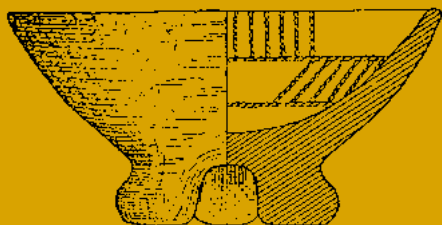


# Baden, Kostolac, Vučedol and Vinkovci



The Late Eneolithic,  
Transition Period,  
and Early Bronze Age  
in the Carpathian Basin  
and the Western Balkans

Želimir Brnić



KAROLINUM PRESS

Karolinum Press is a publishing department of Charles University

Ovocný trh 560/5, 116 36 Prague 1, Czech Republic

[www.karolinum.cz](http://www.karolinum.cz)

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Cover illustrations © After: Lagodovska et al. 1962; Saveljić Bulatović - Lutovac 2003; J. Koledin

Cover and layout by DTP Karolinum Press

Set in the Czech Republic by Karolinum Press

First English edition

A catalogue record for this book is available from the National Library of the Czech Republic.

This publication was published with the support of the Ministry of Education, Youth and Sports and the Czech Recovery Plan within the project Transformation for Universities at CU (reg. No. NPO\_UK\_MSMT-16602/2022)



**Funded by  
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The original manuscript was reviewed by Prof. dr.sc. Marina Miličević Bradač (Faculty of Humanities and Social Sciences, Department of Archaeology, University of Zagreb), and doc. PhDr. Miroslav Popelka, CSc. (Department of Archaeology, Faculty of Arts, Charles University).

ISBN 978-80-246-5178-1

ISBN 978-80-246-5235-1 (pdf)



Charles University  
Karolinum Press

[www.karolinum.cz](http://www.karolinum.cz)  
[ebooks@karolinum.cz](mailto:ebooks@karolinum.cz)

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## Introduction

This work is the fruit of the concerted investigation and study of archaeological material that began in 1978 with my participation in the investigation of the Hotel tell site in Vinkovci and the ensuing years spent working on the conservation, documentation and study of the collected pottery. This remarkable site sparked my interest in the problematics associated with the Late Eneolithic and the dawn of the Early Bronze Age. I later participated in a number of other major investigative efforts, all of which afforded me the opportunity to delve further into these questions. These included Vučedol (the Vinograd Streim and Kukuruzište Streim sites), the Gomolava site near Hrtkovci, the Gradina site on the Bosut River, and a number of other archaeological investigations of smaller scale. The insights presented here concerning the development of Eneolithic cultures and their identification were acquired during my participation in the systematic investigations of the Kukuruzište Streim and Vinograd Streim sites at Vučedol, where I performed pottery analysis and led the excavation of the Baden culture strata.

My time in Prague was given over to the study of the prehistoric cultures of Central Europe. At Vliněves, forty kilometres to the north of Prague, I investigated an Eneolithic (Corded Ware) and Early Bronze Age settlement and necropolis with 114 graves (Dobeš, Limburský, Brnić et al. 2013). It was at this site that I discovered a necropolis of the early and late local phase of the Central European Corded Ware culture, which I shall refer to here as the *Schnurkeramik* culture to distinguish it from similar pottery in the Carpathian Basin and the southeast of Europe.

Throughout this time, I was met with understanding and afforded the opportunity to study finds, for which I wish to express my gratitude to all the persons involved for their help and collaboration.

## The Subject Matter

In the Late Eneolithic, a transitional period into the Early Bronze Age (EBA), I submit that the Carpathian Basin was home to indigenous cultures in which we can follow the development of the Kostolac culture out of the Baden culture, and of the Vučedol culture out of the Kostolac culture. This development is marked by both qualitative and quantitative shifts that cannot be explained within the frame of an ongoing native development alone. I see the initiator of these shifts in external influences and the penetration of foreign populations into the Carpathian Basin. In specialized literature, these migrations and cultural influences have been variously dated and assessed (e.g., finds recovered at Iža and Podolie in Slovakia have been interpreted as native elements), and no consideration has been given to outside interactions with native cultures (Baden, Kostolac, Vučedol), i.e., how foreign influence and incoming migration impacted the native cultures of the Carpathian Basin.

I submit that the Baden culture Phase I (Boleráz) and Phase II constitute a transition from the Middle to Late Eneolithic, which is marked by the emergence of the Baden Phase III.

Thus, the focus here will be the period from the classical Baden Phase III to the end of the Vučedol culture and the dawn of the EBA.

V. G. Childe (1925) was the first to propose a hypothesis concerning Pit Grave culture kurgans in the northeast of Hungary. There was lively debate on the topic in the 1960s and 1970s, including monographic analyses of these finds (N. Kalicz 1968; I. Ecsedy 1979a). Specialist analyses vary in terms of their assessments of origin and dates but – for the most part – these penetrations are dated to the Baden culture period (N. Kalicz 1968; I. Ecsedy 1979a).

Many hypotheses have been proposed concerning the migrations of Indo-Europeans, the most significant of which was proposed by M. Gimbutas (1970, 1979). Also particularly noteworthy are the arguments put forward by E. E. Kuzmina (2001) and D. V. Antoni (1991).

M. Gimbutas (1970, 1979) has posited three waves of Indo-European migration in the period from 4500 to 2500 BC.

C. Renfrew (1987) has proposed that the Indo-European farmers that were the first to arrive from the southeast were also the first to speak an Indo-European language.

B. Jovanović (1979a, 381 and elsewhere; 1979b, 397 and elsewhere), N. Tasić (1983, 15 and elsewhere) and M. Garašanin (1961, 5 and elsewhere) have also discussed the problem of the migration of Indo-Europeans and steppe peoples.

The correct identification and dating of migration episodes and of the interactions between immigrant and native populations allows us to advance more complex cultural history interpretations and contributes to an improved understanding of the emergence of ancient peoples in a particular geographic region.

Impressed cord decoration is one of the foreign (introduced) features of pottery decoration in the Carpathian Basin. There have been no monographic treatments of this type as it pertains to the Carpathian Basin, with the exception of P. Roman's

(1974; Roman, P. et al 1992) treatment of the question as it pertains to the southeast of Europe. It has even been proposed that it constituted a native element.

The focus of our interest are the penetrations of foreign populations and the impacts of foreign cultures in the Carpathian Basin.

We can isolate two components of the foreign elements. The first is the penetration of the Pit Grave culture population, while the second pertains to finds of pottery with impressed cord decoration, largely recovered from settlement contexts. In the analysis of Pit Grave culture kurgans, this paper draws on the monographic treatments of this question (M. Gimbutas 1970, A. Häusler 1976, N. Kalicz 1968, I. Ecsedy 1979a; J. Dani 2011).

The analysis of impressed cord pottery is critical to our consideration of the issues addressed here, and this work will draw on already published material as well as unpublished new finds toward its end.

This work will also analyse the penetration of the Bell Beaker culture – recently identified at the Petrovaradin Fortress site in Vojvodina – into the Carpathian Basin. Turek (2013) erroneously attributed and dated a jug recovered at the Tvrdava (Fortress) site in Petrovaradin to the Nagyrév culture. It is, however, a typical Vinkovci culture jug; older than Nagyrév jugs, which necessarily implies an entirely different cultural-historical interpretation.

The primary objective is to identify the precise period of Pit Grave culture penetration and the interaction of this population with native cultures. Furthermore, the objective of the study is to isolate, enumerate and analyse all foreign elements based on ceramographic analysis, certainly the foremost method applied in the identification of prehistoric cultures. The study will also endeavour to identify the original cultures associated with these phenomena. The finds will be mapped out in order to reconstruct the further penetration and influences emanating from foreign milieus. The correct dating of the finds and interactions with indigenous cultures which a complex cultural history interpretation will emerge from is a further crucial objective.

Establishing the vertical and horizontal stratigraphy is the most reliable method of identifying the chronological sequence and the interrelations of archaeological cultures. This method will be utilised to examine the interrelation of native and foreign cultures in terms of the precise dating of the latter.

Finds from enclosed sites such as pits are clear indicators of the cultural/chronological horizon of a culture and of the chronological concurrency of various manifestations of a culture. A ceramographic analysis will be utilised to identify foreign elements as they relate to native cultures, and to identify the cultural origin of foreign elements in pottery decoration. The funeral rites of individual culture groups will also be analysed. An absolute chronology will be considered and a chronological table will be developed on the basis of calibrated radiocarbon dates.

Two models stand out in the cultural-historical interpretation of the Late Eneolithic in the Carpathian Basin. One model is the ongoing indigenous development, and the other looks at the migration of foreign populations from the Eurasian steppes. This study is structured to follow the chronological sequence and thus also foreign penetration in relation to native cultures. It will also show new evidence for a novel dating of the penetration of the Pit Grave culture population. The paper also analyses pottery that I propose to be the product of foreign cultures whose interaction with the native cultures of the Carpathian Basin led to the emergence of new cultures (as I see it in the example of finds from the Podolie: **T.56 & T.57** and Stránska: **T.58–T.60** sites in Slovakia).

A clarification of the chronological/genetic interrelations of the three cultures that were at the heart of Late Eneolithic cultural development in the Carpathian Basin is in our focus as well. The vertical stratigraphy indicators of multilayer, tell settlements such as Vučedol and Gomolava, and the global horizontal stratigraphy, will show the chronological and cultural autonomy of the Baden, Kostolac and Vučedol cultures. I will also show the continuity of development from older to younger culture, i.e., the process of the emergence of a younger culture from the substratum of the older

culture. Of critical interest, therefore, is a precise identification of the final phase of the older culture as the underpinning and initial phase of the emergent culture, with all the salient characteristics that define and set that culture apart. The Baden-Kostolac-Vučedol evolution constitutes an indigenous and continuous Late Eneolithic development in the Carpathian Basin. This development saw qualitative, but primarily quantitative changes, the causes of which are not generated by the evolution alone.

A critical part of a cultural history interpretation is the reaction of the native culture, its development and area of distribution. In addition to the enumeration of finds of foreign origin (Pit Grave culture kurgans, impressed cord decoration, bell beakers, etc.), it is, therefore, the analysis of indigenous development that is critical to the identification, dating, and cultural history interpretation of the migration phenomenon.

We have thus identified two models that offer explanatory value concerning the Late Eneolithic development. This, of course, by no means suggests that a period as complex as the end of the Eneolithic and the dawn of the EBA can be interpreted simply by pigeonholing it under one or another denominator. It only provides a foundation from which to elucidate complex processes in one of the turning points in prehistory. The migration phenomenon, for example, will have a different connotation precisely on account of different interactions with the local environment or neighbouring influences. Regardless of the many migration types – archeologically difficult to distinguish or indistinguishable – the impact of the incursion of a foreign ethnicity, bringing with it a culture and customs, ranges from dire situations that either extinguish the existing native culture or force it out of the area into which a foreign culture has penetrated, to something akin to symbiosis, i.e., a situation in which we see the infiltration of foreign elements into the native culture. The latter should be distinguished from cultural diffusion. From the aspect of ceramography, newcomer cultural entities exhibit different developmental tendencies. The end of this development often sees the complete loss of the original (ceramic) identity, and we only recognise the (cultural) affiliation in sporadic elements such as burial rituals.

