



**HAL**  
open science

## Fossiles Directeurs Variability in Late and Final Stages of the Gravettian of Central Europe

Michaela Polanska, Martin Novak, Laurent Klaric

### ► To cite this version:

Michaela Polanska, Martin Novak, Laurent Klaric. Fossiles Directeurs Variability in Late and Final Stages of the Gravettian of Central Europe. Adrián Nemergut; Ivan Cheben; Katarzyna Pyżewicz. "Fossile Directeur" Multiple Perspectives on Lithic Studies in Central and Eastern Europe, Supplementum 2, Archeologického ústavu Slovenskej akadémie, pp.145-162, 2021, Štúdijné Zvesti, 10.31577/szausav.2021.suppl.2.10 . halshs-03504137

**HAL Id: halshs-03504137**

**<https://shs.hal.science/halshs-03504137>**

Submitted on 28 Dec 2021

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# ŠTUDIJNÉ ZVESTI

ARCHEOLOGICKÉHO ÚSTAVU  
SLOVENSKEJ AKADÉMIE VIED

SUPPLEMENTUM 2

## FOSSILE DIRECTEUR

**Multiple perspectives on lithic studies in Central and Eastern Europe**

**Adrián Nemergut – Ivan Cheben – Katarzyna Pyżewicz  
(editors)**

The publication was supported by projects  
of the Slovak Research and Development Agency (No. APVV-20-0521)  
and the Scientific Grant Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic  
and the Slovak Academy of Sciences (No. VEGA 2/0101/19 and 2/0075/21).

NITRA 2021

Adrián Nemergut – Ivan Cheben – Katarzyna Pyżewicz (editors)

**Fossile directeur. Multiple perspectives on lithic studies in Central and Eastern Europe**

Študijné zvesti Archeologického ústavu SAV – Supplementum 2, 2021

Recenzovaný časopis / Peer-reviewed journal

Hlavné redaktorky / Editors-in-chief

Gertrúda Březinová, Alena Bistáková

Redakčná rada / Editorial board

Lucia Benediková, Jozef Bujna, Jana Čižmářová, Eva Fottová, Joachim Henning, Ivan Cheben, Alexandra Krenn-Leeb, Ján Rajtár, Peter C. Ramsl, Jozef Zábojník

Technické redaktorky / Technical editors

Daniela Fábiková, Miriama Nemergutová

Počítačové spracovanie / Layout

Beáta Jančíková

Grafický návrh a počítačové spracovanie obálky / Graphic layout and computer elaboration of the cover

Beáta Jančíková, Adrián Nemergut

Príspevky sú indexované a evidované v databázach WoS, Scopus a CEJSH.

Bez predbežného písomného súhlasu vlastníka vydateľských práv nesmie byť žiadna časť tejto publikácie reprodukována alebo rozširovaná v žiadnej forme – elektronicky či mechanicky vrátane fotokópií, nahrávania, prípadne iným použitím informačného systému vrátane webových stránok.

Articles are indexed and covered in WoS, Scopus, and CEJSH databases.

No part of this publication may be reproduced or transmitted in any form – electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, including web pages, without the prior written permission from the copyright owner.

Za znenie a obsah príspevkov zodpovedajú autori. / Authors are responsible for their contributions.

<http://archeol.sav.sk/index.php/sk/publikacie-2/studijne-zvesti/>

<http://archeol.sav.sk/index.php/en/publications/the-studijne-zvesti-au-sav-journal/>

Rozširuje / Distribution

Archeologický ústav SAV, Akademická 2, SK – 949 21 Nitra

e-mail: [nraukniz@savba.sk](mailto:nraukniz@savba.sk)

Tlač / Printed by

VEDA, vydavateľstvo SAV, Bratislava

© Archeologický ústav SAV, Nitra 2021

ISSN 0560-2793

---

## OBSAH

### Magda Cieřla

- Keep it or discard it?  
Why the Neanderthals made tools from some rocks ..... 7
- Zachować czy wyrzucić?  
Dlaczego neandertalczyzy wykorzystywali niektóre typy skał w produkcji narzędzi ..... 18

### Małgorzata Kot – Natalia Gryczewska

- Found in a box.  
Unknown bifacial leaf point from the Koziarnia Cave ..... 19
- Znalezione w pudełku.  
Nieznane bifacjalne ostrze liściowate z jaskini Koziarni ..... 29

### Krisztián Zandler – András Markó – Attila Péntek

- Szeletian or not Szeletian.  
Bifacial industries from three open-air Middle Palaeolithic sites from the Cserhát Mountains  
(Northern Hungary) ..... 31
- Szeletien alebo nie szeletien.  
Bifaciálna industria z troch otvorených stredopaleolitických lokalít v pohorí Cserhát (severné Maďarsko) ..... 46

### Zsolt Mester

- What about the Szeletian leaf point as *fossile directeur*? ..... 49
- Szeletiansky listovitý hrot ako *fossile directeur*? ..... 61

### Katarzyna Pyżewicz – Adrián Nemergut

- First results of use-wear analysis of the leaf points from Moravany nad Váhom-Dlhá ..... 63
- Prvé výsledky trasologickej analýzy listovitých hrotov z lokality Moravany nad Váhom-Dlhá ..... 80

### Marián Soják – Maciej Wawrczak

- Spišské Podhradie-Dreveník, an important Palaeolithic site of the Lower Spiš ..... 83
- Spišské Podhradie-Dreveník, dôležitá paleolitická lokalita dolného Spiša ..... 92

### Yuri E. Demidenko – Petr Škrdla – Joseba Rios-Garaizar – Jaroslav Bartík – Tereza Rychtaříková

- Epiaurignacian industry with Sagaidak-Muralovka-type microliths industry  
in the south of Eastern Europe and Eastern Central Europe and its lithic artefact fossil types ..... 93
- Epiaurignacká industrie s mikrolity typu Sagaidak-Muralovka v období posledního glaciálního maxima  
na jihu východní Evropy a ve východní části střední Evropy a její vúdčí artefakty ..... 109

### Michaela Polanská

- Est-il possible d'identifier des groupes pavloviens sur le territoire d'actuelle Slovaquie ? ..... 111
- Osídľovali pavlovienske skupiny územie dnešného Slovenska? ..... 126

**Sandra Sázelová – Bibiána Hromadová – Angela Perri – Michaela Polanská**

- Aspects of hard tissue modifications.  
Three objects from the Gravettian at Dolní Věstonice II (Czech Republic) ..... 129
- Možnosti modifikace tvrdých tkání.  
Tři gravettské předměty z Dolních Věstonic II (Česká republika) ..... 143

**Michaela Polanská – Martin Novák – Laurent Klaric**

- Fossiles directeurs* variability in Late and Final stages of the Gravettian of Central Europe ..... 145
- Variabilita *fossiles directeurs* v mladom a finálnom gravettiene strednej Európy ..... 161

**Zdeňka Nerudová**

- Can we identify any *fossile directeur* in the Epigravettian? ..... 163
- Je možné nalézt *fossile directeur* pro epigravettien? ..... 173

**Ivan Cheben – Michal Cheben**

- Analysis of chipped industry from the settlement of the Želiezovce group in Bajč ..... 175
- Analýza štiepanej kamennej industrie z lokality želiezovskej skupiny v Bajči ..... 197

**Roman I. Muravev – Evgenia S. Tkach – Dmitriy V. Gerasimov**

- Sinkers and composite fishing hooks in the Neolithic of Eastern Baltic.  
Slate artefacts from Berezovo 2 (Karelian Isthmus, North-West Russia) ..... 199
- Závažia a zložené rybárske háčiky z neolitu vo východnom Pobaltí.  
Bridlicové artefakty z lokality Berezovo 2 (Karelská šija, severozápadné Rusko) ..... 210

**Jaroslav Bartík – Petr Škrdla**

- Raw material as *fossile directeur*?  
A case study of the use of Stránská skála-type chert ..... 213
- Surovina jako *fossile directeur*?  
Případová studie využívání rohovce typu Stránská skála ..... 229

**Lubomíra Kaminská**

- Use of obsidian in Slovak prehistory ..... 231
- Využitie obsidiánu v praveku Slovenska ..... 250

**Magdalena Sudoł-Procyk**

- Chocolate flint outcrops in the Kraków-Częstochowa upland.  
State of knowledge on mining, use and distribution of the raw material  
and further research perspectives ..... 251
- Wychodnie krzemienia czekoladowego na Wyżynie Krakowsko-Częstochowskiej.  
Stan wiedzy nad wydobywaniem, użytkowaniem i dystrybucją surowca  
oraz perspektywy badawcze ..... 262

## FOSSILES DIRECTEURS VARIABILITY IN LATE AND FINAL STAGES OF THE GRAVETTIAN OF CENTRAL EUROPE

Michaela Polanská – Martin Novák – Laurent Klaric

DOI: <https://doi.org/10.31577/szausav.2021.suppl.2.10>

**Keywords:** Gravettian, Central Europe, Moravia, Slovakia, *fossiles directeurs*, Kostenki knives, shouldered points, heterogeneity of human groups

**Abstract:** The Upper Palaeolithic cultures in Central Europe are traditionally defined on the basis of lithic artefacts, predominantly various types of retouched tools, which are usually considered to be typical of a given culture. For the Late and Final Gravettian, the shouldered points and Kostenki knives are supposed to be the main *fossiles directeurs* in this region. Based on the identification of these artefacts in Central and Eastern European lithic assemblages, terms such as “Willendorf-Kostenki/Willendorf-Kostenkian”, or “Eastern Gravettian” or even “Shouldered Point Horizon” have emerged, pointing to the analogy between sites hundreds of kilometres apart. However, new excavations, revisions of old collections, as well as modern research methods, have brought new insights into these emblematic artefacts. Although they are likely to be found in some Central European Late and Final Gravettian assemblages, their occurrence is less common than had been anticipated in the past. Our paper aims to propose a historical “Central European” view on these traditional *fossiles directeurs* considering their identification and cultural value. We also describe their influence on the historical development of terminology in Central European Palaeolithic archaeology.

### INTRODUCTION

The Gravettian is one of the pan-European cultures of the Upper Palaeolithic, which has long attracted attention for its rich material culture and symbolic aspects (i.e. Female figurines/Venus, burials, and personal ornaments). Central Europe, located at the intersection of Western and Eastern influences, plays an essential role in defining this term. It was the classical sites of former Czechoslovakia, such as Předmostí Ia and Dolní Věstonice I, which represented one of the first analogies to the sites of La Gravette or Kostenki I, sites that led to the definition of the term Gravettian itself (Fig. 1; e.g. Garrod 1938; Laccore 1960).

From the first half of the 20<sup>th</sup> century, a strong emphasis was particularly placed on the analogies between Central and Eastern European sites, based, among others, on the characteristic lithic tools (*fossiles directeurs*; Fig. 2; 3). These typological comparisons led to the separation of the “Western” and the “Eastern Gravettian” (e.g. Hawkes 1940). Shouldered points and Kostenki knives were traditionally discussed in the case of comparing Central and Eastern Europe (e.g. Kozłowski 1969; 1986; Otte 1981). Considering these comparisons, the terms such as “Willendorf-Kostenki/Willendorf-Kostenkian”, “Eastern Gravettian” or even “Shouldered Point Horizon” have emerged, pointing to the analogy between sites hundreds of kilometres apart (e.g. Grigor’ev 1968; 1993; Gvozdover 1998; Hromada 1998; Kozłowski 1969; Kozłowski/Sobczyk 1987; Lisitsyn 2019; Svoboda 1996). Today, however, it is evident that although Kostenki knives and shouldered points are likely to be found in some Late and Final Gravettian assemblages of Central Europe, their occurrence is less common than had been anticipated in the past (Klaric et al. 2015; Polanská/Hromadová 2015; Polanská/Hromadová/Sázelová 2021).

