

ŐSRÉGÉSZETI TANULMÁNYOK / PREHISTORIC STUDIES

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MOMENTS IN TIME

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MOMENTS IN TIME

Papers Presented to Pál Raczky
on His 60th Birthday

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Glimpses of the Third Millennium BC in the Carpathian Basin

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The relative and absolute chronology of the cultural groups of the 3rd millennium BC is a particularly exciting field of prehistoric research because this period spans the assumed boundary of two major periods — the final phase of the Copper Age and the initial phase of the Early Bronze Age. The transition from one major archaeological period to the next no doubt involved major structural changes. The transition period roughly spanning the middle third of the 3rd millennium BC, i.e. the period between the close of the Late Copper Age and the Early Bronze Age 2a in Hungary, corresponds to what is known as the Late Eneolithic in Central Europe and is generally divided into three main phases: 1. the late Baden, 2. the post-Baden/Vučedol, and 3. the post-Vučedol period.

The transition in the Carpathian Basin had a mosaic patterning: the rhythm of change varied from region to region and the transformation in each major region followed a different cultural trajectory (Fig. 1, Table 1). This period is here examined in the light of two recently discovered finds from Hungary (Fig. 2, Fig. 4). The finds described here offered a glimpse into the transitional period between the Copper Age and the Bronze Age, with a focus on southern Transdanubia. The more or less identical artefacts and decorative styles appearing roughly synchronously in several regions reflect the period's cultural contacts spanning extensive territories. The mapping of these communications networks and the clarification of the period's finer chronological details based on the growing corpus of data will no doubt remain one of the priorities of future research.

A Kr. e. 3. évezred relatív és abszolút kronológiai viszonyainak kutatása különösen izgalmas területe az őskor vizsgálatának, hiszen két nagy korszak feltételezett határán, a rézkor kései és a bronzkor kezdeti fázisainak megismerését foglalja magában. A nagy régészeti korszak definíciók azt sejtetik, hogy fontos strukturális változások állnak mögöttük. A Kr. e. 3. évezred középső harmadára tehető átmeneti időszakot, vagyis a magyarországi késő rézkor vége és kora bronzkor 2a közötti korszakot, közép-európai szemszögből tekintve a késő eneolitikum időszakát három főbb szakaszra tagoltan vizsgálhatjuk: 1. késő Baden, 2. post-Baden/Vučedol korszak, 3. post-Vučedol korszak.

A Kárpát-medence térségében egy mozaikos jellegű, fokozatos, területenként változóan eltérő ütemű és tendenciájú átalakulásnak lehetünk tanúi (Fig. 1, Table 1). Ezúttal két magyarországi lelet alapján vizsgáljuk a korszakot (Fig. 2, Fig. 4). A bemutatott leletek segítségével a rézkor és bronzkor átmeneti időszakának néhány kérdését tekintjük át, különösen a Dél-Dunántúl területére fókuszálva. A kor nagy távolságokat átfogó kapcsolatrendszerének maradandó lenyomatát őrzi azok a tárgyak/stíluslemek, melyek több régióban közel egyidőben és hasonló jellegben találhatók meg. Ezek alapján fontos feladat lesz ennek/ezeknek a kommunikációs hálózat(ok)nak a további feltérképezése és a folyamatosan gyarapodó adatok alapján kronológiai összefüggéseik tisztázása.

The relative and absolute chronology of the cultural groups of the 3rd millennium BC is a particularly exciting field of prehistoric research because this period spans the assumed boundary of two major periods — the final phase of the Copper Age and the initial phase of the Early Bronze Age. The transition from one major archaeological period to the next no doubt involved major structural changes. The transition period roughly spanning the middle third of the 3rd millennium BC, i.e. the period between the close of the Late Copper Age and the Early Bronze Age 2a in Hungary, corresponds to what is known as the Late Eneolithic (*Jung/Spätäneolithikum, jüngeres Eneolithikum, Endneolithikum*) in Central Europe and is generally divided into three main phases: 1. the late Baden, 2. the post-Baden/Vučedol, and 3. the post-Vučedol period (see, for example, ECSÉDY 1979; 1994; BÓNA 1992; BONDÁR 1995; 2001; KALICZ-SCHREIBER-KALICZ 1997; DANI 2001; 2005; KULCSÁR 2009a; REMÉNYI 2009; for a broader perspective on this period, see MARAN 1998; BERTEMES-HEYD 2002; HARRISON-HEYD 2007). In terms of absolute chronology, this transitional period can be broadly dated between 2800/2700 and 2300/2200 BC (cp. RACZKY 1995; HORVÁTH 2009; 2011a; 2011b; KULCSÁR 2009a; REMÉNYI 2009). The transition in the Carpathian Basin had a mosaic patterning: the rhythm of change varied from region to region and the transformation in each major region followed a different cultural trajectory (*Fig. 1*). This period is here examined in the light of two recently discovered finds from Hungary.