It is in the context of these events that we should seek the causes of the appearance of the Carpathian Basin EBA complex. Its genesis was usually linked with the Vučedol (and even the Baden) culture, with the entire process interpreted as a spontaneous evolution on a Late Eneolithic substrate. Numerous manifestations and cultural phenomena of the Vučedol and post-Vučedol periods have even been included under the Vučedol cultural sphere. Particular attention, then, must be afforded to the cultural constellation of the Vučedol period, strictly distinguishing the Vučedol culture from what is occurring outside its sphere and the causative factors of these events. The archaeological investigations at Vinkovci (the Hotel/Tržnica site) and Vučedol are the points of departure in this analysis. The identification of the Vučedol culture and the space it occupies reveals the southward shift in indigenous development and the lacuna, i.e., the absence of finds and settlements of the native culture in the eastern and northern parts of the Carpathian Basin, that is, the distribution of finds of foreign origin in the area. It is from this context that the complexity of the situation and the untenability of a hypothesis of the spontaneous development of EBA cultures on the Vučedol substrate becomes evident. The tell in Vinkovci has, in fact, opened a window to an understanding of the processes involved in the formation of EBA cultures in an area where there is a Late Eneolithic native culture, namely the Vučedol culture, and to what extent it participated in the EBA formation. From the ceramographic and metallurgic characteristics, we see a greater expression of the Vučedol tradition, i.e., a stronger association of some EBA groups with the Vučedol culture. Noteworthy is the fact that this association is not contingent on proximity to the core area (*kerngebiete*) of the Vučedol culture (e.g., the difference in the case of the Makó and Nyírség cultures). The ceramographic analysis, however, and the confrontation of distribution areas, i.e., areas of settlement, reveal the massive gap: the disproportion of the emergent EBA complex in relation to the preceding Eneolithic period Vučedol base. Momentous change in neighbouring areas, such as the disappearance of the Coțofeni culture, the displacement of the Glina complex to the northwest, and the appearance



of steppe elements in the Romanian and Bulgarian Danube River valley, are the historical context within which it experienced the end of its Late Eneolithic indigenous development in the Carpathian Basin and the Balkan northwest, where it relocated during its final phase. I refer to this final phase of the Vučedol culture, given the mode of the transformation of its elements into EBA cultures and the evident evolutionary break that occurred at the time, as the *regionalisation and disintegration of the Vučedol culture*, i.e., of indigenous Late Eneolithic development. This old core was besieged from many sides and experienced a disintegrative chain reaction; the Vučedol culture did, however, have a most significant impact on the emergent EBA. On the one hand there was the incursion of the steppe peoples from modern Ukraine and, on the other, the penetration of the people of the Bell Beaker culture. Herein lies the cause of the mobility of the Vučedol tradition in EBA cultures, although the expansion of the Vučedol culture, at times motivated by the search for ore deposits, had already occurred in its classical period (Phases II and III in my periodisation, Phases B1 and B2 according to Dimitrijević). Under the periodisation I am proposing, the Vučedol culture has three phases: Phase I is the early Vučedol culture, corresponding to Dimitrijević's Phase A; Phase II is the classical Vučedol culture identified at the eponymous Vučedol site, corresponding to Dimitrijević's Phase B1; and Phase III is the final period of the Vučedol culture, identified at the Hotel tell site (Tržnica-Marktplatz) in Vinkovci and characterised by the expansion and regionalisation of the culture, corresponding to Dimitrijević's Phase B2.

From the view of ceramographic technology, the Late Eneolithic Baden-Kostolac-Vučedol block constitutes a single unit. Its technological characteristics differ markedly from the previous Early and Middle Eneolithic periods, i.e., it constitutes a third technological stage in the evolution of prehistoric pottery. We can, namely, identify three technological stages on the basis of comprehensive studies of Neolithic and Eneolithic period pottery, primarily from multilayered settlements in the Pannonian south (Vučedol, Vinkovci, Bapska, Privlaka, Gomolava, and Gradina on the Bosut River). The first stage covers the Early Neolithic. It is characterised by "sandwich" firing (black core and brick-red surfaces), and by the addition of organic temper to the clay paste (chaff and chopped straw). The earlier phases are largely characterised by thick-walled pottery, while the final phase (Starčevo-Spiraloid B) sees the appearance of thin-walled pottery of well refined alluvial clay fired to ochre-red tones.

The second phase is characterised by the emergence of the Vinča and Sopot cultures with burnished, black-fired pottery, known as the Black Burnished Ware pottery horizon. Significant to this ware is a fabric exhibiting well refined clay paste. The tempers are inorganic (sand, grains of stone, and crushed shells). Early and Middle Eneolithic manifestations in the Pannonian south correspond to this stage entirely.

The third technological stage arrives with the emergent classical Baden culture. Although its early period (Phase I/Boleráz phase, and Phase II) retains a robust holdover tradition drawing on the previous period (hence my appellation of this period of the first two phases of the Baden culture as a *transitional period from the Middle to Late Eneolithic*, i.e., a transitional period into the EBA), we do see the first appearance of crushed pottery (chamotte, grog). The appearance of grog is widespread, present in the clay paste as a significant percentage both in thin-walled and burnished pottery. This pottery is harder than that of the previous phase and is, for the most part, *Klingebrandt*-fired. While this tradition is also transmitted to the EBA, we do see a variety of culture-associated technologies (e.g., finds of the Corded Ware/*Schnurkeramik* culture and Bell Beaker culture) during the disintegration of the Vučedol culture and especially during the period of EBA manifestations.

## The Terminology

Various appellations have been attributed to the period discussed in this study, largely grounded in the traditions of the various schools. Three primary terms are used for the Baden, Kostolac and Vučedol culture periods: the Eneolithic (Late Eneolithic), Copper Age, and the transition to the EBA.

Hungarian archaeologists traditionally referred to this period as the Late Copper Age (cf. Hillebrand 1927, 50–57, 277–280; idem 1929a, 49–51; idem 1929b, 8–12; Tompa 1937, 50–61; Kalicz 1988, 87). According to Kalicz (o.c.), this is the period of the Baden culture; it ends with an independent Kostolac culture and is followed by an EBA represented by the Somogyvár-Vinkovci and Makó cultures (ibid., 92). This interpretation denies a chronologically and culturally distinct Vučedol culture. Romanian archaeologists predominantly refer to the period as the “transitional period from the Neolithic to the Bronze Age”, and more recently as the “transitional period from the Copper Age to the Bronze Age”.

In scientific literature, there is a broad consensus that sees the post-Vučedol horizon as the dawn of the Bronze Age in the Carpathian Basin, the exception being Slovak researchers who follow the traditional Central European school and see the emergence of the Bronze Age in the Únětice culture horizon. The same is true of Czech archaeologists whose terminology treats certain cultural phenomena, in Moravia especially, as being outside the context of the Carpathian Basin, even though they fall within its cultural sphere, and where the influence of the Carpathian Basin is so robust that we can often speak of a cultural unity. Here I am referring primarily to the cultures that correspond to the Carpathian Basin EBA horizon, not just temporally; the influence of the Carpathian Basin horizon is so robust that they lose their identity and their pottery merges with it. The Austrian literature continues to espouse an archaic view, according to which the period preceding the Bronze Age is treated as the Neolithic. Recently, even the late Vučedol phase is seen as a transitional period to the EBA when considering the bronze finds at Sitagroi associated with pottery similar to that from Vučedol and the early Vinkovci culture. The term Late Eneolithic, as used to encompass the period that saw the development of these three cultures, is incomplete because these cultures, although stemming from the earlier period (Middle Eneolithic), are clearly differentiated from this period. The term “transitional period” has some positive aspects in that it points to changes that lead to the emergence of the Bronze Age. Its negative connotation, however, outweighs these because the term suggests continuous development. As we will see, the cultural constellation saw significant change in the course of this period. In particular, the emergence of the EBA complex was by no means a placid evolution; it was accompanied, or rather caused by the mobility of diverse ethnicities and cultures. It is notable that the choice of these terms was aimed at underlining the differentiation in relation to an “early” and “middle” Eneolithic. During the time of the Baden culture, which covers the whole of the Carpathian Basin (**M.1**), one could posit a terminal phase of the Copper Age/Eneolithic for the whole of the basin, but the Kostolac culture period saw the beginning of pro-

found changes (M.2) that are reflected initially in a new constellation of ethnicities and cultures. Thus, the period of the Kostolac, and even more so the Vučedol culture (M.3), is reminiscent of the Great Migration period and constitutes a turbulent period at the dawn of the EBA civilisations.



## I. The Indigenous Baden – Kostolac – Vučedol Development

The primary objective in resolving the issues of the Carpathian Basin Late Eneolithic period is a clarification of the geneses and chronological interrelations of the Baden, Kostolac and Vučedol cultures. The chronology of the Kostolac culture is particularly controversial, with most hypotheses not recognising its chronological or cultural independence. Since Milošević (1949; 1953), the emergence of the Kostolac culture has been associated with the Danube valley area in the former Yugoslavia and the valley of the Morava River in Serbia. The origins of the culture were sought largely within the confines of the Baden culture, leading to confusion between these claims concerning the genesis and area of the emergence of the Kostolac culture, given that to this day we have no finds of a substrate (Baden) culture in the valley of the Morava. Recent Serbian literature (D. Nikolić 2000) also posits the Morava valley and the Danube River area in Serbia as the cradle of the Kostolac culture.

The negation of this culture's chronological independence has been reflected in its appreciation as a culture: in extreme cases it was considered no more than a pottery type. Garašanin (1958, 37) employs the term *Kostolac Gattung* to express a regionalisation of the Baden culture (ibid.: Baden-Kostolac-Gruppe). Its role is thus reduced to that of an admixture to the Baden culture. A positive opinion, but insufficiently articulated and argued, has been expressed on multiple occasions by the investigators of the Gomolava site. The disparity of criteria in the publication of materials and the stratigraphic situation, and a lack of closed contexts (e.g., pits) have seen a muted response to these observations among academic peers. A monograph treating the Gomolava site offers new insights.

Even following the discovery of a clear and independent horizon (at the Pivnica site), one of the most prevalent periodizations continued to consider the Kostolac culture merely a phase of the Baden culture (Neustupný 1966: Baden culture Phase E). This is all

the odder if one bears in mind that Czech archaeologists refer to Baden as the *kultura s kanelovanou keramikou* ("fluted ware culture"), a term entirely inconsistent with the Kostolac culture.

Hypotheses were postulated, but never adequately presented or proven. A number of questions remains open to this day, often obscured, however, by layers of archaeological tradition. These include the question of why the Kostolac culture would appear only in the southern end of the Baden culture area, indeed outside its boundaries (in Serbia's Morava area). Why the lack of a syncretic style arising from the hypothesised extended coexistence of the substrate and newly formed culture? Where are the finds of vessels exhibiting both fluted and *furchenstich* (stab-and-drag) grooved decoration?