In recent years, the issue of Central European Late and Final Gravettian has received increasing attention, since new excavations, revisions of historical collections, as well as modern research methods, have brought new insights into this topic. Gradually, the occurrence and character of



Fig. 1. Main Central and Eastern European Gravettian sites (CAD M. Polanská; www.maps-for-free.com).

traditional lithic *fossiles directeurs* are critically discussed (Klaric et al. 2015; Polanská/Hromadová 2015; Polanská/Hromadová/Sázelová 2021) and other characteristic tools that illustrate the variability of lithic assemblages have come to the fore (e.g. Eigner et al. 2020; Lengyel/Mester/Szolyák 2016; Polanská/Hromadová 2015; Wilczyński et al. 2015; 2020). It turns out that the assemblages dated later than 25 ky uncal BP (29 ky cal BP), which would be suitable for a full-fledged characterisation of the traditional *fossiles directeurs*, do not appear (or only to a very small extent) in the collections of former Czechoslovakia today.<sup>1</sup>

In our work, we would like to contribute to the discussion of the occurrence of Kostenki knives and shouldered points in collections from former Czechoslovakia, considering their identification and cultural value. The aim is to propose a historical “Central European” view on these traditional *fossiles directeurs* because their initial identification and subsequent influence on the historiography of the term Gravettian in former Czechoslovakia have not received much attention in the literature so far.

#### MUTUAL INFLUENCES BETWEEN CENTRAL AND EASTERN EUROPEAN SCHOOLS OF THOUGHT IN THE DEFINITION OF THE LATE AND FINAL GRAVETTIAN IN FORMER CZECHOSLOVAKIA

To understand the evolution of the definition of Gravettian in Central Europe, it is essential to know the history of research in both Central and Eastern Europe, and also the differences between their schools of thought (e.g. K. Absolon, P. P. Efimenko, M. D. Gvozdover, B. Klíma, J. K. Kozłowski, S. M. Zamjatnin)

<sup>1</sup> For example, at Moravany-Podkovic, the reassessment of the collection confirmed the presence of shouldered points but no Kostenki knives were to be found.

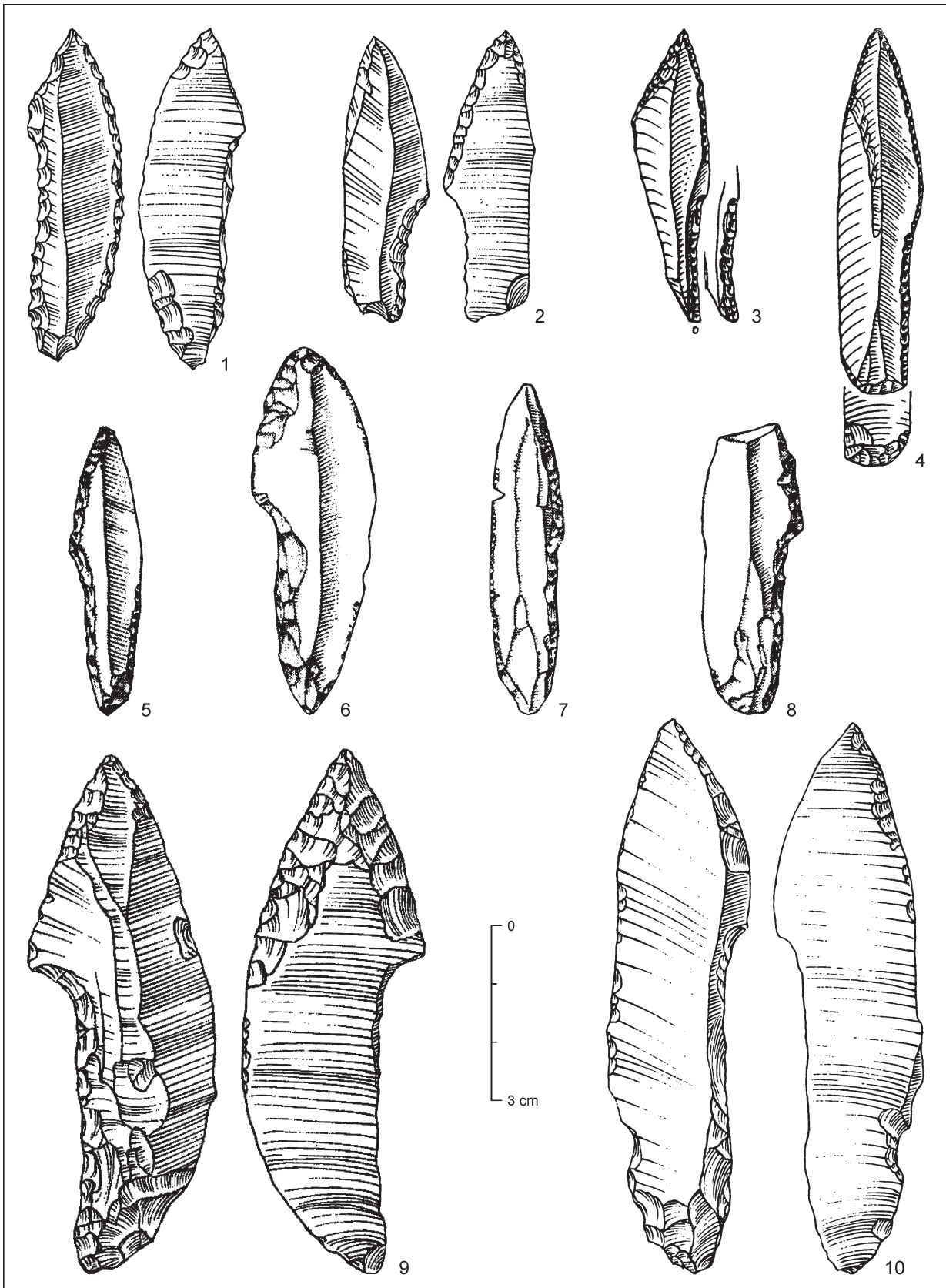


Fig. 2. Shouldered points and questionable "shouldered points" historically identified on various Central and Eastern European sites. 1, 2 – Willendorf I; 3, 4 – Předmostí Ia; 5–8 – Moravany-Podkovicva; 9, 10 – Kostenki I (1, 2 – after *Onorotini 1978*; 3, 4 – after *Valoch 1986*; 5–8 – after *Bárta 1965*; 9, 10 – after *Efimenko 1958*).



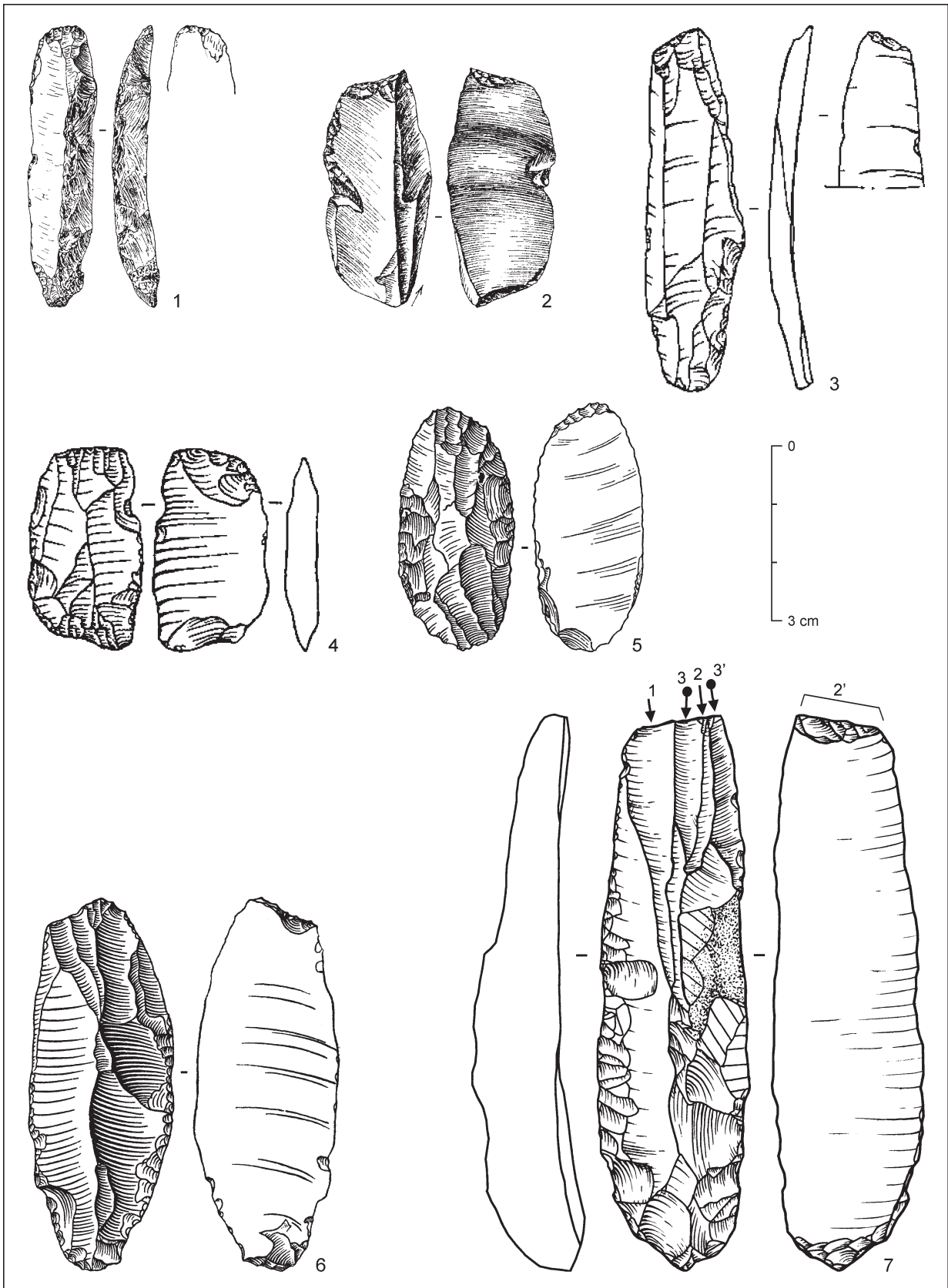


Fig. 3. Kostenki knives and questionable “Kostenki knives” historically identified on various Central and Eastern European sites. 1 – Berdyzh; 2 – Předmostí Ia; 3, 4 – Avdeevo; 5, 6 – Kostenki I; 7 – Pavlov I (1, 2 – after Absolon 1947; 3, 4 – after Gvozdover 1998; 5, 6 – after Efimenko 1958; 7 – drawings by M. Polanská).

each with its own specific methods of work. It is also necessary to consider these schools in the state of research of the given time and the then-available knowledge (known sites, realised studies, etc.).<sup>2</sup>

Each of the schools of thought is the result of the development of archaeology in a given part of Europe and responds to the specifics of its region. In this regard, the definition of archaeological cultures<sup>3</sup> in Eastern Europe, concerning the Middle and Late Gravettian (e.g. *Efimenko 1958; Grigor'ev 1970; 1979; Rogachev 1953*), is based on a set of criteria (such as typical lithic and hard animal material tools, characteristic dwelling structures, specific symbolic and aesthetic elements, etc.) in a multilateral association.<sup>4</sup> On the other hand, in Central Europe, there were only two ways regarding the definitions of the archaeological cultures of the Upper Palaeolithic. In the first one, as in Eastern Europe, archaeological cultures were defined on the basis of a set of multiple features, arising from the richness and originality of their material culture and symbolic expressions (e.g. Pavlovian with its specific stone tools, hard animal material industry and personal decorations). However, in most cases (the second way), similar to the system in Western Europe, the cultural definitions were mostly based only on the characteristic stone tools. This is the case, for example, with the Late and Final Gravettian, which, in contrast to Pavlovian, was defined mainly by the presence of shouldered points and Kostenki knives, because the find circumstances or the limited nature of the finds did not allow it otherwise (uncharacteristic, less numerous or completely missing hard animal material industry, faunal remains, etc.). Shouldered points and Kostenki knives thus became the most significant *fossiles directeurs*, which for several decades have served as the primary analogies between the East and Central European Late/Final Gravettian (for more, see *Grigor'ev 1993; Kozłowski 1969; Lisitsyn 2019*).

