

APPROACH TO THE GENESIS AND INITIAL DEVELOPMENT OF THE EARLY BRONZE AGE CULTURES IN THE LOWER DANUBE BASIN AND IN THE SOUTHERN BALKANS

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Introduction

The Early Bronze I in the Balkans includes a block of cultures from the second half of 4th millennium BC. In the light of the recent evidence, the beginning of the Early Bronze is connected with Hotnitsa-Vodopada site from Northern central Bulgaria dated according to the ¹⁴C dates from c. 3650 BC/3600 BC – 3500 BC (Nikolova 1999a). The earliest values of Baden complex from Central Europe are correlated with that chronology (Pavelčík 1996; Nikolova 1999a; Stadler 1999, 8), while in the south of the Middle Danube there is no contemporary site discovered from the earliest Baden culture. It is a part of the big question of the chronological determination of the Final Copper – Early Bronze (the Hunyadhalom-Vajska culture - Baden I) transition in that part of Europe. On the other hand, the ¹⁴C dates from Hotnitsa-Vodopada parallel with the earliest Boleráz in Central Europe. At the same time, the recent evidence indicates:

1/ Hotnitsa-Vodopada (earlier Early Bronze IA) is not a single site in the Middle Yantra drainage;

2/ The genesis and initial development of the Cernavodă III ceramic style was a long process documented in the eastern Lower Danube as Shepshevo-Klise Bair – Hotnitsa-Vodopada – Koprivets IVB/ Oltenița-Renie II sequence. Ceramically, Koprivets and Oltenița-Renie II follow Hotnitsa-Vodopada. There are no radiocarbon dates from both settlements and based on the comparative ceramic evidence only, it can be assumed that Koprivets and Oltenița-Renie II date from c. 3500 BC-3400 BC.

3/ The alder ornamented vessels represents the classical but not the earliest Cernavodă III culture (later Early Bronze IA-earlier Early Bronze IB). It can be taken as the beginning of the Yunatsite culture. Ezero culture, Pernik group and Sitagroi IV/ Dikili Tash IIIA in the Southern Balkans is synchronized with the later phase of that culture (Nikolova 1998 with the arguments confirming possible synchronization).

To later Early Bronze I belongs the Baden II-III culture in the southern Middle Danube (for later Baden see Tasić 1995 with ref.) as well (Early Bronze IB). On the Lower Danube the Coțofeni I in the western Lower Danube, Orlea type and Celei groups, as well as possibly the latest Cernavodă III in the eastern Lower Danube were contemporary to later Baden, along with the earliest Pit Grave Culture. In the south of the Balkans, the later Yunatsite I culture, later Ezero I culture, later Sitagroi IV-Dikili Tash IIIA, as well as later Pernik I and Ostrikovac Ia groups belong to Early Bronze IB (Nikolova 1998; eadem 1999a).

In this study the principal chronological scheme of the Early Bronze I in the Balkans will be developed (see Nikolova 1998; eadem 1999a; eadem 2000a; eadem 2000b). In addition, there is an approach to the characteristics of the earlier Early Bronze I ceramic style (Koprivets

pottery), as well as to the genesis of the Early Bronze cultures in the Balkans and the synchronization of the Balkans and Central Europe Early Bronze I cultures.

The beginning of the Early Bronze Age in the Balkans:

Hotnitsa-Vodopada evidence and its relation to Baden I culture complex

In the light of the recent data Hotnitsa-Vodopada from central Northern Bulgaria can be positively attributed to the earliest Bronze Age in the Balkans (Nikolova 1999a). The prior distribution program of the ^{14}C dates shows a *terminus ante quem* c. 3700, and posterior distribution program *terminus post quem* c. 3600 – 3500 having in mind the uninterrupted stratigraphic sequence between the second and the first horizon (chart 1-4). Unfortunately, the analysis is weakened because there is only one date from the later (the first) horizon. The sum-probability using Oxcal 3.3 (Nikolova 1999a) and Oxcal 3.4 programs by Ch. B. Ramsey (chart 3) is between 3800 BC and 3520 BC (68.2 % probability). Excluding the negative possibilities of interpretation (Nikolova 1999a, 176) the Hotnitsa-Vodopada beginnings can be inferred in c. 3650 BC. This chronology is closer to posterior distribution values.

Because the sum-probability of the Hotnitsa-Vodopada dates includes a wider chronological span, we should emphasize on the date from the later horizon. Accordingly, the earliest values from Hotnitsa-Vodopada 2 should be excluded from the historical chronology of that level (chart 4). The span between 3700 and 3500 BC is the widest recently acceptable absolute chronology of Hotnitsa-Vodopada 2-1.

Recently, Hotnitsa-Vodopada has already been known through an abundance of ceramic evidence proceeding from both discovered building levels (Ilcheva 1996; see also her paper in this volume; Nikolova 1999a, figure 8.1 and the references cited there). The high handled-cups characterize the local ceramic style at that site, as well as high necked jugs, two-handled necked jug, sinuous bowls, conical bowls, carinated bowls, bowls with high pedestal, deep storage vessels with equal cut rim and shortly necked, amphorae, holed-base vessels, etc. On the whole, the ornamented pottery is in less quantity than the plain ceramics. The relief bands with hollows arc attached under the rims of possibly storage vessels, or incisions are cut over the rims. The courseware is specified by pseudo-barbotine treatment of the surface. The exceptional painted pottery of linear ornaments as well as the channel ceramics specify the Hotnitsa-Vodopada pottery.

In relative terms, it is impossible that Hotnitsa-Vodopada to have been contemporary with Galatin 2 as for instance, Telish 4 is identical with Galatin 2 pottery although, according to the archaeomagnetic data (Kovacheva 1996, fig. 1), Telish 4 definitely preceded Hotnitsa-Vodopada. Lately, one more argument occurred – the Shemshevo-Klise Bair pottery (Ilcheva 1997), which is closer to Telish 4 and antedates, in one and the same micro region, Hotnitsa-Vodopada.

In comparison to Hotnitsa-Vodopada, the system of the emblematic characteristics generally makes a differentiation of the Cernavodă I culture from the ceramic style at that site (see the illustrations in Manzura 1999 and cp. with Ilcheva 1996). So, I completely disagree with the excavator who parallels Hotnitsa-Vodopada most closely with Ulmeni (i.e. late phase of the Cernavodă I culture) and wrote that it belongs to “*the beginning of the Proto-Bronze stage of the Transitional period in our country*” (Ilcheva 1996, 108). In addition, there was V. Ilcheva who published the pottery from Shemshevo-Klise Bair (1997). Despite expressive

contact data with Telish 4 and comparative data with Hotnitsa-Vodopada, it is dated from the so-called Post-Eneolithic stage of the Transition period in central Northern Bulgaria (Ilcheva 1997, 105). But this thesis cannot be however accepted at all. There is a general similarity in the ceramic style between Shemshevo-Klise Bair and Hotnitsa-Vodopada. We can speak about cultural identity of the population of the both sites that possibly succeeded chronologically one after another. There are no ¹⁴C dates from the former site, but all the similarities with Hotnitsa-Vodopada indicate that there is no large chronological difference. Some similarity of Shemshevo-Klise Bair pottery with Telish 4 and Sălcuța IV could indicate contemporary sites. But it cannot be excluded that other sites could be discovered in the future in the Middle Yantra basin, with closer parallels in the *Horizon with disc-appliqué-handles*. There is even a possibility at Koprivets (see below) to have been documented two levels with an earlier one that has preceded Shemshevo-Klise Bair and belonged to Cernavodă I culture. However, in view of this fact, the chronological sequence on the Lower Danube area is rather different than it is accepted in the initial publications of the ceramic evidence (see table 1).

Period / stage / phase BC	The East Lower Danube	The West Lower Danube	The South Middle Danube	East Upper Thrace	West Upper Thrace	The North Aegean	
EARLY BRONZE II							
3000							
3100 EARLY BRONZE IB	PGC	Cernavodă II	COTOFENI I	PIT GRAVE CULTURE	EZERO 13-11 Golyama Detelina	YUNTSITE I Yunatsite 17-15 Dubene IIA	SITAGROI IV – DIKILITASH IIIA
3200 EARLY BRONZE IB	PGC						
3300 EARLY BRONZE IB	Durankulak Mirovtsi	CERNAVODĂ III	CERNAVODĂ III	BADEN III II I	?	?	?
3400 EARLY BRONZE IA							
3500 EARLY BRONZE IA	Olticnița- Renie II Koprivets	?	?	?	?	?	?
3600 EARLY BRONZE IA	Hotnitsa- Vodopada	?	?	?	?	?	?
3700 FINAL COPPER II	Shemshevo-Klise Bair	CERNAVODĂ I	SĂLCUȚA IV- TELISH IV	IIUNYADHIALOM- VAJSKA	Turgovishte tumulus? Drama scepter	Ruzhevo Konare scepter	?
2800							

Table 1. Chronological scheme of the Early Bronze I sequence in the Balkans. See also Nikolova 1998: table 3 for the sequence of the basic sites and/or cultures in broader context.

