

An Emireh point at Ořečov IV–Kabáty Bohunician site (South Moravia, Czech Republic)

Hrot typu Emireh z lokality bohunicieny Ořečov IV–Kabáty (jižní Morava, Česká republika)

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KEYWORDS

Emireh point – Initial Upper Paleolithic – Bohunician – Emiran – Eastern Central Europe – Eurasia

ABSTRACT

The Emireh point is a triangular point, which distinctive bulb of percussion was eliminated with bifacial thinning applied to proximal part of the artefact. This point is a characteristic tool for the Emiran industries and up to yet reported from Levantine sites only. Recently, an isolated Emireh point was excavated at Bohunician site Ořečov IV in South Moravia, ca 3,000 km as the crow flies from Levantine sites.

1. Introduction

‘Many spears have already been broken and will be broken yet’ in the context of various and hotly debated discussions on the Middle Paleolithic (MP) – Upper Paleolithic (UP) Transitional period in Eurasia. From the archaeological point of view, the most intriguing subject for the period is related to first true Initial Upper Paleolithic (IUP) Emiran industries and their Afro-Arabian *Homo sapiens* makers’ rapid distribution throughout vast territories of Eurasia from the Czech Republic, Eastern Central Europe, in the west to Mongolia and Northern China, Eastern Asia, in the east (e.g. Barzilai 2022 with ref.). Our paper primarily aims to demonstrate a recently found Levantine Emiran assemblages’ artefact type fossil, an Emireh point (Fig. 1), at one of the Bohunician sites, Ořečov IV–Kabáty, in South Moravia, the Czech Republic. This extraordinary find literally makes a full striking analogue for lithic artefact data for the Eastern Central Europe Bohunician and the Emiran assemblages in the East Mediterranean Levant. As a result, the IUP record of both the Levant and the Central Europe continues to provide more and more data on some real penetration of IUP *Homo sapiens* into Europe from the Levant maintaining the whole ‘lithic artefact making tradition’ with no visible changes (e.g. Bar-Yosef 2000; Hublin 2012).

2. Ořečov IV–Kabáty

Known since the 1930s from periodic finds of surface Paleolithic lithic artefacts (e.g. Oliva, 1989), Ořečov IV–Kabáty loci was re-located in 2010 on a gentle south-western slope (ca 346 m) above the right bank of River Bobrava in South Moravia, the Czech Republic (Škrdla et al. 2011). It is also situated ca 7.5 km to the southwest of the Brno-Bohunice type-site (Tostevin, Škrdla 2006) and ca 14 km to the southwest from the Stránská skála raw material outcrop. Since the location is not very close to a rich raw material outcrop, like the Stránská skála IUP and EUP site complex (Svoboda, Bar-Yosef eds. 2003), it meant there was a good prospective for the loci to have a Bohunician site of a non-primary workshop character. In addition of the more than 3,000 lithics collected at the surface since 2010, a series of 2011–2013 test pits and a 2016 small excavated area were excavated that resulted in some hearths being recognised, but with only a few associated isolated lithic artefacts. The 2017 excavation of a shallow depression with intact sediments alone led to the discovery of ca 30,000 lithic artefacts for a total area of 25 m² (Škrdla 2017, 55–59; Škrdla et al. 2017). Excavations were continued in 2018, when the area was enlarged in the northern and eastern directions. Eight square meters was excavated which resulted in another almost 1,000 artefacts (including wet sieved small finds). The planned excavation in 2019 was cancelled because of the covid pandemic restrictions and has not yet been rescheduled.