As mentioned above, the analogies between Central and Eastern Europe have been developed since the first half of the 20<sup>th</sup> century (e.g. *Breuil 1924; Freund 1944; Garrod 1938; Zamjatnin 1930*). There were, in particular, Russian researchers looking for stone tools similar to those that found on the sites such as Kostenki I, or later Gagarino and Avdeev (Grigor'ev 1965; 1966; 1998; *Gvozdover 1961; 1998; Tarasov 1979; Zamjatnin 1930*). The Central European approaches have gone in an independent direction (e.g. *Kozłowski 1969; 1986*). One of the examples is Kostenki knives. In Central Europe, the attention has been focused on the modification and morphology of the striking surface, leading to their interpretation as “chisels” (for a complete history, see *Klaric et al. 2015*). Shouldered points are another similar example, where morphology and placement of the shoulder retouched part were the main attributes considered (*Kozłowski 1976*).

#### HISTORIOGRAPHY OF THE TERM “GRAVETTIAN” IN FORMER CZECHOSLOVAKIA AND THE ROLE OF TRADITIONAL LITHIC *FOSSILES DIRECTEURS*

During the Second World War, when Germans militarily occupied Moravia and Slovakia, the research activities focused on confirming the origin of the Aryan race (e.g. *Eickoff 2009*). A German professor L. Zotz from the German University of Prague was one of the leaders of Palaeolithic research in Central Europe. He notably excavated the complex of the Upper Palaeolithic sites around Moravany nad Váhom in Western Slovakia (district of Piešťany). It resulted in the notice that although dated to the “Late Aurignacian” period, the sites around Moravany nad Váhom are chronologically later than Dolní Věstonice (*Zotz/Vlk 1939*). Moreover, Zotz's first comprehensive paper about the finds from the sites of Moravany-Lopata I, Noviny, and Žakovská (*Zotz/Vlk 1939*) is structured according to the modern tendencies in favour of the term “Gravettian” (Fig. 4) proposed by *D. Garrod (1938)*. She also proposed a term “industry of the Willendorf type” based on the presence of shouldered points within the assemblages from the sites of Dolní Věstonice I, Předmostí Ia, and Kostenki I (*Garrod 1938, 23*). L. Zotz partially agreed with her

<sup>2</sup> Today several obstacles hinder the process of understanding such as the availability of publications, the language used in old publications, and more globally an insufficient knowledge of the archaeological contexts.

<sup>3</sup> The problem of the archaeological culture definition of the Upper Palaeolithic in Eastern Europe is more complex. Our simplified explanation does not include a discussion of the cultural definition problem in the Upper Palaeolithic in the Soviet and post-Soviet school of archaeology (for more information, see *Boriskovsky red. 1984; Efimenko 1953; Rogachev 1951; 1957; Vasil'ev 2008*).

<sup>4</sup> On the contrary, in Western Europe, the lithic industry was one of the main (and sometimes the only) criteria for the definition of cultures and cultural groups within for the Middle Upper Palaeolithic. But the situation has been changing since the beginning of the 21<sup>st</sup> century and now more features (art, adornments, bone industry, etc.) are considered. For a definition of prehistoric culture in Western Europe, see *Leclerc/Tarrête (2005, 295)* and *Klaric et al., in press*.

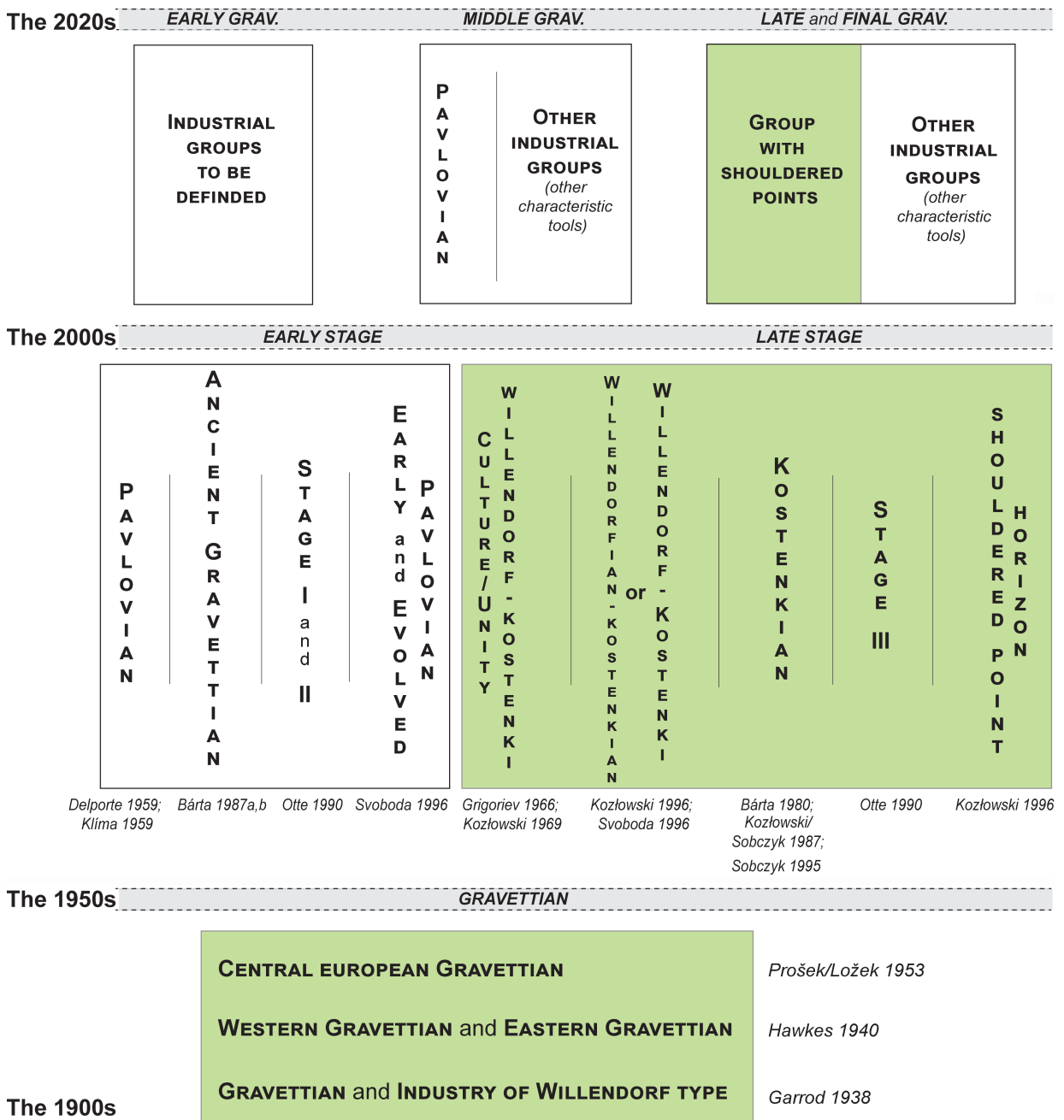


Fig. 4. Historical evolution of the terms used in Central Europe (CAD by M. Polanská).

concept of Gravettian, and under the influence of *B. Richthofen* (1933), he underlined the typological resemblance between “Late Aurignacian” finds (shouldered points) from the sites of Moravany nad Váhom and those found at the sites in Eastern Europe (mainly Kostenki I/1, Berdyzh, Gagarino). However, he did not exclude a possible connection between the Moravany sites and those from Austria and Germany (*Zotz/Vlk 1939*). It should be noted that *K. Absolon* (1947) also pointed out the similar analogies. He was looking for links between the lithic artefacts from the site of Předmostí Ia and the artefacts (e.g. those looking like Kostenki knives) from the Eastern European sites with the presence of specific typological elements (Berdyj and Kostenki I). These artefacts had previously been published in the works of *S. M. Zamiatnin* (1930) and *B. Richthofen* (1933).

In the 1950s, the Czechoslovak archaeologist *F. Prošek* considered that the common presence of the shouldered points and the white-patinated flint from the Bugu region in the collection from the site of

Moravany-Podkovicova might indicate the relationship between Gravettian industries from Central and Eastern Europe (Ambrož/Ložek/Prošek 1952; Prošek/Ložek 1953). He suggested the term “Central European Gravettian” (Fig. 4; Prošek/Ložek 1953, 58) as an answer to C. F. C. Hawkes’s proposal to divide the Gravettian of Europe into two geographical groups – the “Western Gravettian” and the “Eastern Gravettian” (Hawkes 1940). In the mid-20<sup>th</sup> century, the researches increasingly referred to the analogies based on the presence of shouldered points in the collections of Central and Eastern Europe. These points were identified in the collections of Kostenki I (Efimenko 1915; 1958), Willendorf I and II (Felgenhauer 1959) and at the complex of sites around Moravany nad Váhom (e.g. Bohmers 1960, 31). According to this, they have been called Kostenki points/Kostenki type points or Willendorf points (Bohmers 1960; Zamiatnin 1934). This process led to the proposal of the term “Willendorf-Kostenki culture/unity or Willendorf-Pavlov-Kostenki-Avdeevovo cultural unity” (Grigor’ev 1966), which was later accepted by J. K. Kozłowski (1969), although the sense was different in his conception. Since then, G. P. Grigor’ev and J. K. Kozłowski started to distinguish the Gravettian of Central Europe into two chronological stages – the Pavlovian<sup>5</sup> (a chronologically earlier) and the Willendorf-Kostenki (a chronologically later) cultural phase (Fig. 4). Simultaneously, J. K. Kozłowski (1969) argued that the atypical lithic assemblage of Petřkovice I could not be classified as the Willendorf-Kostenkian because it showed no analogies with other sites of this culture (such as Willendorf II, layer 9 for example). The same idea was already mentioned by K. Valoch (1959) and B. Klíma (1961), who attributed the site to the Early Gravettian on the grounds of the typological character of the assemblage (especially the presence of leaf points).

During the 1970s and 80s, the Palaeolithic research in Slovakia mainly focused on the identification of shouldered points in the Váh valley region, where they could be later than those from the Moravian sites (Bárta 1987a; 1987b). During this period, the most intensive research activity took place in Poland, where the site of Kraków-Spadzista was systematically excavated (e.g. Kozłowski/Sobczyk 1987). A new term “Kostenkian” was also introduced here as a synonym to the Willendorf-Kostenki/Willendorf-Kostenkian (Bárta 1980; Kozłowski/Sobczyk 1987; Sobczyk 1995).

