

# The Early to Middle Bronze Age transition as exemplified by Moravia

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## ABSTRACT

The current study of late prehistoric chronology is aimed at defining more robust horizons and, often, at documenting the continuity of phenomena. Systematic records and rescue excavations make it possible to better quantify archaeological sources and identify periods in which archaeological records are missing. The article addresses the issue of the end of Únětice cemeteries in Moravia connected with the movement of burials to the surface level beneath barrows as well as long-term traits regarded as chronologically sensitive. The basic trends are supported with the absolute dates of graves.

## KEYWORDS

Early Bronze Age; pit burial; inhumation burial; radiocarbon dating; Moravia.

## INTRODUCTION

The article aims to foster a discussion on the chronology of the Early Bronze Age from the perspective of burial practices. The region of Moravia on which the work is based is the northwest edge of the Carpathian Basin in the eastern part of the Czech Republic. The basic materials are the existing applied chronology, the database of archaeological components from rescue excavations, and radiocarbon dates from grave assemblages and burials in settlement features that can be classified well on the basis of inventory in the traditional cultural-chronological scheme. We wish to deliberate three key issues: Are burials in settlement pits typical for the end of the Early Bronze Age? When do Únětice burial sites end? And where are the graves of the final horizon of the Early Bronze Age in Moravia? We have discussed this topic already (ŠABATOVÁ – PARMA 2019) and our intention here is to introduce our knowledge to broader public in context of lately published studies.

In the sense of the cultural-chronological scheme, the end of the Early Bronze Age is represented by the post-classic phase of the Únětice culture (ÚC) and the Věteřov group (VG). Current knowledge in Moravia is based especially on the work by S. Stuchlík, J. Stuchlíková and V. Podborský (LORENCOVÁ – BENEŠ – PODBORSKÝ 1987; STUHLÍK 1993; STUHLÍKOVÁ 1993; STUHLÍK – STUHLÍKOVÁ 1996; STUHLÍK 2006).

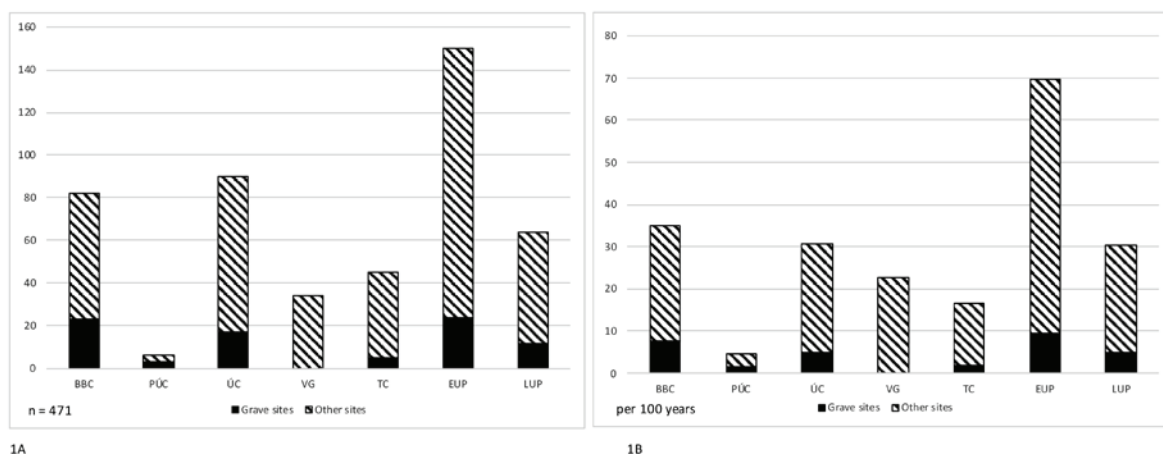
Two ÚC periodisations are used for Moravia. J. Ondráček identified five phases based on the typology of pottery from Únětice cemeteries, whereas Stuchlík (1972) defined three periods on the grounds of settlement material: the Proto-Únětice period (comparable to Ondráček's phase 1), the early period of the ÚC (the second and third phases of the Early Únětice and Middle Únětice combined with Br A1) and the late period of the ÚC (phase 4 and 5 – classic and post-classic Únětice combined with Br A2) (LORENCOVÁ – BENEŠ – PODBORSKÝ 1987, 124; STUHLÍK 1972; STUHLÍK 1993, 240). Important new work from neighbouring regions includes especially the evaluation of the Early and the beginning of the Middle Bronze Age cemeteries from west Slovakia by Z. Benkovský-Pivovarová (BENKOVSKÝ-PIVOVAROVÁ – CHROPOVSKÝ 2015), as well as

the evaluation of the cemetery in Miškovice, which determined the absolute chronology of the ÚC in Bohemia and again pointed to the possible contemporaneity of typological groups of the ÚC. Dates for the classic phase of the ÚC fall here between the years 2000 and 1850 BC (ERNÉE 2015).

The chronology of the Věteřov group was divided, mainly on the basis of ceramics, into three phases: early, contemporary with the end of the ÚC, classic phase filling a substantial part of the development of the VG, and post-classic phase dated to Br B1 (ONDRÁČEK – STUHLÍKOVÁ 1988; STUHLÍK 2006, 221). At present, the detailed five phases chronology is introduced by D. Rožnovský (2019, 108–111). Due to the fact that we do not have typical ceramics in graves, we consider the VG as one period.

## THE STRUCTURE OF ARCHAEOLOGICAL SOURCES

As a result of rescue excavations, the past three decades have witnessed intensive growth in archaeological sources. A look at sites with a more precise dating (2400–800 BC) shows that the greatest numbers belong to the Bell Beaker culture (BBC), ÚC, and the Early Urnfield period (EUP) (**Fig. 1A**). A recalculation of dates with respect to the assumed duration of individual cultures (**Fig. 1B**)<sup>1</sup> reveals that the number of BBC, ÚC, VG, and Tumulus Culture (TC) components is balanced. A significant increase is not seen until the EUP component. The situation is different if only sites with graves (**Fig. 1B**) are chosen from the recalculated dates – the greatest number of inhumation cemeteries belongs to BBC. The subsequent decline in numbers in the Proto-Únětice culture (PÚC) could be expected, but the lower number of ÚC cemeteries is surprising. In contrast, the absence of graves of the Věteřov component and the weak representation of graves of the TC component is significant.



