including two similar products originate from ZC complexes, studied on the Siverskyi Donets (*Lytvynenko* 1993, fig. 5: 6; 1994, fig. 86: 6, 7). Bronze rings made of thin split wire, round in cross-section, sometimes found in burials of Pokrovsk-Zrubna culture (hereinafter referred to as PZC; *Otroschenko* 2013, 162).

On the territory of Ukraine, products similar to the bronze ring with spiral shields from the Azov burial (Pokrovka, barrow 3, burial 10), were also

found on the objects belonging to the Trzcinić-Komariv culture (hereinafter referred to as TKC) of the Trzcinić cultural complex (hereinafter referred to as TCC). These items are usually categorised in terms of size into neck jewellery, bracelets and rings. Bronze wire products with ends twisted into spiral shields were widespread in the Middle and Late Bronze Age also in Central Europe (Mađarovec culture, Otomani-Füzesabony cultural complex – OFCC, kurgan cultures and others). In Poland, such jewellery is typical for the Trzcinić culture, some finds (from the treasures) are attributed to the early Lusatian Culture (*Lysenko* 2005, 25). For example, a jewellery item similar to a bronze ring found in a burial near the village of Pokrovka was discovered in a necropolis of Monteoru culture studied near the village of Sărata Monteoru in Romania (*Bârzu* 1989, 66, 67, fig. 68: 1). Similar rings are also known in Bronze Age cultures in Austria (*Neugebauer* 1994, fig. 10: 13).

M. M. Cherednichenko attributed the rings with spiral shields to the senior stage of the early (Pokrovsk or Archaic) period of the ZC. The researcher cited close analogies in the Monteoru culture of the Carpathian-Danube basin, where similar products exist for two periods (Hänsel FD III–MD I or Reinecke BA2–BB1; *Cherednichenko* 1977, 4, fig. 3: 7; 1986, 65). V. V. *Otroschenko* (2001, fig. 31) attributes such rings of the Siverskyi Donets to the first stage of the PZC. R. O. *Lytvynenko* (1999, 14, fig. 13) attributes the above-mentioned products to the early (Pokrovsk) stage of ZC and correlates them with the first stratigraphic horizon of ZC cemeteries of the North-Eastern Azov Region.

The mapping of neck rings, bracelets and rings with spiral shields allowed the researchers to conclude that almost all of them come from the sites of the Komariv line of development of the TCC. Based on the fact that today in the steppe zone of Ukraine, in the area of the ZC community, only five complexes containing rings with spiral shields are known, S. Lysenko concludes that these artefacts: 'clearly foreign and probably the result of contacts with cultures from the Carpathian-Danube Region, where dozens, if not hundreds, of similar objects are known, and with the TCC formed under their influence' (Lysenko 2005, 32, 33). Thus, the sites of the Middle Dnieper with neck rings, bracelets and rings with spiral shields based on radiocarbon dates ¹⁴C are attributed by the author to the Teklinsky horizon of the Kyiv-Cherkassy group of the TCC and dated to the period 1500–1400 BC (Lysenko 2001, 13).

Indeed, in the Carpathian-Danube Region, rings are considered a fairly common category of treasure finds (Furmánek 1977; 2004, fig. 209) and in graves where they were usually found in a functional position on finger bones (Bátora 2015, 73). Among the oldest are rings in the shape of a willow leaf, rings of simple round wire and double wire rings with a loop back. They are also known in the Nitra culture in south-western Slovakia. In the classical and final phase of Maďarovce culture, a new type of bronze rings appeared, represented by rings made of narrow square or lens-shaped strips with spirally twisted ends of round cross-section (Bátora 2000, tab. 2: 22; 2018, fig. 135: 5). Similar rings are also widely known in the OFCC, widespread in Slovakia, Hungary and Romania (Olexa/Nováček 2015, 34, fig. 12: 1–5; 2017, 34, fig. 9: 2, 4, 6).

In the regions east of the Northern Azov Area, bronze rings are also known in the sites of a fairly wide chronological range. Similar bronze rings made of wire with an S-shaped shield are presented in large numbers in the materials of the Alakul culture (Kalieva/Kolbina/Logvin 2016, 177; Tigeeva/Novikov/Shilov 2016, fig. 2), as well as in the sites of Sintashta and Petrovka cultures (Gening/Zdanovich/Gening 1992, fig. 126: 18–20; 184: 2; Kadyrbaev/Kurmankulov 1992, fig. 76: 21; Potemkina 1985, fig. 82: 5–7; Sotnikova 1990, 25).

Metallographic analysis revealed a technological scheme with the predominance of high-temperature modes, which was used for the manufacture of jewellery of the Alakul cemetery. The raw material was tin bronze. The technology of manufacturing rings is unified and consists in obtaining a blank by forging on a special rounded mandrel, withdrawing, flattening and giving the appropriate shape to the product. The production of spiral shields was carried out by winding on a thin rod. Rings were

formed from a bar on an anvil with a rounded groove. In the process of forging, the wire was drawn and given a semi-circular shape, as well as the shield was formed by winding (Tigeeva/Novikov/Shilov 2016, 26, 27).

Regarding such a category of jewellery as bronze rings with spiral shields, R. O. Lytvynenko notes that their dating possibilities are far from ambiguous. Already in the burials of ZC of the Siverskyi Donets these items are known both in the complexes of the Pokrovsk and developed stages. To the east of the Donets, they are known in sites of a fairly wide chronological range. Therefore, there is no point in relying on eastern analogies dating back to between the 17th and 12th c. BC, the researcher believes. Following M. M. Cherednichenko, the author also drew attention to the western, Danube parallels, dated between Hänsel FD III–MD I or Reinecke BA2–BB1, corresponding to the 17th–16th c. BC.

Lock rings

Sibinian-type lock rings are one of the characteristic jewellers of the Bronze Age. Analogies of this type can be found throughout the Carpathian region (Mozsolics 1973, 51; Stejskalová 1999, 88). Judging by the funerary finds from Nižná Myšľa in eastern Slovakia, such bronze lock rings are considered to be rather feminine jewellery. Finds of Sibinian-type gold lock rings are more often found in men's graves. They were worn as part of a headdress, as pendants on a headband where they clattered or tinkled as you walked, or as hair decoration, so they can be considered part of ancient costume (Olexa/Nováček 2012, 275). The authors consider it unlikely that this type of jewellery would be used as the current earrings (although their shape might suggest so), as the thickness of the wire they are made of makes it almost impossible to do so (Olexa/Nováček 2013, 39).

Indeed, by analogy with the rings widespread in the Carpathian-Danube Region, it can also be assumed, that Sibinian-type lock rings, found in 19 complexes of the ZC of the Northern Azov Region, are clearly foreign to this area and are probably the result of multiple contacts with the cultures of the region, where hundreds, if not thousands, of similar items are known. The use of Sibinian-type lock rings as jewellery and costume elements can be clearly traced in dynamics on the example of the OFCC burial ground in Nižná Myšľa in eastern Slovakia.

Of the first 310 graves identified by the authors of the research as belonging to the pre-classic phase (BA1/BA2 and BA2), 66 burials contained such

objects. The collection has a total of 248 bronze Sibirian-type lock rings and six gold counterparts (Olexa/Nováček 2013, 38, 39, fig. 32; 33). In the following classic period (BA2/BA3–BA3), we observe a sharp decrease in their numbers: only five complexes out of 189 graves contained earrings, and only four of them had lock rings (Olexa/Nováček 2015, 34, fig. 12: 7–10). In the third block of burials at Nižná Myšľa burial ground, only the complexes of the late classic phase of OFCC (BA3) are represented, which date from 1900–1600 BC. Here, out of 293 graves examined, 13 lock rings were found in eight burial complexes (Olexa/Nováček 2017, 14, 33, fig. 9: 1, 3, 5).

Researchers also provide a number of analogies of similar finds in the Carpathian area, and they come not only from burial complexes, but are also known from settlements and treasures. Similar findings correlate with the Reinecke BA2/BA3–BB1 periods (Vladár/Oravkinová 2015, 445). Among others, lock rings of the Sibirian-type are known from Bronze Age treasures in Ukraine, in Transcarpathia (Kobal 2000, 58, 59).

The extremely rich fund of finds together with stratigraphic observations made it possible to develop an internal chronology of Maďarovce culture and divide its development into three phases:

1. Early (transitional) phase Únětice-Maďarovce (half of the stage BA2);
2. Classical phase (end of the stage BA2);
3. Late phase (stage BB1).

In absolute chronology, it is possible to date the Maďarovce culture on the basis of ¹⁴C data obtained at the cemetery in Jelšovce (Bátora 2000; Görsdorf/Marková/Furmánek 2004) and in the fortified settlements of Hoste and Rybník (Bátora/Rassmann 2008) to the period 1730–1450 cal. BC:

- Early phase – 1730–1700 cal. BC;
- Classical phase – 1700–1500 cal. BC;
- Late phase – 1500–1450 cal. BC (Bátora/Vladár 2015, 37).

A new six-step periodization model has been proposed for the OFCC, based on data from excavations in recent years:

1. Old Otomani level (BA1);
2. Pre-classical level (BA1/BA2 and BA2);
3. Early classical level (BA2/BA3);
4. Late classical level (BA3);
5. Post-classical level (BB1);
6. Fading level (BB1/BB2 [BC1]).

Thus, in absolute dates, the time of existence of the OFCC falls in the range of 1800–1400 cal. BC (Jaeger/Strózyk/Olexa 2022; Olexa/Nováček 2013, 12).

Absolute dating of the oval lock rings of the Sibirian-type with bent ends on the territory of the steppe Ukraine is established by analogies in the Danube complexes of Reinecke BA2–BB1 period or 17th–16th c. BC by K. Randsborg (Cherednichenko 1977, 12; Randsborg 1991). However, researchers note that such jewellery has existed in the steppes of Eastern Europe for somewhat longer (Lytvynenko 1994, 159). D. Kushtan also draws attention to the western parallels. The author considers the grooved lock rings with one-and-a-half turns and rings with spiral shields to be characteristic of the third period of the Central European treasures of Kosziderpadlás. This period corresponds to the late stage of the Otomani-Füzesabony culture, dated to the periods Hänsel MD II–III or BB1–BB2 (BC1), according to Reinecke's scheme (Kushtan 2013b, 170).

Beads

Small beads of antimony are also characteristic of the PZC, in contrast to the classical Abashevo culture, where there was jewellery made of arsenic bronze and silver (Gorbunov 1976; Kuz'mina 1992, 49–58). Hundreds of antimony products, mostly beads, were found in the graves of the PZC on the Lower Volga (Malov 1992, 8). They are also known in Pokrovsk-type burials in eastern Ukraine (Kravets/Posrednikov 1990, 12, 73, fig. 18a; Lytvynenko 1995, 77).

Researchers mention 13 locations with Late Bronze Age jewellery – pendants made of antimony in burials, noting the highest concentration of them in the Don-Volga interfluvium (Lun'kov/Lun'kova 2005). The presence of jewellery in the burial inventory in the form of paste and antimony beads is considered to be a symptomatic feature of the early burials of the ZC and the tradition of Pokrovsk-type sites (Lytvynenko 1999, 14). Given the fact that there are no known antimony deposits in Ukraine, V. V. Otroschenko suggested that the raw materials or finished products were imported (Otroschenko 2013, 163).

As noted by researchers, the territory of the Middle Dnieper Area at the beginning of the developed stage of the Late Bronze Age (Berezhnovka-Maevka Zrubna culture-I; hereinafter referred to as BMZC) continued to receive products of the Don-Volga-Ural metalwork centre of the PZC. Starting from the stage of BMZC-II, Loboikivka's own metal processing centre, covering the Middle Dnieper and the basin of the Siverskyi Donets, whose raw material base was copper sandstones of Donbass, began to actively operate in the region. In addition, finds

of metalwork from other centres of the Eurasian metallurgical province (Northern Black Sea region, Volga-Kama, Southern Urals, Northern and Central Kazakhstan, Altai) have also been recorded in the region. The sites of the early stage of BMZC-I are synchronized with the horizon of the Central European treasures of Kosziderpadlás (BB1–BB2 [C1]), and the developed stage of BMZC-II with the Late Bronze Age (BC2–BD) – horizon Ópályi-Uriú-Domănești (*Kushtan 2013a*, 80–85).

SCHEME OF RELATIVE
AND ABSOLUTE CHRONOLOGY
OF ZRUBNA/TIMBER-GRAVE CULTURE
OF THE NORTH AZOV AREA

In the Northern Azov region, as it was already mentioned, there are no bright sights of the Pokrovsk-type. There are only a few burials with weak features of the PZC in the ritual-inventory complex. This allowed R. O. Lytvynenko to synchronize them with the end of the early – the beginning of the developed stage of the burial grounds of the Siverskyi Donets. Thus, these complexes were recognized as the earliest for the Azov ZC and they follow the burials of the BCC in time (*Lytvynenko 1994*, 168; *Otroschenko 2002*, 17).

There was an overlapping of Pokrovsk features onto the late layer of BCC sites rather than a gradual change of cultures – Babine culture (Dnieper-Don Babine culture III [DDBC] + Dnieper-Prut Babine culture [DPBC] – PZC – BMZC). Since Pokrovsk features are rather implicit in ZC sites of the North Azov Area, they disappeared very quickly at the beginning of their early stage (*Zabavin/Bulyk 2020*, 32).

The time of the BMZC finale is reliably dated thanks to the synchronization of the Loboikivka hoard finds (*Leskov 1981*) with the hoard horizon of the Ópályi-Uriú-Domănești of Carpathian Basin (period Reinecke BC2–BD). This chronological boundary, according to V. V. Otroschenko, is now represented not only by a characteristic complex of metal objects, but also by an expressive funerary ritual at the elite level (*Otroschenko 2001*, 162). The turn of 13th–12th c. BC, when the Bilozirsk culture was formed, was the final milestone for the BMZC and ZC community as a whole (*Otroschenko 1999*; *Otroschenko/Vovk 2001*, 70). According to V. A. Romashko, ‘destruction of the BMZC and, simultaneously, the formation of the Boguslav/Bilozirsk culture occurs within the chronological framework of the Proto-BB stage (second half of the 13th–beginning of the 12th c. BC), corresponding to the formation of the final cultural and chronological horizon of the Bronze Age in Eurasia’ (*Romashko 2013*, 217).

The absolute chronology of the burial grounds of the log culture of the Northern Azov region is in full accordance with the ¹⁴C dates of the preceding and subsequent archaeological formations. The existing ¹⁴C dates formally delineate a chronological range for the BCC as a whole within the 22nd–mid-18th c. BC. At the same time, the later phases of the BCC (IIB–III stages of the DDBC) are generally synchronous with the Middle European period BA2, or FD III, or the beginning of the Middle Hellas (MH I), which have absolute dates of about 2000–1800 cal. BC. The latest sites of the BCC, mainly local variants of the DPBC, can be synchronized with the Petrovka culture (or the Petrovka stage of the Alakul culture), the ¹⁴C dates of which are 1940–1690 cal. BC (*Lytvynenko 2009a*; *2009b*, 321).

The horizon of the Middle Don-Siverskyi Donets and Lower Volga region is provided with ¹⁴C radiocarbon dates in the interval 1900–1600 cal. BC (*Trifonov 2001*, tab. 1; 2). A small series of ¹⁴C dates for the Lower and Middle Dnieper and Siverskyi Donets BMZC outlines a range between 1524–1175 cal. BC (*Chernykh/Polin/Otroshchenko 2003*, tab. 1). At the same time, the latest date packages for the Kartamysh micro-district of the BMZC allowed to lower the initial date of this culture by at least a century. Five radiocarbon dates were obtained from the bones of animals from the technogenic site of the Chervone Lake mine. On average, the calibrated dates fit into the 16th c. BC. With a probability of 1 σ , the date range covers 1681–1447 BC, and with a probability of 2 σ range 1741–1411 BC (*Brovender/Otroschenko/Priakhin 2010*, 92).

The materials of BMZC of the Middle Dnieper are contextually related to the sites of the Malopolovetske-type (Kyiv-Cherkassy group of the TCC; *Lysenko 2005*, 44), which allows researchers to extrapolate these dates to the BMZC (1600–1400 BC; *Chernykh/Polin/Otroshchenko 2003*, 334; *Lytvynenko 2009a*).

Migration transformation gradually affected the burial rite of ZC tribes inhabiting the Azov steppe, especially if the infiltration process was going on not instantly but within a certain period. Thus, at the final stage of ZC development in the North Azov Area, there was a deviation from the traditional burial rite, which inevitably led to a loss of cultural identity. In terms of archaeology, it led to the disappearance of the culture itself. With the disappearance of ZC mound rite in the region under research at the break of the 13th–12th c. BC, ZC itself disappeared. Having appreciably decreased, the population of the Azov steppe did not completely vanish. Life was going on in particular settlements, though in a different cultural environment. The emergence of new cultural formations based on ZC genetic background (Boguslav/Bilozirsk

Fig. 6. Scheme of relative and absolute (^{14}C cal. BC) chronology of Zrubna/Timber-grave culture of the North Azov Area.

Absolute dates BC	Reinecke	Hänsel	Archaeological cultures	
1200	HA1	SD II	Post-Zrubna/Timber-Grave culture block (Boguslav/Bilozirsk culture + Otradne culture)	
	BD	SD I	III Horizon	Zrubna/Timber-Grave culture of the North Azov Area
1400	BC2 BB2 (C1)	MD III	II Horizon	
	1600	BB1	MD II	
1700	BA3	MD I	Babine cultural circle (Dnieper-Don Babine cultural + Dnieper-Prut Babine cultural)	

and Otradne cultures) in the 13th c. BC marked the final of ZC in the region under research (*Zabavin/ Bulyk 2020, 31*).

The absolute chronology of the next horizon of post-ZC cultural formations properly cuts off the upper date of the existence of ZC in the studied region. According to V. A. Romashko, the formation of the Boguslav/Bilozirsk culture in the Northern Azov region takes place in the last decades of the 13th c. BC. The chronology of the Boguslav/Bilozirsk culture stages proposed by the researcher is generally confirmed by the available radiocarbon dates of the Late Bronze Age sites in Eastern Europe. Directly or indirectly, the author synchronizes the materials of the early period of the Boguslav/Bilozirsk culture with such chronologically close cultures as the late Noua, Koslogeni, Cherkaskul and others. Also synchronizes with the treasures of the Uriu – Domănești horizon (Reinecke BC2–BD), the culture of the Danube and Hungary burial mounds, the Mycenaean period SH III B, Troy VIIa. It is also noted that a similar stage, which combines the features of ZC and post-ZC time, is distinguished by archaeologists from the Volga Region (the ZC-Khvalynsk stage of the Khvalynsk culture) and dates back to the 13th–12th c. BC (*Romashko 2013, 208–212*).

On the Lower Don and in the North-Eastern Azov burials of the 12th–10th c. BC V. Potapov identified a separate post-ZC chronological horizon (in later works – Otradne culture; *Potapov 1997, 128; 1998*). The Otradne culture covers the region of the Lower Don, steppe Ciscaucasia and the Lower Volga. As a result of the analysis of the inventory fund of the Otradne culture of the final Bronze Age, the researcher identified a number of

peculiar cultural and chronological markers that appear before the 12th c. BC on a large territory and continue to exist in the final period of the Bronze Age (*Potapov 2007*). In general, as noted by the researchers, the early sites of the Late Bronze Age are simultaneous with the sites of the late Hellenistic period (LH III C), synchronous with the horizon of the Central European treasures Kurd-Kisapati-Cincu-Suseni (periods Hänsel SD and Reinecke HA1) and date back to the 12th–first half of the 11th c. BC (*Kushtan 2013b, 176*).

Using comparative-typological and natural methods, D. Kushtan developed a chronology of the main stages of the region of Central Ukraine (Middle Dnieper) in the Late Bronze Age. Given that there is currently an inconsistency between the traditional dates of Late Bronze Age sites and calibrated radiocarbon dates, the author cites both variants. Thus, the chronological framework of the ‘ZC-Sabotynivka’ stage is defined by the 15th–13th c. BC, which according to the new calibrated radiocarbon dates corresponds to 1700–1300 cal. BC. There are two stages within the ‘ZC-Sabotynivka’ time:

- BMZC-I – traditionally dated to the 15th–late 14th c. BC; ^{14}C dates 1700–1500 BC;
- BMZC-II – traditionally dated to the late 14th–13th c. BC; ^{14}C dates 1500–1300 BC (*Kushtan 2013a, 84, tab. 1*).

The obtained dates do not contradict the time of functioning of the Donetsk mining and metallurgical centre during the two periods of the BMZC (15th–13th c. BC; *Otroschenko 2003, 51*), taking into account the fact that the population of this culture mainly consumed the products of this centre

(Brovender 2001, 13–16; Tatarinov 1977). Based on a fairly presentable package of radiocarbon dates (37) of settlement and burial monuments of BMZC of the Dnipro-Don interfluvium, including from the territory of the Donetsk mining and metallurgical centre, the first period of BMZC dates back to the 17th (possibly the end of the 18th c. BC) – 15th c. BC, and the second period to the 15th – 13th c. BC (Brovender 2016, 18).

Thus, the fund of finds-chronological indicators in combination with stratigraphic observations allowed to develop an internal chronology of ZC of the Northern Azov region and to divide its development into three stages. The scheme of relative and absolute chronology is summarized in Fig. 6.

CONCLUSIONS

Summing up the above facts and taking into account the positive experience of predecessors, we can state the following. The lower limit of the existence of ZC of the Northern Azov region is quite reliably limited to the upper dates of the existence of the Babine cultural circle. The later phases of the DDBC are generally synchronous with the Middle European period BA2a, or FD III, or the early Middle Helladic (MH I), with absolute dates of about 2000–1800 cal. BC. The most recent Babine cultural sites, mainly

local variants of the DPBC, can be synchronized with the Petrovka culture (or the Petrovka stage of the Alakul culture), ¹⁴C dating (1940–1690 cal. BC).

The absolute chronology of the next horizon of close-in-time cultural formations (Boguslav/Bilozirsk culture in the western part of the studied region and Otradne culture in the eastern part) properly cuts off the upper date of the existence of ZC in the Northern Azov Region (13th–early 12th c. BC).

Due to the comparative-typological and natural methods, as well as the method of extrapolation using objects-chronological indicators (bronze daggers, grooved lock rings of the Sibirian-type, rings with spiral shields, antimony beads), the chronological framework of ZC culture of the Northern Azov Region is determined within 1700–1200 BC. The fund of finds, together with stratigraphic observations, allowed us to develop an internal chronology of the culture we studied and divide its development into three phases:

- I (early) horizon – 1700–1600 cal. BC (level BA2/BB1 according to Reinecke's scheme or MD II according to Hänsel's scheme);
- II (developed) horizon – 1600–1400 cal. BC (level BB1/BB2 [C1]) according to Reinecke's scheme or MD III according to Hänsel's scheme);
- III (late) horizon – 1400–1200 cal. BC (BC2/BD level according to Reinecke's scheme or SD I according to Hänsel's scheme).

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Kovové artefakty zrubovej kultúry v severnom Priazovsku ako chronologické indikátory

V i a č e s l a v Z a b a v i n

SÚHRN

Štúdia sa zaoberá otázkami súvisiacimi s problematikou relatívnej a absolútnej chronológie zrubovej kultúry v severnom Priazovsku z obdobia paleometalu. Úspešné riešenie týchto otázok umožňuje nielen pochopiť regionálne osobitosti kultúrno-historického procesu, ale aj správne opísať charakter medziregionálnych vzťahov z hľadiska ich dynamiky a smerovania. Použitie historickej chronológie na datovanie predliterárnych kultúr, vrátane kultúry zrubovej, sa zvyčajne zakladá na výsledkoch komparatívnej a typologickej analýzy. Vzhľadom na značnú vzdialenosť územia severného Priazovska od civilizačných centier, sa takéto datovanie stáva viacstupňovým postupom, ktorého výsledky priamo závisia od presnosti početných typologických porovnaní. Porovnávací analýza regionálnych periodizácií zvyšuje spoľahlivosť takehoto datovania, ale nie je nezávislým spôsobom overovania jeho výsledkov. V tejto situácii majú osobitný význam výsledky absolútneho datovania kultúrnych pamiatok vrátane rádiouhlíkového

datovania. Pri určovaní absolútnych dát zrubovej kultúry v severnom Priazovsku sa autor príspevku zameriava najmä na upravené chronologické stupnice vytvorené pomocou prírodovedných datovacích metód.

Kovové výrobky sú jednou z najpreskúmanejších kategórií archeologických prameňov a ich typológii a chronológii je venovaná pomerne rozsiahla literatúra. Už tradične priťahujú vyššiu pozornosť výskumníkov v porovnaní s výskumom techniky ich výroby. Pretrváva záujem o charakteristiku rôznych kategórií nástrojov a ich delenie do funkčných skupín. Aj v štúdiách z posledných desaťročí sa najväčšia pozornosť venuje otázkam typológie a chronológie.

Napriek tomu, že sortiment bronzových výrobkov z neskej doby bronzovej je pomerne široký, ide o zriedkavú kategóriu nálezov na sídliskách a pohrebiskách zrubovej kultúry v skúmanom regióne. Z celkového počtu 1515 preskúmaných hrobov v severnom Priazovsku, boli bronzové predmety zaznamenané len v 44 hroboch,

čo predstavuje asi 2,9 % z celkového počtu. Pre riešenie otázok relatívnej a absolútnej chronológie, ako aj synchronizácie zrubovej kultúry v severnom Priazovsku s kultúrami karpatsko-podunajskými a s mykénskym Gréckom, sú kľúčové nálezové celky obsahujúce bronzové a antimónové artefakty.

Príspevok sa zameriava na nálezy bronzových dýk v severnom Priazovsku. Tento typ artefaktu, náročný z hľadiska spotreby kovu, má osobitý význam pri datovaní hrobov zrubovej kultúry.

Kovové ozdoby rôzneho typu sa našli v 25 hroboch na skúmanom území. Rozšíreným typom inventára sú bronzové záušnice (tzv. sibinského alebo sedmohradského typu). Z 1356 hrobov z rôznych chronologických horizontov zrubovej kultúry sa vyskytovali v 19 súboroch (1,4 %). Celkovo sa v nich objavilo 28 kusov rôzneho stupňa zachovania. Tieto záušnice sú jednou z charakteristických ozdôb doby bronzovej a analógie tohto typu sa nachádzajú v celej karpatskej oblasti.

Bronzové prstene so špirálovými ružicami sa na území Ukrajiny objavili na pohrebisku zrubovej kultúry v Pokrovke (mohyla 3, hrob 10) a vyskytli sa aj na lokalitách patriacich k trziniecko-komarovskej kultúre (trziniecky kultúrny okruh). Tento typ nálezu bol rozšírený aj v strednej a mladšej dobe bronzovej v strednej Európe.

Dôkladné porovnanie chronologicky citlivých kovových artefaktov zrubovej kultúry v severnom Priazovsku s podobnými artefaktmi karpatsko-dunajskej, peloponézskej a maloázijskej oblasti, umožnilo spoľahlivejšie roz-

vinúť otázku chronológie kultúrnych formácií neskej doby bronzovej cirkumpontického regiónu. Na základe toho bola vytvorená schéma relatívnej a absolútnej chronológie zrubovej kultúry v severnom Priazovsku.

Vďaka komparatívno-typologickým a prírodovedným metódam, ako aj extrapoláčnej metóde s využitím chronologicky citlivých predmetov (bronzové dýky, závesky tzv. sibinského alebo sedmohradského typu, prstene so špirálovitými ružicami, antimónové koráliky) možno chronologický rámec zrubovej kultúry v severnom Priazovsku stanoviť v rozmedzí rokov 1700–1200 BC. Začiatok tohto obdobia sa kryje so vznikom babinského kultúrneho okruhu a koniec so vznikom kultúrnych útvarov neskej doby bronzovej. Tieto kultúry sú geneticky príbuzné so zrubovou kultúrou (boguslavsko-bilozerská kultúra v západnej a otradnenská kultúra vo východnej časti skúmaného regiónu). Súbor nálezov spolu so stratigrafickými pozorovaniami umožnil vypracovať vnútornú chronológiu zrubovej kultúry a rozdeliť jej vývoj do troch fáz:

- I (včasný) horizont – 1700–1600 BC cal. (stupne BA2/BB1 podľa Reineckeho schémy alebo MD II podľa Hänselovej schémy);
- II (rozvinutý) horizont – 1600–1400 BC cal. (stupne BB1/BB2 [C1] podľa Reineckeho schémy alebo MD III podľa Hänselovej schémy);
- III (neskorý) horizont – 1400–1200 cal. BC. (stupne BC2/BD podľa Reineckeho schémy alebo SD I podľa Hänselovej schémy).

Вироби з металу Зрубної культури Північного Приазов'я як хронологічні індикатори

В'ячеслав Забавін

РЕЗЮМЕ

У статті розглянуті питання, пов'язані з проблемами відносної та абсолютної хронології зрубної культури Північного Приазов'я (рис. 1–3) доби палеометалу. Успішне розв'язання цих питань дозволяє не тільки зрозуміти регіональні особливості культурно-історичного процесу, а й коректно описати характер міжрегіональних зв'язків з точки зору їх динаміки та напрямку. В основі використання історичної хронології для датування безписемних культур, у тому числі й зрубної культури, як правило, знаходяться результати порівняльно-типологічного аналізу. При значній віддаленості території Північного Приазов'я від центрів цивілізацій таке датування набуває характеру багатоступінчастої процедури, результати якої прямо залежать від точності побудови числен-

них типологічних порівнянь. Порівняльний аналіз регіональних періодизацій підвищує достовірність такого датування, але не є незалежним способом перевірки його результатів. У такій ситуації особливого значення набувають результати абсолютного датування пам'яток культур, у тому числі методом радіовуглецевого датування. При визначенні абсолютних дат зрубної культури Північного Приазов'я автор в основному орієнтується на більш скориговані між собою хронологічні шкали, побудовані за допомогою природничо-наукових методів датування.

Вироби з металу є однією з найбільш вивчених категорій археологічних джерел, знахідкам, типології і хронології яких присвячена досить велика література. Металеві вироби традиційно привертати

переважну увагу дослідників, в порівнянні з оцінкою їх виробництва. Зберігається стабільний інтерес до характеристики найбільш металомістких категорій знарядь різних функціональних груп та інших виробів з металу, при цьому в дослідженнях останніх десятиліть найпильніша увага приділяється саме питанням типології й хронології.

Незважаючи на те, що асортимент бронзових виробів в епоху бронзи досить широкий, на поселеннях та в похованнях зрубної культури регіону, що досліджується, це відносно рідкісна категорія знахідок. Так, серед масиву досліджених 1515 захоронень зрубної культури Північного Приазов'я бронзові предмети зафіксовано лише в 44 поховальних комплексах, що складає близько 2,9% від загальної кількості. Для дослідження проблем абсолютної хронології та синхронізації культур бронзового віку Надчорномор'я зі старожитностями Південно-Східної Європи та Малої Азії важливе значення мають ключові діагностичні комплекси. Для вирішення питань відносної хронології та синхронізації горизонтів зрубної культури Північного Приазов'я з культурами Карпато-Подунав'я та Мікенської Греції автором використано так звані хроноіндикатори – вироби з бронзи та сурми.

Враховуючи металоємність, нечисленність і особливу важливість в процесі хронологічних побудов даного виду поховального інвентарю, в статті розглянуті бронзові ножі (рис. 4), що знайдені на території Північного Приазов'я в похованнях зрубної культури. Незважаючи на те, що асортимент бронзових виробів в епоху пізньої бронзи був досить широкий, на поселеннях і в похованнях зрубної культури досліджуваного регіону це відносно рідкісна категорія знахідок. Комплекси, що містять бронзові ножі, залучаються для визначення абсолютної та відносної хронології могильників зрубної спільності.

Різноманітні прикраси з металу (рис. 5) були виявлені в 25 приазовських похованнях. Серійною категорією інвентарю є бронзові скроневі підвіски. З 1356 поховань, розподілених за горизонтами, бронзові скроневі підвіски зафіксовано в 19 (1,4%) комплексах. Загалом у них зафіксовано 28 підвісок різного ступеня збереженості. Сибірські або трансільванські сережки – одна з характерних прикрас епохи бронзи. Аналогії підві-

скам цього типу також можна знайти на всій території Карпатського регіону.

На теренах України вироби, аналогічні бронзовій каблучці зі спіральними щитками з приазовського поховання (Покровка, курган 3, поховання 10), також знайдені на пам'ятках, що відносяться до тшинецько-комарівської культури (тшинецького культурного кола). Вироби з бронзового дроту з кінцями, завитими в спіральні щитки, також були широко поширені в епоху бронзи на території Центральної Європи.

Ретельне зіставлення металевих артефактів – хронологічних індикаторів зрубної культури Північного Приазов'я з аналогічними артефактами Карпато-Подунав'я, Пелопоннесу та Малої Азії дозволило надійніше розробити питання відносної та абсолютної хронології культурних утворень пізнього бронзового віку циркумпонтійського регіону. Таким чином, виведена схема відносної та абсолютної хронології зрубної культури Північного Приазов'я.

Завдяки порівняльно-типологічному та природничим методам, а також методу екстраполяції з використанням предметів-хроноіндикаторів (бронзові ножі, жолобчасті скроневі підвіски у півтора оберти та (сибірського або трансільванського типу), персні зі спіральними щитками, сурм'яний бісер) хронологічні рамки зрубної культури Північного Приазов'я визначаються в межах 1700–1200 рр. до н.е. Початок окресленого періоду збігається з завершенням існування культурного кола Бабіне, а кінець – формуванням культурних утворень фінальної бронзи, генетично пов'язаних зі зрубним світом (богуславсько-білозерська культура – в західній частині досліджуваного регіону, отрадненська культура – в східній частині). Фонд знахідок разом зі стратиграфічними спостереженнями дали змогу виробити внутрішню хронологію досліджуваної нами культури і поділити її розвиток на три фази (рис. 6):

- I (ранній) горизонт 1700–1600 BC cal. (рівень BB1 за схемою Reinecke або MD II за схемою Hänsel);
- II (розвинений) горизонт 1600–1400 BC cal. (рівень BB2 [BC1] за схемою Reinecke або MD III за схемою Hänsel);
- III (пізній) горизонт 1400–1200 BC cal. (рівень BC2/BD за схемою Reinecke або SD I за схемою Hänsel).

„VON DER HALTESTELLE OST ZUR HALTESTELLE WEST“

Ein Beitrag zu neuen hallstatt- und frühlatènezeitlichen Funden vom östlichen Typ aus Ostböhmen¹

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From the East Stop to the West Stop. A Contribution to New Hallstatt and Early La Tène Finds of the Eastern Type from Eastern Bohemia. The article deals with the cultural and spatial evaluation of new finds of the eastern type from the Hallstatt and Early La Tène periods discovered in the previous five years in Eastern Bohemia. The main point of our interest was to provide the complex overview of these finds, focused mainly on the provenience, chronological aspect and possible interpretations of their occurrence in Bohemia. Based on a detailed analysis of finds of the eastern type from the whole Bohemia, it was possible in terms of their origin to determinate four groups of finds, including those of the Vekerzug culture, and re-evaluate the chronological framework of the researched issues as well as interpretive aspects of their occurrence not only in Bohemia, but also in the broader Central European context. The occurrence of finds of the eastern type in Bohemia shows similar tendencies as in the neighbouring regions of the Eastern Hallstatt culture, especially in Moravia.

Keywords: Bohemia, Hallstatt and Early La Tène periods, Hallstatt culture, Vekerzug culture, weapons, jewellery, wheel-turned pottery, eastern contacts.

EINLEITUNG

Im Allgemeinen ist das Phänomen der Funde vom östlichen Typ und seine Bedeutung für die mitteleuropäische Hallstattzeit zwar das Thema einer langen und meist kontroversen Diskussion, diese Problematik wird in einzelnen Regionen der Hallstattkultur von der Forschung aber nicht gleich intensiv und eingehend behandelt. In Böhmen wird dieser besonderen Fundgruppe nicht so verstärkte Aufmerksamkeit gewidmet wie z. B. in Mähren (zusammenfassend zu Mähren neuerdings *Kozubová/Fojtík 2021*, 81, 82). In Publikationen zu Fundmaterial aus Böhmen befasste sich man dabei nur mit bestimmten Fundgattungen vom östlichen Typ, wie z. B. mit den schlangenförmigen Schläfenringen oder mit dem Knochengegenstand aus Mikulovice, ohne diese Funde auch im Kontext der übrigen Objekte vom östlichen Typ umfassend auszuwerten (*Beneš/Čiřtáková 2016; Frolík/Sedláček 2015; Stolzová/Šulová 2011*). Eine neuere Arbeit von *M. Trefný (2017)*

hat daran nur wenig geändert, weil sie nur eine knappe Übersicht über die einigen Fundgattungen vom östlichen Typ ohne ihre weitere eingehende kulturräumliche Auswertung bietet. Eine komplexe Studie zu diesen Funden aus Böhmen stellt daher ein Forschungsdesiderat dar.

An dieser Stelle sollen daher sowohl neue, in den letzten fünf Jahren geborgene und bisher unveröffentlichte Funde vom östlichen Typ aus Ostböhmen (Königgrätzer und Pardubitzer Regionen) als auch alte, in der Fachliteratur bekannte Objekte dieser Art aus weiten Teilen Böhmens vorgestellt und kulturhistorisch näher erörtert werden. Die Funde der Vekerzug-Kultur und andere Objekte vom östlichen Typ gelten als einer der bedeutenden Indikatoren für überregionale Kontakte Ostböhmens in den Stufen HD und LTA, wobei derartige Funde nicht nur auf die Platěnice-Gruppe Ostböhmens beschränkt bleiben, sondern auch an mehreren Fundplätzen der Bylany-Kultur Zentral- und Nordwestböhmens und der hallstattischen Hügelgräberkultur Südböhmens anzutreffen

¹ Die Entstehung der vorliegenden Arbeit wurde von der Wissenschaftlichen Förderagentur des Bildungsministeriums und der Akademie der Wissenschaften der Slowakischen Republik im Rahmen des Forschungsprojektes VEGA 2/0139/21 (Mobility of prehistoric, protohistoric and historical communities in Slovakia and its manifestations in archaeological sources) und von der Agentur zur Förderung von Forschung und Entwicklung (Vertrag Nr. APVV-20-0044) gefördert. Der Autorenanteil von T. Jořková und T. Mangel entstand im Rahmen des Projektes „Vybrané aspekty lokality Tuněchody (okr. Chrudim) v kontextu latěnskeho osídlení východních Čech“ (Specifický výzkum 2022, Filozofická fakulta, Univerzita Hradec Králové).

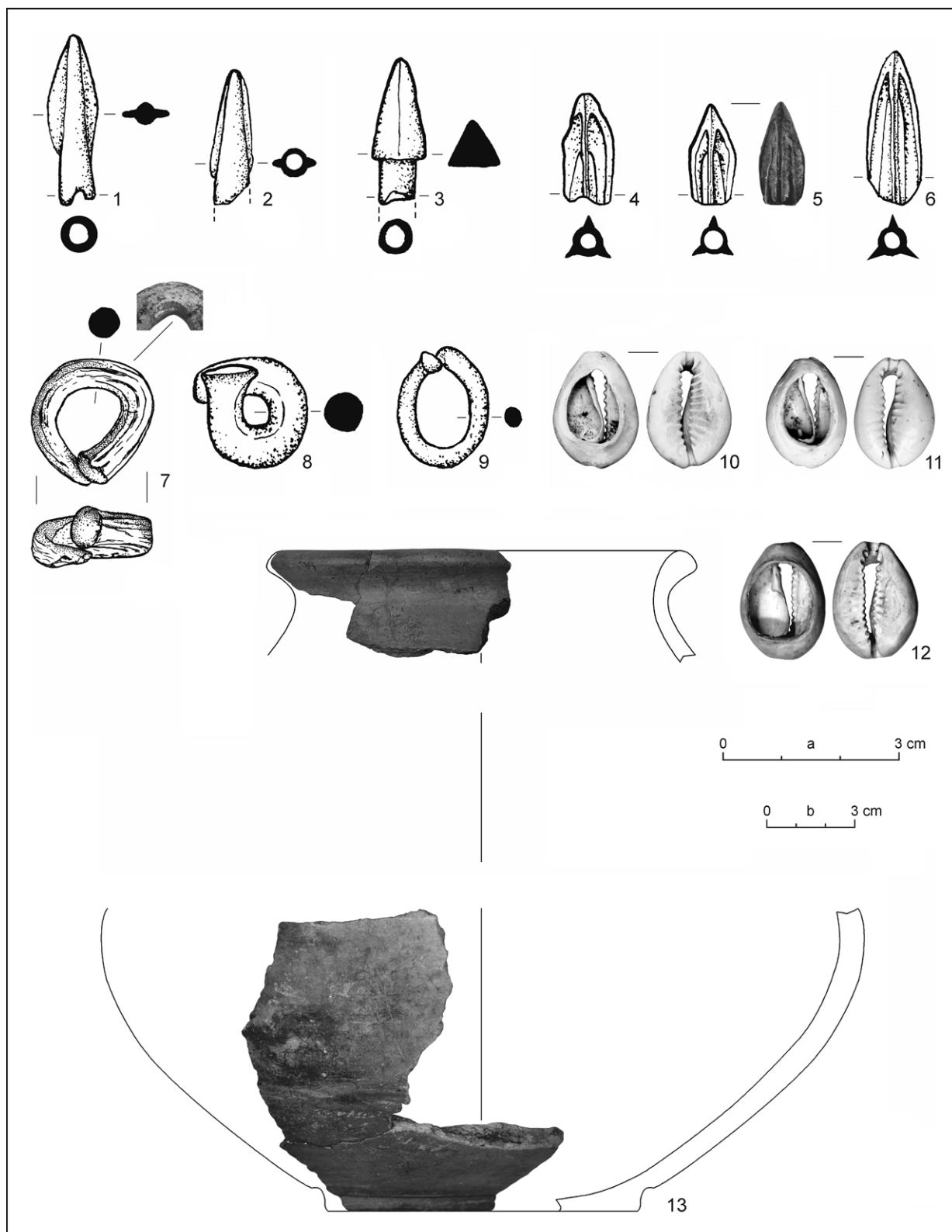


Abb. 1. Neue hallstatt- bis frühlatènezeitliche Funde vom östlichen Typ aus Ostböhmen. 1 – Brozany-Ve Větrolamu (Bez. Pardubice); 2 – Skalička-Na Skále (Bez. Hradec Králové); 3 – Přelouč-Parcela 1013/1 (Bez. Pardubice); 4 – Dašice-Parcela 479/13 (Bez. Pardubice); 5, 6 – Umgebung von Opočno (Bez. Rychnov nad Kněžnou); 7 – České Lhotice-Hradiště (Bez. Chrudim); 8, 9 – Ohnišťany-Na Ohnišťanském (Bez. Hradec Králové); 10, 11 – Tuněchody-Kopecké (Bez. Chrudim); 12 – Mikulovice-V Loučkách (Bez. Pardubice); 13 – Mikulovice-Pod Kostelem, parcela 14/8 (Bez. Pardubice). Zeichnungen T. Jošková (1–6, 8, 9, 13), H. Kolajová (7). Fotos T. Jošková (10–13), D. Vích (7a). Grafik A. Kozubová. Maßstab: a – 1–12; b – 13.

sind. Aus dem Arbeitsgebiet liegt zwar eine eingeschränkte, aber doch aussagekräftige Zahl an Funde dieser Art vor, die zur Beantwortung einiger mit dem Phänomen der Funde vom östlichen Typ verbundenen Fragen behilflich sein könnten. Besonders wichtig ist dabei, die Funde vom östlichen Typ aus Böhmen zusammen mit Funden aus benachbarten Regionen, vor allem aus Mähren und Südwestpolen, zu behandeln und zu diskutieren.

BESCHREIBUNG DER FUNDE AUS OSTBÖHMEN

Der Katalog umfasst die Beschreibung der Funde aus den einzelnen im vorliegenden Beitrag behandelten ostböhmisches Fundorten. Andere Angaben über die Funde – wie z. B. Befundtyp, nähere Beschreibung des Fundortes und der Fundumstände, Lage der Funde – werden in der Fundliste 1 näher erläutert. Bei der Beschreibung der Funde werden zuerst die Waffen beschrieben, dann folgen die Schmuck-/Trachtelemente, abschließend die Keramik. Die fortlaufenden Katalognummern der Funde stimmen mit der Nummerierung auf der Abbildung 1 überein.²

1. Brozany-Ve Větrolamu (Bez. Pardubice), Einzelfund (siehe Fundliste 1 Nr. 1): Zweiflügelige Bronzepfeilspitze mit äußerer Tülle; leicht asymmetrisches mandelförmiges Blatt; mittellange Tülle ohne Widerhaken; Tüllenmündung leicht beschädigt; Oberfläche mit stark ausgeprägter dunkelgrüner Patina; L. 2,7 cm, max. Br. 0,75 cm, Tüllendm. 0,4 cm (Abb. 1: 1).
2. Skalička-Na Skále (Bez. Hradec Králové), Einzelfund (siehe Fundliste 1 Nr. 33): Zweiflügelige Bronzepfeilspitze mit äußerer Tülle, stark beschädigt; Oberfläche mit stark ausgeprägter dunkelgrüner Patina; erh. L. 2,3 cm (Abb. 1: 2).
3. Přelouč-Parcela 1013/1 (Bez. Pardubice), Einzelfund (Fundliste 1 Nr. 28): Dreikantige Bronzepfeilspitze mit äußerer Tülle; dreieckiges Blatt; unvollständig erhaltene mittellange bis lange Tülle ohne Widerhaken; dunkelgrüne Patina; erh. L. 2,3 cm, max. Br. 0,8 cm, Tüllendm. 0,4 cm (Abb. 1: 3).
4. Dašice-Parcela 479/13 (Bez. Pardubice), Einzelfund (siehe Fundliste 1 Nr. 6): Dreiflügelige Bronzepfeilspitze mit innerer Tülle; turmförmiges Blatt; leicht eingezogene Basis; Flügel stark und Basis leicht beschädigt; Spitze abgebrochen; Oberfläche mit stark ausgeprägter dunkelgrüner Patina; erh. L. 1,8 cm, max. Br. 0,65 cm, Tüllendm. 0,3 cm (Abb. 1: 4).
5. Umgebung von Opočno (Bez. Rychnov nad Kněžnou), Einzelfund (siehe Fundliste 1 Nr. 24): Dreiflügelige Bronzepfeilspitze mit innerer Tülle; turmförmiges Blatt; leicht ausgezogene Basis; dunkelgrüne Patina; L. 1,6 cm, max. Br. 0,6 cm, Tüllendm. 0,3 cm (Abb. 1: 5).
6. Umgebung von Opočno, Einzelfund (siehe Fundliste 1 Nr. 24): Dreiflügelige Bronzepfeilspitze mit innerer Tülle; spitzbogenförmiges Blatt; leicht ausgezogene Basis; Tüllenmündung leicht beschädigt; dunkelgrüne Patina; L. 2,4 cm, max. Br. 0,8 cm, Tüllendm. 0,35 cm (Abb. 1: 6).
7. České Lhotice-Hradiště (Bez. Chrudim), Einzelfund (siehe Fundliste 1 Nr. 4): Schlangenförmiger Bronzeschläfenring; das eine Ende des dickstabigen Ringkörpers flach-halbkugelig, das andere leicht beschädigt; Querschnitt achteckig; hell bis dunkelgrüne Patina; Überreste einer dünnen Edelmetallfolie (Silbervergoldung oder Elektron) auf der Oberfläche des Ringkörpers; Außendm. 2,0 × 2,1 cm, St. 0,5 cm (Abb. 1: 7).
8. Ohnišťany-Na Ohnišťanském (Bez. Hradec Králové), Einzelfund (siehe Fundliste 1 Nr. 22): Schlangenförmiger Bronzeschläfenring; ein Ende des dickstabigen Ringkörpers flach-halbkugelig; Querschnitt rund; hellgrüne Patina; Außendm. 1,7 × 1,8 cm, St. 0,6 cm, Gewicht 10,22 g (Abb. 1: 8).
9. Ohnišťany-Na Ohnišťanském, Einzelfund (siehe Fundliste 1 Nr. 22): Schlangenförmiger Bronzeschläfenring; ein Ende des dünnstabigen Ringkörpers leicht verdickt; Querschnitt rund; hell bis dunkelgrüne Patina; Außendm. 0,9 × 1,3 cm, St. 0,3 cm, Gewicht 2,3 g (Abb. 1: 9).
10. Tuněchody-Kopecké (Bez. Chrudim), Siedlungsfund (siehe Fundliste 1 Nr. 37A): Kaurischnecke (Art fachkundig nicht bestimmt, höchstwahrscheinlich *Cypraea moneta* oder *annulus*); eine große künstliche (angeschliffene oder aufgesägte) Öffnung auf dem Rücken des Gehäuses; L. 1,9 cm, max. Br. 1,4 cm (Abb. 1: 10).
11. Tuněchody-Kopecké, Siedlungsfund (siehe Fundliste 1 Nr. 37B): Kaurischnecke (Art fachkundig nicht bestimmt, höchstwahrscheinlich *Cypraea moneta* oder *annulus*); eine große künstliche (angeschliffene oder aufgesägte) Öffnung auf dem Rücken des Gehäuses; L. 1,8 cm, max. Br. 1,3 cm (Abb. 1: 11).
12. Mikulovice-V Loučkách (Bez. Pardubice), Siedlungsfund (siehe Fundliste 1 Nr. 19B): Kaurischnecke (Art fachkundig nicht bestimmt, höchstwahrscheinlich *Cypraea moneta* oder *annulus*); eine große künstliche (angeschliffene oder aufgesägte) Öffnung auf dem Rücken des Gehäuses; L. 1,95 cm, Br. 1,45 cm (Abb. 1: 12).
13. Mikulovice-Pod Kostelem, parcela 14/8, Siedlungsfund (siehe Fundliste 1 Nr. 19C): Eine Bodenscherbe, vier Rand- und zwei Wandscherben eines größeren scheinbendgedrehten Gefäßes (Kegelhalsgefäß) mit deutlich ausbiegendem verdicktem Rand und abgesetztem flachem Standboden; fein geschlämmter Ton im Bruch hellgrau; Oberfläche ocker- bis ockergraufarbig außen geglättet und poliert und innen mit erhaltenen Drehriefen; Randdm. 14,0 cm, Bodendm. 10,0 cm, Wst. 0,5–0,7 cm (Abb. 1: 13).

² Abkürzungen: Br. – Breite; Dm./-dm. – Durchmesser; erh. – erhaltene/-er/-es; L. – Länge; max. – maximale/-er/-es; St. – Stärke; Wst. – Wandstärke.

KULTURRÄUMLICHE AUSWERTUNG DER FUNDE

Zu dem aus dreizehn neuen Artefakten bestehenden Fundensemble aus Ostböhmen zählen Waffen und Schmuck-/Trachtelemente, die typologisch in das für Böhmen übliche Spektrum hallstatt- bis frühlatènezeitlicher Funde vom östlichen Typ fallen. Eine Sondergruppe bildet Gefäßkeramik.

Pfeilspitzen

Im hier behandelten Fundensemble sind gerade bronzene Pfeilspitzen am meisten vertreten. Sechs Exemplare gehören zur gleichen Grundform, nämlich zu den Tüllenpfeilspitzen vom östlichen Typ (Abb. 1: 1–6). Dieser Pfeilspitzentyp wird in der mitteleuropäischen Fachliteratur häufig auch als Pfeilspitzen vom skythischen Typ oder sogar als skythische Pfeilspitzen bezeichnet (*Chochorowski 1974; 1985b, 86–88; Eckhardt 1996; Hellmuth 2006; 2010; Hellmuth Kramberger 2021; Janák 2017; Kementzei 2009, 44–47; Klápa 2017; 2019a; 2019b; Novák 2017, 197–207; Tóth 2018*). Pfeilspitzen dieser Art gehören zwar zum typischen Sachgut der historischen Skythen und der anderen, mit den Skythen mehr oder weniger verwandten reiternomadischen Kulturgruppen, diese wurden jedoch in weiten Teilen des eurasischen Steppen- und Waldsteppengebiets sowie in der donaukarpatenländischen Region auch von sesshaften bzw. halbsesshaften, nicht (!) skythischen Gesellschaften im Rahmen ihres Sachbesitzes aufgenommen und, wie beispielsweise einige Pfeilspitzenvarianten in der Vekerzug-Kultur zeigen, oft schon in lokale Typen umgewandelt (zur Vekerzug-Kultur siehe *Kozubová 2009; 2019b, 61–65; 2021, 84, 86*). Um diesen Umstand auch in der Terminologie zu berücksichtigen, ist die Verwendung des Terminus „vom östlichen Typ“ im Falle der Pfeilspitzen sowie bei anderen Fundtypen aus Mitteleuropa, deren Herkunft bzw. Hauptverbreitung östlich vom Verbreitungsgebiet der Hallstattkultur in kulturell und wohl auch ethnisch heterogenen Gesellschaften liegt, in jedem Fall mehr gerechtfertigt als die Bezeichnungen „skythisch“ oder „vom skythischen Typ“. Der neutralere Begriff „östlich“ spiegelt den rein geografischen Aspekt ohne irgendeine kulturelle oder sogar ethnische Hervorhebung bzw. Zuschreibung des Materials wider. An dieser Stelle sei darauf aufmerksam gemacht, dass im osthallstättischen Milieu solche Funde vom östlichen Typ vorkommen, deren Herkunftsgebiete sich nicht nur in Osteuropa bzw. im Nordkaukasus, sondern auch im östlichen Karpatenbecken, und zwar in der

Vekerzug-Kultur, befinden. Dabei einige dieser Fundtypen sind in der Vekerzug-Kultur keiner östlichen Herkunft. Auf diese Thematik wurde bereits an anderer Stelle ausführlich eingegangen (*Kozubová 2019a, 41, 42; 2019b, 56, 57, 61–65, 154, 155; Kozubová/Fojtik 2021, 81–84; Kozubová/Golec 2020, 355, 356*).

Eines der grundlegenden Merkmale für die typologische Gliederung hallstatt- und frühlatènezeitlicher Bronzepfeilspitzen vom östlichen Typ ist neben dem Flügelquerschnitt (anhand dessen sie in mehrere Hauptgruppen zu trennen sind, wie zwei- und dreiflügelige Pfeilspitzen, drei- und vierkantige Pfeilspitzen, dreikantig-dreiflügelige Pfeilspitzen und Pfeilspitzen mit rundem Querschnitt) und der Blattgestaltung (z. B. mandel-, spitzbogen-, rauten-, turmförmige, dreieckige usw.) vor allem die Form der Schäftungstülle, wobei anhand des Abstandes zwischen dem Tüllenmund und den Flügelabschlüssen zwei Grundformen zu unterscheiden sind. Die erste Grundform zeichnet sich durch eine am unteren Ende überstehende Schäftungstülle der verschiedenen Längen (kurz, mittellang oder lang) aus, wobei die Flügel nicht bis zum Tüllenmund reichen (im Folgenden verkürzt nur: Pfeilspitzen mit äußerer Tülle). Die Pfeilspitzen der zweiten Grundform verfügen über Flügel, die am Tüllenmund abschließen, so dass es sich um Exemplare mit innenliegender Schäftungstülle handelt (im Folgenden verkürzt nur: Pfeilspitzen mit innerer Tülle). Für die typologische Analyse solcher Pfeilspitzen wurden mehrere Gliederungsschemata erarbeitet, die zuerst für ihr Kerngebiet im Osten – also für die Steppen- und Waldsteppenzone Osteuropas und den Nordkaukasus – entworfen (z. B. *Meljukova 1964, 14–32, Abb. 1; Očir-Gorjaeva 1996; Petrenko 1967, 44–48; Rau 1929*) und dann auch für das mitteleuropäische Fundmaterial übernommen wurden, ohne eine eigenständige Typologie vorzulegen (z. B. *Bukowski 1977b, 166–168; Chochorowski 1974, 166; 1985b, 86–88; Eckhardt 1996, 31–36; zur Forschungsgeschichte siehe zusammenfassend Hellmuth 2006, 18–21; 2010, 8–13; Kozubová 2009, 66–68*). Eine eigenständige typologische Gliederung der bronzenen Pfeilspitzen mit äußerer Tülle aus mitteleuropäischen Fundorten nahm relativ kürzlich *A. Hellmuth (2006)* vor, für die zumeist schon lokal geprägten Bronzepfeilspitzen mit innerer Tülle aus der Vekerzug-Kultur wurde dagegen das eigenständige Typologie Schema von *A. Kozubová (2009)* vorgelegt. Im Folgenden wird daher auf die beiden letztgenannten Typengliederungen zurückgegriffen.

Unter den Pfeilspitzen mit äußerer Tülle liegen im betreffenden Fundmaterial aus Ostböhmen nach dem Flügelquerschnitt zweiflügelige sowie dreikan-

tige Exemplare vor. Während der bruchstückhafte Erhaltungszustand der zweiflügeligen Pfeilspitze aus Skalička-Na Skále (Abb. 1: 2; Fundliste 1 Nr. 33) keine Rückschlüsse auf ihre Blattgestaltung zulässt, ist das Exemplar aus Brozany-Ve Větrolamu – der Untergliederung von A. Hellmuth folgend – der Variante I.2.A.a eindeutig zuweisbar (Abb. 1: 1; Fundliste 1 Nr. 1). Charakteristisch für diese Pfeilspitzenvariante sind ein symmetrisches mandelförmiges Blatt, dessen breiteste Stelle in der Blattmitte liegt, sowie eine mittellange Schäftungstülle ohne Widerhaken, wobei die Tülle etwa ein Drittel der Gesamtlänge der Spitze ausmacht (Hellmuth 2006, 26, Abb. 5). Neben dem Stück aus Brozany sind in Böhmen zuverlässig nur zwei weitere Pfeilspitzen der Gruppe I.A mit mandelförmigem Blatt bekannt – beide der Variante I.2.A.a. Eine in die Stufe LTA datierbare Pfeilspitze wurde in der Höhensiedlung Lhota-Točná (Závist) in Lhota u Dolních Břežan, Flur Hradiště nad Závistí gefunden (Bez. Praha-východ; Fundliste 1 Nr. 15A; Drda/Rybová 2008, Abb. 50: 4), die zweite stammt als Streufund aus der Siedlung in Vysoké Mýto-Bučkův kopec (Bez. Ústí nad Orlicí; Fundliste 1 Nr. 39A; Bartík u. a. 2017, Abb. 1: 58). Im Osten gehören die Exemplare der Gruppe I.A mit oder ohne Widerhaken zu einem der beliebtesten frühskythenzeitlichen Pfeilspitzentypen, wobei dort mehrere Verdichtungen im Verbreitungsbild insbesondere am Mittleren Dnjepr und im Nordkaukasus zu erkennen sind. Weitere kleinere Konzentrationen lassen sich in der Mitteldnisterregion und dem Unteren Don-Gebiet beobachten (Hellmuth 2010, 17–20, Abb. 12; 13; siehe dazu auch Burghardt 2015, 147, Tabelle 1; Daragan 2015, Abb. 11: 16; 13: 1, 6, 6; 14: 1, 2; 16: 11, 12; 17: 2–4, 7–11; 2016, Abb. 1: 1–12; 4: 9, 16–19, 20, 23; Meljukova 1964, 18; Mogilov 2020, 149, Abb. 6: 14, 15, 22, 24, 43, 44, 54, 66, 67, 121, 143, 160).³ Ganz anderes Bild zeigt sich dagegen bei den mitteleuropäischen Fundstücken der Gruppe I.A. Wenige Exemplare dieser Pfeilspitzengruppe liegen weit gestreut in Böhmen, Mähren (hier mit Fundverdichtungen auf den Höhensiedlungen in Mokrý-Horákov, Flur Horákovský hrad/Bez. Brno-venkov und Provodov-Ludkovice, Flur Rýsov/Bez. Zlín), Südwest- und Südostpolen, der Südwestslowakei (hier in der Höhensiedlung Smolenice-Molpír/Bez. Trnava konzentriert) und Ungarn vor (Bartík u. a. 2017, 38, 41, 43, 50, 56, Abb. 1: 22, 58; 2: 7; 3: 88, 89; 5: 161; Bukowski 1977b, 40, 67, 97, 104, 115, 118, 123, Taf. I: 3; VIII: 2a, 2b; XIV: 1; XVI: 5;

XIX: 6; XXIV: 11–13; Burghardt 2020, 334, Abb. 7: 3; Chochorowski 1985a, Abb. 3: 1; Fojtík/Novák/Popelka 2020a, Abb. 4: 2; Hellmuth 2006, 29, 30, Abb. 8, Taf. 1: 1–9; Jakubčinová 2008, 53, Abb. 1: 7; Kemenczei 2009, 133, 163, Taf. 59: 11; 136: 6; 2008–2010, 114, Abb. 8: 6, 7; Kłosińska 2013a, 356, Abb. 2; 4; Novák 2017, 190, 191, Taf. 2: 1–3, 6; 2020a, 153, Taf. II: H27, H29–H32, Tabelle 1; V; 2020b, 92, 94, Taf. 1: P66, P76; V. Szabó/Czajlik/Reményi 2014, 5, Abb. 8). Im Westen bildet die Pfeilspitze aus Lhota u Dolních Břežan – wohl als antiques Stück – den äußersten Ausläufer innerhalb des Verbreitungsgebietes der Gruppe I.A in Mitteleuropa (Abb. 21). Im östlichen Mitteleuropa stammt der Großteil der zweiflügeligen Stücke mit mandelförmigem Blatt aus Gräbern der Ciombud-Kultur Siebenbürgens (Abb. 2: 12, 26, 27; siehe Hellmuth 2006, 31–35 mit weiterer Literatur, Abb. 8; Marinescu 1984, 49, 50, Abb. 7: 2b; 10: 6; Vulpe 1990, 23–25, 35, 50, 51, 98, Taf. 42: A3, D16, D18–D21; 43: A6, A7, B4; 44: C10; 45: A8, A9, A12, A17; 46: A4, B4, C9–C12, C17; 47: A2, A3).

Eine dreikantige Pfeilspitze mit dreieckigem Blatt und unvollständig erhaltener mittellanger bis langer Tülle ohne Widerhaken, die als Einzelfund in Přelouč-Parcela 1013/1 gefunden wurde, lässt sich problemlos der Gruppe III nach A. Hellmuth zuordnen (Abb. 1: 3; Fundliste 1 Nr. 28). Aus Böhmen sind noch zwei weitere Exemplare dieser Pfeilspitzengruppe bekannt: Das eine – der Variante III.2.a – stammt als Streufund aus der Höhensiedlung in Pěšice (Bez. Ústí nad Orlicí; Fundliste 1 Nr. 25) und das andere – der Variante III.1.a – wurde in das LTBI-zeitliche Körpergrab 4 von Tuchomyšl (Bez. Ústí nad Labem; Fundliste 1 Nr. 36A) zweifellos als antiques Stück gelegt.⁴ Die Stücke aus der Gruppe III gestalten sich in ihrer Form relativ homogen, das Gros der Pfeilspitzen zeichnet sich dabei durch ein spitzbogenförmiges oder dreieckiges Blatt und eine kurze bis mittellange Tülle aus, die etwa ein Viertel bis ein Drittel der Gesamtlänge der Spitze ausmacht. Der untere Abschluss der Flügel verläuft gerade zur Tülle, bei einigen Exemplaren ist dieser abgeschrägt (Hellmuth 2010, 129, Abb. 167; 172). Im Osten wurden die Pfeilspitzen mit äußerer Tülle der Gruppe III regelmäßig im Laufe der ganzen Frühskythenzeit verwendet, wobei dort sich in ihrem Verbreitungsbild mehrere Schwerpunkte vor allem am Mittleren Dnister und Mittleren Dnjepr, dann im Nordwestkaukasus sowie im Unteren Wolgagebiet zeigen (Abb. 2: 71; Hellmuth

³ Zur Kritik an den Verbreitungen einzelner Pfeilspitzengruppen in der Monographie von A. Hellmuth (2010) siehe Kozubová/Fojtík 2021, 72, Anm. 18.