Critical chronological border in the light of the recent evidence

The Hotnitsa-Vodopada characteristic high-handled cups, as well as the relief-ornamented vessels, sinuous profiled bowls belong entirely to the Early Bronze ceramic style in the Balkans. Some elements similar to the Ulmeni phase of the Cernavodă I culture should be also mentioned, that may indicate that it should be expected synchronisms to Cernavodă I culture sites south of the Danube in Northeastern Bulgaria. However, the cultural definition of the so-called Pevets 'group' in this region is not clear because of the unclear definition of it and absence of the published pottery from the eponymous site. On the other hand, the handful sherds published by H. Todorova from Ovcharovo-Platoto are an insufficient record for deciding in that issue. What is known from central Northern Bulgaria, for the time being, is that the Shemshevo-Klise Bair – Hotnitsa-Vodopada sequence documents the genesis of the Cernavodă III culture to the south of the Danube River, and is interrelated with the cultural processes in the Middle Danube basin. Possible contacts between the Shemshevo-Klise Bair and the *Horizon of disc-appliqué-handles* from the western Lower Danube and the Middle Danube confirm that Hotnitsa-Vodopada succeeded the *Horizon of disc-appliqué-handles*. Unfortunately, there is not even a single datum indicating the earliest phase of the EB in the Southern Balkans. Theoretically, it can be assumed the earliest EB sites to have belonged to a period of co-existing Final Copper and Early Bronze cultures in the Balkans. But we have no definite and expressive data for a synchronization of the Hotnitsa-Vodopada with the western Central Balkan cultures, as well as with the ones in the southern Middle Danube. Also, Hotnitsa-Vodopada can be theoretically synchronized with the latest Cernavodă I culture in northern Dobroudja and northern Muntenia, but again the similarity in the pottery between those sites (for instance, Ghindărești in Northern Dobroudja and Râmnicelu) cannot be correlated with any ^{14}C dates from Romania.

The metal finds from Hotnitsa-Vodopada (Vajsov 1993; Nikolova 1999a) along with the pottery from Shemshevo-Klise Bair that chronologically preceded the former site, indicate clearly the western orientation of the population. At the same time, some very distant contacts with later Tripolje (see Bogataja and Manzura 1994 for recent research on the Final Copper and Early Bronze in the Northwest Black Sea region) cannot be excluded. The painted style from Shemshevo-Klise Bair, however, is comparable with the Yagodina culture (after I. Vajsov) from the Rhodope Mountains as well.

To conclude, the Middle Yantra population from earliest Early Bronze Age represents a model of dynamic interactions in the Lower Danube basin in a period, for which the culture(s) to the south of the Stara Planina Mountains is/are still unknown.

The general question of the chronological relation of Hotnitsa-Vodopada to Baden culture can be grounded recently mainly on ^{14}C dates (for that complex generally see Torma 1969; Pavučlik 1988; Němejcová-Pavůková 1991; Mayer 1991; Němejcová-Pavůková 1992; Ruttkay 1999; Mayer 1999; etc.).

By way of illustration of the radiocarbon interrelations the Lower and Middle Danube, Červený Hrádek – feature 7D/70 is attributed to Baden Ia (Němejcová-Pavůková 1979, 31 and fig. 15; Stadler 1999 and references cited there). There are two dates from that site and their combine-probability, as well as the sum probability can be completely correlated with Hotnitsa-Vodopada (table 2; chart 4). The values with 68.2% probability date both sites from c. 3800 BC-2530 BC. It can be assumed the historic chronology c. 3650/3600 BC-3500 BC (see above for Hotnitsa-Vodopada) and a possibility for the pit 7D/70 from Červený Hrádek to be contemporary with Hotnitsa-Vodopada I (later horizon).

<i>Site</i>	<i>68.2% probability</i>	<i>95.4% probability</i>	<i>Overall agreement</i>
Hotnitsa-Vodopada n=6	3800BC (55.8%) -3620BC 3590BC (12.4%) 3530BC	4000BC (95.4%) 3350BC	100%
Cervený Hrádok (n=2)	3790BC(68.2%) 3520BC	4000BC (95.4%) 3350BC	

Table 2. Comparison of the radiocarbon chronology of Hotnitsa-Vodopada (Cernavodă IIIA) and Červený Hrádok (Baden IA). N=8. Dates from Nikolova 1999a and Stadler 1999.

The Koprivets evidence

Koprivets pottery (Nikolova 1996) originates from an uppermost destroyed layer of the multilevel prehistoric site located over a sloping river terrain near the village of Koprivets, Rousse District. It is in the area of the recent graveyard of the village of Koprivets. For the first time, in the south of Danube drainage the pottery from Koprivets IV documents a transition phase of the initial development of the Cernavodă III culture, that between Hotnitsa-Vodopada on one hand, and classical Cernavodă III culture of the alder ornamented vessels, on the other. Chronologically, that phase was recognized to the north of the Danube as Oltenița-Renie II type, defined as a transition between Cernavodă I and Cernavodă III culture (Morintz and Roman 1968). Recently, it has manifestly shown that the Oltenița-Renie II ceramic style was only a phase of the cultural processes that already had begun to the south of the Danube. As far as Koprivets finds concerns, the discussion, opened by P. Roman on this symposium, requires the discovered ceramics to be again examined. Insofar, as P. Roman suggested, the pottery of Koprivets belongs to Cernavodă II (1) and as I was not directly familiar with the Cernavodă III pottery (2), I will argue that the pottery from Koprivets has nothing to do with Cernavodă II ceramic style. As far as my knowledge concerns, the exhibition of published and unpublished pottery from Cernavodă I and Cernavodă III ceramics from Romania on this Symposium confirms my conclusions concerning the Koprivets data.

Out of 190 sherds from the excavated area at Koprivets which were available in 1994 from the excavations of V. Popov and I. Vajsov (total of c. 200), most belong to walls of vessels. The ceramics from Koprivets IV belong to coarse, technomic and fine pottery. The coarse earthenware is thick-walled, including storage and amphora-like vessels. To the technomic and fine pottery belong moderately to thin-walled pots, bowls and cups made from clay with sand and/or organic mixture and in some cases with crushed shells (observation without a microscopic analysis).

Four technological groups (TG) can be distinguished, with subgroups: dark brown slip coarse and technomic earthenware (A); moderately and light-brown (reddish or ochre) slip earthenware (B); gray and black burnished storage, technomic and fine earthenware (C), as well as gray and black slip smoothed pottery (D). A microscopic observation is to be provided and published elsewhere that may infer an addition definition of those technological groups. From macroscopic viewpoint the existence of clay mixed with fine and coarse sand including

quartz should be stressed, as well as crushed stone, organic inclusions, 'shamot' (ceramic fractions), and possibly crushed shells. Fine paste is an exception of TG A.

The typology accepted is morphological. It is based on very fragmented pottery only; the reconstructed shapes are very common, without a possibility of precise morphological description (Nikolova 1996, 156, figures 6-8). Most of the types have been represented by single instances (table 3).

TG Vessels	Total (min)	Rims	Walls	Handles	Bases	Types (T) distribution
Dark brown slipped	9	8	36	4	4	T3, T7, T8, T12
Moderate and light brown slipped	10	9	2	10	1	T1, T3, T6, T7, T11, T13
Gray-black burnished	4			5	1	T2,T3,T4,T5,T9,T10,T12
Grey-black slip	6	5		1		T8, T13

Table 3. Correlation and distribution of the Koprivets pottery technological groups and types.

Amphorae-like vessels

Type 1. Short necked amphora-like vessels. Ochre brown earthenware.

Type 2. Wide-mouthed vessels. Gray polished earthenware. Channeling ornamentation.

Storage vessels

Type 3. Known only by the uppermost part of vessels with equal cut round rims which is straight or slightly turned out.

Type 4. Known only by an equal cut orifice, thickened rim and straight walls.

Type 5. Known only by the uppermost part of a vessel with equal cut rim and straight walls.

Walls of possible pithoi also belong to coarse earthenware made from clay intensively mixed with chaff. On the whole, the category of the storage vessels is less represented compare to the technomic pottery.

The *technomic pottery* is more abundantly represented. It consists of jugs, pots, jars and bowls. To the *fine pottery* mainly the cups can be attributed, documented by high handled instance and of a round bottom which is perhaps the earliest known of that type in the prehistoric Balkans.

Type 6. A high necked jug.

Type 7. A pot with round equally cut rim, and slightly turned out. Short 'neck'. Spherical-like body shaped. There is relief ornamentation under the rim (figure 1, 1).

Type 8. Spherical S-profiled pot. Round and turned out rim.

Type 9. Bowls with rounded rim and spherical-like body.

Type 10. Bowls with inverted rim and conical body (figure 1, 2).

Type 11.Handled bowls with inverted rounded rim (figure 1, 3-4).

Type 12. Bowls with turned out and flattened rim (figure 1, 5).

Type 13. Cups with high handles (figure 1, 6).

There are many plain wall sherds (35) from the technomic pottery, which belongs at least to four vessels probably of type 7. To type 7 can be also attributed some plastic bulges – single or in groups, as well as two tongue plastic bulges. The ceramics of that pottery is thin (0,5 cm thick walls) or moderately thick (1 cm thick walls). There are also 4 flat bottoms that can be attributed to the technomic pottery of type 7, but they could belong to some of the already mentioned walls, so they are not accounted in the vessels' minimized statistics.

To some of the ceramic vessels handles were attached: horizontal disk-shaped (type 1), characteristic of vessels of type 11, as well as vertical band handles (type 2), vertical arch-shaped with an ellipsoidal horizontal section (type 3) and tongue pseudo-handles (type 4). The handles of type 3 were characteristic of vessels of type 7, while one high handle belongs to a cup and one band handle to a jug.

Another morphological element is the high pedestal base known by a single instance. The vessel belongs to TG A.