An exceptionally important element in studying the development of the cultures of our interest is the identification of the territorial distribution on the basis of a correct definition of a given cultural phenomenon or complex. I would offer a strong criticism of interpretations that, following local characteristics in terms of modern political borders, cast aside a very significant feature of the time that clearly expresses the integrity of a cultural complex and identical tendencies in the evolution of prehistoric cultures, implying a single ethnicity as the vehicle of the culture. This was especially evident in discussion of the Baden culture, fragmented by terms like *Baden-Pécel culture* and *Baden-Kostolac culture*, and – implying local colouring, especially of the terminal phase of development – posited a regionalisation of the Baden complex. The characteristics of the initial phase of the Kostolac complex, although clearly also indicating localised aspects, essentially contradict these views as they clearly show that the cultural integrity remains clearly evident even with the transition of the Baden into a new Kostolac culture. The identification of these cultures' territories enables an analysis of the horizontal stratigraphy – which we shall therefore term *global* – within which we see an

evident territorial discontinuity observed during the Kostolac (M.2) in relation to the Baden substrate (M.1), even more pronounced during the Vučedol culture period (M.3). In the context of this continuous development, and based on the identification of the area of distribution, the global stratigraphy (territorial discontinuance) points to the chronological and cultural independence of each of these cultures.

An accurate analysis of the Baden, Kostolac and Vučedol cultures on the one side, and of the Coțofeni culture on the other, plays an important role in both the chronology and the historical interpretation. The Coțofeni culture exhibits a similar development and its evolution is significantly associated with that of the Baden-Kostolac-Vučedol block. There was a very lively interaction, including a merging of styles (T.17). The Baden-Coțofeni, Kostolac-Coțofeni and Vučedol-Coțofeni contacts are very significant to the chronology. The chronological and cultural links between individual phases of the Coțofeni culture with the Baden, Kostolac and Vučedol cultures are evident in the stratigraphy at the Peștera Hoților site at Băile Herculane (Roman, P. 1976), and at single-layer settlements in which we see the mixing of styles. The frontier zone that sees interaction witnessed significant change over time and corresponds to the cited lacunae in the Kostolac and Vučedol areas. Changes in the cultural constellation of the southeast Baden culture area, i.e., the northwest Coțofeni culture area (northeast Serbia, the Đerdap area in particular), are indicative.

The development of the Baden, Kostolac and Vučedol cultures in the Carpathian Basin was native, which means that these three cultures share a genetic relationship, that they comprise a single evolutionary block. This is a cultural unit with three phases of development/cultures in the archaeological sense of the word. The three cultures share a genetic bond. A gradual shift sees a novel culture emerge from its predecessor. That moment is identified by the appearance of the essential standard elements that define a new culture and by the disappearance of the characteristics of the previous culture. The developmental trend is towards more complexity and richer decoration, with maximal use of encrustation. This line is clear and immediately evident and we can follow its continuity from the Baden to the Kostolac and then the Vučedol culture. Thus, the end of the Baden or Kostolac culture is not a decline; quite the opposite: in the context of this evolutionary block, the final phase represents the richest period of the culture from which a more complex style and decorating technique develops. This is also true – to some extent – of social development, which is especially

evident in the Vučedol culture period. The hypothesis that sees a continual development is founded in the evolution of forms, motifs and decoration techniques. The *furchenstich* stab-and-drag grooved (T.26 & T.28) decoration grows gradually out of the Baden punctate pattern (T.2, T.5 & T.6). Early Kostolac forms draw their roots from Baden forms. The Vučedol decorative concept is drawn out of the late Kostolac culture (T.31). Some of the forms have a long tradition extending through all three cultures (the *fischbutte* form, carinated vessels with everted rims), although varying in commonness. In the northwest of the Balkan region, primarily in the Serbian heartland where we see no confident indicators of the presence of the Baden culture, this native development can be followed in the post-Baden evolution.

## 1. The Baden–Kostolac Relationship

The prevailing hypothesis in the literature sees the Kostolac culture emerging out of the Baden culture not as a further development with the Baden culture as the foundation, but as reflecting regional fragmentation and the disintegration of the Baden complex. The problem was in the strict definition of what constitutes the cultural content of the final phase of the Baden culture, and what constitutes a Kostolac culture. This lack of a strict definition and a cultural/chronological identification was substituted by the idea that the cultures were, in some areas, considered to constitute a mixture and were reduced to the Baden-Kostolac denomination. Although the change was not rapid, the dawn of the Kostolac culture and concomitant waning of the Baden culture constituted a single line of development.

### 1.1 An Analysis of the Phase IV Baden Culture

The accurate identification of the terminal phase of the Baden culture is an acute problem that has engendered significant confusion, not only in the internal periodization of the Baden culture, but also in the chronological interpretation of the Late Eneolithic (transitional period to the EBA). The complexity of the situation is best exemplified by the Baden periodization as proposed by V. Němejcová-Pavúková, where a definition of the final Baden phase is entirely absent (Němejcová-Pavúková 1981). Broadly speaking, the isolation of a Kostolac culture, however much it illuminated the late-stage Baden culture, to an even greater extent confused the chronological

relationship between the two cultures. Advanced archaeological investigation, with its exact stratigraphy and closed contexts, was lacking as a prerequisite for the resolution of this issue. The investigation of Vučedol sites (Vinograd Streim, Kukuruzište Streim) begun in 1981 has provided for a clear demarcation of the Baden and Kostolac cultures and stratigraphic and closed context find evidence for the internal periodization of the Baden culture.

The final (fourth) phase of the Baden culture exhibits elements pointing to regionalisation, characteristics on the basis of which local groups can be distinguished. We do also see significant characteristics that unite this local variety into a single cultural unit. Numbered among these characteristics of over-arching Baden significance are elements that clearly point to the development of the final Baden stage (Phase IV) towards the Kostolac cultural complex, i.e., its local groups. Notable among the latter are punctate or stamped single but most often double and even multiple lines of motifs comprised of a series of distinct or joined Greek letter Π marks. These appear from the northernmost settlements in the south of Poland (cf. Pleszów: Rook 1971, T.XXXV: 5) to the southernmost in the northern Croatia region of Slavonia (cf. Vučedol, Vinograd Streim, pit 63/1985, pit V85/28 & pit V85/34: **T.2**; pit V87/71: **T.44: B1–8, C1–6, D1–5; T.45; T.46; T.47: A1–2**; pit V87/41: **T.47: B1–4**; pit V87/78: **T.47: C1**; pit V87/94: **T.47: E1–3**). Framing incised or fluted motifs with punctate or circular stamped lines is a general characteristic of the Baden Phase IV (**T.3: 1, T.4: 5, T.5: 5**). Also noteworthy as a characteristic element of this phase, widely represented in the Baden culture area, is the motif of a series of incised or grooved triangles framed by a punctate line (**T.8, T.9: 7–16, T.10, T.12: 1–13**). The fluting of the earlier phases is altered in the final phase; at Vučedol its prevalence drops and often transitions to grooving. There is a general trend towards other decorative techniques; punctate, stabbed and stamped in general.

The terminal Baden culture phase is not a developmental decline. It does not mark the end of the Baden culture in the sense of its degeneration and collapse; rather, it heralds further development: the emergence of a, in archaeological terms, new culture. This phase is, then, a transition in the Late Eneolithic evolution, and involves a continuous development that sees a shift from the older Baden into the younger Kostolac culture.

Besides these general Baden characteristics that unequivocally place Phase IV within the bounds of a single Baden culture, it should also be noted that there are elements that point to regional and even more localised characteristics, i.e., local groups.

This localisation is the result of both local development and of interaction with neighbouring cultures. Global differences such as the distribution of conical ladles with high and curved strap handles, the distribution of bipartite bowls, and the distribution of some techniques – for example brushed decoration created by drawing a bundle of straw over ware (*besenstrich*) – allow us to differentiate the late Baden into northern, southern, eastern and western zones.

#### **The South Pannonia Facies (Variant) of the Late Baden Culture**

This facies of the Baden culture was distributed in the southern zone, with some elements erroneously interpreted in the literature as Kostolac (Palotabozsok: Němejcová-Pavúková 1968), and some assemblages interpreted as Kostolac-influenced (in the case of Palotabozsok: Bondar 1984; in the case of the sites in the area around Odžak: Roman 1976). In the southern zone, where there were no conical ladles, there is a transformation of the classical small jug with a globular or bulbous body. This ladle form is characteristic of the classical Baden Phase III of the southern zone. The globular or bulbous body of small jugs is increasingly compressed at the beginning of Phase IV (**T.33**), often exhibiting a carinated form, and is by the end of the phase reduced to only a vestige, often depicted by no more than a moulded band near the base (**T.33: 6**). Finally, the body disappears altogether and only the neck remains of the original form (**T.33: 7–9**), which is now a cylindrical or conical body with a flat or rounded base. The jug has thus morphed into a ladle with a conical or cylindrical body.

#### **The Vučedol Group of the Late Baden Culture**

The region between the Sava and Drava Rivers (**T.1–T.6**), and the southern end of the area between the Danube and Tisza Rivers, presents finds identical to those from Vučedol and sites in the Bačka region (**T.7–T.13**).

#### **Vasas Type Finds from Transdanubia**

A characteristic series of finds illustrative of the Baden Phase IV in southern Transdanubia were found at the Vasas site to the northeast of Pécs. The site has seen two investigative campaigns (F. Fülep in 1957 and G. Bándi in 1962), with some of the assemblage collected as surface finds. M. Bondar correctly identified this assemblage, with the exception of a fragment bearing a punctate checkerboard decoration, which she identified as being of the Kostolac culture (Bondar 1982). Based on closed context

finds from Vučedol (T.2: 1), this fragment should be interpreted in its context, i.e., as a proto-Kostolac element indicative of the late IV B phase of Baden development.

This assemblage is part of the overall Vučedol group. This is best borne out by the finds recovered at the Bonyhád and Zók sites, which are practically identical to those from the Vinograd Streim site at Vučedol. The transformation of some forms, e.g., small jugs, is consistent with the development seen at Vučedol (cf. Ecsedy 1983, Fig. 19, Pl. I: 1–3, 5). A characteristic that does not appear at Vučedol, which I would highlight as varying from the Vasas type, are incised bands with a punctate border. This is a characteristic of the northern zone of the late Baden culture and thus appears in settlements of the northern area of its Vučedol group. Based on the above I posit these finds as a type within the group.

### The Problematics of the Area to the South of the Sava-Danube Line (Bosnia-Herzegovina, Serbia)

Baden sites are rare to the south of the Sava-Danube line (from the mouth of the Sava River to Đerdap). In the northeast of Bosnia, we see true Baden culture assemblages at the Dvorovi kod Bjeljine and the Brdo sites (Benac 1962a, 134, Kosorić 1963a, 24) and at Gornja Tuzla (Čović 1961, T.XIV: 4). More recently, B. Marijanović (2003) studied the Eneolithic period in Bosnia-Herzegovina.

Today we must certainly reject speculation concerning the interpenetration of Baden with Bapska, i.e., Sopot-Lengyel finds on the basis of which Benac has proposed the contemporaneity of the Baden and Sopot-Lengyel cultures (Benac 1962a, 135)<sup>1</sup>.

We can confidently identify finds recovered at Gornja Tuzla as being from the terminal fourth phase of the Baden culture, typologically a part of the Vučedol group of the Baden culture. The typical small jug with its compressed belly and high curved handle has good parallels in the southern Pannonian Baden Phase IV settlements at Vučedol, Zók (Ecsedy 1983a), and the Bodzáspart site in Hódmezővásárhely (Banner 1956). A sherd with punctate vertical and horizontal double lines (Čović 1961, T.XV: 11), a motif that is frequent and characteristic of the final Baden phase (cf., e.g., Pavlović & Bojčić 1981, T.XVI: 2), cannot be confidently attributed to the Baden culture. Stratum I, in which the sherd was found, and stratum II, constitute a layer with poly-cultural finds from a broad chronological and

cultural range, from the Lasinja culture (Čović 1961, T.XV: 3, 15) to the Late Bronze Age. Given that we also find this motif in the Lasinja culture and that the base sherd lacks significant elements (the profile of the upper part of the vessel), the identification should be considered unresolved.