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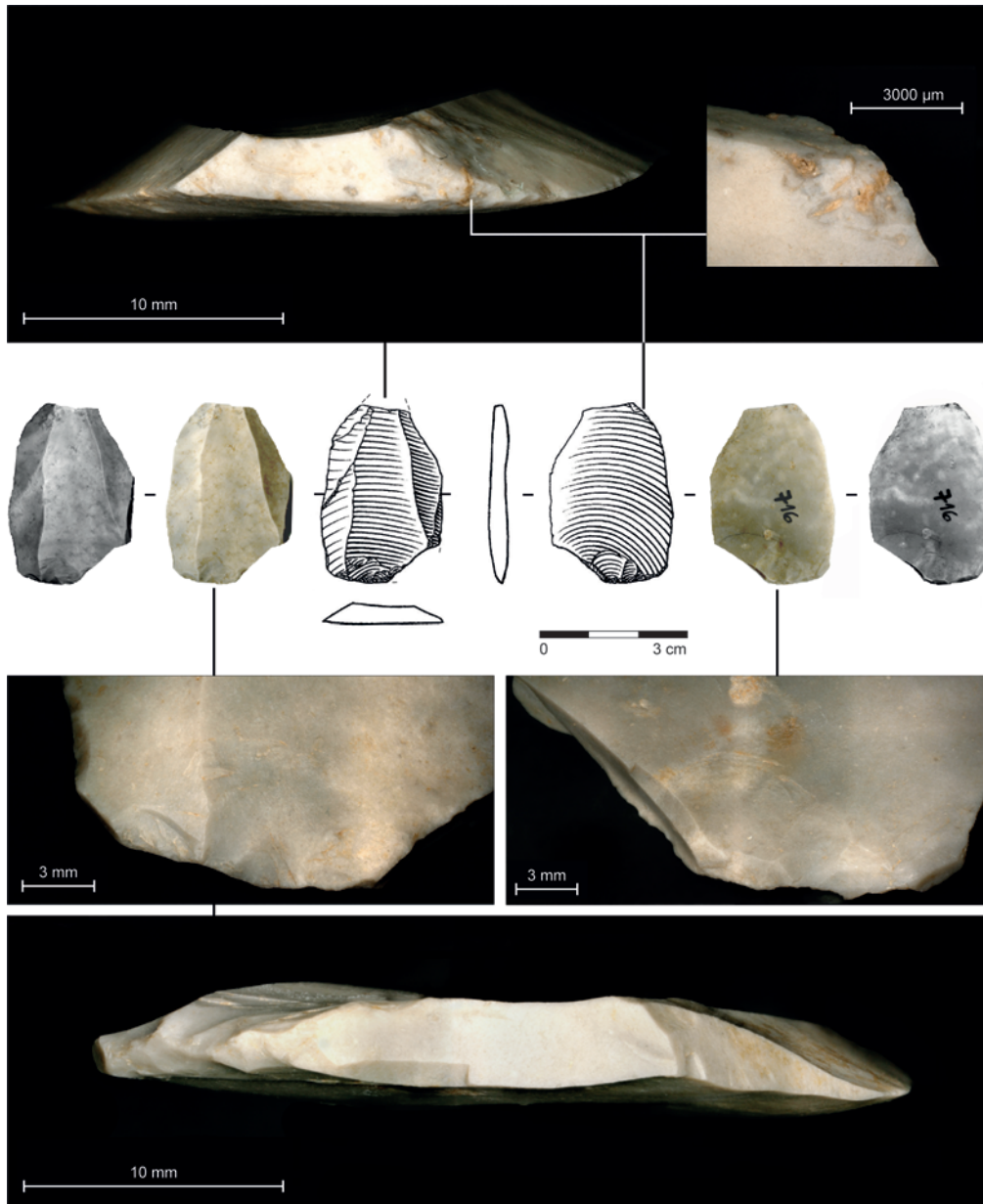


Fig. 1. Emireh point from Ořečov IV. Graphic by J. Bartík, J. Brenner, Č. Fouček, M. Kmošek, L. Zahradníková.
Obr. 1. Hrot typu Emireh z Ořečova IV. Grafika J. Bartík, J. Brenner, Č. Fouček, M. Kmošek, L. Zahradníková.