**Fig. 1: Database of rescue excavations conducted by the Archaeological Heritage Institute Brno in 1993–2016. Records of archaeological components. 1A: Records of all closely dated components (n = 471), absolute numbers. 1B: Records of all closely dated components - recount to the years of duration (BBC - Bell Beaker Culture, PÚC - Proto-Únětice Culture, ÚC - Únětice Culture, VG - Věteřov Group, TC - Tumulus Culture, EUP - Early Urnfield period, LUP - Late Urnfield period).**

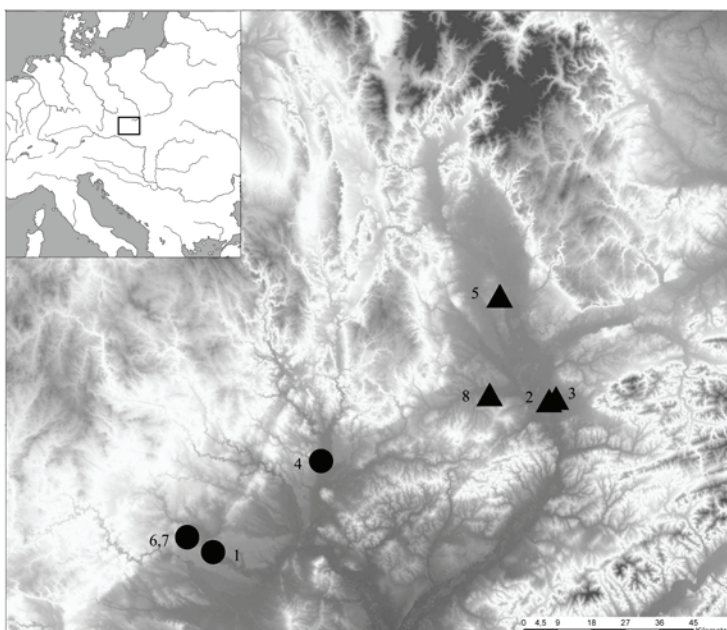
1 BBC - 82 sites, 300 years; PÚC - 6 sites, 200 years; ÚC - 90 sites, 350 years; VG - 34 sites, 150 years; TC - 45 sites, 300 years; EUP - 150 sites, 250 years. LUP - 64 sites, 250 years.

## BURIAL PRACTICES AT THE END OF THE EARLY BRONZE AGE

The end of the Early Bronze Age in Moravia (VG, Br A2 late) is characterised by the ‘collapse of traditional burial practices and the nearly complete absence of grave finds’; the disappearance of Únětice cemeteries is assumed from the end of the classic phase of the ÚC (STUCHLÍKOVÁ 1990, 146; STUCHLÍKOVÁ 1993). Typical burial practices of the VG were previously thought to be burials of the dead in settlement pits outside of cemeteries, so-called pit burials, or even pot burials of children, known as *pithoi* burials, and a few disposals of cremation remains (TIHELKA 1960, 109–112; STUCHLÍK 2006, 134–135). Today it is clear that the dead were in fact buried in graves in the VG, though burials at settlements and pot burials make up a high share of the known number of burials. It is known that both of these phenomena appear already in the ÚC, and it is assumed that burials in vessels are often documented in the (Late) Únětice environment (Blučina ‘Cezavy’, Brno-Slatina, Dolní Věstonice, Vedrovice), though they appear in the greatest numbers later in the VG (STUCHLÍK 1993, 247, 251; STUCHLÍK 2007; SALAŠ 2008).

J. Stuchlíková (1990) dealt in detail with the burial practices of the VG, as did S. Stuchlík (2006) while studying the only larger VG cemetery in Borotice. Since this publication, the inventory of Věteřov graves has been expanded by several assemblages of inhumation burials (Bratčice, Hulín 1 ‘U Isidorka’: STUCHLÍK 2009; DAÑHEL 2010; a grave from Vrchoslavice 3 was also considered: PEŠKA 2012c) and one disposal of cremation remains from Zlín-Malenovice (FOJTÍK 2015). Burials in settlement features, both ÚC and VG, have been followed in a large number of studies (SALAŠ 1990; STAPEL 1999; STUCHLÍK 2006; 2007; 2009; 2010; ROŽNOVSKÝ 2010; 2012; PANKOVSKÁ – MONÍK 2017; MORAVCOVÁ – KALA 2019).

The most prominent VG burial sites include the barrow cemetery in Borotice, where 19 graves are reliably attributed to the VG, 18 probably belong to this culture, and another 16 are uncertain. Others cases include single graves or a few graves in small cemeteries of earlier or later cultures (Branišovice, Kroměříž ‘Hradisko’, Vrchoslavice 3). Inventories (STUCHLÍK 2006; 2009; PEŠKA 2012c) indicate that the total number of VG graves is 60 certain (two of which are cremation, three are burials in vessels) and 48 uncertain (two of which are cremation, 18 in vessels). At least 94 burials in settlement features are also known. The situation



**Fig. 2: Map of sites in Moravia providing radiocarbon dates. Only burial assemblages with a published inventory are listed. 1. Borotice, 2. Hulín 1 ‘U Isidorka’, 3. Hulín-Pravčice 1 ‘U obrázku’, 4. Modřice ‘Ryb-níky’, 5. Olomouc-Slavonín, 6. Těšetice ‘Vinohrady’, 7. Těšetice-Kyjovice ‘Sutny’, 8. Vrchoslavice 3. Recently dated assemblages are indicated with ●, the earlier dates from J. Peška’s with ▲.**

in the preceding ÚC period is only partially different: although more than 1030 inhumation Únětice graves are known from 60 cemeteries, there are also seven burials in vessels and at least 100 burials in settlement features (TIHELKA 1953; LORENCOVÁ – BENEŠ – PODBORSKÝ 1987; STUHLÍK 1993; 2007; SALAŠ 2008; SOSNA 2009, tab. 6.1, 6.3; STUHLÍK 2010; PANKOWSKÁ – MONÍK 2017; MORAVCOVÁ – KALA 2019).

Smaller community cemeteries in Moravia represent a distinct difference to the large Early Bronze Age necropoleis of the Maďarovce and Böheimkirchen cultures continuing to the end of the period in Br A2c or Br B1 (NEUGEBAUER *et al.* 1994, 96; BÁTORA 2000; STUHLÍK 2006).

## RADIOCARBON DATES

The largest number of radiocarbon dates from the Eneolithic and the Bronze Age in Moravia come from the work of J. Peška (2006; 2012a; 2013a; 2013b). For our work, we sought radiocarbon dates for published burial assemblages from the end of the Early and the beginning of the Middle Bronze Age which can be dated using the traditional typology. This group is composed of 12 burials. We also chose and dated another four burials and one mass pit burial belonging to the end of the Early Bronze Age based on their typological dating (Fig. 2). As such, we have a total of 16 burial assemblages with 18 radiocarbon dates (Fig. 3 and 4).