Older and recent literature discussing the late Eneolithic in the area to the south of the Sava and Danube Rivers has attributed some elements of the EBA cultures to the Baden culture on the basis of formal similarity. For the most part, this pertains to incised fishbone and net motifs. Benac thus interpreted finds from the Alihodža and Debelo Brdo sites as incoming Baden elements arriving into Bosnia with the people of the Vučedol culture. This was, at the time, consistent with Schmidt's hypothesis concerning the chronological contacts of the Baden and Vučedol cultures. Tasić (1967) rejected the interpretation of the Alihodža and Debelo Brdo sites as Baden settlements, but did opine that there were Baden imports (failing to indicate what these would be) within some other culture (failing to indicate which culture) at these settlements. Incised fishbone/pine branch and net motifs, which also appear at sites like Hrustovača and Zecovi, are an integral aspect of the final phase of the Vučedol culture, and also appear in EBA complex groups (see the third section here).

We see an analogous situation in central Serbia (the Morava River valley). At the Jasička čuka settlement, from the period of the regionalisation of the Vučedol culture and the EBA horizon, some elements, reminiscent of Baden decoration, were taken out of the find context and declared Baden elements (Stalio & Jurišić 1961, Sl. 19–21). An amphora with strap handles at the transition from the neck to the shoulder and decorated with an incised chevron motif (*ibid.*, Sl. 19) is typical of the initial phase of the Vinkovci culture (cf. Vinkovci-Hotel).

In his analysis of the Đurđevačka Glavica site, Tasić (1961a) identified incised net motifs with rhomboid fields (*ibid.*, Sl. 3–7), chevrons (*ibid.*, Sl. 8–9) and pine branch motifs (*ibid.*, Sl. 10–11) as being Baden elements that “do not appear independently at the site, rather they form an integral part of the Vučedol culture, which adopted the Baden method of decoration.” This sherd is not differentiated from the rest of the finds in terms of its fabric, and the author even notes that typical Baden forms and decoration are absent from the Đurđevačka Glavica site (*ibid.*, 148).

The valid conclusion, then, is that these are sites from the period of the regionalisation and disintegration of the Vučedol culture and of the earlier phase (formation) of the EBA horizon. Encrusted ware finds its best parallels in the final phase of the

<sup>1</sup> Between the Sopot-Lengyel and Baden horizons in this area we find an older Eneolithic horizon represented by the Lasinja culture.



Vučedol culture, well known from the Hotel tell site in Vinkovci (Tasić 1961a, Sl. 14) and the early Vinkovci culture, e.g., a footed bowl with internal decoration of the Kosihy-Čaka type (Tasić 1961a, Sl. 16a–b); at the Vinkovci-Hotel site (T.64) it has a clear stratigraphic position in the older horizon of the Vinkovci culture.

The appearance of decorative elements such as incised pine branch (fishbone) and net motifs at late Vučedol settlements cannot be attributed to a direct link with the Baden culture simply because they are reminiscent of the characteristic decorative features of this culture. They are an integral part of the Vučedol horizon (chronologically very much distant from the Baden culture) and should be associated with the influence of the latest phase of the Coțofeni culture, while their abundance and dissemination into the southern Pannonian and northwestern Balkan area are properly interpreted through the robust migration processes that lead to the regionalisation and disintegration of the Vučedol culture and the formation of the EBA complex (see section III 1 here).

We see, then, continuity in this decoration within the Coțofeni culture from its early phase—contemporaneous with the Baden culture—to its late phase, contemporaneous with the Vučedol culture. At multi-layer settlement sites in the Slavonia region, we see discontinuity in the use of this decoration, particularly during the Kostolac culture period, to have it reappear at the end of the Vučedol culture period and eventually become a characteristic element of EBA cultures (e.g., the Vinkovci culture).

In the north of Serbia, we only find definitively Baden artefacts along the Danube zone. Finds from multiple sites in Belgrade and from the Vinča tell should be distinguished as being from the late Baden Phase IV. Miložić (1953) was not justified in characterising Baden artefacts from Vinča and Vučedol as being from an earlier Baden phase in order to bring the stratigraphically later Kostolac culture into the same time frame as the late and classic Baden phases. Miložić attributed some of the late Baden finds (ibid. 1953, T.10: 7) to the Kostolac culture; this needs to be revised on the basis of current insights, especially in light of the closed context finds from Vučedol. It needs to be underlined that we can follow the Baden culture development at Vinča, isolating the transitional Phase IV, distinguished in terms of the stratigraphy from the older phase of the Kostolac culture.

Jovanović (1963) published a small collection of late Baden material from Vinča. Characteristic Phase IV elements appear at an average depth of two metres (ibid., 20, T.I: 2, 5, 9; T.II: the sherd to the far right, third row from the top: depth 1.7/2.2 metres). These

are, for the most part, bowls decorated with double rows of round stamps featuring typical motifs: hanging triangles, joined Greek letter Π forms at times joined at the bottom by a single row of round stamps producing a series of joined borders. A sherd of the Bubanj-Hum–Sălčuța culture (ibid., T.I: 6) in terms of its cultural and chronological correspondence should be isolated from this Baden pottery group.

The only site to the south of the Danube, in the Podrinje (Drina River valley) region, with evidently Baden pottery, is the Benska Bara site in Šabac (Trbuhović & Vasiljević 1983: p. 32: I/41; p. 33: II/1).

Noteworthy are a number of elements from the Hisar site in Kosovo that may correspond to the Baden Phase IV, in particular its final stage, which is headed towards the Kostolac culture. This primarily pertains to the punctate checkerboard pattern on strap handles (Todorović 1963, T.IV: 8).

Punctate checkerboard patterns are, however, also transmitted to the early stage of the Kostolac culture and should be thus dated in the Kostolac context. The material recovered at Hisar has seen sparse publication, without contexts, and on the whole exhibits the characteristics of a very archaic Kostolac culture (ibid., T.IV: 4), with good parallels in Phase I closed contexts of this culture at Vučedol.

#### **The Hódmezővásárhely Group of the Late Baden Culture (T.14, T.15 & T.16)**

This is a group related to the Vučedol group. There are some specific elements that appear here, characteristic of the northern zone. Among the decorative elements, this includes a band bordered by punctate lines. A particular form is a partitioned bowl. This group exhibits signs of contact with the Coțofeni culture. Baden settlements mixed with this neighbouring culture thus constitute a special Sânpetru German type.

#### **The Northeastern Facies of the Late Baden Culture – The Polgár Group (T.18, T.19 & T.20)**

The area to the east of the Tisza – Zemplínske vrchy – Slanské pohorie line in the north zone of the Baden culture is distinct from that zone in that we find no conical ladles with high curved handles. We see the appearance of encrusted colouring (typical of northern sites), and horizontal or zigzag hatched bands bordered with punctate or stamped lines. The form of the small jug is archaic and we also see coarse pots with a moulded band at the rim. The Polgár site is characteristic of this group, as are a number of finds in the eastern Slovakian lowlands.

The Pişcolt type may be considered as mixed settlements of the Coţofeni and Baden culture in the northern area.

### The Ózd Group of the Late Baden Culture

This group is present in the literature. Noteworthy, however, is the ladder motif. This is an element that indicates a relationship with decoration in the Bošáca culture and we can posit that the Ózd group participated in the process of westward migration during the emergence of the Kostolac-Bošáca complex.

### The Pleszów-Zesławice Group of the Late Baden Culture

This is a local group distributed across the south of Poland and is one of the best understood, thanks to intensive investigation in the area around Cracow (Nowa Huta) and the prompt publication of finds. Thus, we have hundreds of closed contexts that allow for a complete identification of this group. The bulk of the significant elements point to Phase IV, although there are a number of finds exhibiting characteristics of the classic Phase III. There is strong contact with local groups in modern Slovakia, which has been observed in the literature, such as with the Dreveník group (T.21 & T.22) and with smaller groups in the Orava River valley. On the whole, we can conclude that there are a number of corresponding elements that put this late Baden group in the northern facies of the late Baden complex.

There are no zigzag bands with punctate or stamped borders, and we see a predominance of horizontal hatched bands with punctate/stamped borders.

Ugor near Brzezia is another typical site in modern Poland. The Baden finds are detailed in a report by Bielenin (1957). Twelve Baden culture features were discovered in the 1960s (Godłowska 1969), two of which are postholes (possibly indicating above-ground dwellings; the complete excavation plans have not been published). A sherd from a bowl with an incised triangle with a punctate border and filled out with pine branch (fishbone) motifs (Bielenin 1957, T.II: 4), and a sherd with a combination of fluting, grooving and stamping (ibid., T.II: 6), from earlier investigation conclusively indicate the Baden culture Phase IV. The material recovered from pit 19, from later investigation, also points to the late phase of the Baden culture (Godłowska 1969, T.I: 3–11). Hanging triangles filled out with grooves and bordered by oblique punctate dots are also typical of the Baden culture Phase IV (ibid., T.I: 9). We find good parallels for a small spherical jug with a strap handle curved high above the rim at sites in Slova-

kia (cf. Kopčany: Šiška 1966, Obr. 6: 4, 6, Drevenik: T.21; T.22). We also see some specific elements such as a bowl (ibid., T.I: 6) with an incurved rim, topping a horizontal moulded band dotted with dimples. Under the band is a line of hanging triangles with grooved oblique hatching. There is an unusual, or better put, specific combination of decorative elements on a sherd from a large jug (ibid., T.I: 3). The belly features sparse fluting/grooves, which is characteristic of the final Baden phase, while at the transition from the neck to the belly, we see a serpentine moulded band formed of finger impressions. The decoration of the lower part of the necks of amphorae and jugs is a characteristic of the northwestern zone of the Baden culture. It had appeared by the classic Phase III (the Uny site). Especially characteristic of the final phase were a combination of punctate decoration and grooves/fluting (cf. Austria and Moravia).

### Area of Distribution

#### 1.1.1 Finds and Sites of the Baden Culture Phase IV (M.1) Numbers of sites correspond to numbers on map M.1

#### CROATIA

1. Vučedol, (Vinograd Streim: pit V85/63, pit V85/28 & pit V85/34: T.2; pit V87/71: T.44: B1–8, C1–6, D1–5; T.45; T.46; T.47: A1–2; pit V87/41: T.47: B1–4; pit V87/78: T.47: C1; pit V87/94: T.47: E1–3; Hoffiller 1933, Pl. 17: 7, Pl. 33: 3, Pl. 35: 3, 19, 20, 21, 22, 29? Dimitrijević 1962, T.II, 13; T.I: 1).
2. Sarvaš, Vlastelinski brijeg, (Hoffiller 1938, Pl. 9: 11, 12. Balen 2005, T.5: 17).
3. Vinkovci, Marica, (Dimitrijević 1979, T.2: 15).
4. Đakovo, ciglana Grabrovac, (Pavlović & Bojčić 1981, T.XV: 3–8, T.XVI: 1–2).
5. Slavonski Brod, Vrba. Excavations J. Lozuk. Late Baden settlements and workshop structures were discovered during rescue excavation along the highway between Zagreb and the border with Serbia. Hearths and abundant remains of metallurgical activity were found in the workshop structures.
6. Beli Manastir, Ciglana, (Vinski-Gasparini 1956, pit 4/block V: T.X: 26; pit 3/block IV: T.X: 25; pit 6/block VII: T.XIII: 53; pit 8/block VIII: T.XIII: 56, 58, /57 = intrusion Pannonian encrusted ceramic culture/; pit 9/block VII and VIII: T.XIV: 60, 61; pit 10/block VI and VIII: T.XV: 69, 70, /71 = intrusion Pannonian encrusted ceramic culture/; layer: T.XII: 44, 45, 49, 50, T.XV: 76, 77, T.XVI: 82, 88, T.XVII: 93, 95; Dimitrijević 1979a, T.XXIV: 1, 4, 6, 12).