Chronology and synchronization

There are no stratigraphic data on the pottery from Koprivets IV (Nikolova 1996). All originate from the destroyed layer. For the chronology of the pottery it was suggested the pottery had belonged to two levels, respectively to Cernavodă I and to Cernavodă III cultures. The publication of the pottery from Hotnitsa-Vodopada and Shemshvo-Klise Bair did not alter that conclusion. But a possibility to increase the value of the second hypothesis occurs – the site belongs to Cernavodă III culture with some characteristics that continued from Final Copper (Cernavodă I culture) into Early Bronze IA1 and later in Early Bronze IA2. That is a very important research problem but for the time being, there is no sufficient data for its decision. So, my purpose below is to define some basic ceramic elements as continuing from the Final Copper into the Early Bronze Age and the new elements that typify the Early Bronze IA ceramic style, which on their side define the relative and synchronization border lines of the site.

Type 1. The amphora-like vessels occur as a new element in the Cernavodă I ceramic complex (Morintz and Roman 1968; Manzura 1999, fig. 7.11: 4. Căscioarele; fig. 7.21: 8. Oltenița-Renie I; fig. 7.28: 11. Ulmeni-Tăușanca). It continued in Cernavodă III culture – Hotnitsa-Vodopada (Ilcheva 1996, fig. 23, 3). In the Final Copper they were an innovative element in the eastern Lower Danube basin, especially having in mind the absence of tradition of handled storage vessels in the Gumelnița ceramic style. Koprivets instance is close to the type 4 from Cernavodă I culture (after I. Manzura) but there are no data on the lower part of the body. In comparison to the mentioned vessels, those from Koprivets with stressed S-profiling may indicate a later chronological position that had been developed from Hotnitsa-Vodopada phase (see for instance Ilcheva 1996, fig. 22, 1). The B2 technological group is common for both cultures. For the time being, Koprivets type 1 can be dated from FC-EB IA or only EB IA.

Type 2. The gray burnished fragmented vessel has no analogies either in the Cernavodă I culture, or in the earliest Cernavodă III, according to the recent data. It can be attributed to Cernavodă IIIA2 culture.

Types 3 and 4. Those types originate in the Cernavodă I culture known for instance from Hârșova (Manzura 1999, fig. 7.15; 1-5, 8-9), but unfortunately the ceramic style of that culture is fragmentarily known, so it is missing in the typology of I. Manzura (1999). They are typical of Hotnitsa-Vodopada ceramic style (Ilcheva 1996, fig. 20, 8; 21, 2-3; 22, 3; 24) and are genetically connected with Shemshevo-Klise Bair in the Middle Yantra micro region (Ilcheva 1997, fig. 12:2-11). It is characteristic to the *Horizon with disc-appliqué handles* (Gergov 1996, fig. 3: 6. Telish IV) and in the eastern area of the Lower Danube they are a common element of the Cernavodă I and Cernavodă III culture. Therefore, types 3 and 4 date from FC – EB I.

Type 5. The earliest well-dated instance of that type in the Lower Danube is known from Telish IV (Gergov 1996, fig. 5, 8). From Ghindărești is known an instance (personal observation) dated from the latest Cernavodă I culture (information P. Roman). There is no published identical instance from Hotnitsa-Vodopada but at that site the relief under rim ornamentation is characteristic and belongs possibly to the same kind (Ilcheva 1996, fig. 20, 1). The Koprivets instance is of C technological group (gray burnished) and in my opinion can be attributed to the Cernavodă III culture.

Type 6. The high-necked jugs occur as an exception among the Koprivets pottery. That type seems to be an innovative element in the Early Bronze. At Hotnitsa-Vodopada, four types represent the category of jugs according to V. Ilcheva (1996, 94sq.). In my opinion, the so-called type 1 is identical with type 4 (cp. Ilcheva 1996, fig. 7, 11 with fig. 13, 1). There is only one instance from that site which however is related to Koprivets pottery (Ilcheva 1996, fig. 17, 14, the pottery from fig. 8. belongs to Hotnitsa-Vodopada II). There is no data for such a type from the *Horizon with disc-appliqué handles*. Therefore, it can be attributed to the innovative ceramic shapes in the Cernavodă III, respectively to EB I.

Type 7-8. They are common types for Cernavodă I (pot type 1.1 and 2.1) and Cernavodă III cultures. Many instances of similar pots or bowls are published from Râmnicelu (Manzura 1999, 7.29; 18-28 and the references cited there), which could postdate the Cernavodă I along the Danube, according to Harțuche N. (1980). They are characteristic of Sălcuța-Telish IV culture of the *Horizon with disc-appliqué handles* (Gergov 1996, fig. 3, 4). Later they continued in the earliest Cernavodă III according to the pottery from Hotnitsa-Vodopada (Ilcheva 1996, fig. 20, 2-3). Therefore, that type can be generally attributed to both cultures. The continuation in the later phase of Early Bronze IA is confirmed by the pottery at Oltenița-Renie II, where similar pots or storage vessels are characteristic of (Morintz and Roman 1968, fig. 26, 23.25-26). The technological group of A1 of the Koprivets pot type 8 confirms possible attribution to Cernavodă I or Cernavodă III culture.

Type 9. The S-profiled bowl of TG C characterized by vertical shallow channels. That type is typical to the Early Bronze I Balkans. The instance from Koprivets is one of the earliest

of that type of channeling and at the same time makes closer the ceramic style of Koprivets to that from Oltenița-Renie II where similar bowls but with oblique channels have been documented (Morintz and Roman 1968, fig. 26, 5).

Type 10. The bowls with inverted rim and conical body seem not to be characteristic for the Cernavodă I culture, despite some similarity of the Koprivets instance with Ulmeni-Tăușanca handled bowl (Manzura 1999, fig. 7.28; 10; Morintz and Roman 1968, fig. 15, 3). The bowl along with type 2 vessels belong to the gray-black burnished pottery and seems to represent an evolution shape from Cernavodă I into the Cernavodă III ceramic style.

Type 11. The bowls with disk-like horizontal handles, a completely new shape, unknown in the Cernavodă I culture. For the first time in the Lower Danube it was reported from Slobozia (classical Cernavodă III culture Morintz and Roman 1968, fig. 32, 14). The missing of the alder ornamentation is a reason for the bowls from Koprivets to be dated from the earlier phase of the Cernavodă III culture which precedes the alder ornamented horizon. On the other hand, that type is very important in the confirmation that the evolution of the Cernavodă III culture ceramic style was a long process.

Type 12. In the light of the recent evidence, that type occurred in the Early Bronze Cernavodă III culture as an innovative element. One of the instances is close to Oltenița-Renie II bowls (Morintz and Roman 1968, fig. 26:28). According to P. Roman (see above), type 12 belongs to Cernavodă II culture but the illustrated sherd from Cernavodă II eponymous site is rather different (Morintz and Roman 1968, fig. 54, 4). One may believe that kind of bowls with turned out and thickened rims occurred in Early Bronze IA and continued later in the later Early Bronze Balkans, also characterizing the southern Balkan cultures. But it cannot be excluded their diachronic interrelation with the Karanovo VI – Gumelnița – Varna complex, despite the typological peculiarities. The fashion of channeling the inner side of the rims is well demonstrated at Malu Roșu-Giurgiu (Morintz and Roman 1968, fig. 35, 5), which is in a very similar manner with the pottery from type 12.

Type 13. High handled cups occurred in the Middle Yantra drainage already at Shemshevo-Klise Bair (Ilcheva 1997, fig. 5, 1.6; 6, 5; 14, 1) and became very popular at Hotnitsa-Vodopada.

Discussion

For the Cernavodă III-Boleráz horizon, the above analyzed case study is especially important because it indicates the existence of cultural background for the dynamic interaction in the later phase of the Early Bronze IA, in the period of the Alder Ornamented Vessels distribution. On Lower Danube, their occurrence is usually defined as Cernavodă III culture (Morintz and Roman 1968) or Cernavodă III-Boleráz culture (Tasić 1981; idem 1983; idem 1986-1987; idem 1991; idem 1994; idem 1995, 46-50).

J. Maran (1999) has connected the cultural integration in the Danube basin with possible wheel transport distribution. On the other hand, the water trade contacts seem to be also an element of the interaction model, despite the unclear decision of the problem of the

inaccessibility of the Iron Gates in that period. At the same time, the changes have been documented in broader context, including also southern Poland, where the Baden population is connected with a more intensive development of the pastoral economy among the population there (Milisauskas and Kruk 1989). The intensive development of the semi-sedentary and/or semi-mobile population can be also added to the factors of the dynamic interactions in the Carpathians-Balkan region in later fourth millennium BC, demonstrated by the unification of the ceramic style.

The prehistory of the Danube should be seen as including regions of different tendencies of the dynamic cultural interactions. One can be cited here, in the first place, as the region of the only documented Mesolithic culture, that of Lepenski Vir. Later on, the Danube basin was a region of the distribution of the earliest monochrome pottery and the earliest painted pottery. In Late Neolithic and Early Copper Age the integration processes coincided with ethnographic peculiarities and formation of definite cultural complexes like Vinča and Boian in the western and the eastern parts of the Lower and southern Middle Danube respectively. In later Copper Age, the integration of the Lower Danube is especially expressive in the context of the similarity in the graphite ceramic styles, like the northern variants of the Karanovo VI–Gumelnița–Varna complex and Krivodol–Sălcuța–Bubanj complex. However, this is the period when in contrast to the Early Copper Age, the eastern parts of the Balkans were in closer cultural contacts in comparison to the east and west parts of the Lower Danube. In the period of the later Final Copper Age, the Lower and Middle Danube cultures gradually developed, in the context of dynamic interactions. The formation of interrelating cultures results in a similarity, which is based mainly on the close contacts between the neighbour communities and a distribution of the innovations from one area into the neighbouring area(s).