Now it is already clear that Ořečov IV–Kabáty has become one of the most important sites with Emiran-related industry in Eastern Central Europe since it is a ‘living site’ in addition to its on-site intensive core reduction processes. Eighty percent of the 2017 artefacts are made from Stránská skála-type chert, followed by Krumlovský les-type chert (8%), other local raw materials (3%), and unspecified burnt rocks. Technologically, the assemblage is characterized by the Levallois bidirectional point-blade technology. Additionally, an interesting feature of this assemblage is a great number (ca 1,000 items) of unretouched microblades, bladelets, and their fragments (mean width 7.2 mm; Way et al. 2020). At the same time, a search for any bladelet reduction objects has led to recognition of just a single such potential item, a possible burin-core within the entire site’s assemblage. Some morphological and technological studies were undertaken which along with some as-yet unpublished refitting efforts have allowed us to propose the following ‘bladelet origin’ at the site (Demidenko et al. 2020). Located at a considerable distance from two main raw material outcrops, the site is characterized by an intensive and/or multiple primary reductions of chert nodules leading to many cores being reduced in size significantly.

It certainly caused Levallois point reduction ‘miniaturisation’ for a number of cores. Namely, bladelets mostly originate from Levallois point core reduction processes. It means that small-sized cores were flaked for small Levallois points with blade and bladelet removal negatives on their dorsal surfaces. Before the detachment of a Levallois point the necessary Y-arrete scar pattern had to be formed by some elongated removals bearing faceted butts (being more elongated than the resulting Levallois point), as it is evident from some refitting data (e.g. Demidenko, Usik 1993; Škrdla 2003). In Ořečov IV–Kabáty, the Y-arrete pattern was often shaped through bladelet/microblade detachments. Because of the Ořečov IV–Kabáty small-sized Levallois point primary production, bladelets were small-sized blades in fact, and a good series of bladelets with faceted butts has been noted here. None of the complete Levallois cores (Škrdla 2017, 58, Fig. 3.10: 15, 19, 20) are longer than 5 cm, which is in accord with the bladelet observation noted above. Also, the metric proportions typical of bladelets can be surely suggested for many elongated debitage pieces shaping/re-shaping core flaking surfaces, and even for some Levallois points. In summary, the Ořečov IV–Kabáty bladelet factor arises from the use of rather

