

THE CHRONOLOGY OF THE HALLSTATT PERIOD IN MORAVIA

Impact of the Wagon Graves for Synchronisation of East and West Hallstatt Cultures

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DOI: <https://doi.org/10.31577/szausav.2024.71.16>

Keywords: Central Europe, Moravia, Hallstatt period, chronology, burial grounds, wagon graves

The Moravian region occupies a central position in the Northern part of the East Hallstatt culture. There are two regional groups – the Horákov and Platěnice groups. Both of them provide numerous information for the study of chronology. Priority are chosen burial sites with suitable dates, which can be classified into the individual stages, phases and sub-phases of Reinecke's or horizons of Parzinger's periodisation. Within the Platěnice group these are namely the burial grounds in Moravičany, Dílečky, and Seloutky, Na Šťastných. Within the Horákov group we deal with the necropolises in Modřice, Rybníky and Sádky, and Vojkovice, Vojkovické nivy. The central burial ground including cave sanctuary Habrůvka, Býčí skála (not place of sacrifice), is related to both regions. The wagon graves are of strategic importance for the interregional chronology. While the Horákov group offers five of them, the first one in the Platěnice group has been identified at the burial site of Seloutky, Na Šťastných, which is quite newly introduced among the older sites. The fact that the wagon was recognized in a grave with cremation burial is of key importance. Habrůvka, Býčí skála, then offers six unique wagons. Moravia plays an important role for comparison of chronology with neighbouring Bohemia, Slovakia, Austria and Poland. Graves with wagons allow correlations across distant regions up to Bavaria, Baden-Württemberg or Eastern France.

INTRODUCTION

Periodization of the Hallstatt period in Moravia was presented in several works in the 1990s (*Nekvasil 1993; Říhovský 1993; Stegmann-Rajtár 1992*). All these works are now outdated. A special meaning for the Moravian region had the evaluation of the cave site Habrůvka, Býčí skála, which has been the local leitmotif of this era for 150 years (*Parzinger/Nekvasil/Barth 1995*). In this time Moravia became part of the European systems of the Hallstatt period (*Pare 1998; 1999; Torbrügge 1992*). Subsequent research on the periodization of the Hallstatt period followed the line of domestic research with a number of local works on the topic of graves, which did not correlate with neighbouring regions, however (e.g. *Golec 2005; Kos 2004; 2011; 2014; 2015; Makarová 2017*). In the last 30 years, a considerable amount of data has been collected and evaluated, and we draw on this data for the study of chronology. The most recent summary of chronology based on grave data has been presented recently (*Golec/Fojtík 2020, fig. 68; Kos et al. 2022a; 2022b*).

This paper aims to structure the most significant data from the burial sites and correlate them with neighbouring and distant regions. Two chronological lines are crucial for Moravia: in the Southern direction those of the regions along the branches of the Amber Road within the East Hallstatt culture – Eastern Austria, Western Slovakia, Western Hungary, as well as Slovenia, Croatia, Serbia and Italy (latter three are beyond the topic of this paper); in the Western direction chronology of the regions within the West Hallstatt culture – Bohemia, Western Austria, Bavaria, Baden-Württemberg and Eastern France. The region of Poland in the north should be revised in the future. The Eastern direction outside the Hallstatt culture poses a specific problem that goes beyond the scope of the present paper. Linking of wagon (and horse harness) graves across regions appears to be crucial for interregional chronology, as these assemblages respond very quickly and subtly to stylistic changes over large areas.

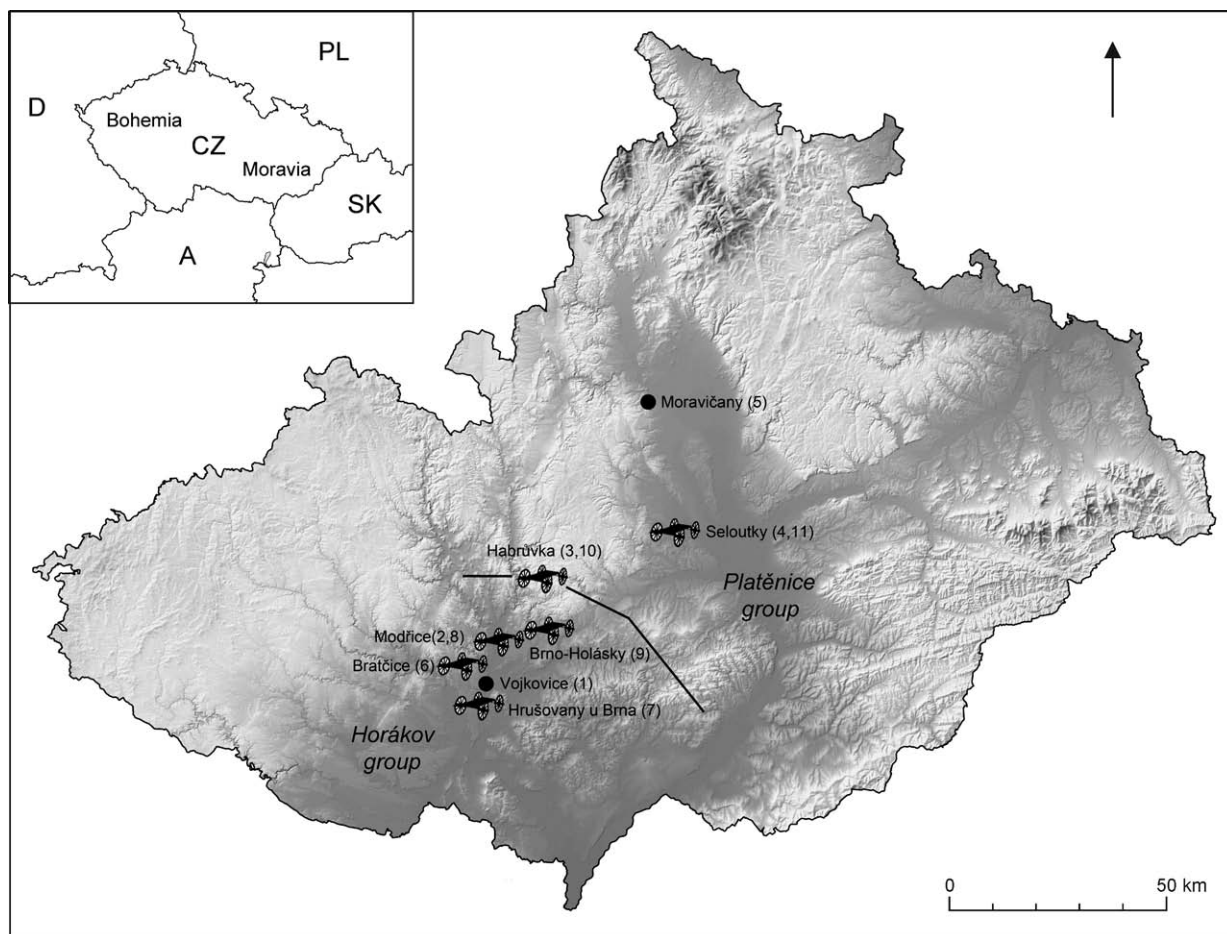


Fig. 1. Burial grounds of the Horákov and Platěnice group (Ha C1–Ha D1) and the former Horákov and Platěnice group in the Late Hallstatt period (Ha D2–Ha D3) in Moravia: 1 – Vojkovice, Vojkovické nivy; 2 – Modřice, Rybníky and Sádky; 3 – Habrůvka, Býčí skála (burial ground in a cave sanctuary); 4 – Seloutky, Na Šťastných; 5 – Moravičany, Dílečky. Graves with four-wheeled wagons of the Horákov and Platěnice group (Ha C2–Ha D1) and the former Horákov group in the Late Hallstatt period (Ha D2–Ha D3) in Moravia: 6 – Bratčice, Mělčanská, grave H1; 7 – Hrušovany u Brna, U Tří mostů, grave H1; 8 – Modřice, Rybníky, grave H3515; 9 – Brno-Holásky, U Tuřan, graves H1 and H2; 10 – Habrůvka, Býčí skála, wagons V1–V6; 11 – Seloutky, Na Šťastných, grave H2/1926.

SELOUTKY BURIAL GROUND

In 2020 a new burial site was published – Seloutky, Na Šťastných, Prostějov District (Golec/Fojtík 2020). It offers a significant set of information on the chronology of the Platěnice group in Moravia (Fig. 1). While a much larger amount of information on graves was known from the more southerly situated Horákov group (Fig. 1), we have so far lacked such a representative site from the Platěnice group that offers possibility for correlation with neighbouring regions.

The burial ground of Seloutky, Na Šťastných (Fig. 1: 4), was excavated in two periods – in 1923, 1926, 1932, 1934, and after a long pause, in 2012, 2017, 2019, and 2020, with modern documentation methods (Golec/Fojtík 2020). Between 1923 and 1934, 26 graves were investigated, at least three of which are chamber graves (H2/1926, H24/1934, H26/1934). Many graves from 1923–1934 cannot be analysed in detail due to lacking documentation. Grave H2/1926, as it will be discussed below, proved to be crucial as containing parts of a burnt four-wheeled wagon (Fig. 1: 11). Renewed rescue excavation at the new house parcels in 2012 revealed 11 graves, of which four were chamber graves (H1/2012 Kašina; H6/2012, H8/2012, H10/2012). In 2017, additional ten graves were researched, of which four were chamber graves (H1/2017–H4/2017; 1 grave H11/2017 unexcavated). The last graves were discovered in 2019, namely two chamber graves (H1/2019–H2/2019), and in 2020 – three graves, of which one was a chamber grave

(H3/2020). Between 1923 and 2020 in Seloutky, Na Šťastných, were researched 53 graves and cremation ground near H20/1932 grave. 15 of them were chamber graves, in total 28.3% of all graves, others were classified as pit graves or small pit graves. Combining the anthropological and archaeological methods it could have been proved that female graves occur in larger number than male graves (ratio 7:1), for chamber graves the ratio of female to male graves is 3:1. Two chamber graves can belong to both sexes. All graves were cremation burials that is typical attribute for the Platěnice group in Central Moravia. All chamber graves had wooden log construction and were lined on the sides and on the ceiling with stones.

In 2020, 125 graves (and burials in the tomb of the cave sanctuary Habrůvka, Býčí skála) were chronologically classified using the metal and glass inventories from the Horákov and Platěnice group in Moravia (*Golec/Fojtík 2020, 220*). Graves with metal and glass inventory from Seloutky, Na Šťastných, belong to two phases: Ha C2 – Seloutky, ‘hrob bez kontextu’ (grave without context), H24/1934, H4/2012 and H10/2012, respectively Ha C2b – Seloutky H2/1926, H4/2017, and H2/2019; Ha D1 – Seloutky H1/2012 Kašina, H8/2012, H3/2017, and H1/2019; the cremation ground near H20/1932 is assigned to the Ha D1–Ha D2 (*Golec/Fojtík 2020, fig. 68*). Grave H3/2020 was the last grave at the site researched; it falls into the Ha D1 phase and was not included in mentioned monograph (and is not yet published). Thus, in total, at the burial site with 53 excavated graves, we can classify 12 graves (that is 1/4 of the graves) and one grave without context into the range of one phase or subphase. At the same time, it is about 1/10 of all dated graves of the Horákov and Platěnice group (Ha C1 – Ha D1) and the former Horákov and Platěnice group in the Ha D2–Ha D3 phase, when we no longer distinguish local groups due to the absence of different elements on the ceramics in the whole territory of Moravia. The contribution of the burial ground Seloutky, Na Šťastných, to the chronology of the Moravian Hallstatt period is obvious. It has potential especially for the correlation with the north lying regions (Poland). Whole Platěnice group in Moravia formally represents the southern edge of the older Lusatian culture (style), but it is fully transforming at this time under a new and progressive Hallstatt style.

SELECTED MORAVIAN BURIAL GROUNDS

The basis for the chronology of the Moravian Hallstatt period are burial grounds with more phases. Five sites offer the greatest potential (Fig. 1; Table 1). Two of them are located in the Horákov (and former Horákov) group in South Moravia – Vojkovice, Vojkovické nivy (Fig. 1: 1; Table 1: 1), and Modřice, Rybníky and Sádky (Fig. 1: 2; Table 1: 2); two are located in the Platěnice (and former Platěnice) group in Central Moravia – Seloutky, Na Šťastných (Fig. 1: 4; Table 1: 3), and Moravičany, Dílečky (Fig. 1: 5; Table 1: 4). A unique cave burial ground Habrůvka, Býčí skála (Fig. 1: 3; Table 1: 5), on the border of South and Central Moravia belongs to both areas as a central site.

Table 1. Overview of selected burial grounds forming the basic dataset for the chronology of the Hallstatt period in Moravia (after *Golec/Fojtík 2020, fig. 68*).

Site and position	Total graves	Total dated graves by metal and glass	Elite graves	Wagon graves	Chronology of site
1. Vojkovice, Vojkovické nivy	23	11	1	0	Ha C(1)2–Ha D2a
2. Modřice, Rybníky and Sádky	100	17	3	1	Ha C1b–Ha D1 (D2?)
3. Seloutky, Na Šťastných	53	12	1	1	Ha C2–Ha D2
4. Moravičany, Dílečky	330	17	0	0	Ha C(1)2–Ha D3
5. Habrůvka, Býčí skála	min. 40 (burials)	min. 12 (burials)	min. 12 (burials)	6 (burials)	Ha D1b–Ha D3

Burial ground Vojkovice, Vojkovické nivy, Brno-venkov District, was researched in 1994. It was chronologically evaluated in an unpublished Ph.D. thesis in 2005 (*Golec 2005, 141–267*). The largest burial ground of the Horákov group – Modřice, Sádky and Rybníky, Brno-venkov District, was researched in 1995, 1997, 2003–2009 and 2015 (*Kos 2015, 4; Kos et al. 2022a, fig. 1*). The chronology of

Modřice sites has been summarised (Kos 2022a, fig. 101) and discussed and correlated in Table 3. As already mentioned, the burial ground Seloutky, Na Šťastných, Prostějov District, researched in 1923, 1926, 1932, 1934, 2012, 2017 and 2019–2020, has been published with a chronology (Golec/Fojtík 2020, fig. 68). The largest Platěnice burial ground Moravičany, Dílečky, Šumperk District, was researched in 1953–1968. A catalogue of inventories, but not plans of graves, was published in 1982 (Nekvasil 1982). The site became the subject of an unpublished Ph.D. thesis by E. Makarová, who, however, did not present the overall chronology of the site (Makarová 2017). The central cave site with a higher number of elite burials is Býčí skála in Habrůvka, Blansko District. The site was investigated already in 1872. A catalogue of the finds and a detailed chronology was published in 1995 (Parzinger/Nekvasil/Barth 1995). New evaluation of the four-wheeled wagons from the site enabled determination of their number (wagons V1–V6) and chronology (Mírová 2019, 88–96, fig. 67). The chronological position of the site was presented recently (Golec/Mírová 2020).

