

# ANALECTA ARCHAEOLOGICA RESSOVIENSIA

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Institute of Archaeology  
Rzeszów University



STUDIES  
ON THE BRONZE AGE  
AND EARLY IRON AGE

FUNDACJA  RZESZOWSKIEGO OŚRODKA  
ARCHEOLOGICZNEGO

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ARCHAEOLOGICA  
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Studia nad epoką brązu i wczesną epoką żelaza



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Edited by / Redakcja  
Katarzyna Trybała-Zawiślak & Andrzej Rozwałka

Rzeszów 2016





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## Editor's note

*Dear Readers,*

*We are pleased to present the eleventh volume of *Analecta Archaeologica Ressoviensia*. From the fourth issue of our journal, we try to make each volume a thematic one. This time, we include articles focusing specifically on the Bronze Age and Early Iron Age. The majority of papers are devoted to issues related to chronology and periodisation of these two epochs and to their particular cultural groups. Several articles attempt to assess the cognitive values of various categories of finds while others present unusual discoveries and reflections on methodology and the history of research.*

*We hope that this collection of articles will attract your interest. It has been edited with a particular idea in mind and with the intention to honour a very prominent scholar.*

*We are pleased and satisfied not only with the contents of this volume, but also with the fact that in publishing it both the authors and the editors have the opportunity to celebrate the 35<sup>th</sup> anniversary of the work of an eminent Bronze and Early Iron Age scholar **Professor Dr hab. Sylwester Czopek** – co-founder and first director of the Institute of Archaeology of the University of Rzeszów, Dean of the Faculty of Sociology and History, Vice-Rector for Academic Affairs and now Rector of the University of Rzeszów. With gratitude and respect, as well as in recognition of his outstanding achievements, we wish to dedicate this volume to him.*

## Od Redakcji

*Szanowni Czytelnicy, z satysfakcją, ale i przyjemnością prezentujemy jedenasty już tom *Analecta Archaeologica Ressoviensia*. Od czwartego numeru czasopisma staramy się, aby każdy tom miał charakter tematyczny. Tym razem zamieszczamy artykuły Autorów, badających epokę brązu i wczesną epokę żelaza. Dominująca część poświęcona jest różnym kwestiom związanym z problematyką chronologii i periodyzacji, zarówno wspomnianych epok, jak i poszczególnych ugrupowań kulturowych. Niektóre artykuły poświęcone są ocenie wartości poznawczych różnych kategorii zabytków i źródeł, prezentują niecodzienne znaleziska, a także zawierają refleksje dotyczące dziejów badań lub rozważania natury metodologicznej.*

*Mamy nadzieję, że ten zestaw artykułów wzbudzi Państwa zainteresowanie, a także życzliwość dla Autorów, którym w tworzeniu interesujących tekstów przyświecała jedna, wspólna i jakże ważna idea – uhonorowanie Osoby, której tom ten jest poświęcony.*

*Satysfakcja i przyjemność, o której już wspomnieliśmy wynika nie tylko z oceny merytorycznej strony tomu, ale przede wszystkim z faktu, że zarówno Autorzy, jak i Redakcja pragną w ten sposób uczcić 35-lecie pracy naukowej wybitnego badacza epoki brązu i wczesnej epoki żelaza, wieloletniego dyrektora Muzeum Okręgowego w Rzeszowie, współtwórcy i pierwszego Dyrektora Instytutu Archeologii Uniwersytetu Rzeszowskiego, Dziekana Wydziału Socjologiczno-Historycznego, Prorektora do spraw Nauki Uniwersytetu Rzeszowskiego, a obecnie JM Rektora Uniwersytetu Rzeszowskiego – **Pana Profesora dr. hab. Sylwestra Czopka**. To właśnie Jemu – w dowód uznania, szacunku i wdzięczności – tom ten dedykujemy.*

**ARTICLES / ARTYKUŁY**

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Václav Furmánek\*, Vladimír Mitáš\*\*

## Systems of Periodization Developed and Used to Study the Urnfield Period in Slovakia<sup>1</sup>

### ABSTRACT

Furmánek V. and Mitáš V. 2016. Systems of Periodization Developed and Used to Study the Urnfield Period in Slovakia. *Analecta Archaeologica Ressoiviensia* 11, 19–48

The authors offer review of systems of periodization dealing with issues of the Urnfield Period in Slovakia. They refer to the general principles on which chronological and synchronisation models are based, but also on their creation and use. The elements of current periodization of the Bronze Age have been evolving in Europe since the late 19<sup>th</sup> and the early 20<sup>th</sup> centuries (O. Montelius, P. Reinecke), and these systems were further developed. Specifically, the authors deal with more than twenty systems of periodization and synchronisation, which are gradually discussed and then introduced schematically. These systems were developed by Slovak researchers (M. Novotná, V. Furmánek, S. Demeterová and others) during the 20<sup>th</sup> and the early 21<sup>st</sup> centuries. In modified form, these systems are being used to study the Urnfield Period up to the present day.

**Keywords:** Slovakia, Urnfield Period, Chronology, Periodization, Synchronisation

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At present there is a large number of different systems of periodization not only in Slovakia, but also neighbouring countries, which indeed facilitate, but at the same time complicate communication among researchers.

One of the dominant entities of any historical research is the phenomenon of time. Great and certainly well-deserved attention has been paid to the issues of chronology, periodization and synchronisation of the Bronze Age throughout Europe. In all prehistoric periods there is relative chronology and absolute chronology. The relative chronology determines the age of a feature or event relative to the age of other features or events.

Relative chronology is based on several principles.

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The first one is synchronisation, *i.e.* a coincidence in time, comparability and synchronisation of two or more historical events and processes. It is used in chronological comparison of historical, economic and social development of territories, archaeological cultures, events, features and so on. Basically there are two types of synchronisation.

First, it is the synchronisation of relative chronology with data of absolute chronology. In principle, this means that time-anonymous archaeological sources, dated only approximately by relative chronology, are synchronized with known dates and accurately dated historical events and eras. Second, it is a struggle to find a coincidence in time between two or more systems of relative chronology in neighbouring or farther regions. There is used the evidence of cultural interactions, typology and also detailed system of time horizons within the frame. Vertical and horizontal stratigraphy, methods of combinatorial data analysis based on the principles of formal logic, statistics, but especially seriation, cluster analysis or analyses of stylistic similarities. This results in comparative regional and trans-regional schemes of relative chronology of different time periods in prehistory and early history.

The second principle of relative chronology is typology. Typology is basically a method of scientific inquiry, based on organization of portable artefacts or events into types through type being a general and individualized model at the same time. In archaeology it is a classic method of analysis and classification of prehistoric monuments by material, shape, decoration etc. It is based on the premise that between a manufacturer and a product was a dialectical relationship that left clear traces on the resulting products, visible, for example, in changes of shape, ornament, technology and function. Typological method was applied in archaeology already at the end of the 19<sup>th</sup> century mainly by Swedish researcher H. Hildebrand, but especially O. Montelius (1885; 1917). He applied his typological principles of chronological dating method to the Bronze Age artefacts in Scandinavia.

The success of Montelius relative chronological dating method of the Nordic Bronze Age, used even at present time, resides in the application of typological method with methodological rigour on suitable assemblage (bronze artefacts) in relatively constant historical environment (with no major external intervention). Typology in the original concept can actually be seen as application of Darwinism in archaeology. It was assumed that archaeological entities are behaving

like living organisms. Later it was found that the mechanical application of the laws of evolution into products of human activity is not entirely correct.

A gradual suspicion of classical typological methods has started especially since the 1950s. It also meant a departure from constructing isolated typological series, which would be seen as a basis for chronological and historical conclusions. At present, the typology is still used in archaeology, but only as part of a comprehensive structural analysis of large archaeological assemblages. It is notably reflected in modern analytical and spatial archaeology. Those methods are approaching the sources objectively, not generating pre-shaped, functional or technical elements that might reflect developmental changes, but are verified using mathematical and statistical methods.

Stratigraphy is another principle. It is derived from the methods of geology. It consists of records of the sequence of geological strata. This is based on a premise that the bottom intact layer is older than the upper. It is a stratigraphic presupposition. In addition, there is also not entirely fortunate term of horizontal (lateral) stratigraphy, whereby it is assumed that two adjacent archaeological contexts were in a particular diachronic status.

Periodization of Slovak archaeology is based on well-known, widely accepted European schemes of periodization and modified to the conditions of prehistory and early history in Slovakia. Comprehensive and yet basically accepted system of periodization and chronology of Slovak prehistory and early history was published in *Slovenská Archeológia* in the early 1980s and in broad outlines, with only small corrections it is used up to the present day (Chropovský 1980). According to him, the Stone Age is divided into Early (Palaeolithic), Middle (Mesolithic), New (Neolithic) and Late (Aeneolithic). Palaeolithic is subdivided into early, middle, upper and late, Neolithic to the Early, Middle and Late and so is Aeneolithic. The Bronze Age is divided into Early, Middle and Late.