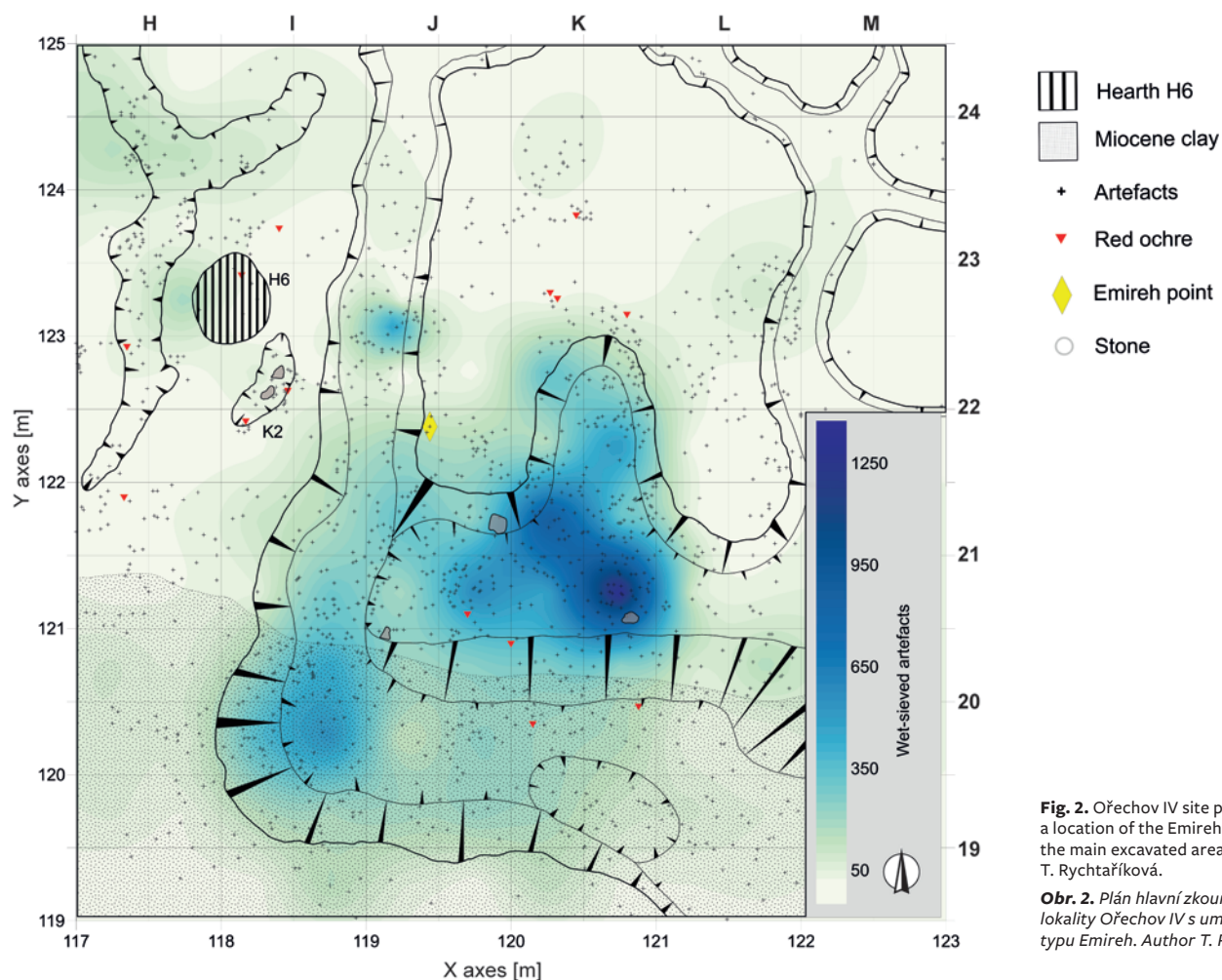


Fig. 2. Ořechov IV site plan and a location of the Emireh point within the main excavated area. Autor T. Rychtaříková.

Obr. 2. Plán hlavní zkoumané plochy lokality Ořechov IV s umístěním hrotu typu Emireh. Autor T. Rychtaříková.

distant chert outcrop locations that ‘subjectively’ led to a significant degree of the assemblage miniaturisation during multiple and/or intensive on-site core reduction processes causing its ‘artificial bladelet character’. At the same time, all the site’s other technological features fully correspond to the known IUP Bohunician data.

The prevailing tool types (Škrdla 2017, 59, Fig. 3.11: 22–36, 40, 48–51) are Levallois points followed by simple flat and thin endscrapers with non-lamellar removal negatives (Škrdla 2017, 58, Fig. 3.10: 1–9). The retouched tool spectrum is mostly added by lightly retouched blades and truncated artefacts (Škrdla 2017, 58, Fig. 3.10: 10–14). Two currently available dates (Tab. 1) from the main excavated area (from hearth H6 and a pit on its periphery, Fig. 2) range from 41 to 35 cal. BP without probable overlap and

both of them are likely underestimated due to the low weight of the carbon samples and possible contamination (as the samples were collected very close to the topsoil). Two other samples from sub-square L19a have yielded results that are too recent. A series of more reliable Bohunician-related dates (Tab. 1) from isolated hearths located 75 m (H3) or 130 m (H1, H2, H4, H5, Test pit 2) east of the main excavated area with the Emireh point find spot (cf. Škrdla et al. 2017, 364, Fig. 1). The latter mentioned hearths survived only as pits dug into weathered bedrock while the expected artefact-bearing horizon was washed downslope into a secondary position where they contributed to a large surface artefact cluster in the vicinity of main excavated area. The number of stratified artefacts excavated in the vicinity of isolated hearths is very low and those artefacts are non-diagnostic.