So, in the context of the history of the Lower and Middle Danube the alder ornamented vessels occur as a document of active cultural interactions along the Danube and had a well-grounded base. On one hand, the background dates back from the earlier fourth millennia BC. On the other, there is no reason to believe that the ceramic similarity indicates a presence of cultural identity of one and the same ethnos (in terms of linguistic groups). It seems to be a document of interaction model between population with different memory, different history and presence of different directions of the cultural contacts. Strictly speaking, we can think about a distributed fashion in the pottery for a certain period along the Danube that spread in areas of different cultural traditions. From Arbon-Bleiche 3 at Bodensee where a transition from Pfyn to Horgen culture is documented (Capitani and Leuzinger 1999; see Ruttkay 1999, 145–60 for Boleráz in Austria; Němejcová-Pavúková 1979; eadem 1984 for Slovakia, and Pavelčík 1999 in Moravia) to the northern Dobroudja, the *Horizon of alder ornamented vessels* is characterized by different accompanying ceramics.

In the light of the recent evidences, it seems that the fashion of alder ornamentation emerged in Central Europe (see for instance Šturovo, Němejcová-Pavúková 1979, fig. 2:16) and was distributed to the east. However, there is neither certain argument confirming that direction, nor arguments that could give a priority to the Lower Danube basin.

After all, the emergence of the alder ornamentation on the Lower Danube is very difficult to be chronologically precisely defined, because most of the data either originate from destroyed thin level settlements or there are no ¹⁴C dates from the better preserved settlements.

In table 4 is given the periodization of the Cernavodă III culture in the light of the recent evidence.

Stage/phase	Sites in Bulgaria	Sites in Romania
A1	Hotnitsa-Vodopada	
A2	Koprivets IV	Oltenița-Renie II
B (Alder ornamented vessels)“!?”	Mirovtsi, Durankulak	Cernavodă, Slobozia, Dobrotești etc.
C	Durankulak	Celei

Table. 4. Periodization of the Cernavodă III culture on the Lower Danube.

The relation of the southern Balkan Early Bronze I cultures with the Cernavodă III and Baden culture complex.

The northern Balkan Early Bronze I chronology is mainly based on the limited stratigraphic, mostly typological and almost non-Radiocarbon chronology. In contrast, the southern Balkan Early Bronze I cultures' chronology is based on long stratigraphic evidence, abundance of the radiocarbon dates, as well as expressive typological and many contact data. Recently, there is a cultural-chronological background argued (Nikolova 1999a; eadem 2000a; eadem 2000b) for the Southern Balkans, according to which the beginning of the Early Bronze can be dated from c. 2250 BC/3300 BC including the Sitagroi IV–Ezero 13–Yunatsite 17–Dubene-Sarovka IIA1 horizon. The recent data confirmed that in later Early Bronze I Upper Thrace was split in several microregions. There are well distinguished EB I occupation phases from areas like Yambol (Vesselinovo tell), Nova Zagora (Ezero 13-11 and Karanovo VIIA) and Chirpan (Rupkite) (Ezero I culture). Yunatsite I is documented at Yunatsite 17-15, Dubene-Sarovka IIA (figure 2; see Nikolova 1998; eadem 2000a; eadem 2000b) and Ognyanovo, as well as possibly at Plovdiv-Nebet Tepe (Nikolova 1998; eadem 1999a; eadem 1999b; see also the pottery from Ognyanovo published by Leshtakov 2000).

From a Central European point of view, if the earliest EB horizon in the Southern Balkans dates from c. 2250 BC/3300 BC, the whole Early Bronze I to the south of the Stara Planina Mountains seems to be contemporary with Baden II-IV but not with later Boleráz (cp. Němejcová-Pavúková 1991; eadem 1992). This general scheme can be confirmed by several arguments:

1. There is no alder ornamented contact-pottery from the Southern Balkans with the North.
2. The sinuous fragmented bowl from Dubene-Sarovka IIA, alder channeled handles from Yunatsite 17-16, as well as the lids' ornamented sherds with parallels in later Boleráz from Radomir-Vakhovo may occur in later context to the south.
3. All the radiocarbon data known from Sitagroi IV, Yunatsite 15, Ezero A 1 date from later 4th millenium BC, after 3 300 BC.

However, the strongest arguments for the post-Boleráz emergence of the Early Bronze I cultures in the Southern Balkans are the ¹⁴C dates from Ezero 13 and Sitagroi IV. But it is possible for the Sitagroi IV beginning to date before 3300 BC, because there are levels excavated without documented ¹⁴C dates. The total thickness of the fourth layer is c. 1.50 m and it corresponds to the Yunatsite tell, where 3 EB I building levels have been documented with the same thickness. If we accept that 6 horizons correspond to EB II (Yunatsite 14-9), it

Basaharc, wo Tassen mit einem Henkel und ausgeprägter Kannelur häufiger vorkommen (Torma 1973, 400, Abb. 3), aus denen sich die leitende Form in der Badener Kultur entwickelt, Tassen mit zwiebförmiger Gefäßform. Vielleicht würden diese Elemente sowie ein bedeutend häufigerer Gebrauch von Kanneluren an den Gefäßen auf einen stilistischen Unterschied zwischen der Boleráz- und der Cernavodă III-Variante hinweisen. Eine Tasse von Gradina am Bosut (Abb. 3, 1), die gemeinsam mit dem Material der Boleráz-Cernavodă III-Kultur gefunden wurde, hat dieselbe Form und Verzierungsweise wie die Tassen aus der Badener Kultur.

Die Stratigraphie der äneolithischen Schicht auf Gradina klärt (oder läßt sie komplexer werden?) die Beziehungen einiger Kulturen, die dieser Zeit angehören. Das bezieht sich vor allem auf die gegenseitige Lage der Balaton-Lasinja I-II-Kultur und der Boleráz-Cernavodă III- bzw. Badener Kultur. Gute Kenner dieser Kultur (S. Dimitrijević, N. Kalicz, V. Němejcová-Pavúková, I. Torma, F. Leben u.a.) geben alle, mit Ausnahme von S. Dimitrijević, der Balaton-Lasinja I-II-Kultur den Vorrang in Bezug auf die Badener Kultur. N. Kalicz und I. Torma sind der Ansicht, dass die Lasinja-Kultur einen *proto-Badener Charakter* hat (Kalicz 1973, 161; Torma 1973, 507 f.), was auch mit der Meinung von V. Němejcová-Pavúková verbunden werden könnte, der zufolge der frühen Phase der Badener Kultur in Ungarn und der Slowakei die Balaton III-, Hunyadi-Vajnska- und Retz-Lažňany-Kultur vorangehen (Němejcová-Pavúková 1981, 287). Bei der Deutung der Beziehungen der Boleráz-Cernavodă III- und der Lasinja-Kultur am Bosut sollte in erster Linie erwähnt werden, dass die Einteilung der Lasinja-Balaton-Kultur in drei Phasen nicht unter der Erklärung akzeptiert werden könnte, die in der Literatur angeführt wird (Tasić 1995, 37). Die Furchenstich-Keramik (Lasinja III, Balaton III) hat keinerlei Gemeinsamkeiten mit der klassischen Balaton-Lasinja I- und II-Kultur. Das zeigt auch die Stratigraphie am Bosut. Im Horizont Bosut IIa, wie zuvor hervorgehoben wurde, befindet sich Keramik mit Merkmalen des Balaton-Lasinja I-II-Typs. Sie folgt der Schicht mit dem Material der *slawonischen Fazies der Lengyel*-, bzw. der Sopot III-Kultur. Eine Mischung der Boleráz-Cernavodă III- und der Lasinja-Keramik wurde im Horizont IIb festgestellt, aber nicht auch im Horizont mit Oberflächenhäusern, die nur die Keramik der Boleráz-Cernavodă III-Kultur beinhalten. Das ist eine bedeutende Angabe, die, wenn es um dieses Gebiet geht, deutlich zeigt, dass die Balaton-Lasinja I- und II-Kultur der Boleráz-Cernavodă III-Kultur vorangeht und sich teilweise zeitlich mit ihr deckt. Eine solche Auslegung würde auch der Entwicklung dieser beiden Kulturen in Transdanubien, der östlichen Alpenzone und der Slowakei entsprechen (Kalicz 1973, 131, mit zit. Lit.).