⁴ Eine weitere, noch unpublizierte dreikantige Pfeilspitze mit äußerer Tülle wurde bei Prospektionen in Karlovice-Čertova ruka (Bez. Semily) geborgen. Das betreffende Exemplar ist den Pfeilspitzen der Gruppe III* zuweisbar, deren Blatt im Querschnitt zwar dreikantig ist, der Übergang vom Blatt zur Tülle ist jedoch mit kleinen Flügelchen versehen (siehe dazu Hellmuth 2010, 129, Abb. 173). Wir verdanken diese Information Jan Prošředník und Petr Šída.

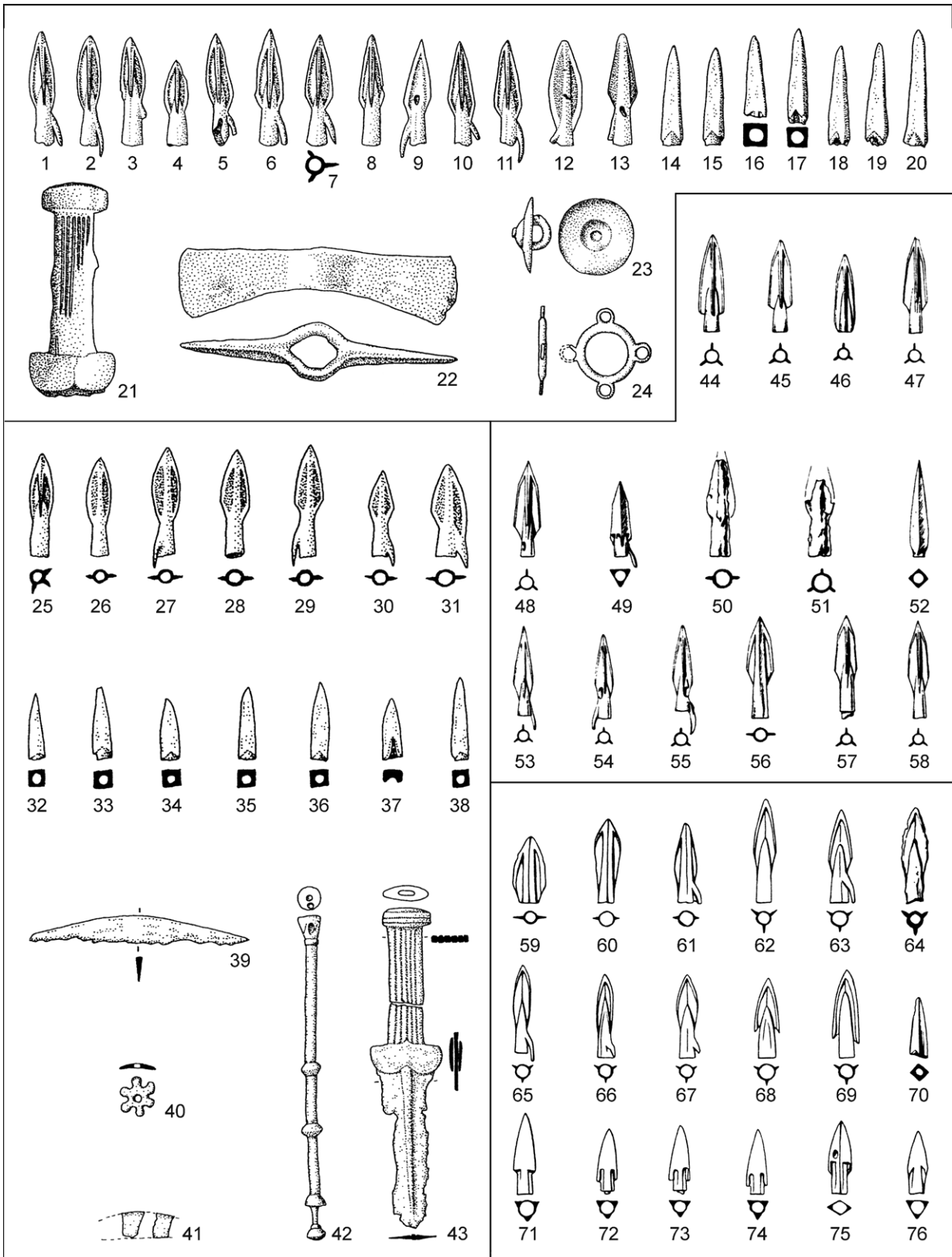


Abb. 2. Bronzefeilspitzen mit äußerer Tülle aus Gräbern der Ciurbrud-Kultur und der Westpodolien-Gruppe. 1–24 – Aiud-Parc (Bez. Alba/RO), Körpergrab 8 (nach *Vulpe 1984*, Abb. 3: 1–17); 25–43 – Mărișelu-Coasta Domneștilor (Bez. Bistrița-Năsăud/RO), Körpergrab 4 (nach *Marinescu 1984*, Abb. 9: 1–6); 44–58 – Perebykivci (Bez. Chotyn/UA), Grabhügel 2 (nach *Smirnova 1993*, Abb. 9: 1–15); 59–76 – Kruglyk (Bez. Černivcy), Grabhügel I (nach *Smirnova 1993*, Abb. 2: 1–18). Verschiedene Maßstäbe.

2010, 125–129, Abb. 168; siehe dazu auch *Burghardt 2015*, 149, Tabelle 1; *Daragan 2015*, Abb. 13: 23; 14: 13, 14; 17: 36, 37; 2016, 68, 69, Abb. 3: 40, 41, 47–49; 4: 40; *Meljukova 1964*, 19; *Mogilov 2020*, Abb. 6: 19, 48, 86, 129–134, 146, 147, 155). Relativ zahlreich sind sie auch in Mitteleuropa, wo sich die Verbreitung der Gruppe III zwar von Böhmen bzw. Südwestdeutschland (dort mit einem Fundstück von Heuneburg/Lkr. Sigmaringen) im Westen bis nach Siebenbürgen und Muntenien (Valea Stâni/Bez. Argeş) im Osten und Süden erstreckt, aber eher auf Mähren und teilweise auch auf Südostpolen konzentriert bleibt (z. B. *Bartík u. a. 2017*, 39, 41, 45–47, 49–51, 53, 54, Abb. 1: 35, 53; 2: 32, 33, 35, 37, 38, 41, 42; 3: 50, 51, 53, 75, 86; 4: 99, 100, 116, 129–131; *Boroffka 2002*, 233, Abb. 1: C10; *Bukowski 1977b*, Taf. XIV: 3; XIX: 9, 10; *Burghardt 2020*, 337, 338, Abb. 9: 1–4, 7–9; *Chochorowski 1985a*, Abb. 3: 77, 78, 91; 4: 40, 71, 74, 75; 6: 37; *Fojtík/Novák/Popelka 2020a*, Abb. 4: 1; *Hellmuth 2006*, 121–127, Abb. 94, Taf. 17: 1–20; 18: 1–10; 25: 6, 7; *Kłosińska 2013a*, 356, Abb. 4; *Măndescu 2019*, Abb. 4: 31, 32; *Miroššayová 2003*, 362, Abb. 5: 3; *Novák 2020a*, 154, Tabelle 1, Taf. II: H3, H5, H7, H8, H12, H20, H21, H23, H26, P1–P3, P5–P7, P9–P12, Š12, Š14, Š15; *Schenk/Komínek 2021*, Abb. 8: 3–5; *Sievers 1984*, Taf. 110: 1466; *V. Szabó/Czajlik/Reményi 2014*, 5, Abb. 8; *Vulpe 1990*, 50, 51, Taf. 47: A5).

Aus Ostböhmen sind auch drei neue Funde von Bronzefleischnadeln mit innerer Tülle bekannt, alle drei Stücke sind dreiflügelig. Eine von zwei Pfeilspitzen aus der Umgebung von Opočno (Abb. 1: 5; Fundliste 1 Nr. 24) und ein Exemplar aus Dašice-Parcela 479/13 (Abb. 1: 4; Fundliste 1 Nr. 6) lassen sich anhand der Blattform der Variante I2 nach dem Gliederungsschemata von A. Kozubová zuweisen. Charakteristisch für diese Pfeilspitzenvariante sind ein turmförmiges Blatt, dessen Länge zwischen 1,8 und 2,8 cm liegt, sowie eine relativ schmale Basis. Anhand der Abschlussform der Flügel und der Ausformung der Basis sind noch drei Subvarianten zu unterscheiden: I2a mit leicht eingezogener Basis und widerhakenförmigen Flügeln, I2b mit gerader Basis und I2c mit wenig ausgezogener Basis (*Kozubová 2009*, 70–72, Abb. 1). Die Pfeilspitze aus Dašice ist dementsprechend der Subvariante I2a zuweisbar, während das Exemplar aus der Umgebung von Opočno als typischer Vertreter der Subvariante I2c anzusehen ist. Beide Fundstücke sind in Böhmen bisher die einzigen seiner Art. Im Verbreitungsbild der Variante I2 sind zwei Schwerpunkte zu beobachten. Ein Verbreitungsschwerpunkt liegt in der Vekezug-Kultur (*Kozubová 2009*, 72; weiter z. B. *Balaša 1959*, 87, Taf. II: 13; *Csallány/Párducz 1944–1945*, 101, 107, Taf. XXXIV: 7; XLIV: 14, 16, 17,

22, 23, 26; *Čambal 2008*, Abb. 2: 5; *Galántha 1986*, 72, Taf. 3: 3; *Kemenczei 2009*, 120, 136, 150, 153, 155, 173, 174, Taf. 17: 1; 79: 6; 105: 17; 117: 11; 120: 9; 171: 11, 20; 178: 8; *Keresztes u. a. 2021*, 67, Taf. 11: 4; *Kisfaludi 2004*, 172, Taf. XIV: 5; *Kozubová 2013a*, 13, 20, 35, 43, 63, 64, 94, 103, 108, 116, 130, 136, 142, Taf. 5: 10; 11: 8; 26: 27; 35: 11; 50: 4, 10, 11, 15, 17–19; 75: 28; 85: 13–20; 90: 6, 12; 102: 9; 109: 8; 114: 6; *Laczus/Párducz 1969*, 223, Taf. LVII: 3; *Miroššayová 2004*, Abb. 5: 1; *Scholtz 2007*, 58, Abb. 5: 1c, 1d; *Tóth 2018*, 100, 101, Abb. 2: 5, 6, 13), wo die ostböhmischen Exemplare ihre besten Vergleiche vor allem unter den Funden aus den Gräberfeldern in Chotín IA und IB (beide Bez. Komárno/SK) finden (Abb. 3: 19; 4: 4), und der zweite befindet sich in der osteuropäischen Steppen- und Waldsteppenzone (z. B. *Daragan 2017*, Abb. 21: 11, 16–18; 2019, Abb. 30: 13–15; *Kozubová 2009*, 73; *Meljukova 1964*, 22, 24, Abb. 1, Taf. 5: 7: 5; *Očir-Gorjaeva 1996*, 46, 52, 53, Abb. 2; *Petrenko 1967*, 46, Taf. 34: 124–127; *Polin 1987*, 29, Abb. 8: 17, 24, 40). In beiden Hauptverbreitungsgebieten ist die Variante I2 aber vergleichsweise nicht zahlreich – im Osten ist sie sogar deutlich weniger vertreten als in der Vekezug-Kultur – und lässt sich dort chronologisch in das ganze 6. Jh. und in die erste Hälfte des 5. Jhs. v. Chr. einordnen (*Kozubová 2009*, 72–74, 97; 2013b, 89, 90). Anhand der Inventarvergesellschaftungen ergibt sich bei einigen Gräbern der Vekezug-Kultur mit Pfeilspitzen der Variante I2, wie z. B. bei Grab 191 von Csanytelek-Újhalastó (Kom. Csongrád-Csanád/HU; *Galántha 1986*, 71, 72, Taf. 1–3), Brandgrab 86/54 von Chotín IA (*Kozubová 2013a*, 34, 35, Taf. 26: 14–27) oder Brandgrab 320 von Tiszalök-Börtön (Kom. Szabolcs-Szatmár-Bereg/HU; *Scholtz 2007*, 57, 58, Abb. 5: 1–8), eine zuverlässige Datierung in die Stufe HD1 (*Kozubová 2009*, 72–74; 2019b, 66, 91, 92, 122). Außerhalb der Hauptverbreitung im Bereich der Vekezug-Kultur kommen Pfeilspitzenfunde der Variante I2 in anderen Teilen Mitteleuropas höchst sporadisch und meist nur als Einzelstücke vor (z. B. *Chochorowski 1985a*, Abb. 4: 90; 6: 30; *Furman/Benediková/Šimková 2019*, Abb. 2: 25; 3: 7; *Molnár 2013*, Abb. 8: 8), wobei Siebenbürgen mit Ausnahme eines HD3-zeitlichen Exemplars aus Băcăinți-Obreje (Bez. Alba) überraschend fundleer bleibt (*Baltes/Borangic/Fetcu 2017*, 72, 79, Abb. 4: 2, 2a). Ausnahmen sind Mähren und Ostslowenien, wo kleinere Häufungen solcher Pfeilspitzen zu erkennen sind: Während diese aus mährischen Fundorten, davon nur aus einer Höhensiedlung (Provodov-Ludkovice, Flur Rýsov), ausnahmslos als Streu- und Einzelfunde vorliegen (*Kozubová/Fojtík 2021*, 107–110, Fundliste 2 Nr. 3, 12, 18, 20, 21, 23), handelt es sich beim Großteil ostslowenischer Exemplare der Variante I2 um Grabfunde (z. B. *Gabrovec u. a. 2006*, Taf. 23: 2;

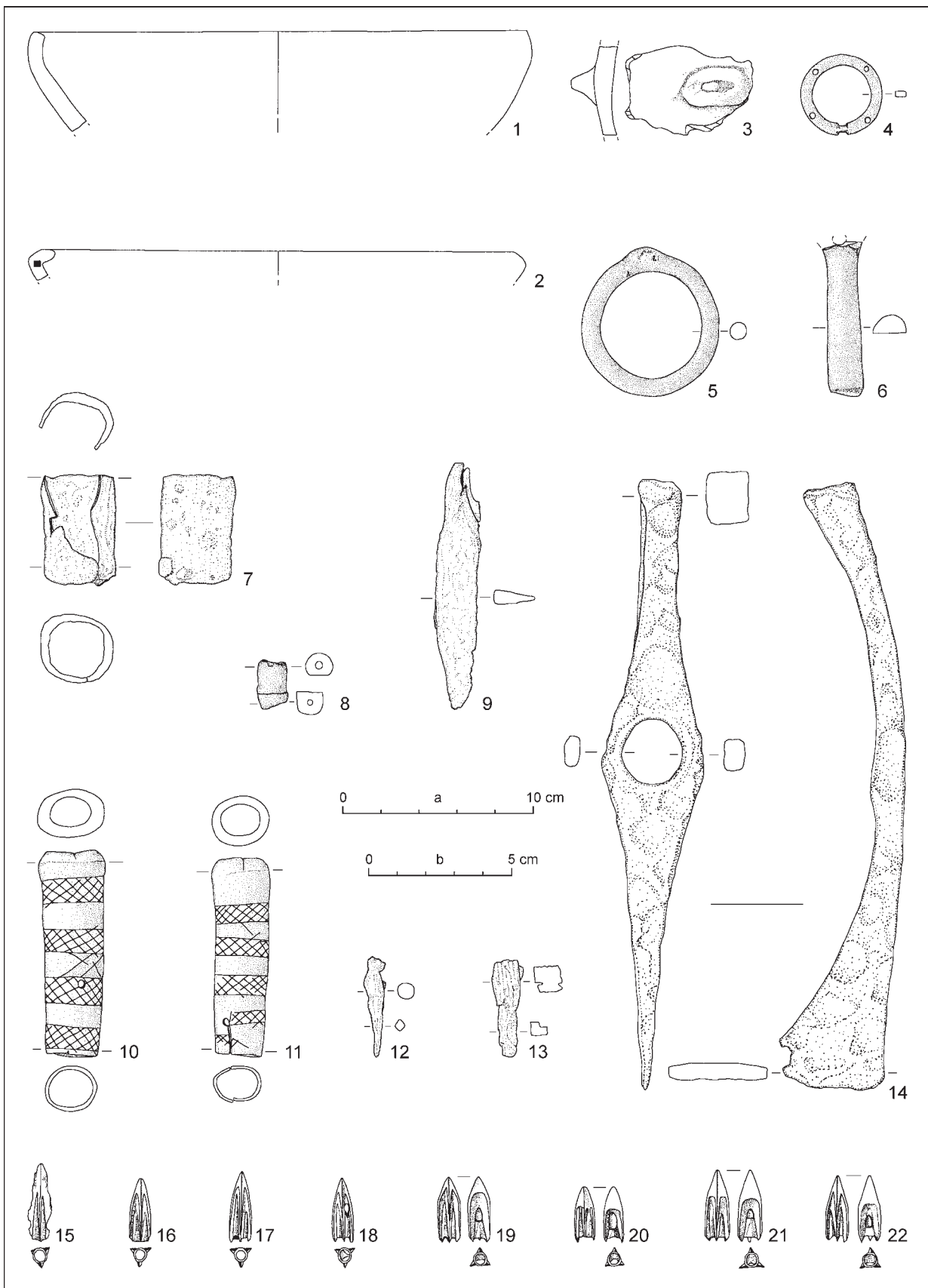


Abb. 3. Chotín IB (Bez. Komárno/SK), Körpergrab 49/61 mit Bronzepeilspitzen vom östlichen Typ mit innerer Tülle (nach Kozubová 2013a, Taf. 102: 1–12; 103: 1–10). Maßstab: a – 1–3; b – 4–22.

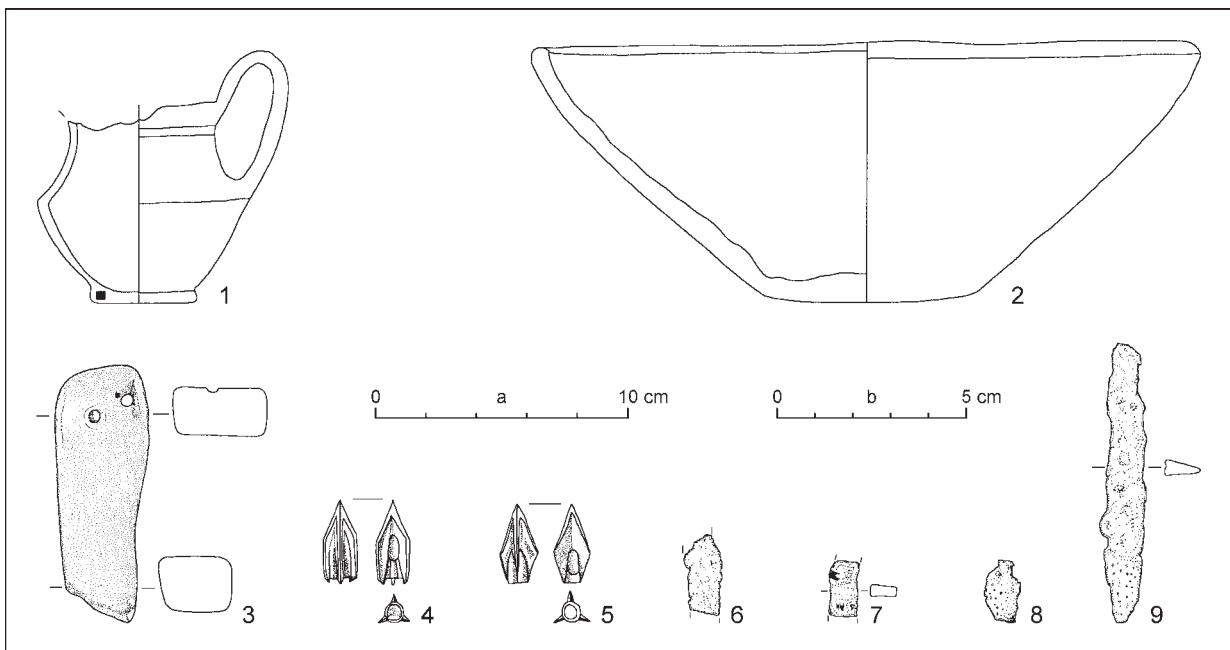


Abb. 4. Chotín IB (Bez. Komárno/SK), Körpergrab 68/62 mit Bronze Pfeilspitzen vom östlichen Typ mit innerer Tülle (nach Kozubová 2013a, Taf. 109: 1–9). Maßstab: a – 2; b – 3–9.

Guštin 1974, Taf. 3: 4; Hellmuth 2007, Taf. 1: 53; Kromer 1959a, Taf. 31: 11; Stare 1964–1965, Taf. 7: 17, 27; Tecco Hoala/Dular/Kocuvan 2004, Taf. 26: 27; 36: 20; Teržan 1998, Taf. 11: 8, 14). Die bislang größte Serie von Pfeilspitzen der Variante I2 außerhalb der Vekerzug-Kultur, bestehend aus 19 Exemplaren, stammt aus Ménfőcsanak-Széles-földek (Kom. Győr-Moson-Sopron/HU; Ilon 2017a, 192, Abb. 8: 10, 11; 2019, 255, Taf. I: 2–5, 10, 11, 16, 17, 21; II: 7–9, 11, 16, 17, 19, 21).

Aus der Umgebung von Opočno liegt noch eine weitere dreiflügelige Pfeilspitze mit innerer Tülle vor, und zwar ein Exemplar der Variante I3 (Abb. 1: 6; Fundliste 1 Nr. 24). Diese zeichnet sich durch meist ein spitzbogenförmiges Blatt (mit einer Länge zwischen 2,2 und 3,2 cm) und eine relativ schmale Basis aus. Einige Stücke weisen aber ein Blatt in Form eines gleichschenkligen Dreiecks mit schmaler Basis auf. Die Pfeilspitzen der Variante I3 gestalten sich in ihrer Form daher wenig homogen als diejenigen der Variante I2. Anhand der Abschlussform der Flügel und der Ausformung der Basis sind bei der Variante I3 die gleichen drei Subvarianten zu unterscheiden wie im Falle der Variante I2 (Kozubová 2009, 70, 74, Abb. 1). Die Pfeilspitze aus der Umgebung von Opočno ist dementsprechend der Subvariante I3c einzuordnen. Neben diesem Stück sind aus Böhmen noch drei weitere Exemplare der Variante I3 bekannt, alle als Einzelfunde, und zwar eine Pfeilspitze der Subvariante I3a aus Kostelní Hlavno (Bez. Praha-

východ; Abb. 14: 2; Fundliste 1 Nr. 12) und zwei Stücke der Subvariante I3b aus Rataje u Bechyně (Bez. Tábor; Fundliste 1 Nr. 30) und Topol-Na Skále (Bez. Chrudim; Abb. 14: 3; Fundliste 1 Nr. 34). Zwei Hauptverbreitungsgebiete der Pfeilspitzen der Variante I3 lassen sich erkennen. Zum ersten gehört der Bereich der Vekerzug-Kultur (Kozubová 2009, 74, 76; weiter z. B. Bálint/Scard/G. Scholtz 2019, 37, Taf. IV: 9; Benadik 1983, 20, Taf. II: 2; Čambal 2015, 116, Taf. XXVIII: 9; Csallány/Párducz 1944–1945, 105, 107, Taf. XXXVI: 14; XLIV: 15, 19, 25; Fodor 2011, Abb. 23; Gutay u. a. 2021, Abb. 15: 4, 6, 9; Gyucha u. a. 2015, 181, Abb. 3: 1; Kemenczei 1986, 118, 122, Abb. 3: 5; 4: 2; 2009, 119, 121, 125, 126, 141, 145, 150, 155, 173, Taf. 14: 2; 19: 9; 30: 12; 37: 13; 100: 17; 104: 21, 22; 105: 17; 108: 7, 9–18; 120: 5–8; 171: 4–8, 11, 13, 21, 23; Keresztes u. a. 2021, 66, Taf. 10: 3; Kisfaludi 2004, 171, Taf. XII: 10; Kozubová 2013a, 13, 15, 35, 38, 43, 63, 64, 91, 94, 97, 101, 106, 116, 130, 273, Taf. 5: 31; 6: 10; 27: 3; 30: 6; 35: 10, 12; 50: 9, 11, 13, 14, 16; 73: 12, 14; 75: 27; 77: 14; 80: 2, 4, 5, 7; 84: 8; 90: 6, 7, 10, 13; 102: 6–8; 119: 6, 13; Laczus/Párducz 1969, 222, 223, Taf. LVI: 1; LVII: 3; M. Nepper 1968, 58, Taf. I: 1; Párducz 1954, 34, 40, Taf. XIV: 1; XXVIII: 2; Patay/B. Kiss 2001–2002, 88, Abb. 11: 6; Polgár 2007, 317, Abb. 19; Scholtz 2007, 58, Abb. 5: 1a, 1b, 1e; Tézer 2011, 101, 102, Abb. 16: 31; 23: 10; Tóth 2018, 100, 101, Abb. 2: 7, 8, 10, 11, 15), wo die oben genannten Fundstücke aus Böhmen ihre zahlreichen Entsprechungen finden (Abb. 3: 16–18). Die zweite Hauptverbreitung bildet der osteuropäische Steppen- und

Waldsteppengebiet, wo die formal den Vekerzuger Exemplaren nahestehenden Pfeilspitzentypen (hauptsächlich Subvariante I3b) etwas zahlreicher als in der Vekerzug-Kultur anzutreffen sind (Kozubová 2009, 76, 96, 97; vgl. dazu auch Daragan 2019, Abb. 6: 5–19, 11–14; 9: 16, 18–20; 10: 22, 23; 13: 9, 16, 17; 14: 5, 7, 9–20; 18: 16–24; 23: 1–5; 26: 14, 16, 18, 22; 27: 24; 30: 17–20; 39: 17–20; 58: 19–21; 60: 18–21; Hellmuth 2010, Abb. 80; 81; 91; 265).⁵ Hierbei ist anzumerken, dass für die Pfeilspitzen im Osten allgemein eher dreieckiges als spitzbogenförmiges Blatt typisch ist, das letztgenannte hat sich dagegen bei den Vekerzuger Stücken durchgesetzt. Unter dreiflügeligen sowie dreikantig-dreiflügeligen Exemplaren mit dreieckigem Blatt dominieren im osteuropäischen Raum besonders solche in Form eines gleichseitigen Dreiecks, die zudem deutlich kürzer als Pfeilspitzen der Vekerzug-Kultur mit dreieckigem Blatt sind (vgl. z. B. Daragan 2017, 77, Abb. 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, Abb. 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). Diejenige Blattform erscheint bei Pfeilspitzen der Vekerzug-Kultur äußerst selten vor (z. B. Kozubová 2013a, 101, Taf. 90: 6; Tóth 2018, 100, Abb. 2: 3). In beiden Hauptverbreitungsgebieten besitzt die Variante I3 keine größere chronologische Relevanz. Während in Osteuropa die Pfeilspitzen dieser Variante schon in der ersten Hälfte des 6. Jhs. v. Chr. auftraten und nachfolgend bis zum Ende des 4. Jhs. v. Chr. Verwendung fanden (Daragan 2017, 85–87, 98–100; Polin 1987, 28–30, 32), scheint ihr chronologischer Schwerpunkt in der Vekerzug-Kultur in der Späthallstattzeit zu liegen (Kozubová 2009, 74, 76, 77; 2013b, 90, 91). Frühe Stücke stammen jedoch auch von dort. Wie zeigen einige gut datierbare Vekerzuger Fundkomplexe, wie beispielsweise aus Tiszalök-Börtön/Brandgrab 320 (Scholtz 2007, 57, 58, Abb. 5: 1–8), Szentés-Vekerzug/Körpergrab 8 (Kom. Csongrád-Csanád/HU; Csallány/Párducz 1944–1945, 107, Taf. XLIV: 14–26; XLV: 1–7; XLVI: 1–6), Cegléd-Hordógyár/Körpergrab (Kom. Pest/HU; Kemenczei 1986, 118, 122, Abb. 4: 1–7; 5: 1–6) oder aus Mátraszele/Körpergrab (Kom. Nógrád/HU; Kemenczei 1986, 122, Abb. 3: 1–5), muss man auch im Karpatenbecken mit dem ersten Vorkommen der Variante I3 zweifellos schon in der entwickelten Stufe HD1, also in der ersten Hälfte des 6. Jhs. v. Chr., rechnen (Kozubová 2009, 74, 75, 108, 109;

2019b, 66, 74). Außerhalb der Hauptverbreitung in Ostungarn und der Südwestslowakei liegen Pfeilspitzen der Variante I3 auch in anderen Teilen Mitteleuropas vor, wobei ihre auffälligste Konzentration sich in Mähren zeigt. Mit Ausnahme von zwei Höhlenfunden aus Habrůvka-Býčí skála (Bez. Blansko) sind sie aber Streu- bzw. Einzelfunde (Kozubová/Fojtík 2021, 58, 107–110, Abb. 2: 3–5; 3: 1; Fundliste 2 Nr. 3–7, 9, 11, 14–16, 18, 23, 24), die in Höhensiedlungen nur höchst spärlich gefunden wurden (Kozubová/Fojtík 2021, 107–108, Fundliste 2 Nr. 6, 9, 16). Weitere Streuungen der Funde sind ferner an Fundorten der Dolenjsko-Gruppe der Osthallstattkultur und in Gräbern der Ciurbrud-Kultur zu beobachten, wo ihr chronologischer Schwerpunkt in die Späthallstattzeit fallen kann, einzelne Exemplare sind schon frühlatènezeitlich (z. B. Balteş/Borangic/Fetcu 2017, 72, 79, Abb. 4: 4, 4a; Boroffka 2002, Abb. 1: C12–C18; Gabrovec u. a. 2006, Taf. 23: 28; 26: 17; Guštin 1974, Taf. 3: 4; 1976, Taf. 20: 13; 41: 4; Hellmuth 2007, Abb. 1: 8–21, 33, 34, 37, 55; Horváth 2015, 249, Abb. 5: 22, 23; Kromer 1959a, Taf. 43: 2; Rustoiu/Baltes/Nagy 2017, Taf. III: 3; Tecco Hvala/Dular/Kocuvan 2004, Taf. 26: 27; 36: 20; Teržan 1998, 528, 529, Abb. 11, Taf. 5: 10; 11: 4–7, 9, 10, 12, 15–18, 20, 21; Vasiliev 1976, Taf. XIX: 2, 4–35; XX: 1–4; XXI: 3–8; XXIII: 5, 6; Vulpe 1984, Abb. 3: 26, 27, 29; 8: 1; 1990, 130). Neben den Fundkonzentrationen in den genannten Gebieten kommt die Variante I3 vereinzelt auch in Österreich, Transdanubien und Südostpolen vor (z. B. Bukowski 1977b, Taf. XII: 6; XXI: 3a, 3b; Chochorowski 1985a, Abb. 6: 31, 32; Czigány/Molnár 2020, 99, Taf. 9: 3; Czopek 2007, Taf. XI: 3; Ilon 2017a, 192, Abb. 8: 8, 14; 2019, Taf. I: 7, 8, 12, 23; II: 12, 13, 15, 18, 22–24; Kłosińska 2007, Abb. 1: 2; Kromer 1959b, Taf. 6: 3; Schweltnus 2011, Abb. 8: F; Stöllner 2002, Abb. 54: 9; Teržan 1998, Taf. 5: 16, 17).

Eine feinchronologische Einordnung der Bronzepfeilspitzen mit äußerer Tülle aus Böhmen sowie aus anderen Regionen Mitteleuropas bleibt schwierig, da zum einen im Osten diese sehr variable Pfeilspitzenform vom Beginn des 7. Jhs. bis zur Mitte des 6. Jhs. v. Chr. geläufig war und zum anderen in den Hallstattgruppen Mitteleuropas der Großteil solcher Pfeilspitzen als Streu- oder Einzelfunde vorkommt (zum Osten siehe z. B. Burghardt 2020, 343–352; Daragan 2015; 2016; 2017, 89; Galanina 1997, 111, 113; Hellmuth 2010, 323–326; Polin 1987). Die Chronologie der Pfeilspitzen mit äußerer Tülle in Mitteleuropa wird zwar noch

⁵ Im Falle der Verbreitungen bei Hellmuth 2010, Abb. 80, 81 und 91 wurden die Exemplare mit innerer Tülle zusammen mit solchen mit äußerer Tülle kartiert, das reale Verbreitungsbild der Stücke mit innerer Tülle zeigen diese Kartierungen daher nicht. Bei der Verbreitungskarte auf der Abb. 265 sind verschiedene Typen bzw. Varianten gemeinsam dargestellt. Bei allen genannten Verbreitungskarten wurde die ukrainische Steppenzone nur teilweise beachtet, was wiederum das reale Bild stark verzerrt.

diskutiert, unter Berücksichtigung der Datierung von wenigen gesicherten Befunden wie z. B. jenen aus Smolenice-Molpír und vor allem aus Wicina (Bez. Żarski/PL) mit vorhandenen Dendrodaten (ca. 571 v. Chr.) scheint das Vorkommen solcher Pfeilspitzen im östlichen Mitteleuropa wohl in der entwickelten Stufe HD1, also in der ersten Hälfte des 6. Jhs. v. Chr., zu liegen (vgl. dazu z. B. *Brujako 2005*, 293–306; *Chochorowski 1994*, 55, 57, 58; *2014*, 41; *Čížmář u. a. 2019*, 192; *Grechko 2020a*; *2020b*, 598–601; *Hellmuth 2006*, 137–149; *2010*, 360–362; *Hellmuth Kramberger 2021*, 181, Anm. 109; *Janák 2017*, 129, 130; *Klápa 2017*, 71, 72, 74; *2019a*, 72, 73; *Krapiec/Szychowska-Krapiec 2013*, 371–373; *Novák 2017*, 205–207). An dieser Stelle soll darauf hingewiesen werden, dass im Osten die Pfeilspitzen mit äußerer Tülle im Unterschied zu Mitteleuropa bis zur Mitte des 3. Jhs. v. Chr. weit verbreitet waren. Diese chronologisch jüngeren Typen aus der zweiten Hälfte des 6. Jhs. und dem 5.–3. Jh. v. Chr., die der dritten und vierten chronologischen Pfeilspitzengruppe nach A. I. Meljukova entsprechen, unterscheiden sich aber stark von massiven frühskythenzeitlichen Exemplaren darin, dass sie ein langes, sehr schmales Blatt mit meist widerhakenförmigen Flügeln und eine sehr kurze, schmale äußere Tülle ohne Widerhaken aufweisen (siehe dazu z. B. *Daragan 2017*; *2019*; *Kozubová 2009*, 68, 95, 96; *Meljukova 1964*, 23–29, Abb. 1, Taf. II–IV; 7: A6, A15, E8–E10; 8: B1–B5; 9: H1–H5, I6–I13). Solche jüngeren Typen von Pfeilspitzen mit äußerer Tülle zählen in Mitteleuropa zu Ausnahmefunden (siehe Diskussion).

Unter Berücksichtigung der Absenz von Befunden und der weiten Datierungsspanne der Vergleichsfunde in der Vekerzug-Kultur mit einem möglichen Weiterlaufen bis in die Stufe LTA (*Kozubová 2013b*, 89–92) können die Pfeilspitzen mit innerer Tülle aus Dašice-Parcela 479/13, Kostelní Hlavno, Rataje u Bechyně, Topol-Na Skále und der Umgebung von Opočno kaum genauer datiert werden und lassen sich daher nur grob der Stufe HD eventuell noch LTA zuweisen.

Schläfenringe

Unter den neuen Funden vom östlichen Typ aus Ostböhmen sind drei kleine offene Bronzeringe vertreten, die sich nach ihrer typischen Form den sogenannten schlangenförmigen Schläfenringen der Vekerzug-Kultur problemlos zuweisen lassen: Zwei Exemplare mit unverziertem Ringkörper von rundem Querschnitt aus Ohnišťany-Na Ohnišťanském (Abb. 1: 8, 9; Fundliste 1 Nr. 22) gehören zum Typ I nach dem Gliederungssche-

ma von A. Kozubová, bei dem Schläfenring mit unverziertem Ringkörper von achteckigem Querschnitt aus České Lhotice-Hradiště (Abb. 1: 7; Fundliste 1 Nr. 4) handelt es sich dagegen um einen klassischen Vertreter des Typs III (zum Kopfschmuck der Vekerzug-Kultur siehe ausführlich *Kozubová 2013b*, 25–36, Abb. 3–6; *2018*; *2019b*, 106–109, Abb. 28; 31). Drei weitere Schläfenringe vom Typ I sind aus Břežánky-Angeblich Povrchový důl Amalia III (Bez. Teplice; Fundliste 1 Nr. 2), Chotýš-Za chotýšskými humny (Bez. Kolín; Fundliste 1 Nr. 9) und Sedlec-V lomech (Bez. České Budějovice; Fundliste 1 Nr. 31B) bekannt. Dem Typ III gehört noch ein Schläfenring mit unverziertem Ringkörper von achteckigem Querschnitt aus Kozinec-Holubí háj an (Bez. Praha-západ; Abb. 6: 10; Fundliste 1 Nr. 13).

Das Hauptvorkommen des Typs I befindet sich in der Vekerzug-Kultur (Abb. 7), wo die böhmischen Exemplare ihre besten Vergleichsstücke finden (Abb. 5: 6, 16, 21, 26). Vielen Schläfenringen aus diesen beiden Regionen gemeinsam ist zudem der Folienüberzug aus Edelmetall, das im Falle der Stücke aus Břežánky, Chotýš und Sedlec anhand der spektralanalytischen Untersuchungen als Elektron bestimmt wurde (*Hrala 1976*, 601; *John/Štěpánek 2012*, 243; *Kozáková/Fořt/Zlámalová Cílová 2016*, 245–247). Weitere Fundverdichtungen außerhalb der Hauptverbreitung in Ostungarn und der Südwestslowakei sind nur in Mähren – hier bis auf zwei Ausnahmen (Abb. 7: 70, 74) auf die Platěnice-Gruppe bzw. späthallstattzeitliche Postplatěnice-Besiedlung beschränkt – und in Nordwestungarn zu erkennen. In östlicher Richtung reicht das Vorkommen des Typs I mit drei Ausnahmen in Nordwestrumänien (Abb. 7: 66), Siebenbürgen (Abb. 7: 67) und der Transkarpatien (Abb. 7: 68) nicht über Ostungarn hinaus, im Westen bildet das Exemplar aus Břežánky in Nordwestböhmen den äußersten Ausläufer innerhalb des Verbreitungsgebietes (Abb. 7: 84). Ein Schläfenring aus Sary Machnów in Südostpolen (Bez. Tomaszowski; *Kłosińska 2007*, Abb. 1: 6; 2: 5) stellt dagegen den bislang nördlichsten Punkt des Vorkommens dar (Abb. 7: 91). Die schlangenförmigen Schläfenringe vom Typ I besitzen in der Vekerzug-Kultur eine lange Laufzeit von der frühen Stufe HD1 bis LTA und können daher zur Datierung der Exemplare außerhalb des Verbreitungsgebietes dieser Kultur nur wenig beitragen (*Kozubová 2013b*, 29–31; *2019b*, 106, 107). Bis auf drei Grab- und zwei gesicherte Siedlungsfunde sind alle Schläfenringe vom Typ III aus dem Osthallstattraum Streufunde ohne chronologische Relevanz (siehe dazu *Kozubová/Fojtík 2021*, 90, Anm. 39). Zeitlich näher einzuordnen sind nur die Exemplare aus dem HD2–D3-

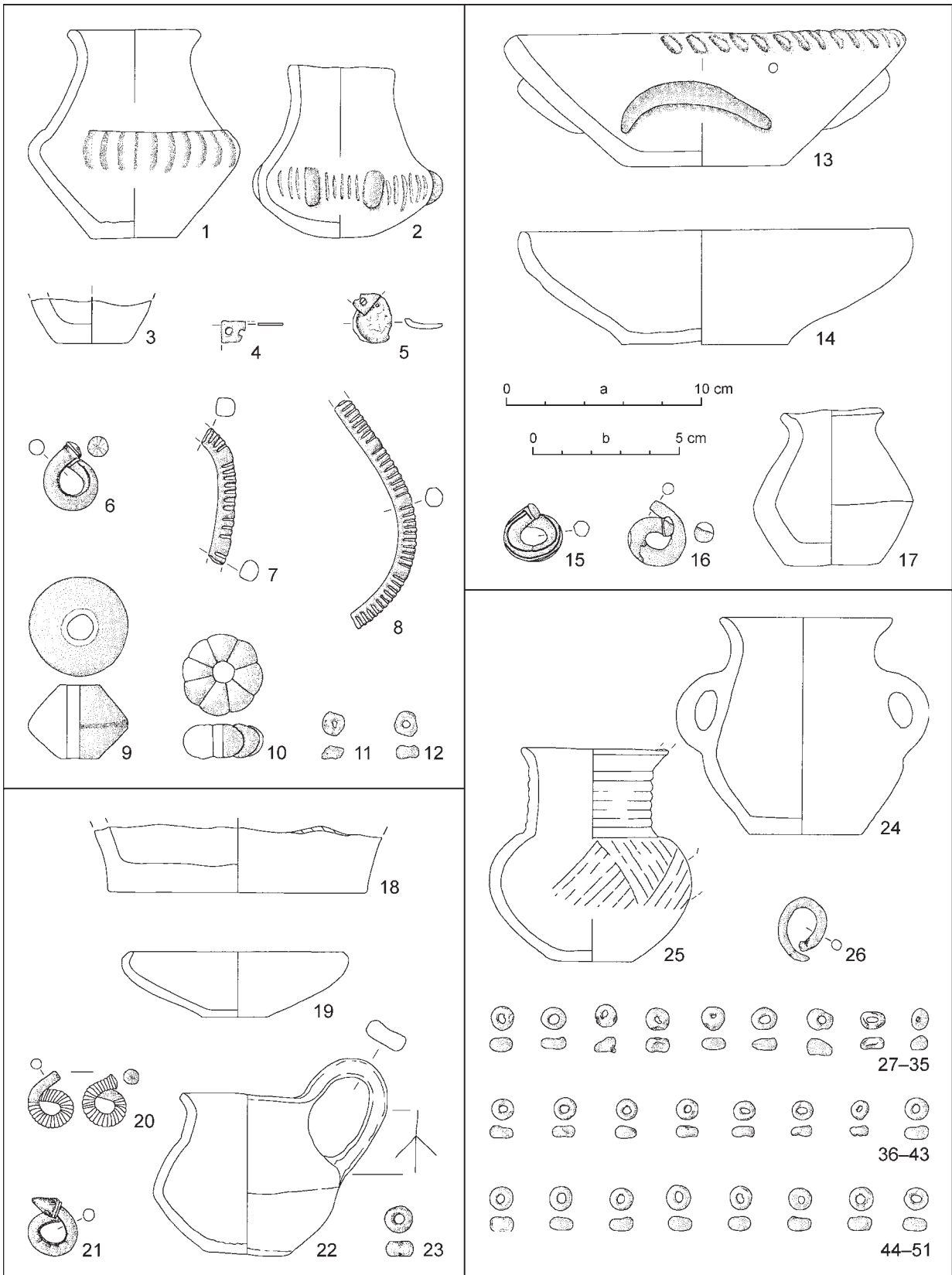


Abb. 5. Schlangenförmige Schläfenringe aus Gräbern der Veckerzug-Kultur. 1–12 – Chotín IA (Bez. Komárno/SK), Brandgrab 61/53 (nach Kozubová 2013a, Taf. 17: 1–12); 13–17 – Chotín IA, Brandgrab 34/53 (nach Kozubová 2013a, Taf. 10: 1–5); 18–23 – Chotín IA, Körpergrab 246/54 (nach Kozubová 2013a, Taf. 78: 10–15); 24–51 – Chotín IA, Körpergrab 108/53 (nach Kozubová 2013a, Taf. 47: 8–35). Maßstab: a – 1–3, 13, 17, 18, 22, 24; b – 4–12, 15, 16, 20, 21, 23, 25–51.

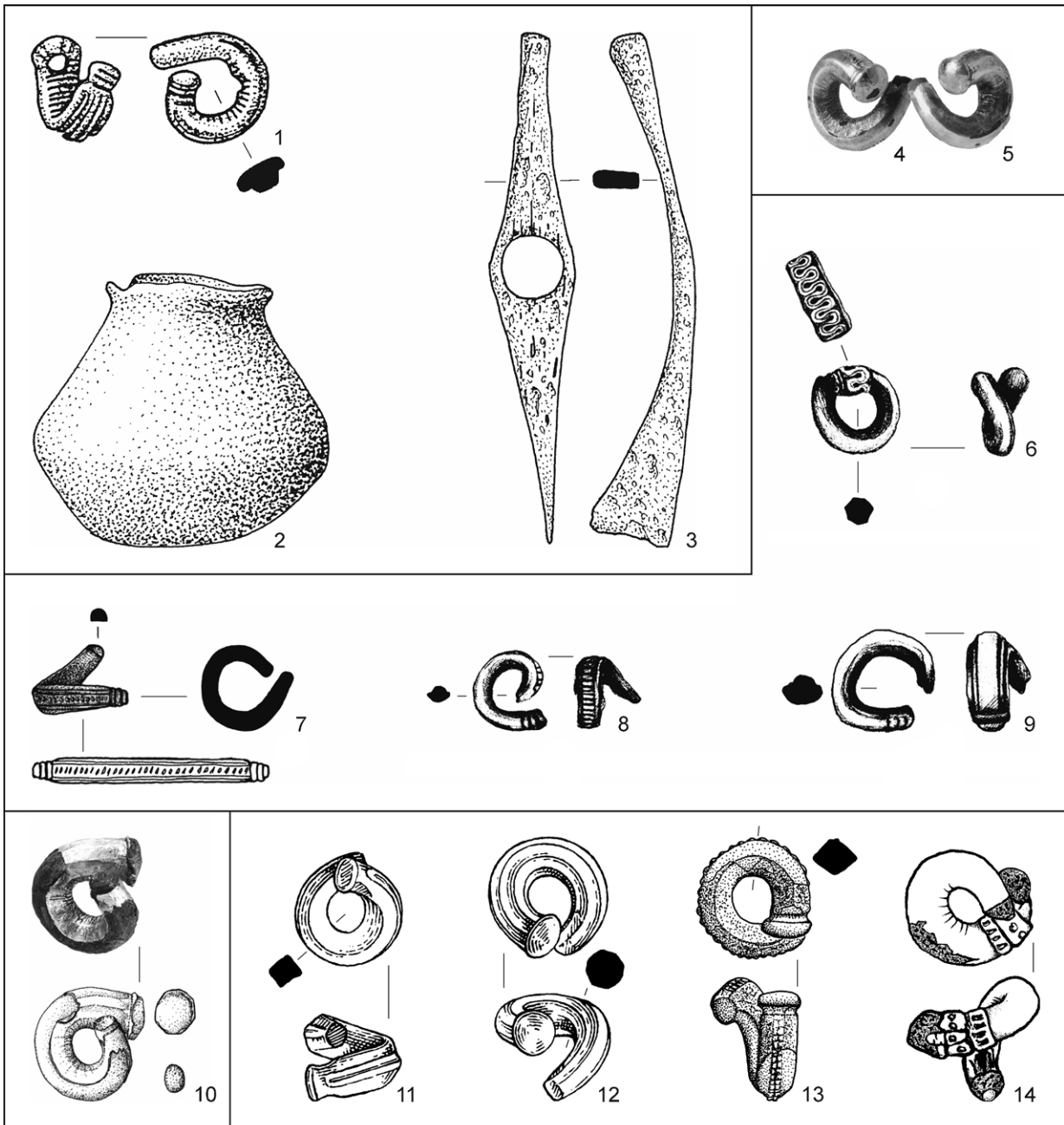


Abb. 6. Schlangenförmige Schläfenringe vom Typ III nach A. Kozubová. 1–3 – Tiszakeszi-Fáy-kert (Kom. Borsod-Abaúj-Zemplén/HU), Brandgrab (nach *Kemenczei 2001–2002*, Abb. 14: 1–3); 4, 5 – Kunszentmárton-Nagy-Éri-Fócsatorna (Kom. Jász-Nagykun-Szolnok/HU), Lesefunde (nach *F. Kovács 2017*, Kat. 30; 31); 6 – Sé-Doberdó (Kom. Vas/HU), Siedlungsobjekt 158 (nach *Ilon 2017b*, Taf. I: 2); 7–9 – Velem-Szent Vid-hegy (Kom. Vas/HU), Lesefunde (nach *Ilon 2017b*, Taf. I: 3, 5, 7); 10 – Kozinec-Holubí háj (Bez. Praha-západ/CZ), Siedlungsobjekt 3 (nach *Stolžová/Šulová 2011*, Abb. 8: 1; Taf. 9: 2); 11, 12 – Mérovíce nad Hanou-Babiny (Bez. Prostějov/CZ), Lesefunde (nach *Bartík u. a. 2017*, Abb. 5: 108, 111); 13 – Práče-U Prosiměřic (Bez. Znojmo/CZ), Lesefund (nach *Bartík u. a. 2017*, Abb. 5: 127); 14 – Suchohrdly-Nad přehradou II (Bez. Znojmo/CZ), Lesefund (nach *Bartík u. a. 2017*, Abb. 5: 146). Verschiedene Maßstäbe.

zeitlichen Grab 29 von Sopron-Krautacker-dűlő (Kom. Győr-Moson-Sopron/HU; *Jerem 1981b*, 114, Abb. 7; 8), dem LTA-zeitliche Körpergrab 1 von Alsónyék-Hosszú dűlő (Kom. Tolna/HU; *Soós 2020*, 51, 97, Abb. 3) und dem HD2–LTA-zeitlichen Siedlungsobjekt 7 von Chotýš-Za chotýšskými humny

(*Beneš/Čiřtaková 2016*, 39, 49, 50, Abb. 9–12). Eine etwas frühere chronologische Stellung ergibt sich dagegen bei einem Schläfenring aus Siedlungsobjekt 268 von Alsópáhok-Hévízdomb I (Kom. Zala/HU), das nach HD1–D2 datiert ist (*Horváth 2015*, 247, 249, Abb. 5: 19).

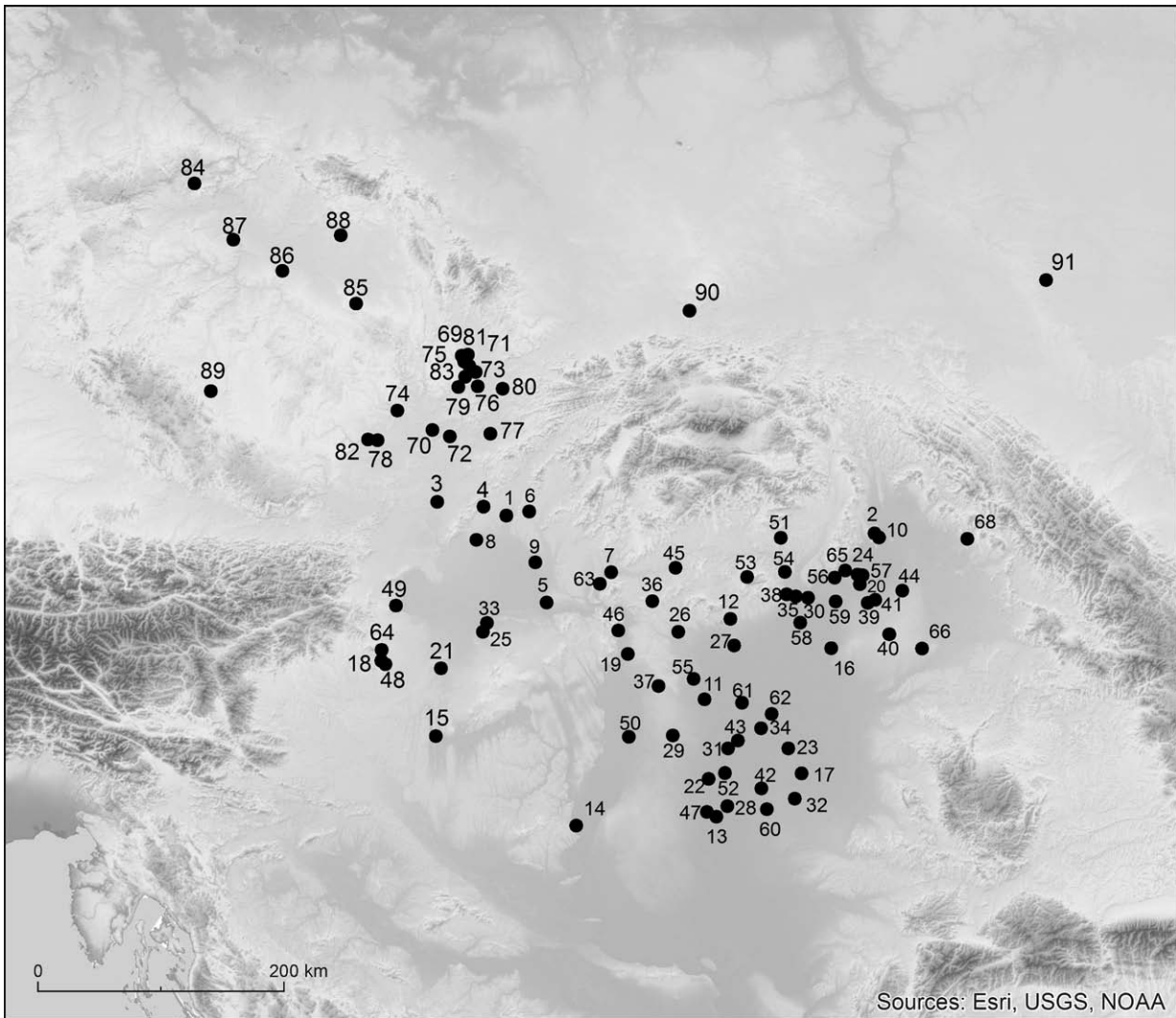


Abb. 7. Verbreitung der schlangenförmigen Schläfenringe in Mitteleuropa. Slowakei: 1 – Bučany; 2 – Cejkov; 3 – Gajary; 4 – Horné/Dolné Orešany; 5 – Chotín IA, Chotín IB; 6 – Merašice; 7 – Preseľany nad Ipľom; 8 – Senec-Štrková kolónia; 9 – Tvrdošovce; 10 – Zemplín. Ungarn: 11 – Abony-Blaskó-dűlő; 12 – Aldebrő-Ilona-tábla; 13 – Algyő-Bartók Béla utca; 14 – Alsónyék-Hosszú dűlő; 15 – Alsópáhok-Hévízdomb; 16 – Balmazújváros-Hortobágy-Árkus puszta; 17 – Békéscsaba-Fényes; 18 – Bucsú-Rétmelléki dűlő II; 19 – Budapest-Békásmegyer-Északi városkapu, Budapest-Rákospalota; 20 – Buj; 21 – Celldömölk-Sághegy; 22 – Csanytelek-Tömörkényi utca, Csanytelek-Újhalastó; 23 – Csárdaszállás-Hanzélitanya; 24 – Gáva-Szincse-part; 25 – Gyórszemere; 26 – Hatvan-Boldog; 27 – Heves-Semelweis utca; 28 – Hódmezővásárhely-Kishomok; 29 – Kecskemét-Hetényegyháza-Belsőnyír; 30 – Kesznyéten-Szérúskert; 31 – Kunszentmárton-Jaksor, Kunszentmárton-Nagy-Éri-Főcsatorna; 32 – Medgyesegyháza; 33 – Ménfőcsanak-Széles-Földek; 34 – Mezőtúr; 35 – Muhi-Kocsmadomb; 36 – Nógrádkövesd; 37 – Nyáregyháza; 38 – Nyékládháza-Mezőnyék; 39 – Nyíregyháza-Közvágóhíd, Nyíregyháza-Nyírfa utca, Nyíregyháza-Pazonyi utca, Nyíregyháza-Volántelep; 40 – Nyírmihálydi; 41 – Oros-Szilvás; 42 – Orosháza-Gyopáros; 43 – Öcsöd-Határ utca IV; 44 – Petneháza-Bogda; 45 – Piliny; 46 – Pomáz-Új dűlő; 47 – Sándorfalva-Eperjes; 48 – Sé-Doberdó; 49 – Sopron-Krautacker-dűlő; 50 – Szabadszállás-Józan; 51 – Szendrő-Ördöggyáti-Csengőbarlang; 52 – Szentese-Vekerzug; 53 – Szilvásvárad; 54 – Szirmabesenyő; 55 – Tápiószéle-Szumrák; 56 – Tarcal; 57 – Tiszabercel-Pálinkás-part; 58 – Tiszakeszi-Fáy-kert; 59 – Tiszavasvári-Csárdapart, Tiszavasvári-Dózsatelep; 60 – Tótkomlós; 61 – Törökszentmiklós-Surján; 62 – Túrkeve-Pásztó II; 63 – Vámosmikola-Istvánmajor; 64 – Velem-Szent Vid-hegy; 65 – Zalkod. Rumänien: 66 – Sanislău-Nisipăria; 67 – Sfântu Gheorghe. Ukraine: 68 – Kušťanovycja/Куштановиця. Mähren: 69 – Čechy pod Kosířem-Na hrádkách; 70 – Diváky-Nedánov; 71 – Držovice-Košské trávníky (Horka); 72 – Hovorany-Konopiska na Pískách; 73 – Hrubčice-Ostrov; 74 – Ivančice-Panovského cihelna; 75 – Kostelec na Hané-Dolní smoluse, Kostelec na Hané-Trněnka; 76 – Měrovice nad Hanou-Babiny; 77 – Ostrožská Nová Ves-Padělky; 78 – Práče-U Prosiměřic; 79 – Pustiměř-Farské; 80 – Rymice-Újezdy; 81 – Slatinice-Vrchy; 82 – Suchohrdly-Nad přehradou II; 83 – Vranovice-Kelčice, Háj. Böhmen: 84 – Břežánky; 85 – České Lhotice-Hradiště; 86 – Chotýš-Za chotýšskými humny; 87 – Kozinec-Holubí háj; 88 – Ohnišťany-Na Ohnišťanském; 89 – Sedlec-V lomech. Polen: 90 – Podleże; 91 – Stary Machnów (nach Kozubová/Fojtik 2021, Abb. 17; 21). Grafik T. Holbová.

Die sehr variablen schlangenförmigen Schläfenringe vom Typ III⁶ gelten in der Vekerzug-Kultur als Ausnahmefunde. Der Typ III weist eine Verbreitung auf, die wesentlich von der dem Typ I abweicht (Abb. 7; 8). Nur wenige Schläfenringe dieser Art sind aus Fundorten der Vekerzug-Kultur bekannt (Abb. 5: 15; 6: 1, 4, 5; *Kozubová 2019b*, 106), wo sie bis auf eine Ausnahme aus Ostungarn (Pilyiny/Kom. Nógrád mit mindestens vier Schläfenringen; *Kemenzei 2009*, 173, Taf. 172: 22; *Reinecke 1897*, Abb. 14: 8, 9, 14) lediglich als Einzelstücke vorkamen (Abb. 8: 5, 20, 29, 31, 45, 58, 65). Nur zwei Konzentrationen dieses Kopfschmucks außerhalb der Vekerzug-Kultur sind zu beobachten (Abb. 8), die eine in Mähren (Abb. 6: 11–14) und die andere in Nordwestungarn (Abb. 6: 6–9), wobei der Typ III bis auf zwei Ausnahmen in Böhmen auf Nordwestungarn und Mähren beschränkt bleibt. In Nordwestungarn sind die Schläfenringe vom Typ III typologisch am variabelsten, wobei dort auch solche Formen wie z. B. mit Verzierung aus einem Längsstreif mit Fischgrat- oder Wellenmotiv vorliegen (Abb. 6: 6–8), die bisher weder in der Vekerzug-Kultur noch in Mähren und Böhmen gefunden wurden. Unter den Funden vom Typ III sind nur zwei Schläfenringe aus dem HD2–D3-zeitlichen Grab 29 von Sopron-Krautacker-dúlő und ein Exemplar aus dem LTA-zeitlichen Siedlungsobjekt 3 von Kozinec-Holubí háj näher datierbar (*Jerem 1981b*, 114, Abb. 7: 14, 15; *Stolzová/Šulová 2011*, 362). Obwohl sich eine lokale Herstellung dieses Typs aufgrund seines häufigen Vorkommens außerhalb der Vekerzug-Kultur mindestens im Falle Transdanubiens als wahrscheinlich erweist, muss diese Annahme mangels entsprechender spektralanalytischer Untersuchungen bisher unter Vorbehalt gesehen werden. In diesem Zusammenhang ist der Schläfenring aus Kozinec-Holubí háj von Interesse, weil er in einem als Metallwerkstatt interpretierten Siedlungsobjekt entdeckt wurde (*Stolzová/Šulová 2011*, 362).