On these principles chronological models and models of periodization and synchronisation were based and developed to study the Urnfield Period in Slovakia. Periodization of the Bronze Age, like any other periodization of prehistory, is a pragmatic tool and allows for a better orientation in the flow of prehistoric history. Basic tenets of existing periodization of the Bronze Age in Central, Western and Northern



Europe were developed by O. Montelius (1885; 1917) and for Central Europe, mostly by P. Reinecke (1899; 1901; 1924). Reinecke's system has been gradually refined (Furmánek 1977a). The detailed and exhaustive summary of the main Central European systems of periodization has been introduced repeatedly, apparently even too minutely (Gumă 1993), therefore here we only refer to their complex publishing in Slovakia and Germany (Furmánek *et al.* 1991, 21–28; 1999, 12–18).

We emphasize that in Slovakia it is currently mainly used for comparative chronological and regional system of synchronisation, which was launched for application in a volume of *Prähistorische Bronzefunde* (Jockenhövel 1974; Müller-Karpe 1974). This means that according to this model the Bronze Age in Slovakia is divided into the Early, Middle and Late. Within the established symbols these are stages BA, BB, BC, BD, HA, HB and other refinements (Furmánek *et al.* 1991, 21–28; 1999, 12–14). Albrecht Jockenhövel (1971, Abb. 3) was the first to publish a detailed and geographically extensive synchronisation table of Central European Urnfield cultures and already mentioned chronological and regional system of synchronisation (Fig. 1; Jockenhövel 1974, 69). Attempts to create new synchronisation for the Carpathian region from the existing schemes are well known today as well (Przybyła 2009, 51, fig. 4).

Earlier work of fundamental importance concerning the issues of Slovak prehistory (Budinský-Krička 1947; Eisner 1933) paid only marginal attention to the periodization of the Urnfield Period. This time period was only divided into Early, Middle and Late Bronze Ages and then further analysed according to defined archaeological cultures.

For periodization of the Urnfield Period M. Novotná has done a tremendous job. She was the first to publish in the monograph dedicated to the bronze hoards of the Urnfield Period in Slovakia (Novotná 1970, 15, Tabelle 1) a brief outline of periodization and its synchronisation with systems of periodization (Fig. 2) developed by W.A. Brunn, A. Mozsolics, H. Müller-Karpe, M. Petrescu-Dîmbovița a M. Rusu. She has further refined the system of periodization and synchronisation in further publications (Fig. 3–5) of the *Prähistorische Bronzefunde* (Novotná 1980, 3, Abb. 1; 1984, 8, Abb. 1; 2001, 3, Abb. 1; Furmánek, Novotná 2006, 65, Abb. 2).

Since 1977 V. Furmánek has studied the periodization and synchronisation of historical development in the northern part of the

Carpathian Basin in the Bronze Age. He submitted extensive and detailed commentary on this issue not only on the pages of *Archeologické rozhledy* in Czech Republic (Fig. 6; Furmánek 1977a, 557, obr. 1), but also in England (Fig. 7; Furmánek 1980a, 124). On the occasion of monographic elaboration of the Piliny Culture his scheme of periodization was published in German (Fig. 8; Furmánek 1977b, 255, Abb. 1).

Of these tables of chronology and synchronisation their modified versions were created (Fig. 9–12), in which archaeological cultures of the Bronze Age in Slovakia have been added and synchronized with the overall system of periodization (Furmánek 1980b, 5, Abb. 1; Furmánek, Veličik, Vladár 1991, 20; 1999, 13, Tabelle 1; Furmánek, Novotná 2006, 6, Abb. 1). Archaeological cultures of the Bronze Age have also been synchronised on the occasion of publication of “The draft of chronology” in the volume *Slovenská archeológia* (Fig. 13; Furmánek, Veličik 1980, 161), in so-called Mexican volume (Fig. 14; Furmánek 1981, 63, fig. 1) and only the Urnfield cultures in materials of XIII World Archaeological Congress in Forlì (Fig. 15; Furmánek 1996, 136, fig. 1).

Chronological and synchronisation tables are specific, comparing the historical development of ancient civilizations from the 24<sup>th</sup> till the 8<sup>th</sup> century BC with the cultural and historical development of the Bronze Age in Slovakia. For both ancient civilizations as well as Slovakia there are used the same years BC. In the Ancient world section there are datable historical events in chronological order. Their equivalent in Slovakia's section are individual archaeological cultures, word division of cultural and historical development to the Early, Middle and Late Bronze Ages respectively, and significant archaeological sites with dating.

Such synchronisation table was first used in the monograph *L'età d'oro dei Carpazi* (Furmánek, Kruta 2002, 25), in which Slovak archaeological cultures with absolute data are compared with ancient historical events and cultural-historical situation in the north of Italy (Fig. 16). A similar concept, also in chronological and synchronisation table, was published in the monograph *Zlatý vek v Karpatoch* (Fig. 17). Instead of archaeological cultures, significant archaeological sites along with expected time of duration were listed (Furmánek 2004, 19, obr. 3). According to it, synchronisation of the events of most ancient civilizations with best examined site of the Urnfield Period in Radzovce has been created (Fig. 18; Furmánek 1990, 17, tab. 1). Recently, this

principle was applied in another monograph on the Bronze Age in Slovakia (Furmánek 2015, 15, fig. 1).

Inspiring and important are some systems of periodization of archaeological cultures of the Urnfield Period. They were presented either in the form of transparent tables or writing (*e.g.* Kotorová-Jenčová 2010). Ladislav Veliačik (1983), starting from the synchronisation of the Bronze Age in Slovakia (Furmánek 1977a, 557) submitted an excellent periodization and synchronisation of the Slovak branch of the Lusatian Culture (Fig. 19). He compared its duration not only with the so-called Frankfurt School system of periodization, but also with the North European system of synchronisation created by O. Montelius (1917), and periodization of the Lusatian Culture in Bohemia, Moravia and Silesia (Veliačik 1983, 172, obr. 8). Synchronisation tables made for Suciú de Sus (Fig. 20) and Gáva Cultures (Fig. 21) published by S. Demeterová are similar (1984, 17, obr. 3; 1986, 109, obr. 2).

However, it should be noted that at times some attempts to replace these commonly applied systems of synchronisation with another system have appeared, which probably better affected history of the Bronze Age in the Carpathian region and in the broader Eurasia (Lichardus, Vladár 1996, 29–33). It was like an attempt on the new relative chronology, although not all over Slovakia, but only in the south-western part (Lichardus, Vladár 1997, 289, Abb. 11). This attempt was undoubtedly interesting and well-founded by archaeological material which has not been accepted in practice so far.

In conclusion, the present study summarizes systems of periodization developed and used for the study of the Urnfield Period in Slovakia. Its purpose is to comprehensively inform colleagues abroad who are dealing with the issues of Central European Urnfield cultures what systems of synchronisation of the Urnfield Period were used in the past and those used now. The current state of this issue truly reflects the chronological and synchronisation table of the Bronze Age in Slovakia (Fig. 22; Furmánek 2015, 16, fig. 2).

	Čaka-Facies	Velatice-Facies	Knovízec Facies (Bouzek)	Milavečec Facies (Bouzek)	Depotfunde
Jüngere Urnenfelderzeit		Klentnice II	Štítary I	Nynice	
		Velatice-Podolí Übergangs- horizont	VI	VI	Rohod-Szentes Jenišovice
Mittlere Urnenfelderzeit		Velatice/Očkov	V	V	
			IV	IV	Přestavlky Suchdol II
Ältere Urnenfelderzeit			III	III	
	Čaka	Baierdorf	II	Sváreč II	Drslavice Lažany II
Frühe Urnenfelderzeit	Vor-Čaka	Blučina	Modřany (I)	Vrhavěc (I)	Blučina Plzeň-Jíkalka
Jüngere Hügelgräberzeit	Salka	Velké Hostěrádky	Prag-Hloubětín	Sedlec 39 Všekary-Hustá Leč I	

**Fig. 1.** Periodization and synchronisation table of the Urnfields in East of Central Europe (after Jockenhövel 1974)

	Slowakei	Ungarn (A. Mozsolics, W. A. Brunn)	Siebenbürgen (W. A. Brunn, M. Rusu, M. Petrescu— Dimbovita)	H. Müller-Karpe
BB	Koszider-Typus	Koszider-Typus		
BC	Dreveník-Blh	Forró-Velký Blh		BC—14. Jh.
BD	Ožďany	Ópályi	Uriu-Domanesti	BD—13. Jh.
	Buzica-Rimavská Sobota			
HA1	Martinček-Bodrog	Kisapáti-Lengyel-tóti	Cincu-Suseni	HA1—12. Jh.
HA2	Komjatná	Jászkarajenő-Uzsavölgy	Turia-Jupalnic	HA2—11. Jh.
HB1	Somotor-Lúčky	Rohod-Szentes	Moigrad-Tauteu	HB1—10. Jh.
HB2			Fizesul Gherlei-Singeorgiul	HB2—9. Jh.
HB3			Somartin-Vetis	HB3—8. Jh.
HC	Istebné-Krásna Hôrka		Bilvanesti-Vint	HC—7. Jh.
HD	↓			