All five above mentioned sites have been presented in the chronological model for Moravia together with other graves and hoards of the Platěnice group (Golec/Fojtík 2020, fig. 68).

WAGON GRAVES AND BURIALS IN MORAVIA

The evidence of Hallstatt period graves with wagons in Moravia is of relatively recent date. As late as 2008, two chambered graves with traces of wagon wheel troughs were found at two sites – at Hrušovany u Brna, U Tří mostů, grave H1 (Fig. 1: 7; Table 2: 2; Kos 2011, 173, fig. 1), and at Modřice, Rybníky, grave H3815 (Fig. 1: 8; Table 2: 3; Kos 2014, fig. 81; 2015, 49–58; Kos *et al.* 2022a, 60–67, fig. 72–75, 79, 94: 1; 2022b, table 171–178; Mírová 2019, 74, fig. 67). It should be noted, however, that these tracks, i.e. the wheel depressions of a four-wheeled all-wood wagon, were first interpreted only as *pars pro toto* and not as an real wagon. However, this interpretation has since been abandoned, not least because of the presence of similar wheel troughs from wagon-like sites from, for example, Bohemia, Eastern France or Bavaria (cf. e.g. Lambot 2018, fig. 15; 81; 84; 88; 107; 108; 217; 324; 341; 395; 453; Pare 1992, fig. 157; 186; 212; Soudská 1994, fig. G4). For a definitive classification of graves with wagons, it is necessary to combine the inclusion of parts from the wagon, if available, and also the usually attached various horse harness.

The grave from Hrušovany u Brna, U Tří mostů, grave H1 (Fig. 1: 7; Table 2: 2) contained, besides the wagon, a yoke richly decorated with studs, nails, rivets and sheets (altogether almost 2000 pieces) with fastening by four toggles of the Lhotka type (KNE 05c after Trachsel 2004; M YT3 after Mírová 2019). Other parts of the harness are two twisted Brno-Holásky type bits (MST 09a after Trachsel 2004; M BB6 after Mírová 2019) and one piece of the Kameniec type bit (MST 09x after Trachsel 2004; M BB7 after Mírová 2019). One piece of the bit was equipped with the Schöngeising type side hook (ZHK 03a after Trachsel 2004; M BH1 after Mírová 2019) and two pieces of a tutuli-like knob with eight eyelets on the sides of the Gendorf type (TUT 01b after Trachsel 2004; M BDk6 after Mírová 2019). Based on the wagon, yoke and horse harness, the grave can be conclusively dated to Ha C2b.

A similar case is the grave from Modřice, Rybníky, grave H3815 (Fig. 1: 8; Table 1: 2; 2: 3). Here, only the troughs of the wheels are preserved from the all-wooden wagon, and two regularly spaced lacing rings are located along the yoke. From the harnesses we can classify two pieces of the Brno-Holásky type twisted bits (MST 09a after Trachsel 2004; M BB6 after Mírová 2019), hemispherical knobs of the Beratzhausen type (KNO 01d after Trachsel 2004; M BDk7 after Mírová 2019), drag decoration of the Lhotka type (RFK 05b after Trachsel 2004; M BDd10a–b after Mírová 2019), arched drag decoration with crossed ribbons of the Mitterkirchen type (KNO 03d after Trachsel 2004; M BDd11 after Mírová 2019). Based on these components, the grave can be safely dated to Ha C2a.

Two more wagons were evidenced by the 2018 revision at the site researched in 1925 in Brno-Holásky, U Tuřan, graves H1 and H2 (Fig. 1: 9; Table 3: 4; Mírová 2019, 74, fig. 67; Mírová/Golec 2018). In both of them, apart from the relics of a four-wheeled wagon – fragments of Brno-Holásky type tyre rim fittings (M WT1 after Mírová 2019), iron nails, decorated nave cap of the wheel hub, and fragments of a yoke (wooden and leather parts), Annelöv type toggle (KNE 05b after Trachsel 2004; M YT2 after Mírová 2019), numerous parts of horse harnesses were found – e.g. twisted bits of the Brno-Holásky type (MST 09a after Trachsel 2004; M BB6 after Mírová 2019), tutuli-like knobs of the Morašice type (TUT 02c after Trachsel 2004; M BDk5 after Mírová 2019), hemispherical knobs of the Beratzhausen type (KNO 01d after Trachsel

Table 2. Overview of graves and burials with wagons in the Hallstatt period in Moravia (after *Mírová 2019*, fig. 67). H ('hrob') – grave; V ('vůz') – wagon.

Site	Total graves	Wagon graves	Dating of wagon graves
1. Bratčice, Mělčanská, grave H1	1	1	Ha D1a
2. Hrušovany u Brna, U Tří mostů, grave H1	2	1	Ha C2b
3. Modřice, Rybníky, grave H3815	100	1	Ha C2a
4. Brno-Holásky, U Tuřan, graves H1 and H2	4	2	Ha C2a
5. Seloutky, Na Šťastných, grave H2/1926	53	1	Ha C2b
6. Habrůvka, Býčí skála, wagons/burials V1–V6	min. 40	6	V1 and V5 – Ha D1b–Ha D2a; V2 and V4 – Ha D2; V3 – Ha D2b; V6 – Ha D3

2004; M BDK7 after *Mírová 2019*), tutuli-like drags of the Buchheim type (RFK 07 after *Trachsel 2004*; M BDd5 after *Mírová 2019*), open tutuli-like drag decorations with five thorns of the Niederfellabrunn type (RFK 08 after *Trachsel 2004*; M BDd6 after *Mírová 2019*) or cross drag decorations of the Pullach type (KZR 02 after *Trachsel 2004*; M BDd12 after *Mírová 2019*) and the Legrad type (KZR 03 after *Trachsel 2004*; M BDd13 after *Mírová 2019*). Both graves can thus be dated identically to Ha C2a.

Another wagon has been identified by revision in the chamber grave H1 in Bratčice, Mělčanská (Fig. 1: 6; Table 2: 1; *Mírová 2019*, 74, fig. 67). Only two reparation elements have been preserved from the wagon – the clamps of the Bratčice type wheel felloes (M WCL1; *Mírová 2019*, 82, pl. 24: 15, 16). The grave is dated on the basis of other inventory items – e.g. four pieces of toreutics, an iron twisted spit and an iron belt with clamps and rings (see *Golec/Mírová 2020*, fig. 4) to Ha D1a.

All of the above pieces of wagons belong to the Horákov group.

A significant surprise was the discovery of a wagon in the cremation grave H2/1926 of the Platěnice group in Seloutky, Na Šťastných (Fig. 1: 11; Table 2: 5; *Mírová 2019*, 74, fig. 67). Only by a lucky coincidence (the whole cremation was never deposited in the urn graves of the Platěnice group, only the absolute – rather symbolic – minimum), small fragments of the Brno-Holásky (M WT1 wheel rim fittings after *Mírová 2019*), wheel nails and 1 Seloutky-type wheel linchpin (M WL1 after *Mírová 2019*) were recovered from the cremation and placed in the grave. This is the first wagon from the Hallstatt period in Moravia discovered in a cremation grave. A similar one is known from Bohemia only from Praha-Bubeneč, U Modré růže, grave H3, but there the cremation was deposited on a complete unburnt wagon (Table 3; *Koutecký 1968*, 422), the same case was e.g. in Bavaria in Leipheim, Waldteil Justing-West, T14 (*Pare 1992*, 301), or in Western Hungary in Somlóvásárhely, T1 (Table 4; *Trachsel 2004*, 423). The dating of the grave H2/1926 from Seloutky, Na Šťastných, to Ha C2b is supported not only by the horse harnesses – the younger smooth bits of the Grosseibstadt type (MST 12b after *Trachsel 2004*; M BB8 after *Mírová 2019*), the side hook of the Mokrá-Horákov type (M BH2), the hemispherical knobs of the Beratzhausen type (KNO 01d after *Trachsel 2004*; M BDK7 after *Mírová 2019*), and drag decoration with a surface and hemispherical protrusion of the Solany type (RFK 10c after *Trachsel 2004*; M BDd7 after *Mírová 2019*) – but also by other inventory (in particular a male iron belt with clamps and rings; see *Golec/Fojtík 2020*, fig. 44).

The situation with the wagons from the cave of Habrůvka, Býčí skála (Fig. 1: 10; Table 2: 6), was quite complicated. The wagon was known here since the discovery of the site in 1872, but the evaluation is of much younger date and a larger number of wagons was proved. F. E. Barth presented extensive catalogue of the wagon parts; he managed to associate the parts of three different wheels with three different wagons and managed to assign a body to one of them (*Barth 1987; 1995*), but he did not perform typological-chronological analysis. Ch. Pare detected five different wagon types (*Pare 1992*). Finally, M. *Trachsel (2004)* described ten wagon 'units', however, he didn't set a final number of wagons. New revision was performed in 2019 (*Mírová 2019*, 88–96), concerning also parts of wagons from Moravian Museum in Brno and parts of wagon bodies and construction elements. New chronological-typological evaluation of all pieces that could be related to the wagon were arranged (*Mírová 2019*, fig. 26). Then, with clearly defined methodology (1. chronological-typological evaluation; 2. typological and chronological contem-

Table 3. Chronologically classified selected burial grounds, graves with wagons or chronology systems of selected sites from Moravia (dated by metal or glass items) and Bohemia. Graves with wagons are marked in bold; T – tumulus; H ('hrob') – grave; V ('vůz') – wagon.

Phase	Moravia (East Hallstatt culture)						Bohemia (West Hallstatt culture)				
	Seloutky, Na Štástných	Moravičany, Dlečky	Vojkovice, Vojkovické nivy	Modřice, Sádky and Rybníky	Habrůvka, Byčí skála	Other wagon graves	Lovosice, Aoyama	Hradenín	Other wagon graves	Dolní Brežany, Závist	Manětín-Hrádek
Ha C1a		graves (dated by ceramics?)	H93, H124 (dated by ceramics)				Lovosice I (H1/2002, H28A/2002)		Rovná u Strakonice T1 burial 1 (826–778 BC)		
Ha C1b							Lovosice II (H16/2002, H19/2002)	H24			
Ha C2 (a and b)	Hwithout context, H26/1934, H4/2012, H10/2012	H21, H103, H220, H966, H1023, H1099, H1128, H1167	H22, H25, H62, H67, H109	H3815	H2/1997, H3814	Brno-Holásky H1 and H2	Lovosice III (H17/2002, H18/2002, H24/2002, H26/2002, H27/2002, H32/2002)	H1	Nehvizdky H1, Ohrada u Kolína	Dýšina T2, Miškovice	I
		H2/1926, H4/2017, H2/2019		H3846	H1800	Hrušovany u Brna H1			Dolany, Poláky H21, Praha-Vinoř, Straškov-Račíněves		
Ha D1 (a and b)	H1/2012 Kašina, H8/2012, H3/2017, H8/2017, H1/2019, H3/2020	H31, H1119, H1145	H4, H60, H110	H802, H817, H827, H1801–1803, H1862, H1864–1865, H2891	BS1 (burial 1–2, 5, wagons V1, V5)	Bratčice	Lovosice IV (H28B/2002, H23/2002)	H5	Nymburk-Haběš, Opařany T2		II
Ha D2 (a and b)	cremation ground by H20/1932	H1154	H117	graves (dated by ceramics?)	(burial 3–4, wagons V2, V4)					horizon 1	III
Ha D3		H1247			BS2 (wagon V3)				Hanov T1/1895, Kladruby, Praha-Bubeneč H3, Rovná u Strakonice T1 burial 2	horizon 2	
LT A					BS3 (wagon V6)				Hořovičky, Lučice, Manětín-Hrádek H196, Mirkovice T9, Skalce nad Lužnicí T1, Sedlec-Hůrka, Želkovice	horizon 3 and 4	IV

poraneity parts; 3. minimal number of various parts; 4. style similarity), final number of wagons was set up (Mírová 2019, fig. 27). In total, seven contexts of wagons from Habrůvka, Býčí skála, were described. Six contexts show the physical existence of six various wagons, seventh context (V7) is constituted by unrecognized semi-finished products for the production of sheet metal parts of the body of the wagon, which demonstrates the existence of a wagon production workshop. Their dating is following: wagons Habrůvka, Býčí skála, V1 and V5, are dated to Ha D1b–Ha D2a, just as the semi-finished product from Habrůvka, Býčí skála, V7. The wagons Habrůvka, Býčí skála, V2 and V4, fall into Ha D2, the wagon Habrůvka, Býčí skála, V3, to Ha D2b, the wagon Habrůvka, Býčí skála, V6, is then the latest appearance of the wagon – it belongs to Ha D3. Most of the analogies (and closest analogies) for these wagons can be found in Baden-Württemberg (see following chapter). Dating of these wagons is supported by other harness components: yoke pendant of the Woskowice type (M YP1 after Mírová 2019), flat phalerae of the Opařany type (FAL 16b after Trachsel 2004; M BDf10 after Mírová 2019); phalerae of the Obernricht type (FAL 17b after Trachsel 2004; M BDf11 after Mírová 2019), and stepped phalera of the Niederrieden type (FAL 17d after Trachsel 2004; M BDf12 after Mírová 2019). Their dating well suits into Ha D1b–Ha D3, same as the wagons dating. It is thus most likely that these were burial wagons; after all, all analogous wagons have only been found in grave contexts; moreover, the finder H. Wankel describes a human burial/skeletal parts at wagon V1 (see Mírová 2019, 93, 96).