Wird letzten Endes die Entwicklung der Boleráz-Cernavodă-Kultur in der jugoslawischen Donauniederung verfolgt, so soll auch die bekannte Gruppe der Fundorte in der südwestlichen Bačka, südlich von Odžaci zwischen Mostonga und dem linken Donauufer erwähnt werden. Die Fundorte sind, dank den Forschungen und der Katalogbearbeitung von S. Karamanski, in der Literatur gut bekannt (1970 und 1970a). Für uns sind sie aus zwei Gründen bedeutend. Erstens, da von ihnen eine reiche und mannigfaltige materielle Kultur stammt, besonders Keramik, und zweitens, da auf demselben Raum (in der westlichen Bačka) eine größere Zahl von Fundstätten der Badener Kultur registriert wurde. Ebenso wichtig ist es, dass die Gruppe der drei bedeutendsten Boleráz-Cernavodă III-Siedlungen in einer Luftlinie von 20 km von Vučedol oder von 30 km von Gradina am Bosut bei Šid entfernt liegt (siehe Fundortkarte). Unter den drei Fundorten, die S. Karamanski veröffentlicht hat, ist jener beim Dorf Deronje, am Ufer der Mostonga (heute Donau-Theiß-Donau-Kanal) am wichtigsten (Abb. 4, 1–5). Die Fülle

und Mannigfaltigkeit des Materials machen diesen Fundort zum wichtigsten in der jugoslawischen Donauniederung (Karamanski 1970, T. I–XIX). Laut einer groben Klassifikation könnten wir folgende Formen anführen: Schüsseln mit ausgebogenem Rand, der auf der Innenseite mit Kanneluren verziert ist, konische Schüsseln mit dickem Rand, Schüsseln mit nach innen gebogenem Rand und unterhalb einem plastischen Band, Töpfe unterschiedlicher Profilierung, doch der Regel nach mit plastischen Bändern verziert, Tassen mit einem Henkel, verziert mit parallelen oder schrägen Kanneluren, die Dreiecksmotive bilden, große Pithoi usw. Außer Kanneluren treten sehr häufig Verzierungen mit groben plastischen Bändern, groben Einkerbungen, Fischgrätenmotive, Kränze mit Fingernageleindrücken usw. auf. Die Keramik vereint in sich Elemente, die das Merkmal der Cernavodă III-Keramik (Brza Vrba und die rumänischen Fundstätten) und der Boleráz-Keramik (Pilismarot-Basaharc), ja auch der Fundorte im fernen Norden (Nova Huta, Pietrowice Wielkie – Kozłowsky 1973, 167 ff.) oder jener im Westen (Donnerkirchen, Schwechart – Kaus 1984, 7 ff.; Ruttkay 1995, 145 ff.) sind. Der Fundort bei Mostonga I (Deronje) weist nahezu ein identisches Repertoire der Gefäße wie auch die Siedlung der Boleráz-Cernavodă III-Kultur auf der Gradina am Bosut auf. Dies ist verständlich, wenn die Nähe dieser beiden Fundorte berücksichtigt wird.

Auf dem Gebiet der südwestlichen Bačka, auf dem sich die genannten drei Fundorte der Boleráz-Cernavodă III-Kultur befinden, wurde eine größere Anzahl von Baden-Siedlungen entdeckt. S. Karamanski nennt 12 Fundorte, von denen die meisten um Mostonga konzentriert sind. Das veröffentlichte Material (Karamanski 1970a, *pass.*) zählt mit wenigen Ausnahmen zur frühen Phase der Badener Kultur. Es ist kennzeichnend, dass von einem dieser Fundorte (Pasnjak, Disznő-Legelö) das Fragment des oberen Teils einer Terrakotta stammt, und zwar vom Typ der kopflosen Idole, das Karamanski falsch als kegelförmiges Wirtel rekonstruierte (Karamanski 1970a). Die Terrakotta ist mit einem Ornament verziert, das der Technik und den Motiven nach jenem auf den Badener Idolen von anderen Fundorten ähnelt. Diese Verzierung wird mit den Boleráz-Cernavodă III-Exemplaren in Verbindung gebracht. Dies, sowie der Umstand, dass alle Badener Fundorte in der südwestlichen Bačka dem Typ der einschichtigen *Gruben*-Siedlungen angehören, die einen vorübergehenden Viehzuchtcharakter aufweisen, erklären den Umstand, dass es auf diesem Raum nicht zu einer vertikalen Stratigraphie der Boleráz-Cernavodă III- und der Badener Kultur gekommen ist.

In einer kurzen Zusammenfassung dieser Arbeit können wir schlußfolgern:

a) Mit Ausnahme von drei Fundorten (Gladnice, Gradina Likodra, Smederevska Palanka – Morava-Ufer) sind die Boleráz-Cernavodă-Siedlungen an die Donauniederung gebunden. Es sondern sich vier Gruppen heraus: Eine bilden die Fundorte im Gebiet des Stausees Eisernes Tor/Đerdap II (von Kladovo bis Prahovo), und diese werden mehr an die rumänischen Fundorte gebunden (Morintz–Roman 1973, 268 f., Abb. 5); die zweite Gruppe bilden die Fundorte im südlichen Banat (Umgebung von Vršac, Potpornja, Brza Vrba bei Malo Bavaniste u.a., siehe: Eneolit južnog Banata); zur dritten Gruppe zählen die Fundorte in der Umgebung von Belgrad und im Srem (Mündung der Bolečica in die Donau bei Vinča, Beljarica und Gradina am Bosut bei Šid), und zuletzt bilden die Fundorte in der südwestlichen Bačka um Mostonga (Donau-Theiß-Donau-Kanal) die vierte Gruppe. Unter diesen letzterwähnten Fundorten ist derjenige am reichsten, den S. Karamanski als Mostonga I beim Dorf Deronje kennzeichnete;

b) Die stratigraphischen Angaben von Gradina am Bosut zeigen folgende Reihenfolge: Sopot III, Lasinja I II, Boleráz-Cernavodă III-Baden Ia (nach S. Dimitrijević), bzw. Ib (nach V. Němejcová-Pavůková);

c) Während die Fundorte im östlichen Teil der jugoslawischen Donauniederung zur Cernavodă III-Kultur in Rumänien gravitieren, weisen die Fundorte im Srem und in der südwestlichen Bačka ein mit den Fundorten in Transdanubien, der Slowakei und Österreich nahezu identisches Material auf.

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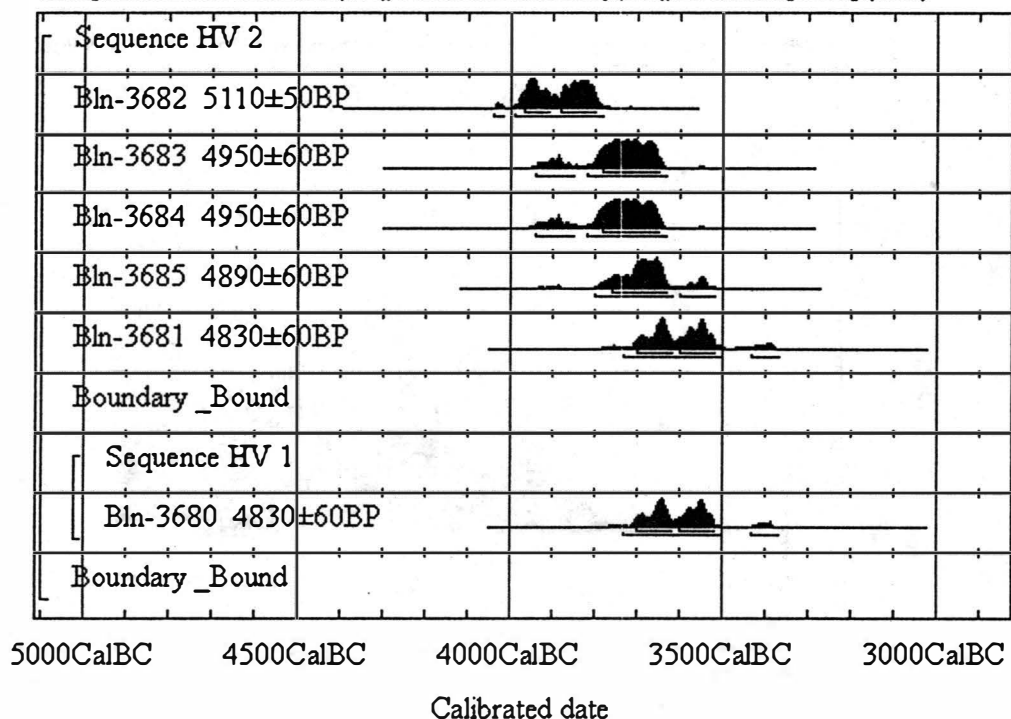
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Chart 1. Sequence Hotnitsa-Vodopada 2-1. Early Bronze IA.

Atmospheric data from Stuiver et al. (1998), OxCal v3.4 Bronk Ramsey (2000), cub r:4 sd:12 prob uap (chron)



Atmospheric data from Stuiver et al. (1998), OxCal v3.4 Bronk Ramsey (2000), cub r:4 sd:12 prob uap (chron)

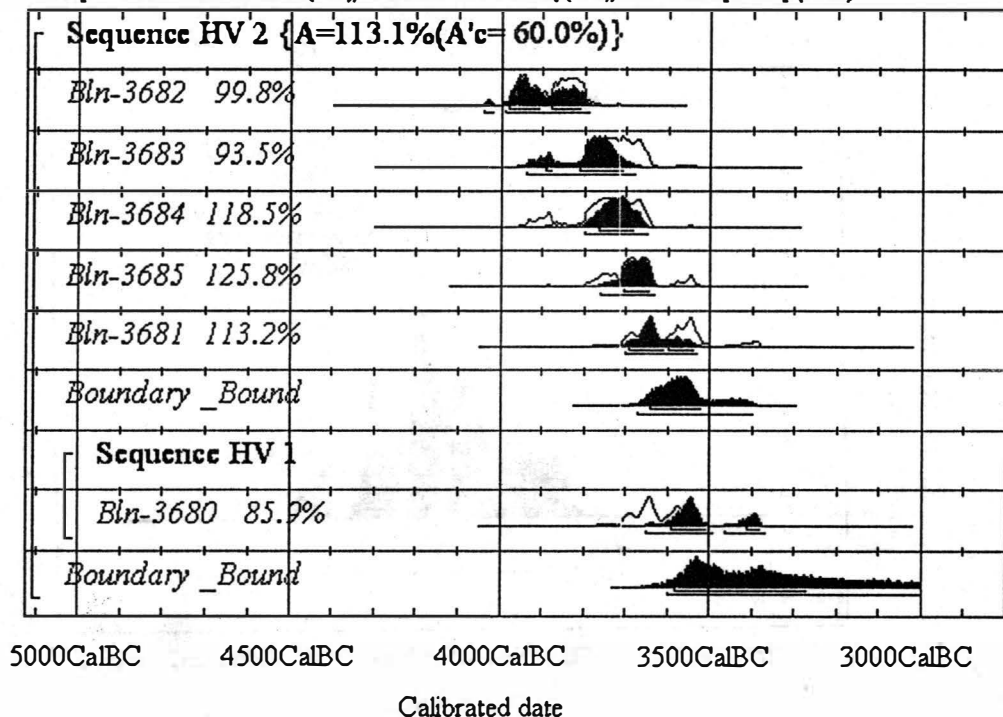


Chart 2. Hotnitsa-Vodopada. Plotted results of calculated posterior distributions of ¹⁴C dates. N=6.