A BOWL FROM THE NÓGRÁD HILLS (NORTHERN HUNGARY)

In contrast to the relatively well-known Copper Age sites lying in the foothills of the Northern Mountain Range and in the river valleys (BANNER 1956; KOREK 1968; PATAY 1999), no more than a scatter of Early Bronze Age sites have been identified in the region, most of which can be associated with the Makó–Kosihy–Čaka culture (for a recent overview, see KULCSÁR 2009a, 31–34, *Fig. 4*).

Most of the currently known Early Bronze Age sites lie in the Nógrád Hill region, specifically in the Salgótarján area. Nándor Kalicz published a handful of stray finds from the Baglyashegy site

and mentioned the excavations conducted by József Korek and Pál Patay at Salgótarján–Pécskő (KALICZ 1968, 79, Sites 29 and 31, Taf. III. 6–11, 13–14). The area is dominated by Mount Pécskő, rising to a height of 543 m. The Early Bronze Age finds brought to light during the excavation of the settlement included a few mould fragments, none of which could be securely associated with a particular settlement feature (KOREK 1968; PATAY 1999). There was no evidence for any contact between the Baden, Makó and Hatvan communities that successively occupied the settlement. A rescue excavation was conducted in a nearby location known as Pécskő-puszta, a site lying some 400 m away, on one of the northern terraces associated with the hilltop settlement, whose occupants were apparently engaged in metallurgy. The remains of a north to south oriented, 13 m by 19 m large house with three rows of posts were uncovered on the strongly eroded terrace. The unstratified surface finds and the structure of the house suggested that the building had been constructed during the Early Bronze Age (GALL-TANKÓ 2007). Hilltop settlements resembling the ones in the Salgótarján area have been assumed at Piliny-Várhegy (PATAY 1999, 52, *Fig. 6. 1*) and Ecseg-Várhegy (BÓNA 1992, 21–22), even though the evidence for the Makó occupation of these sites is minimal, as is the culture's possible late survival in these areas and virtually nothing is known about possible contact with early Hatvan groups.

In the light of the above, even stray finds from this period and this region provide important scraps of new information, no matter how limited. A few years ago, a stray find of this kind dating from the close of the Copper Age/onset of the Bronze Age became known from northern Hungary (KULCSÁR 2009b). Most of the artefacts in the collection of József Holub, a private collector in Salgótarján, originated from the broader Salgótarján area.¹ One of these was an unusual interior decorated bowl from Zagyvapálfalva.

The small, brownish-grey bowl with carefully polished surface is decorated with an intricate design made up of incised lines and motifs made using the stab-and-drag technique that had once been accentuated with lime encrustation (*Fig. 2. 2*). The bowl is 2.8 cm high and has a rim diam-

¹ For other Middle Bronze Age finds in this collection, see GUBA-SZEVEÉNYI 2007.



Fig. 2. 1: Interior decorated footed bowl from Vysočany (after BURGER 1980, Abb. 6. 2), 2: an analogous vessel from Zagyvapálfalva (after KULCSÁR 2009b)

no doubt be substantiated by future finds from secure contexts. The stray bowl from Zagyvapálfalva can be regarded as yet another indication of the contacts with the north-westerly regions at the close of the Copper Age and the onset of the Bronze Age.

A similar bowl brought to light on a site lying on the southern shore of Lake Balaton dates from the same transitional period.