Today we know six sites in Moravia with a total number of 12 wagons (parts of wagons from hoards are not included). The wagons are a key source for understanding the chronology, as they are in fact one artefact as such, but composed of many different parts. Wagon parts are often supplemented by yoke and harness components, not to mention that wagons are always found in the graves of the elites; i.e. they are intertwined with other black and often chronologically significant objects. The wagons themselves, however, especially in Ha D, are never quite identical. Each region combines local, typical elements, probably based on a tradition of wagons modifications from the Late and Final Bronze Age, and then components that are found across the whole of the Hallstatt area. They are also the largest and most luxurious objects ever made in European prehistory, thus, the modifications to suit the owner's wishes are quite likely. They can therefore be compared across vast European regions, even though the most luxurious ones cannot be expected to be absolutely identical (see the case of the Habrůvka, Býčí skála, wagons). Moravia is similar to other regions in this point of view, but it is quite exceptional within the East Hallstatt culture, both in having the highest number of fully metal-plated wagons and in having their closest analogies in the Baden-Württemberg.

WAGON GRAVES IN BOHEMIA AND OTHER REGIONS

The wagon is the best chronological source of data for several reasons. As it is an elite object deposited in grave, the rapid turnover of elite modes allows for relatively detailed and precise correlation across regions (Mírová 2019; Pare 1992). Moreover, it is an object composed of several types of items (e.g. wheel tyres, fittings of the wheel naves and sockets, wagon body decorations), and the combination of these elements further allows for precise dating – it is not a 'single object' in the strict sense of the word, but a combination of individual parts (it has recently been experimentally verified that the most elaborate, fully plated wagons carry up to 1000 parts). Graves with wagons are always associated with other horse harnesses and elite objects (toreutics, weapons, gold, glass and amber, etc.), so dating can be further correlated and refined. Thanks to their chronological potential, the wagon graves allow us to synchronise the Moravian region with the surrounding regions; as mentioned above, priority is given to the analogies from the Western direction, i.e. Bohemia, Bavaria, Western Austria, Baden-Württemberg and Eastern France. Then it is the Southern direction along the Amber Route, i.e. Eastern Austria, Western Slovakia and Western Hungary; Slovenia is only marginally mentioned for the scope of the paper. Here, however, graves with wagons are hardly to be found. A comparative source of data are graves with horse harnesses, which correlate and modify the chronology. Western Slovakia and Poland either do not offer wagons or horse harnesses (probably because of the existence of all-wood wagons; in Northern Poland we find pictures of wagons on ceramics) or only exceptionally, and the chronology must be based on another source of data. It is also necessary to note that, as in the past in the case of the wagons of the Horákov group, in the Bylany culture (group of West Hallstatt culture) some graves with linchpins were considered to be only wagons *pars pro toto*. This discourse is no longer held by most scholars (e.g. Pare 1992, 122).

Western direction

Bohemia

Many graves with wagons come from this territory (Table 3). The richest site in Central Bohemia (Bylany culture) with this type of graves is Hradenín burial ground (*Dvořák 1934–1935; 1936–1938; 1938; Koutecký 1968; Pare 1992, 321–329, pl. 108B–114; Trachsel 2004, 391–393*). 64 graves were excavated, 43 published (at least partially). For chronological correlation, units with closer dating and parts of wagons and harnesses that have a narrower dating frame are selected. Chronological sequence of the Hradenín burial ground lies between Ha C1b–Ha D1. There are 9 wagon graves chronologically listed below, which is a unique situation in Hallstatt period Europe (see Table 3).

We consider the oldest grave with a wagon to be the grave Hradenín H24 (*Dvořák 1936–1938, fig. 9, 11; 12; 13: 4–6; 14; 15: 1, 2; 1938, fig. 24; 25: 4–6; 26; Pare 1992, 323, 324, pl. 109; Trachsel 2004, 392*). On the basis of the parts of the wagon, yoke and horse harnesses, metal parts of wagons – nave fittings of the Dietfurt type (NBH 02b) and Tanheim type (NBR 01b), tyres of Lhotka type (RDR 02a), yoke decorations of the Maisach type (JOCH 02) and (JOCH 03) metal strips (*Blehbänder*; all after *Trachsel 2004*), harnesses – bits of the Miškovice type (MST 12a after *Trachsel 2004*) or maybe more-likely Brno-Holásky type (M MB6 after *Mírová 2019*), cheek-pieces of the Beilngries type (TKN 07d), side hook Lovosice type (ZHK 03b), and decorations of the Solniki type (GRZ 03), Lhotka type (KNE 05c; after *Trachsel 2004*; M YT3 after *Mírová 2019*), Estorf type (KNO 01b), Dýšina type (KNO 02b), Aubstadt type (KNO 19), Buchheim type (RFK 07 after *Trachsel 2004*; M BDd5 after *Mírová 2019*), Hradenín type (RFK 10a) – D. Koutecký dates it to the middle period (i.e. Ha C1b), M. Trachsel to Ha C1 spät (i.e. Ha C1b). Although most of the items have a longer time span, the wagon can be safely classified to Ha C1b (Table 3).

The presence of a wagon in grave Hradenín H1 (*Dvořák 1934–1935, fig. 2; pl. 1*) is indicated by the presence of wooden boards from the wagon body, parts of wagons and harnesses. Its dating is more problematic, as the horse harness components are very archaic – knobs and cheek-pieces of the bit are dated to Ha C1 – Challans type (KNO 03a), Bács-Bodrog type (KNO11a), Maxlan type (TKN 07e), Obernricht type (KNO11b after *Trachsel 2004*; M BDk11 after *Mírová 2019*) and a knife with a protruded handle reminiscent of the Late Bronze Age tradition (?), other inventory suggests more Ha C2 – iron bits of the Brno-Holásky type (M MB6 after *Mírová 2019*), iron sword of the Mindelheim type, ending of the sword sheath of the Oberwaldbehrungen type (after *Gerdson 1986*). Metal parts of the wagon are not available, so we suggest for the time being the dating according to D. Koutecký (1968) to Ha C1b–Ha C2, slightly shifted from M. Trachsel's dating to Ha C1 früh (did not consider other inventory; Table 3).

Younger graves can be dated to Ha C2. Graves Hradenín H18, H30, H33, H46 and H58 also belong to this group. Grave Hradenín H46 (*Dvořák 1938, 39–48, fig. 41–46; Pare 1992, 326–328, pl. 112B–114A*) bears most of the convincing parts of the wagon belonging mostly to Ha C2, such as naves fittings of Marbach type (FBS 01c), Dietfurt type (FBS 03a), Deising type (FBS 05b), Dietfurt type (NBH 02b), Dittenheim type (NBR 01c), Marbach type (NBS 03), tyres of the Niederhofen type (RDR 03b). Part of the wagon, harness and yoke bears the dating Ha C1b–Ha C2 – linchpin of Kolín type (RVS 01), yoke decorations of Maisach type (JOCH 02c), bridle bits of Miškovice type (MST 12a), cheek-pieces and side hooks of Beilngries type, Lovosice type (ZHK 03b), harness decorations of Illerberg type (GRZ 01), Solniki type (GRZ 03), Aubstadt type (KNO 19), Lhotka type (KNE 05c; all after *Trachsel 2004*; M YT3 after *Mírová 2019*), or pure Ha C2 – Lipno type (KNO 06d) and Hradenín type (RFK 10). D. Koutecký dates this grave to his middle period, M. Trachsel to Ha C2 mitte and we can agree with their dating to Ha C2 (Table 3). Another grave is Hradenín H18 (*Dvořák 1934–1935, fig. 1; 5; Pare 1992, 322, 323, pl. 108C*), which can be dated by parts of the wagon – linchpin of the Kolín type (RVS 01), bridle bit of Miškovice type (MST 12a) –, and harness decoration of Deising type (KNO 09a; all types after *Trachsel 2004*). The grave is dated both by D. Koutecký (1968) and M. Trachsel (2004) to Ha C2; authors of this article agree with their dating (Table 3). The dating of the grave Hradenín H30 (*Koutecký 1968, 414, 407, fig. 2b; Trachsel 2004, 393*) is questionable (and therefore tentative) according to parts of the wagon – linchpin of the Kolín type (RVS 01) –, and horse harnesses – tutuli-like drags of the Buchheim type (after *Trachsel 2004*; M BDd5 after *Mírová 2019*), and two bridle bits and toggle. Most of the inventory falls to Ha C2 and not younger (Table 3). Same is valid for the grave Hradenín H33 (*Koutecký 1968, 415, 409, fig. 2d*). It consists of the parts of the wagon – linchpin of the Kolín type (RVS 01) –, and horse harnesses (unknown toggle), but regarding the presence of toggle, it should be no younger than Ha C2 (Table 3). Latest wagon is Hradenín H58 (*Koutecký 1968, 416, 419, fig. 10*) safely dated to Ha C2, according to parts of the wagon and yoke – linchpin of the Kolín type (RVS 01), pendants of the yoke of Budyně type (RVT 02) and Hradenín type (RVT 03) and harness – bridle

bits of Miškovice type (MST 12a). This grave is dated to the middle period after *D. Koutecký* (1968) and Ha C2 früh (Ha C2a) according to *M. Trachsel* (2004). Authors agree with this dating to Ha C2 (Table 3).

The youngest graves with wagons are Hradenín H5 and H28. Hradenín H28 (*Dvořák* 1936–1938, fig. 20–22; 1938, fig. 34, 36–38, 40; *Pare* 1992, 324–326, pl. 110–111A) carries parts of wagon and harnesses occurring within a longer time span – tyres of the Haidensbuch type (RDR 03c), linchpins of the Kolín type (RVS 01), wagon perch of the Geislingen type (WUB 02), bits of the Deising type (MST 12c), side hook of the Lovosice type (ZHK 03b), decoration of the Deising type (KNO 09a). However, it is the advanced components of the wagons – nave fittings of Hradenín type (FBS 04a), Marinville type (NBH 06a), Nymburk type (NBR 02f), Nymburk type (NBS 05b), Hochmichele type (NBV 01b), wagon body fittings of Uffing type (WKB 13b), decorative nails of Plattenhardt type (ZNG 03b) –, and harnesses – phalerae of the Strettweg type (FAL 16a) and Ludwigsburg type (FAL 1c) that are decisive, dated verifiably only to Ha D1b (all types and dating after *Trachsel* 2004). We agree with the dating of *M. Trachsel* to Ha D1 (thus he dates harness to Ha C2 and wagon to Ha D; Table 3). Another grave dated to Ha D1 is Hradenín H5 (*Dvořák* 1934–1935, fig. 2; pl. 2), consisting of wooden parts of the wagon body and metal parts. The wagon does not offer the elements for finer dating – linchpins of the Kolín type (RVS 01), however, the horse harness in correlation with Moravia shows younger elements – smooth bits of the Grosseibstadt type (MST 12b after *Trachsel* 2004; M BB8 after *Mírová* 2019); Deising type (KNO 09a after *Trachsel* 2004). *M. Trachsel* (2004) dates it to Ha C2 mitte to spät (i.e. Ha C2b), *D. Koutecký* (1968) to Ha C1b–Ha C2. The authors do not consider this dating correct and lean towards the younger dating to Ha D1, Ha D1b in the case of H28 (Table 3).

Second most important burial ground in Central Bohemia is Lovosice, Ayoama (*Půlpán* 2012). Most of the graves' datation is based on the jewelry (bracelets, pins) or horse harnesses. Moreover we register three graves with wagons – H17/2012 (*Půlpán* 2012, pl. 11–14); H18/2012 (*Půlpán* 2012, pl. 15–20) and H32/2012 (*Půlpán* 2012, pl. 42–47). They are all dated to Ha C2 (Table 3), based on wagon parts – linchpins of the Kolín type (RVS 01) –, and harnesses – bits of the Kameniec type (MST 09x after *Trachsel* 2004; M BB7 after *Mírová* 2019) and Miškovice type (MST 12a after *Trachsel* 2004), side hooks of the Schöngesing (HK03a after *Trachsel* 2004 and M BH1 after *Mírová* 2019), decorative knobs of the Emmerting type (KNO 06e) and Rvenice type (KNO 06f after *Trachsel* 2004).

Outside these extensively studied burial grounds, we record graves from smaller burial sites, mounds or solitary graves. The oldest of them is Rovná u Strakonice T1 burial 1 (*Chytráček* 2021) dating back to Ha C1a. Although the parts of the four-wheeled wagon would rather correspond to the earliest Ha C1b – it can be well correlated e.g. with Hradenín H24, which bears identical linchpins of the Kolín type (RVS 01), nave fittings of the Dietfurt type (NBH 02b) and Tanheim type (NBR 01b after *Trachsel* 2004) – this dating was absolutely established from the bones of the burial to 826–778 calBC (Table 3).