Fig. 2. Synchronisation table of Middle and Late Bronze Age in Slovakia (after Novotná 1970)

Europa und Vorderer Orient	Mitteleuropa	Slowakei						
		Südwest-(Ostteil)	Südwest-(Westteil)	Südost- und Mittel-	Ost-	Lausitzer Kreis	Depotfunde	
Ältere Eisenzeit Frühe Späte Jüngere Mittlere Ältere Frühe Bronzezeit	Jüngere Hallstattzeit						Istebné-Krásna Hôrka	
	Ältere Hallstattzeit	Kalenderberg				Kušanovice	Orava-Typ Platénice	
	Späte Urnenfelderzeit	Frühe Hallstattzeit						
	Jüngere Urnenfelderzeit	Brno-Obřany Klentnice II	Chotín			Vojnatina-Somotor	Lausitzisch-Schlesische Gruppen	Sitno Somotor-Lúčky
	Mittlere Urnenfelderzeit	Oblekovic Klentnice I	Karpatenländ. Phase Velatice II	Kyjatice		Partizánske (·Diviaky II)	Trenčianske Bohuslavice	
	Ältere Urnenfelderzeit	Velatice-Očkov Baierdorf = Lednice	Karpatenländ. Phase Velatice I Čaka	Piliny IV		Gáva Piliny IV	Diviaky ( I )	Martinček-Bodrog (Kurd) Buzica (Áranyos)
	Späte Hügelgräberzeit	Frühe Urnenfelderzeit	Blučina-Kopčany	(Vor-Čaka)	Piliny III	(Vor-Gáva) Piliny III	Mikušovce Ondrašová	Malá Vieska-Opalyi Ožďany
	Jüngere Hügelgräberzeit	Zohor			Piliny II	Suciul de Sus Piliny II	Martin	Dreveník II-Forro
	Mittlere Hügelgräberzeit	Smolenice	Salka		Piliny I	Piliny I	Liptovský Michal	Dreveník I
	Ältere Hügelgräberzeit		Dolný Peter		Spätotomani	Spätotomani		Koszider
	Flachhockerzeit	IV III II I	Spätmad'arovec Mad'arovec Spätaunjetitz Nordpannonische inkrustierte Keramik Aunjetitz-Mad'arovec Hurbanovo Wieselburg Vorklassisches Aunjetitz Nitra II Nitra I Chlopice-Veselé		Otomani Otomani	Otomani Košťany-Gyula-Varsánd Košťany II Košťany I		

Fig. 3. Synchronisation table of the Bronze Age in Slovakia (after Novotná 1980)

Europa und Vorderer Orient	Mitteleuropa	Slowakei					
		Südwest- (Westteil)	Südwest- (Ostteil)	Südost- und Mittel	Ost	Lausitzer Kreis	Depotfunde
Ältere Frühe Späte Jüngere Mittlere Ältere Frühe Ältere Frühe Ältere Frühe Ältere Frühe	Jüngere Ältere Frühe Ältere Frühe Ältere Frühe Ältere Frühe Ältere Frühe Ältere Frühe	Thrakische Kultur					
		Kalenderberg					Istebné-Krásna Hörka
		Brno-Obřany Klentnice II	Chotin			Orava-Typ Platěnice	Sitno
		Oblekovice Klentnice I	Velatice II	Kyjatice		Schlesische Lausitzisch- Gruppe	Somotor-Lúčky
		Velatice-Očkov	Karpatenländische Phase Velatice I		Gáva	Diviaky II	Trenčianske- Bohuslavice
		Baierdorf-Lednice	Čaka			Diviaky I	Martinček- Bodrog (Kurd)
		Blučina-Kopčany	(Vor-Čaka)		(Vor-Gáva)	Mikušovce	Buzica (Aranyos) Malá Vieska- Ópályi
		Zohor				Ondrašová	Ožd'any
		Smolenice	Karpatenländische Hügelgräber	Piliny		Martin	Dreveník II-Forró
		Mitteldanubische Hügelgräber	Dolný Peter	Spätotomani	Spätotomani	Liptovský Michal	Dreveník I
			Spätmad'arovec Väteřov/Mad'arovec				Koszider
			Nordpannonische inkrust. Keramik Aunjetitz-Mad'arovec Hurbanovo Hatvan	Otomani	Otomani		
	Wieselburg Nitra II		Hatvan				
	Nitra I Chlopice-Veselé		Košťany II Košťany I				
SPÄTÄNEOLITHIKUM							

Fig. 4. Synchronisation table of the Bronze Age between Central Europe and Slovakia (after Novotná 1984)

MITTELEUROPA		SLOWAKEI					
		Südwest- (Westteil)	(Ostteil)	Südost- und Mittel-	Ost-	Lausitzer Kreis	Depotfunde
Ha D	Jüngere		Vekerzug	Vekerzug	Vekerzug	Orava	Istebné- Krásna Hôrka
Ha C	Ältere	Kalenderberg				Platénice	
Ha B3	Frühe				Vojnatina		Sitno
Ha B2							
Ha B1	Jüngere	Podolí	Chotín (Podolí)			Schlesische Stufe	Somotor / Lučky
Ha A2	Mittlere	Spät		Kyjatice		Diviaky II	Trenčianske Bohuslavice
Ha A1	Ältere	Mittel (Očkov)	Velatice		Gáva	Diviaky I	Ducové / Martinček / Bôdrog
Bz D	Späte	Früh	Čaka			Mikušovce	Malá Vieska / Buzica
Bz C2	Jüngere	Mitteldanubische Hügelgräber	Karpatenländische Hügelgräber	Piliny	Piliny	Liptovský Mikuláš- Ondrašová Martin	Ožd'any

**Fig. 5.** Synchronisation table from the Middle Bronze Age till the Iron Age between Central Europe and Slovakia (after Novotná 2001)



ROKY PŘ.N.L.	SLOVNÍ OZNAČENÍ	REINECKE WILLWONDER HOLSTE TÖRBRÜGGE MÜLLER-KARPE	FRANKFURTSKÁ ŠKOLA ----- STŘEDNÍ EVROPA   JIŽNÍ BAYORSKO	MOZSOLICS	BÓNA	NOVOTNÁ	HÄNSEL	
-1200	POZDNÍ	HB <sub>3</sub>	POZDNÍ	ROMÁND				
		HB <sub>2</sub>	STŘEDNÍ	B VI		SOMOTOR LÚCKY		
		HB <sub>1</sub>	MLADŠÍ	STARŠÍ	HAJDÚBÖSZÖRMÉNY		KOMJATNÁ	
	MLADŠÍ	HA <sub>2</sub>	STŘEDNÍ	LANGENGEIS- LING	KURD		MARTIŇEK BODROG	SD II
		HA <sub>1</sub>	STARŠÍ	HART	B V			
		BD	RAŇ POZDNÍ	RIEGSEE	ARANYOS ÓPÁLYI	PŘECHODNÁ PERIODA	BUZICA RIM. SOBOTA	SD I
	STŘEDNÍ	BC (BC <sub>2</sub> )	MLADŠÍ	ASENKOFEN	B IV FORRÓ	SB 2	OŽĎANY	
		BB <sub>2</sub> (BC <sub>1</sub> )	STŘEDNÍ	GÖGGENHOFEN		SB 1	DREVENÍK <sup>BLH</sup>	MD III
		BB <sub>1</sub>	STARŠÍ	LOCHHAM	KOSZIDERPADLÁS	MB 3	KOSZIDER	MD II
		BA <sub>2</sub>		LANGQUAD	HAJDÚSÁMSON	MB 2		FD III
-1500	STARŠÍ	BA <sub>1</sub>	FLACHOCKER <sup>*</sup>	B II	MB 1		FD II	
			STRAUBING					FD I

Fig. 6. Synchronisation table of main chronological systems of the Bronze Age in Central Europe (after Furmánek 1977a)

Years B.C.	Bronze Age Phases	Reinecke Willvonseder Holste Torbrügge Müller-Karpe	Frankfurt School ----- Central Europe	Mozsolics	Bóna	Novotná	Hänsel	
1200	Final	HB 3	Final	Late				
		HB 2	Late	Middle	Romand B VI			
		HB 1	Middle	Early	Hajdúböszörmény		Somotor Lúčky	
	Late	HA 2	Middle	Langengeisling	Kurd		Komjatná	
		HA 1	Early	Hart	B V		Martinček Bodrog	SD II
		BD	Incipient	Reigsee	Aranyos	Transitional Period	Buzica Rim.Sobota	
	Middle	BC (BC2)	Final	Asenkofen	Ópályi	SB 2	Ožďany	SD I
		BB2 (BC1)	Late	Hügeltgräber	Forró	SB 1	Drevenik	MD III MD II
		BB1	Middle	Göggenhofen	Kosziderpadlás	MB 3	Koszider	MD I
		BA 2	Early	Lochham	B III	MB 2		FD III FD II
1500	Early	BA 1	Flachhocker	Hajdúsámsón	MB 1		FD I	