LAKESIDE COMMUNITIES: SETTLEMENTS ON THE BANK OF THE NAGY-BEREK

Lake Balaton is one of the most prominent landscape features of the Transdanubian region in western Hungary between the Danube and the Drava. Conditions for human settlement during successive epochs of the region's history, especially along the southern shore, were determined both by the lake's extent, the shifts in its shoreline and the fluctuations in its water-level, and the climatic changes. The formation and development of Central Europe's largest freshwater lake has always been an important field of research in geographic studies. The archaeological excavations conducted along the lake's southern shore during the past decades have contributed to reconstructing prehistoric water-levels (e.g., BONDÁR-HONTI-KISS 2000; HONTI ET AL. 2002; 2004; 2007; BELÉNYE-SY-HONTI-KISS 2007). The track of the M7 Mo-

torway, running roughly parallel to the lake, offers a good cross-section of the bays once dotting the ancient shoreline (see SÜMEGI ET AL. 2007). The lake was much larger than the current, regulated bed and its ancient southern shoreline was punctuated by countless bays (SÜMEGI ET AL. 2007, Fig. 245; FÁBIÁN-SERLEGI 2009).

Extensive palaeoenvironmental studies were conducted at a few sites: at Balatonkeresztúr-Rétidűlő, for example, the assessment of the archaeological finds and the archaeozoological material, and of the samples taken for geochemical and absolute chronological analyses provided important data on the climatic changes at the close of the Copper Age (FÁBIÁN-SERLEGI 2007; 2009; DEMÉNY ET AL. 2010; SCHÖLL-BARNA ET AL. 2012). The data indicated that the climate apparently turned cooler and wetter in the first third of the 3rd millennium BC. The cultural development leading to the initial period of the Bronze Age began in this milieu.

Lake Balaton's largest bay, known as Nagyberék, is now a marshland. Several prehistoric sites were located on the loess bank overlooking the former bay, one of these being Kécsimező on the outskirts of Ordacsehi (Fig. 3. 12), where rescue excavations were conducted in the sand-mine from the 1990s onward (NÉMETH 1993). A larger area was investigated in 2004–2005: in addition to various archaeological features from other periods, part of an Early Bronze Age settlement was