Two graves from other sites can be dated to Ha C2a – Dýšina T2 (*Pare* 1992, 321, pl. 108A; *Šaldová* 1968, fig. 23; 24) and Miškovice (*Pare* 1992, 330, 331, pl. 119B). Dýšina T2 dating is based on the wagon – nave fittings of the Lhotka type (NBH 03), yoke decorations of Maisach type (JOCH 02c), toggles of the Lhotka type (KNE 05c after *Trachsel* 2004; M YT3 after *Mírová* 2019) –, and horse harnesses parts – cheek-pieces of the Süttö (TKN 09a), phalerae of the Stična type (FAL 10b), knobs of Illerberg type (GRZ 01), Pullach type (GRZ 02), knobs of the Beratzhausen type (KNO 01d after *Trachsel* 2004; M BDk7 after *Mírová* 2019), Aubstadt type (KNO 19), Lhotka type (RFK 05b after *Trachsel* 2004; M BDd10a–b after *Mírová* 2019). Its dating points to Ha C2a (Table 3; also thanks to bronze plate-like vessel and sword of the Mindleheim type), but delicate glass rings and other vessels maybe also to Ha D1. It is not certain, whether this grave doesn't include two burials and need to be revised once. The dating of the grave from Miškovice is based on harness parts – bits of the Miškovice type (MST 12a), decorations of Grosseibstadt (KNO 01c) and Aubstadt type (RFK 10b) – that correspond to *Trachsel*'s dating to Ha C2 (C2a) früh after *Trachsel* 2004 (Table 3).

Two graves, based on their inventory, can be dated to whole Ha C2 (Table 3). First is the grave from Nehvizdky H1 (*Koutecký/Špaček* 1982, fig. 5; 8–12), consisting of wagon parts – linchpin of Kolín type (RVS 01) –, and harness parts – smooth bits of the Grosseibstadt type (MST 12b after *Trachsel* 2004; M BB8 after *Mírová* 2019), cheek pieces of the Süttö type (TKN 09a), decorations of Emmerting type (KNO 06e) and Aubstadt type (RFK 10b). Second grave comes from Ohrada u Kolína (*Dvořák* 1938, 49; *Pare* 1992, 333, pl. 119C) with wagon parts – linchpin of the Kolín type (RVS 01), yoke – pendants of the yoke of Budyně type (RVT 02) and Hradenín type (RVT 03) –, and harness of Aubstadt type (KNO 19).

To the younger phase – Ha C2b, we can date four graves (Table 3) – Dolany (*Pare* 1992, 321, pl. 107A), Poláky H21 (*Pare* 1992, 334, pl. 122A), Praha-Vinoř (*Fridrichová et al.* 2020) and Straškov-Račiněves (*Dvořák* 1938, 14–16, fig. 14–18; *Pare* 1992, 336, 337, pl. 125–126A). These graves include parts of the wagon – nave

fitting of Albertshofen type (FBS 03b), linchpins of Kolín type (RVS 01), tyres of Leipheim type (RDR 04a) or Poláky type (RDR 04b), clamps of the Lisbühl type (FBS 01a) and Straškov type (FBS 05d), yoke – pendants of the yoke of Budyně type (RVT 02) –, and parts of the horse harnesses – bits of Bošovice type (MST 07b after *Trachsel* 2004, M BB5 after *Mírová* 2019), Brno-Holásky type bits (MST 09a after *Trachsel* 2004; M BB6 after *Mírová* 2019) and unknown twisted type (MST 12x), cheek-pieces of Rappenau type (KNE 03) and Plaňany type (KNE 05 after *Trachsel* 2004, M YT1 after *Mírová* 2019), side hooks of the Lovosice type (ZHK 03b), decorations of Lipno type (KNO 06d), Emerting type (KNO 06e), Lhotka type (RFK 05b after *Trachsel* 2004; M BDd10a–b after *Mírová* 2019), Rvenice type (KNO 06f), Buchheim type (RFK 07), Aubstadt type (RFK 10b), Solany type (RFK 10c after *Trachsel* 2004; M BDd7 after *Mírová* 2019).

A chronologically transitional type of grave with a wagon is represented by the site Švihov-Červené Poříčí (*Chytráček* 1988; *Pare* 1992, 337, 338, pl. 126B). It is dated to Ha C2b–Ha D1a based on the parts of the wagon – tyres of Poláky type (RDR 04b) or Sulz type (RDR 05a), nave fittings of Lhotka type (NBH 03) or Marbach type (NBH 04) or Geisslingen type (NBH 05; Table 3).

Younger graves with wagons dated purely to Ha D1 (Table 3) come from Nymburk-Habeš (*Pare* 1992, 332, 333, pl. 120) and Opařany T2 (*Michálek* 2017a, 284–287; 2017b, pl. 207–213). Nymburk-Habeš grave includes wagons parts – nave fittings of Marinville type (NBH 06a), Nymburk type (NBR 02f), Nymburk type (NBS 05b), Sulz type (NBV 01a), tyres of Nymburk type (RDR 05b), linchpin of Kolín type (RVS 01m), decorative nails of the Plattenhardt type (ZNG 03) –, and harness parts – bits of the Untereggersberg (MST 13) and Britzgyberg type (KNO 07b). Opařany T2 grave contains decorative nails of the Plattenhardt type (ZNG 03b) and flat phalerae of the Opařany type (FAL 16b after *Trachsel* 2004; M Bdf10 after *Mírová* 2019).

In the Late Hallstatt and Early La Tène periods, a centre developed in Bohemia with a hillfort of the Fürstensitz type at Dolní Břežany, Závist (also Závist u Prahy). An acropolis was explored on its summit. Four chronological horizons (1–4) were defined for the site: horizon 1 = Ha D2–Ha D3; horizon 2 = Ha D2–Ha D3/Lt A; horizon 3 = Lt A; horizon 4 = Lt A/Lt B1 (Table 3; *Drda/Rybová* 2008, 58–67). Near the second central site from Bohemia – Fürstensitz type at Žlutice, Vladař, lies the Manětín-Hrádek burial ground chronologically divided into phases I–V, which corresponds to Ha C2–Lt A: phase I = Ha C2; phase II = Ha D1; phase III = Ha D2; phase IVA–C = Ha D3/Lt A (with wagon grave H196); phase V = Lt A (Table 3; *Soudská* 1994, 38–40).

There are four wagons from Bohemia dated to Ha D3, no wagons from Ha D2 yet. The first of them is a grave from Praha-Bubeneč H3 (*Pare* 1992, 334, 335, pl. 122B–124A) dated on the basis of the parts of the wagons – nave fittings of Kiclingen type (NBB 04), Reppendorf type (NBK 04g), Reppendorf type (NBS 07c), construction elements of the Bubeneč type (WUB 08b; all after *Trachsel* 2004), tyres of the Bubeneč type (RDR 07d after *Trachsel* 2004; M WT4 after *Mírová* 2019) – without doubts to Ha D3 (Table 3). Another grave with wagon is Hanov T1/1895 (*Michálek* 2017a, 99–103; 2017b, pl. 43–45), which can be dated with the help of wagon parts – nave caps of the Blatec type (NBS 09 after *Trachsel* 2004; M WN2 after *Mírová* 2019), tyres of the Bubeneč type (RDR 07d after *Trachsel* 2004; M WT4 after *Mírová* 2019) – to Ha D3 (Table 3). The grave with wagon from Kladruby (*Drda/Rybová* 1998, 36, 37; *Pare* 1992, 329, pl. 115–116A) was originally dated by *M. Trachsel* (2004) to Lt A, but concerning the wagon and horse harnesses parts – nave fitting of the Vix type (NBK 04e), nave cap of the Blatec type (NBS 09), tyres of Grandvillars type (RDR 07), bit of the Kladruby type (MST 15c), phalerae of Most na Soči type (FAL 16c), knob of Kladruby type (KNO 16a; all after *Trachsel* 2004) –, we can safely rank it in Ha D3 (Table 3). Latest is the burial with two-wheeled wagon in Rovná u Strakonice burial 2 (*Chytráček* 2021, with argumentation). Significant wagon parts are nave caps of the Blatec type (NBS 09 after *Trachsel* 2004; M WN2 after *Mírová* 2019), balustrade columns of the wagon body with an antler collet of the Rovná type (M WB9), antler plates of the wagon body of the Rovná type (M WB10 after *Mírová* 2019). Tyres doesn't correspond to any known type because of its width. According to another inventory, we can assign it safely to Ha D3 (Table 3).

In Lt A we find a large number of graves with already two-wheeled wagons especially in the area of the former Hallstatt Tumulus culture in Southern and Western Bohemia. These wagons are identified mainly through the presence of the two-wheeled wagon itself, by the parts of the wagons – nave cap of the Sillery type (AKP 04b), nave fittings of Chouilly type (NBR 01f), Hundheim type (NBR 01g), tyres of Weilerbach type (RDR 09a), Offaing type (RDR 10a), construction elements of Mirkovice type (WUB 06a), Hillesheim type (WUB 06c), Kobern type (WUB 06d), Gransdorf type (WUB 07a) –, harness parts – bridle bits of Hořovičky type (MST 16a), Sedlec type (MST 16b) and Beine type (MST 16c), cheek-pieces of Křinec type (TKN 14a), Donauwörth type (TKN 15a), Berru type (TKN 15b) –, and decorations – phalerae of the Želkovice type (MST 18), or Sefferweich type (FAL 20c) – are dominant, knobs of the Bechyně type

(KNO 12g; all after *Trachsel* 2004) appear. In the graves there is additional inventory such as beaked jugs or Early La Tène cleavers. These include Hořovičky (*Drda/Rybová* 1998, 50–52), Lučice (*Chytráček* 1999, 368, 369, fig. 10), Manětín-Hrádek H196 (*Soudská* 1994, 198, 199, fig. B30), Mírkovice T9 (*Chytráček* 1990, 87–97, fig. 12–16), Skalice nad Lužnicí T1 (*Michálek* 2017a, 384–387; 2017b, pl. 297–309), Sedlec-Hůrka (*Drda/Rybová* 1998, 39, 40) or Želkovice (*Chytráček* 1999, 367, fig. 8) sites (see Table 3).

Bavaria

Bavaria offers probably the highest concentration of wagon graves among European regions. The oldest grave with wagon, Wehringen, Hexenberg, T8 (Table 4; *Hennig* 2001, 259–268, pl. 102–114), can be dated to Ha C1a, based on obtained dendrochronological date 783–773 BC. This grave contains parts of the wagon and harness which can be dated at the turn of Ha B3 and Ha C1a – nave fittings of Bad Homburg type (NBH 01), wagon body fittings of Bad Homburg type (WKB 01), Lusehøj type (WKB 02), Beratzhausen type (WKB 03b), construction elements of Nächstebach type (WUB 01; after *Trachsel* 2004).

Three sites offer younger dating to Ha C1b (*Trachsel's* Ha C1 mitte–spät) – Beratzhausen T3 (Table 4; *Pare* 1992, 281, pl. 63), Großebstadt I/1 (Table 4; *Kossack* 1970, 45–61, pl. 29–44) and Olching-Neu Esting (Table 4; *Pare* 1992, 306–308, pl. 86B). This dating is based on wagon parts – nave fittings of Beratzhausen type (NBR 01a), Tanheim type (NBR 01b), Dietfurt type (NBH 02b), Beratzhausen type (NBS 01), Gündlingen type (NBS 02), Grosseibstadt type (NBK 01), clamps of Albertshofen type (FBS 03b), Grosseibstadt type (FBS 01b), Straškov type (FBS 05d), tyres of Somlóvásárhely type (RDR 01), Lhotka type (RDR 02a), wagon body of Beratzhausen type (WKB 03b), Lengenfeld type (WKB 03d), Hossingen type (WKB 06b), decorative nails of Moritzbrunn type (ZNG 01) and Beratzhausen type (ZNG 02) –, yoke – toggles of Grosseibstadt type (KNE 02b) –, and horse harness – bits of Bošovice type (MST 07b after *Trachsel* 2004; M BB5 after *Mírová* 2019), decorations of Illerberg type (GRZ 01), Dinnyés type (FAL 12c), Triglitz type (FAL 13), Beratzhausen type (KNO 01d after *Trachsel* 2004; M BDk7 after *Mírová* 2019), Aubstadt type (KNO 19), Lhotka type (RFK 05b after *Trachsel* 2004; M BDd10a–b after *Mírová* 2019) and Retz type (TUT 02b).

Three graves can be dated to the turn of Ha C1b and Ha C2a, which may bear older types of wagons and harnesses, but their dating is supported, for example, by the presence of advanced toreutics – Adeschlag, Moritzbrunn (Table 4; *Kossack* 1954, 153, fig. 26D), Lupburg T1 (Table 4; *Pare* 1992, 302, 303, pl. 83B–84A) and Wehringen, Hungerbrunnenmähder, T1 (Table 4; *Hennig* 2001, 269–271, pl. 115: 4–17; 116; 117). Dating is based on wagon parts – naves of Mitterkirchen type (NBR 02a), tyres of Somlóvásárhely type (RDR 01), Lhotka type (RDR 02a), linchpins of Gottesberg type (RVS 02), wagon body of Lengenfeld type (WKB 03d), Hossingen type (WKB 06b), decorative nails of Moritzbrunn type (ZNG 01) –, yoke – toggles of Annelöv type (KNE 05b) –, horse harness parts – bits of Beilngries type (MST 11), decorations of Dinnyés type (FAL 12c), Triglitz type (FAL 13), Illerberg type (GRZ 01), Mitterkirchen type (KNO 01a), Estorf type (KNO 01b), Beratzhausen type (KNO 01d after *Trachsel* 2004; M BDk7 after *Mírová* 2019), Lhotka type (RFK 05b after *Trachsel* 2004; M BDd10a–b after *Mírová* 2019).

The subsequent phase Ha C2a is represented only by one grave with wagon from Schmidmühlen (Table 4; *Pare* 1992, 311, pl. 89A). This grave bears wagon elements – tyres of the Lhotka type (RDR 02a), linchpin of the Gottesberg type (RVS 02) –, yoke – pendant of the yoke of the Budyně type (RVT 02), toggle of the Lhotka type (KNE 05c; all after *Trachsel* 2004; M YT3 after *Mírová* 2019) –, and horse harness – bits of the Beilngries type (MST 11), decorations of Beratzhausen type (KNO 01d after *Trachsel* 2004; M BDk7 after *Mírová* 2019). Grave from Ehingen T104 (Table 4; *Pare* 1992, 288, pl. 71A) is then dated to the following Ha C2b. The dating is based on the components of the wagon – nave of Geisslingen type (NBH 05), Geisslingen type (NBK 02b), Dittenheim type (NBR 01c), Taxham type (NBS 04), clamps of Albertshofen type (FBS 03b), tyres of Niederhofen type (RDR 03b), wagons body of Aislingen type (WKB 13a) –, and harness – bit of the type MST 12x, decorations of the Sesto Calende type (RVT 04; all after *Trachsel* 2004).