Lab. code	Lab. name	Context	Material	¹⁴ C BP	Std.	cal. BP	Std.
Poz-45556	Orechov4	Hearth 2	Charcoal	37,600	1000	41,867	555
Poz-51618	Orechov4_02	Charcoal lens, test pit 2	Charcoal	38,600	900	42,552	429
Poz-76203	Orechov4_03	Hearth 3 Charcoal	Charcoal	41,000	1300	44,049	904
Poz-87124	Orechov4_04	Hearth 5	Charcoal (Larch)	41,500	1000	44,281	809
S-ANU52429	Orechov_05	Hearth 5	Charcoal (Larch)	42,309	980	44,995	754
Poz-91470	Orechov4_08	Hearth 6	Charcoal (Juniper)	31,700	400	36,022	407
Poz-91471	Orechov4_09	Pit K2 near hearth 6	Charcoal (Juniper)	35,400	700	40,440	675
Poz-94568	Orechov4_10	L19a	Charcoal	1065	30	978	45
Poz-94567	Orechov4_11	L19a	Charcoal	1950	30	1875	44

Tab. 1. Overview of all available radiocarbon dates from Ořechov IV. The dates were calibrated using CalPal software, ver. 2021.2 (Weninger, Jöris 2008) on the IntCal20 (Reimer et al. 2020) curve.

Tab. 1. Přehled všech dostupných radiouhlíkových dat z Ořechova IV. Data byla kalibrována pomocí softwaru CaPal, ver. 2021.2 (Weninger, Jöris 2008) na křivce IntCal20 (Reimer et al. 2020).

Thus, keeping in mind the ‘subjective’ role for many bladelets/microblades in the assemblage (Way et al. 2020), the Ořechov IV–Kabáty lithics are well within both the European Bohunician and Levantine Emiran industrial features, aside from the usual absence of Emireh points in the Bohunician artefact sets.

3. The Emireh point from Ořechov IV–Kabáty site

In the spring of 2017, the excavations at Ořechov IV–Kabáty site led to a surprising discovery, recognition of a true looking Emireh point (Fig. 1). The point was located within sub-square J22c, at the coordinates [119.44, 122.38] (Fig. 2). Its find spot is directly in the centre of the excavated area but on an elevated plateau bordered by gullies. Unfortunately, this elevated part was the most intensively damaged (by ploughing) part of excavated area.

The Ořechov IV–Kabáty point is, first of all, the fragmented piece produced on a Stránská skála-type chert. Its fragmentation relates to both proximal and distal parts. The piece’s fragmentations are probably connected to a hunting projectile damage (see below). Repeated attempts to find both missing parts within the wet sieved material have brought no success, which might also have been caused by the site’s disturbance mentioned above.

3.1 The point’s blank morphology

Despite the partial fragmentation and not even a preserved butt, the piece is evidently a typical Bohunician Levallois point. Its dorsal side features almost successfully prepared by four main removal negatives (two unidirectional and two bidirectional) in a Y-arrete scar pattern on the core. The then detached Levallois point was, however, a little too short, which is why the lower part of the Y-arrete scar pattern was not reached and the piece is not of typical blade metrical proportions.

3.2 The point’s secondary retouch treatment and diagnostic impact fractures (DIF) features

First of all, the Levallois point’s proximal butt area used was bifacially thinned by a series of removals of chip-like facets up to 5–6 mm long on both the dorsal and ventral sides. It certainly made the point’s basal part really thin for hafting in a dart’s shaft. The right part of the point’s proximal part is partially broken and the reason for this breakage is not yet clear for us. Is it projectile damage, fragmentation during the point’s flaking from a core or breakage during the bifacial thinning? In any case, the key Emireh point feature, the bifacial thinning, is evident for the piece. There is also a specific lateral blunting on left lateral edge near the butt area produced by a partial marginal almost steep dorsal retouch ca 6 mm long. The lateral blunting is not only evidence for Levallois points hafting in both pre-IUP and IUP industries in the Levant (e.g. Shea 1995) but now this so-called accommodation element, as we would call it, is also considered as one of the necessary features for Levantine Emireh points (see Yaroshevich et al. 2021, 17, Fig. 23). Finally, the discussed piece bears two groups of DIF signs that resulted from use as a hunting projectile. One DIF group in view of two separate ones from other tiny chip-like facet removals located at the dorsal side of the point’s distal breakage represent unifacial spin-off fractures (see Yaroshevich et al. 2021, 4, Fig. 1, Group A, 2). Another DIF group is again a kind of unifacial spin-off-fracture also restricted to the piece’s distal breakage but is seen in the presence of a sort of partial marginal flat ventral retouch at the left lateral edge ca 5 mm long. In summary, the considered point demonstrates both two specially made accommodation elements (basal bifacial thinning and retouched lateral blunting) and DIF signs evidencing not only we are dealing with a typical Emireh point but its use as a hunting point. Finally, it is necessary once again to touch upon the subject of systematic retouching of