7. Bapska, Gradac, (Mr. Mandić's vineyard), (Dimitrijević 1962, T.I, 7).

## BOSNIA

8. Gornja Tuzla, (Čović 1961, T.XIV: 4, T.XV: 11? Possibly Lasinja).

## VOJVODINA/SYRMIA

9. Gomolava, Hrtkovci, (Girić 1960, TVIII: 4–5, TVII: 10?).  
 10. Dobanovci, Cigлана, Zemun municipality, (Tasić 1959, Fig. 4, Fig. 5, Fig. 6: b, c, Fig. 7: a, b, Fig. 11: a–b, Fig. 12: a–c, Fig. 13: a–c; Tasić 1964a, 10; Tasić 1969b, T.XVI: 1, 5).  
 11. Zemun, (Milojčić 1949, T.11: 2). Milojčić (o.c., T.11: 2) incorrectly attributed this sherd to Kostolac culture.

## VOJVODINA/BAČKA

12. Deronje, Mostonga V, (Karmanski 1970b, T.XI: 1–2, T.XII: 1, T.XIII: 1, 3, T.XV: 4, T.XVII: 6, T.XIX: 3).  
 13. Deronje, Donja Branjevina II, (Karmanski 1970b, T.XLIX: 1).  
 14. Karavukovo, “Mostonga VI – Most III”, (Karmanski 1970b, T.XXI: 3, XXII: 2–4).  
 15. Karavukovo, “Krčevina – Milina Skala”, (Karmanski 1970b, T.XLIV: 5, T.XLV: 3, T.XLVI: 1–2).  
 16. Bogojevo, “Pašnjak”, (T.13: 15–20; Gy. Cziráky, *Archéol* 18/1898, 19–24, T.I: 1–6; Wosinszky 1904, T.LXVI; Banner & Bognár-Kutzián 1960, T.IX: 1–6, X: 1–4; Banner & Bognár-Kutzián 1961, T.I, T.II: 1–4; Karmanski 1970b, T.XLII: 1–2, T.XLIII: 2, 7).  
 17. Odžaci, “Odžaci III”, (T.8, T.9 & T.10; Karmanski 1970b, pit dwelling: T.LXXI: 2, 3, 5, T.LXXII: 1–3, T.LXXIII: 2, 4–5, T.LXXIV: 3, T.LXXXI: 1–3, T.LXXXIII: 3, 5, T.LXXXV: 1, T.XC: 1a–b, 2a–b; pit: T.LXII: 1, 3, T.LXIII: 1–2, T.LXV: 1–2, T.LXVI: 1, 3, T.LXVII: 1–2, T.LXVIII: 2–3, T.LXIX: 1, 3, 4, T.LXX: 2–3, T.LXXI: 1, T.LXXX: 1, T.LXXXII: 2, 7, T.LXXXIII: 4, 6, T.LXXXIV: 1–3, 5, T.LXXXV: 2, 3, T.LXXXVII: 2–4, 6, T.XC: 3a–b, T.XCI: 2; Vinkovci culture intrusion in the pit: T.C: 1; layer/surface find: T.LX: 1–2, T.LXI: 1–3, T.LXII: 2, T.LXIV: 1–3, T.LXIX: 2, 5, T.LXXIII: 1, T.LXXXII: 1, 3–5, T.LXXXIII: 2, T.LXXXVIII: 3a–c = idol, T.XCI: 3, T.XCII: 1–2).  
 18. Odžaci, “Mostonga IV – Mostanica”, (T.11; Karmanski 1970b, T.I, T.II: 1–2, T.III: 1–2, TV: 2, TVI: 4, 7).  
 19. Bački Gračac, “Most II”, (T.13: 6–14; Karmanski 1970b, T.XXXVII: 1, 2 = the proto-Kostolac man-

ner of combining motifs, 3, T.XXXVIII: 1–2, T.XXXIX: 1–3, T.XL: 1 = proto-Kostolac/early Kostolac culture).

20. Srpski Miletić, “Mostonga VII”, (T.12; Karmanski 1970b, T.XXVII: 1–3, T.XXVIII: 1–3, T.XXIX: 1–7, T.XXX: 2, 5, T.XXXI: 3, T.XXXIV: 1–2).  
 21. Doroslovo, “Mostonga VIII”, (T.13: 1–5; Karmanski 1970b, T.XXXVI: 1–3, 5).

## VOJVODINA/BANAT

22. Srpski Krstur, “Bajir I”, (Nadlački 1951, T.XXXII–XXXIV).  
 23. Mokrin, “Aradanska humka”, (Girić 1987; Dimitrijević 1979a, T.XXII: 9–11).  
 24. Padej, Barnahat, Kikinda municipality, (Girić 1987)  
 25. Perlez, Zrenjanin municipality, (Slavnić 1950, pit 4: T.II: 2; pit 3: Sl. 4, Sl. 5).  
 26. Pančevo, (National Museum), (Jovanović 1974, 508: il. 112).  
 27. Vršac, Ulica Ande Ranković, (Jovanović 1974, 508: il. 111).  
 28. Skorenovac, «Humka», (N Banat), (Garašanin 1959, T.7: 1, 4; Jovanović 1974, 163: vignette 83). Garašanin (1959, T.7: 2) erroneously attributed this Bronze Age kantharos to the Baden culture.

## NORTHERN SERBIA

29. Beograd, Kalemegdan, (Todorović 1963b, 74).  
 31. Vinča, “Belo Brdo”, (Vassits 1910, T.15: b – the last sherd to the right, c = Milojčić 1949, T.10: 3, 7, Abb. 1: 1; Jovanović 1963, 20, T.I: 2, 5, 9, T.II: the last sherd to the right in the third row from the top – depth 1.7m/2.2m). Milojčić (o.c., T.10: 3, 7, Abb. 1: 1) incorrectly identified these sherds as being of the Kostolac culture.  
 Drmno, “Nad lugom”, Kostolac, (Šljivar 1977). Although the material is unpublished, the general and characteristic elements identify the Baden Phase IV: decorations executed by a combination of incising and stabbing, and cups/ladles with sharply profiled belly and cylindrical neck.

## ROMANIA/BANAT (Valley of the Mureş River)

32. Moldova Veche, (Roman & Némethi 1978, Pl. 1: F.o.: 12, Pl. 2: 12).  
 33. Beba Veche, (Roman & Némethi 1978, Pl. 1: F.o.: 2, Pl. 6: 1–6).  
 34. Sînpetru German, «Fîntîna vacilor», (Roman & Némethi 1978, Pl. 1: F.o.: 22, Pl. 2: 1–2, 6, Pl. 3: 6–11, 13–16, 20).  
 35. Bodrog, «Pădure», (Roman & Némethi 1978, Pl. 1: F.o.: 5, Pl. 4: 1–2).

**ROMANIA (south of Crişul Alb)**

36. An unknown site, (Roman & Németi 1978, Pl. 7: 5, 6).
37. Valea Crişului, (Roman & Németi 1978, Pl. 9: 1).
38. Tarina, com. Şilindia, jud. Arad, Coţofeni I culture with Baden elements/influences, (Roman & Németi 1978, 18, Pl. 24: 3). The mentioned sherd exhibits a Baden motif; vertical stripes framed by stamping. In a pure Baden milieu, these stripes are usually filled with parallel sloping or transverse lines or nets. Here, however, a chevron band is done in the Coţofeni fashion (an identical decoration is found at the Gheţarie site in the Salca area of Oradea: *ibid.*, Pl. 52: 6). Roman (o.c., l.c.) lists the collection of Baden ceramic from this area; from Satu Mic.

**SOUTHEASTERN HUNGARY  
(Southern Alföld)**

39. Kiszombor, “tell along the road towards Óbéba / along the road in the direction of Óbéba”, Csongrád megye, (Horváth László 1985, T.1: 14, 16).
40. Deszk (A), Csongrád megye, (Foltiny 1941, TVII: 15, 17, Abb. 10; Banner 1956, F.o.: 224 T.XLVIII: 1, 4, 9, 14, 15, 20, 25, 42). The settlement is of the late Phase IV.
41. Ószentiván V, Jató, Csongrád megye, (Banner 1956, F.o.: 218, T.XLIX: 7, 13, 18).
42. Tiszasziget, (Ószentiván VIII, Anhöhe entlang der Eisenbahn), Csongrád megye, (Banner 1956, F.o.: 219, T.XLIX: 3, 4, 12, 23, 24, XLIX: 11 = proto-Kostolac/early Kostolac).
43. Hódmezővásárhely, “Bodzáspart”, Csongrád megye, (T.14, T.15 & T.16; Banner 1935, Grube 1a: T.XXII: 14, 16, 20, 21; Grube 2a: T.XXII: 18; Kulturschicht: XXII: 17, XXIV; Banner 1956, F.o.: 227).
44. Hódmezővásárhely, “Szenti-tanya”, Csongrád megye, (Banner 1956, F.o.: 235, T.LV: 29, 31, T.LV: 18? Kostolac?).
45. Szentes, Nagyhegy, Csongrád megye, (Banner 1956, F.o.: 249, T.LVIII: 23; finds from graves: T.LX: 8, 9).

**SOUTHERN HUNGARY****(central zone: between the Danube and Tisza Rivers)**

46. Tápé-Lebő, Csongrád megye, (Banner 1956, F.o.: 245, T.LVIII: 5, 10, 11, 15, 16, 30).
- Felgő, Csongrád megye, (Bondár 1984, 83, F.o.: 20).?
- Röske, Csongrád megye, (Bondár 1984, 83, F.o.: 42).?

47. Sövényháza, Baks, (Banner 1956, F.o.: 242 T.LVIII: 8).
48. Kiskunfélegyháza, Páka-puszta, Bács-Kiskun megye, (Banner 1956, F.o.: 187, T.XLVII: 19).
49. Ágasegyháza, Bács-Kiskun megye, (Banner 1956, F.o.: 185, T.XXIX: 9, 17, 19, 20, 24, 25).
50. Lakitelek, Szikra, Bács-Kiskun megye, (Banner 1956, F.o.: 186, T.XXVIII: 3, 7, 9, 11, 13, T.XXVIII: 1 proto-Kostolac decoration; Bondár 1984, 69). In addition to the above-mentioned elements that must be dated to Phase IV, there are elements that indicate the developed Phase III (*ibid.*, XXVIII: 5, 7, 11). Since there are no closed context finds, this question should be left open.
51. Kiskőrös, Bács-Kiskun megye, (Csalgovits 1931; Banner 1956, F.o.: 193, T.XXX: 9, 14, 21).
52. Kalocsa, okolina, Bács-Kiskun megye, (Banner 1956, F.o.: 171, T.XXVI: 1, 2, 4).
53. Bátmonostor, Bács-Kiskun megye, (Banner 1956, F.o.: 216, T.XLVIII: 28, 55, 56; Bondár 1984, 74). M. Bondár correctly identified these finds as late Baden in spite of the site being marked on the map as the Kostolac culture in a Baden settlement.