Kaurischnecken

Aus Ostböhmen liegen auch drei neue Funde von kleinen Kaurischnecken (Porzellanschnecken) der Arten *Cypraea annulus* und *Cypraea moneta* vor: Zwei Stücke wurden in den HD2–D3-zeitlichen Siedlungsobjekten 29/03 und 34/06 aus Tuněchody-

Kopecské (Abb. 1: 10, 11; Fundliste 1 Nr. 37A, 37B) gefunden, das dritte stammt aus dem HD2–D3-zeitlichen Siedlungsobjekt 552 aus Mikulovice-V Loučkách (Abb. 1: 12; Fundliste 1 Nr. 19B). Diese kleinen aus dem Roten Meer, dem Indischen oder dem Pazifischen Ozean stammenden Kaurischnecken gibt es mehrfach aus weiteren Fundorten in Böhmen (Fundliste 1, Nr. 3, 5, 7, 14, 15B, 18B, 20, 27, 29B, 35, 36B, 37C), wobei dort bisher insgesamt 18 Exemplare bekannt sind. In Europa sind generell zwei Hauptschwerpunkte in der Verbreitung der eisenzeitlichen Kaurischnecken von Arten *Cypraea annulus* und *Cypraea moneta* festzustellen: Der eine liegt im osteuropäischen Steppen- und Waldsteppengebiet, im Nord- und Zentralkaukasus sowie in der westlichen und nordwestlichen Schwarzmeerregion (z. B. *Bruyako 2007*, Abb. 1, Appendix; *Kovács 2008*, 56, 57, 66–77; *Kozubová 2013b*, 50 mit weiterer Literatur; *Teleaga/Zirra 2003*, 83, 84, Karte 28; *Trejster 2021*, 25), der zweite im östlichen Karpatenbecken (Abb. 9). Hierbei ist anzumerken, dass fast allen ältereisenzeitlichen Exemplaren aus Mittel- und Osteuropa eine große künstliche (angeschliffene oder aufgesägte) Öffnung auf dem Rücken des Gehäuses gemeinsam ist. Die ältesten früheisenzeitlichen Funde von Kaurischnecken aus dem 8. Jh. v. Chr. sind im Nord- und Zentralkaukasus belegt. Wohl aus dem Nordkaukasus gelangten Kaurischnecken nicht früher als im 7. Jh. v. Chr. auch in das osteuropäische Waldsteppengebiet, wo ihr Vorkommen sich fast ausnahmslos am Mittleren Dnjepr konzentrierte und in der zweiten Hälfte des 7. Jhs. v. Chr. kulminierte, wobei sich ihre Anzahl im 6. Jh. und seit dem 5. Jh. v. Chr. etwas verringerte (*Bruyako 2007*, 231; *Kozubová 2013b*, 50, Anm. 78; *Trejster 2021*, 25). In Mitteleuropa weisen Kaurischnecken den Schwerpunkt ihrer Verbreitung im östlichen Karpatenbecken in der Vekerzug-Kultur mit etwa 400 Stück⁷ (Abb. 10: 15–21; 11: 2, 14) sowie in der Ciurbrud-Kultur mit ca. 200 Stück auf (*Kozubová 2019b*, 101), streuen sie aber vereinzelt westlich und südlich darüber hinaus (Abb. 9): Neben drei Streufunden von Kaurischnecken aus Mähren (Abb. 9: 47–49) kamen wenige, vornehmlich späthallstatt-/frühlatènezeitliche Stücke noch aus Nordostserbien (Grab 1 von Mošorin-Stubarlija/Opština Titel) und Transdanubien (Abb. 9: 27, 35) zutage (*Bartík u. a. 2017*, 49; *Jerem 1981a*, Taf. 3: 10, 13; *1981b*, Abb. 7: 5; *Kovács 2008*, 427; *Kozubová/Fojtík 2021*, 105, 106, Fundliste 1 Nr. 18, 19; *Ljuština/*

⁶ Der Ringkörper bei meisten Exemplaren des Typs III ist entweder unverziert und im Querschnitt achteckig (Abb. 1: 7; 5: 15; 6: 4, 5, 10, 12), oder plastisch verziert und dann trägt er eine Verzierung entweder aus einem Längsstreif mit Fischgrat-, Wellen-, Gitter- oder Dellenmuster (Abb. 6: 6–9, 13; *Reinecke 1897*, Abb. 14: 9, 10) oder aus mehreren Längsstreifen (Abb. 6: 1). Dem Typ III können auch solche Stücke zugewiesen werden, die zwar einen für die Typen I und II üblichen Ringkörper aufweisen, ihr Kopf ist aber anders als kegelförmig gestaltet (Abb. 6: 14; *Reinecke 1897*, Abb. 14: 14).

⁷ Rund 200 Stück davon entfallen auf das Gräberfeld von Szentes-Vekerzug (*Kovács 2008*, 203–205).

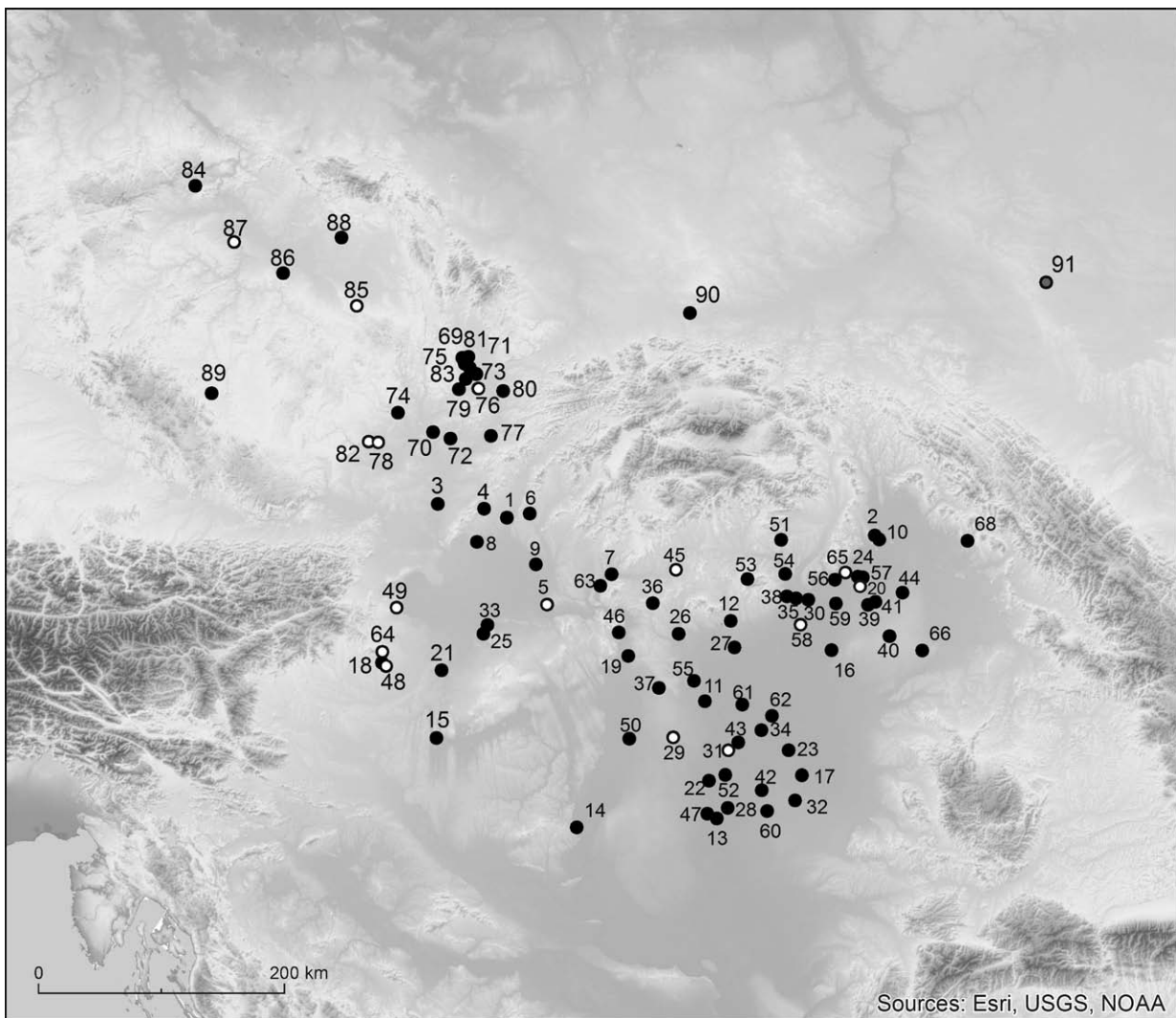


Abb. 8. Verbreitung der schlangenförmigen Schläfenringe vom Typ III nach A. Kozubová in Mitteleuropa (mit leerem Kreis). Slowakei: 5 – Chotín IA, Chotín IB. Ungarn: 20 – Buj; 29 – Kecskemét-Hetényegyháza-Belsőnyír; 31 – Kunszentmárton-Nagy-Éri-Főcsatorna; 45 – Piliny; 48 – Sé-Doberdó; 49 – Sopron-Krautacker-dűlő; 58 – Tiszakeszi-Fáy-kert; 64 – Velem-Szent Vid-hegy; 65 – Zalkod. Mähren: 76 – Měrovice nad Hanou-Babiny; 78 – Práče-U Prosiměřic; 82 – Suchohrdly-Nad přehradou II. Böhmen: 85 – České Lhotice-Hradiště; 87 – Kozinec-Holubí háj (nach Kozubová/Fojtík 2021, Abb. 21). Grafik T. Holbová.

Radišić/Ninčić 2019, 140, 145, Abb. 2).⁸ Auffällig sind dabei ihre Fundverdichtungen in geographisch weit von der Hauptverbreitung im östlichen Karpatenbecken entfernten Nord- und Ostböhmen sowie Nordostpolen in der Pomoranischen Kultur, wobei Schlesien und überraschend auch Südostpolen bisher fundleer bleiben (Kovács 2008, 80, 81, 239, 240; Malinowski 1982, 118–120, Abb. 4; Teleaga/Zirra 2003, 85). Im unteren Weichselgebiet kamen diese Schnecken nicht früher als im 6. Jh. v. Chr. auf und konnten dort wohl aus dem östlichen Karpatenbecken in nördlicher Richtung entlang

der sogenannten Tarnobrzeg-Vekerzuger Bernsteinstraße gelangen (siehe Dziegielewski 2017, 328; Kozubová 2019b, 101, 102). Auch nach Böhmen scheinen die Kaurischnecken der Arten *Cypraea annulus* und *Cypraea moneta* eher aus der Südwestslowakei und/oder Ostungarn entlang der mittleren Donau oder über Mittelmähren gelangt worden zu sein als aus dem Mittelmeer in nördlicher Richtung über die Etrusker. In Mittelitalien traten solche Schnecken selten auf und wurden zudem, ähnlich wie in der Golasacca-Kultur, Slowenien und Picenum, meist aus Bronze nachgeahmt (vgl. Gra-

⁸ Sporadische späthallstatt- und frühlatènezeitliche Funde von Kaurischnecken liegen auch aus Oberösterreich und Südwestdeutschland vor (Schönfelder 2001, 318, 319, Abb. 6; 7, Tabelle 1).

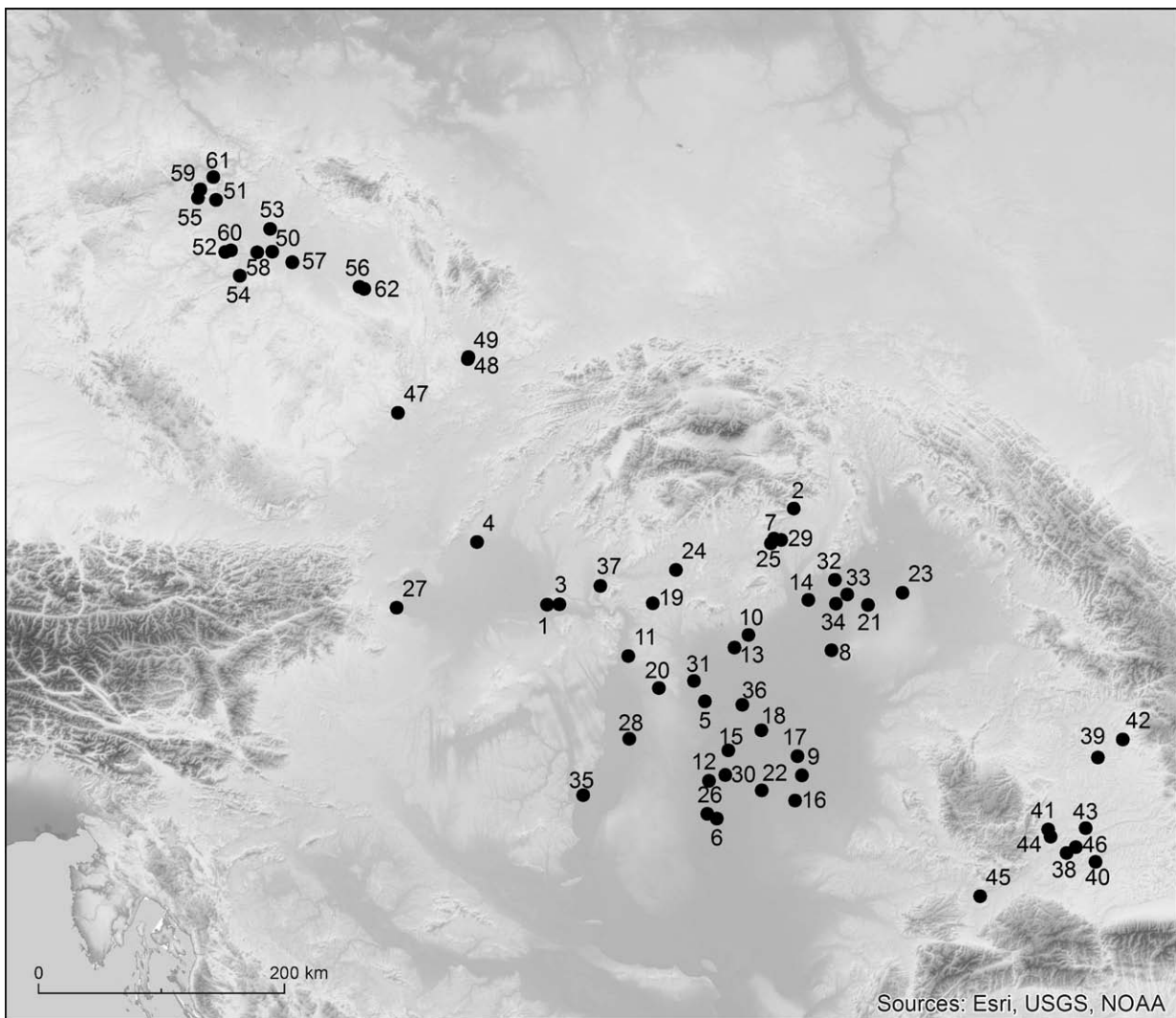


Abb. 9. Verbreitung der hallstatt- bis LTA-zeitlichen Kaurischncken der Arten *Cypraea annulus* und *Cypraea moneta* im Osten Mitteleuropas (Polen nicht kartiert). Slowakei: 1 – Chotín IA, Chotín IB; 2 – Háaj; 3 – Modrany; 4 – Senec-Štrková kolónia. Ungarn: 5 – Abony-Blaskó-dűlő; 6 – Algyő-Bartók Béla utca; 7 – Alsótelekes-Dolinka; 8 – Balmazújváros-Hortobágy-Arkus puszta; 9 – Békéscsaba-Fényes; 10 – Besenyőtelek; 11 – Budapest-Békásmegyér-Északi városkapu; 12 – Csanytelek-Tömörkényi utca, Csanytelek-Újhalastó; 13 – Heves-Semelweis utca; 14 – Kesznyéten-Szérúskert; 15 – Kunszentmárton-Jaksor; 16 – Medgyesegyháza; 17 – Mezőberény-Vasut utca; 18 – Mezőtúr-Újváros; 19 – Nógrádkövesd; 20 – Nyáregyháza; 21 – Nyíregyháza-Közvágóhíd; 22 – Orosháza-Gyopáros; 23 – Petneháza-Bogda; 24 – Piliny; 25 – Rudabánya; 26 – Sándorfalva-Eperjes; 27 – Sopron-Krautacker-dűlő; 28 – Szabadszállás-Józan; 29 – Szendrő-Ördögáti-Csengőbarlang; 30 – Szentek-Kistóke, Szentek-Vekerzug; 31 – Tápiószéle-Szumrák; 32 – Tarcal; 33 – Tiszaeszlár-Kunsírpárt; 34 – Tiszavasvári-Csárdapart, Tiszavasvári-Dózsatelep, Tiszavasvári-Kapusz-lapos; 35 – Tolna-Mózs, Icsi-dűlő; 36 – Törökszentmiklós-Surján; 37 – Vámosmikola-Istvánmajor. Rumänien (nur Siebenbürgen kartiert): 38 – Blaj-Aleea Viitorului; 39 – Budești-Finațe; 40 – Copșa Mică-Schrauenweg (ehem. Proștea Mică); 41 – Gîmbas; 42 – Mărișelu-Coasta Domneștilor; 43 – Ozd-Piscul Deagului; 44 – Sancrii; 45 – Simeria (ehem. Piski); 46 – Șona-Nederschten Auen. Mähren: 47 – Ivančice-Panovského cihelna; 48 – Slatinice-Stráž; 49 – Slatinky-Močilky. Böhmen: 50 – Čelákovice-Parcela 932/1; 51 – Čížkovice-Remíz; 52 – Dobrovíz-Areál firmy Logisor; 53 – Krpy; 54 – Lhota u Dolních Břežan-Hradiště nad Závistí; 55 – Měřunice-Stříbrník; 56 – Mikulovice-V Loučkách; 57 – Milčice-Státní statek; 58 – Praha-Vinoř, Kamenný stůl; 59 – Radovesice u Břiliny-Výsypka velkodolu Maxim Gorkij; 60 – Tuchoměřice-Logistický areál F. M. Česká; 61 – Tuchomyšl-Teichfelder; 62 – Tuněchody-Kopecké (nach Kozubová/Fojtík 2021, Abb. 18). Grafik T. Holbová.

hek 2004, 152–154, Abb. 42; Kovács 2008, 237–239; Kozubová 2013b, 51; Teleaga/Zirra 2003, 84, 85, Karte 28; Trejster 2021, 23, 24, Anm. 7). Die frühesten Funde von Kaurischncken im Karpatenbecken stammen aus HC2b-zeitlichen Grabinventaren

der Ciumbrud-Kultur, wo sie mindestens noch im Laufe der ganzen Stufe HD1 den Bestatteten als Beigaben beigegeben wurden. In der Vekerzug-Kultur zeigen die Kaurischncken zwar eine weite Datierungsspanne, die sich von der frühen Stufe

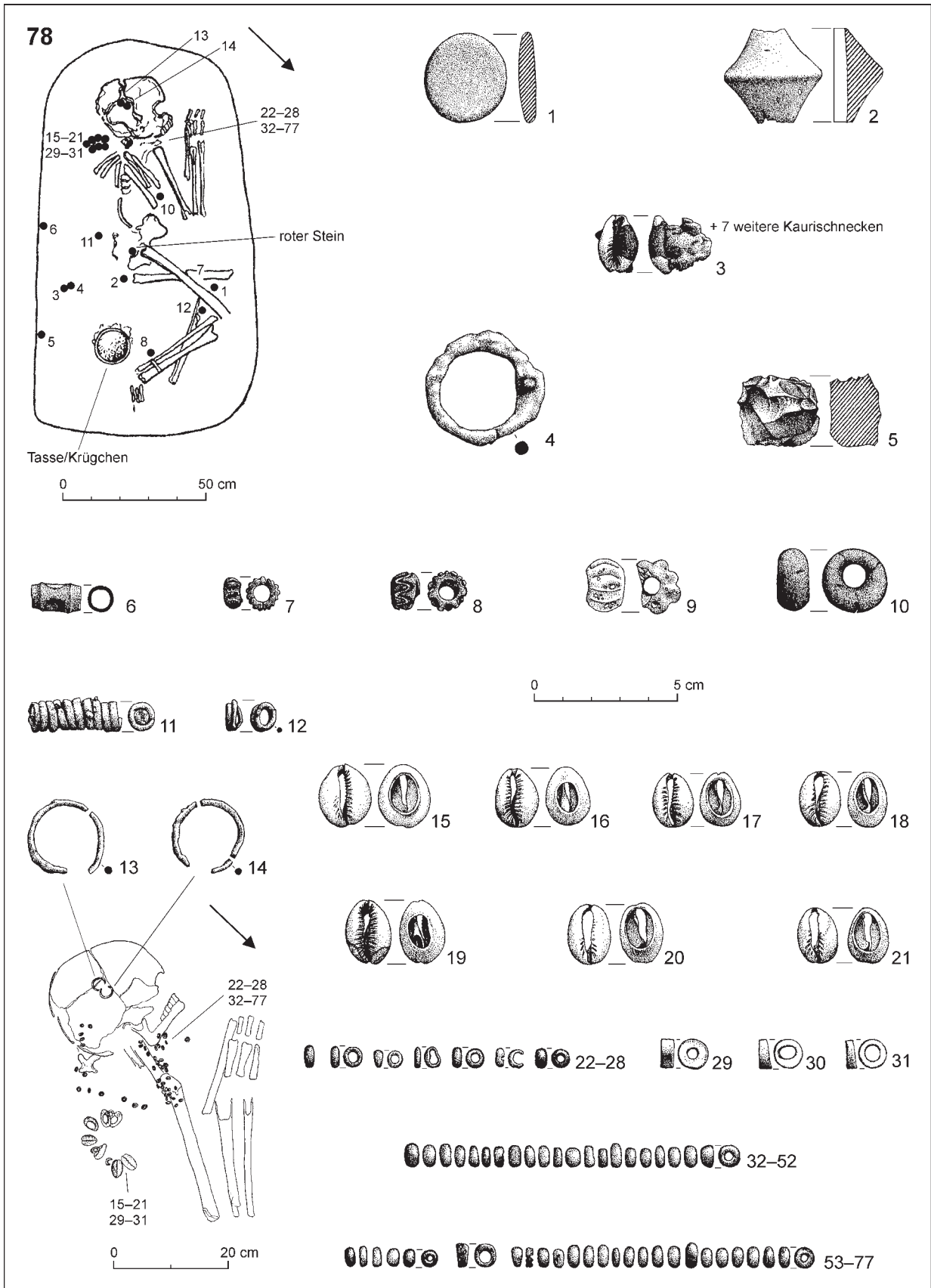


Abb. 10. Algyó-Bartók Béla utca (Kom. Csongrád-Csanád/HU), Körpergrab 78 mit Kaurischnecken. Funde und deren Lage (nach Bende 2003, Abb. 7: 1-15; 8: 1-64).

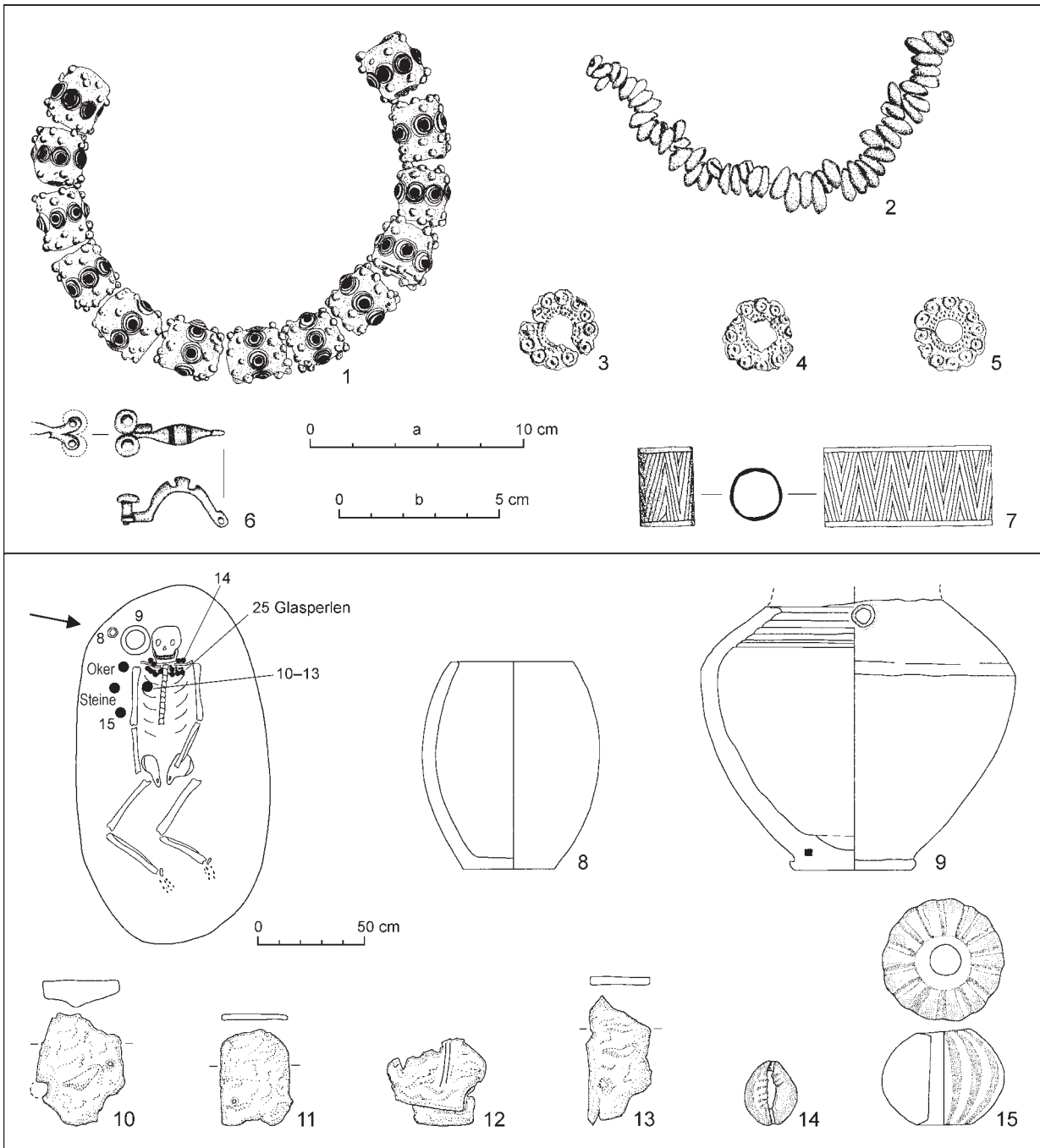


Abb. 11. Gräber der Vekerzug-Kultur mit Kaurischnecken. 1–7 – Mezőtúr-Újváros (Kom. Jász-Nagykun-Szolnok/HU), Körpergrab (nach Kisfaludi 1983, Abb. 1: 1–7); 8–15 – Chotín IA (Bez. Komárno/SK), Körpergrab 124/53, Funde und deren Lage (nach Kozubová 2013a, Abb. 185, Taf. 51: 8–15). Maßstab: a – 1–6, 9; b – 7, 8, 10–15.

HD1 bis zum Ende der Stufe HD3 bzw. noch nach LTA erstreckt, ihre Anzahl scheint dort jedoch vor allem in der Stufe HD3 bedeutend anzusteigen (Kozubová 2013b, 50, Anm. 80). Auch das Gros der Funde von Kaurischnecken in Böhmen stammt aus den späthallstatt- bis frühlatènezeitlichen Siedlungsobjekten (Fundliste 1 Nr. 3, 7, 15B, 19B, 29B, 35, 36B, 37A–37C).

Drehscheibenkeramik

Das bemerkenswerteste Objekt im hier behandelten Fundensemble aus Ostböhmen ist ein fragmentarisch erhaltenes scheibengedrehtes Gefäß mit deutlich ausbiegendem, verdicktem Rand und abgesetztem, flachem Standboden aus dem Siedlungsobjekt 347 von Mikulovice-Pod Kostelem,

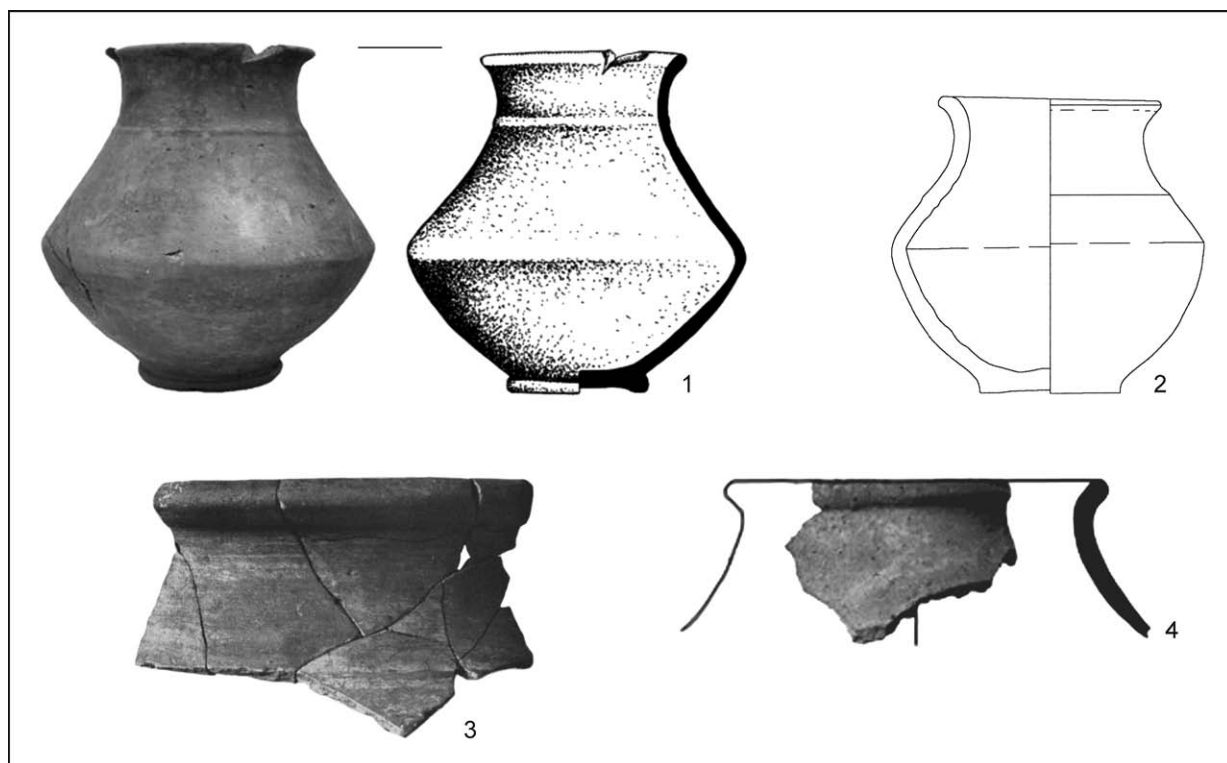


Abb. 12. Vergleiche zu dem scheibengedrehten Kegelhalbgefäß aus Mikulovice-Pod Kostelem, parcela 14/8 aus einigen Fundorten der Vekerzug-Kultur. 1 – Szőreg-Borpalackozó Vállalat (Kom. Csongrád-Csanád/HU), Körpergrab 5 (nach *Keresztes u. a. 2021*, Taf. 5: 3); 2 – Chotín IA (Bez. Komárno/SK), Körpergrab 170a, b, c/53 (nach *Kozubová 2013a*, Taf. 64: 7); 3 – Szentes-Vekerzug (Kom. Csongrád-Csanád/HU), Pferdegrab 19 (nach *Párducz 1954*, Taf. III: 3); 4 – Nyírparasznya-III forduló (Kom. Szabolcs-Szatmár-Bereg/HU), Siedlungsobjekt OBNR 32/SNR 60 (nach *Czifra u. a. 2020*, Abb. 3: 8). Verschiedene Maßstäbe.

parcela 14/8 (Abb. 1: 13; Fundliste 1 Nr. 19C). Trotz des bruchstückhaften Erhaltungszustands lässt sich das Gefäß aufgrund des Profilverlaufs von Rand- und Bodenscherben sowie nach Rand- und Bodendurchmesser wohl einem mittelgroßen Kegelhalbgefäß ohne weitere sichere typologische Präzisierung zuweisen, der breit gerundete Schulter-Bauchumbruch scheint etwas tiefsitzend zu sein. Gefäße dieser Art sind im hallstatt- bis frühlatènezeitlichen Keramikbestand Ostböhmens unüblich. Im Hinblick auf Formgebung, Magerungsart (aus fein mineralisch gemagertem Ton hergestellt) und Oberflächenbehandlung (außen gut geglättet und poliert und innen mit erhaltenen Drehriefen) fügt sich dieses Exemplar problemlos in das bekannte Bild der Drehscheibenkeramik der Vekerzug-Kultur ein.⁹ An scheibengedrehte Gefäßformen sind in der Vekerzug-Kultur insbesondere Schüsseln und Krügelchen mit hochgezogenem bandförmigen Henkel belegt, wobei diese sowohl als Grab- wie auch als

Siedlungskeramik aus fast allen Fundorten dieser Kultur vorliegen. Kleine bis mittelgroße scheibengedrehte Kegelhalbgefäße werden dagegen im Vekerzuger Keramikbestand relativ selten beobachtet, diese Keramikform wurde bevorzugt von Hand geformt. Allen scheibengedrehten Keramikformen dieser Kultur ist der abgesetzte Standboden gemeinsam, der entweder leicht konkav oder flach ist (siehe z. B. *Czifra u. a. 2017*, 260, 262, 263, 266; *Kozubová 2013b*, 162, 165; *Kozubová/Fojtík 2020*, 176, 179, 181; *Romsauer 1993*, 16; 2019, 32–34). Das Kegelhalbgefäß aus Mikulovice findet seine formalen Entsprechungen in kleinen bis mittelgroßen Exemplaren aus Chotín IA, Chotín IB, Michalovce-Hrádok (Bez. Michalovce/SK), Nyírparasznya-III forduló (Kom. Szabolcs-Szatmár-Bereg/HU), Szőreg-Borpalackozó Vállalat (Kom. Csongrád-Csanád/HU) und Szentes-Vekerzug (Abb. 12; *Czifra u. a. 2020*, Abb. 3: 8; *Čilinská 1959*, 79, Taf. I: 6; *Keresztes u. a. 2021*, 63, Taf. 5: 3; *Kozubová 2013a*, 80, 89, 114, Taf. 64: 7; 72: 1; 115: 17;

⁹ Herstellungstechnisch wirkt die Vekerzug-Drehscheibenkeramik als sehr einheitlich und weicht deutlich von den handaufgebauten Waren dieser Kultur ab. Auch die petrografischen Untersuchungen an einigen Gefäßen aus der Siedlung von Nagytarcsa-Urasági-dűlő (Kom. Pest/HU) ergaben, dass die Drehscheibengefäße als Feinkeramik zumeist aus anderen Rohmassen hergestellt waren als die handaufgebaute Keramik (*Czifra u. a. 2017*, 277, 278).

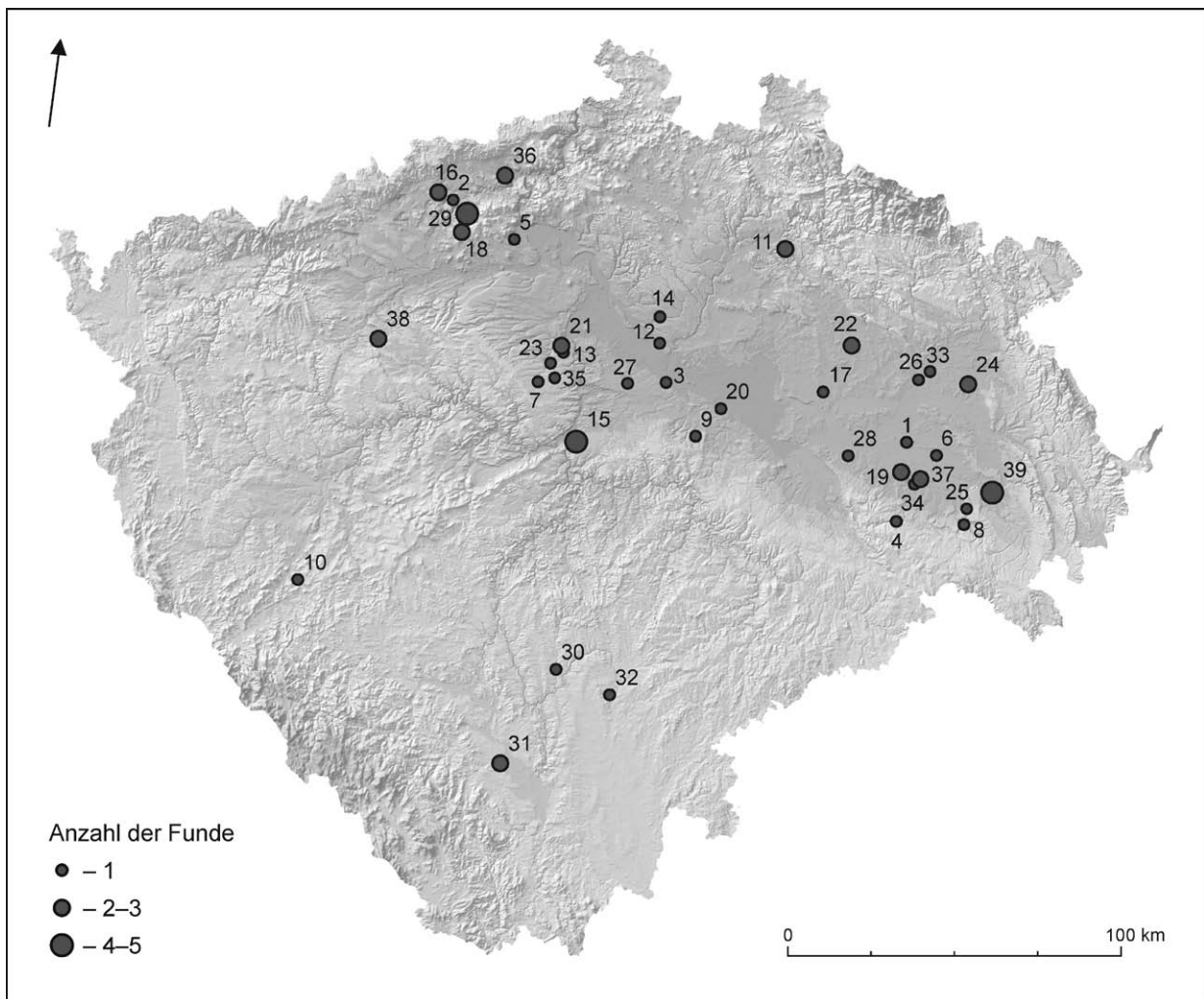


Abb. 13. Verbreitung der hallstatt- bis frühlatènezeitlichen Funde vom östlichen Typ in Böhmen. Zu Nummerierung und Nachweisen siehe Fundliste 1. Karte: ArcČR 500 Version 3.3. Grafik T. Holbová.

Párducz 1954, 26, 37, 41, Abb. 20: 1; 28: 1, Taf. III: 3). Die Keramik der Vekezug-Kultur ist in der Regel chronologisch wenig aussagekräftig und zudem enthalten nur wenige Fundkomplexe mit Drehscheibenkeramik gut datierbare keramische und/oder metallene Beifunde. Die scheibengedrehten Kegelhalsgefäße sind für die ganze Stufe HD und in typologisch etwas modifizierter, schon eher flaschenähnlicher Ausprägung auch für LTA belegt (Czifra u. a. 2017, 266; Kozubová 2013b, 160; 2019b, 132; Kozubová/Fojtík 2020, 180; Romsauer 2019, 32). Das Objekt 347 von Mikulovice-Pod Kostelem ist über die begleitende Keramikware zeitlich nur grob nach HD2–LTA einzuordnen. Außerhalb der Vekezug-Kultur erscheinen scheibengedrehte Kegelhalsgefäße höchst selten und sind bisher mit wenigen fragmentarisch erhaltenen Fundstücken aus Niederösterreich (Inzersdorf-Walpersdorf/Bez. St. Pölten) und Südostpolen (Białobrzegi/Bez. Rzeszów; Jarosław/Bez. Jarosław) vertreten (Czopek

1993, 488, Abb. 1: 3, 4; 2012, 299, Abb. 2: c, d, g, h; Ramsl 1998, 183, Taf. 59: 369).

DISKUSSION

Besonders in den letzten zehn Jahren ist die Zahl der Fundplätze mit Gegenständen vom östlichen Typ in Böhmen durch Neufunde relativ stark angestiegen, so stehen jetzt für eine eingehende Untersuchung mindestens 66 gesicherte Fundstücke aus 44 Fundorten zur Verfügung. Obwohl die meisten von den hier behandelten Funden im Katalog von J. Bartík u. a. (2017, 36–43, Abb. 1) vor kurzem veröffentlicht wurden, war es notwendig, den betreffenden Katalog durch die Autoren dieses Artikels zu korrigieren. Funde, deren östliche Herkunft im mitteleuropäischen Kontext fraglich ist, wie beispielsweise Gehäuse anderer Schneckenarten als *Cypraea annulus* und *Cypraea moneta* aus Blšany, Karlovice-Praděd,

Poříčany, Praha-Dejvice und Praha-Vinoř, eiserne Äxte aus Horoměřice (wohl frühmittelalterlich) und Platěnice oder Bronzefleischnadeln aus Jenišův Újezd und Želkovice (*Bartík u. a. 2017*, 36–40, 43, Abb. 1: 9, 11, 36, 37), wurden nicht in die Fundliste 1 aufgenommen. Nicht berücksichtigt wurden weiter auch solche Funde, die in Publikationen nicht abgebildet und ohne nähere Beschreibung nur allgemein als „skythische Pfeilspitzen“ bezeichnet sind, wie beispielsweise Pfeilspitzen aus Čáslav, Měrunice und Myštice (*Bartík u. a. 2017*, 37, 39). Bislang unpubliziert und daher in diesem Artikel unberücksichtigt bleiben einige Funde aus Südböhmen wie ein scheibengedrehtes Krüglein aus Dobřejovice (Bez. České Budějovice)¹⁰, zwei Bronzefleischnadeln mit innerer Tülle aus Malovice-Krtely (Bez. Prachatice) und Sedlec (Bez. České Budějovice) sowie zwei schlangenförmige Schläfenringe aus einer Siedlung bei Boudy (Bez. Písek) und der Umgebung von Bavorov (Bez. Strakonice; *Michálek u. a. 2018*, 165).

Im Allgemeinen soll die Problematik der Funde vom östlichen Typ in Böhmen wie auch in anderen Regionen Mitteleuropas in Hinsicht auf die Terminologie (s. o.), Provenienz und Datierung dieser Objekte sowie auf die Interpretation ihres Vorkommens im osthallstädtischen Milieu behandelt werden. Vom Standpunkt des Verbreitungsschwerpunktes bzw. der Herkunft aus lassen sich die Funde vom östlichen Typ aus Böhmen in vier folgende Provenienzgruppen gliedern. Die vorgelegte Unterteilung spiegelt jedoch keinen chronologischen Aspekt wider.

Die erste Provenienzgruppe

Die erste Provenienzgruppe umfasst neben einigen Leitformen der Formenschatz der Vekerzug-Kultur wie Bronzefleischnadeln mit innerer Tülle, schlangenförmige Schläfenringe vom Typ I nach A. Kozubová, Drehscheibenkeramik und ein Knochengegenstand mit der für die Vekerzug-Kultur typischen zoomorphen Verzierung aus Mikulovice-V Loučkách auch solche Fundgattungen wie Kaurischnecken, die aus dem Osten nach Böhmen über die Vekerzug-Kultur gelangt sein dürften (Abb. 14: 1–11). Das Vorkommen von Funden aus der ersten Provenienzgruppe konzentriert sich im Arbeitsgebiet deutlich auf die nördliche Hälfte Böhmens.

Bis auf eine vierkantige Pfeilspitze mit innerer Tülle und rautenförmigem Querschnitt des Blattes aus Vysoké Mýto-Bučkův kopec (s. u.) gehören alle Pfeilspitzen mit innerer Tülle aus Böhmen zu denselben Varianten, die im Bereich der Vekerzug-Kultur recht häufig anzutreffen sind – die Varian-

ten I1 (s. u.), I2 (Fundliste 1 Nr. 6, 24), I3 (Fundliste 1 Nr. 12, 24, 30, 34), II2 (s. u.) und II3 (s. u.).

Zwei bronzene Pfeilspitzen mit innerer Tülle aus Plotiště nad Labem-Na Přímských (Bez. Hradec Králové; Fundliste 1 Nr. 26) und Sedlec-V lomech (Abb. 14: 1; Fundliste 1 Nr. 31A) zeichnen sich durch ein kurzes, symmetrisches rautenförmiges Blatt aus und sind daher der im europäischen Kontext selten vorkommenden Variante I1 nach A. Kozubová einzuordnen (*Kozubová 2009*, 70, Abb. 1). Die Länge liegt bei dieser Variante zwischen 1,6 und 2,1 cm. Der Großteil der Stücke besitzt eine innere Tülle mit gerader Basis (Abb. 4: 5), nur wenige Pfeilspitzen sind aufgrund der leicht ausgezogenen Basis wie mit einer rudimentären äußeren Tülle versehen (*Bartík u. a. 2017*, 50, 52, Abb. 3: 81; 4: 103; *Párducz 1952*, 147, Taf. XLIX: 4). Die Verbreitung der Pfeilspitzen mit innerer Tülle und rautenförmigem Blatt ist trotz der geringen Fundmenge weit über ganz Mittel-, Ost- und Südeuropa gestreut, wobei in Mitteleuropa kleinere Fundkonzentrationen der Variante I1 in der ostkarpatenländischen Region sowie in der Osthallstattkultur festzustellen sind. Die beiden Pfeilspitzen aus Böhmen finden ihre besten Vergleiche unter den Funden der Vekerzug-Kultur, wo bisher 12 Exemplare aus sieben Fundorten bekannt sind, und zwar aus Chotín IA (*Kozubová 2013a*, 43, Taf. 35: 8), Chotín IB (*Kozubová 2013a*, 136, Taf. 109: 9), Debrecen-Wolaffka telep (Kom. Hajdú-Bihar/HU; *M. Nepper 1968*, 53, Taf. I: 5), Kunmadaras-Hajcsár utca (Kom. Jász-Nagykun-Szolnok/HU; *Kemenczei 2009*, 124, Taf. 30: 2), Piliny (*Kemenczei 2009*, 173, Taf. 171: 20), Szentes-Vekerzug (*Párducz 1952*, 147, Taf. XLIX: 3, 4; LIV: 4, 5; 1954, 31, 40, Taf. VIII: 11, 13; XXVII: 6) und Tiszavasvári-Csárdapart (Kom. Szabolcs-Szatmár-Bereg/HU; *Kemenczei 2009*, 154, Taf. 119: 12, 13). Im Gegensatz zu den meisten Pfeilspitzenvarianten mit innerer Tülle mit langen Laufzeiten von HD1 bis LTA scheint die Verwendung der Variante I1 in der Vekerzug-Kultur anhand der Gräber aus Szentes-Vekerzug mit Beifunden wie Schichtaugenperlen, Scheibenfibern vom Typ Donja Dolina oder Faleren vom Typ Magdalenska gora chronologisch auf die Stufen HD2 und HD3 beschränkt zu sein (*Kozubová 2009*, 70, 71; *2013b*, 69, 70, 89, 412). In Siebenbürgen wurden dagegen nur vier Pfeilspitzen der Variante I1 gefunden, von denen nur zwei HD3-zeitliche Exemplare aus Körpergrab von Băcăinți-Obreja genau zu datieren sind (*Baltes/Borangic/Fetcu 2017*, 72, Abb. 4: 5, 5a, 6, 6a; *Horedt 1960*, 482, Abb. 1: 10; 1966, Abb. 22: 5). Weitere gute Entsprechungen liegen ferner im osthallstädtischen Milieu vor, wo sich bis auf eine Pfeilspitze aus Gracarca am Klopeiner See (Bez.

¹⁰ Wir verdanken diese Information Jan John und Ondřej Chvojka.

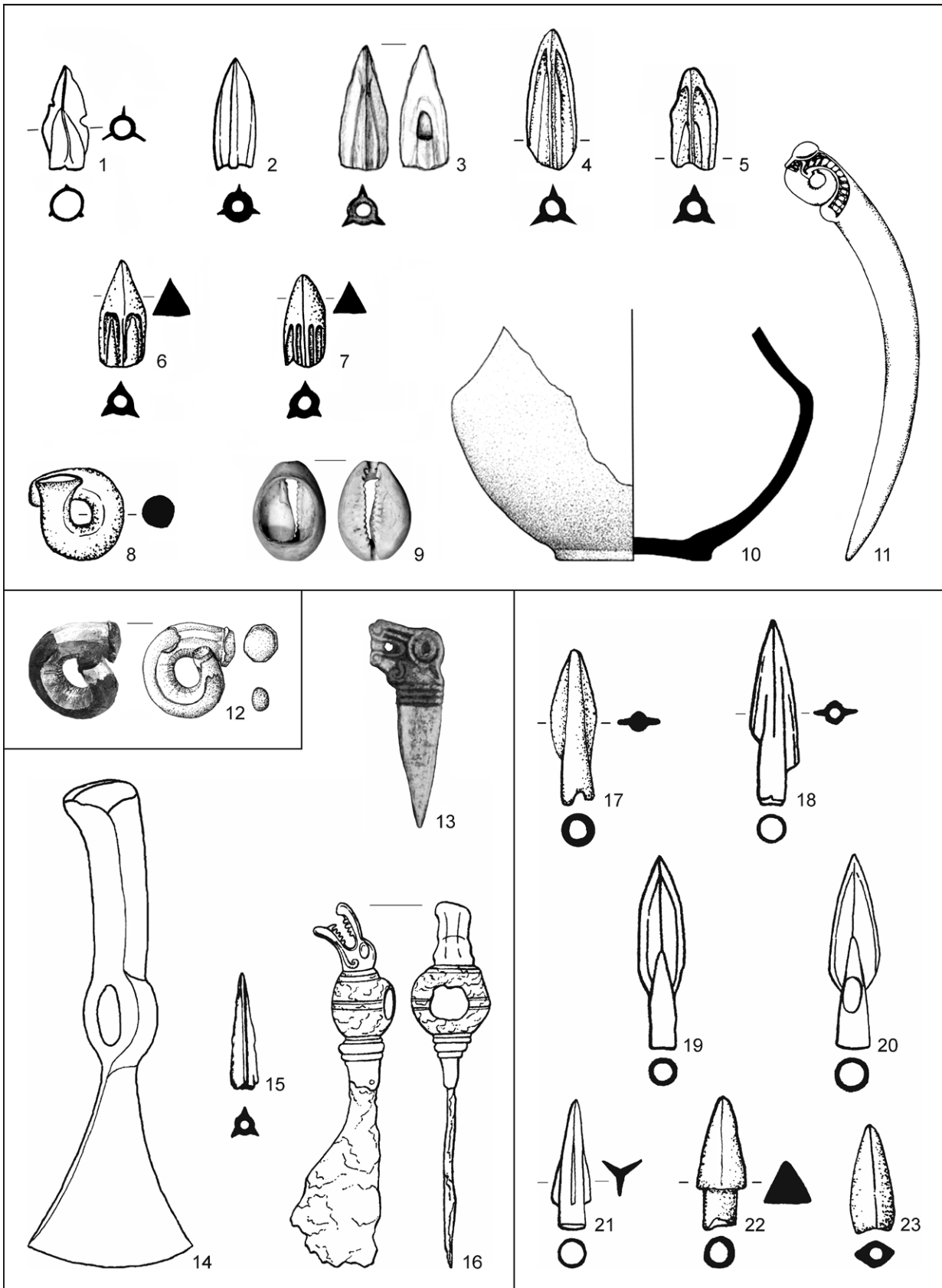


Abb. 14. Typenskala der hallstatt- bis frühlatènezeitlichen Funde vom östlichen Typ aus Böhmen nach Provenienzgruppen. 1–11 – die erste Provenienzgruppe; 12 – die zweite Provenienzgruppe; 13–16 – die dritte Provenienzgruppe; 17–23 – die vierte Provenienzgruppe. Verschiedene Maßstäbe.

Völkermarkt/AT) kleinere Fundverdichtungen in Mähren mit sechs Stück aus sechs Fundorten und in Nordwestungarn mit 11 Stück aus drei Fundorten (davon neun aus Ménfőcsanak-Széles-földek) erkennen lassen. Bis auf eine Pfeilspitze aus dem späthallstatt- bis frühlatènezeitlichen Siedlungsobjekt 114 von Sé-Doberdó (Kom. Szombathely/HU) sind alle Pfeilspitzen der Variante I1 aus dem Osthallstatttraum als Einzel- oder Streufunde aus (Höhen-)siedlungen ohne chronologische Relevanz (Chochorowski 1985a, Abb. 6: 26; Gál/Molnár 2004, 162, 175, Taf. 13: 1; 48; Ilon 2017a, 192, Abb. 8: 9; 2019, 255, Taf. II: 1–6, 9, 10; Kozubová/Fojtík 2021, 107–109, Fundliste 2 Nr. 6, 8, 10, 17, 19, 22; Teržan 1998, 539, Abb. 11). In nördlicher Richtung reicht das Vorkommen der Variante I1 nicht über Böhmen, Mähren und mit den nordslowakischen Funden aus Demänovská Dolina-Demänovská Poludnica (Bez. Liptovský Mikuláš) und Vyšný Kubín-Tupá skala (Bez. Dolný Kubín) auch die Slowakei hinaus (Bukowski 1977b, Taf. XXI: 15; Furman/Benediková/Šimková 2019, Abb. 2: 19, 21, 26, 28; 3: 11, 17–19, 21). Nach Form und Größe vergleichbare Pfeilspitzen wurden in östlicher Richtung zwar bis in die Regionen Osteuropas gefunden, ihre vereinzelt Funde sind dort jedoch nur in den griechischen Kolonien Olbia Pontica (Bez. Mykolajiv/UA) und Nymphaion (Krim/UA) aus wenigen Grabkomplexen aus der zweiten Hälfte bis das Ende des 6. Jhs. v. Chr. sowie im Bereich des Mittleren Dnjepr aus einigen Burgwällen und einem Grab von Prydniprovka/Придніпровка (Bez. Dnipropetrovsk/UA) bekannt (Daragan 2017, 101, Abb. 17: 4; Grač 1999, 74, Taf. 94: 4; Hellmuth 2010, 602, Abb. 10: A9; Polin 1987, 29, Abb. 9: 30, 38–40). Pfeilspitzen mit innerer Tülle und rautenförmigem Blatt sind auch in Frankreich, Italien, Griechenland und Zypern einerseits und in Klein- und Vorderasien andererseits belegt (siehe dazu z. B. Baitinger 2001, 22, 23, Taf. 10: 308–349; Hauser 2019, 238–240, Abb. 1; 4: 1–10; 6; Hellmuth Kramberger 2018, 170–172, Abb. 9; 10: C–E). Die Verbreitung solcher Pfeilspitzen, die auch als persischer Typ bezeichnet werden (z. B. Hellmuth Kramberger 2018, 173), könnte nach einigen Autoren mindestens im östlichen Mittelmeergebiet mit persischen Bogenschützen in Verbindung gebracht werden (z. B. Baitinger 2001, 23). Als fraglich erweist sich diese Interpretation sowohl für die Funde aus Südwest- und Westeuropa (siehe dazu Hauser 2019, 239, 240), als auch für die Pfeilspitzen der Variante I1 aus dem östlichen Mitteleuropa und der Ukraine. Ihr gemeinsames Vorkommen mit einigen typischen Vekerzuger Pfeilspitzenvarianten in Gräbern der Vekerzug-Kultur sowie im Fundensemble von Ménfőcsanak-Széles-földek

könnte dafürsprechen, dass es sich eher um lokale (ostkarpatenländische) Nachahmungen fremder (persischer) Formen als um Belege für Handel, Tausch oder militärische Aktivitäten, wie A. Hellmuth Kramberger (2018, 173, 175) nimmt an, handelt.¹¹

Nach dem Flügelquerschnitt gehören zwei Bronzepfeilspitzen mit innerer Tülle aus Vysoké Mýto-Bučkúv kopec der dreikantig-dreiflügeligen Hauptform an. Diese Pfeilspitzenform ist generell durch ein Blatt gekennzeichnet, dessen oberes Viertel bis oberes Drittel im Querschnitt dreikantig und das restliche Blatt dagegen dreiflügelig ist (Kozubová 2009, 77). Eine der Pfeilspitzen aus Vysoké Mýto lässt sich – der Untergliederung von A. Kozubová folgend – der Variante II2 mit turmförmigem Blatt (Abb. 14: 6; Fundliste 1 Nr. 39B) und die zweite der Variante II3 mit spitzbogenförmigem bis dreieckigem Blatt (Abb. 14: 7; Fundliste 1 Nr. 39B) zuweisen. Anhand der Abschlussform der Flügel und der Ausformung der Basis lassen sich bei den beiden Varianten die gleichen drei Subvarianten unterscheiden wie im Falle der dreiflügeligen Varianten I2 und I3. Die Länge liegt bei den beiden Varianten zwischen 1,8 und 2,7 cm (Kozubová 2009, 70, 77–79, Abb. 1). Die Hauptverbreitung der Variante II2 liegt im Bereich der Vekerzug-Kultur (Kozubová 2009, 78; weiter z. B. Benadik 1983, 20, Taf. II: 3; Čambal 2008, Abb. 2: 3, 4; Gutay u. a. 2021, Abb. 15: 8; F. Kovács 2017, 27, Abb. 16; Kemenczei 1986, 122, Abb. 3: 5; 2009, 150, 155, 170, 173, Taf. 107: 4; 122: 12; 159: 3; 171: 16; Kozubová 2013a, 273, Taf. 119: 4, 5, 7–12, 14–18; Laczus/Párducz 1969, 217, 221, Taf. LIII: 2, 3; LV: 2, 3; Párducz 1954, 31, 34, 36, Taf. VIII: 12; XVII: 1; XXIX: 3, 4; 1955, 3, Taf. IV: 1; Tóth 2018, 100, Abb. 2: 12, 14; 2019, 478, Abb. 4: 7), wo ihre deutliche Konzentration besonders auf den Gräberfeldern in Chotín zu beobachten ist (Kozubová 2013a, 20, 33, 38, 63, 64, 79, 91, 103, 116, Taf. 11: 34; 25: 7; 30: 10; 50: 7, 8, 12; 62: 46; 73: 11; 81: 6; 90: 8, 11). Die Exemplare dieser Variante werden daher in der Fachliteratur auch als Variante Chotín bezeichnet (Kozubová 2009, 78). Die für den Typenbestand der Vekerzug-Kultur besonders charakteristischen dreiflügeligen und dreikantig-dreiflügeligen Pfeilspitzen der Varianten I2 und II2 mit turmförmigem Blatt (Abb. 3: 20, 21) finden unter den osteuropäischen Pfeilspizentypen/-varianten nur wenige Entsprechungen und stellen damit einen wichtigen Beleg für die lokale Entwicklung der Pfeilspitzen vom östlichen Typ im Karpatenbecken dar (Kozubová 2009, 73, 78, 97, 98). Im Steppen- und Waldsteppengebiet Osteuropas sind dreiflügelige und dreikantig-dreiflügelige Exemplare mit turmförmigem Blatt in Fundkomplexen aus der zweiten Hälfte des 6. Jhs. und vor allem aus der ersten Hälfte des 5. Jhs. v. Chr. zwar relativ häufig anzutreffen,

¹¹ Dies wird auch bei den ukrainischen Stücken angenommen (Daragan 2017, 101).