Emireh points to give them a true triangular/convergent shape. The single Ořechov IV–Kabáty point does not demonstrate any lateral and/or tip additional retouching. The Levantine true Emireh points in the vast majority of cases also have no systematic lateral and/or tip retouch (e.g. Volkman, Kaufman 1983, 36, Fig. 1: a, b, d–h, j–l; 41, Fig. 2: a–h; Marks, Kaufman 1983, 81, Fig. 5–6 a, b; 94, Fig. 5–14 a–j; 95, Fig. 5–15 a, b, e–g; 111, Fig. 5–24: h; Copeland 2000, 78, Fig. 2: 2–8; 81, Fig. 3: 1–8; 82, Fig. 4: 1–5, 7; 83, Fig. 5: 1–7; 84, Fig. 6: 1–6). On the other hand, only very few true Emireh points were additionally retouched (e.g. Marks, Kaufman 1983, 81, Fig. 5–6: c; 95, Fig. 5–15: h; Copeland 2000, 84, Fig. 6: 7), whereas some other surprisingly systematically retouched Emireh-looking points with no bidirectional scar pattern and true basal bifacial thinning (e.g. Copeland 2000, 78, Fig. 2: 1; 82, Fig. 4: 6; 84, Fig. 6: 8, 9) should probably be associated with Late Levantine Mousterian, not IUP. Accordingly, the Moravian Emireh point with no additional systematic lateral and tip retouch treatment also fully coincides with the Levantine Emireh points with no retouch. This retouch absence on the Emireh points should be explained by the use of enough standardised triangular/convergent blanks for the point type production and use where accommodation elements (basal bifacial thinning and lateral blunting) were only formed by systematic retouching.

3.3 The point’s metrical parameters

The Ořechov IV–Kabáty piece’s fragmentation causes some problems with its measurements. The proximal damage is only partial for the piece’s right part, which is why it entirely allows its measurement, while the distal fragmentation is characterised by the missing distal tip. Accordingly, it is not possible to fully establish the point’s length, while width and thickness data are fully available. As a result, the following metrics was measured: the preserved length – 35.9 mm; width – 24.4 mm; thickness – 4.4 mm; length/width – 1.5 mm. It is also possible to make one more calculation effort due to the point’s possible length as reconstructed by us with these results: the assumed length – 45 mm; width – 24.4 mm; thickness – 4.4 mm; length/width – 1.8 mm. The latter measurements with the assumed length can be used with the respective Boker Tachtit Emireh point data comparisons for ‘Tip Cross-Sectional Area and Perimeter’ (TCSA, ‘area of a triangle’ and TCSP, ‘perimeter of a triangle’) values (see Yaroshevich et al. 2021, 13, Tab. 5–7). The Ořechov IV–Kabáty point’s TCSA and TCSP values are as follows: 53.7 mm and 50.3 mm, respectively.