Site	Context Nr.	Context type	Lab. Nr.	Date	±	Sample	Archaeological Dating	References
<b>Borotice (sample 1)</b>	<b>Tum. 2, Gr. 2</b>	<b>grave</b>	<b>Poz-89834</b>	<b>3425</b>	<b>30</b>	<b>human bone</b>	<b>VG</b>	<b>STUHLÍK 2006</b>
<b>Borotice (sample 2)</b>	<b>Tum. 2, Gr. 2</b>	<b>grave</b>	<b>Poz-97561</b>	<b>3335</b>	<b>30</b>	<b>human bone</b>	<b>VG</b>	<b>STUHLÍK 2006</b>
Hulín 1 'U Isidorka'	Gr. 31	grave	Poz-14847	3485	35	unspecified	ÚC	PEŠKA 2012a,b
Hulín 1 'U Isidorka'	Gr. 32	grave	Poz-14849	3435	30	unspecified	ÚC	PEŠKA 2012a,b
Hulín 1 'U Isidorka'	Gr. 38	grave	Poz-14850	3510	40	unspecified	ÚC	PEŠKA 2012a,b
Hulín 1 'U Isidorka'	Gr. 108	grave	UGAMS 7657	3390	25	unspecified	VG	DAŇHEL 2010; PEŠKA <i>et al.</i> 2011
Hulín - Pravčice 1 'U obrázku'	F. 85	pit burial	KIA 34727	3510	30	unspecified	ÚC	PEŠKA <i>et al.</i> 2011
Hulín - Pravčice 1 'U obrázku'	F. 315	pit burial	KIA 34731	3540	30	unspecified	ÚC	PEŠKA <i>et al.</i> 2011
<b>Modřice 'Rybníky' (sample 1)</b>	<b>Gr. 811</b>	<b>grave</b>	<b>DSH8050_G</b>	<b>3467</b>	<b>30</b>	<b>human bone</b>	<b>ÚC</b>	<b>unpublished</b>
<b>Modřice 'Rybníky' (sample 2)</b>	<b>Gr. 811</b>	<b>grave</b>	<b>DSH8051_G</b>	<b>3473</b>	<b>32</b>	<b>human bone</b>	<b>ÚC</b>	<b>unpublished</b>
Olomouc - Slavonín	Gr. 46	grave	VERA 2127	3565	40	unspecified	ÚC	PEŠKA 2006
Olomouc - Slavonín	Gr. 55	grave	VERA 2096	3510	40	unspecified	ÚC	PEŠKA 2006
Olomouc - Slavonín	Gr. 73	grave	VERA 2100	3175	45	unspecified	TC (BzB)	ŠMÍD 1997; PEŠKA 2012a
Olomouc - Slavonín	Gr. 86	grave	VERA 2101	3280	35	unspecified	TC (BzB)	ŠMÍD 1997; PEŠKA 2012a
<b>Těšetice 'Vinohrady'</b>	<b>Gr. 22</b>	<b>grave</b>	<b>Poz-89832</b>	<b>3535</b>	<b>35</b>	<b>human bone</b>	<b>ÚC</b>	<b>LORENCOVÁ <i>et al.</i> 1987</b>
<b>Těšetice 'Vinohrady'</b>	<b>Gr. 45</b>	<b>grave</b>	<b>Poz-89833</b>	<b>3515</b>	<b>35</b>	<b>human bone</b>	<b>ÚC</b>	<b>LORENCOVÁ <i>et al.</i> 1987</b>
<b>Těšetice - Kyjovice 'Sutny'</b>	<b>F. 387</b>	<b>pit burial</b>	<b>Poz-89831</b>	<b>3590</b>	<b>35</b>	<b>human bone</b>	<b>ÚC</b>	<b>ČIŽMÁŘ <i>et al.</i> 1993</b>
Vrchoslavice 3	Gr. 4	grave	Poz-14835	3205	30	human bone	VG? (BzB)	PEŠKA 2012c

**Fig. 3: An overview of radiocarbon dates of inhumation burials and burials in settlement features from the Early and Middle Bronze Age in Moravia. Only assemblages with published inventories are listed. Recently dated assemblages are indicated in bold print.**

Site, grave, radiocarbon date	Dating artefacts	Typological dating
Hulín-Pravčice 'U obrázku' f. 85 1918–1748 BC (probability 95.4%)	Pin with a spherical head with an oblique perforation ( <i>schräg durchlochte Kugelkopfnadel</i> ), a Únětice cup and a jug (PEŠKA <i>et al.</i> 2011, 57, fig. 4).	Dating into the post-classic phase of the ÚC with a possible extension to VG (STUCHLÍK 1993, fig. 157: 24; INNERHOFER 2000, 81–83; BENKOVSKY-PIVOVAROVÁ - CHROPOVSKÝ 2015, 31–33, 51–52, Abb. 101e, 120).
Hulín-Pravčice 'U obrázku' f. 315 1955–1767 BC (probability 95.4%)	Two <i>Lockenringe</i> of a simple type and a fragment, perhaps a <i>Nopperinge</i> , a small globular vessel and a small amphora with engraved decoration (PEŠKA <i>et al.</i> 2011, fig. 5).	Classic or post-classic phase of the ÚC. Graves with <i>Lockenringe</i> typically precede the horizon of graves with a spherical and obliquely perforated head (STUCHLÍK 1993, fig. 157; STUCHLÍK 2009, 176; BENKOVSKY-PIVOVAROVÁ - CHROPOVSKÝ 2015, 62, Abb. 120).
Olomouc-Slavonín Gr. 46 2026–1773 BC (probability 95.4%)	Copper axe with a fan-shaped cutting edge and a trace of a central step with side flanges (PEŠKA 2006, fig. 9).	Assumed dating of the cemetery to the classic and possibly the post-classic phase of the ÚC (PEŠKA 2006, 159–152), axe from Gr. 46 from Br A2 to the beginning of Br C ( <i>Absatzbeile</i> , Gruppe I: ŘÍHOVSKÝ 1992, 109–112).
Olomouce-Slavonín Gr. 55 1941–1700 BC (probability 95.4%)	Únětice cup (PEŠKA 2006, fig. 10).	Typologically datable to the late period of the ÚC (STUCHLÍK 2009, 176; BENKOVSKY-PIVOVAROVÁ - CHROPOVSKÝ 2015, 32–33, Abb. 101e).
Hulín 1-U Isidorka, Gr. 38 1941–1700 BC (probability 95.4%)	Únětice cup and pot with an S-shaped profile (PEŠKA 2012b, Abb. 3; PEŠKA 2012a).	The pot typologically falls in the earlier part of the ÚC (STUCHLÍK 1993, fig. 156: 19), the cup to the classic phase, though the material of this phase can overlap with the early period of the ÚC (ERNÉE 2015, 294–295).
Hulín 1-U Isidorka, Gr. 31 1896–1695 BC (probability 95.4%)	Axe with side flanges ( <i>Randleistenbeil</i> ) and a bowl with a groove below the rim and four feet (PEŠKA 2012b, Abb. 3; PEŠKA 2012a).	Late period of the ÚC (ŘÍHOVSKÝ 1992, 90–91; NEUGEBAUER <i>et al.</i> 1994, Abb. 46/14; STUCHLÍK 2004).
Hulín 1-U Isidorka, Gr. 32 1877–1661 BC (probability 95.4%)	Jug (PEŠKA 2012b, Abb. 3).	The original dating to the classic phase can be extended into the post-classic phase of the ÚC (LORENCOVÁ <i>et al.</i> 1987, 126).
Hulín 1-U Isidorka, Gr. 108 1745–1627 BC (probability 95.4%)	Profiled jug of the post-classic phase and an early palstave axe ( <i>Absatzbeil</i> ) (DAŇHEL 2010, 119, fig. 4; PEŠKA <i>et al.</i> 2011, 57).	VG (DAŇHEL 2010, 123–126).
Vrchoslavice Gr. 4 1530–1417 BC (probability 95.4%)	Palstave axe on the border between an arched and cordate stop bar and a dagger with a trace of the expansion of the rounded butt plate and five rivets (PEŠKA 2012c, 14–16).	Late phase Br A2–B1 (BENKOVSKY-PIVOVAROVÁ 1985, 30, 80, Taf. 226: 1–2; ŘÍHOVSKÝ 1992, 111–112, 122–123; NEUGEBAUER <i>et al.</i> 1994, Abb. 47: 1–4; BÁTORA 2000, Beil. 3; DAVID 2002, 224, 315–317, Taf. 212, 255; SALAŠ 2005, 32–33; BENKOVSKY-PIVOVAROVÁ - CHROPOVSKÝ 2015).