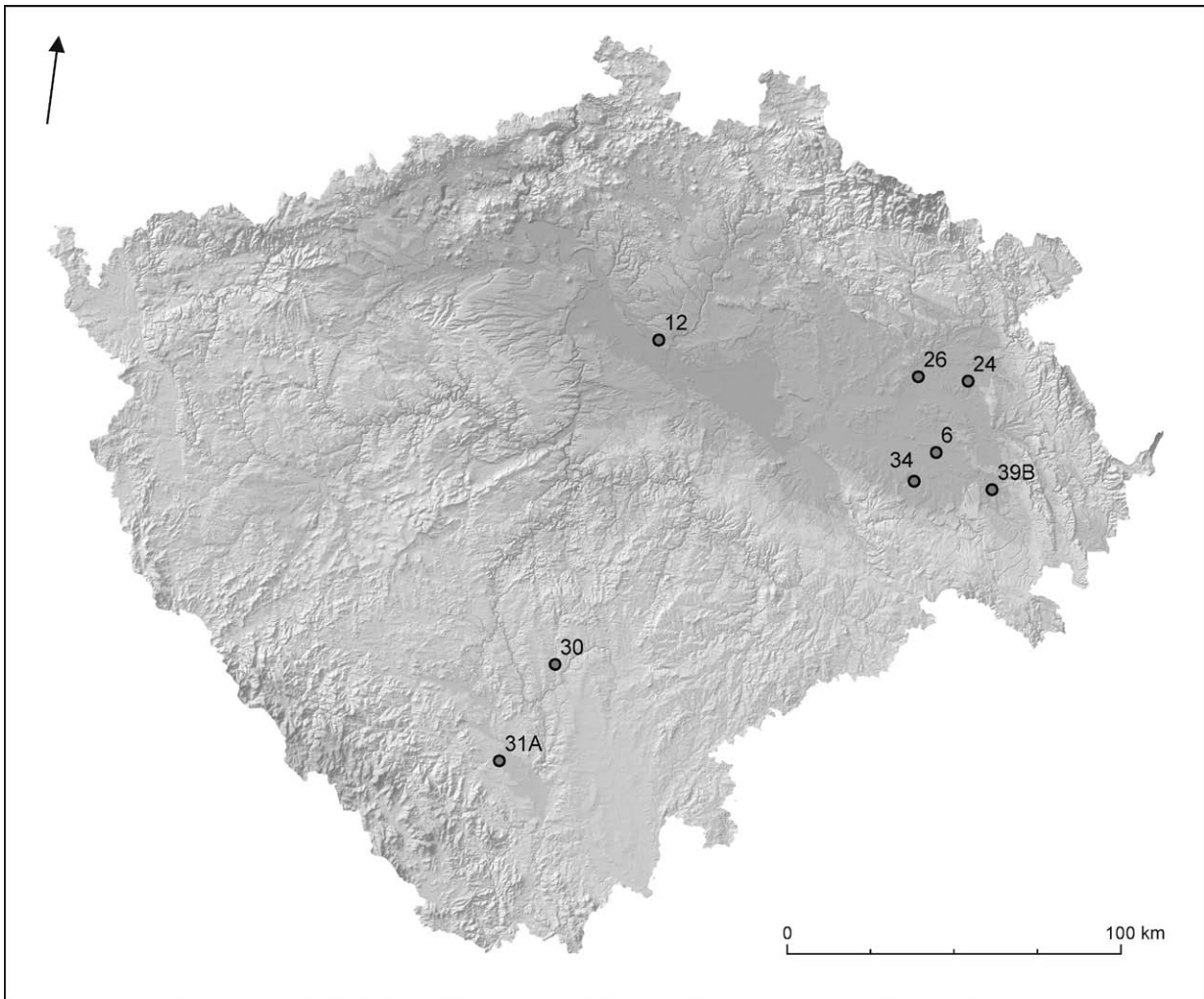


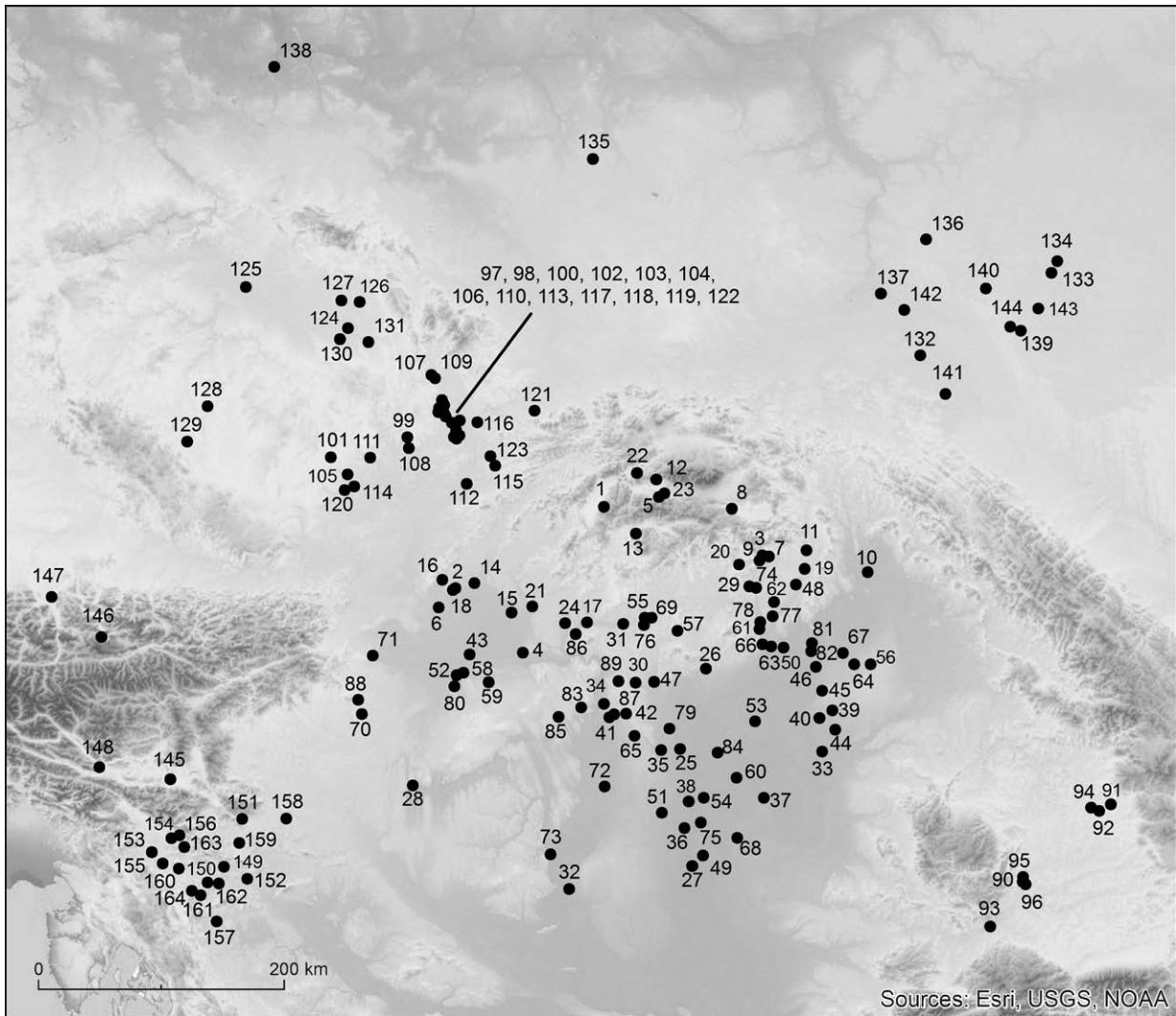
Abb. 15. Verbreitung der hallstatt- bis LTA-zeitlichen Pfeilspitzen vom östlichen Typ mit innerer Tülle in Böhmen. Zu Nummerierung und Nachweisen siehe Fundliste 1. Karte: ArcCR 500 Version 3.3. Grafik T. Holbová.

diese unterscheiden sich aber stark von den Vekerzuger Pfeilspizentypen durch die kurze äußere Tülle und das sehr schlanke Blatt mit widerhakenförmigen Flügeln (siehe dazu z. B. *Daragan 2019*, Taf. 1–3; 5; 8; 11; 12; 15; 17; 22; 24; 25; 27–30; 44; 49; 56). Außerhalb der Hauptverbreitung in der Vekerzug-Kultur erscheinen vergleichbare Pfeilspitzen der Variante II2 im mitteleuropäischen Fundmaterial vereinzelt, wobei gewisse Verdichtungen im Verbreitungsbild nur in Mähren und Ostslowenien zu erkennen sind. In westlicher Richtung reicht ihr Vorkommen anhand der Streufunde aus der Siedlung in Vysoké mýto-Bučkův kopec nicht über Böhmen hinaus, die ostslowenischen Exemplare aus Magdalenska gora (Bez. Grosuplje) und Vinkov vrh (Bez. Žužemberk) stellen die bislang südlichsten und die Pfeilspitzen aus Grab 7/59 von Łagiewniki (Bez. Sieradz/PL) da-

gegen die nördlichsten Fundpunkte der Verbreitung in Mitteleuropa dar.¹² Überraschend selten ist die Variante II2 in Gräbern der Ciurbrud-Kultur Siebenbürgens anzutreffen (*Baltes/Borangi/Fetcu 2017*, 72, Abb. 4: 3, 3a; *Boroffka 2002*, 234, Abb. 1: C36, C37; *Bukowski 1977b*, Taf. XI: 2; *Furman/Benediková/Šimková 2019*, Abb. 2: 27; 3: 13, 16, 20; *Gabrovec u. a. 2006*, Taf. 26: 17; *Hellmuth 2007*, Abb. 1: 2–5, 6, 54; *Horedt 1960*, 482, Abb. 1: 4; *Ilon 2017a*, 192, Abb. 8: 3–6, 11, 13; 2019, 255, Taf. I: 9, 13–15, 19, 22, 24; *Ktosińska 2013a*, 133, Abb. 1: 3–6; *Kozubová/Fojtík 2021*, 110, 111, Fundliste 2 Nr. 1, 6, 7, 13, 25, 26; *Stare 1964–1965*, Taf. 7: 23; *Tecco Hoala/Dular/Kocuvan 2004*, 129, 132, Taf. 26: 27; 36: 20; *Teržan 1998*, 529, Abb. 11, Taf. 5: 3, 15, 18; 11: 11; *Vulpe 1984*, 41, Abb. 8: 1).

Als weitere Sondergruppe sind auch die Pfeilspitzen der Variante II3 anzusprechen, die sich

¹² Noch weiter südlich kamen solche Pfeilspitzen aus Atenica (Bez. Moravica/SRB) und Pečka Banja (Bez. Peja/Kosovo) zutage (*Ljuština/Ninčić 2017*, 248, 249, Abb. 6: 2a, 6).



wieder auf das Bereich der Vekerzug-Kultur konzentrieren und als eine der Leitformen des Pfeilspitzenrepertoires dieser Kultur gelten (Kozubová 2009, 80, 97; weiter z. B. Benadik 1983, 20, Taf. II: 3; Csallány/Párducz 1944–1945, 101, 105, Taf. XXXIV: 6; XXXVI: 13; Čambal 2008, Abb. 2: 2; Gutay u. a. 2021, Abb. 15: 3; F. Kovács 2017, 27, Abb. 16; Kemenczei 1986, 122, Abb. 3: 5; 2009, 119, 158, 173, Taf. 16: 1; 126: 7; 171: 3, 9, 10, 12, 15, 17, 18; Kisfaludi 2004, 171, 172, Taf. XII: 10; XIV: 5; Kozubová 2013a, 36, 43, 63, 64, 88, 91, 101, 116, 130, Taf. 28: 4; 35: 6; 50: 5, 6; 71: 3; 73: 13; 80: 3, 6; 90: 3–5, 9, 14, 15; 102: 10, 11; Laczus/Párducz 1969, 217, Taf. LIII: 4; Párducz 1966, 69, Taf. LII: 1–3; Tóth 2018, 100, Abb. 2: 3, 9). Der Variante II3 formal vergleichbare Pfeilspitzen sind zwar auch aus osteuropäischen Befunden bekannt, zwischen den Exemplaren aus beiden Regionen bestehen aber klare typologische Unterschiede. Im Gegensatz zu den typologisch wenig variablen Pfeilspitzen der Variante II3 in der Vekerzug-Kultur besitzen die meisten osteuropäischen Exemplare, die eine recht

heterogene Typengruppe bilden, entweder ein Blatt in Form eines gleichschenkligen Dreiecks oder ein spitzbogenförmiges Blatt mit sehr breiter Basis (z. B. Daragan 2017, Abb. 1: 6–9; 2–4; 6: 6–16; 8: 8–15; 11: 16–21; 12: 1–106, 121–128; 14: 2–7; 17: 13–15; 28: 4, 6, 8–11; 29; 2019, Abb. 4: 1–6; 6: 10; 7: 15–17; 10: 25; 14: 6; 16: 4–6; 21: 1, 2; 22: 14; 24: 17, 18; 28: 14; 31: 13–15; 33; 34; 35: 1–12, 14–16, 18–21; 36; 46: 1–12; 49: 1–4; Kozubová 2009, 80, 97, 98; 2019b, 63; Polin 1987, Abb. 6: 7, 8, 24; 7: 13–20, 36; 9: 2–7, 14–17, 20, 21, 29; 10: 35–37, 39; 11: 2, 7, 8, 13; 13: 19, 21, 22, 39). Außerhalb des Gebietes der Vekerzug-Kultur sind in anderen Teilen Mitteleuropas die Exemplare der Variante II3 etwas zahlreicher als solche der Variante II2, obwohl die Verbreitung der beiden Varianten ein ähnliches Bild ergibt. Auffällig ist dabei zum einen eine Fundverdichtung der Variante II3 in Ostslowenien und zum anderen ihr sporadisches Auftreten in Siebenbürgen (Boroffka 2002, 234, Abb. 1: C19–C35; Bukowski 1977b, Taf. XI: 1; Chochorowski 1985a, Abb. 6: 23; Czigiány/Molnár 2020, 99, Taf. 9: 4;

Abb. 16. Verbreitung der hallstatt- bis LTA-zeitlichen Pfeilspitzen vom östlichen Typ mit innerer Tülle im Osten Mitteleuropas. Slowakei: 1 – Blatnica-Rovná; 2 – Boldog; 3 – Bôrka-Havrania skala; 4 – Chotín IA, Chotín IB; 5 – Demänovská Dolina-Demänovská Poludnica, Demänovská Dolina-Jaskyňa Dvere; 6 – Dunajská Lužná-Nové Košariská; 7 – Háj-Slaninová jaskyňa; 8 – Hrabušice-Pod Zelenou horou; 9 – Hrhov; 10 – Ižkovce-Predná hora II; 11 – Košice-Šebastovce; 12 – Liptovské Matiašovce-Jaskyňa Dúpnica; 13 – Lubietová-Vysoká; 14 – Majcichov-Hradište; 15 – Maňa; 16 – Pezinok-Slnečné údolie; 17 – Preseľany nad Ipľom; 18 – Senec-Štrková kolónia; 19 – Seňa-Pri lánoch; 20 – Silica-Jaskyňa Silická ľadnica; 21 – Tvrdošovce; 22 – Vyšný Kubín-Tupá skala; 23 – Závažná Poruba-Pod Končistým; 24 – Želiezovce. Hungary: 25 – Abony-Blaskó-dűlő; 26 – Aldebrő-Ilona-tábla; 27 – Algyő-Bartók Béla utca; 28 – Alsópáhok-Hévízdomb I; 29 – Alsótelekes-Dolinka; 30 – Aszód; 31 – Balassagyarmat-Káposztások; 32 – Bátmonostor-Szurdok; 33 – Berettyóújfalu-Nagy-Bócs-dűlő; 34 – Budapest-Békásmegyer-Északi városkapu, Budapest-Csepel-Szabadkikötő, Budapest-Csúcshegy-Harsánylejtő, Budapest-Fehérvári út 149–155, Budapest-Hajógyári-sziget, Budapest-Rákospalota-Mogyoród útja, Budapest-Rákoscaba-Péceli út, Budapest-Soroksár-Akácok-dűlő, Budapest-Soroksár-Haraszti út 42, Budapest-Rákospalota-Újmajor; 35 – Cegléd-Hordógyár; 36 – Csanytelek-Tömörkényi utca, Csanytelek-Újhalastó; 37 – Csárdaszállás-Hanzéltanya; 38 – Csépa-Compodhát; 39 – Debrecen-Újföld, Debrecen-Wolaffka telep; 40 – Ebes-Zsong völgy; 41 – Gyál; 42 – Gyömrő-Deák Ferenc utca; 43 – Győrszabadi; 44 – Hajdúbagos-Ürgés-legelő; 45 – Hajdúböszörmény-Juhász-tanya; 46 – Hajdúnánás-Tedej, Hajdúnánás-Verestenger-járás; 47 – Hatvan-Boldog; 48 – Hernádvécse-Nagyret; 49 – Hódmezővásárhely-Kishomok; 50 – Kesznyéten-Szérűskert; 51 – Kiskunfélegyháza; 52 – Koroncó-Bábot; 53 – Kunmadaras-Hajcsár utca; 54 – Kunszentmárton-Jaksor; 55 – Ludányhalászi; 56 – Máriapócs-Cziberés-hegy; 57 – Mátraszele; 58 – Ménfőcsanak-Széles-földek; 59 – Mezőrs-Alsó-tag; 60 – Mezőtúr; 61 – Miskolc; 62 – Monaj; 63 – Muhi-Kocsmadomb; 64 – Nagykálló-Ipari park; 65 – Nyáregyháza; 66 – Nyékládháza-Ónodi utca; 67 – Nyíregyháza-Hímes; 68 – Orosháza-Gyopáros; 69 – Piliny; 70 – Sé-Doberdó; 71 – Sopron-Krautacker; 72 – Szabadszállás-Józan; 73 – Szekszárd; 74 – Szendrő-Ördöggáti-Csengőbarlang; 75 – Szentes-Vekerzug; 76 – Szécsény-Benczurfalva; 77 – Szikszó-Hell Ring 1; 78 – Szirmabesenyő; 79 – Tápíószele-Szumrák; 80 – Tét; 81 – Tiszalök-Börtön, Tiszalök-Fészckalja, Tiszalök-Vásárhalm; 82 – Tiszavasvári-Csárdapart, Tiszavasvári-Dózsatelep, Tiszavasvári-Kapusz-lapos; 83 – Törökbálint-Tópark; 84 – Törökszentmiklós, Törökszentmiklós-Surján; 85 – Vál; 86 – Vámosmikola-Istvánmajor; 87 – Vecsés; 88 – Velem-Szent Vid-hegy; 89 – Veresegyház-Szent Imre utca. Rumänien (nur Siebenbürgen kartiert): 90 – Aiud-Gerepen, Aiud-Hellós; 91 – Batoș-Neue Halde; 92 – Băița; 93 – Blandiana-În Vii; 94 – Comlod; 95 – Gîmbas-Măguricea; 96 – Sancrii. Mähren: 97 – Bílovice-Lutotín, Zadní hony; 98 – Držovice-Díly odvrhoviční, Držovice-Košné trávníky (Horka); 99 – Habruvka-Býčí skála; 100 – Hrubčice-Ostrov; 101 – Jaroměřice nad Rokytinou; 102 – Kojetín-Babiny; 103 – Kostelec na Hané-Trněnka; 104 – Křenovice-Hradisko; 105 – Křepice-Hradisko; 106 – Měrovice nad Hanou-Babiny; 107 – Mohelnice-Mýto; 108 – Mokrá-Horákov, Horákovský hrad (neu Mordovny?); 109 – Moravičany-Doubravice, Kouřilka; 110 – Náměšť na Hané-Za hřbitovem; 111 – Oslavany-Náporky; 112 – Ostrožská Nová Ves-Padělky; 113 – Polkovice-Ostrov; 114 – Prosiměřice-U Kyjovic; 115 – Provodov-Ludkovice, Rýsov; 116 – Přerov-Kozlovice, Nad Lukami; 117 – Slatinice-Stráž; 118 – Smržice-Rybník (Horka), Smržice-Trávníky u ostrova; 119 – Stařechovice-Služín, Plachý; 120 – Suchohrdly-Starý zámek; 121 – Štramberk-Kotouč; 122 – Věrovany-Zadní celky; 123 – Zlín-Malenovice, Mezicestí Lutz. Böhmen: 124 – Dašice-Parcela 479/13; 125 – Kostelní Hlavno; 126 – Umgebung von Opočno; 127 – Plotiště nad Labem-Na Přímských; 128 – Rataje u Bechyně; 129 – Sedlec-V lomech; 130 – Topol-Na Skále; 131 – Vysoké Mýto-Bučkův kopec. Polen: 132 – Grodzisko Dolne; 133 – Gródek nad Bugiem; 134 – Hrebenne; 135 – Łagiewniki; 136 – Łęczycza; 137 – Obojna-Zaosie; 138 – Polanowice; 139 – Stary Machnów; 140 – Topornica; 141 – Trójcyzce; 142 – Ulanów-Zwolaki; 143 – Żulice; 144 – Żyła. Österreich: 145 – Gracarca am Klopeiner See; 146 – Hallstatt; 147 – Salzburg-Hellbrunnenberg; 148 – Villach-Warmbad. Slowenien: 149 – Boštanj-Klanc; 150 – Brezje pri Trebelnem; 151 – Brinjeva gora; 152 – Libna, Libna-Špiler, Libna-Volčanšek; 153 – Ljubljana-Grad; 154 – Lukovica-Kopa; 155 – Magdalenska gora-Preloge; 156 – Molnik pri Ljubljani; 157 – Podzemelj; 158 – Ptuj-Rabeljča vas; 159 – Rifnik; 160 – Stična; 161 – Straža nad Osrečjem; 162 – Šmarjeta; 163 – Vače, Vače-Klenik; 164 – Vinkov vrh. Grafik T. Holbová. Zusammengestellt von A. Kozubová.

Furman/Benediková/Šimková 2019, Abb. 2: 20; 3: 3, 12, 14, 15; *Gabrovec u. a.* 2006, Taf. 26: 17; *Guštin* 1974, Taf. 3: 4; 1976, Taf. 41: 4; *Hellmuth* 2007, Abb. 1: 1, 5; *Hoređt* 1960, 482, Abb. 1: 3, 5; *Ilon* 2017a, 192, Abb. 8: 12; 2019, 255, Taf. I: 8, 18, 20, 23; *Kemenczei* 2008–2010, 111, Abb. 7: 11, 13; *Kozubová/Fojtik* 2021, 110, 111, Fundliste 2 Nr. 4, 10, 24, 27; *Kromer* 1959a, Taf. 43: 2; *Miroššayová* 2004, 359, Abb. 5: 1; *Molnár* 2013, Abb. 8: 9; *Stare* 1964–1965, Taf. 7: 15, 18, 20, 25, 26; *Stare* 1973, Taf. 11: 8, 14; *Tecco Hvala/Dular/Kocwoan* 2004, 129, Taf. 26: 27; *Teržan* 1998, Abb. 11, Taf. 11: 13, 19; *Vasiliev* 1976, 54, Taf. XXIII: 2; *Vulpe* 1984, 41, Abb. 8: 1).

Die Varianten II2 und II3 weisen in der Vekerzug-Kultur sowie im restlichen Mitteleuropa nicht nur eine ähnliche Verbreitung, sondern auch eine ähnliche Datierung auf. Die feinchronologische Einord-

nung bei vielen Stücken aus der Vekerzug-Kultur gestaltet sich aufgrund der weniger aussagekräftigen Befunde relativ schwierig, wobei diese eine weite Datierungsspanne zeigen, die mindestens in das ganze 6. Jh. und die erste Hälfte des 5. Jhs. v. Chr. fällt. Der chronologische Schwerpunkt der beiden Varianten scheint dabei in der zweiten Hälfte des 6. Jhs. v. Chr. zu liegen, einige HD3- bzw. noch LTA-zeitliche Exemplare wie beispielsweise aus Brandgrab 40/53 von Chotín IA (*Kozubová* 2013a, 20, Taf. 11: 17–37), Körpergrab 114 von Szentes-Vekerzug (*Párducz* 1955, 3, 4, Taf. IV: 1–4) oder Brandgrab 38 von Tiszavasvári-Dózsatelep (Kom. Szabolcs-Szatmár-Bereg/HU; *Kemenczei* 2009, 150, Taf. 107: 1–15) nehmen jedoch eine Spätstellung ein (*Kozubová* 2009, 78, 80; 2013b, 91, 413). Eine Frühstellung, also die Datierung in die Stufe HD1,

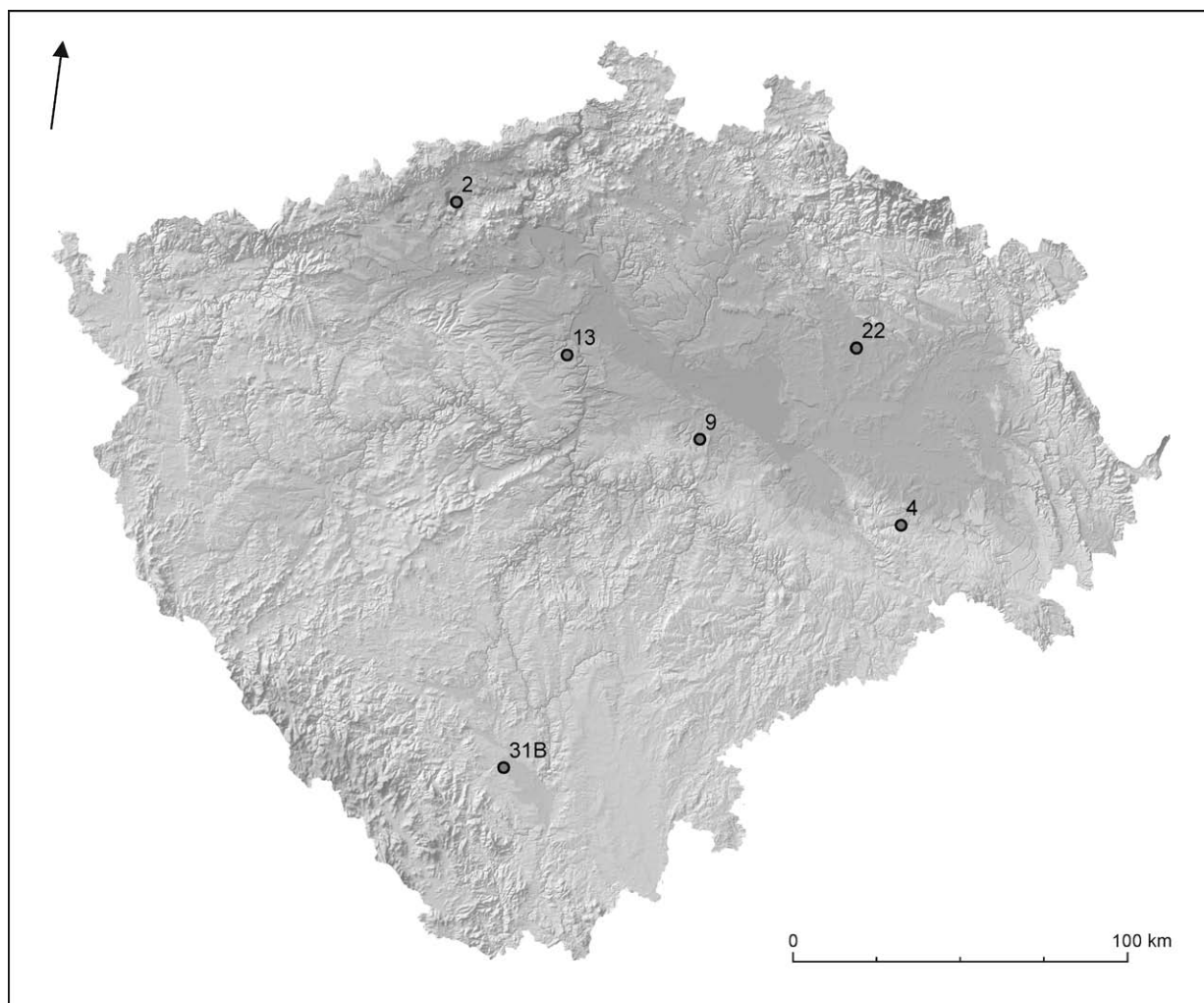


Abb. 17. Verbreitung der schlangenförmigen Schläfenringe in Böhmen. Zu Nummerierung und Nachweisen siehe Fundliste 1. Karte: ArcCR 500 Version 3.3. Grafik T. Holbová.

ergibt sich dagegen bei einigen gut datierbaren Vekerzuger Fundkomplexen, wie beispielsweise aus Cegléd-Hordógyár/Körpergrab, Csanytelek-Újhalastó/Grab 191, Mátraszele/Körpergrab oder Szentes-Vekerzug/Körpergrab 8 (s. o.). In vielen Gräbern der Vekerzug-Kultur wird zudem das gemeinsame Vorkommen der Varianten II2 und II3 beobachtet (Kozubová 2009, 90).

Die Pfeilspitzen mit innerer Tülle machen mit zehn Stück nur etwa ein Drittel aller in Böhmen gefundenen Pfeilspitzen vom östlichen Typ aus. Deutlich überwiegen die dreiflügeligen Exemplare (acht Stück) und von ihnen vor allem diejenigen der Variante I3 (vier Stück). Der Großteil der Pfeilspitzenfunde konzentriert sich in Ostböhmen (Abb. 15). Da in der Vekerzug-Kultur fast alle Varianten lange Laufzeiten von HD1 bis LTA besitzen und zudem bis auf einen sicheren Siedlungsfund aus Sedlec-V

lomech alle Pfeilspitzen mit innerer Tülle im Arbeitsgebiet Einzel- bzw. Streufunde sind, können die böhmischen Stücke innerhalb der Stufe HD kaum genauer datiert und chronologisch daher nur grob in HD, evtl. noch in LTA eingeordnet werden.¹³ Außerhalb des Hauptvorkommens in der Vekerzug-Kultur liegen die gleichen Pfeilspitzenvarianten auch in anderen Teilen Mitteleuropas vor, ihre auffälligste Konzentration ist neben Mähren ferner in Ostslowenien, weniger auch in Siebenbürgen und Transdanubien zu erkennen (Abb. 16). In diesem Zusammenhang ist zu erwähnen, dass im polnischen Schlesien Pfeilspitzen mit innerer Tülle bislang vollkommen fehlen und im restlichen Polen nur kleine Serie von Vekerzuger Pfeilspitzen vor allem aus der Tarnobrzeg Lausitzer Kultur stammt (Abb. 16; siehe dazu Kozubová/Fojtík 2021, 85). Zu beachten ist weiterhin, dass in Ostslowenien und

¹³ Eine Ausnahme stellt die späthallstattzeitliche Variante II dar.

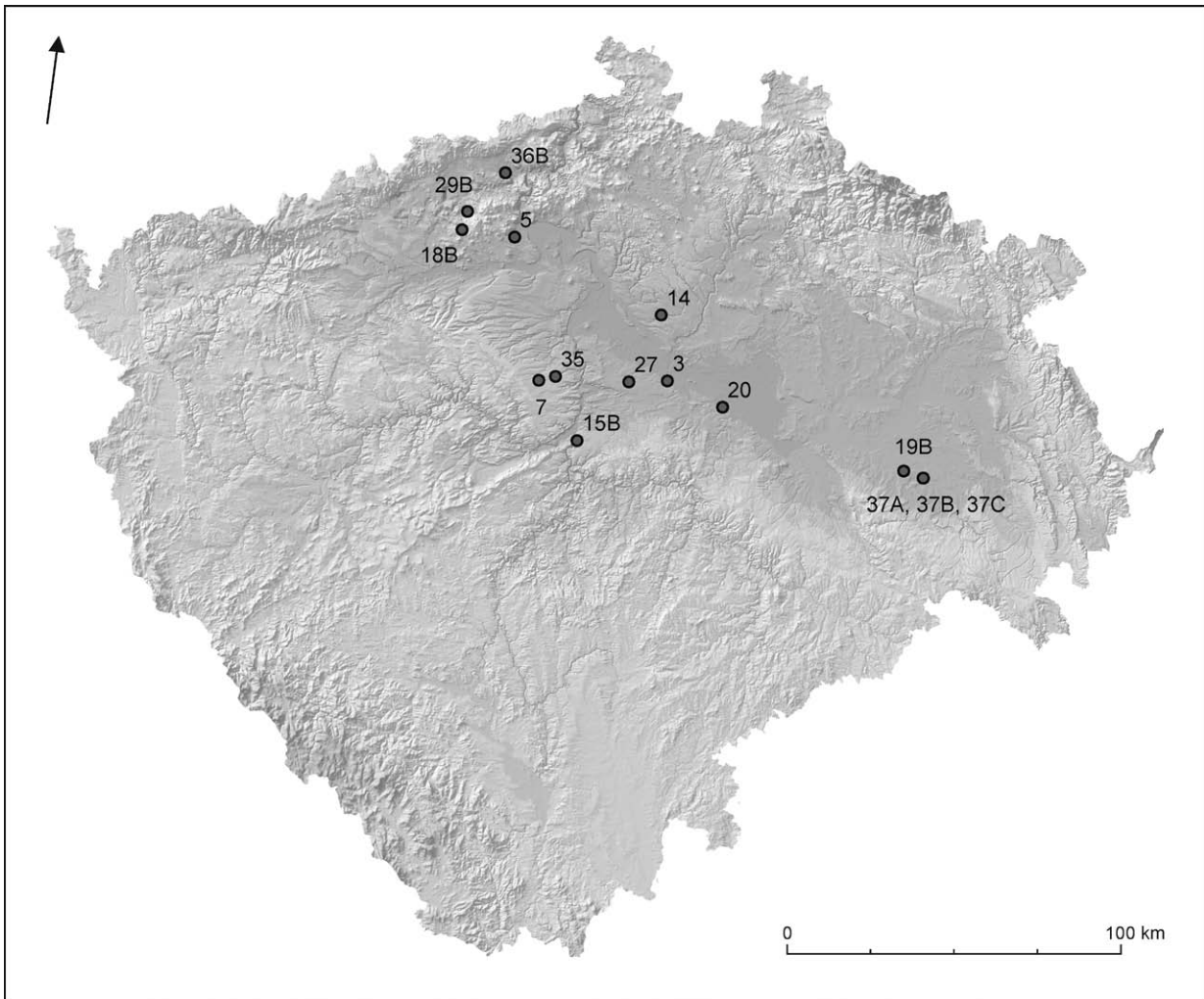


Abb. 18. Verbreitung der hallstatt- bis frühlatènezeitlichen Kaurischnecken der Arten *Cypraea annulus* und *Cypraea moneta* in Böhmen. Zu Nummerierung und Nachweisen siehe Fundliste 1. Karte: ArcČR 500 Version 3.3. Grafik T. Holbová.

Siebenbürgen solche Pfeilspitzen sogar in ganzen Sätzen bevorzugt oder ausschließlich in Gräbern vorkommen, in Transdanubien ist hingegen ihre Zusammenhang mit Siedlungskontexten ersichtlich (Kozubová/Fojtík 2021, 84, 85).

Die schlangenförmigen Schläfenringe vom Typ I scheinen sich im Arbeitsgebiet auf die nördliche Hälfte Böhmens zu beschränken (Abb. 17: 2, 9, 22, 31). Bis auf das HD2–LTA-zeitliche Exemplar aus Chotýš-Za chotýšskými humny sind alle Fundstücke vom Typ I aus Böhmen nur grob in HD, evtl. noch in LTA zu datieren. Bei den Funden von Kaurischnecken, die im Arbeitsgebiet meist aus den späthallstatt- bis frühlatènezeitlichen Fundkontexten vorliegen, sind ihre Häufungen vor allem in Nordwest- und Zentralböhmen zu beobachten, Südböhmen bleibt bislang dagegen fundleer (Abb. 18).

Die Vekerzug-Drehscheibenkeramik liegt in Böhmen neben dem Kegelhalsgefäß aus Mikulovice-Pod Kostelem zuverlässig noch aus zwei weiteren Fundorten vor: Ein nach HD1–D2 zu datierendes, unvollständig erhaltenes Krüglehen vom Typ I nach A. Kozubová (2013b, 165, Abb. 64) wurde in der Grabenfüllung auf der Höhengsiedlung von Minice u Kralup nad Vltavou-V Rusavkách (Bez. Mělník; Abb. 14: 10; Fundliste 1 Nr. 21B) gefunden, das zweite Krüglehen stammt aus Dobřejovice (unpubliziert).¹⁴ Die scheibengedrehten Krüglehen mit hochgezogenem bandförmigem Henkel, nach außen gebogenem Rand, doppelkonischem (Typ I) oder S-profilierem Körper (Typ II) und einfachem oder abgesetztem Standboden bilden zweifellos eine der Leitformen im Sachgut der Vekerzug-Kultur und zeichnen sich hinsichtlich ihrer Gestaltung

¹⁴ Die Zugehörigkeit einer Wandscherbe aus Praha-Křelice (Bez. Hlavní město Praha) zur Vekerzuger Drehscheibenkeramik ist fraglich (Trefný 2017, 244, Abb. 2: 2).

und Proportionen durch eine starke Variabilität aus.¹⁵ Zeitlich umfasst ihr Vorkommen die ganze Stufe HD bis darauffolgende Stufe LTA (*Kemenczei* 2009, 104; *Kozubová* 2013b, 164–167, Abb. 64; *Kozubová/Fojtík* 2020, 176, 180; *Teleagal/Zirra* 2003, 65, 73). Besonders häufig ist diese Gefäßform auf den Gräberfeldern von Chotín (IA und IB) mit 57 Stück, Orosháza-Gyopáros (Kom. Békés/HU), Tápíószele-Szumrák (Kom. Pest/HU) mit mindestens 120 Stück, Tiszavasvári (Csárdapart und Dózsa telep) und Szentes-Vekerzug vertreten (siehe dazu *Csallány/Párducz* 1944–1945; *Juhász* 1976; *Kemenczei* 2009; *Kozubová* 2013a; *Párducz* 1952; 1954; 1955; 1966), wo auch das Exemplar aus Minice u Kralup nad Vltavou seine besten Vergleichsstücke unter den Krüglechen mit breitem doppelkonischem Körper mit gerundeter Bauchung findet (z. B. *Kemenczei* 2009, Taf. 105: 18; 108: 24; 109: 11, 14; 111: 1; 114: 5; 117: 16; 119: 7, 16; 121: 4, 11, 13, 25; 124: 9, 23; *Kozubová* 2013a, Taf. 4: 8; 5: 1, 32; 8: 7; 21: 18; 29: 9; 49: 1; 50: 3; 54: 17; 98: 19, 33; 114: 3).

Außerhalb der Hauptverbreitung der Vekerzug-Drehscheibenkeramik in Ostungarn und der Südslowakei sind in Mitteleuropa noch zwei weitere Fundkonzentrationen dieser Keramik zu erkennen, die eine in Nordwestungarn und die andere in Südostpolen (*Kozubová/Fojtík* 2021, Abb. 19). Aus der letztgenannten Region ist bislang die größte Serie und zugleich das größte Formenspektrum der Vekerzug-Drehscheibenware meist aus Siedlungsobjekten und gelegentlich aus Gräbern der Tarnobrzeg Lausitzer Kultur und der Pommerischen Kultur bekannt, die mit einer weiteren, späthallstattzeitlichen Serie von scheibengedrehten Gefäßen aus der Siedlung von Inzersdorf-Walpersdorf in Niederösterreich vergleichbar ist (*Czigány/Molnár* 2020, Taf. 9: 5–9; *Czopek* 1993; 2012, Abb. 4, Tabelle 1; *Kemenczei* 2008–2010, 105, 108, Abb. 2: 1; 5: 7–12; 6: 4; 7: 12; 8: 1–3; 9: 5, 6; *Molnár* 2013, Abb. 8: 10–11; *Ramsl* 1998, 27, 49, Abb. 33, Taf. 58: 360–368; 59: 369–372; 62: 409; 72: 547; *Schwellnus* 2009, 247, 248). In westlicher, südlicher und östlicher Richtung liegt die Vekerzug-Drehscheibenkeramik dagegen nur vereinzelt noch aus Fundorten in Mähren, Nordserbien und Transkarpatien vor (*Kemenczei* 2009, 120, Taf. 17: 4; *Kobal* 2014; *Kozubová/Fojtík* 2020, 172, Taf. I: 2).

Das auf den ersten Blick auffälligste Objekt unter den Funden der ersten Provenienzgruppe ist ein Knochengegenstand in Form von Eberhauer, das im HD2–D3-zeitlichen Siedlungsobjekt 1889 von Mikulovice-V Loučkách, parcela 241/6 (Bez. Pardubice) gefunden wurde (Abb. 14: 11; Fundliste 1 Nr. 19A). Zwar wurde der Fund bereits in der

Fachliteratur ausführlich behandelt (*Frolík/Sedláček* 2015), an dieser Stelle soll aber darauf hingewiesen werden, dass die stilisierte Raubvogelkopfdarstellung in Kombination mit Pseudoperlschnurmotiv an einem der Enden des Gegenstandes ihre besten Entsprechungen nicht im osteuropäischen Steppen- und Waldsteppengebiet, sondern unter den Funden der Vekerzug-Kultur aufweist (Abb. 19). Vergleichbares Verzierungsmotiv kommt in der Vekerzug-Kultur auf den aus Knochen bzw. Geweih hergestellten Griffauflagen einiger Streit- sowie Arbeitsmesser vor, wobei solche Objekte nur dem Sachgut dieser Kultur eigen sind und ihre Hauptverbreitung in Ostungarn und der Südwestslowakei besitzen (*Kozubová* 2020, 58). Das Fundstück aus Mikulovice ist bisher das einzige seiner Art außerhalb des Bereiches der Vekerzug-Kultur.

Mit Ausnahme von Kaurischnecken scheinen die Funde der Vekerzug-Kultur im Arbeitsgebiet zahlreicher in der Platěnice-Gruppe Ostböhmens als in der Bylany-Kultur Zentral- und Nordwestböhmens vertreten zu sein (Abb. 13: 2, 3, 5–7, 9, 12, 14, 15, 18–22, 24, 26, 27, 29–31, 34–37, 29). Die Funde der Vekerzug-Kultur sind weiter im ganzen osthallstattzeitlichen Raum, auf dem Zentral- und Ostbalkan sowie in Südostpolen zu finden, wobei im Westen gerade Böhmen den äußersten Ausläufer innerhalb des Verbreitungsgebietes dieser Funde bildet. Im Osthallstatttraum lassen sich gewisse Unterschiede im Auftreten der Vekerzuger Funde in einzelnen Kulturgruppen erkennen, die sich sowohl in ihrer Häufigkeit als auch in Befundtypen zeigen. Dabei nimmt Mähren aufgrund der Häufigkeit und Typenvariabilität dieser Funde eine Sonderstellung ein, wobei dort sich die Funde eindeutig in Mittelmähren auf Fundorten der Platěnice-Gruppe und späthallstattzeitlichen Postplatěnice-Besiedlung konzentrieren (*Kozubová/Golec* 2020, Abb. 1). Die erste Provenienzgruppe ist in Mähren durch Waffen (Pfeilspitzen, Streitäxte vom Typ I nach A. Kozubová), Schmuck-/Trachtelemente (schlangenförmige Schläfenringe der Typen I und II, rundovale Schläfenringe vom Typ II nach A. Kozubová, Kaurischnecken), Drehscheibenkeramik, Tonstempel vom Vekerzuger Typ und Spinnwirtel vertreten (siehe dazu *Kozubová/Fojtík* 2021, 84–95). Eine mit Mähren vergleichbare typologische Vielfältigkeit der Vekerzuger Funde wird in Transdanubien beobachtet, wo diese Objekte zum einen meist in Siedlungskontexten, als Einzelfunde oder gelegentlich als Grabfunde gefunden wurden und zum anderen sich in der Umgebung von Sopron und Győr sowie im Plattenseegebiet konzentrieren. Unter den einzelnen

¹⁵ Der Typ I zeichnet sich durch die unterschiedlich gestaltete Bauchung aus, dass gerundet, spitz zulaufend oder kantig kann sein (*Kozubová/Fojtík* 2020, 179, Abb. 4: 1–7).

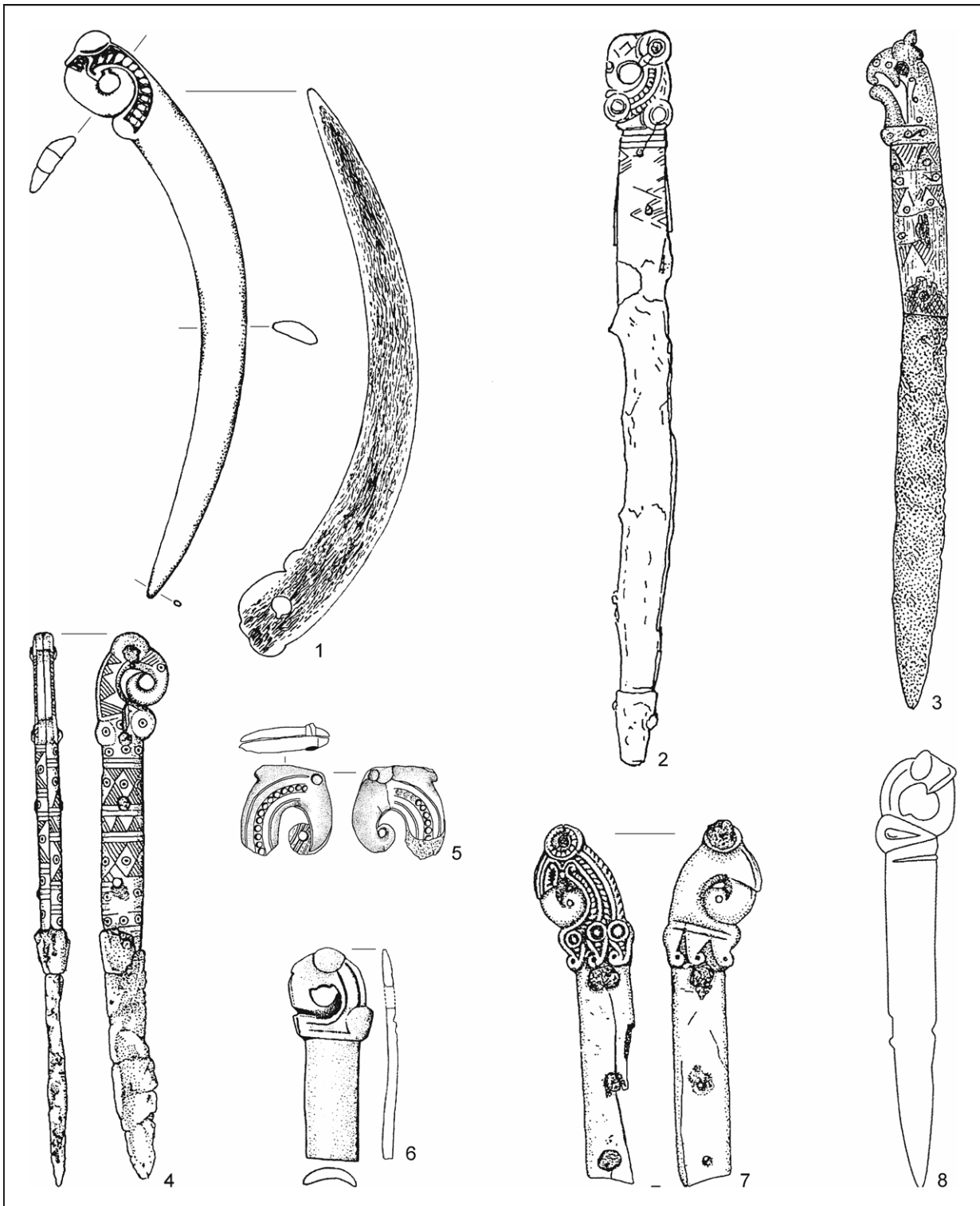


Abb. 19. Hallstatt- bis frühlatènezeitliche Objekte mit zoomorpher Verzierung aus Böhmen (1) und aus einigen Fundstellen der Vekerzug-Kultur (2–8). 1 – Mikulovice-V Loučkách, parcela 241/6 (Bez. Pardubice), Siedlungsobjekt 1889 (nach *Frolík/Sedláček 2015*, Abb. 8); 2 – Szentcs-Vekerzug (Kom. Csongrád-Csanád/HU), Brandgrab 120 (nach *Kemenczei 2009*, Taf. 77: 1); 3 – Csárdaszállás-Hanzélitanya (Kom. Békés/HU), Körpergrab 17 (nach *Kemenczei 2009*, Taf. 16: 10); 4 – Veľký Grob (Bez. Galanta/SK), Siedlungsobjekt 2/82 (nach *Kemenczei 2009*, Taf. 185: 11); 5 – Chotín IA (Bez. Komárno/SK), Körpergrab 13/52 (nach *Kozubová 2013a*, Taf. 38: 14, 14a); 6 – Mužla-Čenkov (Bez. Nové Zámky/SK), Siedlungsobjekt 823 (nach *Kuzma 2011*, Abb. 10: 2, 6); 7 – Nyíregyháza-Mandabokor (Kom. Szabolcs-Szatmár-Bereg/HU), Siedlungsobjekt 446 (nach *Kemenczei 2009*, Taf. 54: 6, 7); 8 – Szurdokpüspöki (Kom. Nógrád/HU), Lesefund (nach *Tankó 2015*, Abb. 3: 1). Verschiedene Maßstäbe.

Fundkategorien sind dort Waffen (Pfeilspitzen, Köcherbeschläge, Streitäxte), Pferdegeschirr (Trensen), Schmuck (schlangenförmige Schläfenringe der Typen I und II, Kaurischnecken), Drehscheibenkeramik, Tonstempel und sogar Spiegel vertreten (z. B. *Czigány/Molnár 2020*, Taf. 9: 2–9; *Horváth 2015*, Abb. 5: 19, 21–23; 6: 27, 28, 41, 42; *Ilon 2017a*, Abb. 8: 1–15, 18–20; *Jáky 2017*, Taf. III: 3; *Jerem 1981a*, Taf. 1: 10; 3: 5, 11, 13; *1981b*, Abb. 7: 5, 11–15; *Kemenczei 2008–2010*; *Soós 2020*, Abb. 3: 1). Am wenigsten zahlreich und variabel sind die Funde der Vekerzug-Kultur in Niederösterreich, Burgenland und Kärnten, wo neben der Drehscheibenware aus Inzersdorf-Walpersdorf (s. o.) noch drei eiserne Trensen vom Typ Szentes-Vekerzug und wenige Pfeilspitzen vorkamen (*Gleirscher 2003*, Abb. 1; *Teržan 1998*, 531, Abb. 11, Taf. 5: 15–23; *Werner 1988*, 19, 23, Taf. 8: 47; 13: 81). Im HD3-zeitlichen Grab I von Führholz (Bez. Völkermarkt) wurde ein Tonstempel gefunden, der dem Vekerzuger Typ zuweisbar ist (*Teržan 1998*, 531, 532, Taf. 12: 7). Auch im Westen Österreichs (nur aus dem Salzkammergut) liegen die Vekerzuger Funde recht sporadisch vor (*Kromer 1959b*, Taf. 6: 3; 231: 1; 249: 9; *Stöllner 2002*, Abb. 54: 9). Etwas andere Situation wie in Böhmen, Mähren, Transdanubien und Österreich ist in Slowenien zu beobachten, wo das Gros der Vekerzuger Funde in reichen Grabinventaren der Dolenjsko-Gruppe anzutreffen ist und das Fundrepertoire nur auf Waffen (Pfeilspitzen, Streitäxte) und Pferdegeschirr (Trensen) beschränkt bleibt (z. B. *Gabrovec u. a. 2006*, Taf. 26: 17; 57: 16; *Guštin 1976*, Taf. 60: 5, 10; *Hellmuth 2007*, Abb. 1: 1–21, 33, 34, 37, 53, 54; *Kromer 1959a*, Taf. 17: 5; 43: 2; *Tecco Hvala/Dular/Kocuvan 2004*, Taf. 26: 26, 27; 27: 44; 36: 26; 67: 6–9; *Teržan 1998*, 527–530). Solche Funde waren dort zudem mit einheimischen Beigabentypen vergesellschaftet und dienten wohl zur Visualisierung sozialer Identitäten der örtlichen Eliten.

Die zweite Provenienzgruppe

Die Gegenstände aus der nicht zahlreichen zweiten Provenienzgruppe besitzen zwar ihre Vorbilder im Formenrepertoire der Vekerzug-Kultur, in Böhmen treten sie aber schon in einer modifizierten, wohl lokalen Form auf (Abb. 14: 12). Dieser Gruppe lassen sich im Arbeitsgebiet nur die schlangenförmigen Schläfenringe vom Typ III nach A. Kozubová zuweisen, deren Vorkommen dort bisher nur auf Zentral- und Ostböhmen eingegrenzt ist (Abb. 17: 4, 13). Auch aus dem restlichen Osthallstattraum liegen nur wenige Funde dieser Provenienzgruppe vor, wobei diese nur im benachbarten Mähren und ferner in Transdanubien und Ostslowenien anzutreffen sind. In Mähren sind in diese Gruppe neben den oben genannten Schläfenringen vom

Typ III (Abb. 8: 76, 78, 82) noch einige Tonstempel- und Gefäßfunde zuzurechnen (ausführlicher dazu siehe *Kozubová/Fojtík 2021*, 95, 96). In Transdanubien gehören dieser Provenienzgruppe neben den Schläfenringen vom Typ III (Abb. 8: 48, 49, 64) auch die einzigartigen Tonstempel aus Báticasék (Kom. Tolna), Sé-Doberdó und Velem-Szent Vid-hegy (Kom. Vas) an (*Kemenczei 2008–2010*, 102, 108, 114, Abb. 1: 1; 6: 1; 9: 4). In Ostslowenien entwickelte sich aus den Vekerzuger Trensen mit Knebeln mit seitlichen Ösen (Varianten I1, I2, I3 nach A. Kozubová) eine lokale, schon frühlatènezeitliche Variante dieser Trensen (Variante A2 nach W. M. Werner; vgl. *Kozubová 2013b*, 113–115, Abb. 36; *Werner 1988*, 12–14, 16, 17, Abb. 4, Taf. 5: 24–26).

Die dritte Provenienzgruppe

Die dritte Provenienzgruppe zeichnet sich durch solche, im Arbeitsgebiet nur einzeln vorkommenden Gegenstände aus, deren Verbreitungsschwerpunkte sich allgemein im osteuropäischen Steppen- und Waldsteppengebiet bzw. in Regionen noch weiter östlich davon befinden (Abb. 14: 13–16). Dieser Gruppe sind in Böhmen eine Pfeilspitze aus Doly-Rabouň, zwei Streitäxte aus Skalice und Kaliště-Bezděkov und ein Knochengegenstand unbekannter Funktion aus Libkovice zuweisbar.

Bislang in seiner Art in Böhmen einzigartig ist eine dreiflügelige Bronzepfeilspitze mit sehr kurzer äußerer Tülle und sehr schlankem dreieckigem Blatt aus Doly-Rabouň, Flur Žižkovy šance (Bez. Chrudim; Abb. 14: 15; Fundliste 1 Nr. 8), die im Osten ihre guten Entsprechungen unter den jüngeren Typen von Pfeilspitzen mit äußerer Tülle findet, und zwar in Exemplaren der Gruppe II/Typ 4/Variante 8 nach A. I. Meljukova (1964, Abb. 1). In der Steppen- und Waldsteppenzone Osteuropas waren vergleichbare Pfeilspitzen vom Ende des 6. Jhs. bis zu Beginn des 5. Jhs. v. Chr. durchaus geläufig (z. B. *Daragan 2017*, 89, 96–98, Abb. 24: 33, 34; 26: 19–21; 2019, Abb. 3; 5; 17; 18: 1–14; 20: 1–11; 25: 1–10, 13–15; 29; 37: 23; *Meljukova 1964*, 23, 24, Abb. 1, Taf. 8: A7, D1, I2, K5, M8, Z2; *Polin 1987*, 31, 32). Im östlichen Mitteleuropa liegen die jüngeren Typen von dreiflügeligen Pfeilspitzen mit äußerer Tülle noch aus Habrůvka-Býčí skála (Bez. Blansko/CZ) und Kłodnica (Bez. Opole Lubelskie/PL) vor (*Klápa 2017*, 77, Abb. 12: 2–4; *Kłosińska 2013a*, 356, Abb. 4).

Nach Form zeigt die einschneidige eiserne Streitaxt mit symmetrisch angebrachtem Schaftloch, sehr breiter, fächerförmig verbreiteter Schneide und leicht gerundetem und verdicktem, hammerartigem Kopf aus dem HD2–D3-zeitlichen Grabhügel I (1) von Skalice-V Zadních Kozlovech (Bez. Tábor; Abb.

14: 14; Fundliste 1 Nr. 32) deutliche Parallelen zur Gruppe derjenigen Streitäxte, deren Kerngebiet sich im ukrainischen Waldsteppengebiet einschließlich der Westpodolien-Gruppe Mitteldnisters befindet und die schwerpunktmäßig in die zweite Hälfte des 7. Jhs. und die erste Hälfte des 6. Jhs v. Chr. datiert sind (z. B. *Burghardt 2015*, 152, 154, Abb. 6: 3–9; *Meljukova 1964*, 66–68, Taf. 21: 9–16, 19–22; *Šelečan' 2012*, 5–7, 9, 10, Abb. 1: 2, 3, 3).¹⁶ In westlicher Richtung reicht ihr Vorkommen bis auf die Streitaxt aus Skalice nicht über die Woiwodschaft Großpolen hinaus (*Bukowski 1977b*, Taf. I: 1a, 1b; VI: 1, 2a, 2ab; X: 15; XIV: 4; XXII: 3a, 3a; *Sadowski 2012*, Abb. 1). Das Stück aus Skalice ähnelt stark vor allem einigen Streitäxten aus Fundplätzen der Westpodolien-Gruppe, wie z. B. aus *Вуків/Букив* (Bez. Drohobych), *Круглик/Круглик* (Bez. Černivcy) oder *Сатанів/Сатанів* (Bez. Chmel'nickyj; *Burghardt 2015*, Abb. 7: 6, 9; *Mogilov 2020*, Abb. 7: 25). An dieser Stelle sei darauf aufmerksam gemacht, dass sich diese osteuropäische Streitaxtform in formalen Aspekten deutlich von den typischen Vekerzuger Streitäxten des Typs I nach A. Kozubová unterscheidet (Abb. 3: 14; *Kozubová 2019b*, 72, 73, Abb. 6: 1–6; 9: 1, 1a, 6, 6a, 9, 9a).

Im HD3-zeitlichen Grabhügel 79 von Kaliště-Bezděkov, Flur Rudický les (Bez. Klatovy) wurde eine kleinere, bimetallische Streitaxt mit asymmetrisch angebrachtem und kugelig verdicktem Schaftloch und ohne Nackenansatz gefunden. Der bronzene Nacken endet im kleinen Kopf eines Raubtieres ohne Ohren und mit ovalen Augen und langem, zähnefletschendem Maul (Abb. 14: 16; Fundliste 1 Nr. 10). V. Šaldová führt einige Vergleichstücke aus der Ananino-Kultur an und bringt die Herkunft der Streitaxt von Kaliště daher mit dem unteren Kama-Gebiet und der mittleren Wolga-Region in Zusammenhang (*Šaldová 1971*, 157, 158, Abb. 3: 3, 4). Das Exemplar aus Kaliště besitzt aber unter den Streitäxten aus östlich von der Hallstattkultur liegenden Regionen keine direkten Parallelen und weist auch zahlreiche Unterschiede gegenüber den in der Literatur als Vergleiche genannten bronzene Streitäxten mit symmetrisch angebrachter Schafttülle, einem Vogelkopf am Tüllenende und Nacken in Form eines großen, realistisch gestalteten Wolfkopfs mit Ohren aus Fundstellen der Ananino-Kultur auf (*Šaldová 1971*, Abb. 3: 3, 4; *Vol'naja 2009*, Abb. 4: 1–3). Bei der Streitaxt aus Kaliště handelt es sich zwar zweifellos um einen östlichen Hiebwarentyp und auch der zähnefletschende Raubtierkopf findet seine gute Entsprechungen im Tierstil des sauromatischen Kulturraumes und der Ananino-Kultur (siehe z. B. *Očir-Gorjaeva 2005*; *Vasil'ev 2004*), eine Zuweisung

ihrer Herkunftsregion nach der Ananino-Kultur scheint jedoch eher fraglich.

Der Knochengegenstand mit der für den Osten typischen zoomorphen Verzierung aus Libkovice-Cihelna Kominika a Bermeisera (Bez. Most; Abb. 14: 13; Fundliste 1 Nr. 16A) ist heute leider nicht mehr auffindbar und zudem handelt es sich um einen Altfund ohne gesicherte Fundumstände. Für den zähnefletschenden Raubtierkopf finden sich aber gute Analogien besonders unter der Gruppe von Tierstilobjekten aus Fundkomplexen der zweiten Hälfte des 6. Jhs. und der ersten Hälfte des 5. Jhs. v. Chr. an der Unteren Wolga und im südlichen Uralvorland (vgl. *Očir-Gorjaeva 2005*, Abb. 4: 2, 5; 49: 1; 50: 1; 55: 1, 2; *Smirnov/Petrenko 1963*, Taf. 22: 3, 4, 11–13, 20).

Im mitteleuropäischen Kontext ist die dritte Provenienzgruppe nur mit wenigen Funden vertreten. Bis auf wenige Ausnahmen wie z. B. einen Knebel aus Knochen/Geweih aus Celldömölk-Sághegy (Kom. Vas/H; *Kemenczei 2008–2010*, 102, Abb. 3: 1) oder einen bronzene Riemenverteiler in Form des Vogelschnabels aus Grab 2 von Novo mesto-Malenškova gomila (Bez. Novo mesto/SLO; *Guštin/Teržan 1975*, 190, Taf. 3: 3) bleiben Objekte der dritten Provenienzgruppe im Hallstattraum weitgehend auf Mähren und Böhmen beschränkt. Hinsichtlich der Fundgattungen ist diese Gruppe in Mähren etwas vielfältiger als in Böhmen. In Mähren erscheinen solche Objekte entweder in identischer Form wie im Osten, wie beispielsweise jüngere Typen von dreiflügeligen Pfeilspitzen mit äußerer Tülle und ein HD3-zeitlicher hand-/pratzenförmiger bronzener Riemenschieber aus Habrůvka-Býčí skála (s. o.), drei eiserne HD2–D3-zeitliche Akinakes aus Mokrý-Horákov, Flur Horákovský hrad oder kleine metallische, als „vorvarki“ bezeichnende Gegenstände, oder in einer modifizierten Form schon als einheimische Produkte wie zoomorphe Knebel aus Knochen/Geweih (ausführlicher dazu siehe *Kozubová/Fojtík 2021*, 96–99 mit weiterer Literatur).

Die vierte Provenienzgruppe

Die vierte Provenienzgruppe bilden nur die älteren Typen von Pfeilspitzen mit äußerer Tülle (Abb. 14: 17–23). Die recht weite Hauptverbreitung dieser Pfeilspitzenform liegt in den früheisenzeitlichen, kulturell heterogenen Gruppierungen im Waldsteppengebiet Osteuropas (einschließlich des Mittleren Dnister und Mittleren Dnjepr sowie der Unteren Don und Unteren Wolga) und im Nordkaukasus. Es ist nicht auszuschließen, dass das Auftreten sol-

¹⁶ Im Waldsteppengebiet ist ein Weiterlaufen dieser Streitaxtform bis zum Ende des 6. Jhs. v. Chr. beobachtet (*Šelečan' 2012*, 7).

cher Pfeilspitzen im östlichen Mitteleuropa auch mit Aktivitäten der Westpodolien-Gruppe Mitteldnisters und/oder der Ciunbrud-Kultur Siebenbürgens verbunden war (vgl. dazu z. B. Hellmuth 2006, 137–154, Abb. 115; *Hellmuth Kramberger 2018*, 174; 2021, 172, 173, 175). Die älteren Pfeilspizentypen mit äußerer Tülle aus dem Arbeitsgebiet zeichnen sich durch einen recht heterogenen Typenbestand aus und umfassen zweiflügelige Exemplare der Gruppen I.A (Fundliste 1 Nr. 1, 15A, 39A) und I.Y (s. u.), dreiflügelige Exemplare der Gruppen II.B (s. u.) und II.C (s. u.) sowie dreikantige Exemplare der Gruppe III (Fundliste 1 Nr. 25, 28, 36A). Aufgrund des bruchstückhaften Erhaltungszustand sind zwei dreiflügelige Exemplare aus Lhota u Dolních Břežan, Flur Hradiště nad Závistí (Fundliste 1 Nr. 15A; *Drda/Rybová 2008*, Abb. 50: 3) und Lišice-Na Bílých, parcela 326/1 (Bez. Hradec Králové; Fundliste 1 Nr. 17) sowie eine zweiflügelige Pfeilspitze aus Skalička-Na Skále (Abb. 1: 2; Fundliste 1 Nr. 33) typologisch nicht näher bestimmbar. Angesichts der Häufigkeit von Pfeilspitzen mit äußerer Tülle in Befunden aus Mitteleuropa und nach ihren Verbreitungsschwerpunkten in östlich davon liegenden Regionen sind sie in zwei Gruppen einzuteilen. Die Pfeilspitzen der ersten Gruppe – wie diejenigen der Gruppen I.A, II.B und III – kommen in beiden Regionen recht häufig vor. Die Vertreter der zweiten Gruppe, nämlich die Pfeilspitzen der Gruppen I.Y und II.C, sind dagegen weder in Mittel- noch in Osteuropa allzu geläufig.

Zu den zweifellos besonderen Pfeilspitzenfunden in Böhmen gehören zwei Exemplare aus Radovesice u Bíliny (Bez. Teplice; Fundliste 1 Nr. 29A) und Vrbice u Hořoviček-Chmelnice (Bez. Rakovník; Abb. 14: 18; Fundliste 1 Nr. 38; *Bartík u. a. 2017*, Abb. 1: 57). In ihrer Blattgestaltung ähneln die beiden Stücke den selten vorkommenden Pfeilspitzen der Gruppe I.Y nach A. Hellmuth, die sich durch ein asymmetrisches, mandel- bis spitzbogenförmiges Blatt auszeichnen. Dabei ist eine der Flügelseiten bis zur bzw. meist über die Tüllenbasis hinaus verlängert und damit übernimmt sie die Funktion eines Widerhakens (*Hellmuth 2006*, 53, Abb. 27; 2010, 54, 55, Abb. 68). Die böhmischen Exemplare besitzen dagegen keine solche Art des Widerhakens und die längere Flügelseite reicht nicht bis zur Tüllenbasis.¹⁷ Obwohl sich die Hauptverbreitung der Pfeilspitzen der Gruppe I.Y im osteuropäischen Steppen- und Waldsteppengebiet befindet, wobei Fundpunkte hier vor allem am Mittleren Dnjepr konzentriert und westlich, östlich

und südlich davon weiträumig gestreut sind, zählen sie im Osten eher zu Ausnahmefunden mit einer Datierung schwerpunktmäßig in das letzte Viertel des 7. Jhs. und das beginnende 6. Jh. v. Chr. (z. B. *Daragan 2015*, 141, Abb. 11: 4; 2016, 65, 67, Abb. 3: 13; 4: 24; *Daragan/Didenko 2021*, 158, Abb. 3: 5–7; 17: 13; *Hellmuth 2010*, 54–57, Abb. 69; *P'jankov/Rjabkova/Zelenskij 2019*, 208, 209, Abb. 4: 3–10). Noch seltener als im Osten sind Pfeilspitzen der Gruppe I.Y mit oder ohne Widerhaken im östlichen Mitteleuropa vertreten. In westlicher und nördlicher Richtung reicht ihr Vorkommen dort nicht über Nordwestböhmen (Radovesice u Bíliny, Vrbice u Hořoviček; Abb. 21) und zwei wohl HD1-zeitliche Fundstücke aus Mărișelu-Coasta Domneștilor (Bez. Bistrița-Năsăud/RO; Abb. 2: 31; *Marinescu 1984*, 50, Abb. 9: 1b) und Murgęști (Bez. Mureș/RO; *Vulpe 1990*, 27, 98, 103, 104, Taf. 46: A4) gehören zu den südlichsten Vertretern dieser Pfeilspitzengruppe. Weitere Exemplare stammen aus Provodov-Ludkovice, wo eine mit den böhmischen Funden fast identische Pfeilspitze ohne Widerhaken als Streufund auf der Höhensiedlung gefunden wurde (*Novák 2017*, 191, Taf. 2: 7), ferner aus Smolenice-Molpír (*Hellmuth 2006*, 53, Taf. 2: 11–13), Dédestapolcsány-Verebce-tető und Dédestapolcsány-Verebce-bérc (beide Kom. Borsod-Abaúj-Zemplén/HU; *Tóth 2012*, 65, Taf. 9: 2; *V. Szabó/Czajlik/Reményi 2014*, 5, Abb. 8). Interessant scheint in diesem Zusammenhang auch die chronologische Stellung der böhmischen Stücke, die aus jüngeren Fundkomplexen stammen als ihre östlich davon vorkommenden Entsprechungen: Objekt 136 mit einer Pfeilspitze aus Radovesice u Bíliny ist späthallstattzeitlich, während die Pfeilspitze aus Vrbice u Hořoviček ins LTA2-zeitliche Brandgrab gelegt wurde (*Bartík u. a. 2017*, 41; *Waldhauser u. a. 1993*, 417).