Regarding the chronological division of the Gravettian in Central Europe, more important syntheses were published during the 1990s. Among others, M. Otte (1990) proposed three stages for the Gravettian period based on typological description – the first with microlithic *fléchettes*, the second with large points, and the last one with shouldered points. In another synthesis, J. Svoboda (1996) proposed to divide the Gravettian into three time-defined stages – the Early Pavlovian stage (30,000–27,000 uncal BP), the Evolved Pavlovian stage (27,000–25,000 uncal BP) and the Willendorf-Kostenkian stage (24,000–20,000 uncal BP). J. K. Kozłowski (1996) confirmed the two stages of Pavlovian; however, he suggested the term “Shouldered Point Horizon” for the late phase of the Gravettian (Fig. 4). Another valuable asset for the study of Late and Final Gravettian lithic industries represented the systematic field research of J. Hromada at the Moravany nad Váhom settlement area (Hromada 1998; Hromada/Kozłowski eds. 1995; Kozłowski ed. 1998) and a bit later the excavation of L. Kaminská and J. K. Kozłowski at the site of Banka-Horné farské role (Kozłowski ed. 2000). In the mid-1990s, some terminological stabilisation occurred in the matter of naming the Late Gravettian, although still differing by individual authors using either the term Willendorf-Kostenki/Willendorf-Kostenkian (e.g. Hromada 1998; Oliva 2007; Svoboda 1996; 2007), or the term Shouldered Point Horizon (Kaminská *zost.* 2014; Kaminská/Kozłowski 2002; Kozłowski ed. 2000).

Over the last decade, several ongoing projects and studies have reopened the question of the chronology of the Central European Gravettian. They drew attention to the diversity of lithic assemblages and subsistence strategies in the Gravettian of Central Europe (e.g. Lengyel/Mester/Szolyák 2016; Moreau 2012; Polanská/Hromadová 2015; Šída 2016; Wilczyński *et al.* 2015; 2020; Wojtal *et al.* 2019). Thus, Kostenki knives and shouldered points are still considered to be the characteristic tools of the late phase of the Gravettian, although some critical studies, as well as first interpretations of traditional lithic *fossiles directeurs*, have reassessed the question (e.g. Klaric/Hromadová 2016; Klaric *et al.* 2015; Polanská/Hromadová/Sázelová 2021; Polanská/Novák/Klaric 2019). Currently, terms such as Willendorf-Kostenki or Kostenkian are gradually being replaced by the general term Late and Final Gravettian. The focus remains on the issue of industrial variability and the simultaneous existence of several groups (Fig. 4), which inhabited the territory of former Czechoslovakia as well as the question of analogies with Eastern Europe.

<sup>5</sup> The term Pavlovian has been formerly proposed as a general synonym for the Central European Gravettian and later as a designation for a specific geographic group with a higher occurrence of its sites around the Pavlov Hills (Delporte 1959; Klíma 1959; 1961). For more detailed historiography of the term Pavlovian, see Polanská 2020.

## TRADITIONAL LITHIC *FOSSILES DIRECTEURS* A SUMMARY ON THE STATE OF RESEARCH IN FORMER CZECHOSLOVAKIA

### Shouldered points

The issue of shouldered points in the Late and Final Gravettian of Central Europe has recently been commented on in several articles and conference presentations (Klaric/Hromadová 2016; Kufel-Diakowska *et al.* 2016; Polanská/Hromadová 2015; Polanská/Hromadová/Sázelová 2021; Polanská/Novák/Klaric 2019; Wojtal *et al.* 2019). From a historical point of view, it is possible to divide the research into three stages.

#### First stage

In Central Europe, the shouldered points were identified according to the Eastern European finds (from the site of Kostenki I and Avdeevo), which Zamiatnin described under the name “Kostenki points/Kostenki shouldered points” as “... shoulder on massive blades with invasive inverse retouch...” (Zamiatnin 1934, 51). However, here in Central Europe, these artefacts differ mainly in size and often just in the absence of invasive retouch on the ventral side (Fig. 2; e.g. some pieces from the Willendorf I or Předmostí Ia site). Also, for this reason, they started to be called “atypical”, or “Périgordian” shouldered points, according to the original definition of Peyrony (Brézillon 1971, 295) or Sonnevile-Bordes (Sonneville-Bordes/Perrot 1956),<sup>6</sup> who thus referred to similar smaller Western European points without ventral retouch.

#### Second stage

According to morphological criteria and realised modifications of a blank, J. K. Kozłowski defined several groups of shouldered points (Kozłowski 1969; 1976). However, this approach was focused mainly on describing statistical parameters in collections. Later, the same author, with the collaboration of A. Montet-White (Kozłowski/Montet-White 2001), supposed that the morphology of these pieces was related to function and resulting from different activities (cutting implements, hunting points) and the inverse retouch was facultative and non-stylistic.

#### Third stage

In the last decade, research studies resulting from new excavations of sites and revisions of lithic collections increased the state of knowledge regarding the traditional *fossiles directeurs* (e.g. Kufel-Diakowska *et al.* 2016; Wojtal *et al.* 2019). In former<sup>7</sup> Czechoslovakia, there are 20 post-Pavlovian sites where shouldered points were mentioned (Polanská/Hromadová/Sázelová 2021, table 1). Nevertheless, there are not enough of these points in any assemblages to allow their full characterisation as well as a description of their production system. Besides, there is an issue of correct interpretation of the “shoulder” part on the artefact, which can also be the result of various artefact modifications and operations. It is therefore necessary to evaluate these artefacts in the broader context of the whole lithic assemblage and their conservation and technical state – whether they are finished or not, complete or broken, pieces discarded during retouching, pieces representing by-products or a waste of backed blade/bladelet production, and also taking into account their further transformation or reutilisation.<sup>8</sup>

Considering the above mentioned, it is evident that shouldered points are not present either in the Middle Gravettian or in the transitional industries towards the Late and Final Gravettian (the sites of Milovice I<sup>9</sup>, Dolní Věstonice III, and Jarošov-Podyrřša; Polanská 2020). Also, their presence is questionable in the assemblages from the sites of Nitra-Čermáň and Petřkovice I (Fig. 5; Polanská/Hromadová/Sázelová 2021), and in the others, as Banka-Horné farské role<sup>10</sup> (Alexandrowicz *et al.* 2000; Polanská 2009)

<sup>6</sup> “N 56. Pointe à cran périgordienne, dite atypique” (Sonneville-Bordes/Perrot 1956, 547).

<sup>7</sup> The 18 sites summarized by M. Polanská (Polanská/Hromadová/Sázelová 2021) are supplemented by two more sites of Cejkov I (Bánesz 1961) and Marhaň (Valde-Nowak 2008).

<sup>8</sup> For more, see Pelegrin/O’Farrell 2005.

<sup>9</sup> For a different point of view, see Wilczyński *et al.* 2019.

<sup>10</sup> The small sized collection of the Banka – Horné farské role site (Kopanica part, trench n. IV) includes a shouldered point

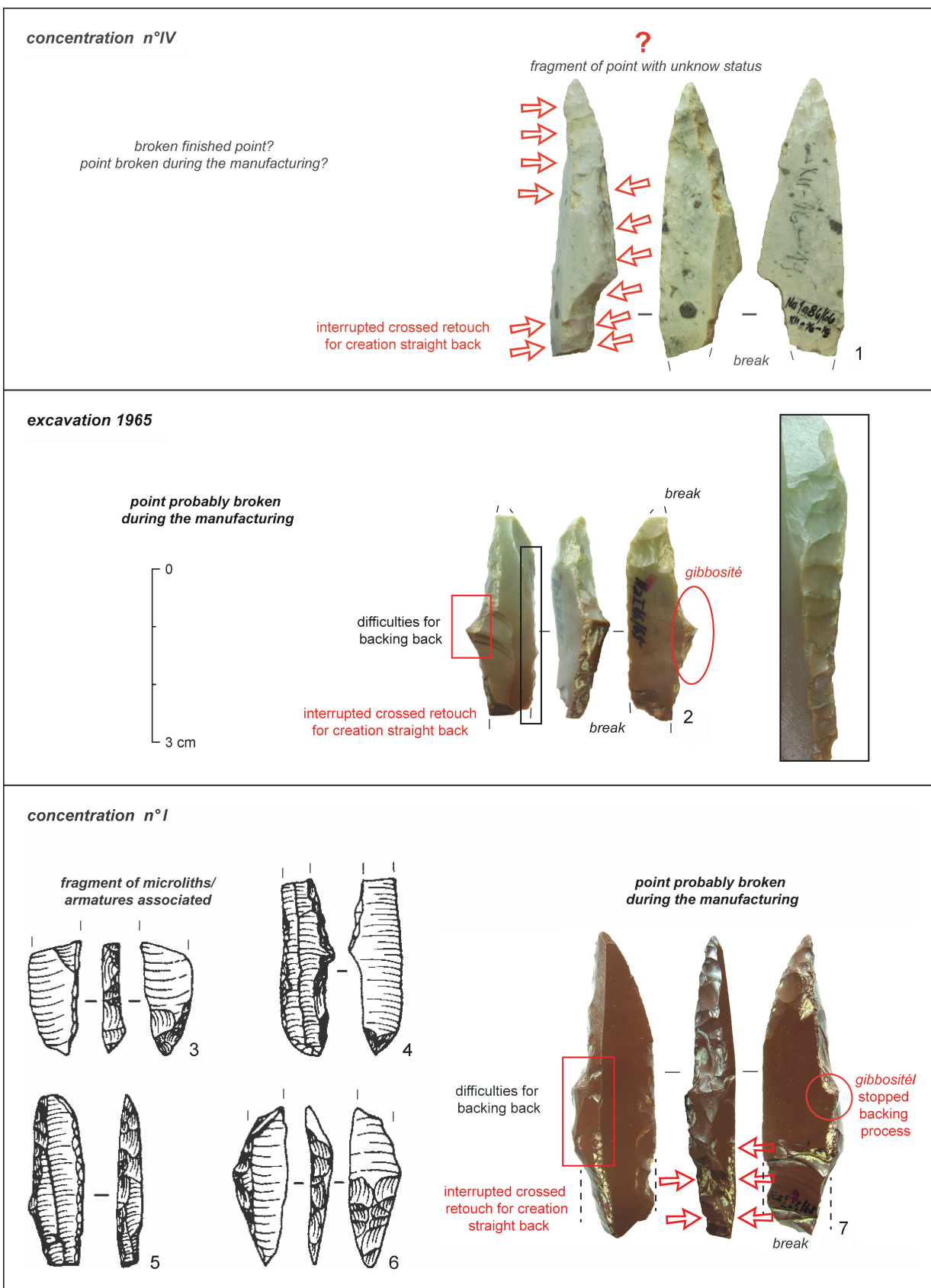


Fig. 5. Broken points of Nitra-Čermáň (no points are complete; 1 – unknown status; 1, 2, 7 – photos by M. Polanská; 3–6 – after Kaminská/Kozłowski 2011).

or Moravany-Noviny, there are only a few (Bárta/Kazior 2000). The reassessment of the collection from Moravany-Podkovicica has not been published yet but according to a conference presentation (Klaric/Hromádová 2016), this site appears to be one of the richest of the area for shouldered points.

To summarise the evolution of influences between Eastern and Central Europe: The original idea of shouldered points comes from S. M. Zamjatnin (1934), defining them as tools made on massive blanks.

In Eastern Europe, regarding the typological research in the second half of the 20<sup>th</sup> century, several studies of this issue followed, devoted to the more precise definition and typology and drawing attention to the diversity of blanks' modifications and morpho-metric variability (e.g. Belyaeva 1979; 2007; Bulochnikova 1988; Gvozdover 1998; Gvozdover/Belyaeva 1988; Lev 2005; 2009).

In Central Europe, the researchers were influenced by Zamjatnin's original definition for a long time. That is also why we still lack a new, more precise definition of shouldered points, considering their variability in size and modifications of the ventral side or shoulder, as seen on the pieces from the sites of Banka-Horné farské role or Kraków Spadzista (Wojtal et al. 2019).