In summary, all the Ořechov IV–Kabáty point metrical data are lower than the mean metrics of Boker Tachtit Emireh points: length – 57 mm (only for complete pieces); width – 25.9 mm; thickness – 7.3 mm; length/width – 2.3 mm; TCSA – 96 mm; TCSP – 55.6 mm (see Yaroshevich et al. 2021, 13, Tab. 6). The differences, however, can be considered of a ‘subjective character’ connected to some unsuccessful detachment of the Moravian Emireh point’s blank, the Levallois point, from a core. Actually, the length itself was accidentally shortened due to a hard hammer blow at the very edge of the core’s striking platform, which is why the Levallois point was, first of all, too thin (only 4.4 mm) thus leading to a short removal. The combination of the metrical data that is too short and too thin for the Levallois point’s length and thickness definitely led to the low values of length/width and TCSA. Therefore, the traced metrical differences between the single partly fragmented Moravian Ořechov IV–Kabáty Emireh point and 16 complete Levantine Boker Tachtit Emireh points (Yaroshevich et al. 2021, 13, Tab. 6) can be left out, keeping in mind that all other features known for Boker Tachtit Emireh points are present at the Ořechov IV–Kabáty point.

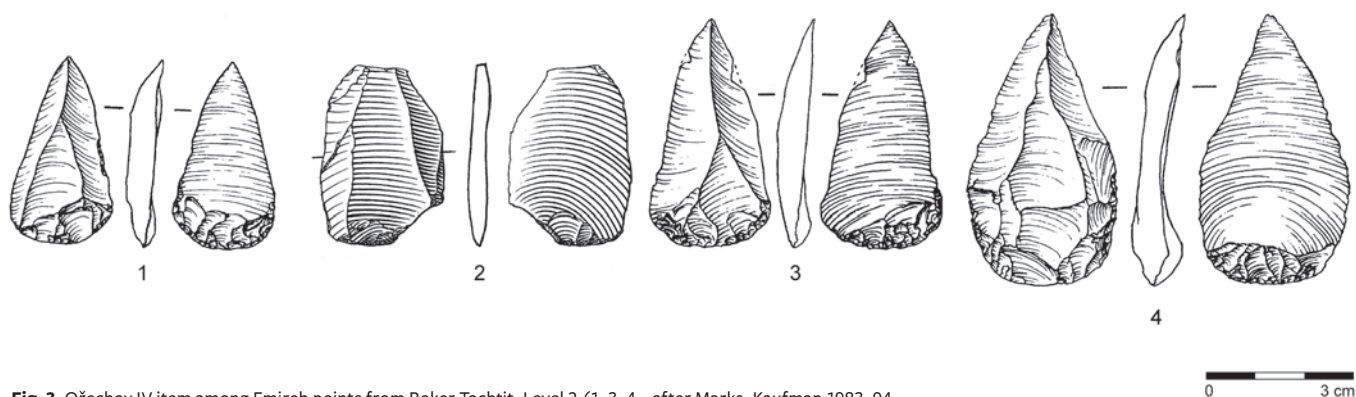


Fig. 3. Ořečov IV item among Emireh points from Boker Tachtit, Level 2 (1, 3, 4 – after Marks, Kaufman 1983, 94, Fig. 5-14: d, f; 95, Fig. 5-15: f; 2 – drawing by J. Brenner).

Obr. 3. Hrot typu Emireh z Ořečova mezi hroty z lokality Boker Tachtit, vrstva 2 (1, 3, 4 – podle Marks, Kaufman 1983, 94, Fig. 5-14: d, f; 95, Fig. 5-15: f; 2 – kresba J. Brenner).