Typologisch entsprechen drei Pfeilspitzen mit spitzbogenförmigem Blatt, dessen breiteste Stelle im unteren Teil am Übergang zur Tülle liegt, und mittellanger Tülle aus Karlovice-Čertova ruka (Bez. Semily; Fundliste 1 Nr. 11B), Měrunice-Strážník (Bez. Teplice; Fundliste 1 Nr. 18) und Okoř (Bez. Prahazápad; Abb. 14: 20; Fundliste 1 Nr. 23) der Gruppe II.B nach A. Hellmuth (2006, 68, Abb. 45).¹⁸ Beim Gros der Exemplare dieser Gruppe, einschließlich der böhmischen Fundstücke, ist der untere Abschluss der Flügel zur Tülle abgescragt, nur vereinzelt verläuft der untere Abschluss gerade zur Tülle (*Kozubová/Fojtik 2021*, 72, 73). Pfeilspitzen der Gruppe II.B gehören im Osten (hier mit mehreren Fundkonzentrationen

¹⁷ Eine weitere, noch unpublizierte zweiflügelige Pfeilspitze mit asymmetrischem Blatt wurde bei Prospektionen in Karlovice-Čertova ruka (Bez. Semily) gefunden. Bei diesem Stück mit Widerhaken handelt es sich aber um einen klassischen Vertreter der Gruppe I.Y. Für diese Information danken wir Jan Prostředník und Petr Šída.

¹⁸ Eine weitere, noch unpublizierte Pfeilspitze der Variante II.B.a wurde bei Prospektionen in Karlovice-Čertova ruka geborgen. Für diese Information danken wir Jan Prostředník und Petr Šída.

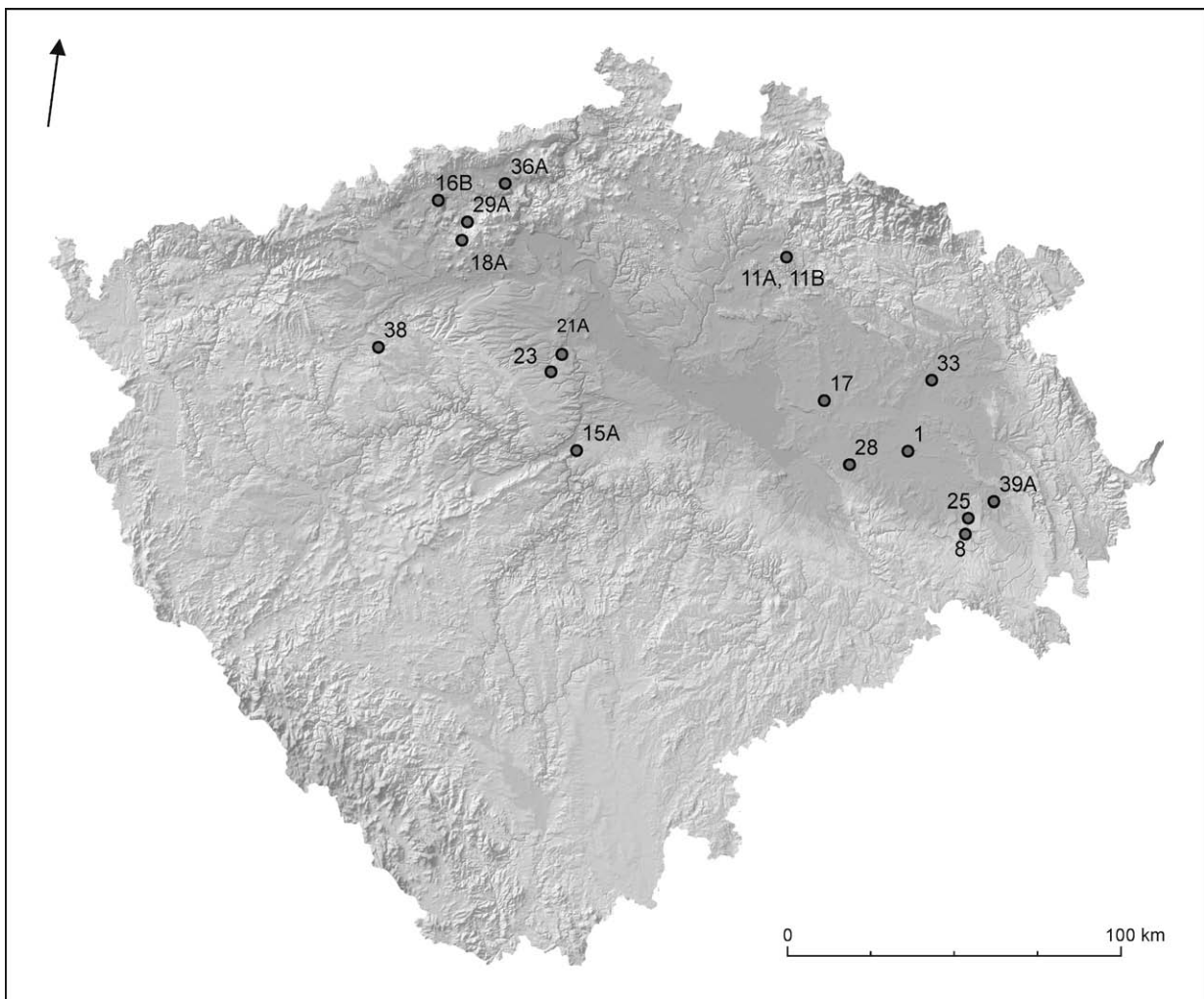
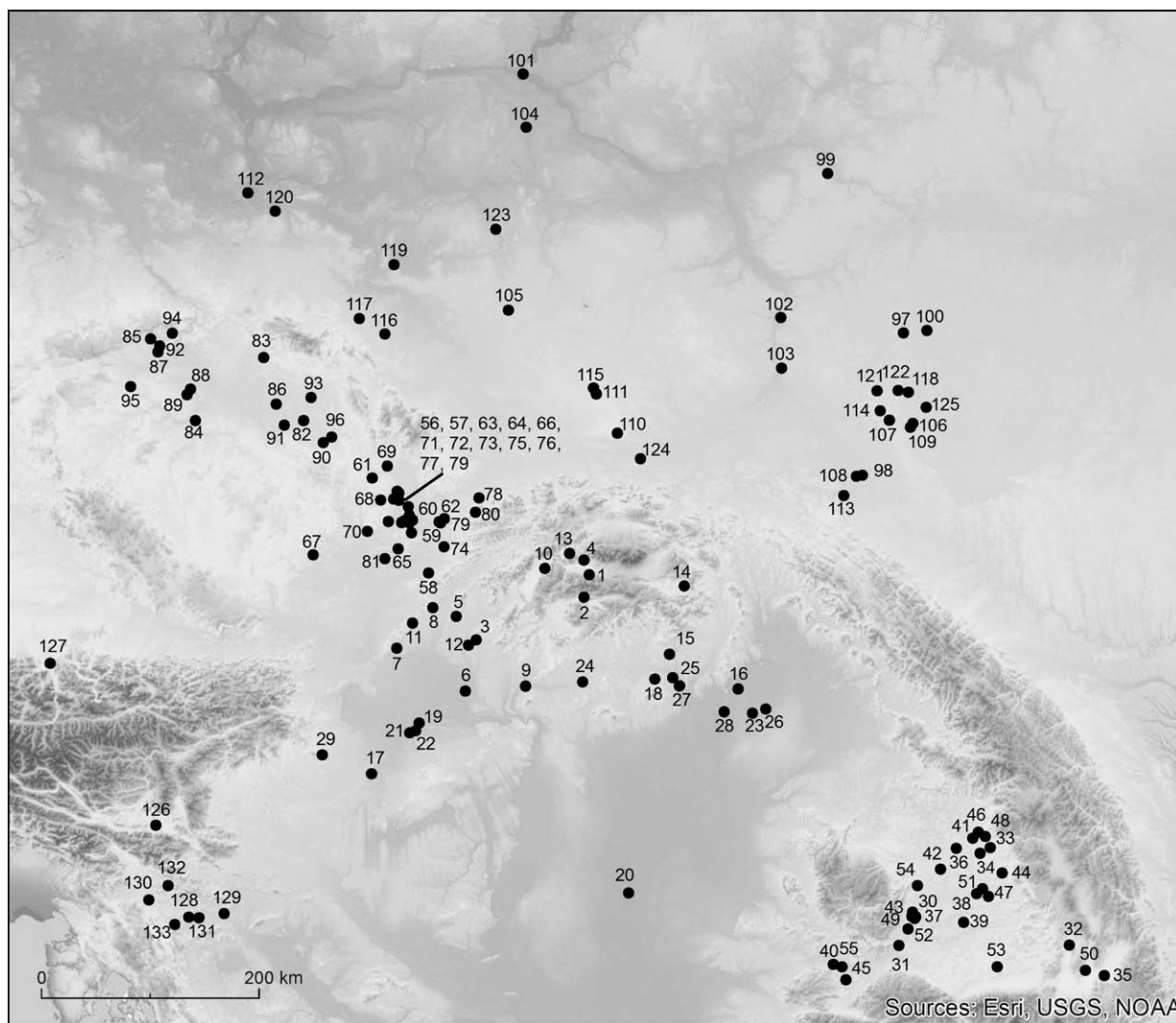


Abb. 20. Verbreitung der hallstatt- bis LTA-zeitlichen Pfeilspitzen vom östlichen Typ mit äußerer Tülle in Böhmen. Zu Nummerierung und Nachweisen siehe Fundliste 1. Karte: ArcCR 500 Version 3.3. Grafik T. Holbová.

vor allem am Mittleren Dnjepr, Mittleren Dnister, Unteren Wolgagebiet und im Nordwestkaukasus) zweifellos zu einem der beliebtesten frühskythenzeitlichen Pfeilspitzentypen (Abb. 2: 62, 63; *Hellmuth 2010*, 63–68, Abb. 80; 264; siehe dazu auch *Burghardt 2015*, 149, Tabelle 1; *Daragan 2015*, Abb. 10: 12, 22; 12: 7; 13: 11; 14: II3, II4; 15: 19, 20; 16: 1–3, 6; 17: 21–23, 29; 2016, Abb. 3: 29–31, 34; 6: 5–11, 15–17; *Meljukova 1964*, 19, Abb. 1; *Mogilov 2020*, Abb. 6: 97, 104, 105) und kommen relativ zahlreich auch in weiten Teilen Mitteleuropas vor, wo sich im Verbreitungsbild mehrere kleinere Schwerpunkte in Mähren, Südwestpolen, der Südwestslowakei, Slowenien und Siebenbürgen zeigen (Abb. 2: 6, 7). Im osthallstädtischen Milieu scheint ihr zeitliches Vorkommen in die Stufe HD1 zu fallen (z. B. *Bartík u. a. 2017*, 49, 51–53, 56, Abb. 3: 74; 4: 94, 106, 125, 133; 5: 159; *Bukowski 1977a*, 253, Abb. 6: a; *Chochorowski 1985a*, Abb. 3: 4, 5, 7, 13, 14, 17, 20, 27, 30; 4: 16, 28, 30, 31; 1998, Abb. 3: 13, 15, 24, 29, 30; *Čížmář u. a. 2019*, 196, Abb. 3: 11; *Fojtík/Novák/Popelka*

2020b, 202, Abb. 4: 3; *Hellmuth 2006*, 68–80, Abb. 49, Taf. 5: 1–24; 6: 1–19, 22–24; 7: 1–14; 2007, Abb. 1: 24, 51; *Klápa 2017*, Abb. 7: 22, 28, 33; *Kłosińska 2013a*, 356, Abb. 4; *Kozubová/Fojtík 2021*, 58, Abb. 3: 4; *Novák 2017*, Abb. 3: 2, 4, 6–8, 12; 2020a, Taf. II: Bo1, H15–H17, H22, H33, R1, Š1, Š7, Š9; 2020b, 92, Taf. 1: P51, P54, P61, P63, P68, P71, P72; *Teržan 1998*, Taf. 11: 2; *Vasiliev 1976*, 52, Taf. XIX: 1; *V. Szabó/Czajlik/Reményi 2014*, 5, Abb. 6: 8; *Vulpe 1984*, 40, 47, 59, 62, Abb. 3: 7, 11–13, 15, 16; 8: 1; 1990, 34, Taf. 44: B3, B5; 46: B23, B25). Im Süden bilden die Pfeilspitzen aus dem Brandgrab in Hügel 10 von Valea Stâinii (die Ferigile-Kultur) aus der zweiten Hälfte des 7. Jhs. v. Chr. den äußersten Ausläufer innerhalb des Verbreitungsgebietes der Gruppe II.B in Mittel- bzw. Südosteuropa (*Măndescu 2019*, 203, Abb. 4: 10, 12, 13, 17, 19).

Drei dreiflügelige Pfeilspitzen mit relativ schlankem hexagonalem Blatt und mittellanger Tülle aus Karlovice-Čertova ruka, wohl Überhang Novákova pec (Fundliste 1 Nr. 11A), Karlovice-Čertova ruka



(Fundliste 1 Nr. 11B; *Plíšek* 2022, Taf. 5: 2) und Vrbice u Hořoviček-Chmelnice (Abb. 14: 19; Fundliste 1 Nr. 38; *Bartík u. a.* 2017, Abb. 1: 56) können der Gruppe II.C nach dem Gliederungsschema von A. Hellmuth zugewiesen werden (*Hellmuth* 2006, 95, Abb. 63). Das Stück aus Vrbice war im LTA2-zeitlichen Brandgrab mit einer Pfeilspitze der Gruppe I.Y vergesellschaftet (s. o.). In Osteuropa war diese frühskythenzeitliche Pfeilspitzengruppe nicht allzu geläufig, wobei sich ihre Verbreitung dort vor allem auf den Bereich des Mittleren Dnjepr konzentriert (Abb. 2: 45, 47, 48, 57, 58). Nur wenige Stücke der Gruppe II.C wurden in der Westpodolien-Gruppe Mitteldnisters entdeckt, wie beispielsweise in Grabhügel 2 von Perebykivci/Перебіківці (Bez. Chotyn/UA; *Hellmuth* 2010, 69–71, Abb. 87; siehe dazu auch *Burghardt* 2015, 149, Tabelle 1; *Daragan* 2016, 67, 68, Abb. 6: 1, 2, 4, 13, 18; *Mogilov* 2020, Abb. 6: 51, 52, 71–73, 103, 104, 107; *Smirnova* 1993, Abb. 8: 7, 8, 18; 9: 2–5, 11; *Sulimirski* 1936, Taf. VIII: 4). Entsprechend selten kommen die Pfeilspitzen der Gruppe II.C

auch im östlichen Mitteleuropa vor, wo sie mit denen der Gruppe II.B zeitgleich zu sein scheinen. Wenige Fundstücke liegen weit gestreut aus Böhmen, Südwestpolen, Mähren, der Südwestslowakei mit einer Konzentration auf der Höhensiedlung Smolenice-Molpír und Ungarn vor (*Bukowski* 1977b, 169, Taf. IX: 8a, 8b; *Chochorowski* 1985a, Abb. 3: 3, 8, 23, 31, 84, 90; 4: 26; *Čambal* 2008, Abb. 2: 1; *Hellmuth* 2006, 95, 97, Taf. 8: 1–24; 9: 1–12; *Jakubčinová* 2008, 53, Abb. 1: 8, 9; *Kozubová/Fojtík* 2021, 58, Abb. 3: 2; *Miroššayová* 2003, Abb. 5: 4; *Novák* 2017, 192, 193, Taf. 3: 9–11; 2020b, 92, Taf. 1: P53, P62, P73; *V. Szabó/Czajlik/Reményi* 2014, 5, Abb. 6: 8). Als überraschend erweist sich ihr bislang vollkommenes Fehlen in der Ciumbrud-Kultur Siebenbürgens.

Unter den dreiflügeligen Pfeilspitzen mit äußerer Tülle nehmen drei Exemplare aus Lhota u Dolních Břežan, Flur Hradiště nad Závistí (Abb. 14: 21; Fundliste 1 Nr. 15A; *Drda/Rybová* 2008, Abb. 50: 2), Libkovice (Fundliste 1 Nr. 16B) und Minice u Kralup nad Vltavou-V Rusavkách (Fundliste 1 Nr. 21A) eine

Abb. 21. Verbreitung der hallstattzeitlichen Pfeilspitzen vom östlichen Typ mit äußerer Tülle (ihrer älteren Varianten) im Osten Mitteleuropas. Slowakei: 1 – Demänovská Dolina-Demänovská Poludnica, Demänovská Dolina-Jaskyňa Dvere; 2 – Horná Lehota-Pod Hrádkom; 3 – Kostofany pod Tribečom-Veľký Lysec; 4 – Liptovská Sielnica-Starhrad; 5 – Marhát; 6 – Nové Zámky-Ragoňa; 7 – Pezinok-Žlábek; 8 – Prašník-Tlštá hora; 9 – Preseľany nad Ipľom; 10 – Sklabinský Podzámok-Katova skala; 11 – Smolenice-Molpír; 12 – Štitáre-Žibrica; 13 – Vyšný Kubín-Tupá skala; 14 – Žehra-Hradný kopec. Ungarn: 15 – Alsótelekes-Dolinka; 16 – Balsa; 17 – Cellödömök-Sághegy; 18 – Dédestapolcsány-Verebce-bérc, Dédestapolcsány-Verebce-tető; 19 – Győr; 20 – Hódmezővásárhely-Kishomok; 21 – Koroncó-Templom-domb; 22 – Ménfőcsanak-Széles-földek; 23 – Nyíregyháza-Bujtos; 24 – Piliny; 25 – Sajószentpéter; 26 – Sényő; 27 – Umgebung von Szirmabesenyő; 28 – Tiszavasvári-Csárdapart; 29 – Velem-Szent Vid-hegy. Rumänien (nur Siebenbürgen kartiert): 30 – Aiud-Parc; 31 – Alba Iulia; 32 – Baraolt; 33 – Batoș-Lotul Dumbravei, Batoș-Neue Halde; 34 – Băița; 35 – Boroșneu Mare; 36 – Budești-Finațe; 37 – Ciombrud-Podireu; 38 – Cristești-Lutărie; 39 – Delenii; 40 – Deva-În viile Carolina; 41 – Dipșa; 42 – Frata; 43 – Gîmbas-Măguricea; 44 – Gornești-Teleac; 45 – Hunedoara-Grădina Castelului; 46 – Mărișelu-Coasta Domneștilor; 47 – Murgești; 48 – Posmuș; 49 – Sancrei; 50 – Sfântu Gheorghe; 51 – Târgu Mureș; 52 – Teiuș-Cetate; 53 – Toarcla; 54 – Turda; 55 – Veșel-Luncă (În Vie). Mähren: 56 – Bílovice-Lutotín, Zadní hony; 57 – Biskupice; 58 – Boršice u Blatnice-Hradištsko (Lipinka); 59 – Brusné-Křídlo; 60 – Chomýž-Podhradí; 61 – Chornice; 62 – Chvalčov-Hostýn; 63 – Drahanovice; 64 – Kojetín-Babiny; 65 – Koryčany-Debrecín; 66 – Křenovice-Hradisko; 67 – Křepice-Hradisko; 68 – Malé Hradisko-Staré Hradisko; 69 – Mohelnice-Mýto; 70 – Mokrá-Horákov, Horákovský hrad (neu Mordovny?); 71 – Nezamyslice; 72 – Němčice nad Hanou-Viceměřice; 73 – Polkovice-Ostrov; 74 – Provodov-Ludkovice, Rýsov; 75 – Radslavice-Zelená hora; 76 – Slatinice-Stráž; 77 – Smržice-Trávníky u ostrova; 78 – Štramberk, Štramberk-Čertova díra, Štramberk-Kotouč; 79 – Zdounky-Něčtice; 80 – Zubří-Dropávka; 81 – Želetice-Roviny. Böhmen: 82 – Brozany-Ve Větrolamu; 83 – Karlovice-Čertova ruka; 84 – Lhota u Dolních Břežan- Hradištsko nad Závistí; 85 – Libkovic; 86 – Lišice-Na Bílých; 87 – Měrunice- Stříbrník; 88 – Minice u Kralup nad Vltavou-V Rusavkách; 89 – Okoř; 90 – Pěšice; 91 – Přelouč-Parcela 1013/1; 92 – Radovesice u Bíliny-Výsypka velkodolu Maxim Gorkij; 93 – Skalička-Na Skále; 94 – Tuchomyšl; 95 – Vrbice u Hořoviček-Chmelnice; 96 – Vysoké Mýto-Bučkův kopec. Polen: 97 – Chełm; 98 – Chotyniec; 99 – Czekanów; 100 – Dorohusk; 101 – Kamieniec; 102 – Kłodnica; 103 – Kosin; 104 – Kruszwica-Ostrów Rzepowski; 105 – Lubnice; 106 – Machnów Stary; 107 – Maziły; 108 – Nienowice; 109 – Nowosiółki Kardynalskie; 110 – Ojców-Góra Koronna; 111 – Piaseczno-Okiennik Wielki; 112 – Polanowice; 113 – Przemysł; 114 – Róża; 115 – Rzędkowice-Okiennik; 116 – Sobótka-Śleza; 117 – Strzegom; 118 – Swaryczów; 119 – Trzcinnica Wołowska; 120 – Wicina; 121 – Wieprzec; 122 – Wolica Śniatycka; 123 – Zagórzyn; 124 – Zakrzów; 125 – Żulice. Österreich: 126 – Gracarca am Klopeiner See; 127 – Salzburg-Hellbrunnenberg. Slowenien: 128 – Brezje pri Trebelnem; 129 – Libna; 130 – Magdalenska gora-Preloge; 131 – Šmarjeta; 132 – Vače, Vače-Klenik; 133 – Vinkov vrh. Grafik T. Holbová. Zusammen- gestellt von A. Kozubová.

besondere Stellung ein. Ihr Blatt mit sehr schmalen Flügeln ist in Form eines Dreiecks gestaltet und die Tülle ist von außen über die gesamte Länge des Blattes bis zu seiner Spitze sichtbar. Der untere Flügelabschluss ist zur Tülle abgeschrägt. Pfeilspitzen dieser Art finden ihre wenigen Vergleiche unter den Pfeilspitzen der Gruppe II/Typ 3/Variante 5 nach A. I. Meljukova bzw. der Gruppe II/Typ 1a nach M. A. Očir-Gorjaeva, die im Osten sporadisch vorkommen und deren Verbreitung dort eher auf den sauromarischen Raum der Unteren Wolga eingegrenzt ist (Daragan 2015, Abb. 8: 7; 2019, Abb. 9: 15; 37: 20; Daragan/Didenko 2021, Abb. 16: 55; 20: 11; Meljukova 1964, Abb. 1; Mogilov 2020, Abb. 6: 78; Očir-Gorjaeva 1996, 46, Abb. 2). Vergleichsweise selten nachgewiesen sind solche Pfeilspitzen auch im östlichen Mitteleuropa, wo bisher sechs Exemplare aus Mähren und jeweils ein Exemplar aus Ostungarn und Siebenbürgen bekannt sind (Bartík u. a. 2017, 44, 48, 54, Abb. 2: 13; 3: 62; 4: 136; Janák 2017, Abb. 1: 5b; Kemenczei 2009, 124, Taf. 28: 5; Novák 2020a, Taf. II: H10, P27; Vulpe 1990, 35, Taf. 45: A16). Näher datierbar sind die Pfeilspitzen aus Minice u Kralup nad Vltavou und Lhota u Dolních Břežan aus den HD1–D2- bzw. LTA-zeitlichen Fundkontexten.

Bislang in seiner Art in Mitteleuropa einzigartig ist eine vierkantige Bronzepfeilspitze mit innerer Tülle und rautenförmigem Querschnitt des Blat-

tes aus Vysoké Mýto-Bučkův kopec (Abb. 14: 23; Fundliste 1 Nr. 39A; Bartík u. a. 2017, Abb. 1: 61), die ihre einzigen Entsprechungen in zwei bronzenen Pfeilspitzen der Gruppe IV Bz nach A. Hellmuth aus Smolenice-Molpír findet (Hellmuth 2006, 133, Taf. 19: 4, 5). Auch in östlich davon liegenden Regionen Osteuropas und Nordkaukasus wurden nur wenige Stücke der Gruppe IV Bz entdeckt (Hellmuth 2010, 144–146, Abb. 196). Dagegen sind dort in frühskythenzeitlichen Fundkontexten weitgehend einheitlich wirkende knöcherne vierkantige Exemplare mit rautenförmigem oder quadratischem Querschnitt deutlich zahlreicher vertreten (Hellmuth 2010, 138–144, Abb. 188; 192). Dieser Umstand könnte im Falle der bronzenen Stücke auf die Möglichkeit der Nachahmung knöcherner Vorbilder verweisen.

Die Pfeilspitzen mit äußerer Tülle machen mit 23 Stück etwa zwei Drittel aller in Böhmen gefundenen Pfeilspitzen vom östlichen Typ aus. Deutlich überwiegen die dreiflügeligen Exemplare (12 Stück), relativ zahlreich sind auch die zweiflügeligen Exemplare (7 Stück). Das Gros der Pfeilspitzenfunde konzentriert sich in Nordwest- und Ostböhmen, in Südböhmen fehlen sie bisher vollkommen (Abb. 20). Die meisten Pfeilspitzen mit äußerer Tülle aus dem Arbeitsgebiet sind Einzel- bzw. Streufunde ohne chronologische Relevanz. Obwohl das Vorkommen solcher Pfeilspitzen im östlichen Mitteleuropa in der

ersten Hälfte des 6. Jhs. v. Chr. liegen zu scheitern, wurden einige böhmische Exemplare auch in etwas jüngeren, späthallstatt- und sogar LTA–LTB-zeitlichen Fundkontexten nachgewiesen (Fundliste 1 Nr. 29A, 36A, 38). Im Verbreitungsbild der Pfeilspitzen mit äußerer Tülle in Mitteleuropa zeigen sich mehrere Fundverdichtungen, und zwar in Mähren, Südwest- und Südostpolen und Siebenbürgen, teilweise auch in Böhmen und Ostslowenien (Abb. 21). Zu beachten ist dabei, dass in Siebenbürgen solche Pfeilspitzen ausschließlich in Gräbern vorkommen, im restlichen Mitteleuropa (dort besonders in Mittel- und Ostmähren, Südwestpolen und der Südwestslowakei) ist dagegen ihre gewisse Zusammenhang mit Höhensiedlungskontexten ersichtlich (siehe dazu z. B. *Hellmuth 2006; Novák 2020a*). In diesem Zusammenhang sind die Funde aus Karlovice-Čertova ruka von Interesse, wo bislang die größte Serie solcher Pfeilspitzen in Böhmen (6 Stück) entdeckt wurde (Fundliste 1 Nr. 11A, 11B).

ZUSAMMENFASSUNG

Im Vorkommen der Funde vom östlichen Typ sind in Böhmen ähnliche Tendenzen zu erkennen wie in benachbarten Regionen der Osthallstattkultur, vor allem in Mähren. Am meisten vertreten sind hier die Funde der Vekerzug-Kultur sowie die Pfeilspitzen aus der vierten Provenienzgruppe. Diese beiden Gruppen konzentrieren sich deutlich auf die Regionen in der nördlichen Hälfte Böhmens, wobei gewisse Fundverdichtungen besonders in der Platěnice-Gruppe Ostböhmens und an den Fundorten der Bylany-Kultur in Zentral- und Nordwestböhmen festzustellen sind (Abb. 13). Im Verbreitungsbild der Funde vom östlichen Typ erweisen sich die weiten Teile Südböhmens zwar als fast fundleer, dieser Umstand scheint jedoch eher auf den aktuellen Forschungsstand zurückzuführen sein. Zudem zeigen die oben genannten unpublizierten Funde (siehe Diskussion), dass man zumindest mit kleineren Häufungen der Vekerzug-Funde auch in Südböhmen rechnen muss. Die Funde aus der zweiten sowie aus der dritten Provenienzgruppe sind in Böhmen ohne Relevanz. Bei den schlangenförmigen Schläfenringen vom Typ III kann man entweder mit ihrer lokalen Produktion oder mit ihrer Vermittlung aus anderen Herstellungszentren in Transdanubien und/oder in Mähren rechnen. Im Falle der dritten Gruppe treten in Böhmen solche Fundtypen auf, die im mitteleuropäischen Kontext entweder einzigartig sind (Streitaxt aus Kališře und Knochengegenstand aus Libkovice) oder ihre wenigen Vergleichsstücke in Mähren (Pfeilspitze aus Doly-Rabouň) und Polen (Streitaxt aus Skalice) anzutreffen sind. Die Frage nach mög-

lichen Routen dieser Gegenstände von ihren Herkunftsgebieten im Osten nach Böhmen und welche Rolle dabei die benachbarten Regionen Mährens und Polens gespielt haben, muss vorerst offenbleiben. Fundkontexte dieser Objekte sprechen aber gegen einen militärischen Hintergrund ihres Auftretens in Böhmen. Im benachbarten Mähren konzentrieren sich die Funde der Vekerzug-Kultur eindeutig in Mittelmähren auf die Fundorten der Platěnice-Gruppe bzw. späthallstattzeitlichen Postplatěnice-Besiedlung, was besonders bei Pfeilspitzen und Schläfenringen ersichtlich ist (*Kozubová/Golec 2020*, Abb. 1). In typologischer Hinsicht sind in Böhmen im Rahmen der ersten Provenienzgruppe die gleichen Fundtypen nachgewiesen wie in Mähren. Diese Feststellungen sind für die Suche nach möglichen Routen bei der Vermittlung der Vekerzug-Funde nach Böhmen von Bedeutung. Dabei ist es höchstwahrscheinlich, dass solche Funde aus ihrem Kerngebiet in der Südwestslowakei bzw. Ostungarn vermittelt über die benachbarten Gebiete Mährens in den böhmischen Raum gelangten. Als möglicher Vermittler der Vekerzug-Funde nach Ostböhmen kommt das Platěnice- und Postplatěnice-Kulturmilieu Mittel- und Nordmährens in Frage, im Falle von Südböhmen dagegen das Horákov- und Posthorákov-Kulturmilieu Südmährens. Unter den Funden vom östlichen Typ sind die Pfeilspitzen sowohl in Böhmen als auch in anderen Regionen Mitteleuropas am meisten vertreten. Die Pfeilspitzen vom östlichen Typ sind dabei ein wichtiges Element bei der Diskussion nicht nur über die östlichen Auswirkungen auf die hallstatt- bis frühlatènezeitlichen Kulturgruppen Mitteleuropas, sondern auch über die These, dass die Pfeilspitzenfunde aus dem Osthallstattraum mit Einfällen skythischer Reiternomaden zu verbinden sind. An dieser Stelle sei aber darauf aufmerksam gemacht, dass die Pfeilspitzen der Vekerzug-Kultur als keine Belege für destruktive militärische Aktivitäten anzusehen sind und dieser Pfeilspizentyp in Mittel- und Südosteuropa durch andere Faktoren verbreitet wurde als Pfeilspitzen mit äußerer Tülle (*Kozubová/Golec 2020*, 357). Die Funde der Vekerzug-Kultur sind als Indikator für großräumige Kontakte dieser Kultur in den Stufen HD und LTA zu werten. Etwas andere Situation zeigt sich im Falle der Pfeilspitzen mit äußerer Tülle, deren höhere Anzahl auf einigen Höhensiedlungen in Mähren, Südwestpolen und der Südwestslowakei eher lokal begrenzte Zusammenstöße in HD1 andeuten könnte (siehe *Hellmuth 2006; Hellmuth Kramberger 2021*). Dabei ist aber anzumerken, dass nur höhere Anzahl der Pfeilspitzen auf der Höhensiedlung kein Kriterium für kriegerische Zusammenstöße sein kann, wenn die Pfeilspitzen zugleich nicht aus solchen Befunden stammen, die derartige Zusammenstöße zuverlässig belegen.

FUNDLISTE 1: HALLSTATT-
UND FRÜHLATÈZEITLICHE FUNDE
VOM ÖSTLICHEN TYP IN BÖHMEN
(Abb. 13)

1. Brozany (Bez. Pardubice)

Flur: Ve Větrolamu.

Befund: Einzelfund (von 2018).

Funde: Zweiflügelige Bronzefeielspitze mit äußerer Tülle (Variante I.2.A.a nach A. Hellmuth), zur Fundbeschreibung vgl. Text (Abb. 1: 1).

Provenienzgruppe: Die vierte.

Datierung: Wohl HD1.

Literatur: –

2. Břežánky (Bez. Teplice)

Flur: Angeblich Povrchový důl Amalia III.

Befund: Zufallsfund wahrscheinlich aus einer Siedlung.

Funde: Schlangenförmiger Bronzeschläfenring, ein Ende des dickstabigen Ringkörpers leicht verdickt, Querschnitt rund (Typ I nach A. Kozubová), Überreste einer dünnen Edelmetallfolie (Silbervergoldung) auf der Oberfläche des Ringkörpers (Technik des Aufbringens – Plattieren), Außendm. 1,8 × 1,9 cm, St. 0,6 cm.

Provenienzgruppe: Die erste.

Datierung: HD–LTA.

Literatur: *Hrala 1976*, 601, Abb. 1.

3. Čelákovice (Bez. Praha-východ)

Flur: Parcela 932/1.

Befund: Siedlungsfund, Objekt II (Halbgrubenhaus?).

Funde: Kaurischnecke (Art *Cypraea moneta*), Größe unbekannt.

Provenienzgruppe: Die erste.

Datierung: LTA.

Literatur: *Venclová 1973*, 629.

4. České Lhotice (Bez. Chrudim)

Flur: Hradiště.

Befund: Einzelfund (von 2018).

Funde: Schlangenförmiger Bronzeschläfenring (Typ III nach A. Kozubová), zur Fundbeschreibung vgl. Text (Abb. 1: 7).

Provenienzgruppe: Die zweite.

Datierung: HD–LTA.

Literatur: –

5. Čížkovice (Bez. Litoměřice)

Flur: Remíz.

Befund: Zufallsfund wohl aus einem Gräberfeld.

Funde: Kaurischnecke (Art *Cypraea moneta*), eine künstliche Öffnung auf dem Rücken des Gehäuses, Größe unbekannt.

Provenienzgruppe: Die erste.

Datierung: HD–LTA.

Literatur: *Blažek/Kotyza 1995*, 14; *Filip 1956*, 339; *Sankot 2000*, 108; *Waldhauser/Mangel 2011*, 405.

6. Dašice (Bez. Pardubice)

Flur: Parcela 479/13.

Befund: Einzelfund (von 2018).

Funde: Dreiflügelige Bronzefeielspitze mit innerer Tülle (Subvariante I2a nach A. Kozubová), zur Fundbeschreibung vgl. Text (Abb. 1: 4).

Provenienzgruppe: Die erste.

Datierung: HD–LTA.

Literatur: –

7. Dobrovíz (Bez. Praha-západ)

Flur: Areál firmy Logikor.

Befund: Siedlungsfund, Objekt 152 (Halbgrubenhaus mit Bestattungen von zwei Kindern).

Funde: Kaurischnecke (Art *Cypraea moneta* oder *annulus*), eine künstliche Öffnung auf dem Rücken des Gehäuses, L. 1,7 cm, Br. 1,1 cm.

Provenienzgruppe: Die erste.

Datierung: HD2–LTA.

Literatur: *Psohlavcová/Stránská/Trojánková 2017*, 835, 840, Abb. 5: c; *Waldhauser/Mangel 2011*, 405, Abb. 2: 4.

8. Doly-Rabouň (Bez. Chrudim)

Flur: Žižkovy šance.

Befund: Höhengsiedlung, Streufund.

Funde: Dreiflügelige Bronzefeielspitze mit äußerer Tülle, sehr schlankes dreieckiges Blatt, sehr kurze Tülle (der Gruppe II/Typ 4/Variante 8 nach A. I. Meljukova nahestehend), L. 3,3 cm, max. Br. 0,65 cm, Tüllendm. 0,3 cm.

Provenienzgruppe: Die dritte.

Datierung: HD3–LTA.

Literatur: *Bartík u. a. 2017*, 37, Abb. 1: 8.

9. Chotýš (Bez. Kolín)

Flur: Za chotýšskými humny.

Befund: Siedlungsfund, Objekt 7.

Funde: Schlangenförmiger Bronzeschläfenring, ein Ende des dickstabigen Ringkörpers flach-halbkugelig, Querschnitt rund (Typ I nach A. Kozubová), Überreste einer dünnen Elektronfolie auf der Oberfläche des Ringkörpers (Technik des Aufbringens – Plattieren), Außendm. 1,8 × 2,1 cm, St. 0,5 cm, Gewicht 7,5 g.

Provenienzgruppe: Die erste.

Datierung: HD2–LTA.

Literatur: *Beneš/Čiřáková 2016*, 39, 40, Abb. 12; *Kozáková/ Fořt/Zlámalová Čilová 2016*, 245–247, Abb. 1–4.

10. Kaliště-Bezděkov (Bez. Klatovy)

Flur: Rudický les.

Befund: Grabfund, Hügel 79.

Funde: Einschneidige bimetallische Streitaxt, mit asymmetrisch angebrachtem, kugelig verdicktem, im Querschnitt rundem und mit schmalen vertikalen Rillen verziertem Schaftloch, relativ breite Schneide stark beschädigt, Klinge beim Schaftloch mit quengeripptem Bronzeblech verkleidet, Nacken im bronzenen Kopf eines Raubtieres mit ovalen Augen und zähnefletschen dem Maul endet, ohne Nackenansatz, L. 15,6 cm.

Provenienzgruppe: Die dritte.

Datierung: HD3.

Literatur: *Bukowski 1977a*, 255, Abb. 6: d; *Šaldová 1971*, 154, Abb. 1; 2: 13.

11. Karlovice (Bez. Semily)

A:

Flur: Čertova ruka, wohl Überhang Novákova pec.

Befund: Einzelfund.

Funde: Dreiflügelige Bronzefeielspitze mit äußerer Tülle, relativ schlankes hexagonales Blatt, mittellange Tülle mit Widerhaken, Spitze abgebrochen (Variante II.2.C.b nach A. Hellmuth), erh. L. 3,5 cm, max. Br. 0,8 cm, Tüllendm. 0,5 cm.

Provenienzgruppe: Die vierte.

Datierung: Wohl HD1.

Literatur: *Waldhauser 1979*, 572, 573, Abb. 1: 1.

Bemerkungen: Typologisch wurde die Pfeilspitze nach dem Originalfund bestimmt. Die Zeichnung bei *J. Waldhauser (1979)* ist unkorrekt.

B:

Flur: Čertova ruka.

Befund: Einzelfunde.

Funde: Dreiflügelige Bronzepfeilspitze mit äußerer Tülle, beschädigt, spitzbogenförmiges Blatt, mittellange Tülle ohne Widerhaken, Spitze abgebrochen (Variante II.2.B.a nach A. Hellmuth), erh. L. 2,6 cm, max. Br. 0,8 cm, Tüllendm. 0,5 cm; dreiflügelige Bronzepfeilspitze mit äußerer Tülle, hexagonales Blatt, mittellange Tülle ohne Widerhaken (Variante II.2.C.a nach A. Hellmuth), L. 4,2 cm, max. Br. 0,7 cm, Tüllendm. 0,5 cm.

Provenienzgruppe: Die vierte.

Datierung: Wohl HD1.

Literatur: *Plíšek 2022*, 39, Taf. 5: 2; *Waldhauser 1979*, 572, 573, Abb. 1: 2.

Bemerkungen: Typologisch wurde die Pfeilspitze mit spitzbogenförmigem Blatt nach dem Originalfund bestimmt. Die Zeichnung bei *J. Waldhauser (1979)* ist unkorrekt.

12. Kostelní Hlavno (Bez. Praha-východ)

Flur: –

Befund: Einzelfund.

Funde: Dreiflügelige Bronzepfeilspitze mit innerer Tülle, spitzbogenförmiges Blatt, leicht eingezogene Basis (Subvariante I3a nach A. Kozubová), L. 2,0 cm, max. Br. 0,8 cm, Tüllendm. 0,5 cm.

Provenienzgruppe: Die erste.

Datierung: HD–LTA.

Literatur: *Bartík u. a. 2017*, 38, Abb. 1: 17.

13. Kozinec (Bez. Praha-západ)

Flur: Holubí háj

Befund: Siedlungsfund, Objekt 3 (Halbgrubenhaus, wohl eine Metallwerkstatt).

Funde: Schlangenförmiger Bronzeschlafenring, ein Ende des dickstabigen Ringkörpers flach-halbkugelig, Querschnitt achteckig (Typ III nach A. Kozubová), Überreste einer dünnen Edelmetallfolie (Silbervergoldung oder Elektron) auf der Oberfläche des Ringkörpers (Technik des Aufbringens – Plattieren), Außendm. 1,9 cm, St. 0,35–0,55 cm.

Provenienzgruppe: Die zweite.

Datierung: LTA.

Literatur: *Stolžová/Šulová 2011*, 357, Abb. 8: 1, Taf. 9: 2, 3.

14. Krpy (Bez. Mladá Boleslav)

Flur: –

Befund: Einzelfund.

Funde: Kaurischnecke (Art *Cypraea moneta*), ohne künstliche Öffnung auf dem Rücken des Gehäuses, L. 1,7 cm, Br. 1,1 cm.

Provenienzgruppe: Die erste.

Datierung: HD–LTA.

Literatur: *Waldhauser 2004*; *Waldhauser/Mangel 2011*, 405, Abb. 2: 5.

15. Lhota u Dolních Břežan (Bez. Praha-východ)

A:

Flur: Hradiště nad Závistí.

Befund: Befestigte Höhensiedlung Lhota-Točná (Závist), Akropolis (Gebäude D).

Funde: Dreiflügelige Bronzepfeilspitze mit äußerer Tülle, dreieckiges Blatt, sehr schlanke Flügel, kurze Tülle ohne Widerhaken (der Gruppe II/Typ 3/Variante 5 nach A. I. Meljukova nahestehend), L. 2,0 cm, max. Br. 0,65 cm, Tüllendm. 0,5 cm; nicht vollständig erhaltene dreiflügelige Bronzepfeilspitze mit äußerer Tülle, wahrscheinlich rhombisches Blatt, kurze Tülle ohne Widerhaken, erh. L. 1,2 cm, Tüllendm. 0,5 cm; zweiflügelige Bronzepfeilspitze mit äußerer Tülle, deformiert, mandelförmiges Blatt, mittellange Tülle ohne Widerhaken (Variante I.2.A.a nach A. Hellmuth), erh. L. 2,8 cm, max. Br. 0,7 cm, Tüllendm. 0,6 cm.

Provenienzgruppe: Die vierte.

Datierung: LTA.

Literatur: *Drda/Rybová 2008*, 47, 65, 66, 102, 103, Abb. 50: 2–4; 85.

B:

Flur: Hradiště nad Závistí.

Befund: Befestigte Höhensiedlung Lhota-Točná (Závist), Vorburg (Schicht D16).

Funde: Kaurischnecke (Art *Cypraea moneta*), L. 2,1 cm.

Provenienzgruppe: Die erste.

Datierung: LTA.

Literatur: *Drda/Rybová 1995*, 80; *2008*, 85; *Waldhauser/Mangel 2011*, 407, Abb. 2: 12.

16. Libkovice (Bez. Most)

A:

Flur: Cihelna Kominika a Bermeisera.

Befund: Angeblich ein Siedlungsfund, Fundzusammenhänge unsicher.

Funde: Knochengegenstand, das eine Ende mit stilisiertem Raubtierkopf (übergroßes Auge kreisförmig gestaltet, kleines, spitzes Ohr und zahnloses, offenes Maul mit einer kleinen Öffnung versehen) in Kombination mit Querrippen und Spiralmotiv verziert, das andere spitzlaufend, L. 7,5 cm.

Provenienzgruppe: Die dritte.

Datierung: Wohl HD2–D3.

Literatur: *Bukowski 1977a*, 254, Abb. 6: c; *Preidel 1934*, 218, Taf. XXXIX: 5.

B:

Flur: –

Befund: Einzelfund.

Funde: Dreiflügelige Bronzepfeilspitze mit äußerer Tülle, dreieckiges Blatt, sehr schmale Flügel, lange Tülle ohne Widerhaken (der Gruppe II/Typ 3/Variante 5 nach A. I. Meljukova nahestehend), L. 2,6 cm, max. Br. 0,5 cm, Tüllendm. 0,4 cm.

Provenienzgruppe: Die vierte.

Datierung: Wohl HD1.

Literatur: *Bartík u. a. 2017*, 38, Abb. 1: 25.

17. Lišice (Bez. Hradec Králové)

Flur: Na Bílých, parcela 326/1.

Befund: Einzelfund.

Funde: Nicht vollständig erhaltene dreiflügelige Bronzepfeilspitze mit äußerer Tülle, kurze Tülle, Widerhaken abgebrochen, erh. L. 2,4 cm, Tüllendm. 0,55 cm.

Provenienzgruppe: Die vierte.

Datierung: Wohl HD1.

Literatur: *Bartík u. a. 2017*, 38, 39, Abb. 1: 27.

18. Měrunice (Bez. Teplice)**A:**

Flur: Stříbrník.

Befund: Siedlungsfund, Objekt 1466 (Halbgrubenhaus, Sektor 4).

Funde: Dreiflügelige Bronzepfeilspitze mit äußerer Tülle, spitzbogenförmiges Blatt, mittellange Tülle ohne Widerhaken (Variante II.2.B.a nach A. Hellmuth), L. 3,3 cm, max. Br. 0,7 cm, Tüllendm. 0,5 cm.

Provenienzgruppe: Die vierte.

Datierung: Wohl HD1.

Literatur: *Bartík u. a. 2017*, 39, Abb. 1: 28.

B:

Flur: Stříbrník.

Befund: Siedlungsfund, Objekt 1791.

Funde: Kaurischnecke (Art *Cypraea moneta*), Größe unbekannt.

Provenienzgruppe: Die erste.

Datierung: HD–LTA.

Literatur: *Bartík u. a. 2017*, 39.

19. Mikulovice (Bez. Pardubice)**A:**

Flur: V Loučkách, parcela 241/6.

Befund: Siedlungsfund, Objekt 1889 (Halbgrubenhaus).

Funde: Knochengegenstand aus einer Hirschrippe geschnitten, in Form von Eberhauer, einseitig bearbeitet und poliert, das eine Ende zoomorphisch gestaltet (stark stilisierte Raubvogelkopfdarstellung in Kombination mit Pseudoperlschnurmotiv) und in der Mitte mit einem Aufhängeloch (Dm. 0,9 cm) mit Abnutzungsspuren versehen, das andere spitzlaufend, L. 20,9 cm, Tierkopf 2,5 × 3,7 cm.

Provenienzgruppe: Die erste.

Datierung: HD2–D3.

Literatur: *Frolík/Sedláček 2015*, 29, 32, Abb. 7; 8.

B:

Flur: V Loučkách.

Befund: Siedlungsfund (von 2019), Objekt 552, Schicht 330 (Halbgrubenhaus).

Funde: Kaurischnecke, zur Fundbeschreibung vgl. Text (Abb. 1: 12).

Provenienzgruppe: Die erste.

Datierung: HD2–D3.

Literatur: –

C:

Flur: Pod Kostelem, parcela 14/8.

Befund: Siedlungsfund (von 2007), Objekt 347 (Halbgrubenhaus).

Funde: Drehscheibenkeramik, zur Fundbeschreibung vgl. Text (Abb. 1: 13).

Provenienzgruppe: Die erste.

Datierung: HD2–LTA.

Literatur: –

20. Milčice (Bez. Nymburk)

Flur: Státní statek.

Befund: Grabfund, Körpergrab 2/1977.

Funde: Kaurischnecke (Art *Cypraea moneta* oder *annulus*), eine künstliche Öffnung auf dem Rücken des Gehäuses, L. 2,4 cm, Br. 1,5 cm.

Provenienzgruppe: Die erste.

Datierung: LTB1a.

Literatur: *Sedláčková/Waldhauser 1987*, 148, Abb. 22: 8; *Waldhauser/Mangel 2011*, 405, Abb. 2: 6.

21. Minice u Kralup nad Vltavou (Bez. Mělník)**A:**

Flur: V Rusavkách.

Befund: Höhensiedlung Minice, Streufund.

Funde: Dreiflügelige Bronzepfeilspitze mit äußerer Tülle, dreieckiges Blatt, sehr schlanke Flügel, lange Tülle ohne Widerhaken (der Gruppe II/Typ 3/Variante 5 nach A. I. Meljukova nahestehend), L. 4,1 cm, max. Br. 0,9 cm.

Provenienzgruppe: Die vierte.

Datierung: HD1–D2.

Literatur: *Chytráček u. a. 2010*, 162, Abb. 7: 1; *Trefný/Slabina 2015*, 57, Abb. 9: 1.

B:

Flur: V Rusavkách.

Befund: Höhensiedlung Minice, aus der Grabenfüllung.

Funde: Drehscheibenkeramik, Unterteil eines kleineren Gefäßes (wohl Krügchen) mit deutlicherem Schulterabsatz und abgesetztem, leicht konkavem Standboden, Bodendm. 5,0 cm.

Provenienzgruppe: Die erste.

Datierung: HD1–D2.

Literatur: *Chytráček u. a. 2010*, 161, Abb. 7: 3; 8; *Trefný 2017*, 243, Abb. 2: 1; *Trefný/Slabina 2015*, 59, Abb. 9: 8.

22. Ohnišťany (Bez. Hradec Králové)

Flur: Na Ohnišťanském.

Befund: Einzelfunde (von 2015 und 2018).

Funde: Zwei schlangenförmige Bronzeschläfenringe (Typ I nach A. Kozubová), zur Fundbeschreibung vgl. Text (Abb. 1: 8, 9).

Provenienzgruppe: Die erste.

Datierung: HD–LTA.

Literatur: –

23. Okoř (Bez. Praha-západ)

Flur: –

Befund: Einzelfund.

Funde: Dreiflügelige Bronzepfeilspitze mit äußerer Tülle, spitzbogenförmiges Blatt, mittellange Tülle ohne Widerhaken (Variante II.2.B.a nach A. Hellmuth), L. 3,5 cm, max. Br. 0,9 cm, Tüllendm. 0,6 cm.

Provenienzgruppe: Die vierte.

Datierung: Wohl HD1.

Literatur: *Bukowski 1977a*, 253, Abb. 6: a.

24. Umgebung von Opočno (Bez. Rychnov nad Kněžnou)

Flur: –

Befund: Einzelfunde (von 2017 und 2020), westlich von Opočno gefunden.

Funde: Dreiflügelige Bronzepfeilspitze mit innerer Tülle (Subvariante I2c nach A. Kozubová); dreiflügelige Bronzepfeilspitze mit innerer Tülle (Variante I3c nach A. Kozubová), zur Fundbeschreibung vgl. Text (Abb. 1: 5, 6).

Provenienzgruppe: Die erste.

Datierung: HD–LTA.

Literatur: –

25. Pěšice (Bez. Ústí nad Orlicí)

Flur: –

Befund: Höhensiedlung, Streufund.

Funde: Dreikantige Bronzefeielspitze mit äußerer Tülle, relativ schmales dreieckiges Blatt, mittellange Tülle ohne Widerhaken (Variante III.2.a nach A. Hellmuth), L. 2,9 cm, max. Br. 0,7 cm, Tüllendm. 0,5 cm.

Provenienzgruppe: Die vierte.

Datierung: Wohl HD1.

Literatur: *Bartík u. a. 2017*, 39, Abb. 1: 35.

26. Plotiště nad Labem (Bez. Hradec Králové)

Flur: Na Přímských.

Befund: Einzelfund.

Funde: Dreiflügelige Bronzefeielspitze mit innerer Tülle, symmetrisches rautenförmiges Blatt, gerade Basis (Variante II nach A. Kozubová), Flügel beschädigt, L. 2,1 cm, max. Br. 0,9 cm, Tüllendm. 0,35 cm.

Provenienzgruppe: Die erste.

Datierung: HD2–D3.

Literatur: *Bartík u. a. 2017*, 39, Abb. 1: 38.

27. Praha-Vinoř (Bez. Hlavní město Praha)

Flur: Kamenný stůl.

Befund: Siedlung, Streufund.

Funde: Kaurischnecke (Art *Cypraea moneta*), eine große künstliche Öffnung auf dem Rücken des Gehäuses, L. 1,9 cm, Br. 1,2 cm.

Provenienzgruppe: Die erste.

Datierung: HD–LTA.

Literatur: *Bartík u. a. 2017*, 40; *Turek/Daněček/Kostka 1998*, 22, Abb. 11: 3; *Waldhauser/Mangel 2011*, 406, Abb. 2: 9.

28. Přelouč (Bez. Pardubice)

Flur: Parcela 1013/1.

Befund: Einzelfund (von 2017).

Funde: Dreikantige Bronzefeielspitze mit äußerer Tülle (Variante III.2.a oder III.1.a nach A. Hellmuth), zur Fundbeschreibung vgl. Text (Abb. 1: 3).

Provenienzgruppe: Die vierte.

Datierung: Wohl HD1.

Literatur: –

29. Radovesice u Bíliny (Bez. Teplice)

A:

Flur: Výsypka velkodolu Maxim Gorkij.

Befund: Siedlungsfund, Objekt 136 (Halbgrubenhäuser).

Funde: Zweiflügelige Bronzefeielspitze mit äußerer Tülle, spitzbogenförmiges Blatt, asymmetrische Flügel, kurze Tülle ohne Widerhaken (der Variante I.3.Y nach A. Hellmuth nahestehend), erh. L. 2,2 cm, max. Br. 1,1 cm, Tüllendm. 0,7 cm.

Provenienzgruppe: Die vierte.

Datierung: HD2–D3.

Literatur: *Waldhauser u. a. 1993*, 22, 75, 417, Abb. 196.

B:

Flur: Výsypka velkodolu Maxim Gorkij.

Befund: Siedlungsfunde, Objekte 136, 150, 155, 300 (Halbgrubenhäuser).

Funde: Vier Kaurischnecken (Art *Cypraea moneta*), eine von ihnen mit großer künstlicher Öffnung auf dem Rücken des Gehäuses, Größen unbekannt.

Provenienzgruppe: Die erste.

Datierung: HD2–D3 (Objekte 136, 150, 155); LTA (Objekt 300).

Literatur: *Flasar 1993*, 155, Taf. 1; *Waldhauser u. a. 1993*, 22, 24, 25, 41, 345; *Waldhauser/Mangel 2011*, 406, Abb. 2: 10.

30. Rataje u Bechyně (Bez. Tábor)

Flur: –

Befund: Polykulturelle Siedlung, Einzelfund.

Funde: Dreiflügelige Bronzefeielspitze mit innerer Tülle, spitzbogenförmiges Blatt, gerade Basis (Subvariante I3b nach A. Kozubová), L. 1,8 cm, max. Br. 0,8 cm, Tüllendm. 0,5 cm.

Provenienzgruppe: Die erste.

Datierung: HD1–LTA.

Literatur: *Michálek u. a. 2018*, 150, Abb. 14: 8.

31. Sedlec (Bez. České Budějovice)

A:

Flur: V lomech.

Befund: Siedlung, aus einem mit Palisaden umgebenen Raum (dort in einer Schüssel gefunden).

Funde: Dreiflügelige Bronzefeielspitze mit innerer Tülle, leicht beschädigt, symmetrisches rautenförmiges Blatt, gerade Basis (Variante II nach A. Kozubová), L. 1,9 cm, max. Br. 0,8 cm, Tüllendm. 0,6 cm.

Provenienzgruppe: Die erste.

Datierung: HD2–D3.

Literatur: *Bartík u. a. 2017*, 40, Abb. 1: 48; *Břicháček/Braun/Košnar 1991*, 444.

B:

Flur: V lomech

Befund: Einzelfund.

Funde: Schlangenförmiger Bronzeschläfenring, starke Abnutzungsspuren, das eine Ende dickstabigen Ringkörpers gerundet, das andere verjüngt, Querschnitt rund (Typ I nach A. Kozubová), Überreste einer dünnen Edelmetallfolie (Silbervergoldung oder Elektron) auf der Oberfläche des Ringkörpers (Technik des Aufbringens – Plattieren), Außendm. 2,0 cm, St. 0,6 cm, Gewicht 8,5 g.

Provenienzgruppe: Die erste.

Datierung: HD–LTA.

Literatur: *John/Štěpánek 2012*, 243, Abb. 1.

32. Skalice (Bez. Tábor)

Flur: V Zadních Kozlovech (auch Zadní Kozlovy, Vršky oder Na Vrščích genannt).

Befund: Grabfund, Hügel I (1) von 1901–1902, Fundzusammenhänge unsicher, wohl Grab 2.

Funde: Einschneidige eiserne Streitaxt, mit symmetrisch angebrachtem Schaftloch und sehr breiter, fächerförmig verbreiteter Schneide (Br. 7,0 cm), hammerartiger Kopf leicht gerundet und verdickt, L. 22,0 cm.

Provenienzgruppe: Die dritte.

Datierung: HD2–D3

Literatur: *Bukowski 1977a*, 256, Abb. 6: e; *Michálek 2017*, 386, 387 mit weiterer Literatur, Taf. 302: 8; *Richlý 1904–1905*, 82, Taf. II: 8; *Venclová 2008*, 23.

33. Skalička (Bez. Hradec Králové)

Flur: Na Skále.

Befund: Einzelfund (von 2021).

Funde: Zweiflügelige Bronzefeielspitze mit äußerer Tülle (typologisch nicht näher zuweisbar), zur Fundbeschreibung vgl. Text (Abb. 1: 2).

Provenienzgruppe: Die vierte.

Datierung: Wohl HD1.

Literatur: –

34. Topol (Bez. Chrudim)

Flur: Na Skále.

Befund: Einzelfund, in der Nähe einer Höhensiedlung.

Funde: Dreiflügelige Bronzepfeilspitze mit innerer Tülle, spitzbogenförmiges Blatt, gerade Basis (Subvariante I3b nach A. Kozubová), L. 2,2 cm, max. Br. 0,75 cm, Tüllendm. 0,4 cm.

Provenienzgruppe: Die erste.

Datierung: HD–LTA

Literatur: *Bartík u. a. 2017*, 41, Abb. 1: 51.

35. Tuchoměřice (Bez. Praha-západ)

Flur: Logistický areál F. M. Česká.

Befund: Siedlungsfund, Objekt 7.

Funde: Kaurischnecke (Art *Cypraea moneta*), eine große künstliche Öffnung auf dem Rücken des Gehäuses, Größe unbekannt.

Provenienzgruppe: Die erste.

Datierung: LTA.

Literatur: *Sankot 2000*, 108; *Sankot/Veselá 1999*; *Waldhauser/Mangel 2011*, 407.

36. Tuchomyšl (Bez. Ústí nad Labem)

A:

Flur: –

Befund: Grabfund, Körpergrab 4.

Funde: Dreikantige Bronzepfeilspitze mit äußerer Tülle, relativ schmales spitzbogenförmiges Blatt, lange Tülle ohne Widerhaken (Variante III.1.a nach A. Hellmuth), L. 3,9 cm, max. Br. 0,9 cm, Tüllendm. 0,7 cm.

Provenienzgruppe: Die vierte.

Datierung: LTB1a–b.

Literatur: *Waldhauser 1987*, 155, Taf. 32: 8; 44: 2.

B:

Flur: Teichfelder, parcela 192.

Befund: Siedlungsfund, Objekt 3 (Vorratsgrube).

Funde: Kaurischnecke (Art *Cypraea moneta* oder *annulus*), eine große künstliche Öffnung auf dem Rücken des Gehäuses, L. 2,0 cm, max. Br. 1,5 cm.

Provenienzgruppe: Die erste.

Datierung: HD2–D3.

Literatur: *Koutecký 2004*, 628, 631; *Waldhauser/Mangel 2011*, 407, Abb. 2: 13.

37. Tuněchody (Bez. Chrudim)

A:

Flur: Kopecké.

Befund: Siedlungsfund, Objekt 29/03 (Vorratsgrube).

Funde: Kaurischnecke, zur Fundbeschreibung vgl. Text (Abb. 1: 10).

Provenienzgruppe: Die erste.

Datierung: HD2–D3.

Literatur: –

B:

Flur: Kopecké.

Befund: Siedlungsfund, Objekt 34/06 (Halbgrubenhaus).

Funde: Kaurischnecke, zur Fundbeschreibung vgl. Text (Abb. 1: 11).

Provenienzgruppe: Die erste.

Datierung: HD2–D3.

Literatur: –

C:

Flur: Kopecké.

Befund: Siedlungsfund, Objekt 34/06 (Halbgrubenhaus).

Funde: Kaurischnecke (Art *Cypraea moneta* oder *annulus*), eine große künstliche Öffnung auf dem Rücken des Gehäuses, L. 2,0 cm, Br. 1,3 cm.

Provenienzgruppe: Die erste.

Datierung: HD2–D3.

Literatur: *Tichý u. a. 2008*; *Waldhauser/Mangel 2011*, 407, Abb. 2: 11.

38. Vrbice u Hořoviček (Bez. Rakovník)

Flur: Chmelnice.

Befund: Grabfund, Brandgrab.

Funde: Dreiflügelige Bronzepfeilspitze mit äußerer Tülle, hexagonales Blatt, mittellange Tülle ohne Widerhaken (Variante II.2.C.a nach A. Hellmuth), L. 3,5 cm, max. Br. 0,8 cm, Tüllendm. 0,5 cm; zweiflügelige Bronzepfeilspitze mit äußerer Tülle, spitzbogenförmiges Blatt, asymmetrische Flügel, kurze Tülle ohne Widerhaken (der Variante I.3.Y nach A. Hellmuth nahestehend), L. 3,4 cm, max. Br. 0,9 cm, Tüllendm. 0,5 cm.