### Kostenki knives

In Central Europe, Kostenki knives represent tools that result from the re-sharpening of an unretouched artefact, where part of the edge was used as a knife (Polanská 2020). The removals on the blank's dorsal face and retouch of the edge serve for edge re-sharpening. These observations match with the technological definition of analogous tools from the Kostenki-Avdeevo culture (e.g. Girya/Resino-Léon 2002; Lev/Klaric/Girya 2009; 2011). However, despite many apparent similarities, artefacts from Central and Eastern Europe show differences in the choice of blank, its size and also in some modifications for edge rejuvenation. These differences will be explained in a forthcoming paper. So far, as an example, we mention that an edge modification can be applied to not only large blades, as seen in Russian sites, but also to flakes, bladelets, and other blades of smaller dimensions.

In former Czechoslovakia, Kostenki knives have been massively identified in the Moravian Middle Gravettian, based on the assemblages from the sites of Předmostí I and Pavlov I within one of the newly defined groups (a group with geometric microliths, after Polanská 2013; 2020). Although since the beginning of the 20<sup>th</sup> century, they have been indicated in the Late Central European Gravettian (e.g. Absolon 1947; Zamjatnin 1930), the first revision rather points to their rare occurrence in this chronological stage (Klaric et al. 2015). The artefacts previously published as Kostenki knives (e.g. Klíma 1961; Kozłowski 1969; Otte 1981; Otte/Noiret 2004) correspond to today's definition only partially, because of probable specimens, various chisels, splintered pieces or burins (Klaric et al. 2015).

## PERSPECTIVES AND CONCLUSION

Kostenki knives and shouldered points are still considered to be the main traditional and emblematic lithic *fossiles directeurs* of the Central European Gravettian, although their consideration has been gradually changing over the last decade. Undoubtedly, they occur within the Gravettian assemblages from Central Europe, however, their occurrence, as well as their role as a chronological marker, has been overestimated in the last century. They are certainly one of the *fossiles directeurs* for some of the Middle and Late/Final Gravettian groups in this region, but under the conditions of their correct identification. Indeed, one *fossile directeur* can be characteristic for several groups, thus its identification should not be based only on a morphological comparison, but also on an evaluation of its technical state and the artefact status in the context of the whole assemblage in a given site.

The task of further studies is to give a full characterisation of the industries in which these *fossiles directeurs* have been found. It seems that there are also several other tool types within these industries specific to them (Fig. 6), such as various bitruncated elements (Petřkovice I, Trenčianske Bohuslavice-Pod Tureckom), small points modified with marginal retouch (Petřkovice I, Dolní Věstonice III) or

---

with a damaged tip and another broken-burnt fragment of relatively small size (length ca. 5 cm) with a not very invasive ventral retouch (Polanská 2009).

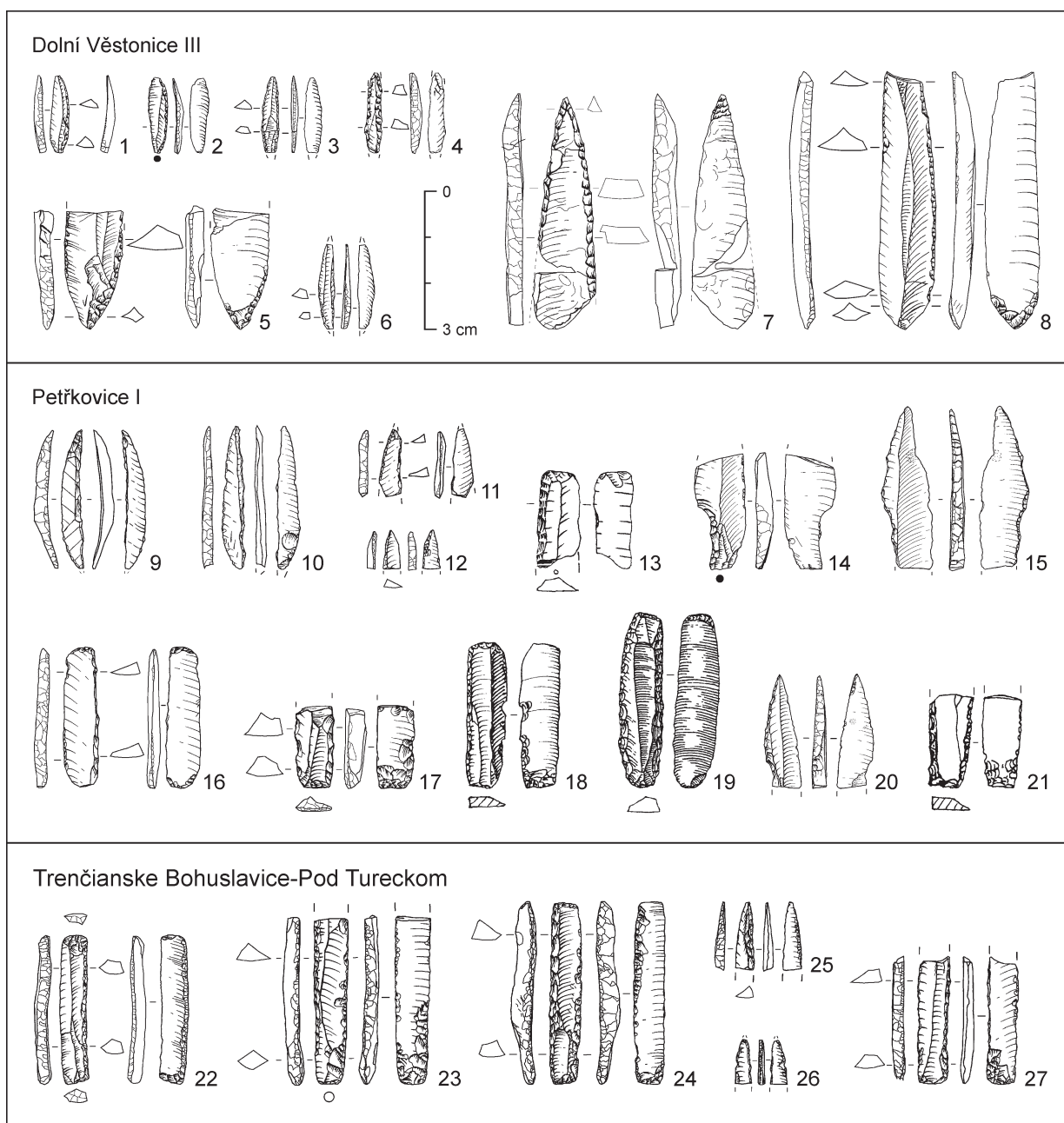


Fig. 6. Some Late and Final Gravettian Central European assemblages with characteristic microliths and armatures. 1–8 – Dolní Věstonice III; 9–21 – Petřkovice I; 22–27 – Trenčianske Bohuslavice-Pod Tureckom (1–12, 14–17, 20 – drawings by M. Polanská; 13 – after *Oliva/Neruda 1999*; 18, 19, 21 – after *Novák 2008*; 22–27 – drawings by M. Polanská).

larger, symmetrical axial backed points with inverse retouch (Dolní Věstonice III). It is evident that during the Middle and Late/Final Gravettian the region of Central Europe was occupied by several groups with their distinctive tool types and industries (Fig. 4). However, in the current state of research, these industries are still not defined in detail, and so we cannot discuss their relationships or chronological significance yet.

In each region of Central Europe, whether in Slovakia, Czech Republic, Poland or Austria, there are several collections suitable for the characterisation of lithic components and the definition of *fossiles directeurs* (e.g. several sites of Lubná and Kraków-Spadzista, Grub-Kranawetberg, Moravany-Žakovská, Petřkovice I). However, they still remain isolated and have been analysed separately. A unified



methodological approach would help a better characterisation and open a meaningful discussion about the Late and Final Gravettian and the beginning of Epigravettian in this area. This first step is the condition to discuss again the analogies between Central and Eastern European sites and the justification of the terms mentioned in the introduction that connect sites hundreds of kilometres distant from one another.

#### Acknowledgements

The work of M. Polanská was supported by the Czech Academy of Sciences (PPLZ programme) and partially realised during PhD. research (Pantheon-Sorbonne University; UMR 7041-ArScAn). For suggestions and constructive discussion, the authors would like to thank two reviewers, Maria Zheltova, Bibiána Hromadová, Daria Eskova, Sergey Lev, Klára Matulová.

Translated by authors

### BIBLIOGRAPHY

- Absolon* 1947 K. Absolon: Kamenné paleolitické nástroje z Předmostí ve sbírkách hanáckého městského musea v Holešově. Tvaroslovná analýza na srovnávacím podklade. *Příroda* 39, 1947, 22–32.
- Alexandrowicz et al.* 2000 W. S. Alexandrowicz/L. Kaminská/B. Kazior/J. K. Kozłowski/M. Pawlikowski/K. Sobczyk: Excavations at Banka-Horné farské role site. In: J. K. Kozłowski (ed.): *Complex of Upper Palaeolithic Sites Near Moravany, Western Slovakia. Vol. III. Late Gravettian Shouldered Points Horizon Sites in the Moravany–Banka Area*. Kraków – Nitra 2000, 121–152.
- Ambrož/Ložek/Prošek* 1952 V. Ambrož/V. Ložek/F. Prošek: Mladý pleistocén v okolí Moravan u Piešťan nad Váhem (Západní Slovensko). *Anthropozoikum* 1, 1952, 53–142.
- Bánesz* 1961 L. Bánesz: Zlomok hlinenej plastiky z paleolitickej stanice v Kašove. *Archeologické rozhledy* 13, 1961, 774–780.
- Bárta* 1965 J. Bárta: *Slovensko v staršej a strednej dobe kamennej*. Bratislava 1965.
- Bárta* 1980 J. Bárta: Paleolit a mezolit. *Slovenská archeológia* 28, 1980, 119–136.
- Bárta* 1987a J. Bárta: Prínos nových poznatkov slovenskej archeológie ku stratigrafii pleistocénu a starého holocénu. *Antropozoikum* 18, 1987, 203–228.
- Bárta* 1987b J. Bárta: K problematike listových hrotov z Trenčianských Bohuslavíc. In: *25 let pavilonu Anthropos 1961–1986*. Brno 1987, 91–95.
- Bárta/Kazior* 2000 J. Bárta/B. Kazior: Excavations at Moravany-Noviny in 1963. In: J. K. Kozłowski (ed.): *Complex of Upper Palaeolithic sites near Moravany, Western Slovakia. Vol. III. Late Gravettian shouldered point horizon sites in the Moravany-Banka area*. Nitra 2000, 13–30.
- Belyaeva* 1979 V. I. Belyaeva: *Kremniovyj inventar' Kostenok 1. Opyt klassifikatsii*. Avtoreferat kandidatskoy dissertacii. Leningrad 1979.
- Belyaeva* 2007 V. I. Belyaeva: Nozhi Kostenok 1 iz kollektcii raskopok P. P. Efimenko. In: *Problemy arheologii kamennogo veka (k jubileju M. D. Gvozdover)*. Moskva 2007, 80–99.
- Bohmers* 1960 A. Bohmers: Statistiques et graphiques dans l'étude des industries lithiques préhistoriques. V. Considérations générales au sujet du Hambourgien, du Tjongerien, du Magdalénien et de l'Azilien. *Palaeohistoria* 8, 1960, 15–37.
- Boriskovsky red.* 1984 P. I. Boriskovskyy (red.): *Paleolit SSSR*. Arheologiya SSSR 1. Nauka. Moskva 1984.
- Breuil* 1924 H. Breuil: Notes de voyage paléolithique en Europe centrale II. Les industries paléolithiques du loess de Moravie et Bohême. *L'Anthropologie* 34, 1924, 515–552.
- Brézillon* 1971 M. Brézillon: *La dénomination des objets de pierre taillée*. Gallia Préhistoire. Supplémentum 4. Paris 1971.
- Bulochnikova* 1988 E. V. Bulochnikova: Nakonečniki s bokovoy vyemkoy kak material k izucheniyu verkhnepaleoliticeskikh populyatsiy. In: *Problemy sovremennoy biologii. Trudy 19 konferentsii molodykh uchenykh*. Deponirovannaya rukopis' v VINITI. Moskva 1988, 128–130.
- Delporte* 1959 H. Delporte: Notes de voyage leptolithique en Europe centrale I. La Tchécoslovaquie. *Rivista di Scienze preistoriche* 14, 1959, 19–57.