Fig. 4: The dating overview of previously published find units in Moravia.

## PIT BURIALS

To answer the first question as to whether burials in settlement pits are typical for the end of the Early Bronze Age, we acquired a radiocarbon date from the mass burial in settlement feature 387 from the Těšetice-Kyjovice 'Sutny' site (Fig. 5). The burial of four individuals and a dog in a storage pit with a depth of 195 cm was covered with stones. A woman was deposited on the bottom of the pit, while the skeletons of a juvenile woman and a young boy were at a higher level. The remains of an infant were deposited by the wall of the pit.<sup>2</sup> The pit burial (Gr. 16) was dated to the VG based on an analogy in burial practices. The most striking find was the woman's necklace composed of 199 beads and a pot-shaped vessel with lengthwise relief knobs (ČIŽMÁŘ *et al.* 1993, 52–56, fig. 13). None of the artefacts are typologically classifiable to the VG (cf. ROŽNOVSKÝ 2010; STUCHLÍK 2010).

2 The deposition of a child in a vessel must be first anthropologically revisited, so we do not take this interpretation into account.



**Fig. 5: Settlement Těšetice-Kyjovice ‘Sutny’. Pit burial of four individuals and a dog in f. 387 (Číž-  
MÁŘ *et al.* 1993).**

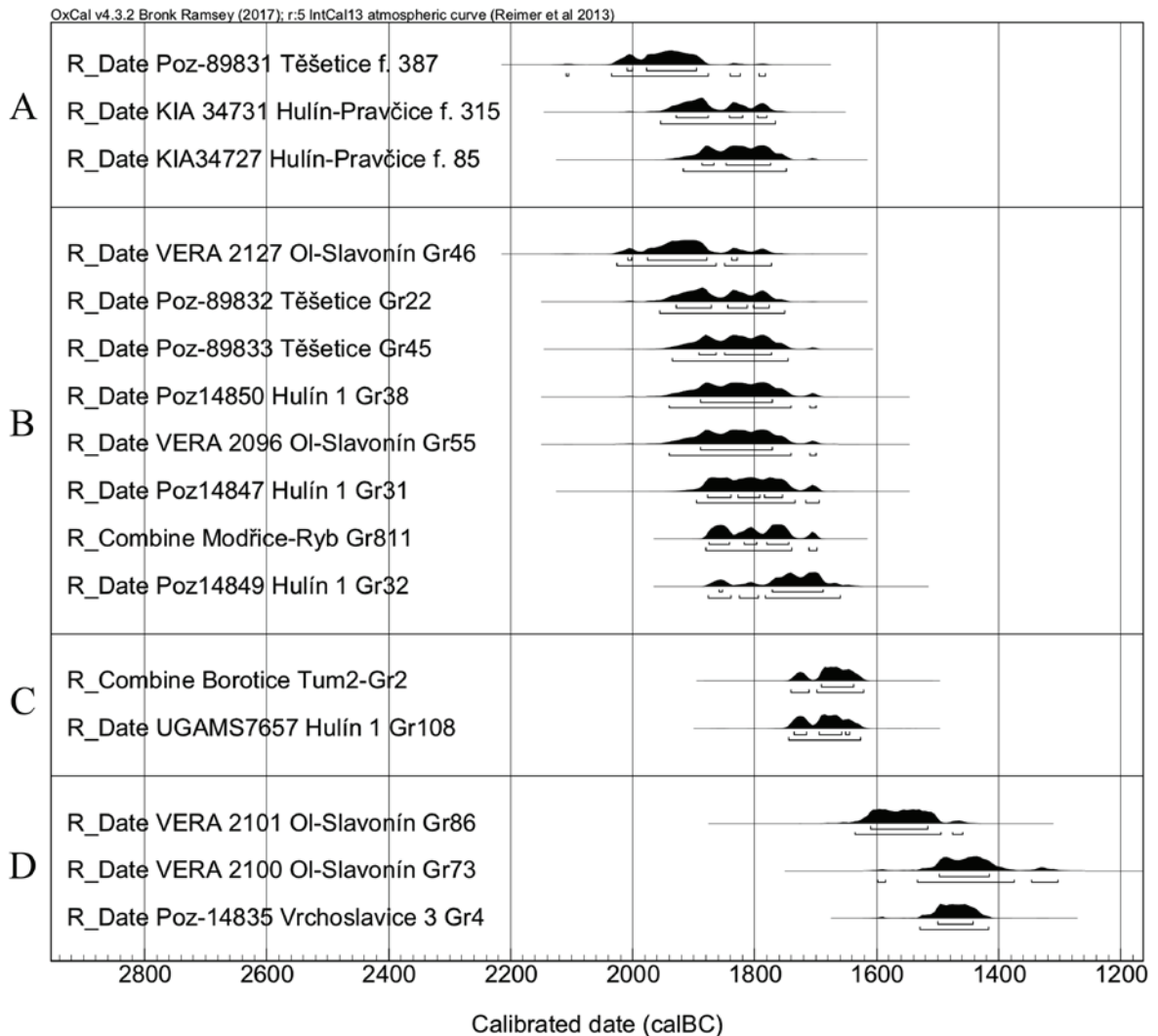
The calibrated radiocarbon date of 2110–1783 BC (probability 95.4%; **Figs. 3 and 6**)<sup>3</sup> obtained from the woman’s skeleton points to the early period of the ÚC. Her bead necklace from the perspective of the type of artefact and the origin of the stone material (MRÁZEK 1996, 66–67) as well as the type of vessel (a pot) present in the grave suggest a connection with the Epi-Corded Ware complex. Similar radiocarbon dates associated with the Nitra culture or more generally with the Carpathian Epi-Corded Ware Culture Complex come from east Moravia and from the Jelšovce and Opava-Vávrovice cemeteries showing that manifestations of the Epi-Corded Complex were a common feature of this time period (BÁTORA 2000, 568–569; PEŠKA 2013a, Taf. 1; HLAS – STUHLÍK – ŠÍN 2017, 70–71, tab. 2).