Provenienzgruppe: Die vierte.

Datierung: LTA2.

Literatur: *Bartík u. a. 2017*, 41, Abb. 1: 56, 57; *Budinský 1981*, 88; *Preidel 1934*, 217, Taf. XXXIX: 3: 3, 4.

39. Vysoké Mýto (Bez. Ústí nad Orlicí)

A:

Flur: Bučkův kopec.

Befund: Siedlung, Streufunde.

Funde: Zweiflügelige Bronzepfeilspitze mit äußerer Tülle, mandelförmiges Blatt, mittellange Tülle ohne Widerhaken (Variante I.2.A.a nach A. Hellmuth), L. 3,9 cm, max. Br. 1,0 cm, Tüllendm. 0,6 cm; vierkantige Bronzepfeilspitze mit innerer Tülle, rautenförmiger Querschnitt, gerade Basis, L. 2,1 cm, max. Br. 0,75 cm, Tüllendm. 0,3 cm (Abb. 14: 23).

Provenienzgruppe: Die vierte.

Datierung: Wohl HD1.

Literatur: *Bartík u. a. 2017*, 41, Abb. 1: 58, 61.

B:

Flur: Bučkův kopec.

Befund: Siedlung, Streufunde.

Funde: Dreikantig-dreiflügelige Bronzepfeilspitze mit innerer Tülle, beschädigt, spitzbogenförmiges Blatt (Variante II3 nach A. Kozubová), erh. L. 1,9 cm (Abb. 14: 7); dreikantig-dreiflügelige Bronzepfeilspitze mit innerer Tülle, turmförmiges Blatt, gerade Basis (Subvariante II2b nach A. Kozubová), L. 2,1 cm, max. Br. 0,8 cm (Abb. 14: 6).

Provenienzgruppe: Die erste.

Datierung: HD–LTA.

Literatur: *Bartík u. a. 2017*, 41, Abb. 1: 59, 60.

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„Zo zastávky Východ do zastávky Západ“

Príspevok k novým nálezom východného typu z doby halštatskej a včasnotátenskej z východných Čiech

Anita Kozubová – Tomáš Mangel – Tereza Jošková –
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SÚHRN

Fenomén nálezov východného typu a ich význam pre stredoeurópsku dobu halštatskú je síce témou dlhodobej a zväčša kontroverznej odbornej diskusie, avšak táto problematika nie je v jednotlivých regiónoch halštatskej kultúry spracovaná rovnako podrobne a intenzívne. V Čechách nebola tejto osobitnej skupine nálezov venovaná taká zvýšená pozornosť ako napríklad v susednej Morave. V publikáciách venovaných nálezom východného typu z Čiech boli doteraz podrobnejšie spracované len niektoré kategórie týchto predmetov bez toho, aby ich autori zároveň vyhodnotili v kontexte ostatných predmetov východného typu (pozri *Beneš/Čiřáková 2016; Frolík/Sedláček 2015; Stolzová/Šulová 2011*). Doterajší stav bádania výraznejšie nezmenila ani novšia práca *M. Trefného (2017)*, ktorá ponúka iba stručný prehľad niektorých kategórií nálezov východného typu, bez ich podrobného kultúrno-priestorového vyhodnotenia.

V štúdiu sa autori zaoberajú podrobným vyhodnotením doteraz nepublikovaných nálezov východného typu z doby halštatskej až včasnotátenskej z východných Čiech (kraje Hradec Králové a Pardubice), ktoré boli nájdené za posledných päť rokov pri povrchových prieskumoch a počas záchranných výskumov. Okrem nich je v štúdiu osobitná pozornosť venovaná aj starším, v odbornej literatúre známym nálezom východného typu, a to najmä s ohľadom na kultúrno-priestorové, chronologické a interpretačné hľadisko ich výskytu v Čechách. Nálezy vekezugskej kultúry a ďalšie predmety východného typu sa považujú za jeden z dôležitých indikátorov nadregionálnych kontaktov Čiech v stupňoch HD a LTA, pričom tieto nálezy sa vo svojom výskyte neobmedzujú len na lokality platénickej skupiny východných Čiech, ale registrujeme ich aj na mnohých lokalitách bylanskej kultúry v stredných a severozápadných Čechách a sporadicky aj na náleziskách halštatskej mohylovej kultúry v južných Čechách. Hoci počet analyzovaných nálezov je v Čechách v porovnaní so susednou Moravou relatívne malý, je však zároveň dostatočný na to, aby pomohol zodpovedať niektoré otázky súvisiace s fenomenom nálezov východného typu. Obzvlášť dôležité je vyhodnotiť nálezy východného typu z Čiech v kontexte podobných nálezov zo susedných regiónov, najmä z Moravy a juhozápadného Poľska.

Vďaka novým nálezom sa počet lokalít s predmetmi východného typu v Čechách výraznejšie zvýšil najmä za posledných desať rokov, pričom k dnešnému dňu máme k dispozícii minimálne 66 spoľahlivo doložených nálezov východného typu zo 44 lokalít. Hoci väčšina v štúdiu ana-

lyzovaných nálezov je publikovaná v katalógu *J. Bartíka a i. (2017, 36–43, obr. 1)*, bolo potrebné zo strany autorov štúdie predmetný katalóg korigovať. Z hľadiska pôvodu môžeme nálezy východného typu z Čiech rámcovo rozdeliť do štyroch skupín. Prvú, typologicky najrozmanitejšiu skupinu, predstavujú nálezy vekezugskej kultúry (bronzové trojkrídielkovité a trojboko-trojkrídielkovité hroty šípov s vnútornou tuľajkou typov I a II a ich varianty podľa A. Kozubovej, hadovité záušnice typu I podľa A. Kozubovej, keramika točená na kruhu, kostenný predmet so zoomorfnou výzdobou z Mikulovic-V Loučkách), a tiež artefakty, ktorých výskyt v Čechách je možné dať do súvisu s aktivitami vekezugskej kultúry (Kauri mušle). S prvou skupinou nálezov je spätá aj druhá skupina, ku ktorej radíme artefakty, ktoré síce majú predlohy v materiálnej náplni vekezugskej kultúry, v Čechách sa však tieto vyskytli už v modifikovanej, lokálnej podobe (hadovité záušnice typu III podľa A. Kozubovej). Analógie k nálezom z tretej skupiny sú široko rozšírené v spoločenstvách včasnej doby železnej vo východnej Európe a na severnom Kaukaze (železný čakan zo Skalice, bronzový trojkrídielkovitý hrot šípu s krátkou vysunutou tuľajkou z Doly-Raboune), k časti z nich nachádzame ich analógie dokonca ešte východnejšie v oblasti dolného Povolžia a južného Priuralia (kostenný predmet z Libkovic). Typologicky homogénnu štvrtú skupinu nálezov tvoria staršie typy bronzových hrotov šípov s vysunutou tuľajkou (trojkrídielkovité a trojboké typy a ich varianty podľa A. Hellmuthovej), ktorých výskyt vo východohalštatskom prostredí súvisí pravdepodobne s lesostepným Podneprím, s lesostepným Podnestrím (so západopodolskou skupinou) a/alebo so Sedmohradskom (s ciembrudskou kultúrou). Miestne nálezné okolnosti a chronologické zaradenie predmetov v oblastiach ich pôvodu umožňujú väčšinu nálezov východného typu z Čiech (s výnimkou štvrtej skupiny pôvodu, ktorej výskyt sa v strednej Európe viaže na stupeň HD1) datovať iba rámcovo do stupňov HD a LTA.

Vo výskyte nálezov východného typu v Čechách pozorujeme podobné tendencie ako v susedných regiónoch východohalštatskej kultúry, najmä však na Morave. Najviac sú tu zastúpené nálezy vekezugskej kultúry a staršie typy hrotov šípov s vysunutou tuľajkou zo štvrtej skupiny pôvodu. Tieto dve provenienčné skupiny sa zreteľne koncentrujú v regiónoch severnej polovice Česka, pričom určité koncentrácie ich nálezov zaznamenávame najmä na lokalitách platénickej skupiny vo východných Čechách a na lokalitách bylanskej kultúry v stredných a severozápadných

Čechách. Naopak, len sporadicky sa doteraz vyskytli v oblasti južných Čiech, táto skutočnosť sa však zdá byť spôsobená skôr súčasným stavom bádania v danej oblasti. Na základe nepublikovaných nálezov navyše vyplýva, že aspoň menšie kumulácie nálezov vekerzugskej kultúry môžeme očakávať aj v južných Čechách. Význam nálezov z druhej a tretej skupiny pôvodu je v celých Čechách vzhľadom na ich obmedzenú početnosť nateraz minimálny. V prípade hadovitých záušnic typu III môžeme predpokladať buď ich miestnu výrobu, alebo ich sprostredkovanie z iných výrobných centier v Zadunajsku a/alebo na Morave. V prípade tretej skupiny pôvodu ide v Čechách o také typy nálezov, ktoré sú buď v halštatskom prostredí jedinečné (bojová sekera z Kališťa a kostený predmet z Libkovic), alebo podobné typy nálezov sporadicky nachádzame aj na Morave (mladší typ hrotu šípu s vysunutou tuľajkou z Doly-Raboune) a v Poľsku (bojová sekera zo Skalice). Otázka možných trás, ktorými sa tieto predmety dostali z oblastí ich pôvodu na východe do jednotlivých regiónov v Čechách a akú úlohu v tom zohrali susedné regióny Moravy a Poľska, zostáva zatiaľ otvorená. Nálezové kontexty týchto predmetov však nepotvrdzujú vojenské pozadie ich výskytu v Čechách. V susednej Morave sa nálezy vekerzugskej kultúry koncentrujú na lokalitách platěnickej skupiny a neskorohalštatského postplatěnickeho osídlenia, čo je obzvlášť zreteľné pri hrotoch šíпов so skrytou tuľajkou a hadovitých záušniciach typu I (Kozubová/Golec 2020, obr. 1). Z typologického hľadiska sú v Čechách v prípade prvej skupiny pôvodu doložené rovnaké typy/varianty nálezov ako na Morave. Tieto zistenia sú preto dôležité pri hľadaní možných trás sprostredkovania vekerzugských nálezov do Čiech. Je vysoko pravdepodobné, že tieto nálezy sa zo svojej

oblasti pôvodu na juhozápadnom Slovensku a vo východnom Maďarsku do Čiech dostali cez susedné regióny Moravy. Sprostredkovateľom nálezov vekerzugskej kultúry do východných Čiech mohlo byť platěnicke a postplatěnicke kultúrne prostredie strednej a severnej Moravy, v prípade južných Čiech zase horákovské a posthorákovské kultúrne prostredie južnej Moravy. Medzi nálezmi východného typu sú bronzové hroty šíпов najviac zastúpené tak v Čechách, ako aj v ostatných regiónoch strednej Európy. Hroty šíпов východného typu sú dôležitým prvkom nielen v diskusii o východných vplyvoch na jednotlivé skupiny halštatskej a včasnolátenskej kultúry v strednej Európe, ale aj pri téze, že nálezy takýchto hrotov šíпов vo východohalštatskom prostredí je možné spájať s násilnými bojovými aktivitami skýtskych jazdeckých nomádov. Tu je ale potrebné zdôrazniť, že hroty šíпов vekerzugskej kultúry nie je možné považovať za dôkazy násilných bojových aktivít a na ich rozšírení do strednej a juhovýchodnej Európy sa podieľali iné faktory ako v prípade hrotov šíпов s vonkajšou tuľajkou (Kozubová/Golec 2020, 357). Nálezy vekerzugskej kultúry indikujú jej intenzívne a ďaleko siahajúce nadregionálne kontakty v stupňoch HD a LTA. O niečo odlišná situácia je pozorovaná v prípade hrotov šíпов s vonkajšou tuľajkou, ktorých vyšší počet na niektorých výšinných hradiskách na Morave, v juhozápadnom Poľsku a na juhozápadnom Slovensku by mohol naznačovať lokálne obmedzené bojové akcie v stupni HD1 (pozri Hellmuth 2006; Hellmuth Kramberger 2021). Samotný výskyt hrotov šíпов na lokalite však nie je dostatočným argumentom pre násilné bojové akcie, pokiaľ sa hroty šíпов nevyskytli v takých nálezových kontextoch, ktoré by deštruktívne bojové aktivity spoľahlivo potvrdili.

MORAVIAN IRON MONEY

Model of the 9th-Century Axe-Shaped Bars' Genesis and Its Testing with the Assemblage from Staré Zámky near Brno-Líšeň

MICHAL HLAVICA  – PAVEL KOUŘIL  – ROMAN MIKULEC 

The article offers a new perspective on the phenomenon of Moravian axe-shaped bars. It presents a new perspective seeing roots of axe-shaped bars in pre-Christian ritual behaviour. In this context, where practical function of original tools was suppressed, initial semi-finished products evolved into the earliest massive axe-shaped bars. These probably started to serve as a social currency (i.e. primitive money) and their value was probably derived from the weight of the iron commodity, and the intrinsic value of original tools (axes) respectively. The model presumes that since the beginning of their existence, the shrinking of their size and weight took place, probably because of gradual increase of iron scarcity. The shrinkage then gradually reached the stage when storing of a part of a weight unit was very difficult, because of the unforeseeable loss of iron mass during forging. As more precise weight could be projected into smaller bars only with difficulty, their values were probably disconnected from the intrinsic value of the iron, and started to be guaranteed by the issuing authority. The value started to be set arbitrarily in a different unit of account, and axe-shaped bars started to be used as substitute tokens of general-purpose money within the Great Moravian commercialized economy. This model was then confronted with the assemblage of 78 axe-shaped bars from one of the major Great Moravian strongholds at Staré Zámky near Brno-Líšeň. The results of the evaluation including their classification into size categories and mapping of their spatial distribution within the stronghold corresponds with the predictions of the model. Although a hoard of medium-sized bars (i.e. size/weight category IIIb) was present on the site indicating that part of the assemblage may still serve as a social currency, most of the bars fell into small size categories (size/weight categories IV or V) and their spatial distribution shows that they freely circulated within the acropolis of the stronghold, and were probably lost during this daily usage. It thus indicates that they were used in the commercial exchange that took place within the stronghold's market.

Keywords: 9th c., Moravia, Western Slovakia, axe-shaped bars, social currency, general-purpose money.

INTRODUCTION – TOWARDS A NEW MODEL OF AXE-SHAPED BARS' GENESIS AND EVOLUTION

Iron axe-shaped bars represent a particular variant of non-coin currencies that occurred in different regions of Europe in different periods. The region of southern Norway preserved the earliest evidence of these bars from the Early Iron Age, even the main period of their use was after the beginning of the Late Iron Age (*Loftsgården* 2019, 80). Iron Axe-shaped bars were also in use in areas around the Middle Volga and Kama rivers since the 4th to the 5th c. AD (*Szmoniewski* 2022). In Moravian and Slovakian territory, the core of the former Great Moravian realm, the first indication of their genesis has been demonstrated from the end of the 8th c. AD (*Hájnik* 2019, 119), and in Lesser Poland, within the presumed domain of the Vistulans, they have been recorded from the first half of the 9th c. (*Szmoniewski* 2010, 290, 291).

Despite the striking morphological similarities, the economic role of these characteristic bars most probably vary within individual regions and periods. For understanding this phenomenon in

general, it is necessary to research their evolution, and the changes of their economic role in various contexts. For this the artefactual assemblage from 9th c. Moravia is especially suitable. It contains finds from multiple find contexts (*Hlavica/Procházka* 2020a, fig. 35; 36), and also shows variations of the shape and size of axe-shaped bars (*Bialeková* 1990; *Bialeková/Turčan* 2007, fig. 9; *Pleiner* 1961, 426, fig. 18) during the period ranging from the late 8th c. to the first decades of the 10th c., when axe-shaped bars vanished from the archaeological record.

R. Pleiner's size classification dividing Moravian axe-shaped bars into four size categories (*Pleiner* 1961, 426, fig. 18) has led some researches to the conclusion that size of axe-shaped bars preserved relicts of standardized 9th-c. Moravian weight units, which were going to be adopted from the Byzantine weight system. The iron commodity of standardized shape and weight then had to serve for storing the value and mediating the exchange, i.e. as the 9th-c. Moravian commodity money (*Bialeková/Tirpáková* 1989, 94; *Pošvář* 1963; *Tirpáková/Bialeková/Vlkolínská* 1989).

Leaving aside the fact that the concept of commodity money is problematic (*Espinosa* 2019; *Graeber*

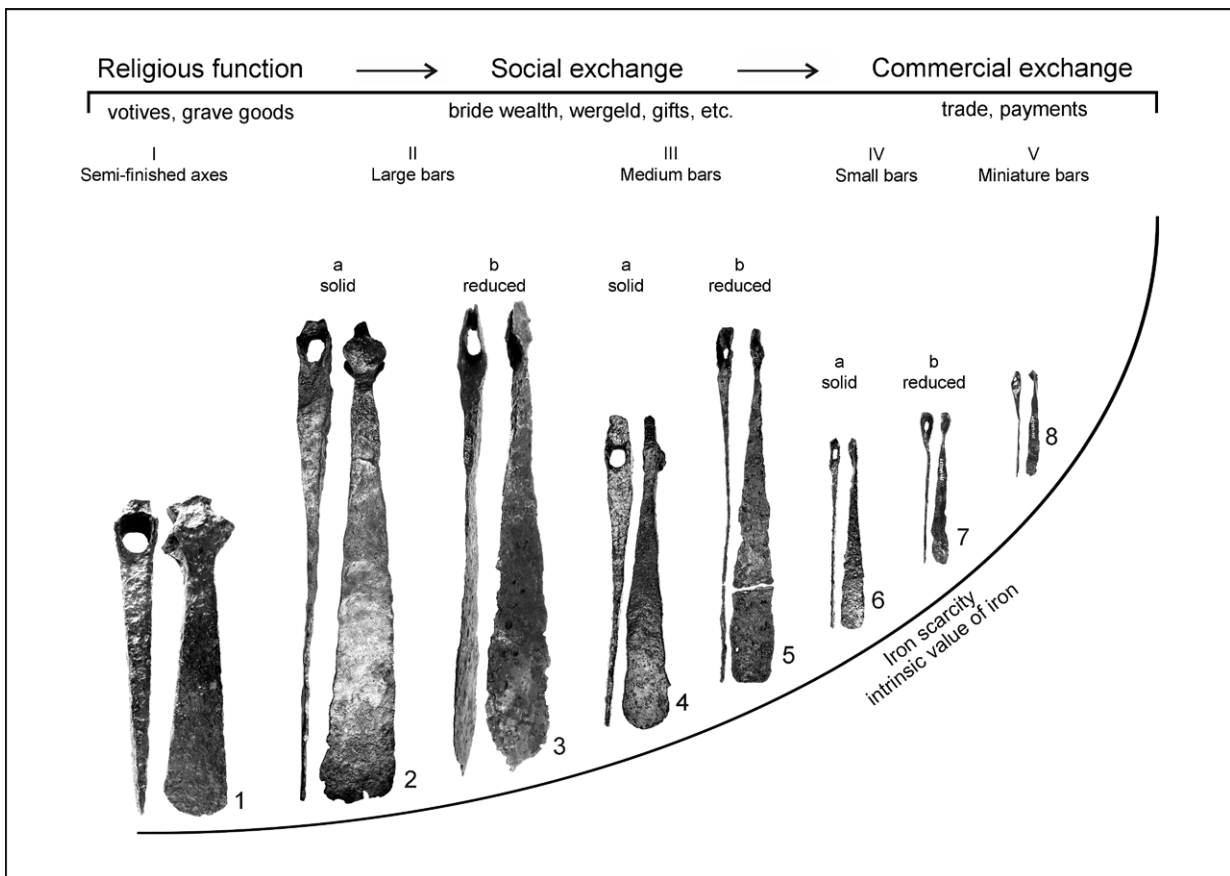


Fig. 1. Preliminary model of axe-shaped bars' evolution. 1 – Devínska Nová Ves, grave no. 555 (28 cm; 1,214 g; photo by V. Turčan); 2 – Devín, metal detector find (43 cm; 880 g; neck ca. = 8.1 cm); 3 – Klášťov, hoard no. 2 (42 cm; 365 g; neck ca. = 6 cm; photo by P. Halbsgutová); 4 – Blučina, solitary find (27.5 cm; 312 g; neck ca. = 5.5 cm); 5 – Brno-Líšeň, inv. no. 396/56e2 (31 cm; 74 g; neck ca. = 3 cm); 6 – Brno-Líšeň, non-professional find N05 (18 cm; 24 g; neck ca. = 1.8 cm); 7 – Mikulčice, inv. no. 4865/59 (13.5 cm; 14 g; neck ca. = 1.4 cm); 8 – Mikulčice, inv. no. 4785/59 (8.8 cm; 4 g; neck ca. = 1.4 cm).

2011, 21–41, 46–51; Ingham 2000, 22; Innes 2004, 14–17; Tcherneva 2016, 2–8), the explanation above suffers from some additional weak points. Firstly, the known axe-shaped bars show much wider variability, in terms of their size. Part of the known assemblage does not even fit into Pleiner's roughly defined size categories (e.g. Bialeková/Tirpáková 1989, 92), and even within the size classes, the distinct weight variability, which is certainly not a matter of iron corrosion, can be clearly observed (Fig. 1). The defined size and weight categories of the axe-shaped bars thus seems to be more artificial and reflect the desire of researchers more than past standardized measure and weight system. Secondly, the iron itself is a problem. Unlike precious metals (such as silver or gold), iron is not transitive (cf. Heymans 2018, 100). As has been proven experimentally (Hlavica/Bárta 2021, 17), it cannot be forged from a commodity into a final product (and vice versa) without significant loss of material in the form of iron scales. Due to unforeseeable events, such as the appearance of ruptures on iron mass, which need to be continually welded, the final loss of mate-

rial can be predicted only to a certain extent. Despite the fact that standardization of bar dimensions can be secured easily by shortening the bar's blade, the more precise weight standardization is very difficult, and the weight of individual pieces from the same original semi-product and of same length can differ on the order of tens of grams (cf. Hlavica/Bárta/Merta 2020, tab. 1). This makes especially the smaller pieces extremely unsuitable for storing parts of an arbitrary weight unit.

As a result of previous experimental observations combined with some cross-cultural analogies (Graeber 2011, 220; Peng 1994, xxiii–xxiv; Scheidel 2009, 139), an alternative explanation stressing the chronological aspect of axe-shaped bars' evolution was offered (Hlavica/Bárta 2021, 17–19). According to this hypothesis, the reduction of the bars' size and weight accompanied by a simplification of their punched eyes was gradual. It reflected dynamic changes in the Great Moravian economy transforming itself from a human economy to a commercial one and the original function of the axe-shaped

bars as social currency to the function of monetary tokens representing an arbitrarily defined value and used in commercial exchange (Fig. 1).

In the archaeological record, the proto-stage of axe-shaped bar genesis would be represented by axe semi-products, that were, even if quite rarely, found by archaeologists (e.g. *Eisner 1952*, 152, fig. 60: 7; *Kouřil 1994*, 155, fig. 85; *Pleiner 1961*, 414, fig. 3; see also *Szmoniewski 2022*).¹ Suppression of the practical function of axe tools and weapons was most probably caused by their parallel religious function, i.e. their usage as votive objects or grave goods. As in some other cases (cf. *Semenova 2011*; see also *Seignobos 2000*, 321–324), even the beginning of the Moravian currency could thus be seen in the Moravian pre-Christian religion.

A further need to save iron resulted in more expressive simplification and the appearance of long and robust bars with the eye imitating the bearded axe's side lugs (Fig. 1: 2). The main difference to the previous stage is that unlike axe semi-products, these bars could not be directly forged into axes anymore (cf. *Hlavica/Bárta 2021*, 16). Already during this initial stage, a significant reduction of the weight and simplification of the punched eye probably took place as can be illustrated by the lighter and reduced pieces of large bars (Fig. 1: 3). Even if the chronological sequence cannot be fully validated yet, this clearly shows that the length of the axe-shaped bars was not firmly connected to their weight, and the possible initial bond between the length and weight eroded over time. This can be further supported by the comparison of large reduced bars with solid bars of the medium size category of comparable weight (Fig. 1: 4). The cause of this gradual attenuation of the axe-shaped bars observed within this and all the following categories described below can be only estimated and should be a matter of future research. But a quite probable explanation is that it was a result of economic stress caused by the gradual increase of iron scarcity caused by increased demand for it.

A specificity of the heaviest pieces is that their robustness allows, even only rough, storage of the weight units, and their parts. Other than their symbolic function, these heaviest, and according to the model also earliest, pieces of large and medium bars, thus could still be perceived as a commodity because of its intrinsic value comparable to the original axe (cf. *Hlavica/Bárta/Merta 2020*, 25).² This is an important note especially when considering possibility of the integration of the axe-shaped bars into the nascent commercialized economy. When the intrinsic value of a bar is defined by the share of a weight unit, it allows an easier evaluation of its price in another unit of account (its value in weight of gold, for instance), and thus also the precise calculation of its exchange equivalency to other goods. These bars can thus serve as a substitute exchange medium in trade (cf. *Crew 1994*, fig. 1; *Raaflaub 2017*, 141).

But as in the previous case, even when medium-sized bars were in circulation, a significant reduction of their weight can again be observed. From hundreds of grams of solid bars, the weight of the reduced medium pieces was reduced up to tens of grams (Fig. 1: 5). Due to the specifics of iron, namely the impossibility to predict the precise weight of final product, projecting smaller parts of the weight unit into lighter types of axe-shaped bars would be quite challenging. Due to the reduction of the iron mass of the bars, their value for possible practical utilization was significantly reduced as well. The guarantee of the bars' value by the intrinsic value of the commodity thus probably started to erode at the time and was substituted by the guarantee of the issuing authority or authorities, who started to define the value arbitrarily (cf. *Hlavica/Bárta 2021*, 18, including references; *Innes 2004*, 17, 18). This can be thus seen as a transition period, when the function of axe-shaped bars as tokens, i.e. the representation of an arbitrarily defined value, probably started to prevail and when they gradually started to serve as medium of credit/debt relations between their producers (who safeguard their value) and their re-

¹ Burial no. 555 from the end of the 8th c. at the site Devínska Nová Ves-Pieskovňa included an artefact that was probably a roughly forged axe missing some of its final adjustments, such as narrowing of the oblique part of the axe containing the eye and processing of the cutting edge (Fig. 1: 1). Some archaeologists thus interpret it as the first evidence of the axe-shaped bar in East Central Europe (*Hájník 2019*, 119; *Točík 1983*, 214). But as the presented artefact can be most probably turned into a functional axe with some final forging, unlike the typical axe-shaped bar, which has to be completely faggoted for further processing (*Hlavica/Bárta 2021*), it probably rather represents an axe semi-product. It should be thus interpreted as an intermediate evolutionary stage between utilizable axes and axe-shaped bars, rather than an axe-shaped bar itself.

² The referenced archaeological experiment was focused on the production of robust pieces of axe-shaped bars, and in the end concluded that it is possible to preserve parts of a same weight unit within different sizes of bars. Large-sized bars weighed approximately twice as much as medium-sized bars, and robust small bars represent approximately one quarter of a medium-sized bar. The only problem with this conclusion is that small but robust axe-shaped bars have not been found in the archaeological record, i.e. the real weight of the small bars was significantly less than that of the experimental products. The hypothesis presented in the referenced paper is thus most probably valid only partly – the first two size categories (large and medium) can potentially preserve the weight unit and its parts or multiples due their robustness, but due to nature of iron and the technology of its processing (unpredictable loss of material during forging), this is not possible in the case of small and very light pieces weighting only tens grams or even less.

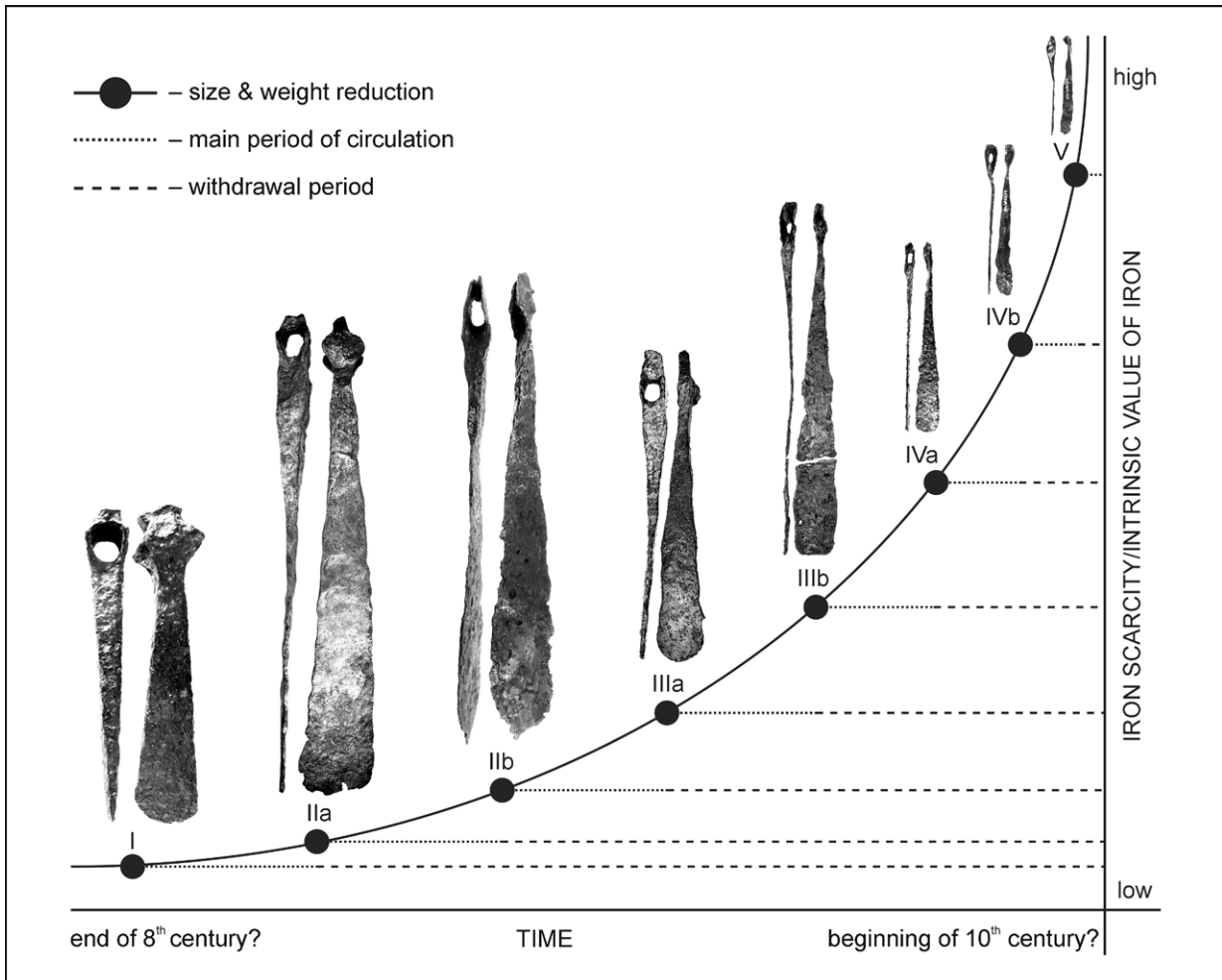


Fig. 2. Preliminary model of chronological occurrence, circulation and withdrawal periods of axe-shaped bars' individual size/weight categories.

ceivers (who accepted the value and were willing to offer a counter-value). This was thus probably when axe-shaped bars primarily started to fulfil their role within the commercialized economy and the elite's control and monopolization of bar production either started or was reinforced.

After this period, the reduction of the size and weight of axe-shaped bars gradually continued. It consequently reached the stage when small bars started to be produced (Fig. 1: 6) and the shrinking continued even within this category (Fig. 1: 7). It thus resulted in the production of smallest recorded, miniature pieces weighting just a few grams (Fig. 1: 8). According to the model, this was chronologically the last stage before the collapse of the Great Moravian economic system.

The above-described hypothesis offers an explanation for the gradual simplification and the size/weight reduction of axe-shaped bars and illustrates their shift from the use of the bars as a means of ritual and socially conditioned payments still

defined in utilitarian tools (and the commodity from which are they made) to monetary tokens representing an arbitrarily set value and then circulating within complex anonymised networks of credit-debt relations of the 9th-c. Moravian commercialized economy. The significant reduction of the size and weight of the bars indicates that during the stage when lighter types weighing just tens of grams appeared, their value ceased to be based on the intrinsic value of the commodity, and started to be defined arbitrarily in another unit of account. The reduction of size and weight is then perceived as a preventive precaution of the issuer resulting from the increasing scarcity of iron. The reason for this precaution is that the arbitrarily defined value of a monetary token (calculated in a widely accepted unit of account, for instance, a weight of gold) should never exceed the intrinsic value of a commodity used for its representation. If the intrinsic value of the commodity (of iron in this case) increases over time, the quantity of the commodity

used for tokens has to be reduced more and more, so its value never exceeds the arbitrarily defined value of the token, or in the specific case of iron, at least not by too much (cf. *Hlavica/Bárta 2021*, 18). If the opposite is true, the tokens would be started to be withdrawn from circulation, for practical utilization, and the whole monetary system collapses (*Hlavica/Bárta 2021*, 12, including references).

Nevertheless, the model of the Moravian axe-shaped bars' genesis still needs to be perceived as preliminary and be further tested. The first category of testing should deal with the chronological occurrence of the individual size and morphological categories of the bars. Research should focus especially on the earliest chronological evidence of individual types, as they could have existed for quite a long time concurrently with later types (Fig. 2), occur in the archaeological record together and thus confuse researchers. This kind of research will need a systematic evaluation of the assemblages from well-dated contexts. The second kind of testing should be focused on the presumed change of the role of axe-shaped bars within the 9th-c. Moravian economy. For this purpose, assemblages from 9th c. Moravian central places are especially suitable, as these localities are presumed to be nodes of Great Moravian market system (*Hlavica/Procházka 2020b*, fig. 33), i.e. nodes, where anonymised market exchange probably first occurred. In these centres, the archaeological record should preserve evidence of circulation of later (smaller) types of axe-shaped bars within a complex credit-debt exchange network. This sort of evaluation of axe-shaped bars from former early medieval Moravian centres might detect market exchange within the centre and, besides refining the genetic model of the Moravian axe-shaped currency, it can concurrently test the Great Moravian economic model.

Regarding the above-described theoretical basis, the following part of the paper focuses on an evaluation of the small assemblage of axe-shaped bars from the Great Moravian centre at Staré Zámky near Brno-Líšeň, one of the presumed nodes of the period regional market system (*Hlavica/Procházka 2020b*, fig. 33), and on an exploration of the testimonial potential of a similar sort of assemblages for testing and refining the model of axe-shaped bars' genesis. The study evaluates all the pieces currently available, including finds from multiple seasons of archaeological excavations, later metal detector surveys, and the existing non-professional finds. Besides their value for any future understanding of the phenomenon of Moravian iron currency, the conclusions based on the evaluation also present the value of this archaeological record to clarify specific aspects of the 9th-c. Moravian economy, and the eco-

nomical relations on which contemporary production and distribution of commodities were based.

MATERIAL:

AXE-SHAPED BARS FROM STARÉ ZÁMKY

During the 9th c., the stronghold at Staré Zámky was one of the major Moravian centres. It was located in the north-eastern part of today's city of Brno, in the Líšeň neighbourhood (Fig. 3). The occupation of the site has been demonstrated from the pre-Great Moravian early 8th or possibly even late 7th c. Even during the pre-Great Moravian period, the acropolis of the stronghold was probably already fortified and the archaeological record from this period contains evidence of prestige goods, such as hooked spurs or hammered bronze belt fittings connected to Moravian mounted elite warriors.

Most probably in the first half of the 9th c. an extensive fortification system encircling the area of ca. 4 ha was constructed, and the existence of a magnate court is also presumed from the mid-century. The outer wards of the stronghold occupied an area of ca. 7 ha at the time. At the turn of the 10th c., the centre was destroyed most probably by a nomadic attack resulting in an extensive fire. From the beginning of the 10th c., only part (ca. 0.8 ha) of the former fortified area was inhabited. Although previous research presumed that the settlement at Staré Zámky was abandoned early in the 11th c., later coin finds prove activities on the site even during the 12th c. (for more details see *Kalčík 2015*; *Kouřil 2019*, 82; *Měřínský 2014*; *Procházka 2009*, 152–159; *Videman 2015*, 214).

Based on its geographic position (*Hlavica/Procházka 2020b*, fig. 33; *Mikulec/Hlavica/Kmošek 2022*, fig. 1), it is presumed that the elites residing there supervised or even directly organized iron production on the territory of the Moravian Karst, the forested area with a lack of contemporary settlements, but with abundant evidence of early medieval iron smelting including large workshops from the 9th c. or even earlier period (*Souchopová 1986*, 14–39). The possible control over the production of the strategic iron commodity would make Staré Zámky an important node of the Great Moravian economic system. Some indirect evidence, such as the presence of iron blooms (*Merta 2019*, 8, fig. 11; *Mikulec 2022*, 107, fig. below; *Přichystal/Přichystal/Romanovský 2019*), unlike the only sporadic evidence of iron processing within the centre (*Mikulec 2022*, 41, 42, 50–52) indicates that the iron produced in an approximate total quantity of thousands of kilograms during the existence of contemporary workshops in the Moravian Karst (cf. *Souchopová 1986*, 31, 32) could flow through the centre, but it was not

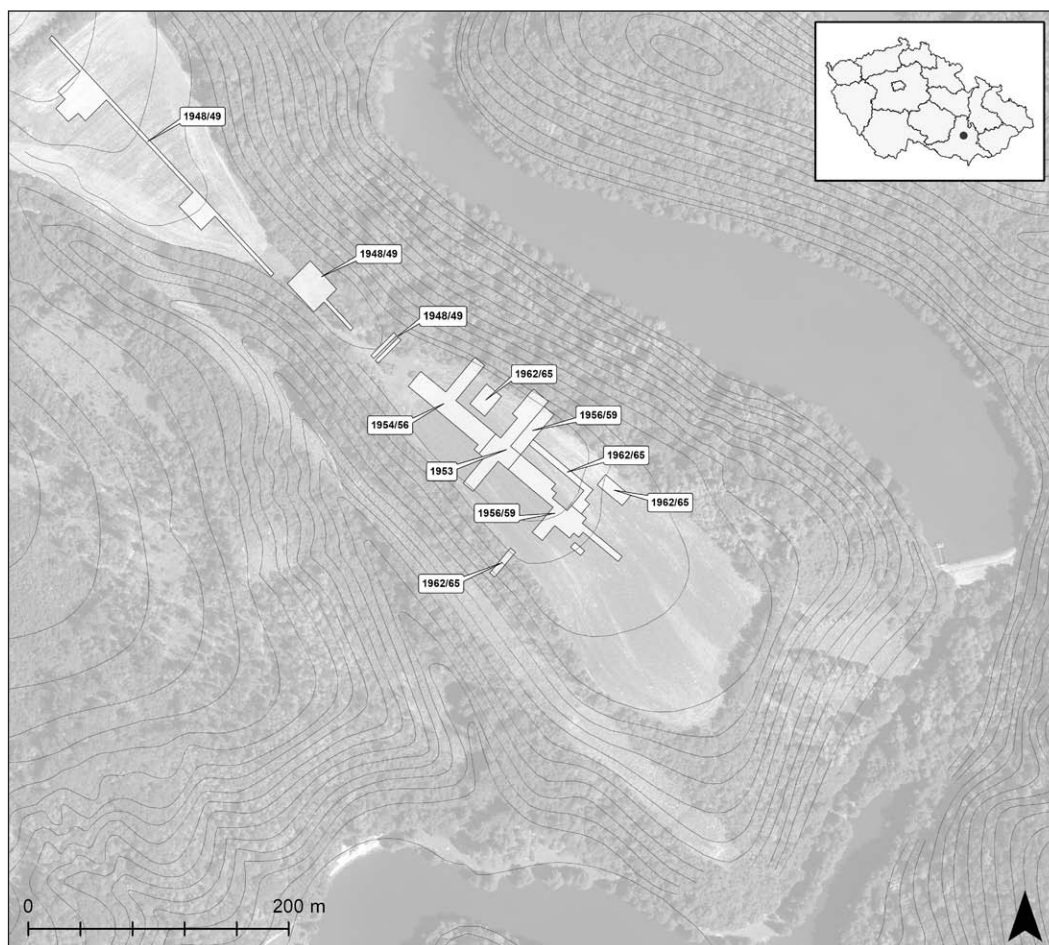


Fig. 3. Staré Zámky near Brno-Líšeň. Area of the excavation campaign.

primarily intended for local processing,³ Staré Zámky might thus probably serve as a nodal hub redirecting the raw iron to another circle of consumers.

Despite the only sporadic archaeological evidence of smithing activities within the centre, the relatively abundant evidence of the use of iron axe-shaped bars is quite interesting. The assemblage of altogether 78 pieces or fragments (including four currently lost pieces), which represents approximately 1/4 of the quantity when compared to the known assemblage of axe-shaped bars from the contemporary primary power centre in Mikulčice (cf. *Kučerovská 1989; Poláček*

2007, 511; 2021, 195), has been collected. The assemblage evaluated in this study consists of 38 pieces of fragments of axe-shaped bars from archaeological excavation conducted in 1953–1956 (one is currently lost), three more pieces from the seasons 1958, 1959, and 1965 (all three are currently lost), 30 fragments (including one piece found in the more remote vicinity of the centre) discovered by metal detector surveys carried out between 2014 and 2017, and seven non-professional finds discovered between 2006 and 2022 (Fig. 4–9). Excluding the six bars from the hoard found in 1956 (*Staňa 1959b, 55, fig. 11: 28–33; 12: 34–40*),

³ The assemblage obtained during 12 season of archaeological excavation yielded less than 17 kg of slags, whereas 4.2 kg was classified as ceramic slags originated probably from body or bodies of early medieval pyrotechnical devices. The rest have mostly been categorized as iron working slags (*Hauptmann 2021, 243–245*) or have remained uncategorized (8.1 kg, and 4.1 kg respectively). A few smaller pieces (ca. 0.2 kg) can possibly represent smelting slags (*Mikulčec 2022, tab. 8*). The possibility of significant extension of this assemblage by new finds is quite low, as no concentration of ferrous smithing slag at Staré Zámky was detected even during the geophysical survey of yet unexcavated parts of the stronghold and the area of its outer wards (*Milo et al. 2020*). Despite the fact that part of the slag assemblage from Staré Zámky was possibly discarded during the inventORIZATION (*Kalčík 2015, 131*), the site still yielded evidently less ironworking slag finds than a contemporary rural settlement in Bořitov. From there located smithy itself it came at least 21.5 kg of smithing slags (*Mikulčec/Hlavica/Kmošek 2022, tab. 3*) and possibly even more as part of the assemblage was probably also discarded (cf. *Souchopová 1975*). The assemblage from Staré Zámky is markedly smaller also when compared to the contemporary centre of Mikulčice. The northern bailey of Mikulčice currently being evaluated, which containing approximately 1/3 of all the slag finds from the centre, yielded about 288 kg of slags (Michael Lebsak, personal communication).

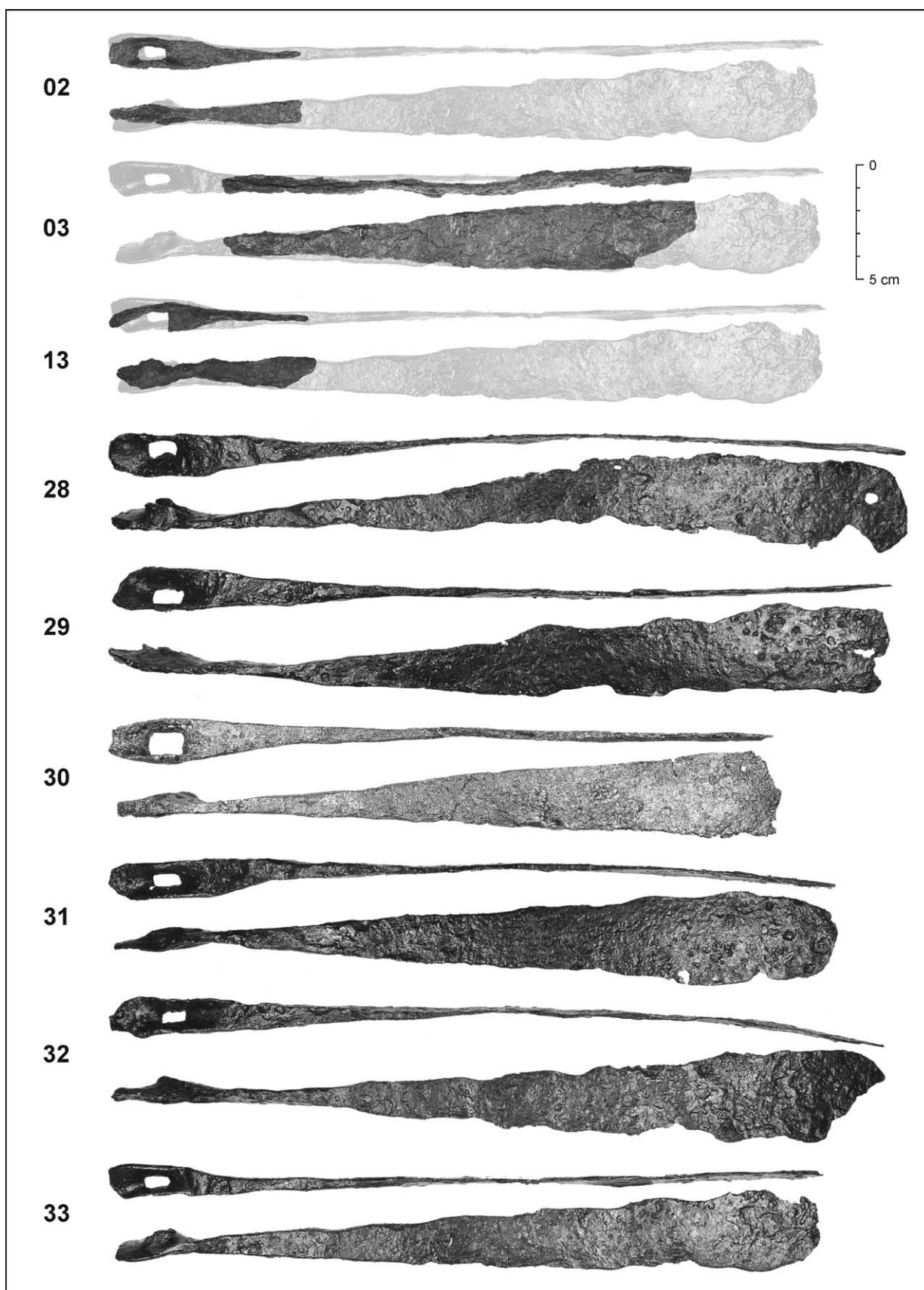


Fig. 4. Staré Zámky near Brno-Líšeň. Axe-shaped bars. Category IIIb, i.e. reduced medium-sized bars (numbering corresponds with Fig. 11; 12; Tab. 1). For comparison the fragments were superimposed on the bar inv. no. 396/56f (map no. 33).

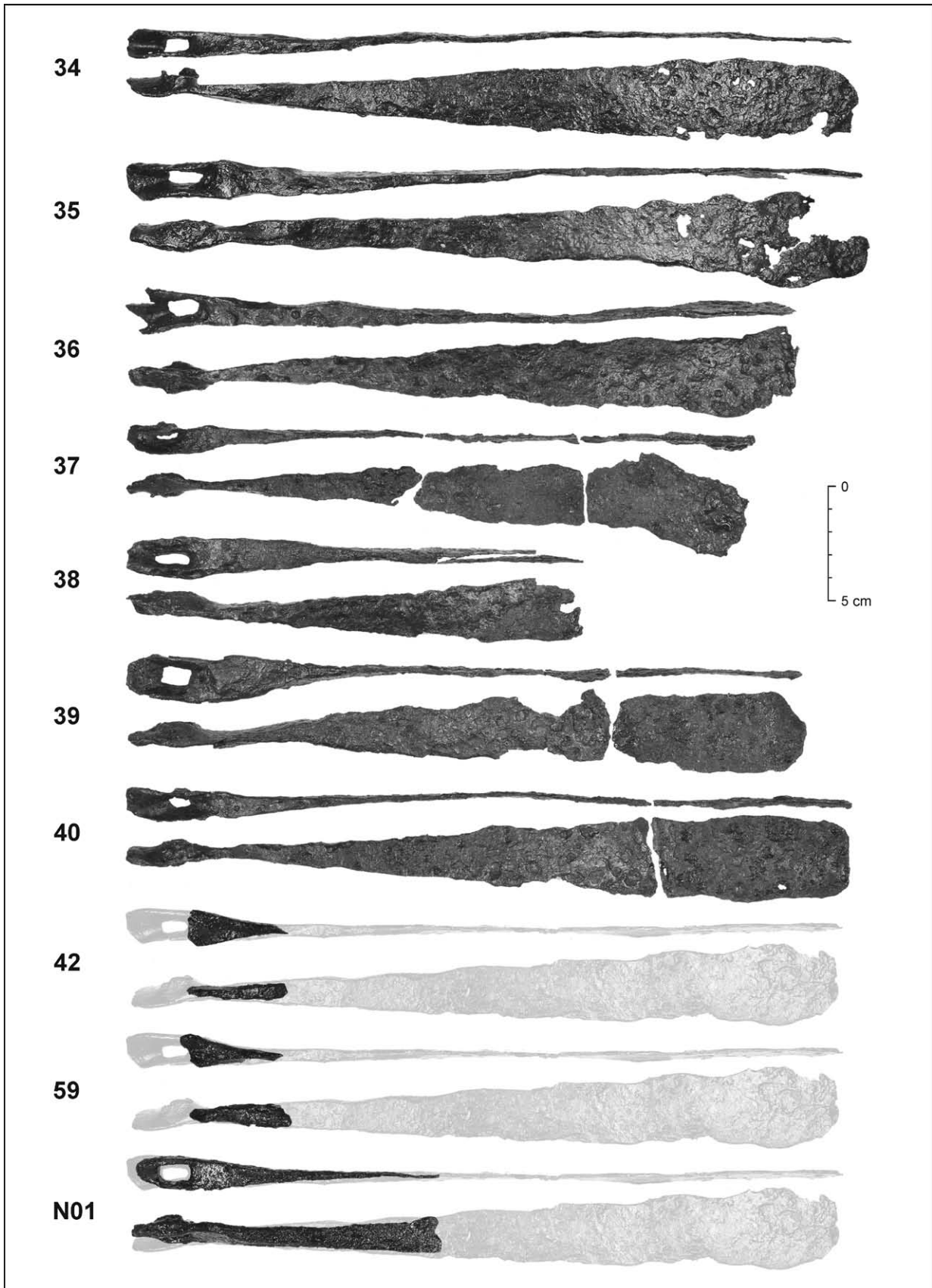


Fig. 5. Staré Zámky near Brno-Líšeň. Axe-shaped bars. Category IIIb, i.e. reduced medium-sized bars (numbering corresponds with Fig. 11; 12; Tab. 1). For comparison the fragments were superimposed on the bar inv. no. 396/56f (map no. 33).

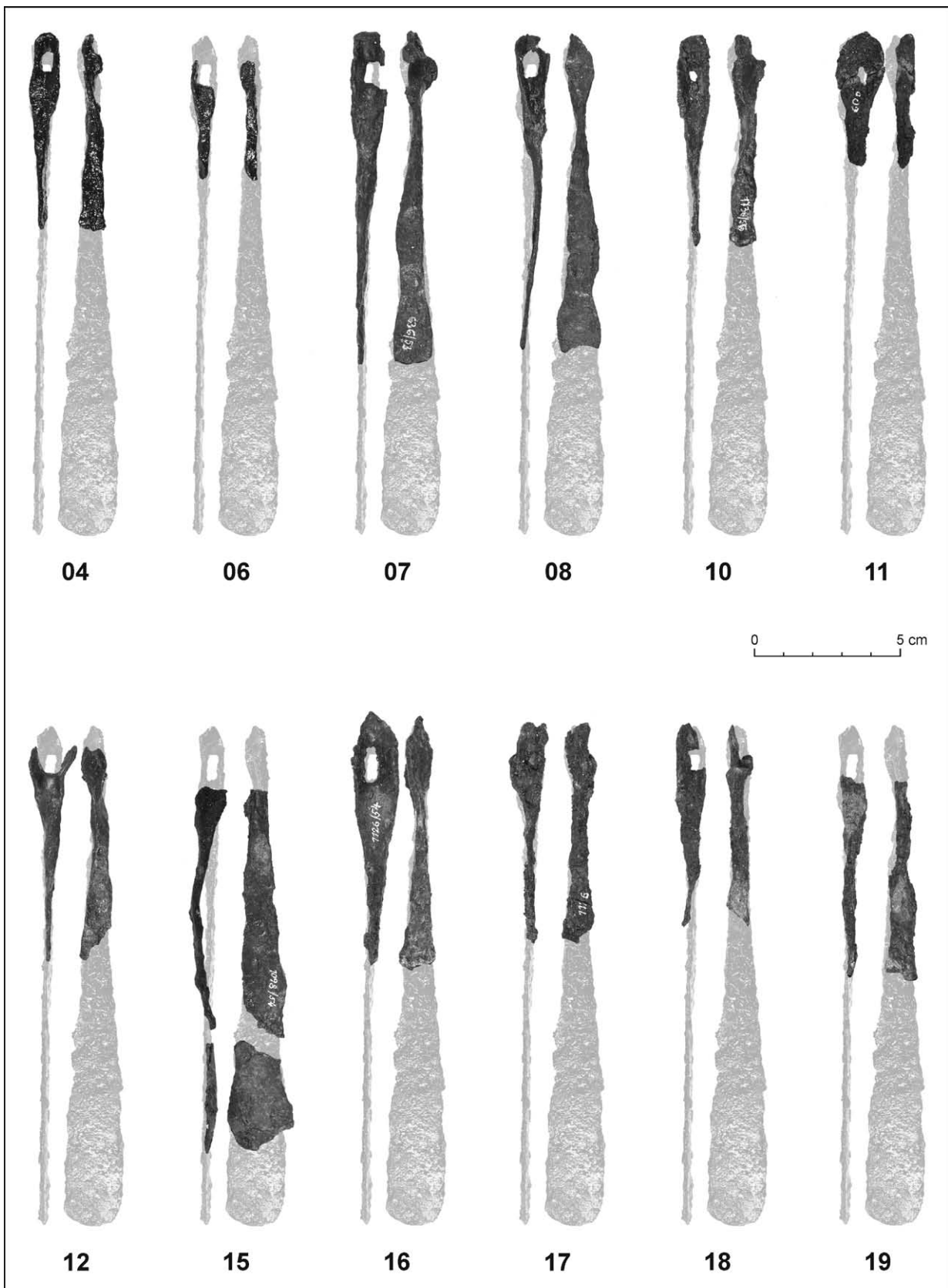


Fig. 6. Staré Zámky near Brno-Líšeň. Axe-shaped bars. Category IV (including subcategories IVa and IVb), i.e. small-sized bars (numbering corresponds with Fig. 11; 12; Tab. 1). For comparison the fragments were superimposed on the digitally straightened bar no. N05.

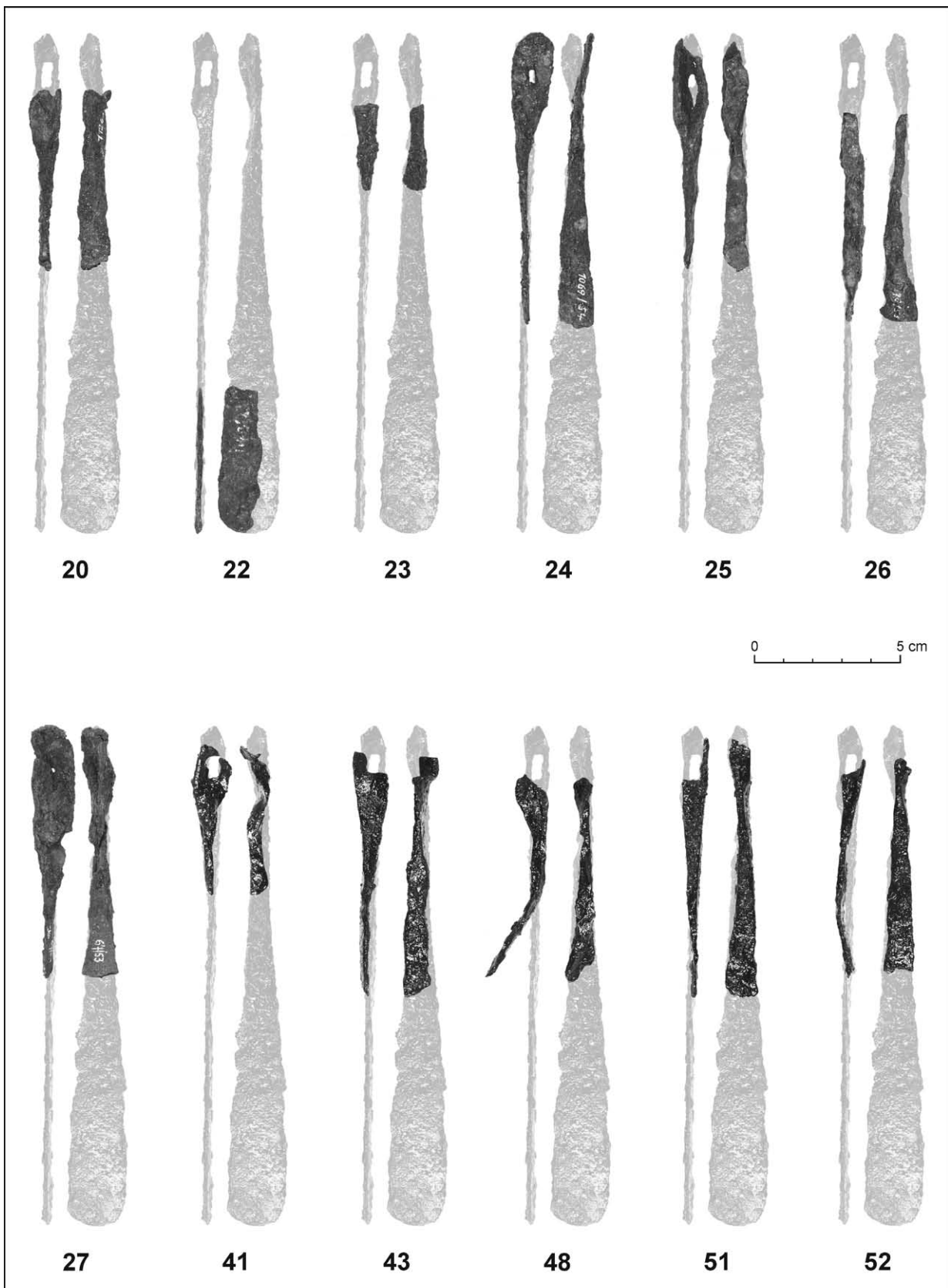


Fig. 7. Staré Zámky near Brno-Líšeň. Axe-shaped bars. Category IV (including subcategories IVa and IVb), i.e. small-sized bars (numbering corresponds with Fig. 11; 12; Tab. 1). For comparison the fragments were superimposed on the digitally straightened bar no. N05.

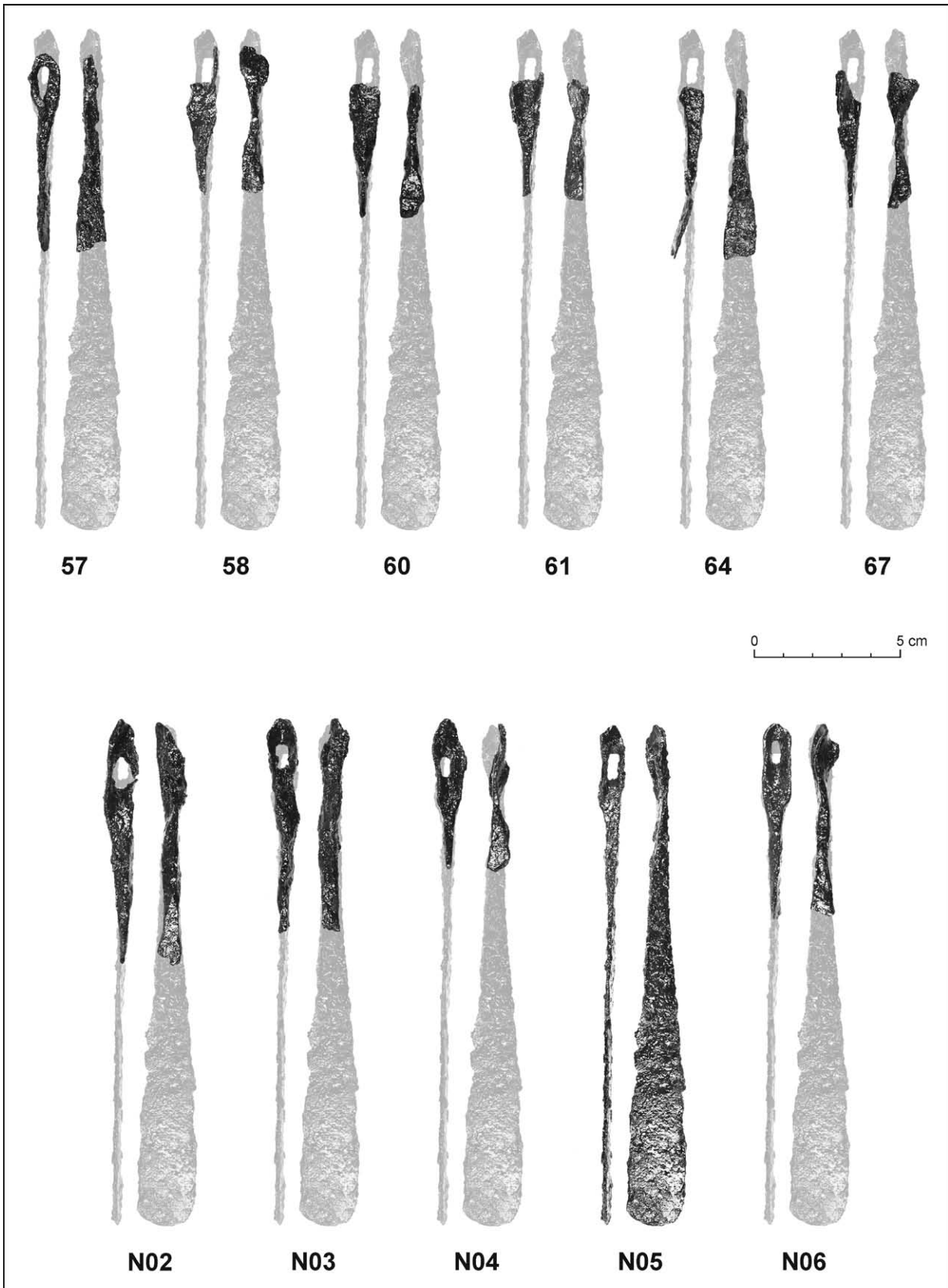


Fig. 8. Staré Zámky near Brno-Líšeň. Axe-shaped bars. Category IV (including subcategories IVa and IVb), i.e. small-sized bars (numbering corresponds with Fig. 11; 12; Tab. 1). For comparison the fragments were superimposed on the digitally straightened bar no. N05.