4. Final considerations for the Ořečov IV–Kabáty Emireh point and Emiran beyond the East Mediterranean Levant

The above-analysed Emireh point as first recognised by us from the in situ IUP Bohunician site in South Moravia (Czech Republic) with its detailed morphological, technological and macroscopic trace analyses and comparisons with etalon Emireh points coming from the original Levantine Emiran IUP context at Boker Tachtit site now completed leaves no doubt for the statement that we are indeed dealing with the first genuine Emireh point discovered beyond the Levant and in Eastern Central Europe (Fig. 3). It was already understood that the Ořečov IV–Kabáty site is one of the most important sites for IUP Bohunician and now such a position is additionally strengthened by the Emireh point's presence. Moreover, now this surprising discovery allows us to speculate that some Afro-Arabian Emiran *Homo sapiens* moved from the Levant into Europe bringing with them the entire lithic artefact-making tradition without any fabricated additional changes. As a result, it creates a scenario for understanding the first IUP humans moves throughout various regions of Eurasia as more complex and intriguing than it was before find of the Ořečov IV–Kabáty Emireh point. Here it is important not to forget our archaeological definition of the IUP industries and their types is based upon the Levantine Emiran and Emiran-like features and their chronological time span covers ca 50–49–40 ka cal BP, GI-14a / GS-14 – GI-9 (Boaretto et al. 2021). At the same time, such the IUP time span also includes some local, non-Emiran IUP industries in various Eurasian regions, such as, for example, the Szeletian and Kostenki-Streletskaya industry in Central and Eastern Europe. The latter industries are not IUP ones by archaeological criteria but following IUP chronology. Thus, the archaeological and chronological data have to be distinguished from one another and understanding it will help in the study of complex possible scenarios in different regions with new incoming IUP human groups and local Late MP people developing the first UP techno-typological trends under the influence of IUP humans and their technologies

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Resumé:

Za hrot typu Emireh je považován takový hrot trojúhelníkovitého tvaru, jehož bulbus byl po úderu na proximálním konci odstraněn sérií úderů vedených jak z ventrální, tak z dorsální strany artefaktu (bifaciální ztenčení). Tyto hroty jsou charakteristickým nástrojem industrií emiranu a dosud byly známy pouze z prostoru Levanty. Nedávno byl ovšem tento typ hrotu nalezen na lokalitě bohunicenu Ořechov IV na jižní Moravě, cca 3000 km vzdušnou čarou od lokalit v Levantě (obr. 1).

Lokalita Ořechov IV byla známa jako povrchová lokalita od 30. let 20. století (e.g. Oliva 1989) a od roku 2010 systematicky sledována autory článku. Zatímco série sond na východním okraji lokality (cf. Škrdla et al. 2017, 364, obr. 1) zachytila zahloubená ohniště pouze s ojedinělými kamennými artefakty, situace odkrytá na západním okraji v letech 2017 a 2018 sestávala s ohniště obklopeného jamkami a erozními kanálky a na ploše 25 m² poskytla více než 30 000 artefaktů štípané kamenné industrie (Škrdla 2017, 55–59; Škrdla et al. 2017). Hrot typu Emireh byl nalezen přibližně v centru této koncentrace (sub-sektor J22c, souřadnice [119.44, 122.38]; obr. 2), ovšem na vyvýšeném místě, které bylo nejvíce poškozeno orbou. Zatímco radiouhlíková data z ohnišť na východním okraji lokality spadají do časového úseku charakteristického pro bohunicien, vzorky uhlíků z ohniště H6 a jamky K2 (obr. 2), situovaných v blízkosti nálezu hrotu typu Emireh, poskytly mladší data bez pravděpodobnostního překryvu, což je činí problematickými. Ani další pokusy o datování nebyly úspěšné (Tab. 1).

Hrot typu Emireh z Ořechova IV je vyroben z rohovce typu Stránská skála. Hrot není kompletní a nese stopy poškození na proximálním i distálním konci artefaktu, které zřejmě souvisí s impaktem v důsledku použití. Přestože exemplář z Ořechova je metricky menší než je průměr pro hroty z Boker Tachtitu (Negevská poušť, Izrael; cf. Yaroshevich et al. 2021), má všechny ostatní charakteristické rysy hrotů typu Emireh z izraelské lokality.

Hrot typu Emireh z Ořechova IV představuje první a ojedinělý doklad tohoto nástroje mimo Levantu a jeho detailní morfologické, technologické a mikroskopické porovnání s etalony z Boker Tachtitu poukazuje nejen na význam Ořechova IV jako klíčové lokality bohunicenu na jižní Moravě, ale představuje důležitý impuls do diskuse o migracích nositelů Emiranu (*Homo sapiens*) z Levanty do Evropy.

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