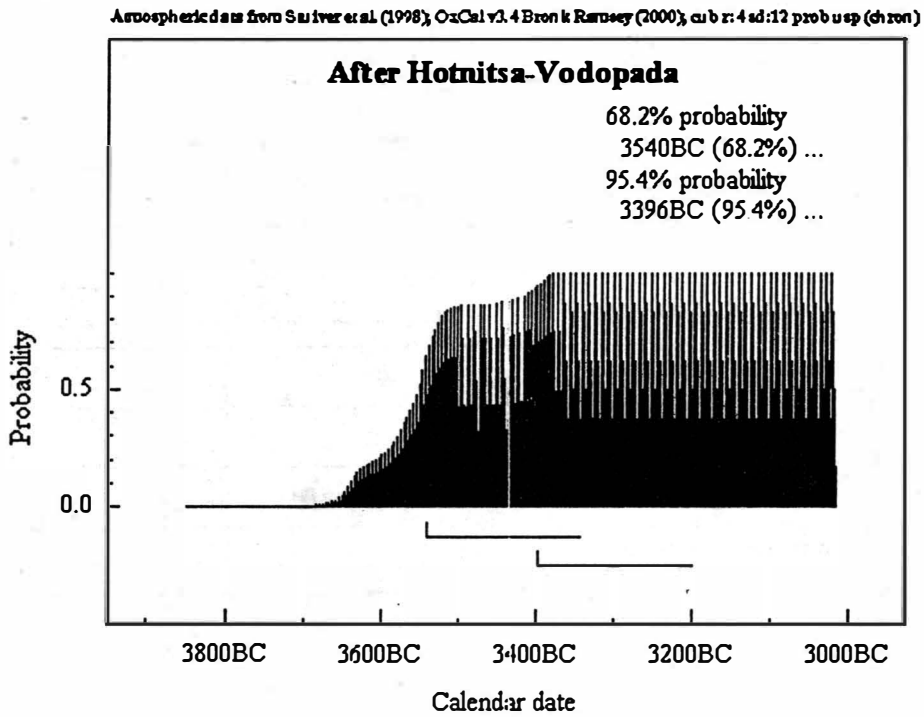
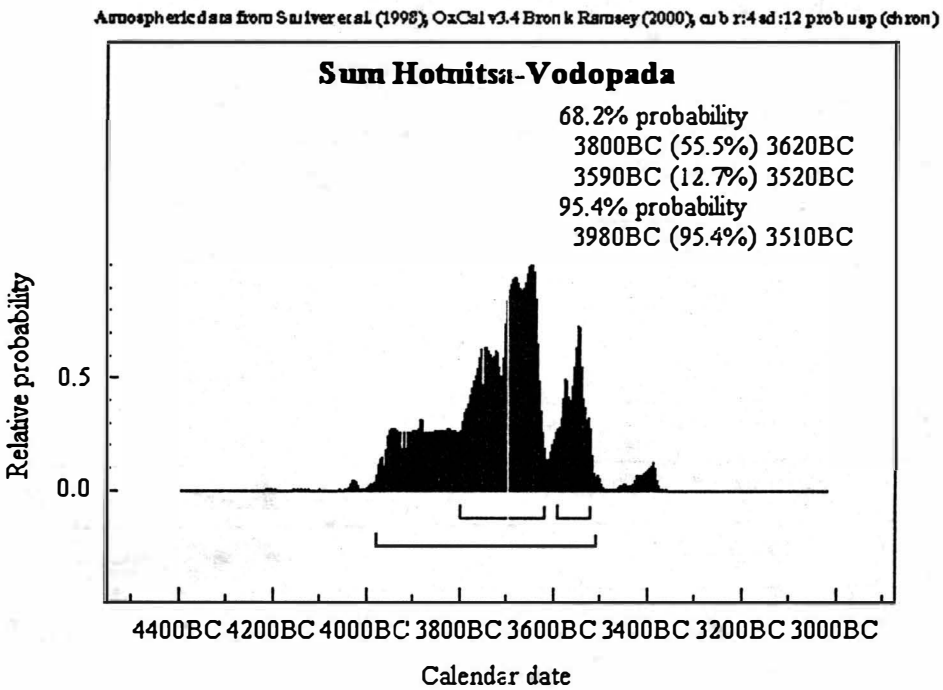
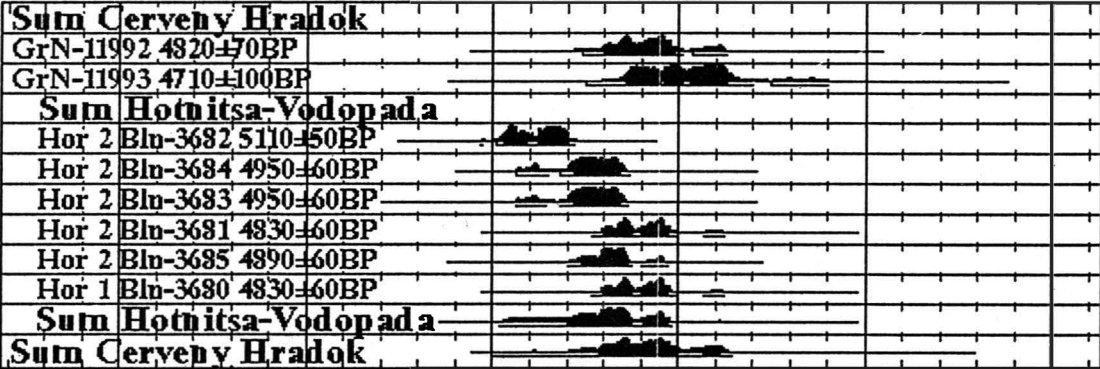


Chart 3. Hotnitsa-Vodopada. Sum-probability of the ¹⁴C dates. N=6.



Charts 4.1-4.2. Comparison of the radiocarbon chronology of Hotnitsa-Vodopada (Cernavodă IIIA) and Červený Hrádek (Baden IA). N=8

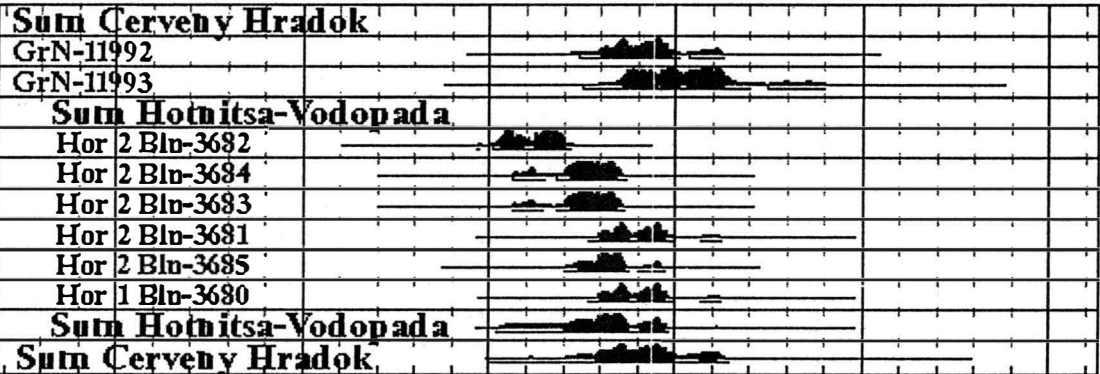
Atmospheric data from Stuiver et al. (1998), OxCal v3.4Bronk & Ramsey (2000), calibration: 12 prob up (chron)



5000CalBC 4500CalBC 4000CalBC 3500CalBC 3000CalBC 2500CalBC

Calibrated date

Atmospheric data from Stuiver et al. (1998), OxCal v3.4Bronk & Ramsey (2000), calibration: 12 prob up (chron)



5000CalBC 4500CalBC 4000CalBC 3500CalBC 3000CalBC 2500CalBC

Calibrated date

Chart 5. Ezero 13. Sum-probability of ¹⁴C dates. N=14.