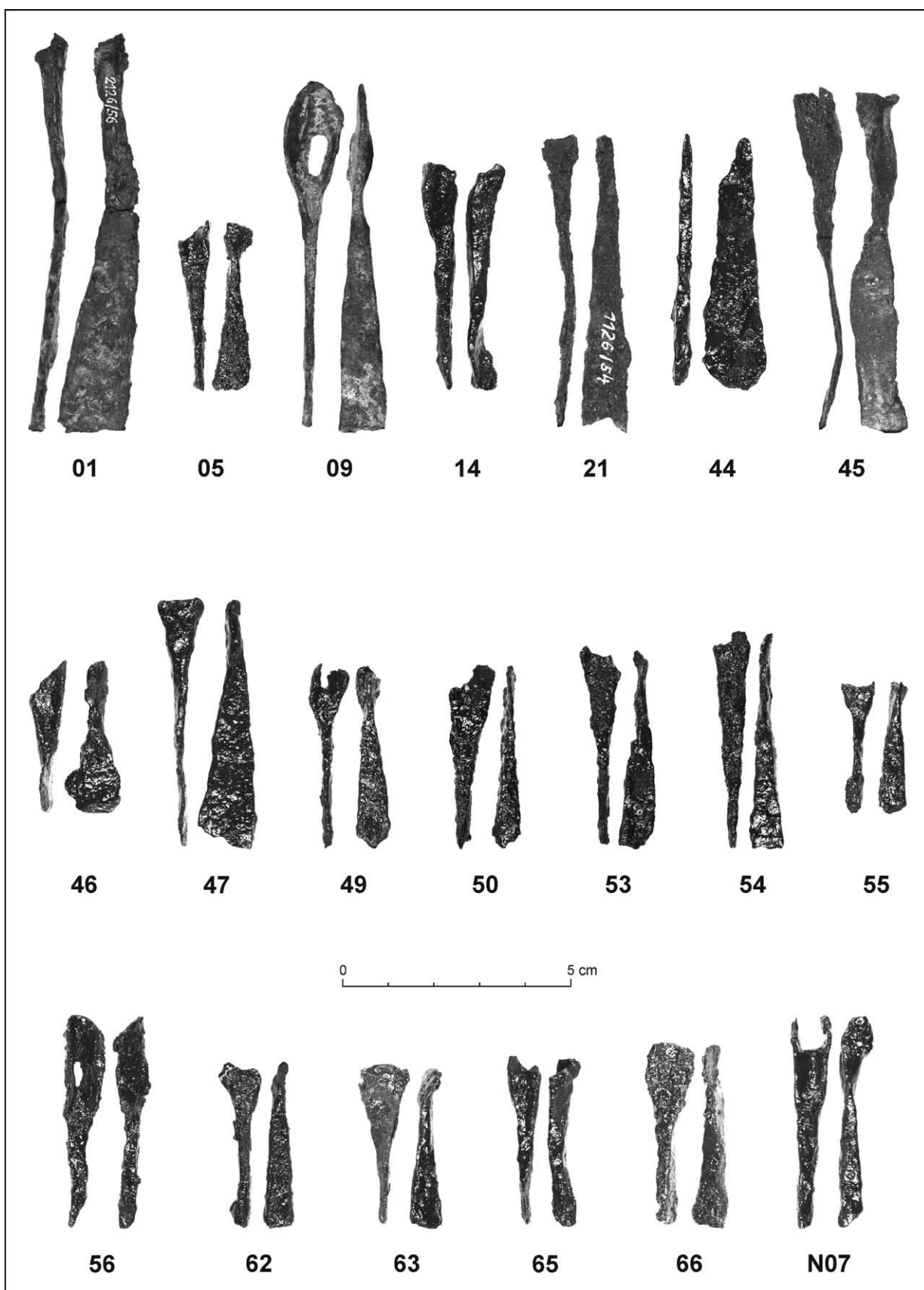


Fig. 9. Staré Zámky near Brno-Líšeň. Axe-shaped bars. Category IVb and V, i.e. reduced small-sized bars and miniature size bars (numbering corresponds with Fig. 11; 12; Tab. 1).

one non-professional find (Fig. 8: N05), and the bar reportedly found in one of the sunken huts (*Staňa 1960*, 244),⁴ all the axe-shaped bars were found incomplete. With the absolute majority (68 pcs., i.e. more than 90% of the evaluated finds), part or the entire blade was missing, and significant part of finds (43 pcs., i.e. almost 60% of evaluated finds) also lacked part or the whole ear.

The quality of the description of the find contexts varies depending on the circumstances of the find. Only the seasons 1953 and 1954 of regular archaeological excavation have more complex documentation, as their excavation reports have been published (*Staňa 1953; 1954*). Documentation of the other seasons of the excavation campaign were incomplete and have been partially lost (*Staňa 1955; 1956; 1958; 1959a; 1965*), they thus have not allowed more than a spatial localization of individual finds.⁵ All the finds obtained by metal detector survey were localized by GPS, allowing the spatial distribution to be mapped more precisely, but no more detailed documentation about the contexts of finds are available. Finally, the non-professional finds can be only roughly localized to the acropolis of the stronghold, as they were collected without more precise documentation.

METHODS OF EVALUATION

For the purpose of the size/weight classification of axe-shaped bars from Staré Zámky, the neck circumference in the area between the ear and the blade of the bar was measured. Fragmentary pieces were also compared to complete bars known from the site. According to these criteria, the bars were then classified to the size/weight categories including the probable subcategories (Fig. 1), where it was possible to determine them. With regard to the fact that the circumference of the bar's neck was in most cases deformed during the forging of the bar (cf. *Hlavica/Bárta/Merta 2020*, 25) and thus can slightly differ between different parts of the neck, the following classification of fragments into defined size/weight categories needs to be perceived as illustrative. Its purpose is to approximately determine the quantity of bars of distinct sizes and weights present at the site, but these results unfortunately cannot be further specified by any other data.

The preserved length and weight of bars and their fragments were also measured. It is valuable

especially in the case of six complete bars from the axe-shaped bars hoard, where the level of possible size/weight standardization can be determined.

Based on the available data, spatial distribution of individual axe-shaped bars was also mapped. Bars obtained during the archaeological campaign were mapped to the excavation square grid of the research, whereas metal detector finds were localized using the GPS coordinates. Undocumented non-professional finds were excluded from the distribution map, as they can be only roughly localized to the area of the stronghold's acropolis. The four currently lost pieces were also excluded.

RESULTS

Classification

According to results of the axe-shaped bars classification, the weight/size categories from III to V are present at the site (Fig. 10; Tab. 1).

Category III (approx. Pleiner's medium-sized bars) represents the largest axe-shaped bars at the site (Fig. 4; 5). It includes nineteen pieces. Beside thirteen bars known from the hoard (Fig. 4: 28–33; 5: 34–40), six more fragments (Fig. 4: 02, 03, 13; 5: 42, 59, N01) are most probably relicts of bars from this category. According to six complete pieces from the hoard, the documented length of the bars from this

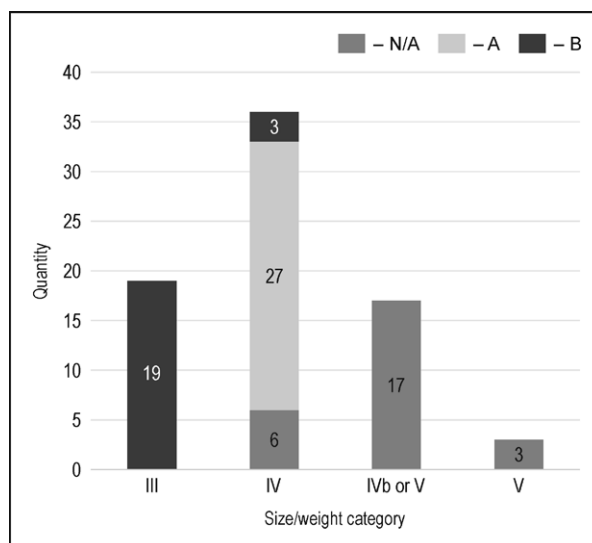


Fig. 10. Staré Zámky near Brno-Líšeň. Distribution of individual axe-shaped bars among the size/weight categories.

⁴ From the sunken hut located in trenches E-IX and F-IX, the author reported find of one broken axe-shaped bar of total length of 18 cm along with the fragments of nine more pieces. The Inv. Nos. of finds contain altogether 11 fragments of the axe-shaped bar, but, unfortunately, they cannot be combined into a bar of the reported length (Fig. 6: 15–19; 7: 20–25).

⁵ Incomplete excavation reports were based on Č. Staňa's scholarly legacy left to the Archive of the Archaeological Institute of the Czech Academy of Sciences, Brno.

Tab. 1. Staré Zámky near Brno-Líšeň. List of axe-shaped bars containing the evaluated attributes (size/weight category acc. to Fig. 1; eye type acc. to *BialekováTurčan 2007*, fig. 9).

Map No.	Inv. No.	Year	Preserved Length [cm]	Preserved Weight [g]	Neck Circumference [cm]	Size/Weight Category	Eye	Eye Type	Blade	Total Condition	Context	Dating
01	2126/56	1956	8.5	8	1.5	IVb or V	missing	n/a	incomplete	incomplete	square O-II	n/a
02	868/54	1954	8.5	17	2.6	IIIb	complete	II	incomplete	incomplete	layer with a hooked spur and ceramic slags	turn of the 9 th c.?
03	809/53	1953	20.5	59	3	IIIb	missing	n/a	incomplete	incomplete	undated layer	n/a
04	1/2018	2018	7.6	7	2.2	IVa	complete	II	incomplete	incomplete	metal detector find	n/a
05	5/2014	2014	3.7	3	1.5	IVb or V	incomplete	II	incomplete	incomplete	metal detector find	n/a
06	3/2014	2014	6	10	2.3	IVa	incomplete	II	incomplete	incomplete	metal detector find	n/a
07	636/53	1953	11.3	15	2.1	IVa	incomplete	II	incomplete	incomplete	fill of the fortification chamber	1 st half of 9 th c.
08	807/53	1953	11	10	1.9	IVa	complete	II	incomplete	incomplete	body of the fortification	1 st half of 9 th c.
09	1835/56	1956	7.5	6	1.5	IVb or V	complete	II	incomplete	incomplete	square A-0	n/a
10	1736/56	1956	7	7	1.9	IVa	complete	II	incomplete	incomplete	square A-1	n/a
11	600/54	1954	4.5	5	2	IVa	complete	III	incomplete	incomplete	fill of the feature	n/a
12	206/54a	1954	7.3	9	1.8	IVa	incomplete	II	incomplete	incomplete	undated layer	n/a
13	373/55	1955	9	13	2.7	IIIb	incomplete	II	incomplete	incomplete	small feature near half-sunken hut with spurs	n/a
14	5/2018	2018	5	5	1.5	IVb or V	incomplete	II	incomplete	incomplete	metal detector find	n/a
15	1098/54	1954	11	17	2.2	IVa	incomplete	II	incomplete	incomplete	half-sunken hut with spurs	2 nd half of 9 th c.
16	1126/54a	1954	8.5	15	2.1	IVa	complete	II	incomplete	incomplete	half-sunken hut with spurs	2 nd half of 9 th c.
17	1126/54b	1954	6	6	2	IVa	complete	II	incomplete	incomplete	half-sunken hut with spurs	2 nd half of 9 th c.
18	1126/54c	1954	7	8	2	IVa	incomplete	II	incomplete	incomplete	half-sunken hut with spurs	2 nd half of 9 th c.
19	1126/54d	1954	6.8	5	1.9	IVa	missing	n/a	incomplete	incomplete	half-sunken hut with spurs	2 nd half of 9 th c.
20	1126/54e	1954	6	7	2	IVa	incomplete	II	incomplete	incomplete	half-sunken hut with spurs	2 nd half of 9 th c.
21	1126/54f	1954	6.4	4	1.5	IVb or V	missing	n/a	incomplete	incomplete	half-sunken hut with spurs	2 nd half of 9 th c.
22	1126/54g	1954	5	5	n/a	IV	missing	n/a	incomplete	incomplete	half-sunken hut with spurs	2 nd half of 9 th c.
23	1126/54h	1954	3	3	2	IVa	missing	n/a	incomplete	incomplete	half-sunken hut with spurs	2 nd half of 9 th c.
24	1069/54	1954	10	10	1.9	IVa	complete	III	incomplete	incomplete	half-sunken hut with spurs	2 nd half of 9 th c.
25	1091/54	1954	7.8	10	2	IVa	complete	II	incomplete	incomplete	half-sunken hut with spurs	2 nd half of 9 th c.
26	70/53	1953	7	9	2.2	IVa	missing	n/a	incomplete	incomplete	fill of the ditch, destruction of fortification	beginning of the 10 th c.

Table 1. Continuation.

Map No.	Inv. No.	Year	Preserved Length [cm]	Preserved Weight [g]	Neck Circumference [cm]	Size/Weight Category	Eye	Eye Type	Blade	Total Condition	Context	Dating
27	67/53	1953	8.5	13	2.1	IVa	complete	III	incomplete	incomplete	fill of the ditch, destruction of fortification	beginning of the 10 th c.
28	396/56a	1956	35	108	3.6	IIIb	complete	II	complete	complete	hoard	n/a
29	396/56b	1956	34	136	3.4	IIIb	complete	II	incomplete	incomplete	hoard	n/a
30	396/56c	1956	30	144	3.6	IIIb	complete	II	incomplete	incomplete	hoard	n/a
31	396/56d	1956	32	131	3.6	IIIb	complete	II	complete	complete	hoard	n/a
32	396/56e	1956	34	91	3	IIIb	complete	II	incomplete	incomplete	hoard	n/a
33	396/56f	1956	31	99	3.3	IIIb	complete	II	complete	complete	hoard	n/a
34	396/56g	1956	32	88	2.8	IIIb	complete	II	complete	complete	hoard	n/a
35	396/56h	1956	32	118	3.8	IIIb	complete	II	complete	complete	hoard	n/a
36	396/56a2	1956	29	99	2.7	IIIb	complete	II	incomplete	incomplete	hoard	n/a
37	396/56b2+f2	1956	26	49	2.3	IIIb	complete	II	incomplete	incomplete	hoard	n/a
38	396/56c2	1956	21	84	3.8	IIIb	complete	II	incomplete	incomplete	hoard	n/a
39	396/56d2	1956	30	80	3	IIIb	complete	II	incomplete	incomplete	hoard	n/a
40	396/56e2	1956	31	74	2.5	IIIb	complete	II	complete	complete	hoard	n/a
41	4/2016	2016	5	5	1.7	IVb	complete	II	incomplete	incomplete	metal detector find	n/a
42	4/2018	2018	4	7	2.5	IIIb	missing	n/a	incomplete	incomplete	metal detector find	n/a
43	2/2014	2014	8.2	9	2.1	IVa	incomplete	II	incomplete	incomplete	metal detector find	n/a
44	7/2018	2018	5	5	n/a	IVb or V	missing	n/a	incomplete	incomplete	metal detector find	n/a
45	803/53	1953	7.5	5	1.6	IVb or V	incomplete	II	incomplete	incomplete	undated layer	n/a
46	6/2016	2016	3.3	>1	1.6	IVb or V	missing	n/a	incomplete	incomplete	metal detector find	n/a
47	6/2018	2018	5.5	3	1.5	IVb or V	missing	n/a	incomplete	incomplete	metal detector find	n/a
48	2/2018	2018	7	5	1.6	IVb	missing	n/a	incomplete?	incomplete	metal detector find	n/a
49	2/2016	2016	3.9	>1	1.3	V	incomplete	II	incomplete	incomplete	metal detector find	n/a
50	7/2014	2014	4	2	1.4	IVb or V	missing	n/a	incomplete	incomplete	metal detector find	n/a
51	1/2014	2014	8.5	9	1.7	IVb	incomplete	II	incomplete	incomplete	metal detector find	n/a
52	3/2016	2016	7.5	7	1.8	IVa	incomplete	II	incomplete	incomplete	metal detector find	n/a
53	10/2018	2018	4.3	2	1.4	IVb or V	missing	n/a	incomplete	incomplete	metal detector find	n/a
54	5/2016	2016	4.6	4	1.6	IVb or V	missing	n/a	incomplete	incomplete	metal detector find	n/a

Table 1. Continuation.

Map No.	Inv. No.	Year	Preserved Length [cm]	Preserved Weight [g]	Neck Circumference [cm]	Size/Weight Category	Eye	Eye Type	Blade	Total Condition	Context	Dating
55	1/2017	2017	2.9	>1	1.3	V	missing	n/a	incomplete	incomplete	metal detector find	n/a
56	4/2017	2017	4.5	2	1.4	IVb or V	complete	II	incomplete	incomplete	metal detector find	n/a
57	1/2016	2016	7.6	5	1.6	IV	repaired?	IV	incomplete	incomplete	metal detector find	n/a
58	4/2014	2014	5	5	2	IVa	incomplete	II	incomplete	incomplete	metal detector find	n/a
59	9/2018	2018	4.5	8	2.7	IIIb	incomplete	II	incomplete	incomplete	metal detector find	n/a
60	8/2018	2018	4.5	5	1.9	IVa	missing	n/a	incomplete	incomplete	metal detector find	n/a
61	6/2014	2014	4.2	6	1.7	IV	incomplete	II	incomplete	incomplete	metal detector find	n/a
62	5/2017	2017	3.5	3	1.3	V	missing	n/a	incomplete	incomplete	metal detector find	n/a
63	3/2017	2017	3.4	2	1.6	IVb or V	missing	n/a	incomplete	incomplete	metal detector find	n/a
64	3/2018	2018	5.8	5	1.7	IV	missing	n/a	incomplete	incomplete	metal detector find	n/a
65	2/2017	2017	3.6	3	1.5	IVb or V	incomplete	II	incomplete	incomplete	metal detector find	n/a
66	1/2015	2015	4	3	1.5	IVb or V	incomplete	II	incomplete	incomplete	metal detector find	n/a
67	6/2017	2017	4.5	3	1.7	IV	incomplete	II	incomplete	incomplete	metal detector find	n/a
N/A 01 (acropolis)	1/2007	2006, 2007	13	30	2.5	IIIb	complete	II	incomplete	incomplete	non-professional surface find	n/a
N/A 02 (acropolis)	2/2007	2006, 2007	8	13	2.2	IVa	complete	II	incomplete	incomplete	non-professional surface find	n/a
N/A 03 (acropolis)	3/2007	2006, 2007	7.2	8	2.2	IVa	complete	II	incomplete	incomplete	non-professional surface find	n/a
N/A 04 (acropolis)	4/2007	2006, 2007	5	5	2	IVa	complete	II	incomplete	incomplete	non-professional surface find	n/a
N/A 05 (acropolis)	1/2022	2022	18	24	1.8	IVa	complete	II	complete	complete	non-professional surface find	n/a
N/A 06 (acropolis)	2/2022	2022	6.5	8	1.9	IVa	complete	II	incomplete	incomplete	non-professional surface find	n/a
N/A 07 (acropolis)	3/2022	2022	4.6	4	1.6	IVb or V	incomplete	II	incomplete	incomplete	non-professional surface find	n/a
N/A (lost)	294/65	1965	n/a	n/a	n/a	n/a	n/a	n/a	n/a	incomplete	groove, square J-III	n/a
N/A (lost)	306/58	1958	n/a	n/a	n/a	n/a	incomplete	n/a	n/a	incomplete	fill of the feature	n/a
N/A (lost)	414/53	1953	14.5	n/a	n/a	IV	complete	II	incomplete	n/a	half-sunken hut with sheep shears	1 st half of the 10 th c.
N/A (lost)	490/59	1959	n/a	n/a	n/a	n/a	n/a	n/a	n/a	incomplete	square VVX, among rocks	n/a

category vary between 31 and 35 cm, the weight of already preserved pieces vary between 74 and 144 g (the heaviest bar from the hoard was the incomplete piece 396/56c; Fig. 4: 30). This makes them significantly lighter than the known piece defining category IIIa weighing 312 g (Fig. 1: 4). Based on their weight and in the case of fragments on the neck circumference (ranging between 3.2 and 3.8 cm), all these pieces were thus classified in category IIIb (reduced medium-sized bars).

Category IV (approx. Pleiner's small-sized bars) includes a major part of the assemblage, as 36 pieces, including one complete bar, fall into it (Fig. 6–8). Based on the weight and the neck circumference comparison between the complete bar from Staré Zámky (Fig. 8: N05) with the known reduced piece (Fig. 1: 7), most of the bars (27 pieces) were classified in category IVa (standard small-sized bars, neck circumference ranging between 1.8 and 2.3 cm), three more were classified to category IVb (reduced small-sized bars, neck circumference ranging from 1.6 to 1.7 cm). Six pieces were only roughly classified in category IV, as it was not possible to determine whether they belong to category IVa or IVb (they possibly represent something in between). The only complete piece representing category IVa weighs 24 g and measures 18 cm. The size/weight attributes of pieces of category IVb from Staré Zámky can be only roughly estimated as the category contains no complete specimen. A slightly shorter reduced piece from Mikulčice (Fig. 1: 7) with a neck circumference of about 1.4 cm measures 13.5 cm and weighs approximately 14 g.

Category IVb or V (Fig. 9, excluding nos. 49, 55, 62) defined as the smallest pieces of the assemblage were impossible to classify more precisely due to only minor differences in the neck circumference (ranging from 1.4 to 1.6 cm) and the high level of fragmentation (no complete piece was recorded from the site). 17 pieces are included in this transitional category.

Category V (Fig. 9: 49, 55, 62) included fragments of miniaturized parts of the bars with the smallest neck circumference (1.3 mm). These three pieces, including one with a ruptured eye (Fig. 9: 49) most probably represents the smallest known category of axe-shaped bars. As no complete specimen from the site is known, no precise information about size and weight attributes of pieces from this category can be given, except the fact that the fragments are hardly distinguishable from the category IVb. It is thus uncertain if these miniature pieces really existed on the site or if they are just specific cases of category IVb (i.e. quite similar with a view to their length and weight attributes).

Dating

Only small part of the assemblage obtained by the excavation campaign is roughly datable, and it consists almost entirely of pieces from category IVa. The circulation of category IVa bars in the first half of the 9th c. is indicated by two pieces (Fig. 6: 7, 8), which were found in the fill of the fortification chamber, and the body of the fortification (*Staňa 1953*, 143, 144). This roughly defined period is thus probably the time of the first occurrence of this type at the site. Eleven fragments including the nine shortened pieces classified to IVa (Fig. 6: 15–19; 7: 22–25) were discovered in the context of one of the sunken huts dated to the second half of the 9th c. (*Kalčík 2015*, 146; *Staňa 1960*, 242–244). But the assemblage also contained one piece classified in category IVb or even V. Reduced versions of small bars thus already existed in this period. As to the chronologically latest occurrence of the bars, there are some indications that axe-shaped bars of category IVa remained in circulation at the time of the collapse of the centre at the beginning of the 10th c. This is indicated by two pieces (Fig. 7: 26, 27) found in the fill of the ditch containing the destruction of the fortification (*Staňa 1953*, 47, 48), as well as by the occurrence of category IV (unfortunately lost) bar (see *Staňa 1953*, tab. 267) discovered within the hut roughly dated to the first half 10th c. (*Staňa 1960*, 250, 251; *Kalčík 2015*, 191). This supports the hypothesis that the economic role of small (category IV, and possibly V) axe-shaped bars may have continued to exist at the site for some time even after the collapse of the centre and Great Moravian political organization.

As regards category III, most of its representatives originated from the undatable hoard context. The only indication about their chronology is a fragment (Fig. 4: 2) discovered in the layer containing also part of a hooked spur and some atypical ceramic slags (*Hauptmann 2021*, 245, 246; *Staňa 1954*, 140, 141). The first occurrence of the category III bars is thus possible during the turn of the 9th c. or even in the 8th c., but the current data base is insufficient for presenting any firm conclusion.

Spatial distribution

Mapping the spatial distribution of axe-shaped bars from the studied assemblage indicates circulation of the bars within all parts of the stronghold's acropolis, no distinct concentration or separation of individual categories can be observed (Fig. 11). No data is available from outer wards of the stronghold, but a solitary find in a forested area ca. 1 km to the

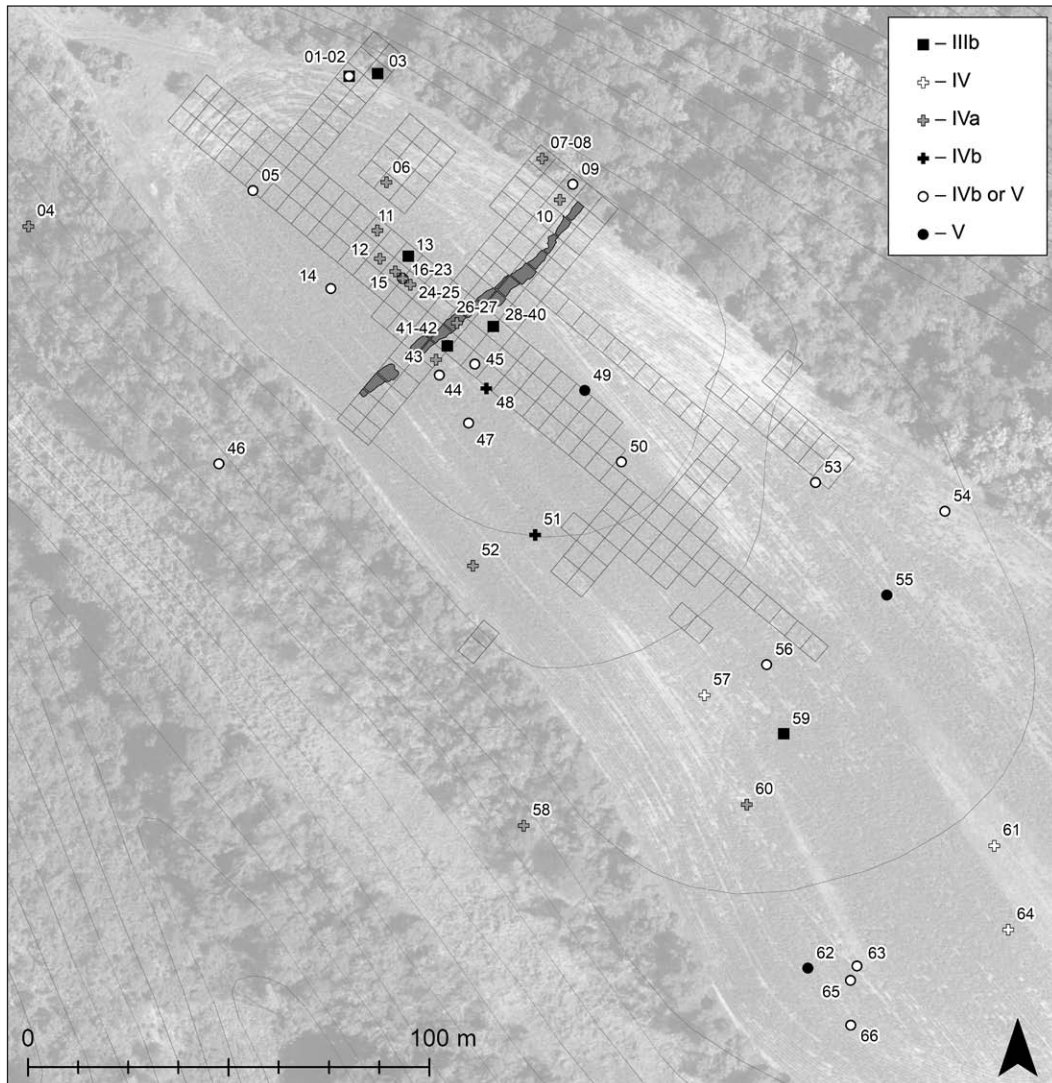


Fig. 11. Staré Zámky near Brno-Líšeň. Spatial distribution of axe-shaped bars' individual size/weight categories within the acropolis. Aerial photograph by State Administration of Land Surveying and Cadastre of the Czech Republic.

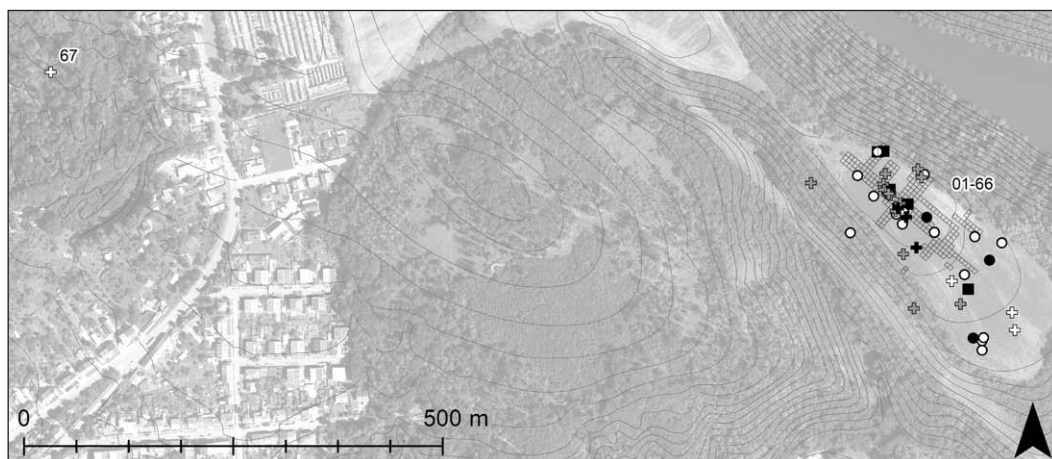


Fig. 12. Staré Zámky near Brno-Líšeň. Spatial distribution of axe-shaped bars' individual size/weight categories including the metal-detector find from the area of the stronghold's hinterland. Aerial photograph by State Administration of Land Surveying and Cadastre of the Czech Republic. For the legend see Fig. 11.

west of the stronghold (Fig. 12: 67) indicates that the movement of axe-shaped bars was not restricted to the stronghold itself, but they can be discovered even in the immediate surroundings of the stronghold. As only the solitary find is yet known from the hinterland of the centre, so far, the economic role of the bars in the hinterland can be only estimated.

DISCUSSION

Compared to the known assemblages of other major strongholds of Great Moravia (*Bialeková/Tirpáková 1989, 92; Galuška 1992, 145; Poláček 2007, 511; Vidlák 2018, 65*), the assemblage of axe-shaped bars from Staré Zámky can be considered as less abundant. Despite this fact, its detailed evaluation yielded stimulating results for further discussion about the role of axe-shaped bars within the Great Moravian economy.

Distribution of individual pieces and fragments among axe-shaped bars' size/weight categories (Fig. 10) indicates that category IV, and IVa respectively, mainly circulated within the centre. This conclusion is not without limits, however, as significant quantity of smaller pieces (categories IVb or V) was found by later metal detector survey. Their relatively small presence in the assemblage from the excavation campaign may indicate that fragments of smaller and miniature bars were not recognized or were later discarded (cf. *Kalčík 2015, 131*). The circulation of smallest bars on the site could be thus originally more frequent than presented by this evaluation.

The category IV probably occurred on the site during the first half of the 9th c. and the find from one of the sunken huts indicates that they may have in circulation even at the beginning of the 10th c. Some of the pieces were thus possibly in use also shortly after the collapse of Great Moravia and its regional economy. The distribution of the fragments within the stronghold, as well as multiple contexts including the presence of these bars within sunken huts with spurs, and the another with sheep shears respectively (see also *Staňa 1960, 242–244, 252, 253*) indicate that access to them was not socially restricted. They were thus probably used widely on a daily basis instead of systematically accumulated and stored. The archaeological record also shows that they possibly circulate in bundles (as they were found within the hut with the spurs), or solely (hut with the sheep shears). This observation corresponds with the hypothesis that the axe-shaped bars' evolution reached the stage, when they were

used as general-purpose money tokens mediating the trade within the centre, or between the centre and its hinterland. But to reinforce this conclusion, an appropriate evaluation of assemblages from other major Great Moravian centres is indeed still needed.

What is striking within the assemblage of category IV bars is that most of the pieces are lacking the blade. Some fragments indicate that the absence of the blade is not a matter of post-depositional processes, but that they were intentionally removed (cf. *Galuška 1992, 145; Pleiner 1961, 429; Szmoniewski/Rozmus 2022*). Especially testimonial are the bars from category IVb (reduced small bars). A study of similar pieces from Mikulčice (e.g. Fig. 1: 7) shows that thickness of these pieces is homogeneous throughout the body of the bar. Despite this fact, the upper part including the eye survived archaeologization often in quite good shape (e.g. Fig. 9: 09) unlike the blade or its part that seems to be missing. The thesis about the intentional removing of the bar's blade is also supported by the finds of more massive

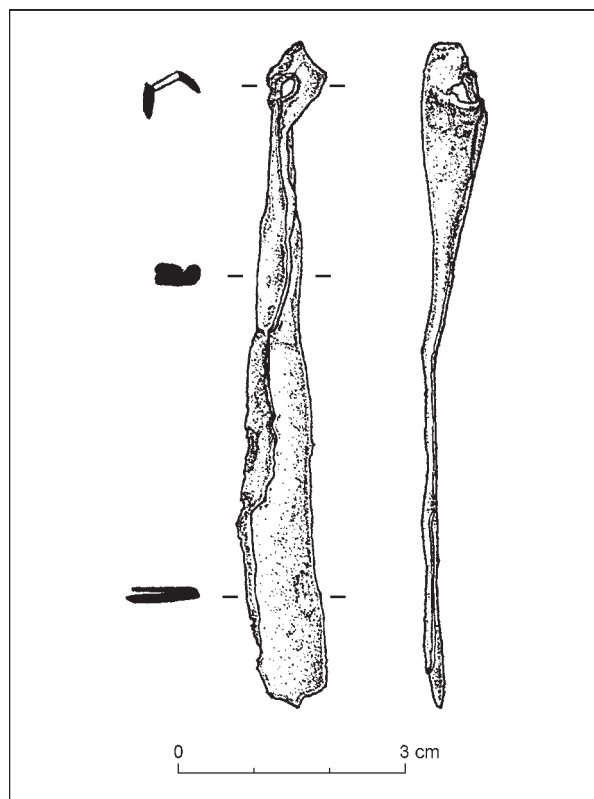


Fig. 13. Great Moravian centre of Mikulčice. Small reduced or miniature axe-shaped bar (inv. no. 4785/59; 8.8 cm; 4 g; neck ca. = 1.4 cm) probably made from blade of a larger axe-shaped bar (drawing by K. Augustinová).

⁶ See note 3 above.

category IIIb pieces. Non-hoarded pieces were also found without the blade (Fig. 4: 02, 13, 42, 59, N01), or the blade was found without the eye (Fig. 4: 03). Regarding the fact that the blades of axe-shaped bars were found on the site only rarely indicates that easily workable parts of bars were further utilized (cf. *Dostál 1983*, 194; *Pleiner 1961*, 429). Some finds outside Staré Zámky (Fig. 13; see also *Galuska 1992*, 145, 149, fig. 12: 11) also indicate that at least part of axe-shaped bar blades could have been used for making smaller bars. The blade removal phenomenon is observable on all axe-shaped bar categories present on the site, and as indicated by the (unfortunately only rough) dating of the pieces from the stronghold fortification body possibly from the first half of the 9th c. The phenomenon included also miniature (category V) pieces, which in complete shape weighed no more than a few grams. But in the latest case, the practical utilization of miniature axe-shaped bar blades weighing only a few grams is hardly conceivable.

The phenomenon of devaluation of axe-shaped bars corresponds with part of the model of axe-shaped bar genesis and evolution predicting the practical use of axe-shaped bars, when the intrinsic value of iron exceeded the value attached to the earlier and more massive token (Fig. 2). It is quite striking, however, that the phenomenon that was going to be caused by the increasing iron scarcity occurred at the centre that probably controlled iron production sites (*Mikulec/Hlavica/Kmošek 2022*) and also affected the smallest recorded pieces of category V. The possibility that breaking the bars had another meaning thus cannot be completely excluded as it also indicated by the rare find of a riveted axe-shaped bar (*Turčan 2021*; see also *Szmoniewski/Rozmus 2022*, fig. 5: 17; 8: 17). Based on the evaluation it is also difficult to definitely decide if the removal of the part or the whole blade of the bar definitely devaluated the token, or if the shortened bar was able further circulate and fulfil its economic role. The spatial distribution of axe-shaped fragments within the centre with many of them possibly lost by their wearers (as indicated by ruptured eyes of approx. 60% of the available finds, and 70% of the finds excluding the hoard of IIIb bars respectively) as well as the presence of a bundle of bars including pieces of reduced length within one of the sunken huts however indicate that not even these pieces were discarded immediately after their blade was removed or shortened.

The only more significant part of the assemblage that escaped devaluation is the hoard of 13 axe-shaped bars of category IIIb. Considering the practical utilization of the rest of the non-hoarded IIIb pieces, it is possible that the hoard was deposited

during the stage when axe-shaped bars were still perceived as social, i.e. non-monetary currency (*Hlavica/Bárta 2021*, 17), and the practical utilization of the bars on the site was not advantageous. Their deposition could thus have happened before the appearance of category IV bars, i.e. the turn of the 9th c. or earlier. But unfortunately, this hypothesis cannot be tested at this time by any other data.

The final point that deserves discussion is the occurrence of axe-shaped bars at the Staré Zámky centre at all. Evaluation of relics of iron production at the site⁶ (*Mikulec 2022*, 41, 42, 50–52) shows that iron processing was only marginally present there. It is thus possible that axe-shaped bars were originally not forged at the site, but was brought there from elsewhere, first as the social currency building the relationship between Moravian kinfolk (*Hlavica/Bárta 2021*, 17), and then as tokens of general-purpose money, when the centre was integrated into the 9th-c. Moravian market system (*Hlavica/Procházka 2020b*). Even this hypothesis deserves more attention in future research. A comparison with properly evaluated assemblages of axe-shaped bars from other central places of Great Moravia will be vital for solving the issue about the place or places where axe-shaped bars were originally made and from which they might possibly have been spread.

CONCLUSION

The paper offers a new perspective on axe-shaped bars as a distinct phenomenon of the Great Moravian economy and society. It first presents a new diachronic model of axe-shaped bars' genesis and evolution. The model sees the roots of axe-shaped bars in the pre-Christian religion when original tools were part of ritualized behaviour. The first axe-shaped bars started to appear within this context where the symbolic function of axes was accented at the expenses of their practical function. Large and massive pieces were probably produced first and perceived as social currency used in non-commercial contexts. Because of the economic stress (increasing demand for iron, and thus increase of its scarcity), these bars, originally possibly also preserving some standardized weight of iron, were gradually made smaller until the stage where there was almost impossible to project any part of a weight unit into them. At this point they started to be perceived as tokens, their value was calculated in another unit of account and guaranteed by the emitting authority or authorities and they were implemented in the credit/debt, i.e. commercial, relations of the 9th-c. Moravia. With the continual

increase of iron's scarcity, their shrinking continued until the stage where small and at the end of the Great Moravian period possibly even miniature pieces were produced.

The next part of the paper confronted the above-described model with the data from one of the major centres of the 9th-c. Moravia at Staré Zámky near Brno-Líšeň. The evaluation of 78 pieces and fragments of axe-shaped bars showed that majority of the bars belonged to size/weight categories, which, according to the model, were utilized in commercialized exchange. Analysis of their spatial distribution shows that they circulated with no limits within the stronghold, and they were not hoarded, but probably used on daily basis, used individually as well as in bundles. Thanks to insufficiently documented and evaluated find contexts, the period of their usage can be dated only roughly and only uncertainly from the first half of the 9th c. possibly up to the first half of the 10th c.

According to the model, the bars from the only present hoard on the site belong to the latest phase of the period where the axe-shaped bars could still have been perceived as social currency. These pieces thus could be still exchanged in non-commercial contexts and can be thus of slightly earlier origin. This conclusion is also supported by the fact that unlike most pieces found on the site the bars from the hoard were not devaluated by the removal of their blade.

The model also explains the phenomenon of cutting off the axe-shaped bars' blades, which would have been the result of the increasing iron scarcity and thus the increase of the intrinsic value of the iron used for the production of 9th-c. Moravian tokens of general-purpose money. Since the value of iron significantly exceeded the arbitrarily defined value of the token, the tokens were devaluated by cutting off part or the entirety of its blade. There are some indications, however, that even devaluated pieces further circulated within the site, unlike the blades, which were most probably further processed. The possibility that the blades were forged into smaller and lighter types of axe-shaped bars cannot be excluded and deserves future attention.

The paper also touched on the issue of the origin of the bars present on the site. According to the data obtained by the evaluation of iron slags from Staré Zámky, which shows that iron processing works were conducted only marginally at the site, the possibility that axe-shaped bars are not produced at the centre itself needs to be considered. However, only further research can resolve this issue satisfactorily.

The data from the Staré Zámky near Brno-Líšeň thus are not in any fundamental way contradictory to the model defined in the initial part of the paper, which gives it some basic credibility. But only further evaluation of larger assemblages from other Great Moravian central sites can essentially test and refine its fundamentals.

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Moravské železné peníze

Model vzniku a vývoje sekerovitých hřiven 9. stol. a jeho prověření souborem ze Starých Zámek v Brně-Líšni

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SOUHRN

Předkládaná práce prezentuje novou perspektivu, s jejíž pomocí reviduje fenomén sekerovitých hřiven, charakteristický projev hmotné kultury velkomoravského období středoevropských dějin. V úvodu nabízí diachronní model jejich geneze a vývoje. Model vidí počátky vzniku sekerovitých hřiven v předkřesťanském kultu, v němž byly originální nástroje v podobě seker součástí ritualizovaného chování a sloužily též coby votivní obětiny či hrobová výbava. Právě tento specifický kontext, v němž byla symbolická funkce seker akcentována na úkor jejich funkce praktické, umožnil vznik prvních masivních železných hřiven stylizovaných do podoby původních nástrojů. Oproti klasickým polotovarům z nich však již není možno vytvořit sekeru bez zpětného pakování do původního polotovaru v podobě železného hranolového prutu. Největší hřivny, které model považuje také za chronologicky nejstarší, pravděpodobně nabývaly role tzv. společenských platidel (starším termínem „primitivních peněz“), které zpravidla cirkulují v nekomerčních kontextech. Nejspíše působením ekonomických tlaků, jejichž součástí byla postupně se zvyšující poptávka po železe, a paralelně s tím jeho narůstající nedostatek, jenž se projevoval i růstem hodnoty této komodity, se původně masivní hřivny postupem času zmenšovaly. Ačkoliv největší a nejtěžší exempláře mohly železnou komoditu zhruba zachovat v nějaké předem definované váze, byly tyto hřivny postupně nahrazeny lehčími a následně též kratšími verzemi. Do nich bylo díky specifickým kovářskému zpracování, tedy nepředvídatelnému úbytku suroviny během kování, již jen velmi obtížně jemnější podíl arbitrárně stanovené váhové jednotky přesněji promítnout. Nejspíše v této fázi pak začala být hodnota sekerovité hřivny garantována jejich producentem (či producenty) a hřivny se postupně transformovaly v úvěrové tokeny integrované do komerčních ekonomických vztahů uvnitř velkomoravské společnosti. S další narůstající hodnotou železa v průběhu času pak pokračovalo zmenšování hřiven, a to až do fáze, kdy se na sklonku velkomoravského období objevují nejmenší dokumentované kusy měřící jednotky cm a vážící pouze několik málo gramů.

Představený vývojový model práce prověřuje konfrontací s menším a dosud nepřilíh dobře známým souborem sekerovitých hřiven z významného velkomoravského centra na Starých Zámčích v Brně-Líšni. Vyhodnocení 78 kusů či fragmentů zde nalezených sekerovitých hřiven ukázalo, že naprostá většina z nich náleží do nejmenších velikostních, resp. váhových, kategorií typu IV a V. U těch již model předpokládá možnou integraci do komercializované směny. Analýza jejich prostorové distribuce ukazuje, že v rámci hradiska obíhaly bez větších omezení a nebyly systematicky deponovány, ale naopak užívány na denní bázi. Jak následně naznačují nálezy z obytných objektů, kolovaly nejen jednotlivě, ale i ve svazcích. Trvání této „komerční fáze“ Starých Zámek může být na základě zdejších nálezů vymezeno jen velmi hrubě a nejspíše. Jeho počátek lze snad položit do období

před, či okolo vzniku komorové hradby, tj. před polovinu 9. stol. Nález v pravděpodobně povelkomoravské zemnici pak naznačuje, že hřivny se v dobové hmotné kultuře mohly vyskytovat ještě v první polovině 10. stol., tj. období po kolapsu velkomoravské společnosti a regionální ekonomiky. Patrně ztrátový nález z polohy mimo vlastní hradisko (obr. 12: 67), pak naznačuje, že mohly být vynášeny i do zázemí centra, byť zde jejich ekonomická role není zcela jasná.

Dosud ojedinělý depot hřiven ze Starých Zámek, který vyhodnocení zařadilo do váhové a velikostní kategorie IIIb, náleží podle modelu do závěru fáze, kdy hřivny mohly být stále ještě vnímány jako společenské platidlo (tzv. primitivní peníze). Kusy shromážděné pravděpodobně prostřednictvím nekomerční společenské směny (např. vzájemného obdarování) mohly být deponovány v období před nástupem menších hřiven. Naznačený závěr je do jisté míry spekulativní, je však rovněž podpořen zjištěním, že oproti soliterně nalezeným kusům (zahrnujícím i několik izolovaných fragmentů kategorie IIIb), nebyly hřivny z depotu devalvovány odseknutím listu.

Jev odsekávání hřiven, který je predikován v úvodu prezentovaným modelem, je v souboru na Starých Zámčích přítomen v masivní míře. Na základě teoretických východisek této práce je možno jej přisoudit narůstající hodnotě železa, z níž byly hřivny vyrobeny. Ta v průběhu času převýšila arbitrárně stanovenou hodnotu tokenu v podobě sekerovité hřivny. Devalvací tokenů sesekáváním listu hřivny je možno interpretovat jako snahu o zvrácení nepříznivého poměru hodnoty železné komodity vůči stanovené hodnotě hřivny. Vyhodnocení tohoto souboru poskytuje indicie, že i devalvované hřivny nadále obíhaly, zatímco odsekuté listy byly zpracovávány. Nelze zcela vyloučit ani možnost, že z jejich částí byly vyráběny menší a lehčí hřivny.

V závěru se studie dotýká též otázky provenience hřiven na Starých Zámčích. Ačkoliv ta zatím postrádá přírodovědná data umožňující provenienci železných artefaktů postihnout, předcházející vyhodnocení souboru železných strusek z lokality ukázalo, že kovozpracující aktivity byly na hradisku pouze sporadické, a to i ve srovnání s některými venkovskými lokalitami. V úvahu tak musí být brána možnost, že hřivny na Starých Zámčích nemusely být produkovány, ale dostávaly se tam v důsledku směny. V případě větších exemplářů snad ještě směnou společenskou (tj. vzájemným obdarováním za účelem budování, utužování či korekce společenských vztahů) a v případě masivně zastoupených menších kusů pak již komerční, v níž hřivny plnily funkci směnného média, tedy peněz.

Data obdržena vyhodnocením dostupného souboru ze Starých Zámek v Brně-Líšni tak nejsou v žádném zásadním rozporu s modelem definovaným v počátcích této práce, což mu dává základní kredibilitu. Avšak pouze podobná vyhodnocení dalších objemnějších souborů mohou jeho validitu testovat v plné míře a celý model v budoucnu zpřesnit či korigovat.

RECENZIE

Vladimír Turčan (zost.): Germánske elity v dobe rímskej na Slovensku. Museion 6. Slovenské národné múzeum. Bratislava 2022. 327 strán. ISBN 978-80-8060-519-3.

Výskum elít historických spoločností patrí medzi hlavné trendy dnešného archeologického a historického bádania. K téme vzniklo už viacero kníh a článkov, ktoré sa zaoberajú elitami z mnohých pohľadov v rôznych historických obdobiach.

Od vzniku poľnohospodárstva inklinuje väčšina ľudských spoločností k usadlému spôsobu života, ktorý si vyžadoval nový spôsob obživy. Na rozdiel od predchádzajúceho obdobia paleolitu sa v neolite prejavili väčšie spoločenské nerovnosti a vznikli elity, ktoré si postupne monopolizovali násilie a ovládli ľudskú spoločnosť. Na základe etnologických paralel vieme, že úloha elít v paleolite bola viac potláčaná v prospech celej spoločnosti. Možno práve usadlý spôsob života viedol k zhromažďovaniu majetku, a tým aj k vymedzeniu tzv. elít (z množstva literatúry pozri napr. *Boehm 2001; Scheidel 2017*). Časom sa objavili aj ďalšie „druhy“ elít, ktorých doménou nebolo len násilie a súkromné vlastníctvo, ale napríklad aj duchovný a intelektuálny svet. Existenciu elitných skupín obyvateľstva predpokladáme aj v pravekých obdobiach Karpatskej kotliny.

Ďalšími pohľadmi by k problematike elít chcela prispieť skupina bádateľov v zborníku *Germánske elity v dobe rímskej na Slovensku*. Publikáciu zostavil autor viacerých podobných úspešných diel V. Turčan. Vyšla ako 6. zväzok edície Museion Slovenského národného múzea. V zborníku sa okrem úvodnej kapitoly nachádza 16 príspevkov v slovenskom a v českom jazyku. Väčšina textov obsahuje fotografickú, alebo kresbovú prílohu. Môžeme si položiť relevantnú otázku, či autori zborníka prispeli niečím novým k téme bádania o elitách v dobe rímskej alebo ide skôr o kompiláciu doterajších známych vedomostí a jej prínosom je tak zhrnutie všetkých dôležitých informácií na jednom mieste?

Pri tvorbe monotematických zborníkov stoja jeho editori často pred dilemou, ktoré texty do diela zaradiť. Mnohé ohlásené príspevky sa nakoniec nestihnú pripraviť k vydaniu, niektorí autori sa – či už obsahovo, geograficky, alebo časovo – výrazne odklonia od témy. Rovnako môže byť problémom (niekedy však, naopak, výhodou), že každý autor má na problematiku svoj vlastný pohľad. Editor má často neľahkú, niekedy priam sizyfovskú úlohu

udržať nastolený koncept zborníka. V. Turčanovi sa podarilo z veľkej časti zachovať geografickú a časovú jednotu príspevkov. Len jeden z textov je z chronologického hľadiska z iného obdobia. Rovnako zachovali autori viac-menej totožný prístup k skúmanej problematike.

Zborník vyšiel pre slovenskú odbornú archeologickú spisbu v netypickom formáte. Namiesto štandardne používanej veľkosti A4 má zborník menší formát, blízky skôr populárno-vedeckej knihe. Toto rozhodnutie editora a vydavateľa, porušujúce zaužívané stereotypy vo vydávaní archeologickej vedeckej literatúry, považujeme za prejav istej odvahy. Okrem praktického hľadiska (formát sa lepšie číta) je tu aj väčšia šanca, že kniha upúta aj širšie publikum. Viacero archeologických publikácií by mohlo ísť v budúcnosti podobnou cestou. Väčšina príspevkov v knihe je aj koncipovaná tak, že okrem odborníkov by mohli zaujať aj laikov.

Prvý krátky príspevok *Mocenská elita v protohistorickom období na území Slovenska* v zborníku napísal jeho zostavovateľ V. Turčan. Ide o krátky text, ktorý má uviesť čitateľa do problematiky výskumu elít. Napriek jeho názvu sa príspevok chronologicky viac venuje dobe rímskej, elity doby laténskej sa spomínajú len v úvode textu. Tu si dovoľíme trochu polemizovať s autorovým tvrdením, že v dobe laténskej došlo v dôsledku keltskej expanzie k civilizačnej unifikácii. Toto tvrdenie je pravdivé len čiastočne. Na územiach, ktoré osídlili Kelti (autori recenzie uprednostňujú pojem nositeľa laténskej kultúry), sledujeme isté spoločné znaky v časti materiálnej kultúry, ale vôbec sa nedá hovoriť o unifikácii. Napríklad, opevnenia z doby laténskej sú budované rozličnými technikami, dokonca sa uvažuje, či niektoré typy opevnení nemohli v mladšej dobe železnej definovať aj konkrétnu etnickú skupinu (*Barral/Fichtl a i. 2019, 19–28*). Rovnako by sme sa mohli zamýšľať aj pri ostatných kultúrnych prejavoch.

Nasledujúce dva príspevky sa pozerajú na problematiku germánskych elít z pohľadu písomných prameňov. J. Kucharík vo svojom príspevku (*Elity očami Rimanov. Kvádski králi v svedectvách písomných prameňov*) ukázal, že aj so zdanlivo vyčerpanými historickými prameňmi je možné ďalej pracovať a priniesť nové bádateľské výsledky. V texte sa však ukazuje jedna disproporcía, ktorá je, žiaľ, charakteristická pre celú knihu. Za elity sa v podstate považujú len príslušníci vládnucej vrstvy, alebo „vlastníci“ bohatých hrobov a kamenných stavieb imitujúcich antický štandard bývania.

Uvedomujeme si, že písomné pramene nastavujú isté hranice nášho poznania, ale samotnú množinu „elita“ nemusíme nutne vymedziť bohatstvom a politickou mocou.

Príspevok P. Valachoviča *Elity barbarov na území dnešného Slovenska v dobe rímskej skôr* v krátkosti zhrňuje písomné pramene venujúce sa problematike. Niektoré informácie by určite zniesli aktualizáciu. Napríklad spomenutá informácia o ilýrskych kmeňoch na území Slovenska už neplatí. Nemáme totiž žiadne relevantné archeologické pramene, ktoré by prítomnosť Ilýrov na našom území potvrdzovali (Kovář 2008, 58).

Pre budúce historické bádanie o germánskych elitách v dobe rímskej by mohlo byť zaujímavé, ak by historici skúsili aplikovať výsledky z výskumov barbarských zákonníkov (*Leges Barbarorum*), ktoré sú síce mladšie (5. až 9. stor.) a nepochádzajú z územia dnešného Slovenska, ale mohli by byť dobrým doplnkom k bádaniu o germánskych elitách.

Ďalší text *Hroby germánskej elity* pristupuje k téme z pohľadu metodológie a syntézy. Nedávno zosnulý profesor E. Krekovič sa venoval tzv. kniežacím hrobom. Text má dve časti – metodologickú a katalogizujúcu syntetizujúcu. V prvej časti sa E. Krekovič snažil o definíciu objektu svojho bádania, pričom nadviazal predovšetkým na prácu G. Kossacka (1974). Uvítali by sme aj zapojenie dôležitej práce o výskume elit od T. Earlea (1997) a ďalšej novšej literatúry. Druhá časť textu E. Krekoviča zhrňuje doterajšie poznatky o výskume germánskych kniežacích hrobov.

R. Čambal a I. Bazovský sa venovali sídlam elit v dobe laténskej (*Sídla elit v dobe laténskej na juhozápadnom Slovensku*). Napriek faktu, že článok sa zameriava na iné obdobie ako je hlavná téma zborníka, ide o kvalitný text, ktorý dobre mapuje dôkazy o existencii elit, či už v prostredí opevnených centier, tzv. hradísk (Horné Orešany, Pohanská, Bratislava) alebo na základe nálezov bohatých hrobov (i s luxusnými prídavkami, napríklad Stupava). Tu sa vynárajú i ďalšie dôležité otázky. Môžeme definovať laténske elity na základe hrovej výbavy? Sú tzv. „hradiská“ centrami elity mladšej doby železnej? Treba sa zamyslieť, či vôbec dokážeme na tieto otázky s dnešnými archeologickými metódami odpovedať. Podstatnú časť textu venujú autori fenoménu bratislavského oppida. Tu je potrebné upozorniť na terminologickú nezrovnalosť, ktorá sa však vyskytuje aj v ďalšej odbornej literatúre. Autori označujú neskoroláténske osídlenie na území dnešnej Bratislavy pojmami „oppidum“ a „centrálna lokalita typu Zemplín“ (str. 77). Pojem „typ Zemplín“ zaviedol do literatúry J. Collis a práve bratislavské oppidum do neho nezaraďuje

(na rozdiel napríklad od laténskeho osídlenia na hrade Devín a v jeho okolí; Collis 1975, 70–73). Autori tu citovali aj prácu K. Pietu, ale ten sa taktiež jasne nevyjadril k zaradeniu bratislavského oppida k lokalitám typu Zemplín (Pieta 2008, 120). Vzhľadom na nové objavy na hradnom kopci a na rozsah laténskeho osídlenia na území Bratislavy je zaradenie k typu Zemplín otázne.

V. Krupa sa vo svojom príspevku *História objavu hrobov germánskej elity v Krakovanoch-Strážach (okres Piešťany)* zameril na históriu bádania o známych bohatých hrobom. I keď sa príspevok čiastočne odkláňa od nastolenej témy zborníka, ide o veľmi zaujímavý a informáciami naplnený text o histórii bádania. Škoda, že podobne nie je spracovaná história objavov aj na iných dôležitých slovenských lokalitách.

M. Lamiová-Schmiedlová a L. Luštková (*Germánska elita na východnom Slovensku*) sa vo svojom príspevku zamerali na bohaté kniežacie hroby v Cejkove a hlavne v Ostrovanoch. Ide o príspevok, ktorý dobre zhrnul problematiku možných elitných hrobom na východe Slovenska.

K. Elschek sa vo svojich dvoch príspevkoch zaoberal témou, ktorej venuje veľkú časť svojho vedeckého bádania. V prvom z nich *Germánske stredisko v Zohore a kniežacie hroby zo staršej doby rímskej zo Zohora a Vysokej pri Morave* zhrnul a čiastočne doplnil výsledky svojich výskumov na spomínaných lokalitách. Druhý príspevok *Antické kúpele v Bratislave-Dúbravke* vychádza z autorovej nedávno publikovanej knihy (Elschek 2017) a čiastočne dopĺňa už známe informácie.

Podobný charakter ako posledný príspevok K. Elscheka má aj text zostavovateľa publikácie V. Turčana (*Rezidencia na trase Jantárovej cesty v Stupave*). Ide o zhrnutie a čiastočné doplnenie výsledkov autorovho dlhodobého výskumu na lokalite (Turčan 2011; 2012; 2014). V Stupave sa podarilo zachytiť rezidenciu miestnej elity, ktorá mala viaceré stavebné fázy. Na záver si autor položil oprávnenú otázku, kto lokalitu obýval, i keď správnu odpoveď sa asi nedozvieme.

Jedným z veľkých dlhov slovenskej archeológie je spracovanie starších výskumov, hoci aj v tomto smere nastal určitý pokrok. Dve ďalšie kapitoly v zborníku sa pokúšajú tento dlh napraviť. Prvý text od dvojice autorov V. Varsik a T. Kolník je o germánskom sídle v Cíferi-Páci (*Germánske panské sídlo v Cíferi-Páci*). Výsledky tohto archeologického výskumu boli nedávno publikované aj knižne (Varsik a i. 2021). Text v zborníku však vznikol skôr ako citovaná kniha a v podstate veľmi dobre zhrňuje výsledky dlhoročného výskumu na lokalite a jeho spracovania.

Lokalitu Milanovce skúmal pred viac ako polstoročím nestor slovenskej archeológie T. Kolník. Komplexného spracovania sa však dočkala až dnes vďaka M. Hrabkovskému (*Kvádské elity v 4. storočí a germánska kniežacia rezidencia v Milanovciach/Veľkom Kýre*). Text je dobrým zhrnutím autorovej knihy o lokalite (Hrabkovský 2021), možno práve preto tu boli mimo témy zaradené aj časti o belobrdskom pohrebisku a slovanských objektoch, aj keď poskytli *terminus ante quem* pre datovanie rímskej stavby. Na autorových výsledkoch je vidieť, že aj staršie výskumy, ak bola možnosť ich robiť precízne a komplexne, môžu priniesť zaujímavé výsledky, ak sa rovnako precízne pristupuje aj k ich spracovaniu.

A. Karabinoš a M. Vizdal napísali príspevok *Germánska rezidencia v Ražňanoch – výskum a hypotézy*. V priebehu výskumov vo východoslovenských Ražňanoch, ktoré sa realizovali v rokoch 2009 a 2011, archeológovia odkryli časť germánskeho sídliska. Nachádzali sa tu objekty, ktoré boli klasifikované ako elitné a na základe keramiky zaradené do mladšej doby rímskej a na začiatok sťahovania národov. Fragmenty rímskej strešnej krytiny (teguly a imbrexy) sa nachádzali v ornicovej vrstve, ako aj vo výplniach sídliskových objektov. Prítomnosť možného mocenského centra v tejto oblasti potvrdzuje aj nález kniežacieho hrobu v Ostrovanoch, ktorý je vzdialený od obce Ražňany len 4 km. Hrob pochádzal zo záveru 3. stor. po Kr. Podľa nášho názoru však existenciu nejakej novej germánskej rezidencie v oblasti, na ktorej stavbu sa použili rímske krytiny, bude musieť potvrdiť ďalší archeologický výskum, pretože zatiaľ ide viac o zaujímavú pracovnú hypotézu, než o dôkaz existencie germánskej rezidencie.

Prehľadovú prácu v zborníku publikoval aj J. Jílek (*Antické kovové nádoby v prostredí germánskej elity ve středním Podunají*). V zaujímavej kapitole, ako je zrejme už z jej názvu, mapuje autor výskyt antických kovových nádob v prostredí stredného Podunajska. Na rozdiel od iných textov v zborníku, sa autor nezameral len na opisy nálezov a lokalít ich výskytu, ale na problematiku sa pozrel aj komplexnejšie. Ako jeden z mála autorov sa okrem otázok „kde?“, „kedy?“ a „čo?“ snažil odpovedať aj na „ako?“ a „prečo?“. Chronologicky od staršej, cez strednú, až po mladšiu dobu rímsku opisuje nálezy kovových nádob v barbarskom prostredí severne od Dunaja, pričom ponúka aj možné vysvetlenia príčin ich výskytu v tejto oblasti. Archeologické nálezy prepája s historickými udalosťami, ktoré mali na tento jav veľký vplyv.

M. Daňová sa vo svojom príspevku zamerala na zozbieranie nálezov luxusného osobného šperku u Germánov z doby rímskej žijúcich na území

Slovenska (*Luxusný osobný šperk v germánskom prostredí*). Čitateľovi poskytuje dobrý prehľad o ozdobách tela zhotovených predovšetkým z drahých kovov v barbarskom prostredí, ktoré bývajú spájané s miestnou elitou. Každý z nálezov je opísaný osobitne, pričom autorka uvádza spôsob nosenia, výroby, či analógie v okolitom barbariku. V bližších detailoch šperkov hľadá rímske a germánske vplyvy, vďaka čomu môžeme odlíšiť ich provenienciu.