Solely to Ha C2 can be dated three wagon graves – Dietfurt G87 (Table 4; *Pare* 1992, 281–284, pl. 64–67 – marked incorrectly as G31), Großebstadt I/4 (Table 4; *Kossack* 1970, 75–84, pl. 59–67) and II/14 (Table 4; *Pare* 1992, 292–294, fig. 188; pl. 47B; *Wamser* 1981).

Their dating is again based on the parts of the wagon – naves of Dietfurt type (NBH 02b), Tanheim type (NBR 01b), Lhotka type (NBR 01e), Breitenbrunn type (NBR 02b), Grosseibstadt type (NBK 01), clamps of Dietfurt type (FBS 03a), tyres of Marbach type (RDR 02b) –, yoke – toggles of Grosseibstadt type (KNE 02b) –, and harness – bits of Grosseibstadt type (MST 12b after *Trachsel* 2004; M BB8 after *Mírová* 2019) and Miškovice type (MST 12a), side hooks of Lovosice type (ZHK 03b), decorations of Grosseibstadt (KNO 01c), Mesteri type (KNO 06g), Aubstadt type (KNO 19), Buchheim type (RFK 07 after *Trachsel* 2004; M BDd5 after *Mírová* 2019) and Grosseibstadt type (RFK 10d).

Table 4. Chronologically classified selected sites, graves with wagons or chronology systems of selected sites/regions from the East and West Hallstatt culture. Graves with wagons are marked in bold; T – tumulus; G – grave.

Phase		East Hallstatt culture					West Hallstatt culture					East France	
West Slovakia		West Hungary		South Poland		East Austria		Slovenia	West Austria	Bavaria	Heuneburg	Baden-Württemberg	
Ha C1a	Nové Košariská T11			Domasław, Kietrz, Swibie	Frög 2 (Frög T70 G1)	Podze- mej 1			Wehringen, Hexenberg T8 (783–773 BC)				East France
Ha C1b			Vaszar TV		Frög 3	Podze- mej 2	Klein- klein, Hartner- michelko- gel G1 and G2		Beratzhausen T3, Großleibstadt I/1, Olching-Neu Esting	Adeschlag, Moritz- brun, Lupburg T1, Wehringen, Hunger- brunnennieder T1		Umlingen T3	
Ha C2 (a and b)	Nové Košariská T11–IV, VI	Győrulbarát-Nagybarát T1, Somlóvásárhely T1		Domasław, Kietrz, Swibie, Soniki Male hoard (?)	Frög 4				Schmidmühlen			Köngen	Saint-Louis-la-Chaussée
Ha D1 (a and b)	Nové Košariská T1	Smolenice, Molpir hillfort I	Regöly context RHQ 20, V1	Domasław, Kietrz, Swibie, Woskowiec Male 1 hoard	Frög 5 (Frög T82 G1, T168 G1)	Slčna 2	Klein- klein, Pom- merkogel		Riedenheim burial 1		Heuneburg IVC–a (17–12)	Bettelbühl T4 (583 BC), Kappel am Rhein T3, Magdale-nenberg bei Villingen central grave (616 BC)	
		Smolenice, Molpir hillfort II, hoards 2–6					Schal- chen- Unter- lochen T2	Uffing T1 and T6			Altheim-Heiligkreutz-tal, Hochmichele central grave and GVI		
Ha D2				Bieszków hoard (near Wicina hillfort)	Frög 6		Klein- klein, Krölkogel		Augsburg, Willenburg T1, Donaauwörth, Regelholz T10 burial 2, Starnberg-Mühlal T1		Heuneburg IIb–a (11–10)	Herbertingen-Hundersingen Gießbübel-Talhaus T1 central grave and G1 and T4 central grave	Aprenont, Tumulus de la Motte T1 and T2, Saint Colomb, T. de La Butte
			?						Domelsdorf burial 2, Dillingen T9, Hilpoltstein-Weinsfeld T4 G5, Leinach-Oberleinach, Kitzingen-Reppendorf		Heuneburg II a Ib–a (9–4)	Asperg, Grafenbühl	Diarmville T7 G1, Grandvillars, Hatten, Saint Colomb, T. de la Garenne, Vix
Ha D3				Domasław, Kietrz					Lengau T2	Niederrieden			Stuttgart-Bad Cannstatt

Only to Ha D1 is dated the grave with the wagon from Riedenheim burial 1 (Table 4; *Wamser 1980*, 122–127, fig. 28–31), based on the parts of the wagon – spoke fittings of the Ins type (SPB 03) and/or Vilsingen type (SBP 04). We date two wagon graves from Uffing T1 (Table 4; *Pare 1992*, 311, 312, pl. 90A) and T6 (Table 4; *Pare 1992*, 312, 313, pl. 90C–91) to Ha D1b according to wagon parts – nave fittings of Hügelsheim type (NBB 01), Mauenheim type (NBB 02), Winterlingen type (NBH 06b), Nymburk type (NBR 02f), Hügelsheim type (NBR 02g), Kappel type (NBK 03), Nymburk Type (NBS 05b), Vilsingen type (NBS 06), tyres of Nymburk type (RDR 05b), Vilsingen type (NBV 02), wagon body of Uffing type (WKB 13b), decorative nails of Quinçai type (ZNG 06), construction elements of Sternberg type (WUB 08a) –, and harness – decorations of the Hügelsheim type (KNO 12e; all after *Trachsel 2004*).

Phase Ha D2 is again represented by three graves with wagons – Augsburg, Wellenburg, T1 (Table 4; *Hennig 2001*, 235–240, pl. 76–82), Donnauwörth, Riegelholz, T10 burial 2 (Table 4; *Hennig 2001*, 195–197, pl. 40–44) and Starnberg-Mühlthal T1 (Table 4; *Pare 1992*, 311, pl. 89B). They include parts of wagons – naves of Wellenburg type (AKP 02a), Wellenburg type (NBB 03), Rumpenheim type (NBH 07), Wellenburg type (NBS 07b), Mühlthal type (NBS 08b), Ludwigsburg type (NBZ), spokes of Nürtingen type (SPB 05), Wellenburg type (FBS 05c), drawbar clamps of Wellenburg type (DEI 01), tyres of Wellenburg type (RDR 07b), Bubeneč type (RDR 07d), wagon body of Wellenburg type (WKB 05a), Donnauwörth type (WKB 05b), Allenlüften type (WKB 11), Hochdorf type (WKB 16a) –, and harnesses – cheek-pieces of Heuneburg type (TKN 11c), decorations of Obernricht type (FAL 17b after *Trachsel 2004*; M Bdf11 after *Mírová 2019*), Wellenburg type (KNO 06h). Many of these parts can be found in Czechia in Habrůvka, Býčí skála cave.

Transitional phase Ha D2b/Ha D3 represents grave from Niederrieden (Table 4; *Pare 1992*, 306, pl. 86A), with wagon parts – naves of Bad Cannstatt type (NBH 08), drawbar clamps of Wellenburg type (DEI 01) –, and harnesses parts – decorations of Niederrieden type (FAL 17d after *Trachsel 2004*; M Bdf12 after *Mírová 2019*), Kicligen type (KNO 06k).

Ha D3 phase represents five wagon graves – Demmelsdorf burial 2 (Table 4; *Schußmann 2019*, 204, 205, fig. 268; 269), Dillingen T9 (Table 4; *Pare 1992*, 284, 285, pl. 68A), Hilpoltstein-Weinsfeld T4 G5 (*Pare 1992*, 296, 297, pl. 76–77A), Leinach-Oberleinach (*Pare 1992*, 301, pl. 78) and Kitzingen-Reppendorf (Table 4; *Pare 1992*, 298–300, fig. 191; 192; pl. 79B–82). We find advanced wagon parts – naves of Kicligen type (NBB 04), Kicligen type (NBH 09), Reppendorf type (NBK 04f), Reppendorf type (NBS 07c), clamps of Witry type (FBS 05a), tyres of Wellenburg type (RDR 07b), Bubeneč type (RDR 07d), Grandvillars type (RDR 07e), wagon body of Cannstatt type (WKB 12), Vix type (WKB 17) –, and harnesses – hooks of Bannwil type (HKN 04), decorations of Niederrieden type (FAL 17d after *Trachsel 2004*; M Bdf12 after *Mírová 2019*), Wellenburg type (KNO 06h), Kicligen type (KNO 06k), Talhau type (KNO 09b). These wagon parts are also most common analogies to the wagons from the Habrůvka, Býčí skála cave.

Baden-Württemberg

From this region, we also know many wagon graves. Oldest can be dated to Ha C1b – Unlingen T3 (Table 4; *Hansen/Meyer/Tarpini 2018*), according to parts of the wagon body of the Hossingen type (WKB 06b). We also know one grave from Ha C2 from Köngen (Table 4; *Echinger 2017*), bearing parts of the wagon – nave fittings of Mitterkirchen type (NBR 02a), clamps of Lisbühl type (FBS 01a), tyres of Lengenfeld type (RDR 03a), wagon body of Lengenfeld type (WKB 03d), Hossingen type (WKB 06b) –, and harnesses – bits of the Bošovice type (MST 07b after *Trachsel 2004*, M BB5 after *Mírová 2019*), drags of the Lhotka type (RFK 05b after *Trachsel 2004*; M BDd10a–b after *Mírová 2019*).

Phase Ha D1 represents graves without wagon, but with dendrodates captures Bettelbühl T4 – 583 BC (Table 4; *Krausse/Ebiger-Rist 2018*) and Magdalenenberg bei Villingen, central grave – 616 BC (Table 4; *Koch 2017*, 40). Two graves can be safely classified – Kappel am Rhein T3 (Table 4; *Dehn/Egg/Lehnert 2005*) generally to Ha D, with wagon – naves of Cordast type (AKP 01), Hügelsheim type (NBB 01), Kappel type (NBK 03), Vilsingen type (NBS 06), Vilsingen type (NBV 02), clamps of Hradenín type (FBS 04a), tyres of Nymburk type (RDR 05b), decorative nails of Quinçai type (ZNG 06) –, and harness parts – bits of Obernricht (MST 14) and decorations of Sesto Calende type (RVT 04). Both wagon graves from Altheim-Heiligkreutzthal, Hochmichele, central grave (Table 4; *Kurz/Shiek 2002*, 77, fig. 13: 1–3) and GVI (*Kurz/Shiek 2002*, 80, fig. 13: 4) belong to younger Ha D1b phase, containing wagon parts – naves of Mauenheim type (NBB 02), Winterlingen type (NBH 06b) or Rumpenheim type (NBH 07), Mauenheim type (NBS 08a), Rumpenheim type (NBK 04a), Hochmichele type (NBV 01), Vilsingen type NBV 02, tyres of Wellenburg type (RDR 07b), wagon body of Hügelsheim (WKB 04a), Wellenburg type (WKB 05a), construction elements of Sternberg (WUB 08a) –, and harness – cheek-pieces of Hochmichele type (TKN 11b), hooks of Hochmichele type (HKN 02), decorations of Wellenburg type (KNO 06h), Hochmichele type (KNO 11c), Kappel type (RVT 06; all after *Trachsel 2004*) parts.

To the whole Ha D2 belong two graves from Herbertingen-Hundersingen, Gießhübel-Talhau, T1 central grave and G1 (Table 4; *Kurz/Shiek* 2002, 94–100, fig. 25; pl. 9–15) and T4 central grave (Table 4; *Kurz/Shiek* 2002, 116–121, fig. 44; 45; pl. 29–32). Both are dated by the following components: wagon parts – naves of Wellenburg type (AKP 02a), spoke fittings of Ludwigsburg type (SPB 08b), tyres of Bubeneč type (RDR 07d), drawbar clamps of Wellenburg type (DEI 01), construction elements of Bubeneč type (WUB 08b) –, and harnesses – cheek-pieces of Heuneburg type (TKN 11c), hooks of Hassle type (HKN 03), decorations of Heuneburg type (ANH 02), Talhau type (KNO 09b), Hochmichele type (KNO 11c), La Butte type (KNO 06i) and Simmrigen type (RVT 07 D2). Younger Ha D2b phase represents only the wagon grave from Eberdingen-Hochdorf (Table 4; *Koch* 2006). Its dating is based on the components of the wagon – naves of Ludwigsburg type (AKP 02b), Wellenburg type (NBB 03), Rumpenheim type (NBH 07), Uttendorf type (NBK 04b), Rumpenheim type (NBS 07a), Quinçai type (NBV 03), Apremont type (NBZ 02), clamps of Witry type (FBS 05a), spoke fittings of Apremont type (SPB 06), Hochdorf type (SPB 08a), tyres of Rumpenheim type (RDR 07c), drawbar clamps of Wellenburg type (DEI 01), wagon body of Wellenburg type (WKB 05a), Dotternhausen (WKB 10), Allenlüften type (WKB 11), Hochdorf type (WKB 16a) –, and harness – cheek-pieces of Heuneburg type (TKN 11c), hooks of Hochmichele type (HKN 02), Hassle type (HKN 03), decorations of Heuneburg type (ANH 02), La Butte type (KNO 06i), Simmrigen type (RVT 07; all after *Trachsel* 2004). It is the most accurate analogy to the wagon Habrůvka, Býčí skála, V3 (*Mírová* 2019).