Fig. 7. Synchronisation table of main chronological systems of the Bronze Age in Central Europe (after Furmánek 1980a)

JAHRE V. U. Z.	WÖRTLICHE BEZEICHNUNG	REINECKE WILLYONSEDER HOLSTE TORBRÜGGE MÜLLER-KARPE	FRANKFURTER SCHULE		MOZSOLICS	BÓNA	NOVOTNÁ	HÄNSEL	
			MITTELEUROPA	SÜDBAYERN					
-1200	SPÄTE	HB <sub>3</sub>	SPÄTE	SPÄTES	ROMÁND		SOMOTOR LÚCKY		
		HB <sub>2</sub>	JÜNGERE	MITTLERES	B VI				
		HB <sub>1</sub>		ÄLTERES	HAJDÚBÖSZÖRMÉNY				
	JÜNGERE	HA <sub>2</sub>	MITTLERE	LANGENGESLING	KURD		KOMJATNÁ		
		HA <sub>1</sub>	ÄLTERE	HART	B V		MARTINČEK BODROG	SD II	
		BD	FRÜHE SPÄTE	RIEGSEE	ARANYOS ÓPÁLYI	ÜBERGANGS- PERIODE	BUZICA RIM. SOBOTA	SD I	
	-1500	MITTLERE	BC(BC <sub>2</sub> )	JÜNGERE	ASENKOFEN	B IV	FORRÓ	BLH DREVENIK	MD III
			BB <sub>2</sub> (BC <sub>1</sub> )	MITTLERE	GÖGGENHOFEN	B V			MD II
		ÄLTERE	BB <sub>1</sub>	ÄLTERE	LOCHHAM	B III		KOSZIDER	MD I
			BA <sub>2</sub>		LANGQUAID	HAJDÚSÁMSON			FD III
	ÄLTERE	BA <sub>1</sub>	"FLACHHOCKER" STRAUBING	B II			FD II		
								FD I	

Fig. 8. Synchronisation table of main chronological systems of the Bronze Age in Central Europe (after Furmánek 1977b)

Europa und Vorderer Orient	Mitteleuropa	Moszolics	Novotná	Bronzezeitliche Kulturen in der Slowakei und den Nachbargebieten
Frühe Eisenzeit	Späte Urnenfelderzeit	Románd		
	Jüngere Urnenfelderzeit	Hajdúböszörmény	Somotor – Lúčky	18
	Mittlere Urnenfelderzeit	Kurd	Komjatná	
	Ältere Urnenfelderzeit	B V	Martinček – Bodrog	17
	Späte Hügelgräberzeit	Aranyos	Buzica – Rimavská Sobota	15 16
	Jüngere Hügelgräberzeit	B IV	Ópályi	
	Mittlere Hügelgräberzeit	Forró	Ožd'any	
	Ältere Hügelgräberzeit	B III	Kosziderpadlás	
	Jüngere Flachhockerzeit	Hajdúsámson		6 7 10
	Frühe Flachhockerzeit	B II		3 4 5 8 9
				11 12 13 14
				19 20

Abb. 1. Synchronistische Übersicht

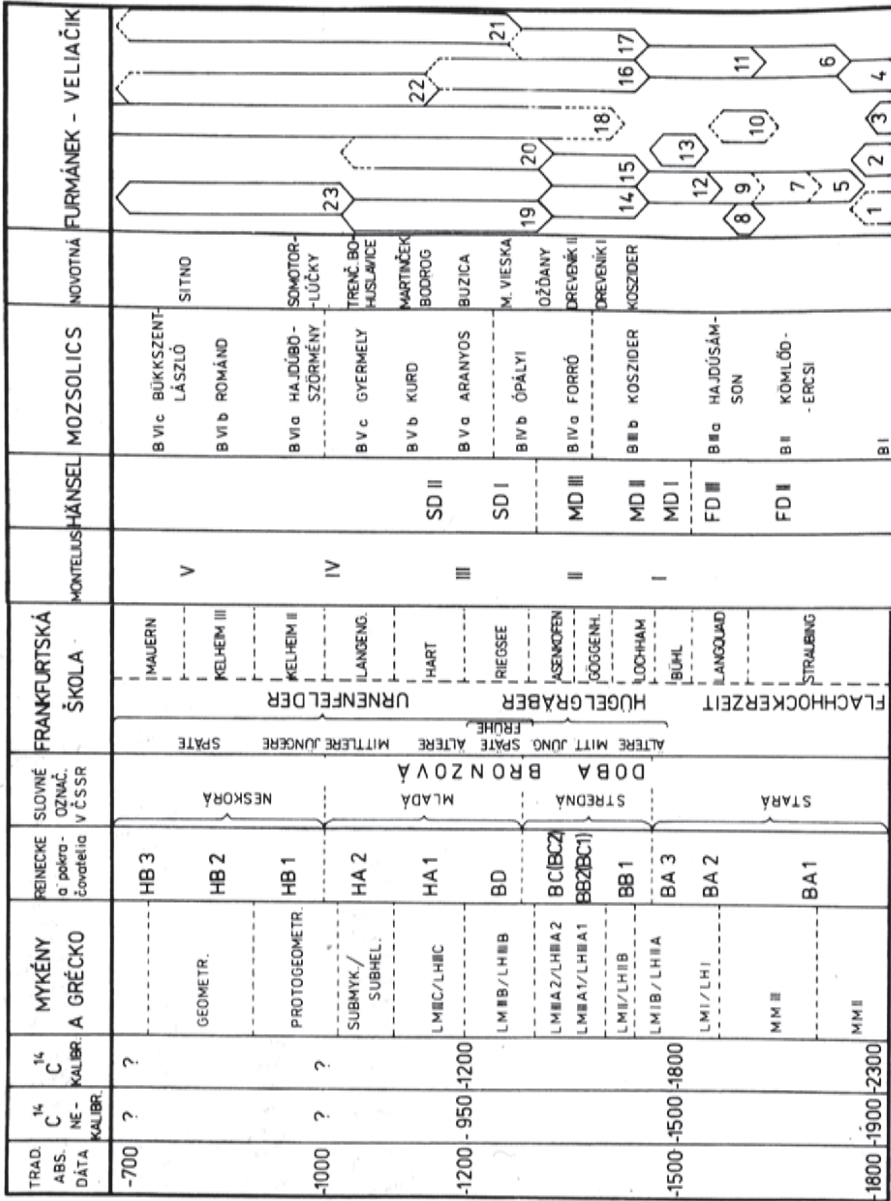
 Die Zahlen der rechten Spalte bezeichnen folgende Kulturen:<sup>52a</sup>

- 1 = Veselé-Typ
- 2 = Nitra-Kultur
- 3 = Wieselburger Kultur
- 4 = Aunjetitzer Kultur
- 5 = Hurbanovo-Typ
- 6 = Mad'arovec-Kultur
- 7 = Nordpannonische Kultur

- 8 = Hatvan-Kultur
- 9 = Košť'any-Kultur
- 10 = Otomani-Kultur
- 11 = Mitteldanubische Hügelgräberkultur
- 12 = Karpatenländische Hügelgräberkultur
- 13 = Pilinyer Kultur
- 14 = Kultur Suciu de Sus

- 15 = Velaticer Kultur
- 16 = Čaka-Kultur
- 17 = Lausitzer Kultur
- 18 = Podoler Kultur
- 19 = Kyjaticer Kultur
- 20 = Gáva-Kultur

Fig. 9. Synchronisation table of main chronological systems of the Bronze Age in Central Europe with archaeological cultures in Slovakia (after Furmánek 1980b)



- 1 Kultúra zvoncovitých pohárov
- 2 Nagyrévská kultúra
- 3 Kultúra východoslovenských mohýl
- 4 Kultúra Nyírség-Zatin
- 5 Kultúra Chloptce-Veselé
- 6 Košťianska kultúra
- 7 Nitrianska kultúra
- 8 Wieselburská kultúra
- 9 Umětická kultúra a hurbanovský typ
- 10 Hatvanská kultúra
- 11 Otomanská kultúra
- 12 Maďarovská kultúra
- 13 Severopánska kultúra
- 14 Stredodunajská mohylová kultúra
- 15 Karpatská mohylová kultúra
- 16 Flínská kultúra
- 17 Kultúra Suciu de Sus
- 18 Lužická kultúra
- 19 Velatická kultúra
- 20 Čakanská kultúra
- 21 Gávaška kultúra
- 22 Kyjatická kultúra
- 23 Podolská kultúra

Fig. 10. Synchronisation table of main chronological systems of the Bronze Age in Central Europe with archaeological cultures in Slovakia (after Furmánek et al. 1991)