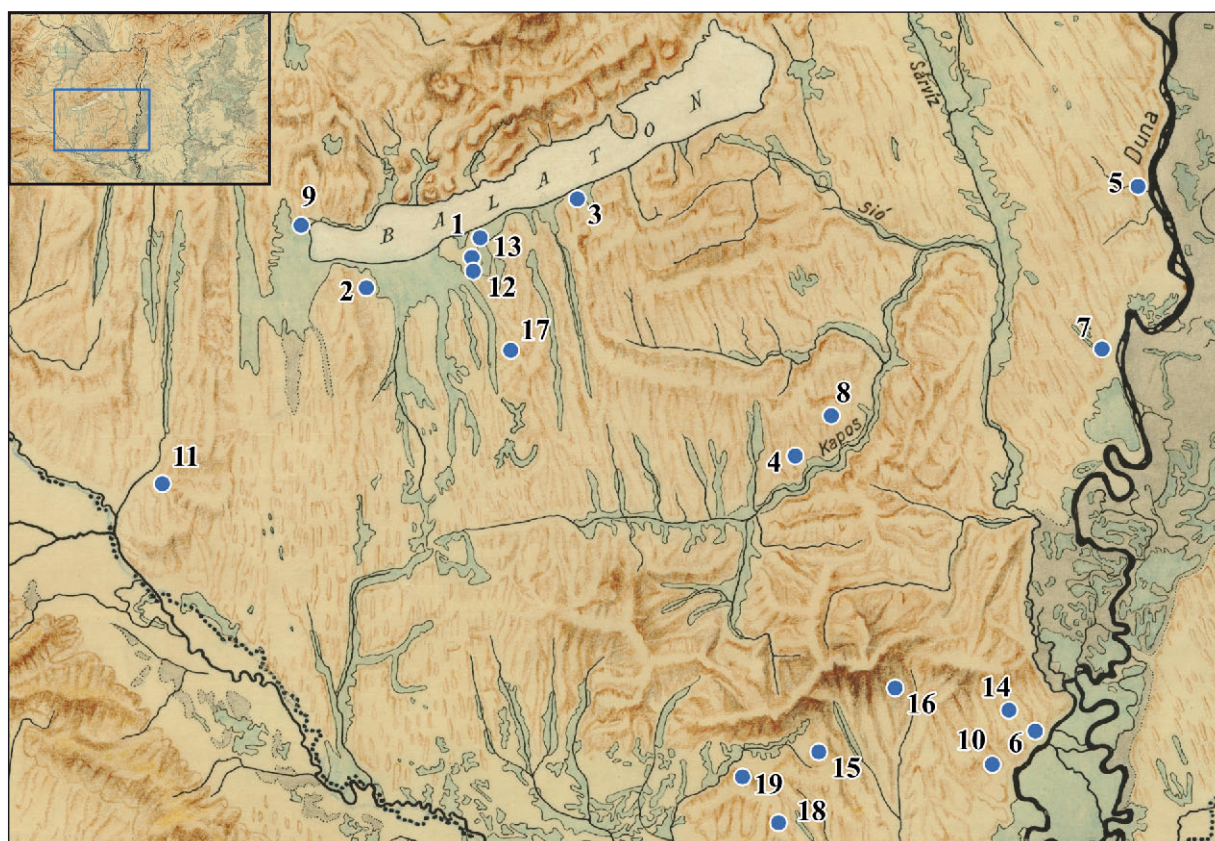


Fig. 3. Map of Southern Transdanubia with the important sites mentioned in the text — 1: Balatonboglár-Berekredülő, 2: Balatonkeresztúr-Réti-dűlő, 3: Balatonőszöd-Temetői dűlő, 4: Döbrököz-Tűzköves, 5: Dunaföldvár-Kálvária, 6: Dunaszekcső-Várhegy, 7: Dunaszentgyörgy, 8: Gyulaj-Banyahegy, 9: Keszthely-Fenekpuszta, 10: Lánycsók, 11: Nagykanizsa-Billa, 12: Ordacsehi-Kécsimező, 13: Ordacsehi-Major, 14: Palotabozsok, 15: Pécs-Nagyárpád, 16: Pécs-Vasas, 17: Somogyvár-Kupavárhegy, 18: Szava, 19: Zók-Várhegy

also uncovered (PÁSZTÓKAI-SZEŐKE ET AL. 2005; 2007; KULCSÁR 2009a, 378, Site 154). A detailed report on the site and its finds is currently being prepared. Here, I shall describe a small find assemblage recovered from one of the features that indicates that an extraordinary site was discovered at Ordacsehi.

A roughly 3.60 m by 2.70 m large oblong feature was uncovered during the 2004 season (Fig. 4. 2). A handled mug was recovered from the fill of Feature 99 (Fig. 4. 1a, 2a). Two smaller depressions were noted in the roughly 35–40 cm deep feature: one of these, lying in the north-western corner, had a diameter of ca. 80 cm and a depth of over 50 cm, the other was a shallower depression measuring ca. 90 cm by 70 cm lying beside it, from which a small amphora-like vessel and a lavishly ornamented footed bowl were recovered (Fig. 4. 1b–c, 2b–c). The observations made during the feature's excavation suggest that the three vessels can be regarded as one assemblage. The relative date of the

feature within the site and its exact function will be addressed in the final report.

The small, funnel-necked mug with a dull polished surface was fired to a mottled brownish-darkbrownish and brownish-grey colour. Its handle spans the neck and the shoulder (surviving Height 8.5 cm, Diameter of Rim 8 cm; Fig. 4. 1a). A row of impressed dots interrupted by a flat knob encircles the shoulder. The vessel's broken lower half is lightly scored, probably made using a many-toothed comb-like implement. No exact analogies to the mug are known. A comparable two-handled vessel decorated with a similar impressed pattern was found in a late Vučedol context at the Vinšovci-Hotel site (DURMAN 1988, 108, 176, Cat. no. 115; DIZDAR ET AL. 1999, 93, Cat. no. 62).

An intact bowl and an amphora shaped vessel with damaged neck came to light from a smaller depression in the feature's western half. The carefully smoothed biconical amphora with cylindrical neck was fired to a dark brown-brownish col-