A total of three radiocarbon dates from pit burials with grave goods are known today for Moravia. In addition to feature 387 from Těšetice-Kyjovice, these are two skeletons from the Hulín-Pravčice ‘U obrázku’ (f. 85 and f. 315), both of which can be dated to post-classic ÚC (**Fig. 3, 4, 6**).

Radiocarbon dates show that laying down pit burials is a phenomenon that is characteristic of the entire Early Bronze Age and cannot be used as a more accurate dating criterion. In the case of two assemblages discussed here, the deposition in a settlement feature influenced the archaeological dating, e.g. feature 387 from Těšetice-Kyjovice ‘Sutny’ and the burial from Hulín-Pravčice, feature 85, both originally dated to VG.

A similar picture was newly provided by the settlement area in Vliněves, Bohemia. Radiocarbon data from human remains buried in seven settlement pits are known here. The earliest dated skeleton falls into 2199–1941 BC (probability 95.4%). The other six features are later, dating between 2000–1600 BC (LIMBURSKÝ *et al.* 2018, 502, tab. 45, fig. 334).

<sup>3</sup> Other yet unpublished radiocarbon data for feature 387 from M. Dočkalová’s project have been ascertained, which confirm this chronology.



**Fig. 6: Comparison of radiocarbon dates from pit and inhumation burials from the Early and beginning of the Middle Bronze Age. A. Pit burials. B. Únětice Culture graves. C. Věteřov Group graves. D. Graves of Middle Bronze Age.**

## INHUMATION BURIALS

Ten graves from Moravia with typologically classifiable inventory determined by radiocarbon dating come from the Early Bronze Age. Four were dated recently (Borotice, Modřice-Rybníky Gr. 811, Těšetice 'Vinohrady' Gr. 22 and Gr. 45), and the other come from published excavations in central Moravia (Hulín 1 'U Isidorka' and Olomouc-Slavitín: PEŠKA 2006; DAŇHEL 2010; PEŠKA – TAJER – PANKOWSKA 2011; PEŠKA 2012a; 2012b).

Grave 46 from Olomouc-Slavitín with a date of 2026–1772 BC (probability 95.4 %; **Fig. 3, 4, 6**) has a median before 1900 BC and ranks among assemblages typologically classified to the classic phase of the ÚC, the absolute dates of which are at the beginning of the 2<sup>nd</sup> millennium BC (cf. ERNÉE 2015, 294–295).

The median of most absolute dates from graves falls between 1900 and 1800 BC. Graves regarded as late on the basis of a typological analysis were recently dated to identify the end

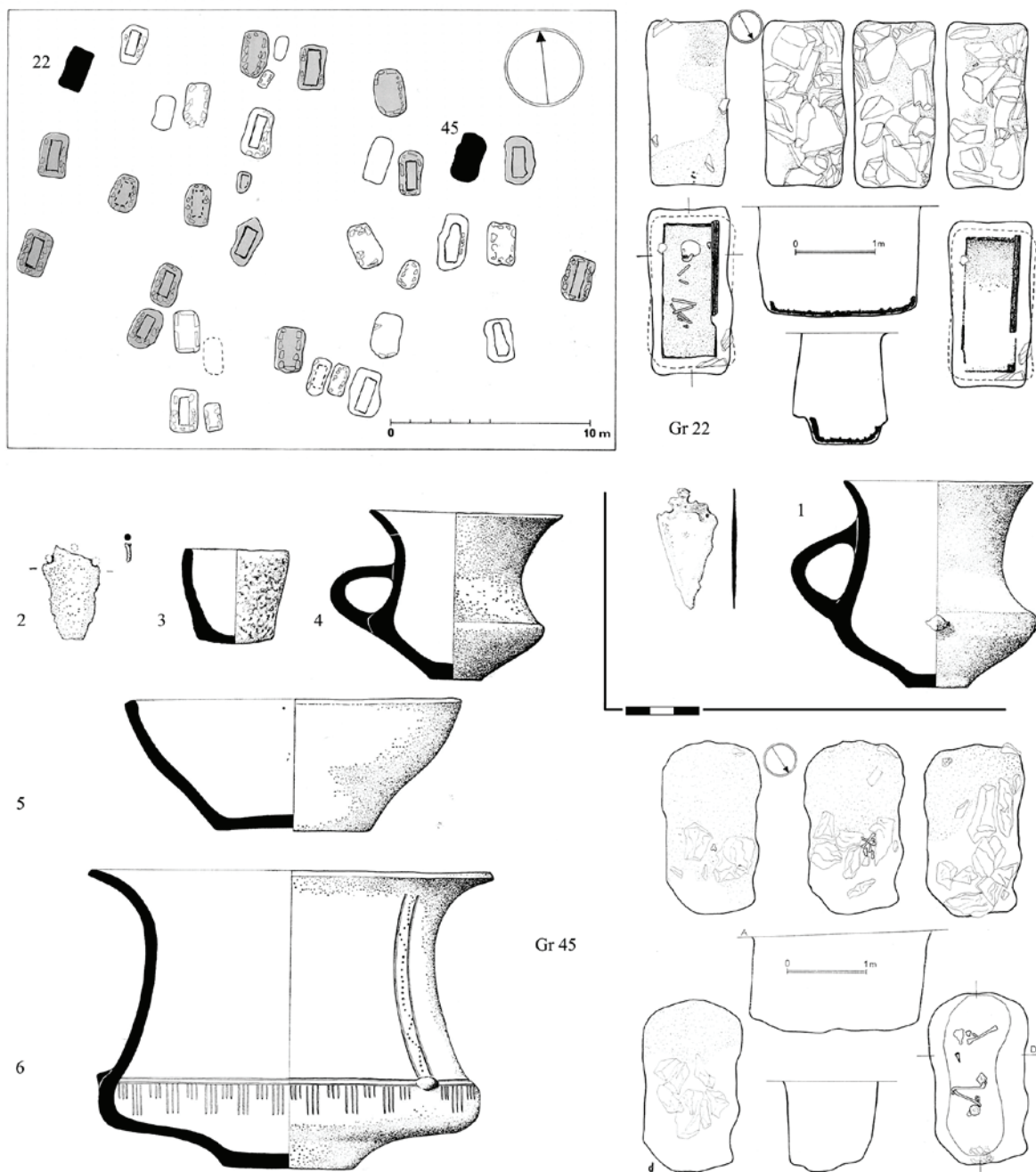


Fig. 7: The Těšetice 'Vinohrady' cemetery. Graves 22 and 45 (LORENCOVÁ – BENEŠ – PODBORSKÝ 1987).

of burials at Únětice cemeteries. Burials from the 'Rybníky' site in Modřice and the 'Vinohrady' site in Těšetice were selected.