TRADABS DATEN	<sup>14</sup> C CAL.	GRIECHEN- LAND	REINKEKE CLAS	SLOWAKEI	FRANKFURTER SCHULE	MONTELIUS	HÄNSEL	MOZSOLICS	NOVOTNÁ	FURMÁNEK- VELIAČIK
-750			HB3	SPÄTE	MAERN	V		BVIc BÜKKSZENT- LASZLO	SITNO	
		GEOMETR.	HB2		KELHEIM III			BVIb ROMÁND		
-1000		PROTOGEOMETR.	HB1		KELHEIM II	IV		BVIa HAJDÚBÓ- SZÖRMÉNY	SOMTOR- LUCKY	
		SUBMYK/ SUBHÉL	HA2		LANGENG			BVc GYERMELY	TREŇANSKE BOHUSLAVICE	
		LMIIIc / LHIIIc	HA1	JÜNGERE	HART		SDII	BVb KURD	MARTIŇEK BODROG	
-1200	-1200	LMIIIb / LHIIIb	BD		RIEGSEE	III	SDI	BVa ARANYOS	BUZICA	
		LMIIIa2 / LHIIIa2	BC/BCZ		ASENKOFEN			BIVb ÓPÁLYI	M. VIESKA	21
		LMIIIa1 / LHIIIa1	BB2/BC1	MITTLERE	GÖGGENH.	II	MDIII	BIVa FORRÓ	OZDANY	20
		LMIIIb / LHIIIb	BB1		LOCHHMAN			BIIIb KOSZIDER	DREVENIK II DREVENIK I	18
-1500	-1600	LMIIIb / LHIIIa	BA3		BÜHL	I	MDI		KOSZIDER	14 15
		LMII / LH I	BA2		LANGQUAD		FDIII	BIIIa HAJDÚSÁM- SON		12 13
		MM III	BA1	ALTERE	STRAUBING		FDII	BII KÖMLÖD- ERCSI		10 11
-2000	-2300	MM II						BI		7 8 9
										5 6
										1 2 3 4

I Glockenbecher-K.; 2 Nagyrév-K.; 3 Ostslowakische Hügelgräber-K.; 4 Nyírség-Zatin-K.; 5 Chotovice-Veselé-K.; 6 Košťany-K.; 7 Nitra-K.; 8 Wieselburger-K.; 9 Aunjetitzer-K. u. Hurbánovo-Typ; 10 Hatvan-K.; 11 Otmani-K.; 12 Mad'arovce-K.; 13 Nordpannonische K.; 14 Mitteladribische Hügelgräber-K.; 15 Karpatische Hügelgräber-K.; 16 Piliňer K.; 17 Suciu de Sus-K.; 18 Lausitzer K.; 19 Velatice-K.; 20 Čaka-K.; 21 Gáva-K.; 22 Kyjatice-K.; 23 Podoler K.

Fig. 11. Archaeological cultures of the Bronze Age in Slovakia (after Furmánek et al. 1999)

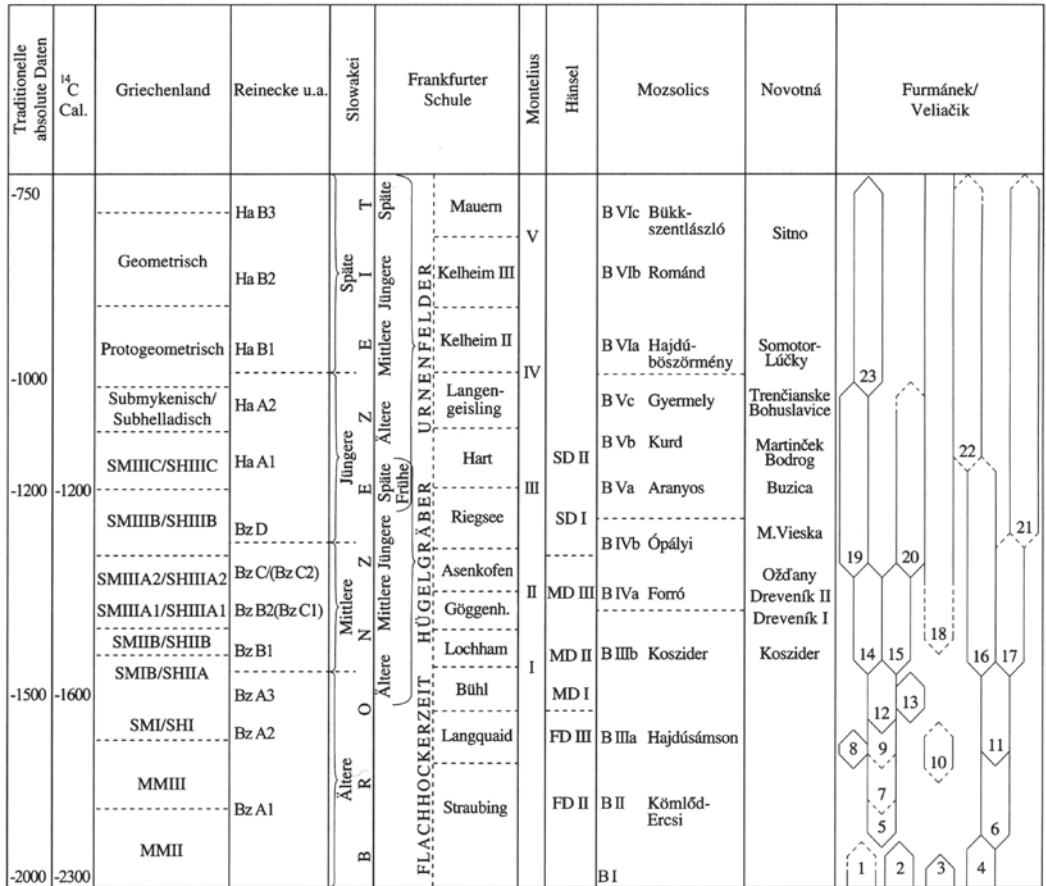


Abbildung 1. Relative Chronologiesysteme der Bronzezeit (nach Furmánek / Veliačik / Vladár, Bronzezeit 13).  
 1 = Glockenbecher-Kultur; 2 = Nagyrév-Kultur; 3 = Ostslowakische Hügelgräberkultur; 4 = Nyírség-Zatín-Kultur; 5 = Chlopice-Veselé-Kultur; 6 = Košťany-Kultur; 7 = Nitra-Kultur; 8 = Wieselburger Kultur; 9 = Aunjetitzer Kultur u. Hurbanovo-Typ; 10 = Hatvan-Kultur; 11 = Otomani-Kultur; 12 = Madarovce-Kultur; 13 = Nordpannonische Kultur; 14 = Mitteldanubische Hügelgräberkultur; 15 = Karpatische Hügelgräberkultur; 16 = Pilinyer Kultur; 17 = Suci de Sus-Kultur; 18 = Lausitzer Kultur; 19 = Velatice-Kultur; 20 = Čaka- Kultur; 21 = Gáva-Kultur; 22 = Kyjatice-Kultur; 23 = Podoler Kultur

Fig. 12. Archaeological cultures of the Bronze Age in Slovakia (after Furmánek 2006)