**HUNGARY (Transdanubia)**

54. Baranya megye, (Banner 1956, F.o.: 154, T.XXIV: 28, 29, 31).
55. Birján, Baranya megye, (Banner 1956, F.o.: 140, T.XXV: 1).
56. Zók, Várhegy, Baranya megye, (Vulić & Grbić 1937, Pl. 18: 5; Banner 1956, F.o.: 130, T.XXIV: 1, 7, 14, 27, 30; Ecsedy 1983a, Pit 1977/32: Fig. 19, Fig. 20; accidental finds: Pl. I: 1–3, 5, 8).
57. Királyegyháza, Gusztávműve-puszta, Baranya megye, (Banner 1956, F.o.: 129, T.XXIV: 9, 16).
58. Pécs (Bez. I), Vasas, Baranya megye, (Bondár 1982, Grube D (1957): T.2: 8, T.3: 3–5, 8, 12, 13, 16, T.5: 5, 11; Grube a (1962): T.5: 7; Grube A (1962): T.7: 1 = proto-Kostolac, 6, 11, 13; Kulturschicht: T.6: 10, T.7: 17, 20; Oberflächenfunde: T.1: 1–6; T.2: 1–3, 5; T.3: 1, 11, 17; T.4: 1–3, 7–8; T.5: 1, 10; T.6: 6, 9; T.7: 19, 21; T.8: 1, 5). Only the most characteristic features that date this settlement to the developed Phase IV are listed. Pit A (1962), in which a proto-Kostolac chequerboard motive (*ibid.*, T.7: 1) was found produced with Baden technology (plain stabbing), and a very fine three-row stabbing pattern (*ibid.*, T.7: 11), represents the very end of Phase IV, the base from which the Kostolac culture later developed.
59. Pécs, Makárhegy, Baranya megye, (Banner 1956, F.o.: 132, T.XXIV: 34, 41, 42, 44).
60. Pécs, Apácastrasse, Baranya megye, (Banner 1956, F.o.: 137, T.XXIV: 36, 37).

61. Pécs, Ürögi völgy, Baranya megye, (Banner 1956, F.o.: 136, T.XXIV: 38).
62. Pécs, Makáralja und Megyer, Baranya megye, (Banner 1956, F.o.: 133, T.XXIV: 50, 53).
63. Pécs, Makáralja, Baranya megye, (Banner 1956, F.o.: 134, T.XXIV: 51).
64. Dunaszekcső, Belváros & Várhegy, Baranya megye, (Banner 1956, F.o.: 125, T.XXIII: 32).
65. Dunaszekcső, Kálváriahegy, Baranya megye, (Banner 1956, F.o.: 126, T.XXIII: 1, 5, 11, 14).
66. Geresd, Baranya megye, (Banner 1956, F.o.: 146, T.XXV: 6–13, 15, 17).
67. Palotabozsok, Baranya megye, (Banner 1956, F.o.: 145).
- Nagyharsány, Baranya megye (Bondár: Somogy megye), (Bondár 1984, 83, Abb. 6: F.o.: 34).?
- Nagypall, Baranya megye, (Bondár 1984, 83, Abb. 6: F.o.: 35).?
68. Tolna megye, (Banner 1956, F.o.: 124, T.XXIII: 35, 39).
69. Bonyhád, Tolna megye, (Banner 1956, F.o.: 111, T.XXII: 1–4, 7). Based on the above mentioned significant elements, the site should be dated to Phase IV.
- Kajdacs, Tolna megye, (Bondár 1984, 83, F.o.: 23).?
70. Dombóvár, Tolna megye, (Banner 1956, F.o.: 106, T.XIX: 17, 26).
- Pári, Téglagyár, Tolna megye, (Bondár 1984, 83, Abb. 6: F.o.: 39).?
- Szakály, Tolna megye, (Bondár 1984, 83, Abb. 6: F.o.: 46).?
71. Somogy megye /A/, (Banner 1956, F.o.: 48, T.IX: 14, 20).
72. Taszár, Somogy megye, (Banner 1956, F.o.: 35, T.IX: 57–59, 63, 66). These are key elements for a dating to the Baden Phase IV.
73. Somogyvár, Somogy megye, (Banner 1956, F.o.: 30, T.IX: 1).
74. Fonyód, “Römische Schanze”, Somogy megye, (Banner 1956, F.o.: 41, T.XLVII: 20, 24).
75. Kánya, Batifarok-Flur, Somogy megye, (Banner 1956, F.o.: 109, T.XIX: 12).
76. Kánya, Somogy megye, (Banner 1956, F.o.: 108, T.XXI: 5, 10, 21).
- Látrány, Somogy megye, (Bondár 1984, 83, Abb. 6: F.o.: 31).?
77. Vajta, Fejér megye, (Banner 1956, F.o.: 99, T.XIV: 10, 14). The cylindrical cup (ibid., T.XIV: 10) represents a combination of elements of the southern and northern zones. The root of the strap handle lies slightly above the base, which is a characteristic of the cylindrical and conical cups of the southern group. In terms of form, it is associated with the northern finds; Petöháza, as Banner noted.
78. Rácalmás, Fejér megye, (Banner 1956, F.o.: 96, T.XIV: 13).

#### NORTHWESTERN HUNGARY (Transdanubia north of Lake Balaton)

- Lovasberény, Fejér megye, (Bondár 1984, 83, Abb. 6: F.o.: 32).?
- Moha, Fejér megye, (Bondár 1984, 83, Abb. 6: F.o.: 33).?
79. Balatonkenese, Akarattya A–B, Veszprem megye, (Banner 1956, F.o.: 56, T.IX: 35).
- 79A. Veszprem, (MRT, F.o.: 51/60, T.5: 16, 18). The profiles of bowls are already very close to the Kostolac forms. The conical frustum shaped cup has a strap handle the root of which begins at the base, which is a characteristic of cups of the southern zone.
- 79B. Tihany, Veszprem megye, (MRT, F.o.: 45/16, T.5: 24). A bowl with a septum and two pointed projections on the rim, decorated with a two-row punctate pattern in a joint motif framed by a single vertical chevron motif. This combination is rare and occurs in the far northern (Poland) and eastern (Romania) areas.
80. Keszthely, Apátdomb, Zala megye, (Banner 1956, F.o.: 22, TV: 8, 9, 24, 40, 41–92, 94–97, TVI: 1, 6, 7, 13, 20, 38, 54, 55–57, 59, TVII: 20). According to the published material, two phases can be distinguished: the classical Phase III and the transitional Phase IV. Cups with a bulbous or spherical body point to the classical Phase III (ibid., TV: 3, 21 and 22, TVI, 25).
81. Celldömölk-Sághegy, Vas megye, (Banner 1956, F.o.: 8, T.II: 29). This conical (frustum) cup, with a high curved handle curving up from the root of the handle at the middle of the body, is decorated with a punctate pattern at a level of the handle root below which, across the lower third of the body of the cup, is a decoration of parallel horizontal grooves. We see analogues at the Trenčín-Pollákova tehelna site (T.23), and in eastern Moravia. Two undecorated cups are also likely from this horizon, one of conical frustum form and the other cylindrical to slightly conical (ibid., T.III: 2, 3).
82. Vas megye, (Banner 1956, F.o.: 19, T.IV: 20, 21). Massive ansa lunata strap handle, inside surface decorated with one double and two triple punctate rows; round punctate marks, between which there are proportional undecorated fields.
83. Szigetcsép, Tangazdaság, Pest megye, (Korek 1984, Grube 3 = Abb. 3: 1, Grube 24/a = Abb. 12: 10–13, Grube 34 = Abb. 11: 11–16, Grube 60 = Abb. 8: 11–18, Grube 100 = Abb. 14: 1–11, über Grube 12 = Abb. 10: 1, 15, Streufund: Abb. 3: 2).

84. Budapest, Tabán, (Banner 1956, F.o.: 204, T.XLII: 17).
85. Budapest, Andro u., (Banner 1956, F.o.: 205, T.XXXIV: 36, 37).
86. Budapest, Békési-telep, (Banner 1956, F.o.: 208, T.XLII: 11).
- Veszprém, Nádortelep, (Banner 1956, F.o.: 53, T.IX: 21–28, 30–32). A cup with a flattened bottom (*ibid.*, T.IX: 30), and even more punctuated decoration (*ibid.*, T.IX: 23, 24 and 28) indicates the late phase.
87. Budapest, Békásmegyér I, Budapest III. Bez., (Banner 1956, F.o.: 200, Grab 1: T.XXXVIII: 14, 17, 18). Both graves are most likely from the beginning of Phase IV, although grave 2 (*ibid.*, T.XXXVIII: 21–23) with classical forms and without distinct elements of Phase IV is closer to the classical Phase III.
88. Budapest, Békásmegyér II, Budapest III. Bez., (Banner 1956, F.o.: 201, T.XXXIX: 12, T.XLI: 4?).
89. Budapest, Békásmegyér III, Budapest III. Bez., (Banner 1956, F.o.: 202, T.XL: 4, 8-inverted).
- 89A. Budapest, Békásmegyér, Budapest III. Bez., (Gábori-Csánk 1964, Fig. 11: 1, 2, Fig. 7: 5–6).
- 89B. Budapest, Káposztásmegyér-Farkas-erdő, Budapest IV. Bez., (Endrodi 1988, Grube 50: Abb. 5: 6 = Abb. 6: 5).
90. Szentendre, Pannonia telep, (Pannónia-Flur), Pest megye, (Banner 1956, F.o.: 181, T.XXXV: 2; Bondár 1984, Abb. 3: 7).
91. Szentendre, Papsziget, Pest megye, (MRT XIII/1, F.o.: 28/10; Bondár 1984, 69, Abb. 3: 7, 9). M. Bondár (*o.c.*, *l.c.*) attributed these two sherds to the Kostolac culture. They should be dated to Phase IV of the Baden culture. An example of a vertical double-punctate row on the inner side of the rim is found in the Baden-only milieu at the Szeghalom, Dió-ér site (MRT IV/1, T.22: 6).
92. Szigetmonostor, Duna-part, Pest megye, (Banner 1956, F.o.: 190, T.XXXVII: 5, 10?; Bondár 1984, Abb. 2: 10). Very little material in relation to the Kostolac culture!
- Tahitótfalu, Szentpéteri dűlő, Pest megye. M. Bondár (1984, 72) has correctly distinguished the material previously attributed to the Kostolac culture as being Baden material (Banner & Bognár-Kutzián 1960, T.XIV: 3, 5, 7). Two sherds attributed to the Kostolac culture (*ibid.*, T.XIV: 1–2) are consistent with the Baden culture Phase IV by the exhibited decorative technique and motif.
93. Pilismarót, Basaharc, Esztergom-Komárom megye, (Banner 1956, F.o.: 84, T.XIII: 26).
94. Szob, Homokdűlő, Pest megye, (Banner 1956, F.o.: 159, T.XXVI: 21).
95. Nyergesújfalu, Viskosa-gyár, (Banner 1956, F.o.: 85, T.XIV: 25, 26).
96. Esztergom, Diósvölgy, Esztergom-Komárom megye, (Bondár, *CommArchHung* 1987 – transition from Phase III to IV with elements of Phase IV).
- 96A. Esztergom-Komárom megye, (Banner 1956, F.o.: 89, T.XIV:19).
- Bag, (Banner 1956, F.o.: 169, T.XXVI:12). This sherd may be dated to Phase IV, although the remaining material indicates the characteristics of Phase III.
- Pilisszentlélek, Esztergom-Komárom megye, (Bondár 1984, 83, Abb. 6: F.o.: 41).