- Eickhoff 2009 M. Eickhoff: Historie „ukradeného“ nálezistě Assien Bohmers a vykopávky SS-Ahnenerbe v Dolních Věstonicích. In: M. Eickhoff (ed.): *RegioM. Sborník Regionálního muzea v Mikulově*. Mikulov 2009, 129–146.
- Efimenko 1915 P. P. Efimenko: Kostenkovskaya paleoliticheskaya stoyanka. *Ezhegodnik Russkogo antropologicheskogo obshchestva pri S.-Peterburgskom universitete* 5, 1915, 15–25.
- Efimenko 1953 P. P. Efimenko: *Primaeval Society, Academy of Sciences of the Ukrainian Soviet Socialist Republic*. Kiev 1953.
- Efimenko 1958 P. P. Efimenko: *Kostienki I. Academy of Science of the URSS*. Moskva – Leningrad 1958.
- Eigner et al. 2020 J. Eigner/M. Lička/A. Přichystal/S. Vencl/K. Žák: Výzkum gravettského a neolitického sídliště v Řevnicích, okr. Praha-západ. *Archeologie ve středních Čechách* 24, 2020, 33–63.
- Felgenhauer 1959 F. Felgenhauer: *Willendorf in der Wachau. Monographie der Palaeolithfundstellen I–VII. Mitteilungender Prähistorischen Kommission der Österreichischen Akademie der Wissenschaften* 8–9. Wien 1959.
- Freund 1944 G. Freund: *Pschedmost*. PhD. Thesis. German Charles University in Prague. Prague 1944. Unpublished.
- Garrod 1938 D. A. E. Garrod: The Upper Palaeolithic in the light of recent discovery. *Proceedings of the Prehistoric Society* 1, 1938, 155–172.
- Girya/Resino-Léon 2002 E. Yu. Girya/A. Resino-Léon: Semenov – Kostionki – Palaeolithic Science. *Arkheologicheskie vesti* 9, 2002, 173–190.
- Grigor'ev 1965 G. P. Grigor'ev: *Early Upper paleolithic Sites in Near East and the Problem of Homo sapiens Migration into Europe*. 1965, 96–100.
- Grigor'ev 1966 G. P. Grigor'ev: Kremenskaya, Willendorfskaya i Pavlovskaya kul'tury v Tsentral'noy Evrope. In: *Arkheologiya Starogo i Novogo Sveta*. Nauka. Moskva 1966, 7–24.
- Grigor'ev 1968 G. P. Grigor'ev: *Natchalo verkhnego paleolita i proyskhozhdenie. Homo Sapiens*. Nauka. Leningrad 1968.
- Grigor'ev 1970 G. P. Grigor'ev: Verkhniy Paleolit. In: A. A. Formozov (ed.): *Kamennyy vek na territorii SSSR*. Nauka. Moskva 1970, 43–63.
- Grigor'ev 1979 G. P. Grigor'ev: Kostenkovskaya kul'tura – metodologicheskie problemy ee vydeleniya. In: *Verkhniy Pleystotsen i razvitie Paleoliticheskoy kul'tury Russhoy ravniny. Tezisy dokladov k vsesoyuznomu soveshchaniyu posvyaschennomu 100-letiyu otkrytiya paleolita v Kostenkakh*. Voronezh 1979, 28–30.
- Grigor'ev 1993 G. P. Grigor'ev: The Kostenki-Avdeev archaeological culture and the Willendorf-Pavlov-Kostenki-Avdeev cultural unity. In: O. Soffer/N. D. Praslov (eds.): *From Kostenki to Clovis. Upper Paleolithic–Paleo–Indian Adaptations*. Boston 1993, 51–65.
- Grigor'ev 1998 G. P. Grigor'ev: Otnoshenie vostochnogo gravetta k Zapadu? In: *Vostochnyy Gravett*. Moskva 1966, 73–80.
- Gvozdover 1961 M. D. Gvozdover: Spetsificheskie osobennosti kremnevoogo inventarya Avdeevskoy paleoliticheskoy stoyanki. *Kratkie Soobshchenia Instituta Arkheologii* 82, 1961, 112–119.
- Gvozdover 1998 M. D. Gvozdover: Kremnevyy inventar' Avdeevskoy verkhnepaleoliticheskoy stoyanki. In: H. A. Amirkhanov (red.): *Vostochnyy gravett. Izdanie finansirovano rossiyskim gumanitarnym nauchnym fondom pri uchastii instituta „Otkrytoe Obshchestvo“*. Moskva 1998, 15–34.
- Gvozdover/Belyaeva 1988 M. D. Gvozdover/V. I. Belyaeva: O nozhakh „kostenkovskogo tipa“. In: *Zakonomernosti razvitiya paleoliticheskikh kult'ur na territorii Frantsii i Vostochnoy Evropy*. Leningrad 1988, 54–56.
- Hawkes 1940 C. F. C. Hawkes: *The Prehistoric Foundations of Europe to the Mycenaean Age*. London – Methuen 1940.
- Hromada 1998 J. Hromada: Gravettienske sídliská v Moravanoch nad Váhom a ich miesto vo vývoji mladého paleolitu strednej Európy. *Slovenská archeológia* 46, 1998, 145–167.
- Hromada/Kozłowski eds. 1995 J. Hromada/J. K. Kozłowski (eds.): *Complex of Upper Palaeolithic sites near Moravany, Western Slovakia I. Moravany-Žakovska (Excavations 1991–1992)*. Kraków 1995.
- Kaminská zost. 2014 E. Kaminská (zost.): *Staré Slovensko 2. Paleolit a mezolit*. Archaeologica Slovaca Monographiae. STASLO 2. Nitra 2014.

- Kaminská/Kozłowski 2002 L. Kaminská/J. K. Kozłowski: Gravettian settlement on the south and north side of the Western Carpathians. In: J. Gancarski (ed.): *Starsza i środkowa epoka kamienia w Karpatach polskich*. Krosno 2002, 35–58.
- Kaminská/Kozłowski 2011 L. Kaminská/J. K. Kozłowski: Nitra I-Čermáň v rámci štruktúry osídlenia gravettianskej kultúry na Slovensku. *Slovenská archeológia* 59, 2011, 1–85.
- Klaric/Hromadová 2016 L. Klaric/B. Hromadová: Moravany-Podkovicova debunked, reassessment of an almost unknown Willendorf-Kostienkian collection of Western Slovakia. In: J. Wilczyński/P. Wojtal (eds.): *World of Gravettian Hunters. 16–20 May 2016. Abstract*. Kraków 2016, 42, 43.
- Klaric et al. 2015 L. Klaric/S. Lev/E. Ye. Girya/M. Polanská: “Couteaux de Kostienki et lames aménagées par technique de Kostienki”: Retour sur un malentendu historique. *Bulletin de la Société Préhistorique Française* 112, 2015, 421–474. DOI: <https://doi.org/10.3406/bspf.2015.14550>
- Klaric et al., in press L. Klaric/N. Goutas/J. Laccarière/W. Banks: Rayssien? Vous avez dit Rayssien? In: O. Touzé/N. Goutas/P. Noiret/H. Salomon (eds.): *NW Europe during the Gravettian. Contributions of recent research to the understanding of the societies and their environments. Proceedings of Liège symposium, 13–14 april 2018*. ERAUL. Liège, in press.
- Klíma 1959 B. Klíma: Zur Problematik des Aurignaciens und Gravettiens in Mittel Europa. *Archaeologia Austriaca* 26, 1959, 35–51.
- Klíma 1961 B. Klíma: Současný stav problematiky aurignacienu a gravettieniu. *Archeologické rozhledy* 13, 1961, 84–121.
- Kozłowski 1969 J. K. Kozłowski: Problem tzw. Kultury Kostienkowsko-Willendorfskiej I. Analiza inwentarzy kamiennych. *Archeologia Polski* 14, 1969, 19–85.
- Kozłowski 1976 J. K. Kozłowski: Les industries à pointes à cran en Europe centre-est. In: B. Klíma (dir.): *Périgordien et Gravettien en Europe, Colloque XV du IX<sup>e</sup> Congrès international de l’UISPP*. Nice 1969, 121–127.
- Kozłowski 1986 J. K. Kozłowski: The Gravettian in Central and Eastern Europe. *Advances in World Archeology* 5, 1986, 131–200.
- Kozłowski 1996 J. K. Kozłowski: The Danubian Gravettian as seen from the northern perspective. In: J. Svoboda (ed.): *Paleolithic in the Middle Danube region. Anniversary volume to Bohuslav Klíma*. Spisy AÚ AV ČR v Brně 5. Brno 1996, 11–22.
- Kozłowski ed. 1998 J. K. Kozłowski (ed.): *Complex of Upper Palaeolithic sites near Moravany, Western Slovakia. Vol. II. Moravany-Lopata II (Excavations 1993–1996)*. Kraków 1998.
- Kozłowski ed. 2000 J. K. Kozłowski (ed.): *Complex of Upper Palaeolithic Sites near Moravany, Western Slovakia. Vol. III. Late Gravettian Shouldered Point Horizon Sites in the Moravany-Banka area*. Kraków – Nitra 2000.
- Kozłowski/Montet-White 2001 J. K. Kozłowski/A. Montet-White: The hunting-butchering tool-kit from Kraków-Spadzista a Gravettian site in Southern Poland. In: *Proceedings of the International Conference on mammoth site studies*. Publications in Anthropology 22. Kansas 2001, 109–116.
- Kozłowski/Sobczyk 1987 J. K. Kozłowski/K. Sobczyk: *The Upper Palaeolithic site Kraków-Spadzista Street C2*. Kraków 1987.
- Kufel-Diakowska et al. 2016 B. Kufel-Diakowska/J. Wilczyński/P. Wojtal/K. Sobczyk: Mammoth hunting–Impact traces on backed implements from a mammoth bone accumulation at Kraków Spadzista (Southern Poland). *Journal of Archaeological Science* 65, 2016, 122–133. DOI: <https://doi.org/10.1016/j.jas.2015.11.008>
- Lacorre 1960 F. Lacorre: *La Gravette, Le Gravétien et Le Bayacien*. Imprimerie Barneoud. Laval 1960.
- Leclerc/Tarrête 2005 J. Leclerc/J. Tarrête: Notice Culture. In: A. Leroi-Gourhan (ed.): *Dictionnaire de la Préhistoire*. Paris 2005, 295.
- Lengyel/Mester/Szolyák 2016 G. Lengyel/Z. Mester/P. Szolyák: The Late Gravettian and Szeleta cave, North-East Hungary. *Quaternary International* 406, 2016, 174–183. DOI: <https://doi.org/10.1016/j.quaint.2015.09.014>
- Lev 2005 S. Yu. Lev: Kostienki knives from the Zaraysk site (typological aspect). In: M. Zhilin (ed.): *The Stone Age of the East European Forest area Europe and the Trans-Urals region*. St. Petersburg 2005, 18–27.
- Lev 2009 S. Yu. Lev: Kamennyy inventar’ Zarayskoy stoyanki (tipologicheskiiy aspect). In: H. Amirkhanov (red.): *Issledovaniya paleolita v Zarayske 1999–2005*. Moskva 2009, 37–186.
- Lev/Klaric/Girya 2009 S. Yu. Lev/L. Klaric/E. Yu. Girya: O prichinakh raznoobraziya nozhey kostenkovskogo tipa. *Rossiyskaya arkheologiya* 4, 2009, 81–93.