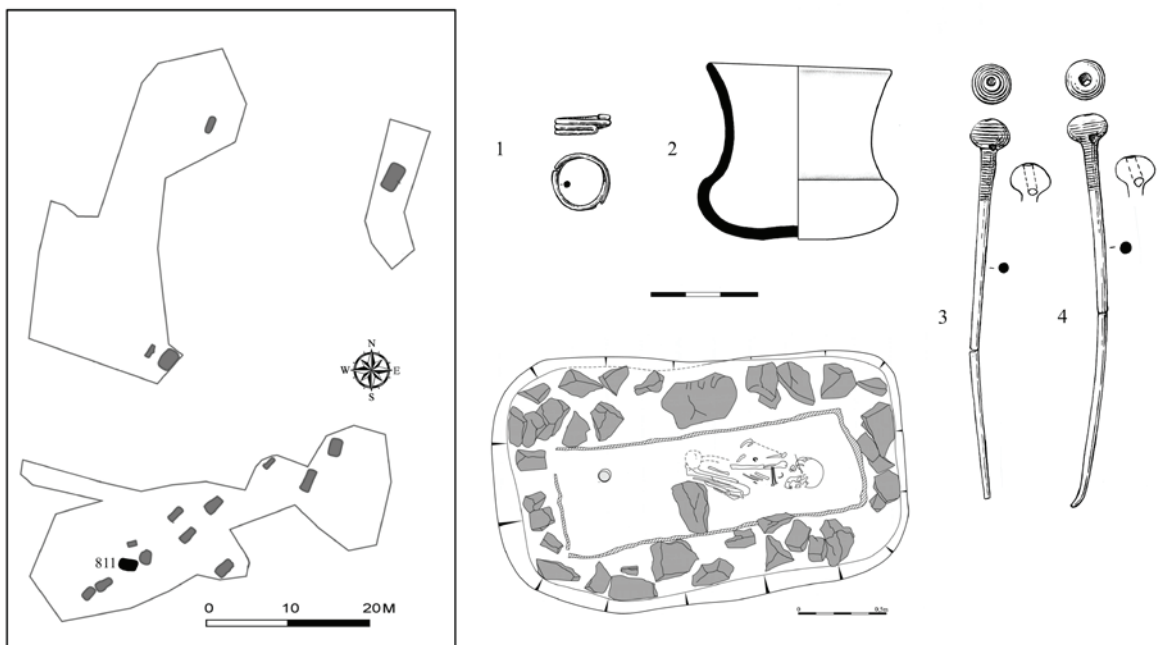
Grave 22 from the 'Vinohrady' site in Těšetice with a tree-trunk coffin covered with stones and with a secondary disturbance is considered to be one of the latest features in the Těšetice cemetery. It contained a smaller smoothed jug and a small dagger (Fig. 7; LORENCOVÁ – BENEŠ – PODBORSKÝ 1987, 43–45, 128, fig. 14a–b). The jug has parallels in Moravia in material dated to



the ÚC (LORENCOVÁ – BENEŠ – PODBORSKÝ 1987, 128, fig. 36b, 44c; MORAVCOVÁ – KALA 2019, tab. 18/1, 20/4). Z. Benkovsky-Pivovarová classified similar forms as jugs of broader type G-3, which she records as ÚC (BENKOVSKY-PIVOVAROVÁ – CHROPOVSKÝ 2015, 31, Taf. 37/3, 39/8). A bronze dagger with three rivet holes and an omega-shaped hilt line (**Fig. 7**) was dated to the classic phase of ÚC (Nr. 84: NOVÁK 2011, 47). Radiocarbon dating placed Grave 22 from Těšetice in 1956–1751 BC (probability 95.4%; **Figs. 3, 6**), which corresponds to a classification of inventory in the late period of the ÚC.

The pit of Grave 45 from the ‘Vinohrady’ site in Těšetice (LORENCOVÁ – BENEŠ – PODBORSKÝ 1987, 79–81, fig. 36a–b) covered with stones and with a secondary disturbance contained a thin-walled jug, a higher conical bowl, a small conical beaker, and the remnants of a bronze dagger. The shaft held a cup (**Fig. 7**) considered as one of latest vessels on the cemetery, very similar to the cup from the Grave 22 (LORENCOVÁ – BENEŠ – PODBORSKÝ 1987, 124, 126, 128). The date of 1936–1746 BC (probability 95.4%; **Figs. 3, 6**) from Grave 45 is similar to Grave 22 too. Based on the inventory, a range from the late period of the ÚC can also be assumed in this case.

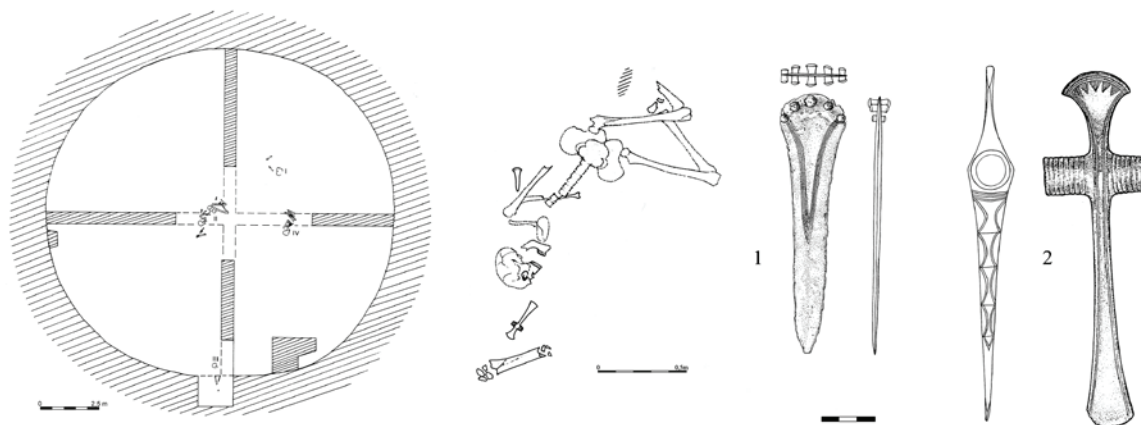
Grave 811 with a wood coffin covered with stones was chosen from the ‘Rybníky’ site in Modřice. The inventory contains two pins with a spherical head (diam. 12 mm) with an oblique perforation (*schräg durchlochte Kugelkopfnadel*, Typ Matzhausen) and a small handle-less vessel (**Fig. 8**). Pins with an oblique perforation are regarded as artefacts from the end of the Early Bronze Age in the Br A2. Dating of the pieces with decoration of engraved lines on the head to the Únětice period is supported by both typological reasons and by radiocarbon dates (BENKOVSKY-PIVOVAROVÁ – CHROPOVSKÝ 2015, 51–52, Abb. 120; ERNÉE 2015, 270; INNERHOFER 2000, 82–83; MASSY 2018, Abb. 21; PEŠKA *et al.* 2011, 57, fig. 4). Two samples were taken from the skeleton, and the combination of the two dates falls into the range of 1880–1699 BC (probability 95.4%, **Figs. 3, 6**; OxCal R-Combine: BRONK RAMSEY 2009). Based on the grave inventory and absolute dates, the burial assemblage can be placed at the late period of the ÚC, though not the very end of the Early Bronze Age.