Important wagon grave from Stuttgart-Bad Cannstatt (Table 4; *Pare* 1992, 268, 269, pl. 48) can be dated to the range Ha D2b–Ha D3, according to wagon parts – naves of Niederweiler type (AKP 02c), Wellenburg type (NBB 03), Bad Cannstatt type (NBH 08), Bad Cannstatt type (NBK 04c), Wellenburg type (NBS 07b), Ludwigsburg type (NBZ 01), clamps of Witry type (FBS 05a), tyres of Wellenburg type (RDR 07b), wagon body of Cannstatt type (WKB 12), Cannstatt type (WKB 15b), construction elements of Bubeneč type (WUB 08b) –, and harness – bits of Niederambach type (MST 15b), cheek-pieces of Bad Cannstatt type (TKN 12), hooks of Bannwil type (HKN 04), decorations of Wellenburg type (KNO 06h). Latest grave with wagon from this region is Asperg, Grafenbühl (Table 4; *Pare* 1992, 244, pl. 30–31A) dated solely in Ha D3, with the wagon components – naves of Vix type (AKP 02d), Wellenburg type (NBB 03), Bad Cannstatt type (NBH 08), Grafenbühl type (NBK 04d), Urtenen type (NBS 08c), Ludwigsburg type (NBZ 01), tyres – of Urtenen type (RDR 08), wagon body of Vix type (WKB 17), decorative nails of Bell type (ZNG 07; all after *Trachsel* 2004).

Eastern France

Graves with wagons with additional dating support come from Eastern France as far back as Ha C2. As an example we present site (former Blotzheim, Lisbühl) Saint-Louis-la-Chaussée (Table 4; *Pare* 1992, 222, 223, pl. 8B–9A), with wagon parts – naves of Mitterkirchen type (NBR 02a), clamps of Lisbühl type (FBS 01a), wagon body of Lengenfeld type (WKB 03d), Hossingen type (WKB 06b) –, and harness components – bits of Kameniec type (MST 09x after *Trachsel* 2004; M BB7 after *Mírová* 2019), decorations of Illerberg type (GRZ 01), Estorf type (KNO 01b), Lhotka type (RFK 05b after *Trachsel* 2004; M BDd10a–b after *Mírová* 2019). Wagon and harness are dated to Ha C2, but there is also a fibula from Ha D, which can indicate an additional burial.

Other graves with wagons are known only from Ha D2 – Apremont, Tumulus de la Motte, T1 (Table 4; *Pare* 1992, 220–222, pl. 6B) and T2 (Table 4; *Pare* 1992, 222, pl. 7; 8A), Saint Colombe, Tumulus de la Butte (Table 4; *Pare* 1992, 228, 229, pl. 16). Their dating is based on the wagon components – naves of Ludwigsburg type (AKP 02b), Niederweiler type (AKP 02c), Bad Cannstatt type (NBH 08), Uttendorf type (NBK 04b), Cannstatt type (NBK 04c), Wellenburg type (NBS 07b), Quinçai type (NBS 08e), Ludwigsburg type (NBZ 01), Apremont type (NBZ 02), spoke fittings of Apremont type (SPB 06), La Butte type (SPB 07), tyres of Wellenburg type (RDR 07b), Rumpenheim type (RDR 07c), drawbar clamps of Wellenburg type (DEI 01), wagon body of Apremont type (WKB 04b), Wellenburg type (WKB 05a), Allenlüften type (WKB 11), La Butte type (WKB 15a), Cannstatt type (WKB 15b), Hochdorf type (WKB 16a), construction elements of Wellenburg type (WUB 5a) –, and harness parts – bits of Niederambach type (MST 15b), cheek-pieces of Hochmichele type (TKN 11b), decorations of Ludwigsburg type (FAL 17c) and La Butte type (KNO 06i) again.

Most of the graves from Eastern France can be dated to Ha D3. Here are named some of them: Diarville T7 G1 (Table 4; *Egg/Lehnert* 2000), Grandvillars (Table 4; *Pare* 1992, 224, 225, pl. 9B), Hatten (Table 4; *Pare* 1992, 225, 226, pl. 10D), Saint Colombe, Tumulus de la Garenne (Table 4; *Pare* 1992, 229, 230, pl. 17; 18) and Vix (Table 4; *Egg/France-Lanord* 1987). The dating of these graves is again based on wagon – naves of

Ludwigsburg type (AKP 02b), Vix type (AKP 02d), Wellenburg type (NBB 03), Kiclingen type (NBB 04), Vix type (NBK 04e), Reppendorf type (NBK 04f), Veuxhaulles type (NBS 07d), Saraz type (NBS 08d), Kocanda type (NBS 09), Grandvillars type (NBV 05), Ludwigsburg type (NBZ 01), clamps of Bell type (FBS 05e), tyres of Bubeneč type (RDR 07d), Grandvillars type (RDR 07e), wagon body of La Garenne type (WKB 16b), Vix type (WKB 17), decorative nails of Bell type (ZNG 07), construction elements of Grandvillars type (WUB 04a), La Garenne type (WUB 04b), Dürdingen type (WUB 04c), Mirkovice type (WUB 6a) –, and harness parts – decorations of Most na Soči type (FAL 16c; all after *Trachsel 2004*). Graves from Ha D2–Ha D3 make chronological support to the wagons from Habrůvka, Býčí skála, as well.

Western Austria

A chronologically significant group of wagons is found in Upper Austria in the Salzach and Mattig river basins. It is noteworthy that these are graves with wagons and burnt individuals. We date the grave from Salzburg-Taxham to Ha D1a (Table 4; *Stöllner 1996*, 223–225, pl. 152B–154A). M. Trachsel dates it to Ha C2b on the basis of the wagons – naves of Geisslingen type (NBH 05 and NBK 02b), Taxham type (NBR 02c and NBS 04), tyres of Haidensbuch type (RDR 03c). However, harnesses – bits of the Untereggersberg (MST 13), cheek-pieces of the Sesto Calende type (TKN 09b), dagger, T-form belt buckle – support rather younger dating to Ha D1a. We agree with M. Trachsel's dating of other three wagons. Schalchen-Unterlochen T2 (Table 4; *Stöllner 1996*, 64, 65, pl. 31B) is dated to Ha D1b thanks to the wagon parts – naves of Rumpenheim type (NBK 04a), Vilsingen type (NBV 02), tyres of Nürtingen type (RDR 07a). A single wagon belongs to Ha D2 – Schalchen-Unterlochen T5 (Table 4; *Stöllner 1996*, 64–66, pl. 32–34A) according to the wagon – naves of Wellenburg type (NBB 03), Uttendorf type (NBK 04b), Rumpenheim type (NBH 07), Wellenburg type (NBS 07b), Nürtingen type (NBV 04), Ludwigsburg type (NBZ 01), tyres of Wellenburg type (RDR 07b), construction elements of Bubeneč type (WUB 08b) –, and harness components – bits of Uttendorf type (MST 15a), cheek-piece of Hochmichele type (TKN 11b), decorations of Ludwigsburg type (FAL 17c), Wellenburg type (KNO 06h) and Uttendorf type (KNO 12f). A grave with a wagon from Lengau T2 (Table 4; *Stöllner 1996*, 35–38, pl. 15E–17A) can be seen as the youngest, Ha D3, depending on the wagon parts dating – naves of Kiclingen type (NBH 09), Reppendorf type (NBK 04f), tyres of Bubeneč type (RDR 07d; all after *Trachsel 2004*). This region is important for correlation to Habrůvka, Býčí skála, in Moravia.

Southern direction

Eastern Austria

There are rarely graves with wagons in Lower Austria. The two oldest graves with wagons (Ha C1b–Ha C2) are found at the sites Gemeinlebarn T1 and Mitterkirchen T10 G1, but due to incomplete publication we only mention them as published by e.g. M. Trachsel (Table 4; *Trachsel 2004*, 347).

Significant is the chronology of the central site Kleinklein in Styria, where four princely graves have been evaluated – Hartnermichelkogel G1 and G2 from Ha C1b, Pommerkogel from Ha C2, and Kröllkogel from Ha D1 (all Table 4; *Egg 2010*, fig. 7; *Egg/Kramer 2013*, table on p. 391; 2016, 203–211, table 3). Table 4 presents the chronology of Slovenia correlated with Kleinklein (Table 4; Ha C1a/Podzemelj 1 = 800–725 BC; Ha C1b/Podzemelj 2 = 725–670 BC; Ha C2/Stična 1 = 670–620 BC; Ha D1a/Stična 2 = 620–580 BC; Ha D1b–Ha D2a/serpentine fibula horizon = 580–540 BC; after the end of Kleinklein Ha D2b–D3/Certosa fibula horizon = 540–450 BC) and chronologically significant graves from the Sulmtal group, Burgenland, Western Hungary, Slovenia, Croatia or Northern Italy are included. A similar chronological evaluation is offered by the Frög site in Carinthia (Table 4; *Ebner-Baur 2020*, fig. 54). Within the Hallstatt period the site is divided into Frög 2–6 (Frög 1 = Ha B2–B3) phases. Correlations have been made to Kleinklein, Slovenia or the Este culture in Northern Italy: Frög 2 = Ha C1a (Podzemelj 1; Este IIB–C; 810/780–730/720 BC); Frög 3 = Ha C1b (Podzemelj 2; Este IIIA; 730/720–680/670 BC); Frög 4 = Ha C2 (Stična 1; Este IIIB; 680/670–610/600 BC); Frög 5 = Ha D1 (Stična 2 = Ha D1a; serpentine fibula horizon = Ha D1b; Este IIIC; 610/600–580/550 BC) a Frög 6 = Ha D2 (Certosa fibula horizon; 580/550–500 BC).

Western Slovakia

The Nové Košariská burial ground is a valuable source for chronology in Western Slovakia. M. Pichlerová divided five mounds into chronological stages: mound II = Ha C1, mounds I and VI = Ha C2, and mounds III and IV = Ha D1 (Table 4; *Pichlerová 1969*, 191). However, we suggest following dating

on the basis of metal finds: mound II = Ha C1, mounds III, IV and VI = Ha C2 (pins with multiple head, Statzendorf type pins, triangular applications) and mound I = Ha D1 (same ordering also suggested by *Stegmann-Rajtár* 1992, 108). The central hillfort of Fürstensitz type – Smolenice, Molpír, in Southwestern Slovakia (Table 4) – is a crucial site, especially considering the absence of burials with metal inventory. The main phase of use of the hillfort belongs to Ha C2–Ha D1a according to S. Stegmann-Rajtár's chronology, which was recently extended to whole Ha D1, with the possibility of existence of a later settlement in Ha D2–Ha D3 (*Stegmann-Rajtár* 2017, table 1). A dendrochronological date from a cistern on the acropolis provided an absolute date of 605–585 BC (*Barta et al.* 2017), suggesting the use of the site in Ha D1b. Former problem with the site's chronology was, however, the inaccurately dated youngest range of navicella fibulae (e.g., the Šmarjeta type, the type with regular transverse bundles of grooves/sheets on the bow, etc.) that circulate throughout the Ha D1 phase, even in the serpentine fibula horizon, i.e. Ha D1b phase (cf. Stična elite female grave 27/mound 48 with serpentine fibulae; *Gabrovec et al.* 2006, table 16; 18: 34–39; *Gabrovec/Teržan et al.* 2008 [2010], 288, fig. 42) both in Slovenia and here. Fragments of serpentine (dragon) fibulae Ha D1b were found in houses number 16 (serpentine fibula VIIb type after *Tecco Hvala* 2014) and 18 (*Dušek/Dušek* 1984, pl. 118: 14; 140: 24). A similar dating of the site to whole Ha D1 was also indicated by six hoards from the acropolis of the hillfort (*Čambal/Makarová* 2020): hoard 1 = Ha C2b–Ha D1a, hoards 2–6 = Ha D1. In our opinion, the external attack on this hillfort evidenced by bronze arrowheads of the Eastern type with an outer socket found on the site can be dated to the subphase Ha D1b, which corresponds to the range 575–550 BC and is identical to a similar attack on the Southern Polish hillfort of Wicina built in 574 BC (see below). Thus, the peak of the existence of Molpír hillfort can be put to Ha D1 and can be correlated with phase IV at Heuneburg hillfort in Baden-Württemberg (see Table 4).

Western Hungary

There is an example of a wagon grave from the Somlóvásárhely TI (Table 4; *Patek* 1993, fig. 54–64) from Western Hungary. M. Egg first dated it to Ha C2 (*Egg* 1996), then reclassified it to Ha C1b (*Egg* 2010, fig. 7). Based on the wagon's components – tyres of the Somlóvásárhely type (RDR 01 after *Trachsel* 2004), probably nave caps of the Brno-Holásky type (M WN1? after *Mírová* 2019) –, and harness parts – Brno-Holásky type bits (MST 09a after *Trachsel* 2004; M BB6 after *Mírová* 2019), decorations of the Niederfellabrunn type (RFK 08 after *Trachsel* 2004; M BDd6 after *Mírová* 2019) and Gendorf type (TUT 01b after *Trachsel* 2004; M BDk6 after *Mírová* 2019) – we can date this grave to Ha C2 (Table 4). The grave synchronises very well with the most distinct wagon horizon in Moravia and Bohemia (cf. Table 3). Another grave with a wagon (?) is recorded from the Györujbarát-Nagybarát TI site (Table 4; *Patek* 1993, fig. 88–92). The wagon is evidenced by probable nave cap of the Brno-Holásky type (M WN1 probably; function yet unclear), parts of the yoke – toggles of Plaňany type (KNE 05 after *Trachsel* 2004; M YT1 after *Mírová* 2019), Annelöv type (KNE 05b after *Trachsel* 2004; M YT2 after *Mírová* 2019) –, and harness parts – bits of the Miškovice type (MST 12a after *Trachsel* 2004), smooth bits of the Grosseibstadt type (MST 12b after *Trachsel* 2004; M BB8 after *Mírová* 2019), cheek-pieces of the Süttö type (TKN 09a), decorations of Mesteri type (KNO 06g) and the Buchheim type (RFK 07 after *Trachsel* 2004; M BDd5 after *Mírová* 2019). The dating to Ha C2 (Table 4) is well supported by belt clamps found at Moravian sites. The last grave with a possible wagon is Vaszar TV (Table 4; *Patek* 1993, fig. 74–76). It consists of wagon parts – probably nave cap of the Brno-Holásky type (M WN1 after *Mírová* 2019) –, and horse harnesses – Brno-Holásky type bits (MST 09a after *Trachsel* 2004; M BB6 after *Mírová* 2019); knobs show to be predecessor of the Niederfallabrunn type. We suggest preliminary dating in Ha C1b–Ha C2a (Table 4).