- Lev/Klaric/Girya 2011 S. Yu. Lev/L. Klaric/E. Yu. Girya: Nozhi kostenkovskogo tipa i plastiny s pod-  
rabortkoy konca. Fenomen konvergentnogo razvitiya ili rodstvo tekhnologiy?  
In: K. N. Gavrilov (red.): *Paleolit i Mezolit Vostochnoy Evropy*. Taus. Moskva 2011,  
235–279.
- Lisitsyn 2019 S. N. Lisitsyn: The Eastern Frontier of the Gravettian in the Kostenki-Borshche-  
vo Palaeolithic Locality, the Don Basin, Russia. *Vestnik of Saint Petersburg Uni-  
versity* 64, 2019, 525–554.  
DOI: <https://doi.org/10.21638/11701/spbu02.2019.208>
- Moreau 2012 L. Moreau: Le Gravettien ancien d'Europe centrale revisité. Mise au point et  
perspectives. *L'Anthropologie* 116, 2012, 609–638.  
DOI: <https://doi.org/10.1016/j.anthro.2011.10.002>
- Novák 2008 M. Novák: Flint and Radiolarite Assemblages. Technology and Typology. In:  
J. Svoboda (ed.): *Petřkovice. On shouldered Points and Female Figurines*. The Dolní  
Věstonice Studies 15. Brno 2008, 70–142.
- Oliva 2007 M. Oliva: *Gravettien na Moravě*. Disertationes archaeologicae brunenses/pr-  
agensesque 1. Brno – Praha 2007.
- Oliva/Neruda 1999 M. Oliva/P. Neruda: Gravettien severní Moravy a českého Slezska. K otázce  
horizontu s vrubovými hroty. *Acta Musei Moraviae, Scientiae sociales* 84, 1999,  
43–115.
- Onoradini 1978 G. Onoradini: Un nouveau type de pointe à cran: la pointe de La Bouverie  
dans le complexe général des pointes à cran. *Bulletin de la Société Préhistorique  
Française* 75/11–12, 1978, 522–542.
- Otte 1981 M. Otte: *Le Gravettien en Europe centrale*. Vol. 1–2. De Tempel. Bruges 1981.
- Otte 1990 M. Otte: Révision de la séquence du Paléolithique Supérieur de Willendorf  
(Autriche). *Bulletin-Institut royal des sciences naturelles de Belgique. Sciences  
de la terre* 60, 1990, 219–228.
- Otte/Noiret 2004 M. Otte/P. Noiret: Évolution du Gravettien au moyen Danube. In: J. Svoboda/  
L. Sedláčková (eds.): *The Gravettian along the Danube. Proceeding of the Mikulov Con-  
ference 20–21, November 2002*. The Dolní Věstonice Studies 11. Brno 2004, 8–32.
- Pelegrin/O'Farrell 2005 J. Pelegrin/M. O'Farrell: Les lamelles retouchées ou utilisées de Castanet. Les  
lamelles retouchées ou utilisées de Castanet. In: F. Lebrun-Ricalens/J. G. Bor-  
des/F. Bon (eds.): *Productions lamellaires attribuées à l'Aurignacien: chaînes opé-  
ratoires et perspectives technoculturelles*. Archéologiques 1. Luxembourg 2005,  
103–121.
- Polanská 2013 M. Polanská: L'industrie lithique (fouille 2006). Collection d'une importan-  
ce significative pour la compréhension de la "composante lithique à micro-  
lithes géométriques" du Pavlovien morave. In: J. A. Svoboda/J. Mikulík/  
M. Novák/M. Polanská/Z. Schenk/J. Wilczyński/P. Wojtal: *Předmostí – Building  
an authentic museum*. The Dolní Věstonice Studies 19. Brno 2013, 44–63.
- Polanská 2020 M. Polanská: *Questionnement sur la diversité du Pavlovien par l'étude technologique  
des gisements moraves*. Spisy AÚ AV ČR 66. Brno 2020.
- Polanská/Hromadová 2015 M. Polanská/B. Hromadová: Réflexion autour des industries gravettiennes "po-  
st-pavloviennes" de Slovaquie occidentale et de Moravie (25,500/24,500–22,000  
BP non calibré). In: S. Sázlová/M. Novák/A. Mizerová (eds.): *Forgotten times  
and spaces. Anniversary volume dedicated to J. Svoboda*. Brno 2015, 132–154.  
DOI: <https://doi.org/10.5817/CZ.MUNI.M210-7781-2015-12>
- Polanská/Hromadová/Sázlová 2021 M. Polanská/B. Hromadová/S. Sázlová: The Upper and Final Gravettian in  
Western Slovakia and Moravia. Different approaches, new questions. *Quater-  
nary International* 581–582, 2021, 205–224.  
DOI: <https://doi.org/10.1016/j.quaint.2020.08.004>
- Polanská/Novák/Klaric 2019 M. Polanská/M. Novák/L. Klaric: Shouldered point status as the "fossile direc-  
teur" in the Late Gravettian of Central Europe. In: A. Nemergut/I. Cheben/  
J. Ruttikayová/K. Pyżewicz (eds.): *16<sup>th</sup> SKAM Lithic Workshop. "Fossil directeur."  
A phenomenon over time and space. 21–23 October 2019, Nitra, Slovak Republic*.  
Abstract book. Nitra 2019, 39.
- Prošek/Ložek 1953 F. Prošek/V. Ložek: Sprašový profil v Bance u Piešťan. *Anthropozoikum* 3, 1953,  
301–323.
- Richthofen 1933 B. Richthofen: Altseizeitliche Funde in Weissrussland und dem grossrus-  
sischen Nachargebeit. *Eurasia septentrionalis antiqua* 8, 1933, 162–174.
- Rogachev 1951 A. N. Rogachev: O nizhnem sloye kul'turnykh ostatkov telmanskoy stoyanki  
v Kostenkakh. *Kratkie soobshcheniya o dokladokh i polevykh issledovaniyakh Insti-  
tuta istorii material'noy kul'tury* 37, 1951, 23–29.

- Rogachev 1953 A. N. Rogachev: Issledovanie ostatkov pervobytno-obshchinnogo poseleniya verkhnepaleoliticheskogo vremeni u s. Avdeevo na r. Srjm v 1959. *Materialy i issledovaniya po Arhheologii SSSR* 39, 1953, 137–191.
- Rogachev 1957 A. N. Rogachev: Mnogosloynnye stoyanki Kostenkovsko-Borshevskogo rayona na Donu i problema razvitiya kul'tury v epokhu verkhnego paleolita na Ruskoj ravnine. *Materialy i issledovaniya po arkhheologii SSSR* 59, 1957, 9–134.
- Sobczyk 1995 K. Sobczyk: *Osadnictwo wschodniograweckie w dolinie Wisly pod Krakowem*. Kraków 1995.
- Sonneville-Bordes/Perrot 1956 D. Sonneville-Bordes/J. Perrot: Lexique typologique du Paléolithique Supérieur. *Bulletin de la Société Préhistorique Française* 53/9, 1956, 547–560.
- Svoboda 1996 J. Svoboda: Gravettian and Epigravettian chronologies in the Middle Danube area. *Préhled výzkumů* 1992, 1996, 9–19.
- Svoboda 2007 J. Svoboda: The Gravettian on the Middle Danube. *PALEO* 19, 2007, 203–220.
- Šída 2016 P. Šída: Gravettian lithics assemblages from Lubná (Bohemia). *Quaternary International* 406, 2016, 120–128.  
DOI: <https://doi.org/10.1016/j.quaint.2015.09.008>
- Tarasov 1979 L. M. Tarasov: *Gagarinskaya stoyanka i ee mesto v paleolite Evropy*. Nauka. Leningrad 1996.
- Vasil'ev 2008 S. A. Vasil'ev: *Drevneyshee proshloe chelovechestva: poisk rossijskikh uchenykh*. St. Petersburg 2008.
- Valde-Nowak 2008 P. Valde-Nowak: Paleolityczne zabytki ze stanowiska Marhaň, okr. Bardejov (Słowacja). In: J. Machnik (ed.): *Archeologia i środo-wisko naturalne Beskidu Niskiego w Karpatach II. Kurimská brázda*. Kraków 2008, 139–156.
- Valoch 1959 K. Valoch: Löss und paläolithische Kulturen in der Tschechoslowakei. *Quartär* 8, 1959, 115–149.
- Valoch 1986 K. Valoch: Les questions du Pavlovien. *Antiquités nationales* 18–19, 1986, 55–62.
- Wilczyński et al. 2015 J. Wilczyński/P. Wojtal/M. Lanczont/P. Mroczek/D. Sobieraj/S. Fedorowicz: Loess, flints and bones. Multidisciplinary research at Jaksice II Gravettian site (Southern Poland). *Quaternary International* 359–360, 2015, 114–130.  
DOI: <https://doi.org/10.1016/j.quaint.2014.04.002>
- Wilczyński et al. 2019 J. Wilczyński/P. Wojtal/M. Oliva/K. Sobczyk/G. Haynes/J. Klimowicz/G. Lengyel: Mammoth hunting strategies during the Late Gravettian in Central Europe as determined from case studies of Milovice I (Czech Republic) and Kraków-Spadzista (Poland). *Quaternary Science Reviews* 223, 2019, 105919.  
DOI: <https://doi.org/10.1016/j.quascirev.2019.105919>
- Wilczyński et al. 2020 J. Wilczyński/O. Žaár/A. Nemergut/B. Kufel-Diakowska/M. Moskal-del Hoyo/P. Mroczek/B. Páll-Gergely/T. Oberc/G. Lengyel: The Upper Palaeolithic at Trenčianske Bohuslavice. Western Carpathians, Slovakia. *Journal of Field Archaeology* 45, 2020, 270–292.  
DOI: <https://doi.org/10.1080/00934690.2020.1733334>
- Wojtal et al. 2019 P. Wojtal/G. Haynes/J. Klimowicz/K. Sobczyk/J. Tarasiuk/S. Wroński/J. Wilczyński: The earliest direct evidence of mammoth hunting in Central Europe – The Kraków Spadzista site (Poland). *Quaternary Science Reviews* 213, 2019, 162–166.  
DOI: <https://doi.org/10.1016/j.quascirev.2019.04.004>
- Zamjatnin 1930 S. M. Zamjatnin: Die Ausgrabungen auf demaltsteinzeitlichen Wohnplatz von Berdiš im Jahre 1927. *Prace archeologickej komisii* 2, 1930, 479–490.
- Zamjatnin 1934 S. M. Zamjatnin: *La station Aurignacienne de Gagarino*. Les Editions d'Etat, Bulletin de l'Académie de l'Histoire de la culture matérielle 88. Moskva – Leningrad 1934.
- Zotz/Vlk 1939 L. Zotz/V. Vlk: Das Paläolithikum des unteren Waagtales. *Quartär* 2, 1939, 65–101.