Nedávno zosnulá profesorka Klára Kuzmová prispela do zborníka textom *Terra sigillata v hroboch germánskej elity na území juhozápadného Slovenska*. Konštatovala, že kvalitná rímska keramika terra sigillata sa väčšinou v kvádskom prostredí juhozápadného Slovenska nachádzala na sídliskách, ale vyskytovala sa aj na niektorých pohrebiskách. Distribúcia týchto nálezov bola zrejme ovplyvnená nielen súvekovou geopolitickou situáciou, ale aj špecifickými sociálnymi a ekonomickými faktormi. Každý z nálezov je predstavený osobitne, pričom autorka poskytuje informácie o datovaní, motívoch výzdoby, či o výrobných dielňach, ktoré prezdávajú kolky majstrov. Taktiež sa venuje analógiám k nálezom z nášho územia, ktoré pochádzajú hlavne z oblasti dnešného Nemecka a Poľska. Len jeden zo štyroch nálezov v príspevku spája s hrobom elity, konkrétne skyfos z Krakovian-Stráží. Na záver musíme oceniť katalóg nálezov, ktorý obsahuje podrobný opis reliéfnej výzdoby, rozmery, odkazy na ďalšiu literatúru, výrobnú dielňu a datovanie.


Zborník *Germánske elity v dobe rímskej na Slovensku* priniesol zaujímavú kompiláciu doterajších známych informácií o nastolenej problematike. Niektoré príspevky doplnili a v menšej miere rozšírili naše vedomosti o germánskom osídlení na území strednej Európy v dobe rímskej. Väčšina autorov sa zamerala hlavne na tému germánskych elít z pohľadu prestížnych nálezov a architektúr. V zborníku chýbajú úvahy, ktoré by lepšie definovali tie elity, ktoré sa nedajú vymedziť len na základe luxusných nálezov. Napriek uvedenému je však recenzovaná kniha užitočnou publikáciou pre štúdium elít v dobe rímskej.

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Jean-Louis Brunaux: Vercingétorix. Éditions Gallimard. Paris 2018. 326 strán. ISBN 978-2-07-017892-6.

Francúzsky archeológ a historik J.-L. Brunaux (Centre national de recherche scientifique) viedol terénne odkryvy viacerých sídliskových lokalít (napr. La Chaussée-Tirancourt, Montmartin) a kultových miest z doby laténskej v Pikardii (svätyne Ribemont-sur-Ancre, Gournay-sur-Aronde). Vo svojej výskumnej činnosti sa systematicky zaoberá otázkami keltského náboženstva a rituálov, ako aj výzbroje a vojenstva. V poslednom období sa zameriava predovšetkým na problematiku vojny v Galii, s ktorou priamo súvisí aj recenzovaná práca.

K základným dielam o Vercingetorigovi dodnes patrí staršia monografia C. Julliana (1901), ktorý využíval metódu analýzy pramenného materiálu (podľa jeho vlastných slov „vyťažovania textu“) s cieľným rekonštruovaním pozadia opisovaných udalostí. Významným prínosom pre ďalšie štúdium problematiky bolo kritické filologické posúdenie *Zápisov o vojne galskej*. Klasický filológ M. Rambaud preukázal, že ide o tendenčný historický text (*littérature de propagande*), v ktorom boli naračné postupy vedome podriadené účelu presvedčiť o Caesarových zásluhách a vodca protirímskeho povstania bol z toho dôvodu vykreslený ako rovnocenný protivník (Rambaud 1966, 301–311; pozri tiež Duval 1989, 139–144). J.-L. Brunaux konštatuje, že Caesar pri vytváraní svojho vlastného obrazu spravidla neposkytuje explicitné prostriedky na pochopenie historickej reality (s. 13). Prístup autora k spracovaniu témy je preto založený na kritickom prehodnotení pramenného písomného materiálu a na konfrontácii s novými poznatkami archeologického bádania.

Pokiaľ ide o obsahové vymedzenie pojmu Galia, J.-L. Brunaux sa nazdáva, že desiatky keltských kmeňov sídliačich od Akvitánska až po ústie Rýna a Mázy uznávali svoju príbuznosť a zdieľali spoločné politické a náboženské hodnoty. V prvom rade sa však považovali za príslušníkov jednotlivých etnických a teritoriálnych jednotiek a až na vyššej úrovni – v určitých špecifických situáciách – sa označovali ako Galovia (s. 52–55). Odlišný názor zastával Chr. Goudineau (2001, 238–246), podľa ktorého Rýn nepredstavoval prirodzenú východnú hranicu Galie, ale umelú demarkačnú čiaru stanovenú Caesarom, ktorý tak chcel zdôvodniť integráciu dobytého územia ako homogénneho priestoru do Rímskeho impéria. Až do Ceasarových výbojov sa geografický pojem Gallia vzťahoval na široké keltské osídlenie od brehov Atlantického oceánu po Karpatskú kotlinu.

Pri analýze spoločenského zriadenia dochádza autor k záveru, že od prelomu 2. a 1. stor. pred Kr. sa u väčšiny kmeňov uskutočnil prechod od monarchického systému k oligarchickému režimu, založenému na volených magistrátoch a senáte. Keltské komunity boli organizované do obcí (*civitas, civitates*) s relatívnou autonómiou a boli navzájom prepojené sieťou rôznych foriem vzájomných závislostí na princípe klientely (k medzikmeňovým vzťahom podrobnejšie Fichtl 2012, 124–148). Právny rámec klientského systému zabezpečovala spoločná politická konfederálna inštitúcia – snem celej Galie (*Concilium totius Galliae*). Na sneme zástupcov galských obcí sa raz do roka prostredníctvom voľby poveril jeden kmeň tzv. patronátom (*principatus*), podstatou ktorého bolo privilégium iniciatívy, napr. možnosť zvolaf mimoriadne zhromaždenie, navrhnuť vojnové ťaženie alebo kolonizačný zámer (v dnešnom ponímaní *leadership*). Caesar prvý raz spomína všegalský snem na konci roku 58 pred Kr., keď ešte nevykonával žiadnu právomoc nad nezávislou Galiou (s. 34–39, 163). Napriek tomu sa v odbornej literatúre možno stretnúť s názorom, ktorý ustanovenie tejto inštitúcie kladie do priamej súvislosti s presadzovaním rímskeho protektorátu (Badel 2021, 124, 125).

V spoločnosti neskorej doby laténskej sa obvykle neuplatňovalo kategorické oddelovanie výkonu politických a náboženských úradov. Na zastávanie funkcie v oblasti náboženstva a ritu oprávňoval aristokratický pôvod, vzdelanie a zásluhy. Šírku pôsobnosti intelektuálnych elít a ich účasť na vedení galských obcí naznačuje prípad Diviciaca z kmeňa Héduov, ktorý v písomných prameňoch vystupuje ako druid (*Cic. Div., I, 41*), politik, diplomat aj vojenský veliteľ. Podľa názoru autora však Vercingetorix na rozdiel od Diviciaca pravdepodobne neukončil celý cyklus druidskej výučby (s. 85, 86).

Predmetom ďalších úvah sú kľúčové vonkajšie faktory ovplyvňujúce vývoj situácie vo východnej časti Galie, kde boli kmene Héduov, Sekvanov, Treverov a Rémov vystavené narastajúcemu vplyvu rímskeho obchodu a migračnému tlaku Germánov. Antické pramene dokladajú dlhodobu nadštandardné priateľské väzby (*amicitia*) Héduov s rímskym senátom, vyjadrené napr. priznaním titulu *fratres consanguineique populi Romani*.

V rámci politiky aliancií Rimania uplatňovali zvyk prijímania záruk prostredníctvom rukojemníkov z radov galských elít. Súčasťou tejto diplomacie bolo i plánovité formovanie budúcich vodcov, ktorí mali po prevzatí moci v domovských kmeňoch spolupracovať pri presadzovaní

rímskych záujmov. J.-L. Brunaux predpokladá, že Vercingetorix strávil v postavení rukojemníka v blízkosti Caesara tri roky a prešiel službou v rímskom vojsku ako *contubernalis*. Odvoláva sa na zmienku Cassiona Dia o niekdajších priateľských vzťahoch medzi Caesarom a Vercingetorigom, ktoré interpretuje nie v zmysle osobnom, ale inštitucionálnom a politickom (s. 109–111). Niektorí bádatelia pokladajú dočasné pôsobenie u prokonzula za dôsledok záväzku arvernskej obce na spoločnom postupe proti príležitostnému galskému nepriateľovi. Obidva výklady počítajú s tým, že Vercingetorix sa dôkladne oboznámil s rímskou vojenskou stratégiou a taktikou (porovnaj *Le Bohec 2021*, 132, 133). V Caesarovom opise udalostí roku 52 pred Kr. je Vercingetorix označený termínom *adulescens*, čo v dobovom právnom jazyku znamená, že ešte nedosiahol zákonom predpísaný vek pre uchádzanie sa o prvý úrad (s. 111, 127). Paradoxne je ale uvedený v okruhu *principes* (s. 91), t. j. úzkej vrstvy popredných predstaviteľov barbarskej nobility podieľajúcej sa na riadení obce (k štruktúre galskej aristokracie pozri *Badel 2005*, 50–53; *Dobesch 1993*, 433–436). Jeho spoločenský vplyv sa zakladal na širokej klientele (*ambacti, clientes*), s pomocou ktorej uskutočnil na druhý pokus v Gergovii prevrat, zvrhol oligarchický režim a znovunastolil u Arvernov kráľovstvo (*Rex ab suis appellatur*).

Dezilúzia časti elít galských kmeňov, spoliehajúcich sa na Caesarom prisľúbenú pomoc pri presadzovaní ich hegemoniálnych plánov, vyústila na konci roku 53 pred Kr. do otvoreného konfliktu. Bezprostredným podnetom pre ďalšie vyostrenie rozporov bolo vykonanie rozsudku nad Accom z kmeňa Senónov počas snemu v meste Durocortorum: spôsob popravy príslušníka miestnej aristokracie podľa starého rímskeho zvyku – ubitím prútmi a sťatím – nezodpovedal v nezávislej Galii platným zásadám a symbolike (s. 158). J.-L. Brunaux poukazuje na premyslené manipulácie a skryté protirečenia v Caesarovom opise začiatku povstania, ktoré vyplynuli zo snahy nepririeknuť si diel zodpovednosti na nezvládnutí situácie. Opakovane vyzdvihuje význam oppida Cenabum s posvätným miestom (*locus consecratus*) na území kmeňa Karnutov, kde sa v decembri 53 pred Kr. slávnostnou prisahou (*gravissima caeremonia*) začal galský odpor. Za dôležitý medzník v chronologickom slede udalostí považuje ubránenie Gergovie, po ktorom bolo Vercingetorigovi na sneme v Bibracte, hlavnom oppide Héduov, zverené vrchné velenie (*imperium*) a patronát (*principatus*) nad Galiou (s. 231).

Vercingetorix preukázal sformovaním širokej protirímskej koalície a mobilizáciou väčšiny galských kmeňov nesporné politické a vojenské schopnosti. Základnou myšlienkou jeho strategického plánu bolo viacerými operáciami v navzájom od seba vzdialených oblastiach rozdeliť a vyčerpať rímske légie (s. 181, 182, 217). J.-L. Brunaux podrobne rozoberá dôvody, ktoré viedli k porážke galského odporu. Domnieva sa, že Caesar voči početnej prevahe povstalcov nedisponoval dostatočnými vojenskými kapacitami, no vedel si na druhej strane pomocou zvedov a prostredníkov v tajnosti zabezpečiť lojalitu, resp. dvojitú hru senátnej nobility (*seniores*) Héduov. Na podopretie tejto hypotézy o kolaborácii starých patricijských rodín, tradičného obchodného partnera Rimánov, prináša argument, že vojská pod vedením Eporedoriga a Viridomara, táborejúce na výšine Mussy-la-Fosse, nezasiahli v kritických momentoch do bojov pri obliehaní Alésie, a pripomína tiež Caesarovo omilostenie Héduov a vydanie ich zajatcov (s. 279–281).

Objasnenie priebehu kapitulácie Galov sa prednostne opiera o Caesarove svedectvo z prvej ruky (*Caes. BGall.*, VII, 89). Z formulácie v trpnom rode (*eo duces producuntur; Vercingetorix deditur; arma proiciuntur*) autor vyvodzuje, že Vercingetorix bol vydaný v putách a v sprievode centuriónov (s. 276). K podobnému záveru dospel na základe porovnania uplatnenia slovesných rodov pri opisoch kapitulácií oppíd Alésia (*passivum – deditur*) a Uxellodunum (*activum – se tradiderunt*) aj M. Reddé (2003, 55). Pri bližšej charakteristike aktu kapitulácie kladie dôraz na rituálny a súdny rozmer ceremónie pred táborem (s. 272–274). Zaujímavé sú i autorove poznámky k dlhoročnému väzneniu (presuny s vojskom, strážená rezidencia?) a predstavy o osobných rozhovoroch oboch vojvodcov (s. 251, 285).

Údaje prameňov svedčia o tom, že zo štvornásobného triumfu roku 46 pred Kr. bola najväčšou práve slávnosť pri príležitosti víťazstva nad Galiou (*Primum et excellentissimum triumphum*). Zvyklosť viesť v triumfálnom sprievode zajatých vodcov sa v Ríme zaužívala od čias konzula Aemilia Paula. Zodpovedanie otázky, prečo Vercingetoriga po skončení triumfu popravili, hľadá autor v politickej nevyhnutnosti a v potrebe obetovania Caesarovi (s. 293, 294). Usmrtenie, o ktorom sa zmieňuje Cassius Dio, sa vykonalo v Tulliane uškrtením (v antickom Ríme spôsob pozbavenia života vyhradený úzkej skupine odsúdených; *Cantarella* 2000, 132–134).

K problematike zlatých statérov s nápisom VERCINGETORIXS alebo VERCINGETORIXIS

J.-L. Brunaux poznamenáva, že ide o prestížne emisie kráľa arvernskej obce a uchádzača o vládu nad Galiou, ktorých razba sa realizovala počas niekoľkých mesiacov. V rozpore so súčasným numizmatickým bádáním považuje obraz hlavy na Vercingetorigových minciach za osobný portrét ich vydavateľa (porovnaj *Nieto-Pelletier* 2017, 120). Samostatnú kategóriu predstavujú tzv. núdzové razby, ktoré boli pre nedostatok drahého kovu počas obliehania Alésie vyrobené z mosadze.

Z rímskych mincí oslavujúcich dobytie Galie autor upozorňuje najmä na republikánsky denár *monetára* Lucia Hostilia Sasernu z roku 48 pred Kr. na averze s hlavou božstva Pavor (Hrôza) a galským štítom (Syd. 952). V realistickom zobrazení detailov tváre nachádza podobnosti s portrétom Vercingetoriga na barbarských razbách. Komemoratívny charakter mince sa na reverznej strane prejavuje v historickom námete s bojovým dvojzáprahom odkazujúcim na keltskú inváziu do Itálie (s. 288, 289).

J.-L. Brunaux premostuje medzery v písomných prameňoch zaujímavými hypotézami opretými o dôkladnú znalosť dobových súvislostí a prináša viacero nových, dôveryhodne vystavaných interpretácií. Predkladanou publikáciou sprostredkováva čitateľskej verejnosti životopis vodcu celogalského povstania a v širokom priereze oboznamuje s rôznymi sférami života keltskej spoločnosti v 1. stor. pred Kr.

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IN MEMORIAM

Prof. PhDr. Klára Kuzmová, CSc.
(* 28. 6. 1955 – † 16. 4. 2022)



Nezvyčajná doba, na ktorú sme neboli pripravení, narušila náš každodenný život. Bolo zvykom, že záver letného semestra sme končili neformálnym stretnutím členov katedry. V roku 2020 sme súčasne chceli blahoželať k narodeninám našej kolegyni prof. PhDr. Kláre Kuzmovej, CSc., ktoré v tých dňoch oslávila. Namiesto toho sme sa učili spoznávať, čo v praxi znamená *lockdown*, či skúšanie *online*. Pôvodne mal byť tento text príležitosťou, aby sme sa krátko poohliadli za časom, ktorý jej z veľkej časti vyplňala práca v teréne, za pracovným stolom v Archeologickom ústave SAV v Nitre (AÚ SAV) a v posledných rokoch pri pedagogicko-vzdelávacej činnosti na Katedre klasickej archeológie Trnavskej univerzity v Trnave (TU). Žiaľ, nečakaná informácia o jej opätovnom boji so

zákerou chorobou spôsobila, že o osude tohto textu nakoniec rozhodol sám život, keď nám jej dcéra Lubka 16. apríla 2022 o 9:31 napísala správu: „*Maminka nás dnes ráno opustila.*“

Týchto pár riadkov je útržkami spomienok jednej z jej učiteľov počas vysokoškolského štúdia archeológie v Archeologickom seminári vedenom prof. PhDr. Bohuslavom Novotným, DrSc. na Filozofickej fakulte Univerzity Komenského v Bratislave (FiF UK). K nim sa pridáva aj bývalý poslucháč a absolvent klasickej archeológie na Filozofickej fakulte Trnavskej univerzity v Trnave (FF TU) a zároveň jej súčasný dekan. Obaja menovaní sa neskôr, po jej nastúpení na Katedru klasickej archeológie TU v Trnave, stali jej spolupracovníkmi.

Klára Buranská (vydatá Kuzmová) sa narodila 28. júna 1955 v Nových Zámkoch v rodine hodinára. Už pri výbere strednej školy bola rozhodnutá stať sa archeologičkou. Zámerne si zvolila len trojročné štúdium na Strednej všeobecno-vzdelávacej škole v Nových Zámkoch, aby mohla po jej skončení nastúpiť na študijný odbor, ktorý sa na UK v Bratislave otváral len raz za niekoľko rokov.

Od roku 1973 bola súčasťou početnejšieho a ambíciami silného ročníka. Študovali v dobe, kedy predpokladom na prijatie bola náročná písomná, ako aj ústna skúška. Overovala znalosti, no predovšetkým predpoklady pre zvolený študijný odbor. Bolo preto takmer samozrejmé, že všetci študenti ukončia štúdium v prvom termíne, v danom prípade v letnom semestri v roku 1978. Čo sa aj nakoniec stalo. Vypovedá o tom aj ich záujem uplatniť sa v odbore ako profesionálni bádatelia a terénni pracovníci. Obsadili miesta archeológov v múzeách od Bratislavy až po Michalovce. Časť, medzi nimi aj Klára Buranská a jej budúci manžel Ivan Kuzma, nastúpili do AÚ SAV. Z rovnakého ročníka do AÚ SAV nastúpil aj J. Rajtár, s ktorým rad rokov – vtedy už PhDr. K. Kuzmová – viedli výskum rímskeho tábora v Iži-Leányvári. Nástup do zamestnania si niekedy, podľa potreby, vyžiadali zmenu pôvodne zvolenej odbornej orientácie, čo nastalo aj v prípade PhDr. K. Kuzmovej. Napriek tomu, že sa vo svojej diplomovej práci venovala nížinným sídliskám z neskorej doby laténskej v strednom Podunajsku, dokázala sa rýchlo prispôbiť a preorientovať na bádanie o dobe rímskych provincií. Stala sa jednou z najlepších znalcov limitného prostredia na Dunaji, topografie, politicko-hospodárskeho významu povodia tohto európskeho toku, histórie o dobe rímskej na Slovensku a pod. Zaujala ju najmä rímska luxusná keramika terra sigillata. V jej poznaní bola odborníčkou európskeho významu. Nálezom z predpolia rímskej hranice, prevažne z germánskych sídlisk a pohrebísk, sa venovala v dvoch monografiách, ktoré dodnes patria k jej najcitovanejším prácam (Kuzmová 1997; Kuzmová/Roth 1988).

Vzhľadom na jej odborné zameranie bola oslovená vtedajšou vedúcou katedry, podieľať sa na výučbe nastupujúcej generácie klasických archeológov na TU, na úseku rímsko-provinciálnej archeológie. To znamenalo zásadnú zmenu v jej dovtedajšom vedeckom i osobnom živote. Nielen, že sa stala „pendlerkou“ medzi Nitrou – kde s rodinou aj bývala – a Trnavou, ale postavilo ju to aj pred nové úlohy, ktoré so sebou prináša údel pedagóga. Okrem iného vzdať sa voľného času, resp. ho rozdeliť medzi profesionálne povinnosti, rodinu a priateľov.

Do Trnavy prišla v dobe, kedy už katedra mala vyhranený profil tak v pedagogicko-výchovnej, ako aj vo vedecko-výskumnej činnosti. Pôsobili tu osobnosti klasickej archeológie a dejín staroveku, akými boli prof. PhDr. Jan Burian, CSc., prof. Radislav Hošek, CSc., a doc. PhDr. Marie Dufková, CSc. Bol to čas zveľaďovania odboru, knižnice a hľadania sponzorov na jednotlivé aktivity. K nim patrili exkurzie pre poslucháčov do zahraničia, aby sa postupne zoznamovali s pôvodnými pamätníkmi antického sveta v teréne či v múzeách. Všetko si vyžadovalo čas, a aj preto sme uvítali príchod PhDr. Kuzmovej do našich radov a jej zapojenie sa do ďalšieho rozvoja odboru.

V roku 2004 PhDr. K. Kuzmová, CSc. získala titul docenta na Filozofickej Fakulte Univerzity Konštantína Filozofa v Nitre a v roku 2011 po inaugurácii na FF TU v Trnave ju prezident Slovenskej republiky vymenoval za prvú profesorku klasickej archeológie na Slovensku. V rokoch 2002 až 2004 pôsobila ako prodekan pre vedu, výskum a doktorandské štúdium na FF TU v Trnave. Bola spolugarantka a od roku 2012 hlavná garantka študijného odboru Klasická archeológia. Jej vedecký profil ju určoval prednášať o rímskych provinciách, či o okrajových oblastiach antického sveta a dal jej priestor aj pre jej srdcovú záležitosť – rímsku keramiku. Viedla viac ako 40 záverečných prác. Zapájala študentov aj do výskumných aktivít katedry. Spolu s doc. E. Hrnčiarikom objavili najstaršiu sakrálnu pamiatku v Trnave – románsky karner. Rozvíjala plodnú spoluprácu s AÚ SAV, organizovala Medzinárodné archeologické školy v rímskom tábore v Iži-Leányvári. Pomáhala nadväzovať kontakty s inými archeologickými inštitúciami doma a v zahraničí. Vďaka jej znalosti maďarského jazyka sa prehĺbila spolupráca s Maďarským národným múzeom, či Univerzitou Loránda Eötvösa v Budapešti a s Katolíckou univerzitou v Piliscsabe. Spolu s prof. M. Novotnou, DrSc., a s doc. M. Dufkovou, CSc., sa podieľala na vzniku a neskôr na zostavovaní katedrového zborníka Anodos (doc. M. Dufkovej vďačíme za názov periodika Anodos, t. j. Znovuzrodenia) a Anodos Supplementum. Na redakcii prvých ročníkov mal výrazný podiel aj jej manžel PhDr. I. Kuzma a vtedajší asistent Mgr. P. Hnila. Obidve periodiká sa stali uznávanými doma aj v zahraničí. Spolu s kolegami z katedry sa pravidelne podieľala na príprave a priebehu medzinárodných vedeckých sympózií a konferencií. Bola členkou Vedeckej rady TU v Trnave a Vedeckej rady FF TU v Trnave, členkou medzinárodnej vedeckej spoločnosti pre výskum rímskej keramiky, Slo-

venskej archeologickej spoločnosti (v ktorej spolu s PhDr. G. Březinovou, CSc., začali redigovať jej časopis Informátor), občianskeho združenia Pro Archeologia Classica a pod. Pôsobila v rôznych komisiách, grantových agentúrach či redakčných radách – z mnohých napríklad rakúsky Carnuntum Jahrbuch. Bola spolueditorka a spoluautorka niekoľkých vysokoškolských učebníc a vedeckých monografií. Za svoju prácu získala rad ocenení, napríklad Bronzovú plaketu AÚ SAV v roku 2009, Cenu Martina Palkoviča za pedagogickú činnosť v roku 2013 na TU v Trnave a pod. Jej osobnosť charakterizovala skromnosť, pokora, ústretovosť, ľudskosť a ochota pomôcť. Bola praktická a pragmatická žena pozerajúca sa na veci realisticky. Jedna naša kolegyňa z TU v Trnave ju raz nazvala tichou bojovníčkou. Vždy vytrvalo, bez veľkého hluku a zbytočného pátosu, bojovala za užitočné a prospešné veci.

Prof. Klára Kuzmová nebola len odborníčka na rímske provincie, ale aj úspešný pedagóg. Dokázala inšpirovať, počúvať, povzbudiť, či odborne a ľudsky pomôcť. Trpezlivo čítala, opravovala, cennými radami obohacovala seminárne, bakalárske, diplomové, dizertačné a habilitačné práce. Vďaka jej kontaktom sa niekoľko poslucháčov klasickej archeológie dostalo na štúdium, či na výskumné pobyty do zahraničia.

V posledných dvoch správach, ktoré len pár dní pred smrťou poslala, napísala: „*Ináč to zvládam zatiaľ dobre. Môžete so mnou naďalej rátať, pokiaľ budem môcť,*

zapojím sa a pomôžem, hoci v obmedzenom režime.“ My teda s Vami, pani profesorka, aj naďalej rátame, hoc v inom čase a priestore.


Sit tibi terra levis!

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JUBILEÁ

Jubileum Ivony Vlkolinskej



V roku 2022 oslávila dlhoročná zamestnankyňa Archeologického ústavu SAV v Nitre (AÚ SAV) archeologička Ivona Vlkolinská 65 rokov. Hoci ju poznám 40 rokov a istý čas sme v AÚ SAV mali vedľa seba kancelárie, doteraz jej poctivo dávam v priezvisku na „i“ dĺžeň. Nech žijú redaktori, ktorí to opravajú.

Ivona má dar anglického humoru a neraz ma rozosmiala svojimi poznámkami, či dobrými vtipmi. Narodila sa v Martine 6. júla v roku 1957, no s rodičmi sa presťahovala na Považie, do Považskej Bystrice, kde maturovala na gymnáziu. Štúdium jednodborovej archeológie ukončila na Katedre všeobecných dejín a archeológie Filozofickej fakulty Univerzity Komenského v Bratislave v roku 1981.

V tom istom roku nastúpila pracovať do AÚ SAV, kde je doteraz zamestnaná. Popri vedeckej aktivite sa venovala rôznym oblastiam činností spojených s fungovaním AÚ SAV. V dokumentácii odvieďla

kus práce pri budovaní informačného systému, vytvorila špeciálny heslár a v čase, keď počítače boli u slovenských archeológov ešte *sci-fi*, pracovala s ich pomocou rôzneho stupňa. Ukázala tým, akou výhodou je počítač pre dokumentáciu archeologických nálezov a faktov.

V roku 1981 bola prijatá do Slovenskej archeologickej spoločnosti, ktorej členkou je doteraz. Dve volebné obdobia tu pôsobila ako predsedníčka Revíznej komisie.

Vo vedeckej oblasti sa zamerala na včasný a vrcholný stredovek, hlavne na keramiky a hrnčiarstvo vôbec.

Taktiež začala spolupracovať pri vyhodnocovaní vybraných druhov nálezov za pomoci rôznych matematicko-štatistických metód a počítačovej techniky, a to hlavne z obdobia včasného stredoveku (napr. možnosť ich aplikácie pri skúmaní sekerovitých hrivien, vývoja objemov nádob atď.).

Spolupracovala s odborníkmi z iných vedných disciplín (numizmatika, antropológia, analýza zvieracích kostí, ako aj analýza dokladov železiarstva a kováčstva), aby bolo možné získať čo najviac a najkvalitnejších údajov.

V roku 1995 obhájila kandidátsku prácu a získala titul CSc., a to na tému „Príspevok k poznaniu keramiky z pohrebísk 9.–11. storočia na Slovensku“.

Z organizačných aktivít treba spomenúť jej podiel na príprave XII. svetového kongresu UISPP v Bratislave, ktorý sa konal v roku 1991. Podieľala sa tiež na redakčnej úprave tretieho dielu materiálov z tohto významného medzinárodného podujatia. Redakčnej práci sa venovala tiež ako výkonná redaktorka časopisu *Slovenská archeológia* (41/1, 1993–44/1, 1996) a odborná redaktorka AVANS-u spolu s I. Chebenom v rokoch 1996–2001.

Zostavila viaceré zborníky súvisiace napr. s významnými osobnosťami slovenskej archeológie.

V rokoch 1994–2004 bola vedúcou Oddelenia vedecko-technických informácií (VTI), ktoré v tom čase zahŕňalo knižnicu, dokumentáciu, depoziťare, redakciu a reprografické stredisko. Na tomto poste okrem riadiacej funkcie zabezpečovala výmenu zahraničnej literatúry pre knižnicu AÚ SAV a publikovala svoje skúsenosti zo spracúvania výsledkov aplikácie počítačov v archeologických výskumoch, výstaviek, dňa otvorených dverí AÚ SAV, ako aj rôznych iných podujatí. Tu využila svoju dobrú znalosť anglického jazyka pri sprevádzaní kolegov či návšteví z cudziny.

Zúčastňovala sa domácich i zahraničných konferencií a sympózií, pozvaná bola v roku 1990 do Heidelbergu a v roku 1991 do Oxfordu. Okrem

vyššie spomenutých sa zúčastnila aj konferencií napr. v Čechách, Maďarsku, Poľsku, Ukrajine a pod. V nedávnom období bola spoluautorkou článkov publikovaných v interdisciplinárnych medzinárodných periodikách, akými sú napr. *Sustainability* a *periodikum Land*.


Terénnym prieskumom a výskumom sa venovala hlavne v okrese Galanta v súvislosti so zasypávaním starých koryt riek, či v bývalom okrese Považská Bystrica, kde realizovala výskumy hlavne v súvislosti s investičnou výstavbou diaľnice v chotároch obcí Beluša, Visolaje a Púchov. Osobne ľutujem, že nemala možnosť dlhšie sa venovať archeologickým výskumom tejto časti horného Považia, o ktorom máme len málo poznatkov hlavne z včasnostredovekého obdobia. Ivona bola jednou z tých, čo mali osobnostné, ako aj odborné predpoklady, aby poznatky o včasnom stredoveku tohto regiónu posunula ďalej.

Je nutné tiež spomenúť angažovanosť jubilantky v oblasti medzinárodných projektov česko-moravsko-slovenských, slovensko-poľských a slovensko-bulharských (ich výsledky boli publikované napr. v *Internationale Tagungen Mikulčice, Igolomia, Nitra, sympóziá Ostrakon Wrocław*).

Ako som už spomenula vyššie, z odborných tém venovala svoju pozornosť včasnostredovekej keramike a viaceré univerzitné pracoviská si vyžiadali jej prednášky, alebo ju oslovili na posúdenie prác.

Jubilantka Ivona Vlkolinská má za sebou široký záber odborných a organizačných činností a prajeme jej ešte veľa rokov plodného vedeckého života.

Mnogaja ljeta!

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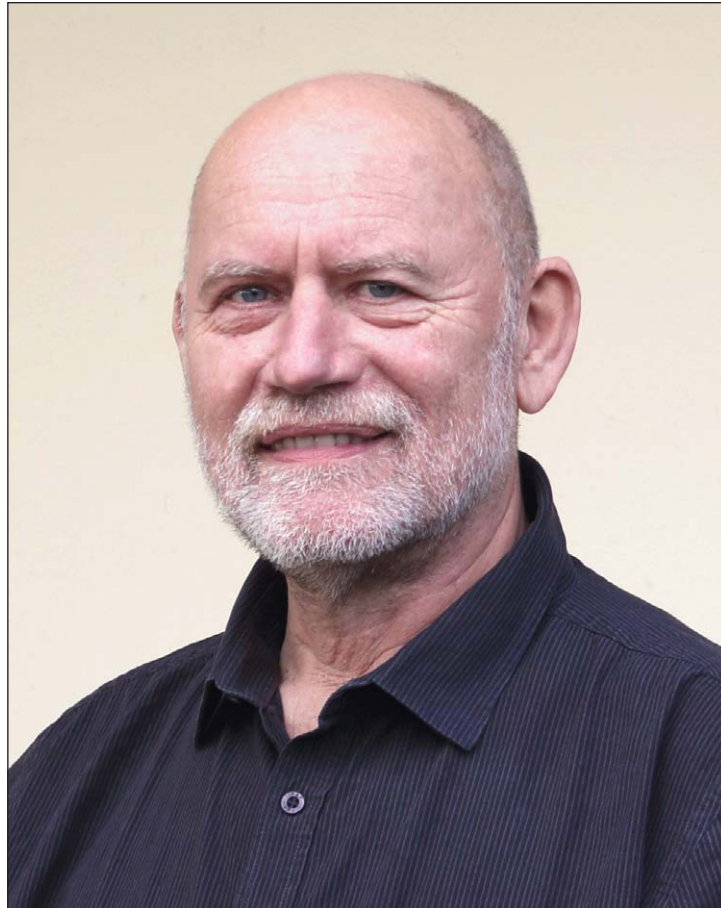
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Podľa autorkiných podkladov zostavila *Kristína Sedliaček*

Náš vzácny jubilant

Venované Gabrielovi Fusekovi pri príležitosti jeho 65. narodenín



Motto: *Tempora mutantur et nos mutamur in illis.*
Časy sa menia a my sa meníme s nimi.

Je nesporné, že výrok v motte (možno ide o útvár ľudovej slovesnosti) sa týka každého z nás. Jeho pôvod možno identifikovať v Hérakleitovej myšlienke z jeho diela *Panta rhei* – všetko plynie (Hérakleitos z Efezu pravdepodobne žil v rokoch 544–475 pred n. l.). Výrok je mylne pripisovaný Cicerónovi (Marcus Tullius Cicero, 3. január 106 pred n. l.–7. december 43 pred n. l.), pravdepodobne chybnou zámenou jeho slávnej reči „*O tempora, o mores!*“, adresovanej svojmu, nielen politickému oponentovi Luciovi Sergiovi Catilinovi. Jubilant je však dokladom toho, že tomu tak nemusí byť vždy doslovne. Časy sa síce radikálne zmenili, ale Gabriel Fusek sa za obdobie, odkedy sa poznáme, zmenil mimoriadne úsporným spôsobom. Je to

spôsobené predovšetkým jeho osobnou charizmou, jeho nechuťou meniť sa podľa vzoru „kadiaľ vietor, tadiaľ plášť“. Žiaľ, v dnešnej dobe sa týmto úslovím riadi mnoho ľudí, popredných politikov nevynímajúc. Čím je to spôsobené? Podľa mojej mienky vypočítavosťou, farizejstvom, či dokonca zbabelosťou mnohých z nás. Som nesmierne rád, že nášho jubilanta do tejto skupiny osôb (pojem „ľudí“ sa mi v tejto súvislosti nejaví ako vhodný) rozhodne nemožno zaradiť. Gabriel Fusek je vzácny človek. A slovo „človek“ je v jeho prípade viac ako opodstatnené. Za svojho, nie príliš krátkeho života som sa stretol s veľkým počtom ľudí. Pramenilo to v mojej snahe venovať sa čo možno najväčšiemu počtu potrieb a záľub. Nemám právo

prirovnávať sa k Bohu, ktorý našiel zaľúbenie vo svojom synovi, ale potrebujem vyjadriť svoj pocit duchovnej spriaznenosti s jubilantom. A ten výraz „duchovná spriaznenosť“ dvakrát podčiarkujem.

Musím sa však oprostíť od môjho filozofujúceho úvodu a prejsť k faktografii. To sa pri podobných „medailónoch“ požaduje. Gabriel Fusek uzrel svetlo sveta v Trnave (*9. 8. 1957). Svoje detstvo i mladosť však prežil v Novom Meste nad Váhom. Tam absolvoval nielen základnú školu, ale aj gymnázium. V rokoch 1976–1981 študoval odbor archeológia na Filozofickej fakulte Univerzity Komenského. Vo svojej hodnotnej diplomovej práci sa zaoberal osídlením v dobe bronzovej (*Spoločnosť a hospodárstvo na východnom Slovensku v období zániku otomanskej kultúry*). Od apríla 1981 až po dnes je pracovníkom Archeologického ústavu SAV v Nitre. Na jeho pôde sa začala dynamicky rozvíjať kariéra vedca orientujúceho sa na problematiku včasného stredoveku. Vo svojej práci si čoskoro získal rešpekt nielen svojimi terénnymi aktivitami, ale aj celým radom novátorsky ladených príspevkov, štúdií a článkov. Prejavil v nich mnoho odvahy, keď prezentoval nové názory na stereotypne ponímaný vývoj osídlenia v danom období a nebál sa diskusie s odborníkmi. V roku 1983 získal akademický titul PhDr. a v roku 1993 po úspešnom obhájení dizertačnej práce *Včasnosingovské osídlenie Slovenska* pripojil k svojmu menu vedeckú hodnosť kandidáta vied (CSc.). Kandidátsku prácu následne pod mierne zmeneným názvom monografickým spôsobom publikoval (*Slovensko vo včasnosingovskom období*). V roku 1997 nastúpil na študijný pobyt, ktorý zastrešovala nadácia Volkswagen Stiftung. V rámci uvedeného pobytu sa podieľal na pedagogickom procese v Insitute für Vor- und Frühgeschichte, Johann Wolfgang Goethe-Universität Frankfurt am Main, kde viedol seminár „Včasnostredoveké osídlenie Karpatskej kotliny“.

Zúčastnil sa celého radu terénnych archeologických výskumov. Považujem za potrebné spomenúť aspoň tie najdôležitejšie: 1981 – Mužla-Čenkov, Chľaba, 1982 – Komjatice-Legionárske, 1983 – Nitra-Športový areál, Nitra-Na Vršku, 1984 – Nitra-Mikov dvor, 1985 – Bielovce, Nitra-Šindolka, 1986 – Nitra-Šindolka, 1988–1990 – Nitra-hrad, 1995 – Nitra-Šindolka, 2013–2019 – Divinka. Mimoriadne bohatá a podnetná publikačná činnosť jubilanta obsahuje viac ako 160 titulov pôvodných odborných a vedeckých prác.

Nezvyčajne rozsiahla je edičná činnosť Gabriela Fuseka, ktorá mu výrazne odkrajovala čas, ktorý mohol využiť na vedeckú prácu. Napríklad zostavil a redakčne spracoval *Zborník na počesť Dariny Bia-*

lekovej (2004) a zborník *Archäologische Studien zum frühen Mittelalter* (2017). Je jedným zo zostavovateľov monografie *Dejiny Nitry. Od najstarších čias po súčasnosť* (1998). Dokonca aj v Nemecku sa venoval tejto činnosti, podieľal sa na redakčnom spracovaní zborníka *Frühmittelalterlicher Burgenbau in Mittel- und Osteuropa* (1998).

Od roku 1990 je členom redakčnej rady časopisu Slovenská archeológia. V tiráži tohto profilového periodika Archeologického ústavu SAV sa objavovalo meno Gabriela Fuseka vo funkcii hlavného redaktora v rokoch 1998–2022. Právom možno oceniť jeho nezvyčajnú náročnosť k autorom, ktorí do časopisu prispeli. Pre jubilanta je charakteristická mimoriadna dôslednosť nielen z hľadiska obsahu príspevkov, ale aj po ich formálnej stránke. V roku 2013 mu bola udelená medaila pri príležitosti 60. výročia založenia SAV, pričom bol zaradený medzi špičkových pracovníkov SAV na základe hodnotenia Akademicko-renomingovej a ratingovej agentúry ARRA. Od roku 2020 je členom redakčných rád zahraničných periodík (Cercetări Arheologice, Přehled výzkumů) a od roku 2022 členom redakčnej rady Študijných zvestí AÚ SAV. Po zásluže bol v roku 2010 ocenený pamätnou medailou Schönvisner István Emlékérem za ochranu archeologického dedičstva. V roku 2018 mu mesto Nitra udelilo pamätný list pri príležitosti 770. výročia udelenia kráľovských výsad mestu Nitra. Obec Divinka, v katastri ktorej Gabriel Fusek viedol archeologické výskumy na Veľkom vrchu, v roku 2018 udelila jubilantovi ďakovný list za profesionálny prístup, spoluprácu a prínos ku kvalite monografického diela: *Monografia Divinka a Lalinok*.

Nezanedbateľná je i jeho činnosť v oblasti realizácie viacerých grantových projektov agentúr VEGA a APVV, ako aj medzinárodných projektov (Slovensko, Poľsko). Viedol jednu diplomovú prácu a bol školiteľom troch doktorandov.

Gabriel Fusek dostal znamenitú intelektuálnu pripravenosť a argumentačnú úroveň do vienka od svojich rodičov. To, že nie všetko je ideálne si jubilant náležitým spôsobom uvedomuje. Je neveriteľné, s akou trpezlivosťou, priam posadnutosťou je schopný veľa času venovať kolegom, priateľom, ale aj iným osobám pri argumentácii a zdôvodneniach svojich poznatkov. To i napriek početným zdravotným ťažkostiam, ktorým jubilant čelil a dodnes ho „kvária a moria“ (parafrázujúc Hviezdoslavovu Hájnikovu ženu). Má však schopnosť sebareflexie a kritického prístupu k svojim myšlienkam a činom. Ide o skutočnosť, ktorú si treba mimoriadne vážiť, pretože mnohým z nášho okolia niečo podobné enormne chýba. Absenciu intelektuálneho rozhľadu nahrádzujú diletantstvom, neschopnosťou, či priam namyslenosťou. Zásluhou svojho jasnozrivého


intelektu sa dokázal vysporiadať aj s hendikepom nepočujúceho.

Nezanedbateľným podielom jeho kreativity je jeho zručnosť. Vybudoval nielen ovocný sad, o ktorý sa s nemalým úsilím stará. Zakúpil malý domček v Lukáčovciach, obci nevelmi vzdialenej od Nitry. Pristavil k nemu rodinný dom, pričom väčšinu remeselných prác pri jeho stavbe sám uskutočnil. V pôvodnej časti domu má jeho manželka Vierka remeselnícku dielňu, v ktorej vyrába rôznorodé keramické produkty, vrátane dekoratívnych výrobkov. Zdôrazniť je vhodné aj jeho gurmánstvo. Varí nielen rád, ale aj vynikajúco.

Predchádzajúci text dokladá jeho ľudskú rozmanitosť a mnohorakú vedeckú vrstevnatosť. Nemôžem však nespomenúť niekoľko bezprostredných zmienok. S kolegom Gabrielom Fusekom som sa zoznámil krátko po jeho vstupe na pôdu Archeologického ústavu SAV v Nitre. V tomto čase totiž nebolo vôbec jednoduché stať sa pracovníkom zmienennej inštitúcie. O to viac treba oceniť skutočnosť, že si ho vtedajšie vedenie ústavu vybralo. Zakrátko sme sa stali priateľmi, ktorí sa navzájom rešpektujú a kolegami, ktorí dokážu diskutovať na rôznorodé

témy. Výsledkom našich početných rozhovorov a diskusií sú viaceré spoločné príspevky a štúdie. Niektoré sa rodili ľahko, iné ťažšie. Ich vznik bol podmienený náročnosťou tém a intenzitou diskusie o sporných témach. Som presvedčený, že iba v spore sa rodí podnetná myšlienka a z nej vyplývajúci produkt. A ešte jedna veľmi osobná spomienka. V roku 1984 sa Gabriel Fusek významnou mierou podieľal na výskume pohrebiska z obdobia avarského kaganátu v Obide, ktorého som bol vedúci. Jeho prínos z hľadiska spôsobu odkryvania hrobov a ich dokumentovania bol pre mňa nielen podnetný, ale aj neoceniteľný. Medzičasom som predmetné pohrebisko monografickým spôsobom publikoval (Jozef Zábojník: *Pohrebisko z obdobia avarského kaganátu v Obide*. Archaeologica Slovaca Monographiae. Studia 26. Nitra 2019).

Milý Gabko, viac ako rád Ti za priateľov, či kolegov a samozrejme aj za seba chcem popriať ešte veľa tvorivých rokov, zaželať dobré zdravie, spokojnosť a neutíchajúci elán pri plnení nových výziev. V neposlednom rade ešte mnoho pozoruhodných objavov v problematike včasného stredoveku.

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Podľa autorových podkladov zostavila *Kristína Sedliaček*

SPRÁVY

53. medzinárodná konferencia
archeológie stredoveku

V krásnom areáli hospitálu Kuks, okr. Trutnov, sa v dňoch 19.–23. septembra 2022 uskutočnila 53. medzinárodná konferencia archeológie stredoveku. Jej prípravy sa zhostil Ústav archeologie a muzeologie Filozofickej fakulty Masarykovy univerzity v Brně (PhDr. Irena Loskotová, PhD., Mgr. Jana Mazáčková, PhD., doc. Mgr. Petr Hrubý, PhD.), Národní památkový ústav (Mgr. Martin Tomášek, PhD.), Archeologický ústav AV ČR v Brně (Mgr. Petr Žákovský, PhD.) a Katedra archeologie Filozofickej fakulty Univerzity Hradec Králové (Mgr. Pavel Drnovský, PhD.). Posledné dva roky sa nám spájajú s vyčerpávajúcou prítomnosťou vírusu a celosvetovej pandémie, a tie podnietili usporiadateľov tohto stretnutia k zvoleniu nosnej témy *Archeologie hygieny*. Téma inšpirovala usporiadateľov aj k výberu miesta, kde sa konferencia uskutočnila – hospitálu Kuks. Ide o komplex budov, kde sa pôvodne nachádzal špitál pre vojenských veteránov, postavený na podnet grófa Františka Antonína Šporka na začiatku 18. storočia. Areál hospitálu zahŕňa lekárňu, knižnicu, kostol, ako aj nádhernú bylinkovú záhradu a celé okolie podmaňujúco dopĺňajú sochy od významného sochára Matthiasa Bernarda Brauna.

Konferencia bola rozdelená na niekoľko sekcií: 1. „Hygiena, odpady, choroby a lekárství: diskurs historického výskumu a možnosti archeologie“, 2. „Nemoci, liečba a hygiena podľa výskumu kosterných ostatkov“, 3. „Hygiena a odpad na vesnici, ve meste, v kláštore a na hrade“, 4. „Výroba, odpad a životní prostředí v předprůmyslovém období dotekem archeologie“, 5. Hygiena, lekárství a léčitelství nové doby“, 6. „Lazebnictví“ a 7. „Varia“. Napriek tomu, že ide o ťažkú tému, viacerí bádatelia sa jej zhostili s veľkým entuziazmom, čo bolo vidieť aj na rôznorodosti tém prednášok, z ktorých spomeňme aspoň niektoré. V úvode sa hovorilo o hygiene postrehnuteľnej v archeologických dokladoch rozličných sociálnych skupín a stave výskumu tejto problematiky na Slovensku (M. Slivka/Z. Poláková), či o hygiene v stredovekom väzení (J. Varhaník). Na pandémiu nadviazal aj nový projekt Západočeského múzea v Plzni, ktorý návštevníkom približuje choroby a epidémie v dejinách ľudstva a spôsob ich liečby, s prihliadnutím na nálezy z územia mesta Plzeň


(D. Brejchová). Zdravotný stav ľudí sa dá vypozerovať z dôkladného spracovania kostrových pozostatkov, ako to ukazuje príklad ľudí žijúcich v minulosti na území dnešného mesta Žatec (P. Čech/D. Malyková/J. Likovský), alebo detí na stredovekom Nitriansku, ktorým sa venovali aj naše kolegyne (M. Krošláková, Z. Hukeľová). Zaujímavosťou výskumu v dominikánskom kláštore v ukrajinskom meste Vinnycia bolo (okrem iného) aj objavenie kostry slúžiacej na edukačnú výučbu (L. Vynohrodska). Ďalšie dni sa niesli v znamení hygieny a odpadu v okolí ľudských obydlí či príbytkov, ako aj v častiach súvisiacich s priemyslom a výrobou. Záchranný výskum zaniknutej stredovekej dediny Kapansko priniesol pozoruhodné výsledky a na jeho príklade sa autor zameril na problematiku vodných zdrojov a s tým spojenou hygienou a odpadom v prostredí juhomoravskej dediny (J. Šimík). Niektoré výskumy realizované v dodnes obývaných mestách v Česku – Chrudim (J. Frolík/J. Musil), Hradec Králové (R. Bláha), Brno (V. Kolařík/M. Peška/L. Sedláčková/A. Zúbek), na Slovensku – Banská Bystrica (B. Styková zastupovala početný kolektív autorov), či v Poľsku – Krakov (S. Dryja), predstavili nezvyčajné poznatky týkajúce sa danej problematiky v stredovekých mestách. Prednáška o hrade Rokštejn ukázala, aké výsledky prináša systematický výskum jednej lokality a jej širšieho okolia, aj v spojení s témou hygieny a odpadu (J. Mazáčková/P. Žaža/D. Vaněčková/A. Půčař). Hradnú problematiku doplnila prednáška o cisternách na hradoch na Slovensku (S. Oporosková), či o teplovzdušnom vykurovaní na hradoch aj v kláštoroch v strednej Európe (M. Hanuš). Netradičný archeobotanický výskum nadzemných častí stavebných konštrukcií v barokovom hospodárskom dvore Švamberk, tesne pred jeho demoláciou, priniesol pozoruhodné výsledky. Doložilo sa niekoľko stavebných fáz, ale taktiež sa zachytilo experimentovanie s viacerými exotickými rastlinami, ako napríklad kukurica, ryža, cirok, ktoré možno stotožniť s konkrétnou stavebnou činnosťou, čiže aj s majiteľom panstva (T. Šálková/L. Vobejda/Z. Thomová). Aj jednoduchý malý kovový (možno trochu netradičný) predmet vie veľa povedať, ako to demonštrovala prednáška o dokladoch importov benátskeho



Účastníci konferencie z Archeologického ústavu SAV, v. v. i., v pozadí hospitál Kuks (foto archív M. Krošlákovej).

theriaku (J. John). Medzi posledné prednášky patril aj referát o vybavení kúpeľov v stredoveku a ranom novoveku (P. Moš). Autor si tiež pripravil názorné ukážky dobových chirurgických nástrojov, prezentovaných počas posterovej sekcie, aj s ilustračným použitím vybraných inštrumentov, predvedeným priamo na prítomných kolegoch (pravdaže dobrovoľníkoch). Referátovú časť doplnili početné postery, ktoré okrem obsiahlej nosnej témy (napríklad „Nález stredovekého prvétu na hrade Krásna Hôrka“ – P. Bednár/M. Šimkovic/T. Votroubeková), predstavili aj ďalšie pozoruhodné námety (napríklad „Nález unikátnej zachovanej konštrukcie včasnostredovekého drevozemného valu a románskej hradby s vežou na Bratislavskom hrade“ – M. Samuel). Konferencia bola (už tradične) spojená s celodennou exkurziou, na ktorej sme navštívili viaceré destinácie – v Čechách

najstarší zachovaný drevený kostol Panny Márie v Broumове, benediktínsky kláštor v Polici nad Metují, zaniknutý hrad Vlčinec a hrad Vízmburk. Nemennou súčasťou každej konferencie je spoločenský večer, ktorý vždy uzatvára tento spoločne strávený čas, tentoraz zahalený aj vo výrazne chladnejších dňoch.

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Príspevok vznikol s podporou grantového projektu 2/0043/22 agentúry VEGA „Archeologické pramene k včasnej dobe dejinnej a začiatku stredoveku v strednom Podunajske“.

Medzinárodná konferencia v meste Alba Iulia (Rumunsko) a projekt slovensko-rumunskej vedeckej mobility

V dňoch 20.–22. 10. 2022 sa vedeckí pracovníci Archeologického ústavu SAV doc. PhDr. Gertrúda Březinová, CSc., Mgr. Lucia Benediková, PhD., Mgr. Branislav Kovár, PhD. a doktorandka Mgr. Petra Dragonidesová zúčastnili medzinárodnej konferencie na tému „The Archaeology of Communities and Landscapes in the Carpathian Basin. Interdisciplinary Perspectives (the end of the Early Iron Age–beginning of the Roman provincial period)“. Konferencia sa konala v budove Museikonu, ktoré je súčasťou komplexu Národného múzea zjednotenia v centre rumunského mesta Alba Iulia. Počas konferencie odznelo 25 príspevkov, doplnených o záverečné diskusie účastníkov, ktoré odprezentovali odborníci z Chorvátska, Maďarska, Rakúska, Rumunska, Slovenska a Slovinska. Ako už prezrádza samotný názov konferencie, prezentácie aj diskusie boli zamerané predovšetkým na otázky komunit žijúcich v prostredí Karpatskej kotliny v dobe halštatskej, laténskej a na začiatku doby rímskej.

Konferenciu otvorila L. Benediková svojím príspevkom „Settlement dynamics in the northern part of the Western Carpathians from the Late Hallstatt to the Migration Period on the example of Lazisko site (distr. Liptovský Mikuláš/SK)“ za kolektív autorov. Na tento príspevok nadviazal A. Rustoiu s referátom „The middle Mureş valley during the Early Iron Age. Communities and landscape transformations“. V ňom priblížil spôsob akým spoločnosti v údolí stredného toku rieky Mureş ovplyvnili prostredie v ktorom žili na začiatku doby železnej. Spočiatku sa moc a kontrola nad oblasťou centralizovala v pevnosti Teleac a jej okolí. Postupne ale dôležitosť tejto lokality upadala, čo spôsobilo mocenské spory medzi komunitami. A. Georgescu prezentoval aj za svojich kolegov A. C. Ardeleana a A. Sărăşanovej „A tale of four sites. Reconstructing the early and middle La Tène habitat in the lowlands of south-western Romania“. Na územie Slovenska bola zameraná prezentácia G. Březinovej s názvom „Settlement of south-western Slovakia in the La Tène period on the basis of eco-parameters“, B. Kovára, K. Pietu a T. Lieskovského „Preconditions of landscape research around the hillfort at Trenčianske Bohuslavice“ a P. Dragonidesovej „Settlement of surroundings of lower part of Morava River at the beginning of the Roman period“. Z maďarských bádateľov prispeli

Z. Sörös s prezentáciou „Late Iron Age sites in the vicinity of Arnót (north-eastern Hungary)“ a K. Tankó s A. Kovácsom s prednáškou „Farms, villages and economic centres... What can we know about Late Iron Age cultural landscape use from the archaeological evidence in the Carpathian Basin?“. Bádania opísali agrárne využitie pôdy v okolí sídlisk v dobe laténskej. Predstavili konkrétne lokality so stopami po poľnohospodárskych aktivitách a železné nástroje určené k tejto práci. Z. Czajlik sa v príspevku „Aerial archaeological investigation of Late Iron Age fortified settlements in Hungary“ zameril na nedeštruktívny spôsob výskumu lokalít. V prednáške „Public and private space in urban areas of Apulum. Case study: Domus-Thermae Sector (ArcheoDanube Project – Archaeological Parks in urban areas as a tool for Local Sustainable Development)“ ukázali kolegovia A. Timofan a A. I. Buty výsledky aktuálne prebiehajúceho výskumu rozsiahleho rímskeho domu mimo hradieb mesta, ktorý mali účastníci konferencie možnosť i navštíviť. Chorvátski bádatelia M. Dizdar a B. Kratofil predstavili „Late La Tène settlement network in the Vinkovci area (Eastern Croatia). Organization and use of landscape by the Scordisci“. Mimoriadne zaujímavý bol príspevok S. Kovačevića, ktorý priblížil výskum mohyly v obci Jalžabet – „Monumental burial mounds in Jalžabet and Martijanec as parts of the Early Iron Age landscape in the Plitvica – Bednja Rivers Basin (NW Croatia)“. Na archeozoológiu boli zamerané príspevky „Ancient diet reconstruction of the communities from the *villa rustica* at Oarda-Bulza“ (B. Ciută), „Animals. Shaping landscapes and modelling human minds. A case study of the Late Iron Age settlement from Giarmata“ (M. Urák) a „Animal management in *villa rustica* from Oarda-Bulza (Alba County) and its impact on the environment“ (G. El Susi). V poslednom z nich bola uvedená podrobná analýza zvieracích kostí objavených na lokalite Oarda-Bulza počas výskumov z rokov 2020–2021. Vďaka nej je možné rekonštruovať druhy zvierat ktoré sa tu nachádzali a k čomu boli využívané. Jediný príspevok na konferencii týkajúci sa palynológie predstavila R. Grindean – „Pollen-based quantitative reconstructions of Holocene land cover in the Romanian Carpathians and adjacent lowlands“. Bulharskí kolegovia Z. Dimitrov a V. Zhivkov sa



Účastníci konferencie (foto R. Diodiu).

zamerali na predstavenie osídlenia na severozápade Bulharska na konci doby laténskej a začiatku doby rímskej a konferencie sa zúčastnili s príspevkom „Rome and the “Moesians“. The end of the Iron Age south of Danube (1st century AD)“. Z rumunských bádateľov prispeli M. Egri s G. El Susi a I. V. Ferenczom – „Meat consumption between body nourishment and social statement. The case of pre-Roman Dacia“, P. Pupeză – „The hill behind the hillfort. Reverse engineering the construction of the Dacian hillfort from Covasna – Cetatea Zănelor“, A. Drăgan – „Tower houses of Late Iron Age Dacia in the relational conceptualization of space“, A. Cășălean – „Late Iron Age “downtowns“: Some perspectives regarding the organization and functionalities of public squares within the Dacian habitats from the eastern Carpathian Basin“, S. Berecki – „Celtic period ritual landscapes in the eastern part of the Carpathian Basin“ a v neposlednom rade I. V. Ferencz – „Aristocratic residences in south-western Transylvania. Reflections on the functionality of the so-called Dacian fortresses“. I. V. Ferencz vo svojej prezentácii o dáckych pevnostiach zdôraznil, že neboli len obranného charakteru ale išlo o elitné opevnené rezidencie. Toto tvrdenie podoprel architektonickou analýzou lokalít, pričom ako model použil pevnosť v Ardeu. Konferenciu uzavreli teoreticky orientovanými príspevkami P. C. Ramsl – „Sacred spaces and communication

lines: Case studies in Eastern Austria and Alpine areas“ a B. Kavur – „The mind is a safe place to be... Landscapes in memory and perception of past societies“. B. Kavur na príklade lokality Zavrč v severovýchodnom Slovinsku opísal, akými zmenami prešla v rôznych časových obdobiach. V krajine sa podľa neho odrážajú zvyky a zážitky minulých spoločností.

Súčasťou konferencie bola aj exkurzia po meste Alba Iulia. Centrum dnešného mesta, obohané masívnymi tehlovými múrmi z obdobia vlády Habsburgovcov, leží na ruinách pôvodného rímskeho mesta Apulum, vďaka čomu ešte aj v dnešnej dobe v jeho rôznych častiach prebiehajú záchranné archeologické výskumy.

Konferencia bola zakončená exkurziou na dvoch dáckych lokalitách umiestnených na výšinných polohách rumunských Karpát. Prvou z nich bola lokalita Costești-Cetățuie. Ide o najstaršie zo šiestich opevnených dáckych hradísk v horách Orăștie. Hradisko malo za úlohu chrániť hlavnú prístupovú cestu do Sarmizegetusy. Na lokalite sú dodnes zachované pozostatky stavieb vybudovaných v helenistickej tradícii, základy chrámov, či strážnych veží. Druhou z lokalít bolo opevnené centrum dáckeho sveta z obdobia vlády kráľa Burebistu – Sarmizegetusa. Táto výnimočná lokalita má rozlohu viac ako 30 000 m² a nachádza sa v nadmorskej výške 1030 m n. m. Jej minulé význam dodnes pripomínajú hrubé forti-


fikačné múry vybudované stavebnou technikou *murus dacicus*, zachované cesty, kanalizácia, či početné chrámy. Rovnako ako aj veľké množstvo archeologických nálezov rôzneho druhu.

Napriek tomu, že konferencia sa skončila 22. 10. 2022, slovenskí účastníci mohli vďaka mobilnému projektu „Konektivita v dobe železnej v Karpatskej kotline (Connectivity in the Iron Age in the Carpathian Basin)“ medzi Slovenskou a Rumunskou akadémiou vied v nasledujúce dni navštíviť ešte niekoľko rumunských lokalít a múzeí v blízkosti Alba Iulie. Prvou z nich bola opevnená lokalita Teleac, osídlená od konca doby bronzovej do doby halštatskej. Druhou z navštívených lokalít bol Cugir, podobne ako Teleac situovaný v horách. Začiatok osídlenia tejto lokality bol v dobe bronzovej a pokračoval aj v dobe laténskej, až do dáckeho obdobia. Výnimočne sú bohato vybavené mohylové hroby pravdepodobne miestnych bojovníkov z 2.–1. stor. pred n. l. Nachádzali sa v blízkosti najvyššie položeného opevneného okrsku – na svahoch pod akropolou. Táto lokalita je typickým predstaviteľom podobných výšinných sídel, ktoré zo strategických dôvodov neboli umiestnené na najvyšší kopec v danej oblasti, ale na ten, z ktorého bolo dobre vidno do okolia a na zvyšné vrcholy.

Z prostredia rímskeho sveta sme navštívili dobre zachované a voľne prístupné rímske kúpele Germisara, pričom termálna voda z tejto lokality je dodnes využívaná v moderných kúpeľoch postavených v blízkosti starovekých štruktúr. Následne sme sa prešli po rímskej ceste spájajúcej antickú Germisaru s jej okolím. Mali sme možnosť pozrieť si stredoveký kostolík reformovanej cirkvi v Geoagiu, do ktorého stien boli čiastočne zamurované rímske funerálne pamiatky. Využili sme šancu na prehliadku expozícií Národného múzea v Alba Iulii, ktoré predstavujú dejiny šir-

šieho regiónu od doby kamennej do novoveku. V múzeu a lapidáriu v Deve sme mali príležitosť porovnať materiál z doby laténskej a rímskej s nálezmi z nášho územia. V expozíciách zameraných na archeológiu sa nachádzali významné predmety, predovšetkým z doby rímskej. Obzvlášť treba vyzdvihnúť nález bronzovej helenistickej matrice v tvare nízkeho hranola so šesťuhľňkovou podstavou, objavenej v Sarmizegetuse. Scény vyobrazujúce zvieratá, ako hroch, či slon lovené gepardmi, boli zhotovené technikou *intaglio* a matrica bola pravdepodobne využitá pri odlievacej technike metódou strateného vosku. Posledný deň bol venovaný návšteve goticko-renesančného hradu v meste Hunedoara, ktorého zakladateľom bol Ján Huňady a k významným vlastníkom patrili i Matej Korvín. Na nezastavanej časti hradného kopca bolo objavené dácke pohrebisko.

Vďaka mobilnému projektu sme mali možnosť vidieť v krátkom čase veľké množstvo pamiatok a archeologických nálezov. Nové poznatky, výsledky diskusií a kontakty otvárajú príležitosti k vzniku ďalších projektov a medzinárodných výskumných tímov. Príspevky, ktoré odzneli na konferencii, budú publikované v tematickom zborníku.

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