The newest addition to the Hungarian wagons is the Regöly site – a magnate mound, probably a tomb. Inside were many contexts containing weapons, armour, toreutics, pottery and other objects. However, the authors do not discuss one of the best dating materials, the wagon parts that remained unrecognized. We can safely distinguish one wagon context – for now, we can call it Regöly V1 – located mainly in context RHQ20. Apparently, it was a wagon with a wheel, covered with metal parts – we record central fittings of the wheel naves of the Apremont type (NBZ 02 after *Trachsel* 2004; M WC3 after *Mírová* 2019), fittings of the wheel felloes of the Habrůvka type (M WF1c after *Mírová* 2019), fittings of the central part of the wheel naves of the Bad Cannstatt type (NBH 08 after *Trachsel* 2004; M WNSc1 after *Mírová* 2019), fittings of wheel nave of the Wellenburg type (NBS 07b after *Trachsel* 2004; M WN4 after *Mírová* 2019) and corner metal hemispherical fittings of the body of wagon of the Habrůvka type (M WB 6 after *Mírová* 2019). We also record a large number of wagon tyres from the site, which, however, cannot be safely determined due to the lack of profiles. Most of these wagon parts are securely dated to Ha D2 and have the best analogy in Habrůvka, Býčí skála. The authors date the site to Ha D1–D2 (*Szabó/Fekete* 2024), which is confirmed by the wagon dating (Table 4).

At this point, it is necessary to mention other graves from the territory of present-day Hungary, from its Eastern part. These are specific Vekerzug culture wagons, which of course, together with harnesses, penetrated from Ha D1 into the area of Central Europe and the Balkans. These are for example the Gyöngyös, Miskolc-Diósgyőr and Szentes-Vekerzug graves (Szentes-Vekerzug grave No. 13; *Teleaga 2017*). Wagon parts and horse harnesses are rarely found in hoards, e.g. at the hillfort Dédestapolcsány-Verebcebérc¹ (*Szabó et al. 2022; 2023*).

Outside the Hallstatt territory – Balkan area and Italy

Although the article does not allow to fully discuss the graves with wagons outside the area of the Hallstatt culture, it is nevertheless worth mentioning at this point at least the most characteristic cases connected by other material and offering further dating potential. In the Italian environment, mostly two-wheeled chariots are found. In Northern Italy, for example, a two-wheeled carriage from Sesto Calende, Tomba 2, dated to Ha D1 (*De Marinis 2009*). A two-wheeled chariot dating to Phase 1 (Piceno III final, 625–580 BC; *Bardelli 2022, 341*) comes from the Central Italian site of Sirolo-Numana, Circolo delle Fibule, tomba 7. From the 6th century BC also comes chariot parts from Belmonte Piceno, Tomb 163 (Tomb of the Duce). This is the largest ever collection of two-wheeled chariots from all of Italy. Belmonte Piceno, Malvatani Tomb 17, and Belmonte Piceno, Grave 1/2018, bears the same dating. At least 22 chariots then come from the site (*Weidig 2021; 2024*). For a more detailed study of the two-wheeled chariots see *Woytowitsch 1978* and *Emiliozzi 1997*. However, four-wheeled wagons are also recorded. A grave with a four-wheeled wagon from Como Ca' Morta, newly dated to Ha D3, should be mentioned (*Chaume, in press*). Two graves with wagon and chariot are known from Serbia, from the site of Atenica, Mound 2, contained an older 'Central European type' four-wheeled wagon, earliest from Ha D1b, with a similarly dated horse harness originating from the Vekerzug culture. In Mound 1, dated to 500 BC, a Greek-type chariot with specific wheel decoration was then found (*Dmitrović 2024; Teleaga 2017*).

Northern direction

Southern Poland

Upper and Lower Silesia does not yet yield graves with wagons, therefore for chronology it is necessary to work mainly with chamber graves with other metal and glass inventory, similarly to Moravia (Table 3). The current synchronisation between Moravia and Southern Poland is not complete and the future task is to establish it. The essential task for establishing the chronology for the territory of present-day Poland is to verify the possibility of classification of the burial sites with longer development, embracing also the period of the 'top occurrence of graves' from Ha C2 and Ha D1 phases. In the chronology for Polish territory there are graves dated to the long time span of Ha C–Ha D1 and subsequent phases are supposed to be absent (cf. *Gediga et al. 2020, table 10*). These are burial grounds with newly published catalogues, such as Świbie (Table 4; *Dzięgielewski/Michnik 2022, table 4.1; Michnik 2022*), Kietrz near the Czech border that is dated from Ha C1 to Ha D3 (Table 4; *Gedl 1973; 2004, pl. 107: B–D*), and especially well-documented largest burial site in Southern Poland – Domasław – that again was in use longer, namely from Ha C1 to Lt A (Table 4; *Gediga/Józefowska 2018a; 2018b; 2018c; Józefowska/Kamyszek/Żygadło 2021*). The second task is to verify the synchronisation of Polish data with Reinecke's phases and absolute dating, which is 'delayed' here compared to the neighbouring Czech Republic and other regions. The chronology set up in this way requires detailed revision. The Platěnice group in Moravia, as the Southern part of the disintegrating large Lusatian culture (style group), should play a significant role in the synchronisation.

Considerable potential also lies in hoards of this area. As an example, the Woskowice Małe 1 hoard with cheek-pieces of a horse bit dated to Ha D1 (Table 4; *Gedl 2000, pl. 56B–59A*) has analogies (cheek-pieces TNK 09b of the Sesto Calende type, decorations of the Sesto Calende type RFK 11a and Sesto Calende type KNO 07a; all after *Trachsel 2004*, pendant of the yoke of the Woskowice type M YP1 after *Mírová 2019*) in Northern Italy in the Golasecca culture equipment in the Sesto Calende B wagon grave (*De Marinis 2009*), dated also to Ha D1 (*Egg/Kramer 2016, table 3*). Second important hoard (but maybe also grave, discovered in 1894) is Solniki Małe (Table 4; *Gedl 2000, pl. 54: C; 55: A; 82*) containing tutuli-like

¹ Due to preliminary publication, the material is not precisely dated; however, the horse harness and wagon material points to the broader dating of the site from Ha C2 to Ha D3.

drags of the Buchheim type (RFK 07 after *Trachsel 2004*; M BDd5 after *Mírová 2019*), harness decoration of the Solniki type (GRZ 03 after *Trachsel 2004*) and hemispherical knobs of the Beratzhausen type (KNO 01d after *Trachsel 2004*; M BDk7 after *Mírová 2019*). Dating to Ha C2 is also supported by the presence of ribbed cista with geometrical decoration.

Chronologically significant in Southern Poland is the Wicina hillfort, which provided numerous dendrodates dating its construction to 571 BC (Table 4; *Jaszewska/Katagata 2016*, 230), which can be correlated with the transition of the Ha D1a and Ha D1b subphases (Table 4). Metal artefacts are dated in Ha D1 or Ha D2 as Eastern type of arrowhaeds, chakans and earrings, fibulae with decorated foot and cross winding (*Jaszewska 2011*, fig. 32: 4, 5; 33: 1–3; 65; 66). More complicated is dating of horse harness (*Jaszewska 2011*, fig. 34; 35: 1, 2, 4, 5; 56; 57: 1–5, 7, 8), because of the presence of archaic-looking parts of the horse harnesses: knobs of the Beratzhausen (KNO 01d after *Trachsel 2004*; M BDk7 after *Mírová 2019*) and Holásky type (M BDk10 after *Mírová 2019*), drag decoration of the Niederfellabrun type (RFK 08 after *Trachsel 2004*; M BDd6 after *Mírová 2019*), Solany type (RFK 10c after *Trachsel 2004*; M BDd7 after *Mírová 2019*) and Mitterkirchen type (KNO 03d after *Trachsel 2004*; M BDd11 after *Mírová 2019*), which can be dated in Central Europe to the Ha C1b–Ha C2 phase, but they also occur in the graves of the Vekerzug culture in Ha D1–Ha D2, eventually Ha D3 (*Kozubová 2019*). However, we can also find precisely dated Central European parts of the horse harnesses: knobs of the La Butte type (KNO 06i after *Trachsel 2004*; M BDd9 after *Mírová 2019*), Uttendorf type (KNO 12f after *Trachsel 2004*), phalera of the Obernrich type (FAL 17b after *Trachsel 2004*; M BDf11 after *Mírová 2019*), hooks of the Salem (HKN 01 after *Trachsel 2004*) and Hochmichele type (HKN 02 after *Trachsel 2004*) and rings of the Kappel type (RNG 03d after *Trachsel 2004*). All can be dated to Ha D1b–Ha D2. This dating confirms the content of one Wicina hoard (found in 1902) containing fibula with decorated foot (Table 4; *Gedl 2004*, pl. 110: C). A voluminous Bieszków hoard was found near the hillfort, which date the youngest objects – e.g. a stepped knobs of the La Butte type and an arched fibula with a cross winding similar to pcs. from Wicina (*Orlicka-Jasnoch 2013*, table 2: 5; 8: 3, photo 21) to Ha D2 (Table 4). A similar date to Wicina hillfort comes from Smolenice, Molpír, hillfort, where the cistern is dated after 585 BC. Both hillforts were attacked by external invaders who used bronze arrows of the eastern type with an outer socket. Both attacks are identically dated to Ha D1b, i.e. 575–550 BC (same dating *Chochorowski/Krapiec 2020*, 1622 – episode 2 dated to years 570–560 BC; *Kozubová/Golec 2020*, 350). Moravia is located between named two regions. The evidence on identical external raid that took place in Ha D1b comes also from the ‘Moravian Molpír’, i.e. from the site Provodov, Rysov, settlement (*Čižmář/Golec Mírová/Golec 2021*, fig. 3).

HALLSTATT PERIOD CHRONOLOGY IN THE CZECH REPUBLIC AND CORRELATION OF WAGON GRAVES

The chronological system of the Hallstatt period in Bohemia was published in 2008 by a team of authors led by N. Venclová (*Venclová et al. 2008*, 26, 27, table 1). A member of this team was D. Koutecký, who earlier dealt with the chronology of chamber graves of the Bylany culture, among which were also graves with wagons, especially from the site in Hradenín (*Koutecký 1968*). Thus, his original division into Ha C1, Ha C2, Ha C3 and Ha D1 phases was ‘converted’ to the current system, introduced in 2008 with Ha C1a, Ha C1b, Ha C2 and Ha D1 phases and subphases (Table 5). For terminological correlation, the subdivision of Ch. Pare of Ha C1 phase into Ha C1a and Ha C1b subphases was introduced in 1998–1999 over a wide range of European regions (Table 5; *Pare 1998; 1999*). Pare’s division of Ha D stage can be found in detail in the study on Hallstatt graves with wagons (*Pare 1992*). Reinecke’s periodization for Bohemia fully coincides with his ‘global’ Hallstatt period division, represented, for example, by H. Hennig’s system for Bavarian Swabia correlated by numerous dendrodates (Table 5; *Hennig 2001*, table 1). From Bohemia and Moravia, we lack such data, yet, and therefore the chronology is based only on a comparative typology correlated with existing systems. This method was used by H. Parzinger, who divided the period 750–370 BC into ten horizons (Table 5), tracing again (as Ch. Pare) over large Central European regions (*Parzinger 1988*, 124, 125). His ten-horizon system essentially tested the possibility of a finer subdivision of the Reinecke phases into shorter subphases. Parzinger’s chronological analyses of the material-rich site Habrůvka, Býčí skála, brought this system into Moravia (*Parzinger 1995*, 179–183, fig. 1). The only category of artefacts that Parzinger did not devote such close attention was four-wheeled wagon. Their analyses were earlier elaborated by F. E. Barth (1987). However, Barth did not deal with chronology in his

Table 5. Reinecke's periodization and absolute dating of the Hallstatt period in Moravia (after *Golec/Fojtík 2020*, fig. 68; *Mírová 2019*, fig. 67) and Bohemia (after *Koutecký 1968*; *Venclová et al. 2008*, table 1) with the correlation of the system of *Ch. Pare* (1992, 136–164; 1998, table 5), *H. Hennig* (2001, table 1), *H. Parzinger* (1988, 124, 125; 1995, fig. 1), and *M. Trachsel* (2004, fig. 84; 165; 179).

BC	<i>Koutecký 1968</i>	<i>Parzinger 1988; 1995</i>	<i>Pare 1992; 1998</i>	<i>Hennig 2001</i>	<i>Trachsel 2004</i>	<i>Venclová et al. 2008</i>	<i>Mírová 2019; Golec/Fojtík 2020</i>
800–780	Ha C1		Ha C1a	Ha C0	Ha C1 früh	Ha C1a	Ha C1a
780–750					Ha C1 mitte		
750–725		1			Ha C1 spät		
725–700	Ha C2		Ha C2 früh	Ha C1b	Ha C1b		
700–675			2			Ha C2 mitte	
675–650	Ha C3	3	HaC2	Ha C2	Ha C2 spät	Ha C2	Ha C2a
650–625		4			Ha D1 früh		Ha C2b
625–600	Ha D1	5	HaD1	Ha D1	Ha D1 mitte + spät	Ha D1	Ha D1a
600–575		6			Ha D2 früh + spät		
575–550					Ha D3 früh		Ha D1b
550–525		7a	Ha D2	Ha D2	Ha D3 mitte + spät	Ha D2	Ha D2a
525–500		7b/c			Ha D2		LT A früh
500–450		8	Ha D3	Ha D3	LT A mitte	Ha D3	Ha D3
450–425		9		LT A	LT A spät	LT A	LT A
425–370		10					

paper. In 1995, his earlier text was reprinted, but remained unedited. In the meantime, however, Ch. Pare significantly advanced the issue of wagons and especially their chronology (*Pare 1992*). Ten years later, the wagons were again taken up as the basic foundation of the chronology by M. Trachsel in 2004, who again worked on a broad European territory (Table 5; *Trachsel 2004*). His chronological conclusions are basically correct, but his division of Reinecke's phases each into three subphases is already too subtle and much more appropriate is division into two subphases. However, T. Stöllner was the first to try to divide the Reinecke's phases into three parts (*Stöllner 1996*). Trachsel's correlation of the absolute data of the Central European chronological system to the Italian region is rather problematic, thereby moving it considerably 'up' one Reinecke phase. Working with Trachsel's chronological groups without back-correlation to absolute dates will pose problems in sorting out the wagon sets (cf. Table 5). It must be said, however, that Trachsel's chronological sequence and general dating basically works well and there is only a shift in dating in some regions within the subphases.