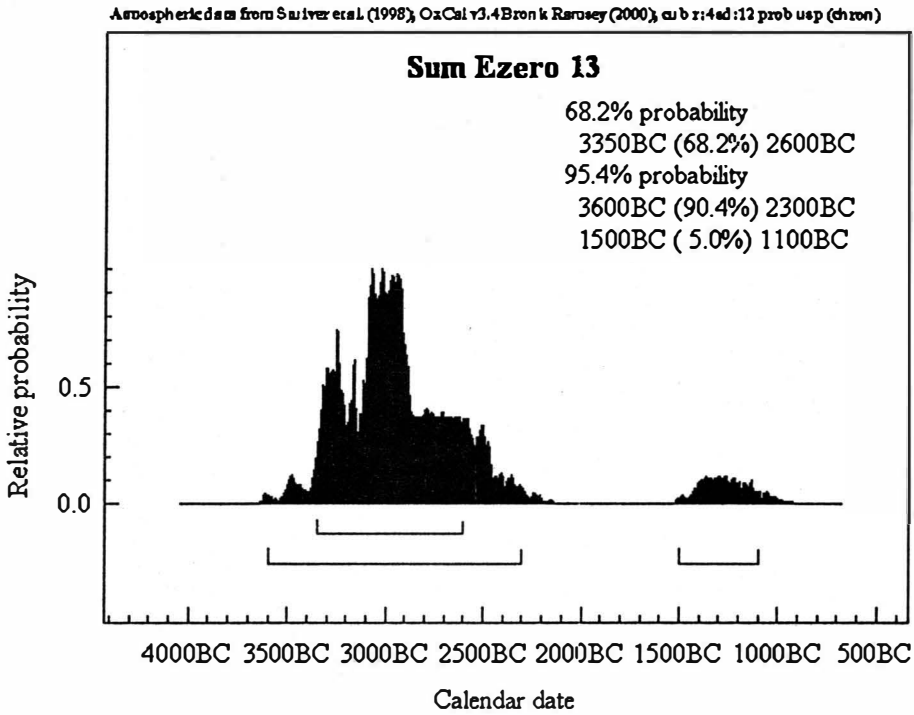


Chart 6. Ezero 13. Combine-probability of the ¹⁴C dates. N=12. Two dates, with the highest and the lowest values respectively, have been excluded.

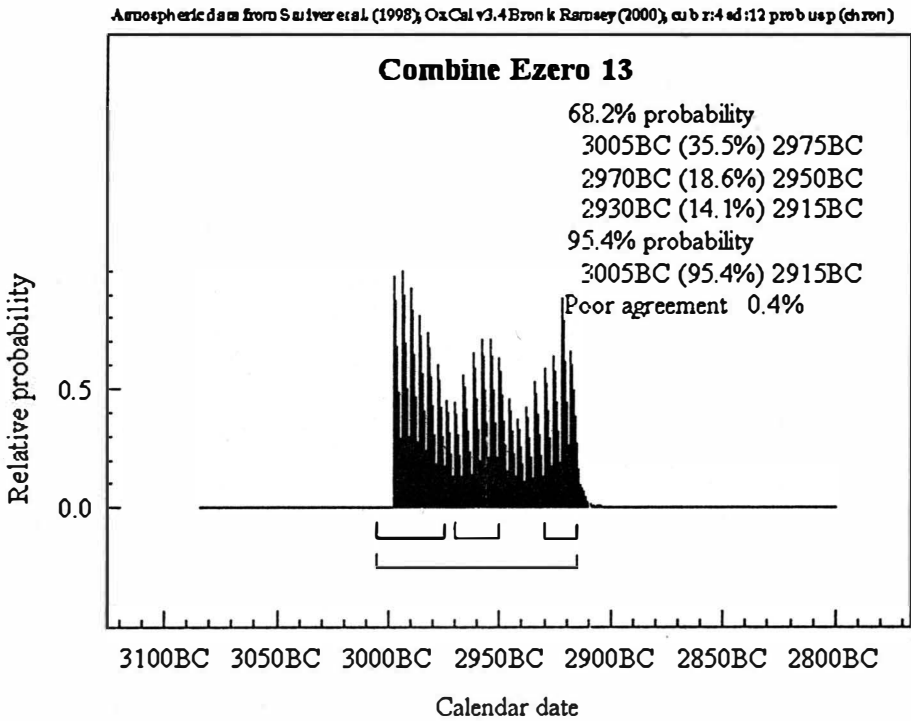


Chart 7. Sum-probability compared of 74 dates from Ezero I, Yunatsite I, Sitagroi IV-Dikili Tash IIIA and Baden cultures.

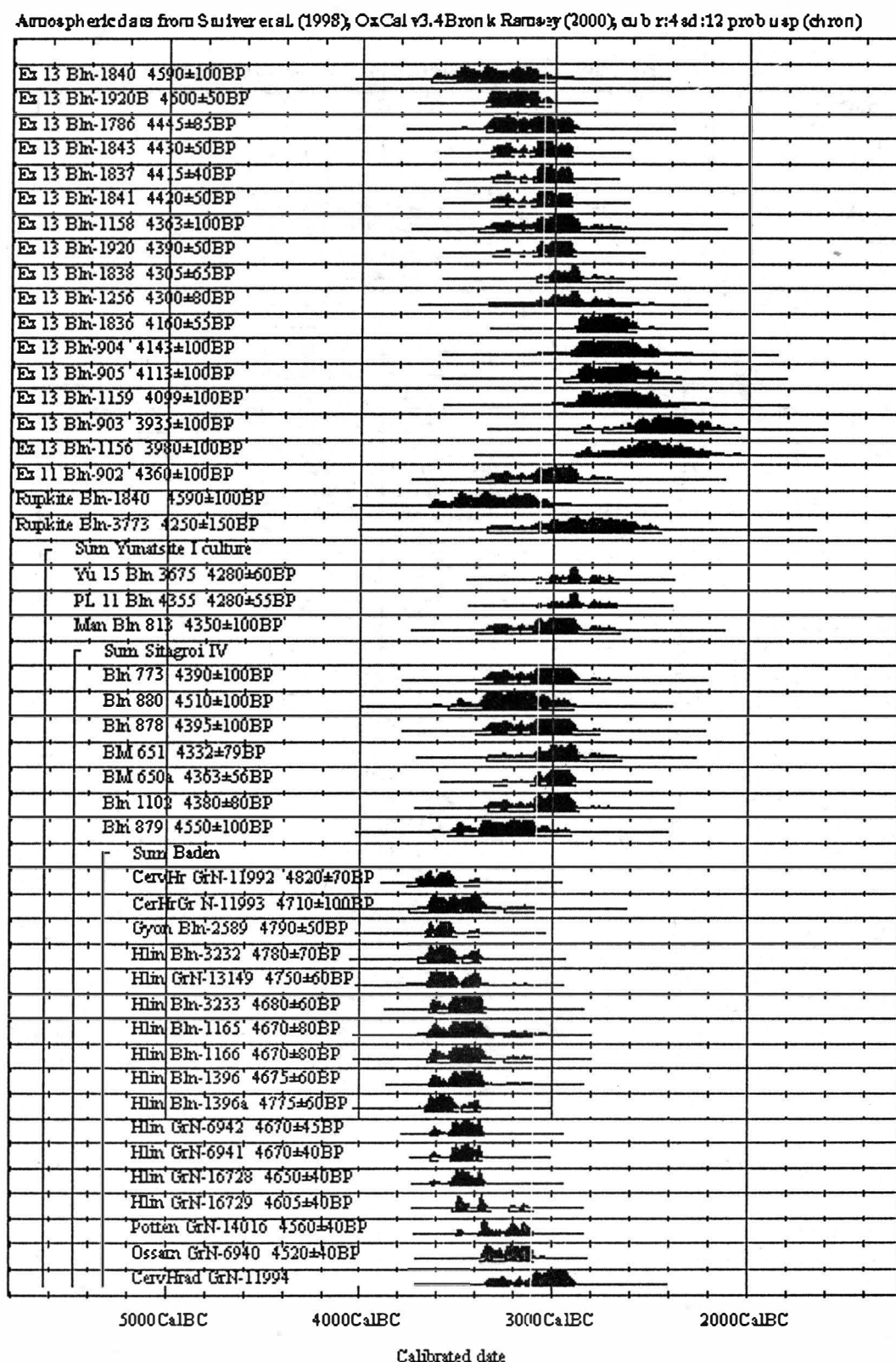
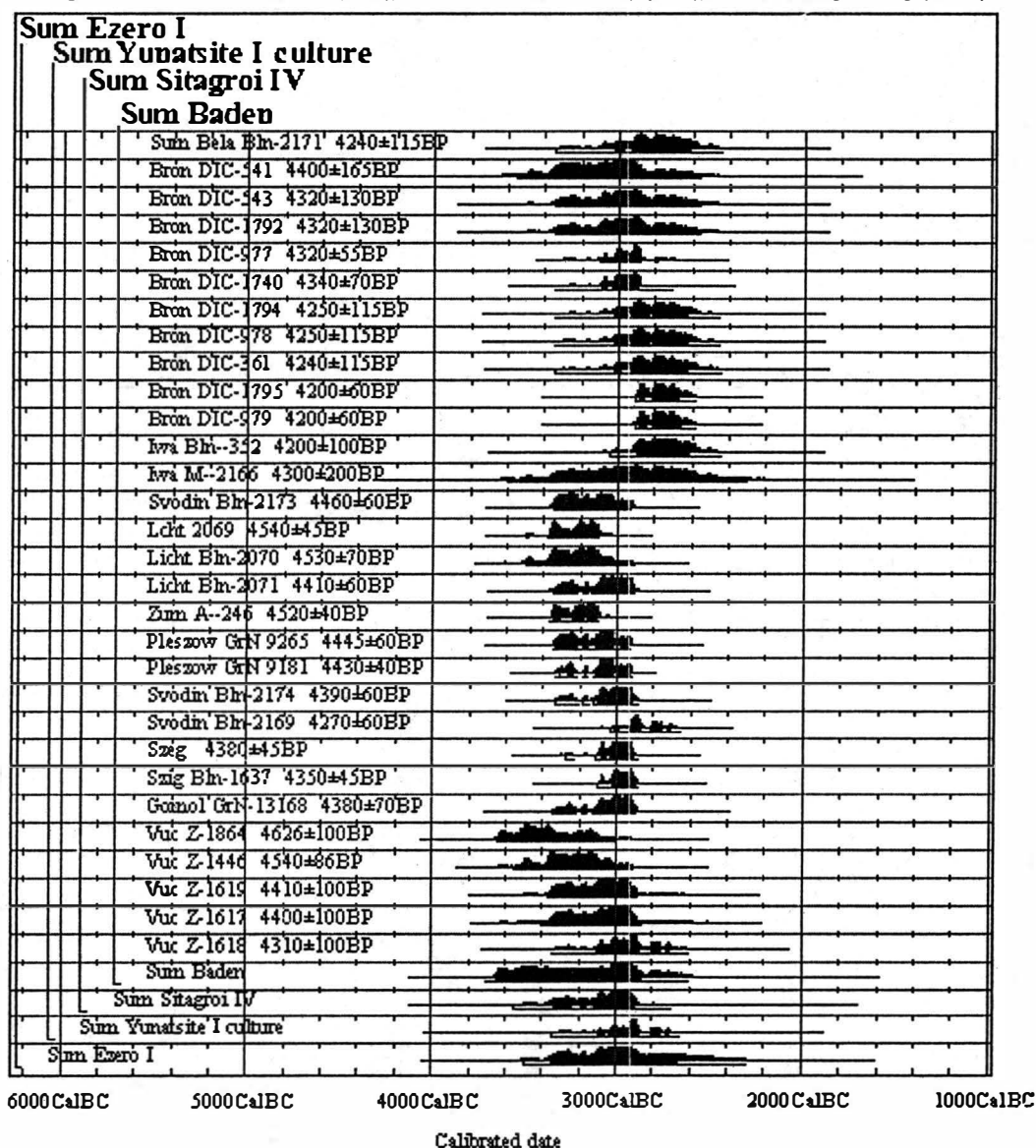