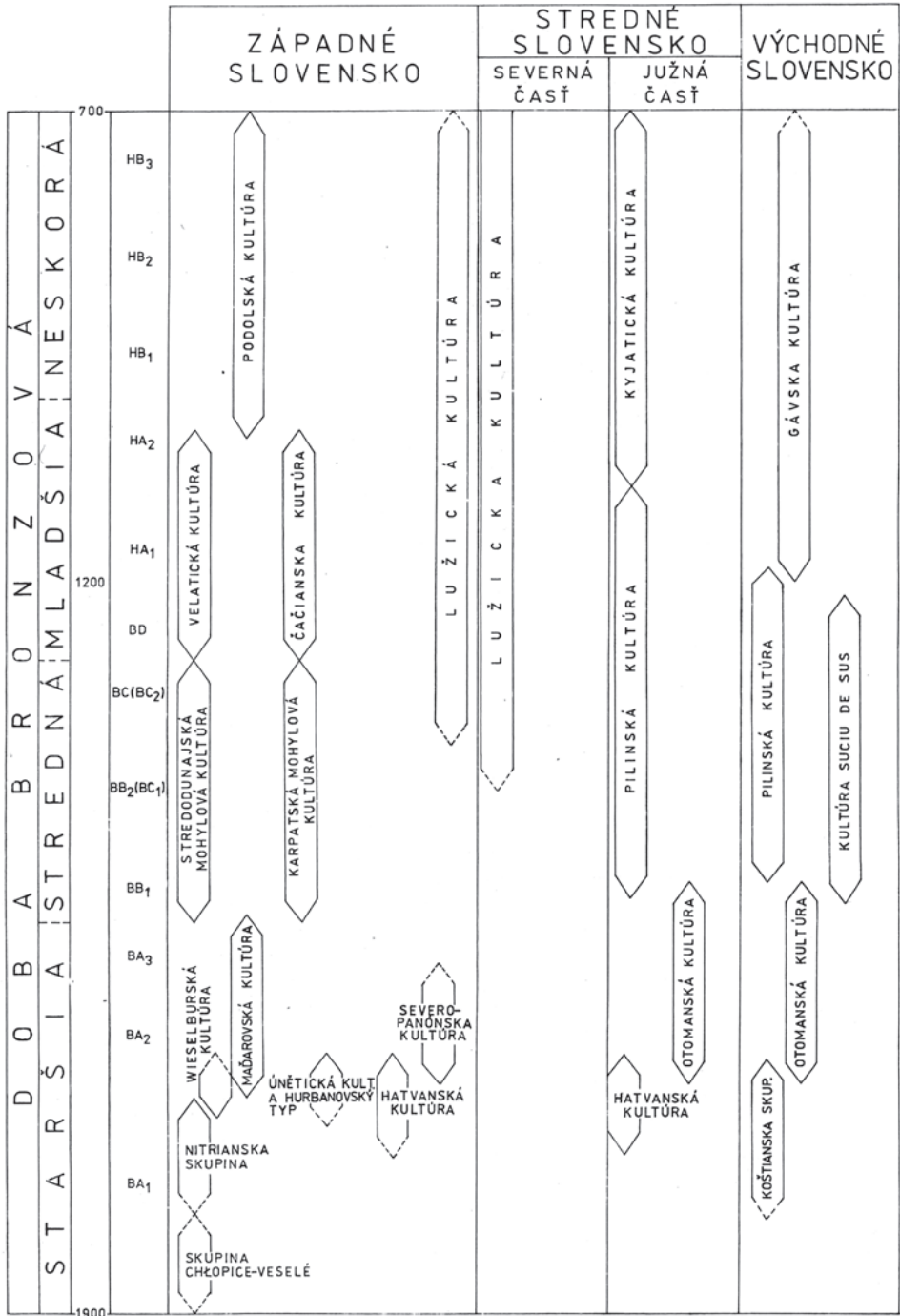


Fig. 13. Chronological table of the Bronze Age in Slovakia (after Furmánek, Veliáček 1980)



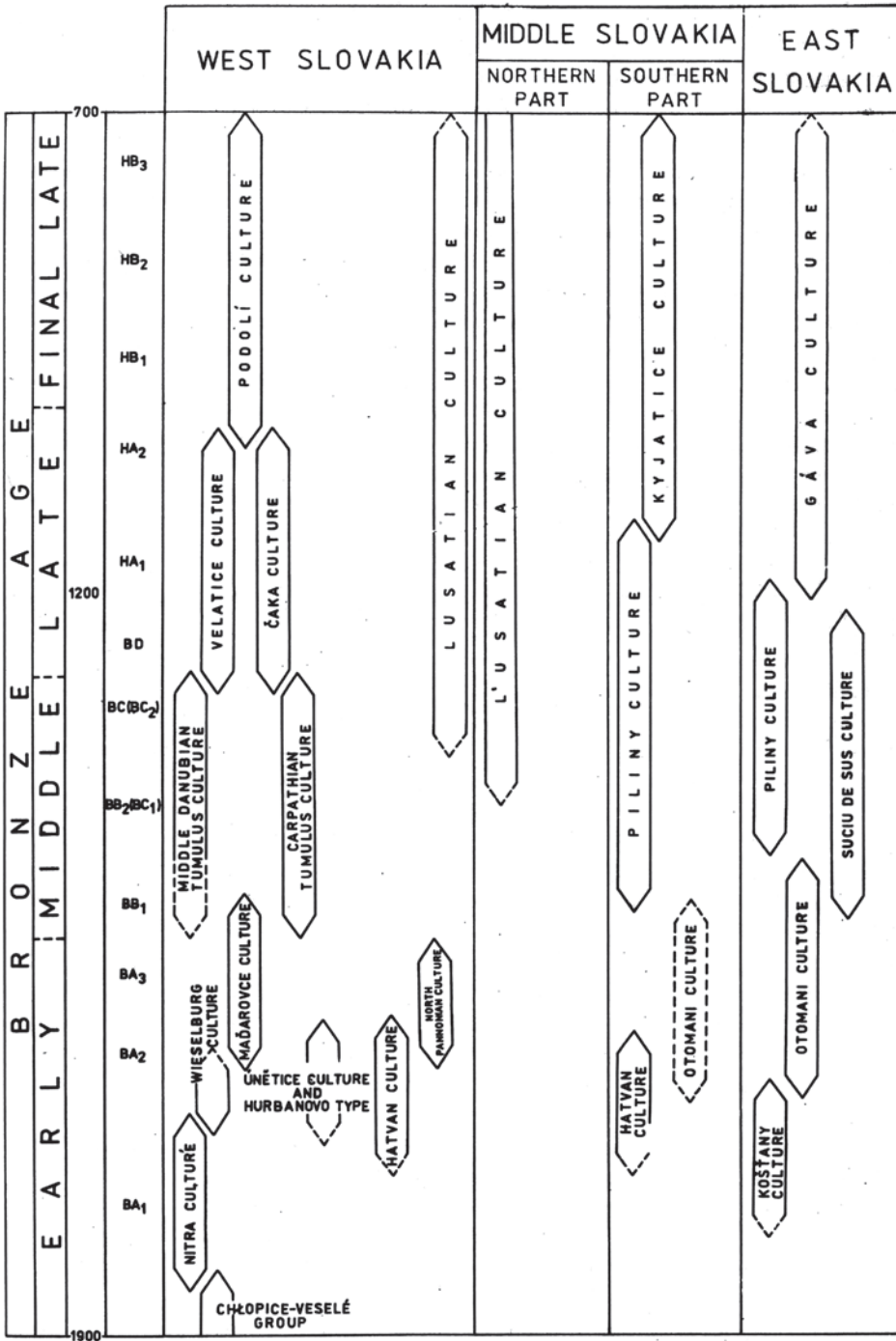
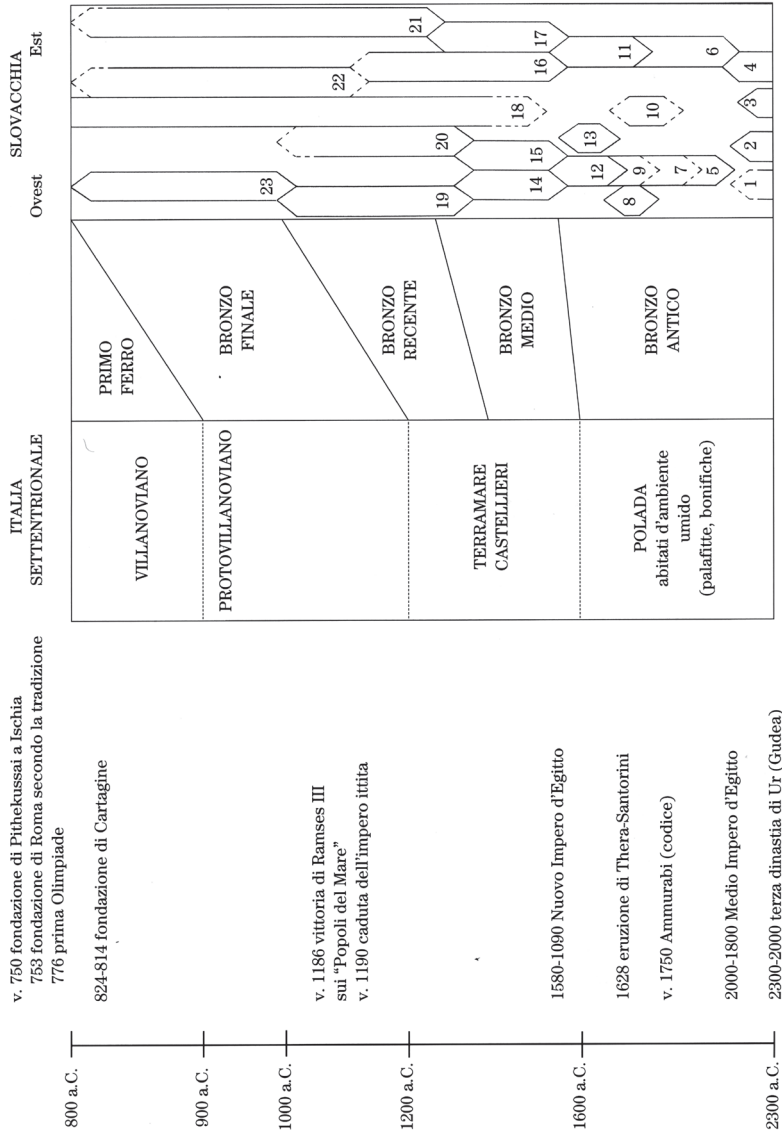


Fig. 14. Chronological table of the Bronze Age in Slovakia (after Furmánek 1981)