For the chronology of Moravia the wagon graves were recently used by Z. Golec Mírová (Table 5; *Mírová 2019*). The chronological classification of other graves and hoards with metal and glass objects in Moravia, with the incorporation of the chronology of wagons, has been also presented recently (Table 5; *Golec/Fojtík 2020*, fig. 68). The correlation of Moravian chronology with other regions is, due to the absence of dendrodata, so far possible only by the typological method. Moravia takes advantage of its geographic location in the vicinity of the Western Hallstatt culture, making it within the Eastern Hallstatt culture exceptional mainly by the occurrence of the graves with wagons (cf. Table 3; 4). It is therefore a territory suitable for synchronizing two main parts of the Hallstatt culture. It is the Central European chronology created on the base of the components of wagons that may primarily help to divide Reinecke's phases Ha C2, Ha D1 and Ha D2 into subphases.

For the chronological synchronization of Moravia in the Hallstatt period, two directions – Western and Southern – must be followed: the Western direction is represented by the regions of the Western Hallstatt culture – we observe rich connections with Bohemia, Western Austria, Bavaria, Baden-Württemberg and Eastern France. Many of the Moravian analogies lie not in neighbouring, but even in more distant regions; for Ha D stage wagons, especially in Bavaria, Baden-Württemberg and Eastern France (cf. Table 4).

The Southern direction is represented (along the Amber Road) by the regions of the East Hallstatt culture – Eastern Austria, e.g. the Kleinklein site in Styria (cf. Table 4), which connects Moravia with Western Hungary, Slovenia and Northern Italy (Egg/Kramer 2016, table 3). The central site Kleinklein with its princely tombs is the well-known site in the southern part of the East Hallstatt culture and its chronology is broadly reflected. In Moravia, the development of the elites in Ha D was not considered in the past and chronological model was subjected to the ‘decline’ within the East Hallstatt culture in general (cf. Stegmann-Rajtár 1992, fig. 63). Considerable potential for the Central European chronology still holds central tomb of the elites (situated in a cave sanctuary and erroneously assessed by H. Parzinger as a ‘place of sacrifice of the elites’) Habrůvka, Býčí skála, with development in Ha D1b–Ha D3. It coincides with Kleinklein, Kröllkogel, only in the Ha D1 phase, that corresponds to Býčí skála 1 phase (Ha D1b–Ha D2a) phase. While the Styrian centre ends at that time, Habrůvka, Býčí skála, use culminates in Býčí skála 2 (Ha D2b) phase and ends in Býčí skála 3 (Ha D3) phase. In the Southern direction, Moravia, with the absence of younger development in Kleinklein, corresponds only to the development with the appearance of elites in Slovenia, chronologically correlated, for example, with mound 48 in Stična during Ha D stage in horizons of serpentine and Certosa fibulae (Golec/Mírová 2020, 125, fig. 8; 9).

CONCLUSIONS

The chronology of the Hallstatt period in Moravia depends on two groups of dates: 1 – burial grounds with a longer time span of several phases and graves containing numerous metal and glass objects; 2 – graves with four-wheeled wagons (and horse harnesses). Five burial grounds have the greatest potential (Fig. 1): Vojkovice, site Vojkovické nivy, Modřice, site Rybníky and Sádky, Seloutky, site Na Šťastných, Moravičany, site Dílečky, and Habrůvka, site Býčí skála. These burial grounds are further correlated with hoards (Table 1; Golec/Fojtík 2020, fig. 68).

The wagons are the ‘red thread’ of chronology across very distant regions. Their chronological classification depends on many metal parts from wheels and wagon bodies. They are luxury items, they evolve rapidly, they are found in many regions, and graves with wagons often contain other datable material such as yokes, horse harness, toreutics, weapons, and jewelry, further supporting the correlation of chronology. The advantages of this methodology have been observed in the large collections of Ch. Pare (1992), M. Trachsel (2004), and Z. Mírová (2019).

When working with wagon graves, attention must be paid to careful review of especially older data. In the case of significantly different typological objects, there is a risk of unrecognised mixing of subsequent burials in the same grave. The use of an older harness and a younger wagon can also cause problems. The employment of different ways of burial on wagons – skeletal on an unburnt wagon, biritual, cremation on an unburnt wagon and cremation on a burnt wagon – should not surprise us either. All these ways are legitimate and reflect rather regional customs. For Moravia, the classification of wagons was developed recently (Mírová 2019, fig. 67). We recorded six sites with 12 wagons (Table 2).

Graves with wagons from Moravia from Ha C2–Ha D3 correlate typologically very well with the West Hallstatt culture – with Bohemia (Table 3; e.g. Hradenín, Lovosice), but also with more distant regions (Table 4) of Western Austria (e.g. Schalchen-Unterlochen, Lengau), Bavaria (e.g. Wehringen, Großesbald, Augsburg), Baden-Württemberg (e.g. Herbertingen-Hurdensingen, Hochdorf), and Eastern France (e.g. Vix, Apremont). In the East Hallstatt culture, wagon graves are rarely found, and Moravia clearly forms the eastern edge of their extension in Central Europe. Westwards they are found as far as Eastern (and probably Central and Western) France. This fact makes their chronological position significant. Chronological system based on division of wagon components can be well correlated in a southerly direction with the regions of the East Hallstatt culture (Table 4) – with Eastern Austria (e.g. Kleinklein and Frög), which is well linked to Slovenia (e.g. Stična, mound 48) and Northern Italy (Egg/Kramer 2016, table 3). The Moravian chronology can also be linked to Western Slovakia and Western Hungary (Table 4). Data revision will require correlation with Southern Poland and regions of France, or with the regions of the North Atlantic (Belgium, the Netherlands, etc.).

The authors present the current chronological system of Moravia correlated within the Czech Republic and with other systems (Table 5). The wagons and their further inventory allow in some cases to divide Moravian graves into chronological subphases. As shown by grave H2/1926 in Seloutky, Na Šťastných, graves with wagons may not only be found in skeletal graves, but also in cremation graves and even

with burnt wagons. Such cases can also be found in the ‘core of Central European hallstattisation’, e.g. Schalchen-Unterlochen and Lengau in Western Austria. A review of data in many regions where wagons were not counted at all may thus bring new surprises.

Acknowledgments

The authors gratefully acknowledge the support of the OP RDE, MEYS, the project ‘Ultra-trace isotope research in social and environmental studies using accelerator mass spectrometry’ Reg. No. CZ.02.1.01/0.0/0.0/16_019/0000728 and the Palacký University Olomouc FPVČ 2022/04, SPP 452101741/30 for financial support.

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Chronologie doby halštatské na Moravě

Význam hrobů s vozy pro synchronizaci východo- a západohalštatské kultury

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Souhrn

Chronologie doby halštatské na Moravě je závislá na dvou skupinách dat: 1 – pohřebištích s delším časovým rozsahem několika fází a hrobech obsahujících četné nálezy kovových a skleněných předmětů; 2 – hrobech se čtyřkolovými vozy (a koňskými postroji). Pět pohřebišť má největší potenciál (obr. 1): Vojkovice, poloha Vojkovické nivy, Modřice, poloha Sádka a Rybníky, Seloutky, poloha Na Šťastných, Moravičany, poloha Dílečky, a Habrůvka, poloha Býčí skála. Tato pohřebiště jsou dále korelována s depoty (tabela 1; Golec/Fojtík 2020, fig. 68).

Vozy jsou „červenou nití“ chronologie napříč velmi vzdálenými regiony. Jejich časové zařazení je závislé na mnoha kovových dílech z kol a koreb. Jsou luxusními předměty, rychle se vyvíjejí, nalezneme je v mnoha regionech a hroby s vozy obsahují často další datovatelný materiál, jako jha, koňský postroj, toreutiku, zbraně a šperky, což dále podporuje korelaci chronologie. Výhody této metodiky sledovali na rozsáhlých souborech Ch. Pare (1992), M. Trachsel (2004) a Z. Mírová (2019).

Při práci s hroby s vozy je nutné dbát na pečlivou revizi zejména starších dat. V případě výrazně odlišných typologických předmětů hrozí nerozpoznané smíchání následných pohřbů v jednom hrobu, problém může působit i využití staršího postroje a mladšího vozu. Nemělo by nás také překvapit využití různých způsobů pohřbívání na vozech – kostrově na nespáleném voze, birituálně, žárově na nespáleném voze a žárově na voze spáleném. Všechny tyto způsoby jsou legitimní a odrážejí spíše regionální zvyklosti. Pro Moravu vzniklo rozřazení vozů nedávno (Mírová 2019, obr. 67). Evidujeme šest lokalit s 12 vozy (tabela 2).

Hroby s vozy z Moravy z HC2–HD3 velmi dobře typologicky korelujeme západním směrem se západohalštatskou kulturou – s Čechami (tabela 3; např. Hradenín, Lovosice), i se vzdálenějšími regiony (tabela 4) – se západním Rakouskem (např. Schalchen-Unterlochen, Lengau), Bavorskem (např. Wehringen, Großesbacht, Augsburg), Bádenskem-Württemberskem (např. Herbertingen-Hurdensingen, Hochdorf) a východní Francií (např. Vix, Apremont). Ve východohalštatské kultuře se hroby s vozy nacházejí výjimečně a Morava zde evidentně tvoří východní okraj jejich

rozšíření, západním směrem je nacházíme až do východní (a pravděpodobně i střední a západní) Francie. Díky této skutečnosti je jejich chronologická pozice významná. Takto „kalibrovaný“ chronologický systém lze dobře korelovat také jižním směrem s regiony východohalštatské kultury (tabela 4) – s východním Rakouskem (např. Kleinklein a Frög), které je dobře navázáno na Slovinsko (např. Stična, mohyla 48) a severní Itálii (Egg/Kramer 2016, tabela 3). Moravskou chronologii můžeme propojit také na západní Slovensko, západní Maďarsko (tabela 4), revizi dat bude vyžadovat korelace s jižním Polskem a regiony Francie, případně regiony severního Atlantiku (Belgie, Nizozemí ad.).

Autoři příspěvku představují aktuální chronologický systém Moravy korelovaný v rámci České republiky a s dalšími systémy (tabela 5). Vozy a jejich další inventář dovoluje v některých případech dělit moravské hroby až na subfáze. Jak ukázal hrob H2/1926 v Seloutkách, Na Šťastných, hroby s vozy se nemusí nacházet pouze v kostrových hrobech, ale též žárovém a dokonce se spáleným vozem. Takové případy registrujeme i v „jádro středoevropské halštatické“, např. na lokalitách Schalchen-Unterlochen a Lengau v západním Rakousku. Revize dat v mnoha regionech, kde se s vozy vůbec nepočítalo, tak může přinést nová překvapení.

Obr. 1. Pohřebiště horákovské a platěnické skupiny (Ha C1–Ha D1) a bývalé horákovské a platěnické skupiny v pozdní době halštatské (Ha D2–Ha D3) na Moravě: 1 – Vojkovice, Vojkovické nivy; 2 – Modřice, Rybníky a Sádky; 3 – Habrůvka, Býčí skála (pohřebiště ve svatyni); 4 – Seloutky, Na Šťastných; 5 – Moravičany, Dílečky. Hroby se čtyřkolovými vozy horákovské a platěnické skupiny (Ha C1–Ha D1) a bývalé horákovské a platěnické skupiny v pozdní době halštatské (Ha D2–Ha D3) na Moravě: 6 – Bratčice, Mělkanská, hrob H1; 7 – Hrušovany u Brna, U Tří mostů, hrob H1; 8 – Modřice, Rybníky, hrob H3515; 9 – Brno-Holásky, U Tuřan, hroby H1 a H2; 10 – Habrůvka, Býčí skála, vozy V1–V6; 11 – Seloutky, Na Šťastných, hrob H2/1926.

Tabela 1. Přehled vybraných pohřebišť tvořících základní soubor dat pro chronologii doby halštatské na Moravě (dle Golec/Fojtík 2020, obr. 68).

Tabela 2. Přehled hrobů a pohřbů s vozy v době halštatské na Moravě (dle Mírová 2019, obr. 67). H – hrob; V – vůz.

Tabela 3. Chronologicky zařazená vybraná pohřebiště, hroby s vozy nebo chronologické systémy vybraných lokalit z Moravy (datované podle kovových nebo skleněných předmětů) a Čech. Hroby s vozy jsou vyznačeny tučně; T – mohyla; H – hrob; V – vůz.

Tabela 4. Chronologicky zařazené vybrané lokality, hroby s vozy nebo chronologické systémy vybraných lokalit/regionů východohalštatské a západohalštatské kultury. Hroby s vozy jsou vyznačeny tučně; T – mohyla; G – hrob.

Tabela 5. Reineckova periodizace a absolutní datování doby halštatské na Moravě (dle Golec/Fojtík 2020, obr. 68; Mírová 2019, fig. 67) a v Čechách (dle Koutecký 1968; Venclová et al. 2008, tabulka 1) s korelací systému Ch. Pareho (1992, 136–164; 1998, tabela 5), H. Hennig (2001, tabela 1), H. Parzinger (1988, 124, 125; 1995, obr. 1), a M. Trachsela (2004, obr. 84; 165; 179).

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