## Variabilita *fossiles directeurs* v mladom a finálnom gravettiene strednej Európy

Michaela Polanská – Martin Novák – Laurent Klaric

### Súhrn

Mladopaleolitické kultúry v strednej Európe sú tradične definované na základe kamenných artefaktov, predovšetkým rôznych typov retušovaných nástrojov, ktoré sa zvyčajne považujú za typické pre danú kultúru. Nie je to inak ani v rámci gravettienu, ktorý je jednou z paneurópskych kultúr mladého paleolitu a od nepamäti prifahuje pozornosť svojou bohatou materiálnou kultúrou aj symbolickými aspektmi. V rámci bývalého Československa sú pre mladú a finálnu fázu gravettienu považované za tradičné *fossiles directeurs* (charakteristické nástroje) hroty s vrubom a kostienkovské nože (typ Kostienki). Na základe identifikácie týchto artefaktov v stredo európskych a východoeurópskych kamenných nálezových súboroch boli navrhnuté termíny ako „Willendorf-Kostienki/Willendorf-Kostenkien“, „kostenkien“, „východný gravettien“, čo poukazuje na analógie medzi náleziskami vzdialenými stovky kilometrov od seba (napr. Grigor'ev 1968; 1993; Gvozdover 1998; Hromada 1998; Kozłowski 1969; Kozłowski/Sobczyk 1987; Lisitsyn 2019; Svoboda 1996). Nové výskumy, revízie historických zbierok, ako aj moderné metódy bádania však prinášajú nový pohľad na tieto „typické“ artefakty. Aj keď je pravdepodobné, že sa vyskytujú vo viacerých stredo európskych súboroch mladého a finálneho gravettienu, ich výskyt je menej častý, ako sa v minulosti predpokladalo (napr. Klaric et al. 2015; Polanská/Hromadová 2015).

Prvé analógie medzi strednou a východnou Európou sa začali objavovať v prvej polovici 20. storočia (napr. Breuil 1924; Freund 1944; Garrod 1938; Zamjatnin 1930). Boli to predovšetkým ruskí bádatelia, ktorí hľadali analógie ku kamenným nástrojom podobným tým z Kostienok I, Gagarina alebo Avdeeva (obr. 1; Grigor'ev 1965; 1966; Gvozdover 1961; Zamjatnin 1930). Stredo európske prístupy (definície charakteristických typov nástrojov) sa však vydali iným nezávislým smerom, čo je priamo viditeľné od druhej polovice 20. storočia na opisoch kostienkovských nožov a hrotov s vrubom (napr. Kozłowski 1969; 1986).

Problematike hrotov s vrubom v mladom a finálnom gravettiene strednej Európy bolo v poslednom období venovaných viacero článkov a konferenčných príspevkov (Klaric/Hromadová 2016; Kufel-Diakowska et al. 2016; Polanská/Hromadová 2015; Polanská/Hromadová/Sázelová 2021; Polanská/Novák/Klaric 2019; Wojtal et al. 2019). V strednej Európe boli pôvodne tieto charakteristické nástroje identifikované podľa východoeurópskych nálezov z Kostienok I a Avdeeva. Podľa definície S. M. Zamjatina (1934, 51) vo východnej Európe išlo o nástroje s retušovaným vrubom na masívnych čepeliach, ktorých spodná strana bola upravená rozpínavou retušou. Artefakty zo strednej Európy boli upravené na menších polotovaroch s častou absenciou spodnej retuše (napr. niektoré artefakty z Willendorfu I, Předmostí Ia; obr. 2). J. K. Kozłowski (1969; 1976) následne definoval niekoľko skupín hrotov s vrubom vychádzajúcich z tvaru úpravy polotovaru.

V bývalom Československu bolo doteraz identifikovaných 20 postpavlovienských lokalít s hrotmi s vrubom (Polanská/Hromadová/Sázelová 2021, tabeľa 1). Napriek tomu sa v žiadnej zbierke nenachádza dostatok týchto nástrojov, ktoré by umožnili ich úplnú charakterizáciu a popis výrobného procesu (systému produkcie). Okrem toho existuje problém so správnou interpretáciou „vrubu“ na artefakte, ktorý môže byť tiež výsledkom rôznych modifikácií polotovaru. Preto je potrebné tieto artefakty hodnotiť v širšom kontexte kamenného nálezového súboru, ich technického stavu a stavu zachovania.

V strednej Európe sú kostienkovské nože (definované ako) výsledkom obnovy hrany neretušovaného polotovaru (čepielka, čepeľ alebo úštep), kde bola ako nôž používaná hrana nástroja (Polanská 2020) a kde odbitia na vrchnej strane spolu s retušovaním okraja slúžili na opätovné doostrenie hrany. Tieto znaky sa zhodujú s technologickou definíciou analogických nástrojov kultúry Kostienki-Avdeeva (napr. Lev/Klaric/Girya 2009; 2011), avšak artefakty zo strednej a východnej Európy sa líšia výberom polotovaru, jeho veľkosťou a tiež v niektorých modifikáciách obnovy hrany.

V bývalom Československu boli kostienkovské nože početne identifikované v moravskom strednom gravettiene na lokalitách Předmostí I a Pavlov I (skupina s geometrickými mikrolitmi; Polanská 2013; 2020). Aj keď od začiatku 20. storočia boli signalizované v mladom stredo európskom gravettiene (napr. Absolon 1947; Zamjatnin 1930), ich prvá revízia skôr poukazuje na sporadický výskyt v tomto chronologickom úseku období (Klaric et al. 2015). Artefakty, v minulosti publikované ako kostienkovské nože (napr. Klíma 1961; Kozłowski 1969; Otte 1981; Otte/Noiret 2004), zodpovedajú dnešnej definícii iba čiastočne a zahŕňajú pravdepodobné exempláre, odštepovače a rydlá (Klaric et al. 2015).

Kostienkovské nože a hroty s vrubom sú dnes naďalej považované za tradičné kamenné charakteristické nástroje, hoci pohľad na nich (ich typo-technologickú definíciu a význam) sa postupne mení (obr. 3). Nepochybne sa vyskytujú v gravettienských súboroch zo strednej Európy, avšak ich výskyt, ako aj ich štatút chronologického ukazovateľa boli v minulosti precenené. Stále sú bezpochyby jedným z *fossiles directeurs* niektorej/niektorých skupín stredného a mladého gravettienu, ktoré osídľovali územie strednej Európy (obr. 4). Jeden nástroj však môže byť typický aj pre niekoľko skupín, a tak ich správna identifikácia je úlohou ďalších štúdií. Nemala by byť založená na porovnaní tvaru

artefaktu, ale na vyhodnotení ich technického stavu v kontexte celej industrie danej lokality. Ich „technický stav“ odráža, či ide o kompletný nástroj bez poškodenia, nedokončený artefakt (nahrubo opracovaný alebo preformu) zlomený počas retušovania, prípadne tvarovania alebo už dokončený finálny produkt zlomený/poškodený vplyvom vykonávanej aktivity (obr. 5).

Úlohou ďalších štúdií je charakterizovať nálezové celky, v ktorých sa tieto tradičné *fossiles directeurs* vyskytujú. Ukazuje sa totiž, že v rámci týchto celkov (industriálnych skupín) existujú aj iné typy nástrojov, ktoré sú pre nich špecifické (obr. 6). Ide napríklad o rôzne obojstranne priečne retušované elementy (Petřkovice I, Trenčianske Bohuslavice-Pod Tureckom), malé hroty upravené marginálnym (okrajovým) otupením (Petřkovice I, Dolní Věstonice III) alebo väčšie, symetrické axiálne hroty upravené spodnou retušou (Dolní Věstonice III). Je zrejme, že počas stredného, mladého a finálneho gravettienu bolo územie strednej Európy osídľované viacerými skupinami s charakteristickými nástrojmi (obr. 4). Za súčasného stavu výskumu však tieto industriálne celky stále čakajú na definovanie, preto zatiaľ nemôžeme podrobne diskutovať o ich vzťahoch alebo chronologickom význame.

Na území strednej Európy existuje v súčasnosti len niekoľko zbierok vhodných na kompletnú charakterizáciu kamenných industrií a definíciu charakteristických nástrojov. Tie však stále ostávajú izolované. Jednotný metodický prístup a spoločná analýza by pomohli ich lepšiemu poznaniu a obohatili diskusiu o mladom/finálnom gravettiene a počiatku postgravettienu v tejto oblasti. Až po takomto komplexnom prístupe bude možné znova otvoriť diskusiu o analógiách medzi stredo a východoeurópskymi lokalitami a o opodstatnení pojmov ako Willendorf-Kostienki, prípadne kostienkien, ktoré spájajú lokality vzdialené stovky kilometrov od seba.

Obr. 1. Najznámejšie stredoeurópske a východoeurópske gravettienske lokality (grafická úprava M. Polanská; [www.maps-for-free.com](http://www.maps-for-free.com)).

Obr. 2. Hroty s vrubom a otázne „hroty s vrubom“ tradične identifikované v stredoeurópskych a východoeurópskych lokalitách. 1, 2 – Willendorf I; 3, 4 – Předmostí Ia; 5–8 – Moravany-Podkovic; 9, 10 – Kostienki I (1, 2 – podľa *Onoratiini 1978*; 3, 4 – podľa *Valoch 1986*; 5–8 – podľa *Bárta 1965*; 9, 10 – podľa *Efimenko 1958*).

Obr. 3. Kostienkovské nože a otázne „kostienkovské nože“ tradične identifikované v stredoeurópskych a východoeurópskych lokalitách. 1 – Berdyzh; 2 – Předmostí Ia; 3, 4 – Avdeev; 5, 6 – Kostienki I; 7 – Pavlov I (1, 2 – podľa *Absolon 1947*; 3, 4 – podľa *Gvozdover 1998*; 5, 6 – podľa *Efimenko 1958*; 7 – kresby M. Polanská).

Obr. 4. Historický vývoj termínov v strednej Európe (grafická úprava M. Polanská).

Obr. 5. Fragменты hrotov a preforiem z Nitry-Čermáňa (nekompletné hroty; 1 – neznámy štatút; 1, 2, 7 – fotky M. Polanská; 3–6 – podľa *Kamínská/Kozłowski 2011*).

Obr. 6. Niektoré mlado a finálne gravettienske súbory s charakteristickými mikrolitmi a *armatures*. 1–8 – Dolní Věstonice III; 9–21 – Petřkovice I; 22–27 – Trenčianske Bohuslavice-Pod Tureckom (1–12, 14–17, 20 – kresby M. Polanská; 13 – podľa *Oliva/Neruda 1999*; 18, 19, 21 – podľa *Novák 2008*; 22–27 – kresby M. Polanská).

Dr. Michaela Polanská  
The Czech Academy of Sciences  
Institute of Archeology Brno  
Centre for Palaeolithic and Paleoanthropology  
Čechyňská 363/19  
CZ – 602 00 Brno

and

UMR 7055 – Préhistoire et Technologie  
MSH Mondes  
21, Allée de L'Université  
FR – 92 023 Nanterre Cedex  
[michaelapolanska@yahoo.fr](mailto:michaelapolanska@yahoo.fr)

Mgr. Martin Novák, Ph.D.  
The Czech Academy of Sciences  
Institute of Archeology, Brno  
Centre for Palaeolithic and Paleoanthropology  
Čechyňská 363/19  
CZ – 602 00 Brno  
[novak@arub.cz](mailto:novak@arub.cz)

Dr. Laurent Klaric  
UMR 7055 – Préhistoire et Technologie  
MSH Mondes  
21, Allée de L'Université  
FR – 92 023 Nanterre Cedex  
[klaric@cnrs.fr](mailto:klaric@cnrs.fr)