Chart 7 (continued). Sum-probability compared of 76 dates from Ezero I, Yunatsite I, Sitagroi IV-Dikili Tash IIIA and Baden cultures. Dates from Nikolova 1999a; Stadler 1999; Godlowska 1986.

Atmospheric data from Stuiver et al. (1998), OxCal v3.4Bronk Ramsey (2000), calibration:12prob usp (chron)



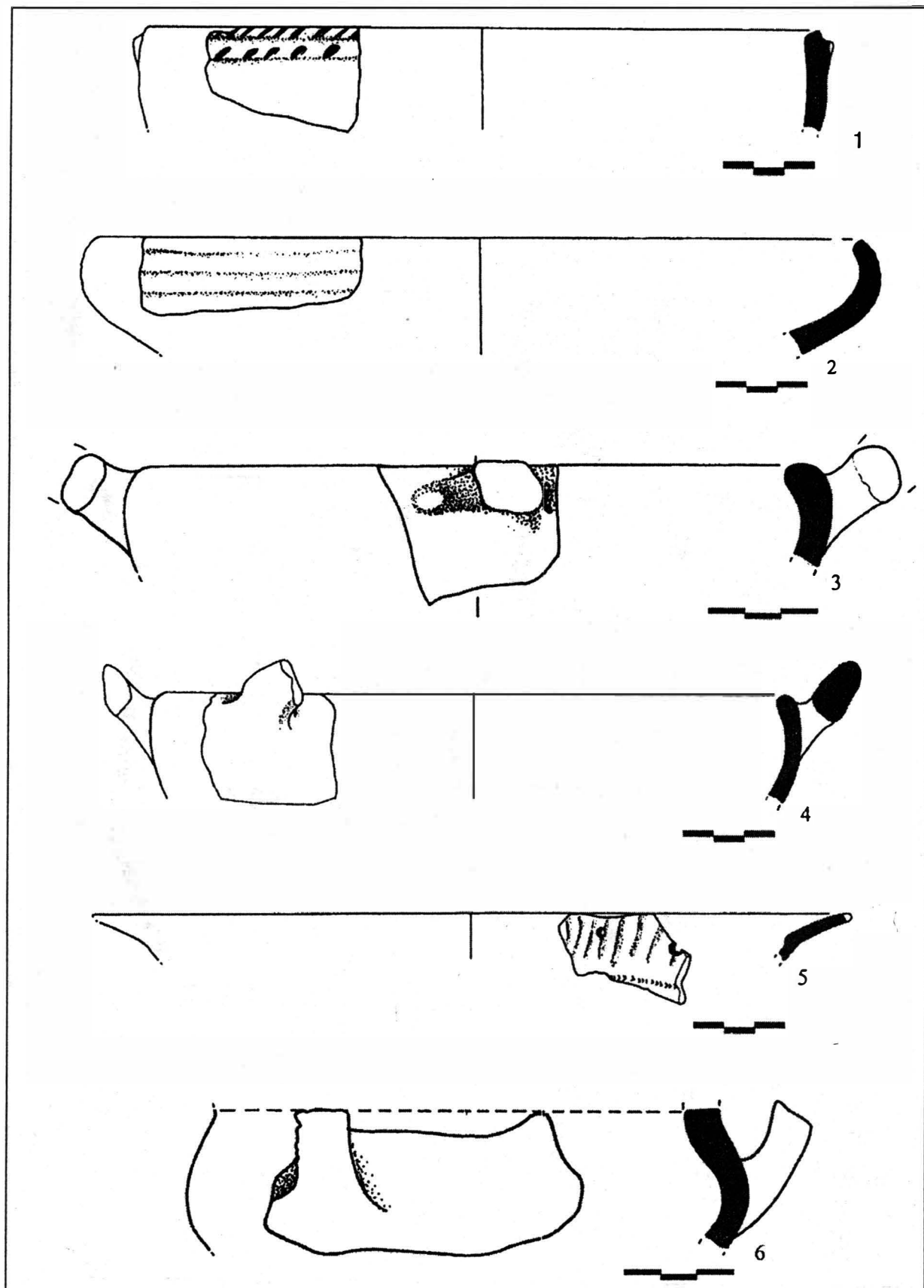


Figure 1. Koprivets IV pottery (after Nikolova 1996).

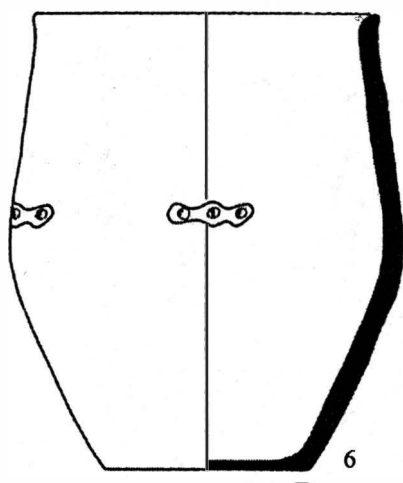
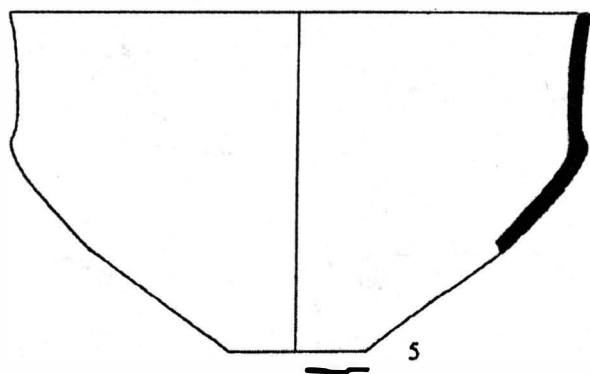
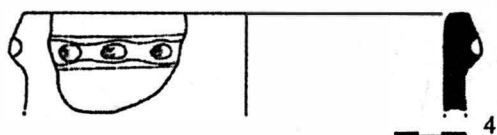
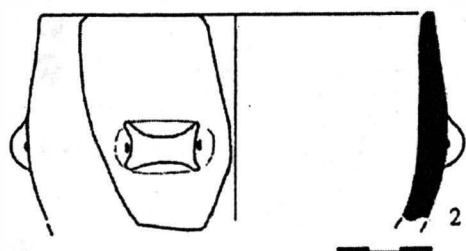
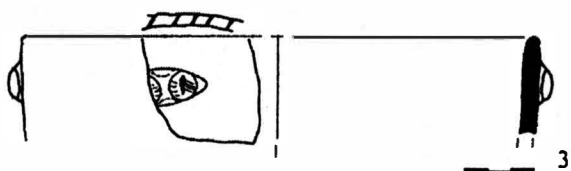
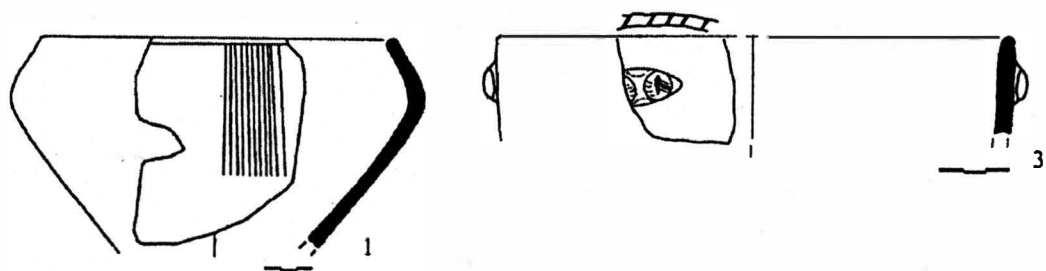


Figure 2. Dubene-Sarovka IIA pottery. Pit No. 2 (5, 6).