**Fig. 8:** The Modřice ‘Rybníky’ cemetery. Grave 811.

Four published graves from central Moravia typologically classified from the early to post-classic phase of the ÚC have a comparable radiocarbon dating (**Figs. 3, 4, 6**). Grave 55 from Olomouc-Slavonín has an identical dating to Grave 38 from the Hulín 1 site. Two additional dates also come from Grave 31 and 32 at the Hulín 1 site. The majority of Únětice burials cannot be dated more precisely on the basis of typology than to the interval between the classic and post-classic phase of the ÚC, which means that we can speak of the late period of the ÚC in terms of with S. Stuchlík's periodisation. Artefacts typologically classified in the classic phase mix with those from the early, classic, and post-classic phases of the ÚC. Therefore, within the typo-chronology of Moravian material, the 'classic phase' of the ÚC represents rather patterns of the Únětice distribution sphere with a longer interval of occurrence. Both radiocarbon dates and typological analyses indicate a longer existence of both ceramic and bronze types. As such, artefacts do not represent just a chronological structure but multiple parallel material traditions living side by side (cf. BENKOVSKY-PIVOVAROVÁ – CHROPOVSKÝ 2015). Such long-lived types are also assumed by the new study about Early Bronze Age burials in southern Bavaria (MASSY 2018, 84, 265).

Two graves can be classified in VG, i.e. to the end of the Moravian Early Bronze Age (Borotice and Hulín 'U Isidorka' Gr. 108); the median of their radiocarbon dating falls between the years 1700 and 1600 BC. Grave 2 in Barrow 2 in Borotice (STUHLÍK 2006, 35–38, fig. 22–23) provided two dates (from the same bone, **Figs. 3, 6**) whose calibration gives an interval of 1741–1622 BC (probability 95.4%, OxCal R-Combine: BRONK RAMSEY 2009). Based on its inventory – a Křtěnov type axe-hammer (*Schafttröhrenaxt vom Typ Křtěnov*; ŘÍHOVSKÝ 1992, Nr. 44: 45–46; DAVID 2002, 347–356, Abb. 5.5; STUHLÍK 2006, 182–185) and dagger with a butt plate (*Griffplattendolch*) with five massive rivets (STUHLÍK 2006, 182; NOVÁK 2011, Nr. 323: 79–80) – the assemblage is dated to the late period of Br A2 (**Fig. 9**). The second Věteřov assemblage is Grave 108 with a wooden grave chamber from the Hulín 1 site placed separately away from the group of ÚC graves, which provided an identical date (**Figs. 3, 4, 6**).



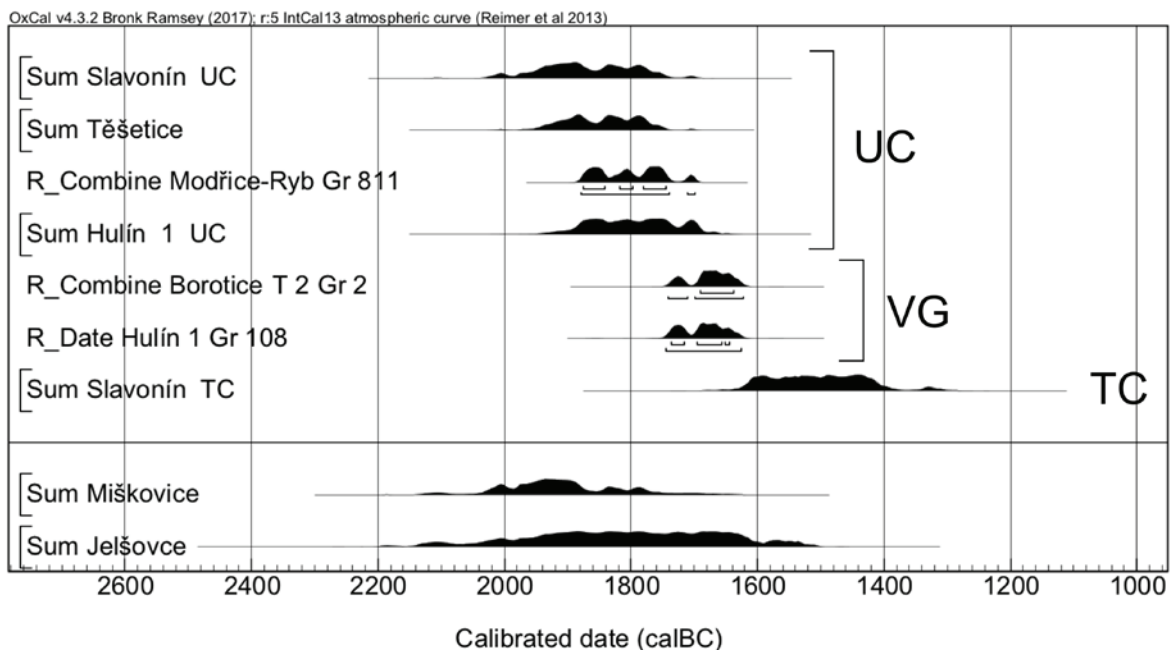
**Fig. 9: The Borotice cemetery. Barrow 2, grave 2 (STUHLÍK 2006).**

Male Grave 4 from Vrchoslavice in the Prostějov region (PEŠKA 2012c, 14–16, fig. 5) with a palstave axe and a dagger was also dated to VG based on a typological analysis. A very late date in the range of 1530–1417 BC (probability 95.4%; **Figs. 3, 6**) corresponds to the radiocarbon dates of two graves from Slavonín (1599–1304 BC and 1636–1460 BC, both with probability 95.4%) regarded as typical burials from the beginning of the Middle Bronze Age (Graves 73 and 86:

ŠMÍD 1998; PEŠKA 2012a). On the basis of parallels (**Fig. 4**), the dating of Gr. 4 from Vrchoslavi- ce to the Middle Bronze Age cannot be ruled out. The continuation of elements of material culture and settlements from the end of the Early Bronze Age into the Middle Bronze Age has long been considered a possibility (STUHLÍK 1984; NEUGEBAUER *et al.* 1994, Abb. 4; STUHLÍK 2006, 221; BENKOVSKY-PIVOVAROVÁ – CHROPOVSKÝ 2015, 122–123; BENKOVSKY-PIVOVAROVÁ – STADLER 2019).