## HUNGARY

### (central zone between the Danube and Tisza, northern end)

97. Pécel, Pest megye, (Banner 1956, F.o.: 191, T.XXX: 1, 2, 4).
98. Üllő, Pest megye, (Banner 1956, F.o.: 197, T.XXXII: 30, 31, 33, 34, 49, 60, T.XXXIII: 4, 48, T.XXXIV: 1, 27, 29, 34).
99. Tápiószéle, Pest megye, (Banner 1956, F.o.: 172, T.XXXVIII: 9, 10).
100. Jászberény, Kalksandziegelei, Jász-Nagykun-Szolnok megye, (Banner 1956, F.o.: 265, T.LXI: 10, 12, 15?).
- Poroszló, Ráboly, Heves megye, (Korek 1985, Abb. 4: 13, 17?).

### NORTHERN HUNGARY (central zone)

101. Piliny, (Banner 1956, F.o.: 166, T.XXVII: 2, 4, 7, 9, 10, 18, 25, 38, 40, 43, 45). The complete finds from Piliny (*ibid.*, T.XXVII) fit well into Phase IV. Only the most remarkable elements are listed.
102. Salgótarján-Pécskő, Nógrád megye, (Korek 1968, I. Fläche: T.III: 10, 22, II. Fläche: T.IV: 5, 19, III. Graben: TV: 9, 18, II. und IV. Fläche, Lehmschicht b: TVI: 14, Lehmschicht c: TVII: 2, Lehmschicht e: TVIII: 22, II. Fläche, Lehmschicht f: T.IX: 6, 16). The Baden material represents the late Phase IV with elements (*ibid.*, T.IX: 18, 19) that indicate the initial formation of the Kostolac (Bošáca) decorating technique. The Makó-Kosihy-Čaka material occurs in trenches II and IV (Fläche) of Lehmschicht a–d, while Lehmschicht (e?) f–g represents the Baden layer.
103. Ózd, Kőaljatető, Borsod-Abaúj-Zemplén megye, (Banner 1956, F.o.: 283).
104. Ózd, Sportstadion, Borsod-Abaúj-Zemplén megye, (Banner 1956, F.o.: 284).
105. Center, Kofejalja, Borsod-Abaúj-Zemplén megye, (Kalicz 1963, Grab 1: TV: 1–2, Grab 2: TV: 6, Grab 5: TV: 7, Grab 6: TVI: 5). Indicative elements are listed only for Phase IV, on the basis of which the necropolis should be dated.

106. Szilvásvárad, Istállósokoi-barlang, (Banner 1956, F.o.: 279, T.LXII: 8).
107. Emőd, (Banner 1956, F.o.: 282, LXIII: 2, 17, 25, 50). The published material dates everything to Phase IV.
108. Onga, Borsod-Abaúj-Zemplén megye, (Banner 1956, F.o.: 288, T.LXXVIII: 9, 13).
109. Tiszakeszi, (Banner 1956, F.o.: 281, T.LXII: 16, 21, 22, 30, 31, 33, 35, 36).  
Szirmabesenyő, (Banner 1956, T.LXII: 41, 45–46).?  
Szentistvánbaksa, Borsod-Abaúj-Zemplén megye, (Bondár 1984, 83, Abb. 6: F.o.: 49).?
118. Tiszalök, Szabolcs-Szatmár-Bereg megye, (Banner 1956, F.o.: 320, T.LXXXIII: 12–14).
119. Oros, Nyiregyháza Bez., (Banner 1956, F.o.: 321, T.LXXVIII: 4–6).
120. Székely, Zöldtelek, Szabolcs-Szatmár-Bereg megye, (Kalicz 1958, p. 3 sqq, T.I: 1, 6, 8–10, T.II: 7, 11, 17, 18, 20–22, 25).
121. Ajak, Szabolcs-Szatmár-Bereg megye, (Banner 1956, F.o.: 309, Abb. 27).
- 121A. Vis?, (Sárospatak lizeum kol.), (Banner 1941, T.I: 3; Banner 1956, F.o.: 304, T.LXXXII: 6).

#### ROMANIA (Valley of Crișul Repede)

122. Sîntandrei, (Roman & Némethi 1978, Pl. 1: F.o.: 24, Pl. 56: 3, Pl. 57: 4, 6).
123. Oradea-Salca, Ghețarie site, (Roman & Némethi 1978, Pl. 1: F.o.: 15, Pl. 52: 5, 6, Pl. 55: 1, 2, 4?, Pl. 73: 11, Pl. 76: 7, 9, 10).
124. Girișu de Criș, (Roman & Némethi 1978, Pl. 1: F.o.: 10, Pl. 59: 8, 9, 14, Pl. 70: 1, Pl. 71: 1–5, 7, 9, 10, 11, 13).

#### Biharea

125. Fegernic, com. Sirbi, jud. Bihor, Baden IV. – Coțofeni I symbiotic settlement, (T.17; Ignat 1981, Pl. III: 3, 5, Pl. IV: 1, 3–4, 9).

#### NORTHWESTERN ROMANIA

126. Sălacea, Dealul Vida, (Roman & Némethi 1978, Pl. 1: F.o.: 19, Pl. 45: 2, Pl. 46: 1, 3, 4, Pl. 48: 2).  
Valea lui Mihai (Phase III/IV).
127. Vășad, com. Curtuișeni, (Roman & Némethi 1978, Pl. 1: F.o.: 31, Pl. 22: 9). Fluting on the inside face of the base.
128. Pișcolt, Nisipărie, (Roman & Némethi 1978, Pl. 1: F.o.: 17).  
Grube 1/1970: Pl. 26: 3; Grube 4/1972: Pl. 37: 2;  
Grube 5/1972: Pl. 30: 4a–b; Grube 8/1972: Pl. 42: 6; Grube 18/1973: Pl. 27: 6; Pl. 21: 13, Pl. 29: 2,  
Pl. 31: 6, Pl. 32: 1, 3, 8, Pl. 33: 12, Pl. 34: 14, Pl. 35: 3, 4, Pl. 35: 6, Pl. 37: 1, Pl. 38: 1, Pl. 39: 1, 3, 4a–b,  
Pl. 40: 1, Pl. 42: 1, 3–5).
129. Sanislău, (Roman & Némethi 1978, Pl. 1: F.o.: 18, Pl. 21: 4, 6–7).
130. Ciumești II, (Roman & Némethi 1978, Pl. 1: F.o.: 7, Pl. 11: 5, 6).
131. Ciumești III, (Roman & Némethi 1978, Pl. 1: F.o.: 7, Pl. 11: 10–12, Pl. 12: 4, 5, 8, Pl. 13: 2, Pl. 14: 8a–b, Pl. 15: 1, Pl. 16: 1a–b).
132. Berea Ia-b, (Roman & Némethi 1978, Pl. 1: F.o.: 3, Pl. 16: 2–4, 6, 8, Pl. 17: 3, 6, 8, 9, 11, Pl. 18: 1).
133. Berea XIII, (Roman & Némethi 1978, Pl. 1: F.o.: 3, Pl. 19: 15, Pl. 20: 5, 7–11, 13).

#### ZEMPLIN-BETWEEN HERNAD AND TISZA

Mezőzombor, Borsod-Abaúj-Zemplén megye, (Simán 1982, T.I: 5, T.II: 3?, 4, T.III: 1–3).

#### NORTHEASTERN HUNGARY (east of the Tisza River)

110. Kunszentmárton, Pusztastvánháza, Jász-Nagykun-Szolnok megye, (Banner 1956, F.o.: 257, T.LXI: 2, 5).
111. Szeghalom, Sárga-Mágor, Békés megye, (MRT IV/1, 157, Fundort 11/89, T.23: 4, 6, 8–9, 12, 14).
112. Szeghalom, Dió-ér, Békés megye, (Ecsedy 1975a, Nagytúlakörös?, T.5: 14, 23, T.6: 2, 14; MRT IV/1, 154, Fundort 11/80, T.22: 6, 8–10, 12, T.62: 16). There are also elements for the isolation of earlier phases of the Baden culture, indicating lengthier development. I consider the isolation of the Boleráz phase (Ecsedy 1975a, 16; MRT IV/1, 154) to be problematic, and it is more likely that these pre-classical finds are to be dated to Phase II.
113. Szeghalom, Nagytúlakörös, Békés megye, (MRT IV/1, 178, Fundort 11/234, T.23: 1–2, 15).
114. Debrecen, Hajdú-Bihar megye, (Banner 1956, F.o.: 293, T.LXXIX: 15).
- 114A. Debrecen, Dunahalom, Hajdú-Bihar megye, (Ecsedy 1979a, Pl. 1: 4, 5, Pl. 2: 1).  
Debrecen, Ohat, Hajdú-Bihar megye, (Bondár 1984, 83, F.o.: 15)?
115. Polgár, Hajdú-Bihar megye, (Banner 1941, Fig. 1: 33, Banner 1956, F.o.: 310, T.LXXIX: 30, T.LXXXIII: 1–10).
116. Polgár, Hajdú-Bihar megye, (Banner 1956, 109, F.o.: 315, T.LXXXII: 2).
117. Polgár, Téglaszin, Hajdú-Bihar megye, (Banner 1956, F.o.: 314, T.LXXXV: 3–24, T.LXXXVI). According to the description in the table (*ibid.*, T.LXXXIV), this collection of cups and horn-shaped handles is from the Téglaszin site; however, this material (Burián-Nachlass) is attributed to the site under number 310 in the text (*ibid.*, 108).

134. Berea XX, (Roman & Némethi 1978, Pl. 1: F.o.: 3, Pl. 20: 16, 18).  
 135. Carei, Bobald, (Roman & Némethi 1978, Pl. 1: F.o.: 6, Pl. 22: 8).  
 136. Carei, Cozard, (Roman & Némethi 1978, Pl. 1: F.o.: 6, Pl. 22: 3–4).  
 137. Unimăt, (Roman & Némethi 1978, Pl. 1: F.o.: 25, Pl. 61: 10, Pl. 64: 1–8, 10, 11, 13, 14, Pl. 67: 8).  
 138. Cehăluț, (Roman & Némethi 1978, Pl. 1: F.o.: 29, Pl. 62: 5, 9, 10).