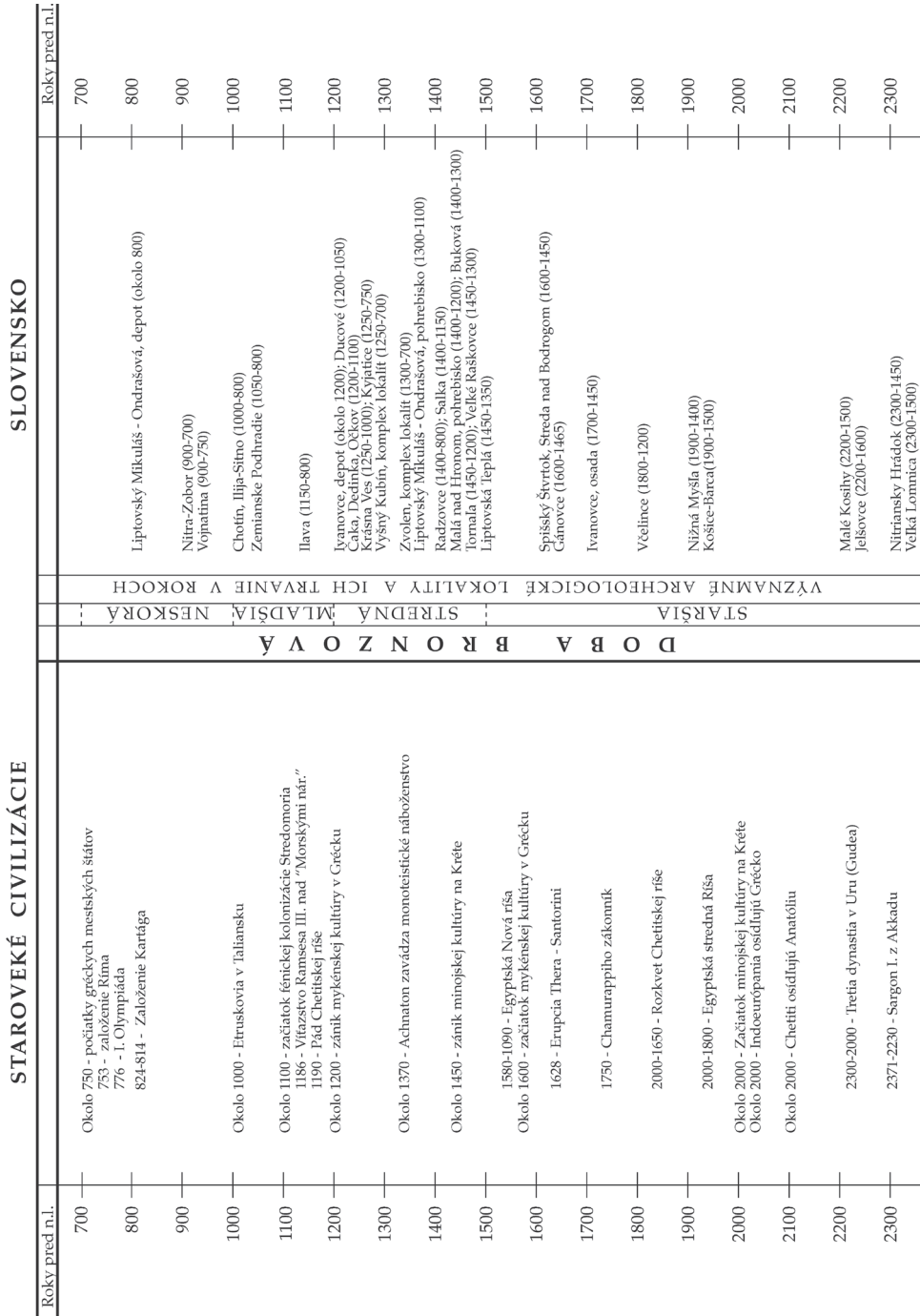
		SW SLOVAKIA	S MORAVIA	E AUSTRIA	W HUNGARY	N CROATIA	BANAT	S HUNGARY, VOJVODINA	NW RUMANIA	N RUMANIA	B HUNGARY	S of MID. SLOVAKIA & N of MID. HUNGARY	N SLOVAKIA	
B R O N Z E A G E	HB <sub>1</sub> HR <sub>1</sub> HB <sub>1</sub> HA <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub> BB <sub>1</sub>	HB <sub>1</sub>	HB <sub>1</sub>	HB <sub>1</sub>	HA <sub>1</sub>	HA <sub>1</sub>	BD	BC	BB <sub>1</sub>	BB <sub>1</sub>	BB <sub>1</sub>	BB <sub>1</sub>	BB <sub>1</sub>	
		1000 B.C.	1000 B.C.	1000 B.C.	1000 B.C.	1000 B.C.	1000 B.C.	1000 B.C.	1000 B.C.	1000 B.C.	1000 B.C.	1000 B.C.	1000 B.C.	1000 B.C.
		L A T E	L A T E	L A T E	L A T E	L A T E	L A T E	L A T E	L A T E	L A T E	L A T E	L A T E	L A T E	L A T E
		HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	
		HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	
		HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	
		HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	HB <sub>1</sub> HA <sub>1</sub> BD BC BB <sub>1</sub>	

Fig. 15. Attempt at a schematic synchronisation of the Urnfield cultures in Danube Basin (Furmánek 1996)



1. Complesso a vaso campaniforme, 2. Cultura di Nagyrév, 3. Tumuli della Slovacchia orientale, 4. Cultura di Nyírség-Zatán, 5. Cultura di Chłopice-Veselé, 6. Gruppo di Košťany, 7. Cultura di Nitra, 8. Cultura di Wieselburg, 9. Cultura di Únětice, 10. Cultura di Hatvan, 11. Cultura di Otomány, 12. Cultura di Madaróce, 13. Cultura nord-pannonica, 14. Cultura medio-danubiana dei tumuli, 15. Cultura carpatica dei tumuli, 16. Cultura di Piliny, 17. Cultura Suci de Sus, 18. Cultura lusaziana, 19. Cultura di Velatice, 20. Cultura di Čaka, 21. Cultura di Gáva, 22. Cultura di Podolí (da Furmánek-Veliáčik-Vladár 1999).

**Fig. 16.** Chronological and synchronisation table of Ancient civilisation, North Italy and archaeological cultures of the Bronze Age in Slovakia (after Furmánek, Kruta 2002)



**Fig. 17.** Chronological and synchronisation table of Ancient civilization and the most important places of the Bronze Age found in Slovakia (after Furmánek 2004)

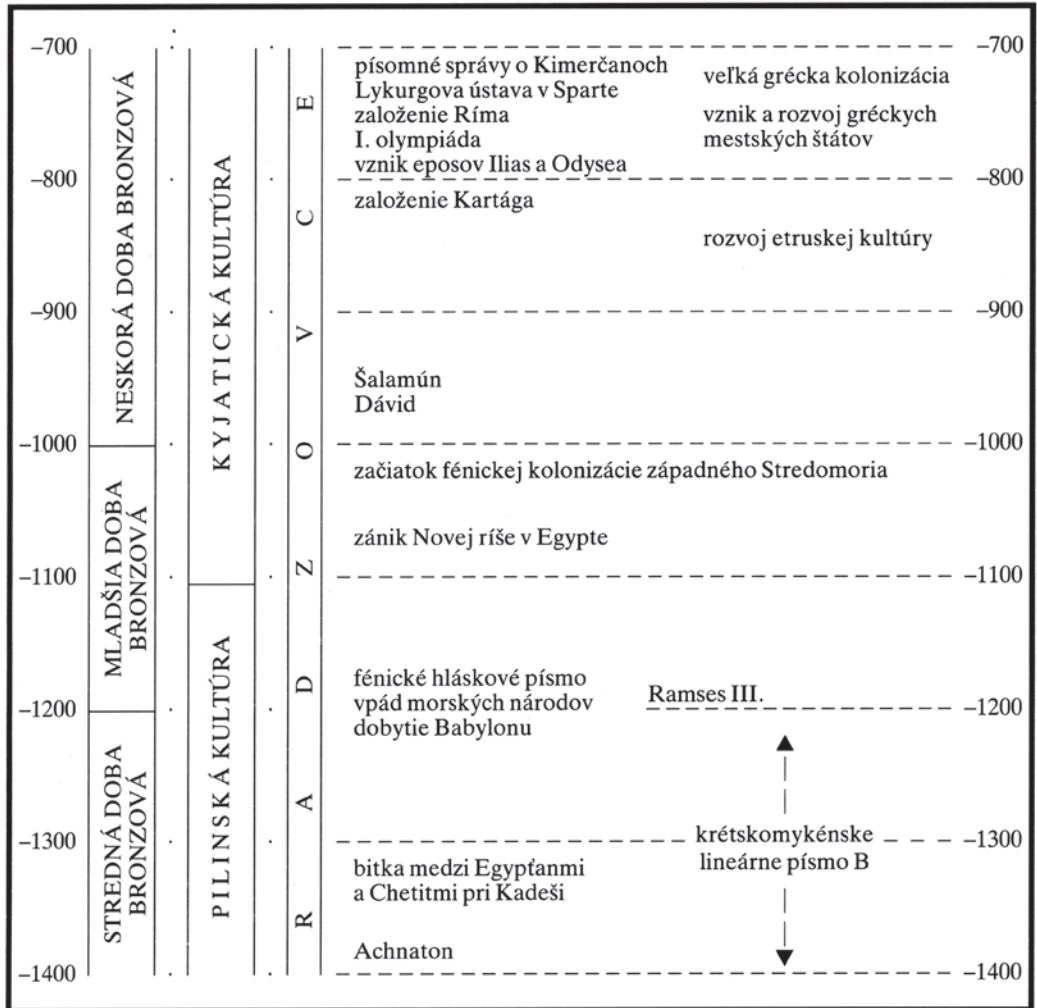


Fig. 18. Chronological and synchronisation table of Ancient civilization with settlement in Radzovce (after Furmánek 1990)