## CEMETERIES AND THE EXTERIOR TREATMENT OF GRAVES

For a basic orientation in the development of burial practices, we can apply the radiocarbon dates of individual burials from Moravia to the development of cemeteries. Cemeteries clas- sified in the Únětice culture based on radiocarbon dates (Hulín 1, Modřice-Rybníky, Slavonín, Těšetice) were not abandoned according to radiocarbon curves in ca. 1750–1700 BC (**Fig. 10**). The latest dates of the ÚC burials are similar to the earliest dates of Věteřov group burials and they do not seem to continue whilst the Věteřov burial grounds are established. The Hulín 1 ‘U Isidorka’ site represents the possible development of a single community, where the post- classic ÚC cemetery is replaced by a separate VG site (at a distance of 335 m: DAÑHEL 2010).



**Fig. 10: Comparison of radiocarbon curves of cemeteries from the Early and beginning of the Middle Bronze Age. The cemetery of Miškovice after ERNÉE 2015 and of Jelšovce after BÁTORA 2000.**

Two burials (Borotice Barrow 2, Grave 2 and Hulín 1, Grave 108) representing the Věteřov group provided radiocarbon dates between the years 1750 to 1610. Data from burials with assemblages that can be well classified based on inventory indicate a very later beginning of the Věteřov Group as the data from open settlement features published by J. Peška (2012a). The date from Grave 4 from Vrchoslavi- ce regarded as of the Věteřov group corresponds to the period at the beginning of the Middle Bronze Age. The dating of the cemetery in Vrchoslavi- ce

exclusively to the VG is therefore unclear (PEŠKA 2012c, 6–7, tab. 1). The radiocarbon curve of the Tumulus culture burials from Slavonín begin roughly after the year 1620 BC (cf. PEŠKA 2012a). Survival of some Early Bronze Age elements until the beginning of the Middle Bronze Age has long been assumed in central and northern Moravia on the grounds of settlement evidence (STUHLÍK, 2006, 221).

Lately an essential article summarizing radiocarbon data from the hilltop settlements in Austria and southern Bohemia was published, which again points to the survival of Early Bronze Age settlements to the beginning of the Middle Bronze Age (BENKOVSKY-PIVOVAROVÁ – STADLER 2019). The date from Vrchoslavice, Grave 4, shows that survival of Early Bronze Age material traits in the Middle Bronze Age is a real phenomenon.

Hence, it is possible to declare that based on the radiocarbon dates currently available for the ÚC, burials ended in its post-classic phase while Věteřov Group cemeteries were established at new locations. Because the continuity of VG and TC cemeteries was previously clearly documented by the analysis of the barrow cemetery in Borotice (STUHLÍK 1992; 2006), we can postulate based on the current state of knowledge, that it is the end of the ÚC that is the turning point in the placement of burial sites and apparently also in burial practices in Moravia. However, links between ÚC and VG may be visible in smaller burial grounds such as the cemetery in Branišovice (STUHLÍK 2009, 178).

As far as comparison with the dates from the cemeteries in Miškovice and Jelšovce is concerned, the latest grave from Miškovice dated to the post-classic ÚC in Bohemia is contemporary with graves dated to the post-classic phase in Moravia. The earliest TC dates in Moravia correspond to the latest radiocarbon dates from the cemetery in Jelšovce (BÁTORA 2000) or other large cemeteries in the Danube region (e.g. Franzhausen II, NEUGEBAUER *et al.* 1994, 96), which ended at the beginning of the Middle Bronze Age.

The major difference between the number of Únětice graves (at least 1030) and Věteřov graves (at most 108 certain and uncertain) in Moravia must be the result of a complex change in burial practices, not only of a shift in burials from settlement features and vessels, in which respect the numbers of deposited Únětice and Věteřov individuals are comparable.

For years, one of the reasons given for the low number of VG graves was their placement under barrows, where bodies were deposited on the surface or in the actual mounds (STUHLÍK 1990, 142). The building of barrow mounds is not commonly accepted for the ÚC in Moravia, and examples from Letonice and Suchohrdly were regarded as random later overlays (STUHLÍK 1990; STUHLÍK 1993, 247; STUHLÍK 2006, 157). However, Únětice graves under barrows are now being discovered (e.g. Sudice: PŘICHYSTAL 2012). Mounds are also considered at several cemeteries with greater distances between graves or with isolated graves, both ÚC and VG (Branišovice, Mušov, Olbramovice; STUHLÍK 1990, 141–142; STUHLÍK 2006, 133; PEŠKA 2012c, 5). As barrow burials are documented for the ÚC period in neighbouring regions (STUHLÍK 1990; 2006; DANIELISOVÁ *et al.* 2013) it cannot be ruled out that also in Moravia this phenomenon began already in the ÚC period. Barrow burials and the deposition of graves on the surface increase in intensity in the Middle Bronze Age.<sup>4</sup> In the barrow cemetery in Borotice, depositions on the terrain surface or on various levels of the mounds made up a significant share of both Věteřov group and Tumulus culture burials. Among the Věteřov graves, the burials sunk in the shallow topsoil prevailed, none was in the subsoil. Among Tumulus graves only four were sunk into the subsoil (STUHLÍK 2006,

4 A separate article is in preparation on this topic on the basis of the work: PARMA – ŠABATOVÁ forthcoming. Attention is focused in this work on the sequence of gradual changes in the Middle Bronze Age burial practices.

146–147, 161–162). Even this trend has probable antecedents in the ÚC (Těšetice ‘Vinohrady’: LORENCOVÁ – BENEŠ – PODBORSKÝ 1987, 17; Hulín 1: PEŠKA 2012b, 491).

## ACKNOWLEDGEMENTS

We thank M. Dobisíková, S. Stuchlík, V. Podborský, Z. Tichý, and P. Velemínský for the opportunity to collect samples from Borotice, Těšetice-‘Vinohrady’, and Těšetice-Kyjovice ‘Sutny’ (National Museum and Moravian Museum). The OxCal4.3 program was used for the calibration (BRONK RAMSEY 2009). This paper is an outcome of project The Early Bronze Age burial practises based on absolute data (MUNI/21/SAB/2019).

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