## UKRAINE

139. Mukačevo, Malaja gora, (Eisner 1933; Potušnjak 1972; Balaguri 1975).  
 140. Djedovo

## SLOVAKIA (east of Tisza-Hornad)

141. Streda nad Bodrogom, Bakhegy (Bálvánahyge), okr. Trebišov, (T.18: 1–6; Polla 1956, Obr. 258: first sherd to the right in the second row from the bottom /7/, last sherd to the right in the first row from the bottom /12/, Obr. 259: 3, 4; Budinský-Krička 1960, TVI: 6; Šiška 1966, 54, F.o.: 31; Němejcová-Pavúková & Šiška 1970, T.LXXVIII: 6, 7).  
 142. Plešany, Plešivec, okr. Trebišov, (T.18: 7–15; Eisner 1933, 32; Šiška in: Budinský-Krička et al. 1962, 292, Obr. 3: 8, 10; Šiška 1966, 54, F.o.: 23; Čaplovič et al. 1978, Obr. 31: 8, 12, 15).  
 143. Michalany, okr. Trebišov, (T.20: 15; Šiška & Klčo 1990, 158, Obr. 69: 9).  
 144. Hrčel, Nad baňou, okr. Trebišov, (T.18: 16–22; Kaminská 1987, Obr. 9: 10, Obr. 10, Obr. 11).  
 145. Oborin, časť Kucany, okr. Trebišov, (T.20: 16; Šiška & Klčo 1990, 159, Obr. 69: 4).  
 146. Malé Raškovce, Hrachovisko, distr. Michalovce, (T.19; Vizdal 1988, object K-1/87: Obr. 47: 3–5; Obr. 46: 2–4; Vizdal 1992, object 1/1988: Obr. 5: 6, Obr. 7: 1–3, 5, 6 and 9; layer: Obr. 1: 1–6, Obr. 2: 3 and 8, Obr. 4: 3–5 and 7, 8? Obr. 5: 7? 8? Obr. 6: 1, 5 and 9, Obr. 7: 7, 8, 10?). Vizdal (1988, 140) first published this material under the toponyms Hradisko and Pod lesom, and designated the Baden structure as K-1/87. In a recent paper, Vizdal (1992) introduced the toponym Hrachovisko, and renamed the structure 1/1988 (adding another structure: 2/1988). Irrespective of the different denominations, the two papers refer to the same site and the same material (features).  
 147. Kopčany, okr. Michalovce, (Šiška 1962, 770, jáma: Obr. 255: 1–3, 5–7; Šiška 1966, 51–52, F.o.: 13, Object 1: Obr. 8: 1–4, 6–13, 15–20, Obr. 9: 7; Objekt 3: Obr. 5: 9 = Obr. 6: 9, Obr. 7: 2, 7;

Němejcová-Pavúková & Šiška 1970; Šiška 1975, Obr. 91: 1, 6).

Streda nad Bodrogom, Medzi jarkami-Kompoš, okr. Trebišov, (Čaplovič et al., AVANS 1976, /Nitra 1977/, Obr. 45 : 1). A low cup with rounded sides, flat base, and a massive strap handle likely from Phase IV.

Kačanov, hospodársky dvor JRD, okr. Michalovce, (Šiška 1966, 51, no illustrations).

## EASTERN SLOVAKIA

### (west of Slanské Pohoria (Torise))

#### Košická kotlina

148. Valaliky, časť Košťany, (za cintorínom), okr. Košice-vidiek, (Pastor 1962, 625–626, Obr. 214: 1 = first sherd from the left in the top row, 18 = first sherd to the right at the bottom; Šiška 1966, 55, F.o.: 39). Two settlement objects: 2/58, 3/59 (Pastor, o.c., l.c.). Šiška mentions a sherd from a conical ladle.  
 149. Barca, (I), okr. Košice-vidiek, (Hajek 1961, Obr. 4, Šiška 1966, 50, F.o.: 1).  
 150. Barca, Gylkos, okr. Košice-vidiek, (Budinský-Krička 1977, 68, Obr. 20: 2).  
 151. Jasov, Takáčova jaskyňa, okr. Košice-vidiek, (Eisner 1933, T.XVIII: 1, 8; Šiška 1966, 51, F.o.: 11).  
 Seňa II, Istendomb, okr. Košice-vidiek, (Šiška 1966, 54, F.o.: 27). “Anthropomorphic” urn with hatched fields separated plastic rib – Phase III or IV.  
 Kurimany, Za lesíkom, okr. Spišská Nová Ves, (Javorski 1982, 118, Obr. 79: 1, 2) Phase III or IV.

#### Torysa valley (middle and upper part)

152. Šarišské Lúky, Prešov, (Šiška 1976, objekt 8: T.XV: 18).  
 153. Veľký Šariš, hrad Šariš, okr. Prešov, (Slivka & Olexa 1977, Obr. 168: 17).  
 154. Šarišské Michalany, Fedelemka, okr. Prešov, (Šiška 1985, 227, Obr. 87: 5, 6, 7; Šiška 1986, T.IV: 2, 6, 9).  
 155. Ostrovany, (obec, č.d. 78), okr. Prešov, (Lamiová-Schmiedlová 1964, T.XI: 3; Šiška 1966, 54, F.o.: 21).  
 156. Jakubovany, okr. Prešov, (Béřes 1993, Obr. 4: 7). Prešov, časť Solivar, Stavenec, (B. Tomášová, AVANS 1989, /Nitra 1991/, 99, Obr. 54: 5 = zigzag stripe, obliquely hatched). Likely Phase IV.



## SLOVAKIA (Central, north)

## Hornádská and Popradská kotlina

157. Žehra, Drevení, (T.21 & T.22; Pod Dreveníkom?), okr. Spišská Nová Ves, (*Bayer 1928*, T.XVII: 4 – the first from the right; *Kozłowski 1965*, T.IV: 14; *Ľavorski 1982*, 122–123).
158. Žehra, Puklinová jaskyňa, okr. Spišská Nová Ves, (*Bárta 1958a*, Obr. 179: 5, 9, 16).
159. Spišské Tomášovce, Čertova džura, okr. Spišská Nová Ves, (*Bárta 1958b*, Obr. 182: 4, 5).
160. Veľká Lomnica, Burchbrich, okr. Poprad, (*Novotná & Štefanovičová 1958*, T.II: 6, 10, 11, T.III: 6, 9, 11, 12, 16; *Novotný 1972*, Obr. 2: 1; *Novotný 1988*, 101, Obr. 27: 10; *Novotný 1990*, 128, Obr. 56: 3; *Novotný 1991*, Obr. 31: 5).

## SLOVAKIA (Central, south)

## Ipeľská, Rimavská and Lučenská kotlina

161. Včelince, Feketesár, okr. Rimavská Sobota, necropolis, (*Kovács 1984*, 47; *Kovács 1987*, Grab 6 = Abb. 4: 1).
162. Včelince, Káposztás, okr. Rimavská Sobota, (*Kovács 1985*, Obr. 19: 1, 2) 2 = ?
163. Stránska, Mogyorós, okr. Rimavská Sobota, (*Kovács & Nevizánsky 1986*, 65–66, Obr. 18: 5).
164. Gemer, okr. Rimavská Sobota, (*Kovács 1987*, Grab 7 = Abb. 4: 3).
165. Bátka, časť Dulovo, Padalja, (*Kovács 1984*, 45, Obr. 15: 5).
166. Rimavská Sobota, sídlisko Zapad I, (*Kovács 1982*, Obr. 92: 4; *Kovács 1984*, 46, Obr. 16: 2, 3). The sherd is incorrectly identified as Kostolac. At this site, however, one should expect the Bošáca group as indicated by the sherd decorated with a stamp (*Kovács 1982*, Obr. 92: 7).
167. Rimavská Sobota, sídlisko Zapad II, (*Kovács 1985*, Obr. 19: 7).
168. Točnica, okr. Lučenec, (*Ožďáni 1977*, Obr. 141: 1, 4, 6).
- Pustatina Filipova, obec Veľké Dravce, okr. Lučenec, (*Eisner 1933*, T.XVIII: 10, 20). An incised vertical ladder motif in combination with fluting indicates the Ozd type. Punctate vertical moulded bands with a fluted surface in-between are a feature of the late Phase III and constitute the prototype for the punctate pattern of framing motifs so widespread and characteristic of Phase IV. Most likely from the transition from Phase III to IV.

## NORTHWESTERN SLOVAKIA

## (Orava valley, Liptovská and Turčianská basin)

169. Turčianska Belá, Baba, okr. Martin, (*Hrubec 1970*, Obr. 1: 2a–b, 8).
- 169A. Bešeňová, okr. Liptovský Mikuláš, (*Kürti 1930*, 179sq, T.II: H 9, 11, 13, 15–16; *Lichardus 1962*, 849sq, Obr. 278: 7).
- 169B. Dolný Kubín, Trniny, okr. (Čaplovič 1987, 26sq, Obr. 6, T.III: 11–13). The author attributes certain sherds to the Bošáca group (*ibid.*, T.III: 3 = Dolný Kubín-Trniny, 6 = Vyšný Kubín-Ostrá skala), although there are no definite indications. Namely the decoration consists of slanted pricking/incisions, which also appear in the Baden culture.

## SOUTHWESTERN SLOVAKIA

170. Ivanovce, okr. Trenčín, (*Pavelčík 1974*; *Němejcová-Pavúková*).<sup>2</sup>
171. Trenčín, Polaková tehelna, (T.23 & T.24: 1–16; *Eisner 1933*, T.XIV: 1–8, 10–12, T.XV: 1, 3, 8, 12, T.XVI: 1; *Novotná 1961*, cottage 1: T.IX: 3, 5; T.X: 5, 7, T.XI: 2; pit III: T.IX: 6, T.XI: 4; pit IV: T.IX: 2, T.XI: 1, 3, 5, 7; pit V: T.IX: 7–9; layer: T.IX: 1, 4, T.X: 6, T.XI: 6, below T.XII is a mistakenly transcribed text that belongs to T.XI; *Točík 1963*). In the paper by M. Novotná (*o.c.*) below T.XII is a mistakenly transcribed text that belongs to T.XI, so this material cannot be ascribed to these features; the sherds of the Baden Phase IV are: *ibid.*, T.XII: 1, 4.
172. Iža, okr. Komarno.
173. Mužla, časť Čenkov (Vilmarket), okr. Nové Zámky, (*Novotný 1958a*, Obr. 238: 1, 4–6; *Kuzma 1982*, Objekt 37: Obr. 99: 7; Objekt 45: Obr. 100: 6; Objekt 61: Obr. 100: 8).
174. Parkan, (*Budinský-Krička 1947*, T.VII: 3).
- 174A. Bíňa, okr. Nové Zámky (*Janšák 1938*, T.XV: 13). In addition to the mentioned Phase IV elements, the earlier phases of the Baden culture could also be distinguished in Bíňa, e.g., classical corresponding with finds from Úny.
- 174B. Malé Kosihy, Törökvar, (*Janšák 1938*, T.XXVII: 9).
175. Hurbanovo, Sesíleš, okr. Komárno, (*Novotný 1953*, Obr. 324: a sherd in the middle of the second row from the top, Obr. 326). A zigzag stripe appears done as a dense incised grid.
176. Bajč, Vlkanovo, okr. Nové Zámky, (*Nevizánsky 1987*, objekt 22/82: Obr. 4: 6, 11, 12). The occurrence of a “fonyodoid” handle (*ibid.*, Obr. 4: 13) should be regarded as an intrusion from the older phase of

<sup>2</sup> Both authors closely associate Baden finds from this site with the Trenčín site, Polaková tehelna.