Absol. Daten v. u. Z.	Wörtliche Bezeichnung	REINECKE WILLVONSEDER HOLSTÉ TORBRÜGGE MÜLLER-KARPE	MITTELEUROPA	LAUSITZER KULTUR						MONTELIUS
				BÖHMEN	NORD-UND MITTEL-MAHREN	NORD- UND MITTEL-SLOWAKEI	SLOWAKEI (Depots)	SCHLESISIEN		
800	späte	HB3	späte	Schlesische Kultur II	Čelechovice	Schlesische Stufe			IV	V
				Schlesische Kultur I	Ptení					
				III b	Domamyslice II					
1000	jüngere	HB1	jüngere	III a	Domamyslice I	Übergangs-horizont	Somotor-Lúčky	III	IV	
				III a	Kostelec	Diviaky n.N. II	Komjatná			
				II b	Hrubčice	Diviaky n.N. II	Martínček-Bodrog			
				II a	Mostkovice	III Mikušovce	Buzica-Rim.Sobota			
1200	ältere	HA1	ältere	I	Záhoří	Lipt. Mikuláš Ondrašová	Ožďany	II	III	
				Vorlausitzer Kultur	Hradisko C	Martin	Drevenik-Blh			
					Hradisko B Bezměrov	Liptovský Michal	Koszider-Horizont			
1400	mittlere	BB2(BC1)	mittlere			Liptovská Teplá		I	II	

Fig. 19. Synchronisation table of main chronological systems of the Bronze Age in Central Europe with periodisation of the Lusatian Culture (after Veličák 1983)

LES ANNÉES AV. N. E.	ÉPOQUE	REINECKE WILVONSEDER HOLŠTE TORBRÜGGE MÜLLER-KARPE	T. BADER (1972, 1978)	N. CHIDIOȘAN (1970)	A. VULPE (1971, 1975)	C. KACSÓ (1975)	H. G. HÜTTEL (1979)	
1200	A G F D U B R O N Z E	HA <sub>2</sub>	G Á V A OTOMANI IV - SUCIU DE SUS III - LĂPUȘ I (L'HORIZON URIU) (CULCIU MARE)	----- ↑	----- LĂPUȘ II (III) LĂPUȘ I ----- (II) MEDIEȘU-AURIT	----- LĂPUȘ II ----- LĂPUȘ I	LĂPUȘ II (SD II)	
		HA <sub>1</sub>						
1500	A G F D U B R O N Z E	BD	OTOMANI III B - SUCIU DE SUS II OTOMANI III A (CULCIU MIC) OTOMANI II - WIETENBERG II - SUCIU DE SUS (L'HORIZON APA) (MEDIEȘU-AURIT)	SUCIU DE SUS - OTOMANI III - WIETENBERG III	(I) SUCIU DE SUS	SUCIU DE SUS (I)	? ↑ (MD III)  MEDIEȘU-AURIT. -CULCIU MARE (MD II) SUCIU DE SUS ? ↓ CULCIU MIC (MD I) TUMULUS DE MEDIEȘU-AURIT	LĂPUȘ I (SD I)
		BC						
		BC <sub>2</sub>						
		BB						
		BB <sub>1</sub>						
BA <sub>2</sub>	BA <sub>2</sub>	OTOMANI I						
BA <sub>1</sub>	BA <sub>1</sub>	OTOMANI I						

Fig. 20. Developmental phases of the Suci de Sus Culture (after Demeterová 1984)

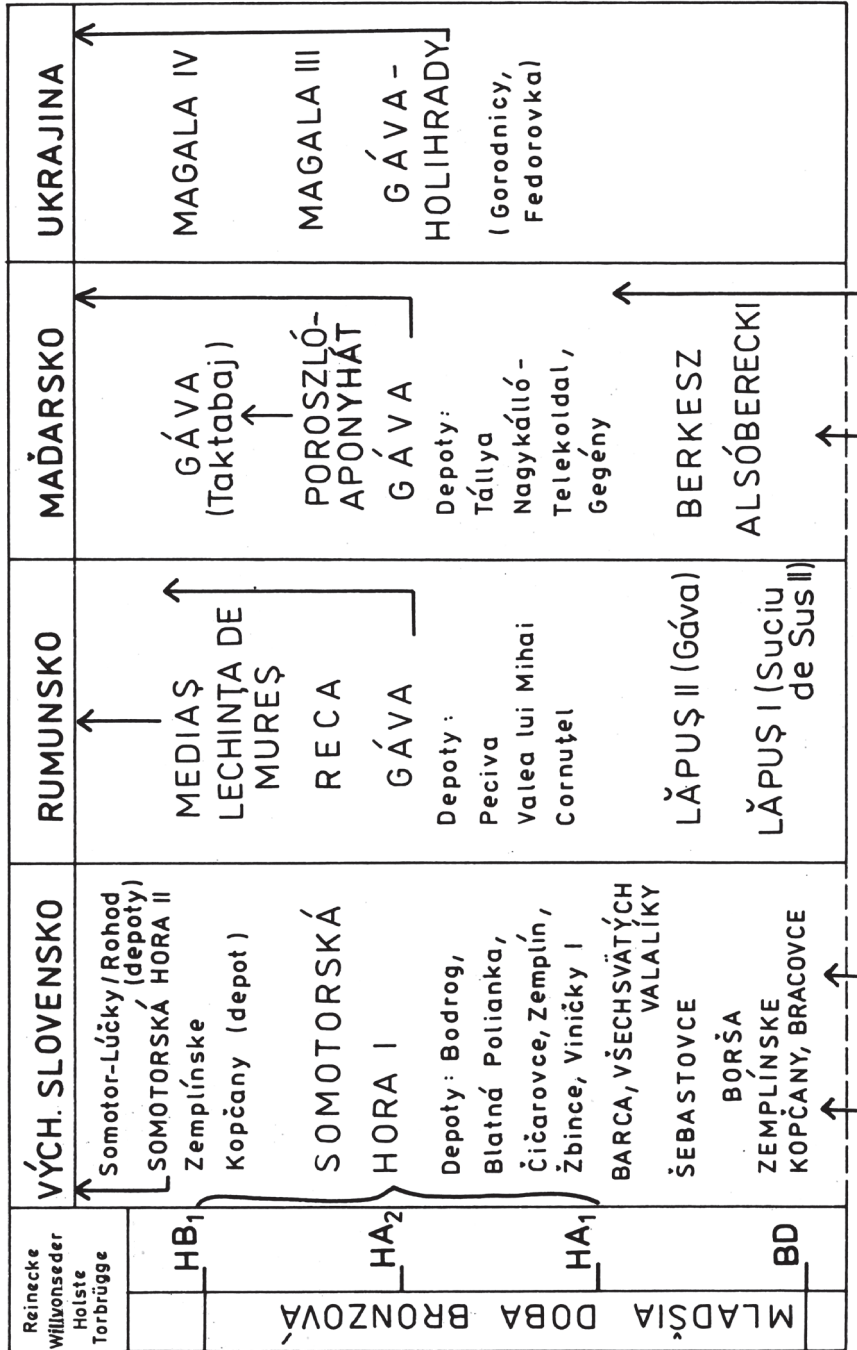


Fig. 21. Developmental phases of the Gáva Culture (after Demeterová 1986)



ABS. DÁTA	REINECKE a pokračovatelia	SLOVNÉ OZNAČ.	HÄNSEL	FRANKFURTSKÁ ŠKOLA
-750/ 800	HB 3	} NESKORÁ		MAUERN
	HB 2			KELHEIM III
	HB 1			KELHEIM II
-1000	HA 2	} MLADÁ	SD II	LANGENG.
-1200	HA 1			HART
	BD			RIEGSEE
-1800	BC(BC2) BB2(BC1)	} STREDNÁ	SD I	ASENKOFEN
	BB 1			GÖGGENH.
	BA 3			LOCHHAM
	BA 2			BÜHL
-2300	BA 1	} STARÁ	MD III	FLACHHOCKERZEIT
			MD II	LANGQUAID
			MD I	STRAUBING
			FD III	
			FD II	

Fig. 22. Chronological and synchronisation table of Bronze Age in Slovakia (after Furmánek 2015)

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