our and a pair of ribbed lug handles was set on the carination (Height: 16.5 cm, Diameter of Rim: 10 cm, Diameter of Base: 6.5 cm; *Fig. 4. 1b*). The vessel shoulder is decorated with carefully made herringbone motifs, in which remains of the one-time lime encrustation can be made out. An exact parallel to the vessel is not known. Its fabric, its form and its decoration recall elements of the ceramic styles emerging in the late Vučedol period and the Early Bronze Age. Ribbed handles appear on Late Copper Age vessels (e.g., the *Fisch-butte* from Sarvaš: DIMITRIJEVIĆ 1979, Taf. XXII. 8; BALEN 2006, Fig. 23, Cat. no. 27), on various Vučedol ceramics (e.g., Vučedol: VULIĆ-GRBIĆ 1938, Pl. 44. 1–6; SCHMIDT 1945, 148, Textbild 84. 1; Sarvaš: DIMITRIJEVIĆ 1977–78, Taf. 9. 5), and on pots of the Early Bronze Age, such as the asymmetric vessel with small handle found at Budapest-Szentmihályi út (KALICZ 1968, Taf. III. 3). More elaborate variants of the design covering the biconical vessel's upper half are typical of Vučedol ceramics (e.g., SCHMIDT 1945, Taf. 31; BALEN 2006, Tab. 44. 160–161; and KOROŠEC-KOROŠEC 1969, T. 4. 2–3, T. 13. 1, 3–4, T. 17. 1–2), while its simpler variants appear on the one-handled asymmetrical vessels of the Carpathian Basin and the southern Russian steppe region (e.g., Tarnzasadány: KALICZ 1968, Taf. III. 2; Sofievka: RASSAMAKIN-NIKOLOVA 2008; cp., KULCSÁR 2009a, 98–102, 356). The herringbone was a popular decorative motif of the Baden period that occurs in the Boleráz material from the nearby Balatonőszöd-Temetői dűlő settlement (HORVÁTH 2011a, Fig. 15, amphoras, top row, middle) and in the Kostolac material at Gomolava: PETROVIĆ-JOVANOVIĆ 2002, 285–286). The fluted version of this motif appears on a *Fisch-butte* vessel (Balatonőszöd-Temetői dűlő: HORVÁTH 2011a, Fig. 26).

The brown-dark brownish footed bowl (Height: 6.5 cm, Diameter of Rim: 14 cm; *Fig. 4. 1c*) represents a type with countless variants used across an extensive region during a fairly long period (e.g., BURGER 1980; KAISER 2003; KAISER-NIKITENKO 2003; KULCSÁR 2009a, 121–141, 308–319). In contrast to the other vessel with a finer finish found beside it, the bowl's decoration is quite carelessly executed. The interior is divided into four fields, each filled with hatched bundles of lines and triangles. The rim is adorned with a lattice pattern, while the exterior is covered with a zig-zag pattern created from hatched triangles. The cross shaped

foot bears a combination of hourglass motifs and hatched triangles. The lightly incised lines and dots made using the stab-and-drag technique were originally accentuated with lime encrustation. Although its exact counterpart is not known, good parallels to this bowl type can be cited from the settlements of the Vučedol and the post-Vučedol period (e.g., Dunaszekcső-Várhegy: ECSEDY 1985, Fig. 9. 1; Ljubljana area: KOROŠEC-KOROŠEC 1969, T. 38–47; Central Moravia/Jevišovice period: e.g., Kroměříž 3-Miňůvky, Grave 1: PEŠKA-TAJER 2009, Fig. 1; absolute dating for the settlement: 2700–2560 cal BC [2σ]).

The amphora shaped vessel and the footed bowl appear to have been deposited in a virtually intact condition. Their style is best matched by vessels from post-Baden, Vučedol and late Vučedol contexts in the northern Balkans and the Ljubljana area, although neither has an exact counterpart. The assemblage is unique in this respect and a more detailed analysis will no doubt contribute to elucidating the function of the feature in which they were found. Unfortunately, no samples from the site have yet been submitted to radiocarbon measurements or other archaeometric analyses. On the basis of our current knowledge, our best guess is that this assemblage dates from the transitional period between the Copper Age and the Bronze Age of the southern Balaton region.

THE TRANSITIONAL PERIOD IN SOUTHERN TRANSDANUBIA

The most important cultural complexes of this transitional period in southern Transdanubia were the Baden, Kostolac, Vučedol and Somogyvár-Vinkovci groups. The detailed typochronological analyses can now be set against the series of absolute dates available for this period, although the latter are of varying quality. Work on gathering the many strands of evidence is now well underway, but even the broad picture of the period is incomplete owing to the countless, yet unanswered questions.

The better understanding of the lively and eventful history of the Baden complex, distributed over an immense territory during the 4th–3rd millennium, has always been a major challenge to the period's researchers (for good overviews, see BONDÁR 2002; HORVÁTH 2008; 2009; 2011a; 2011b;

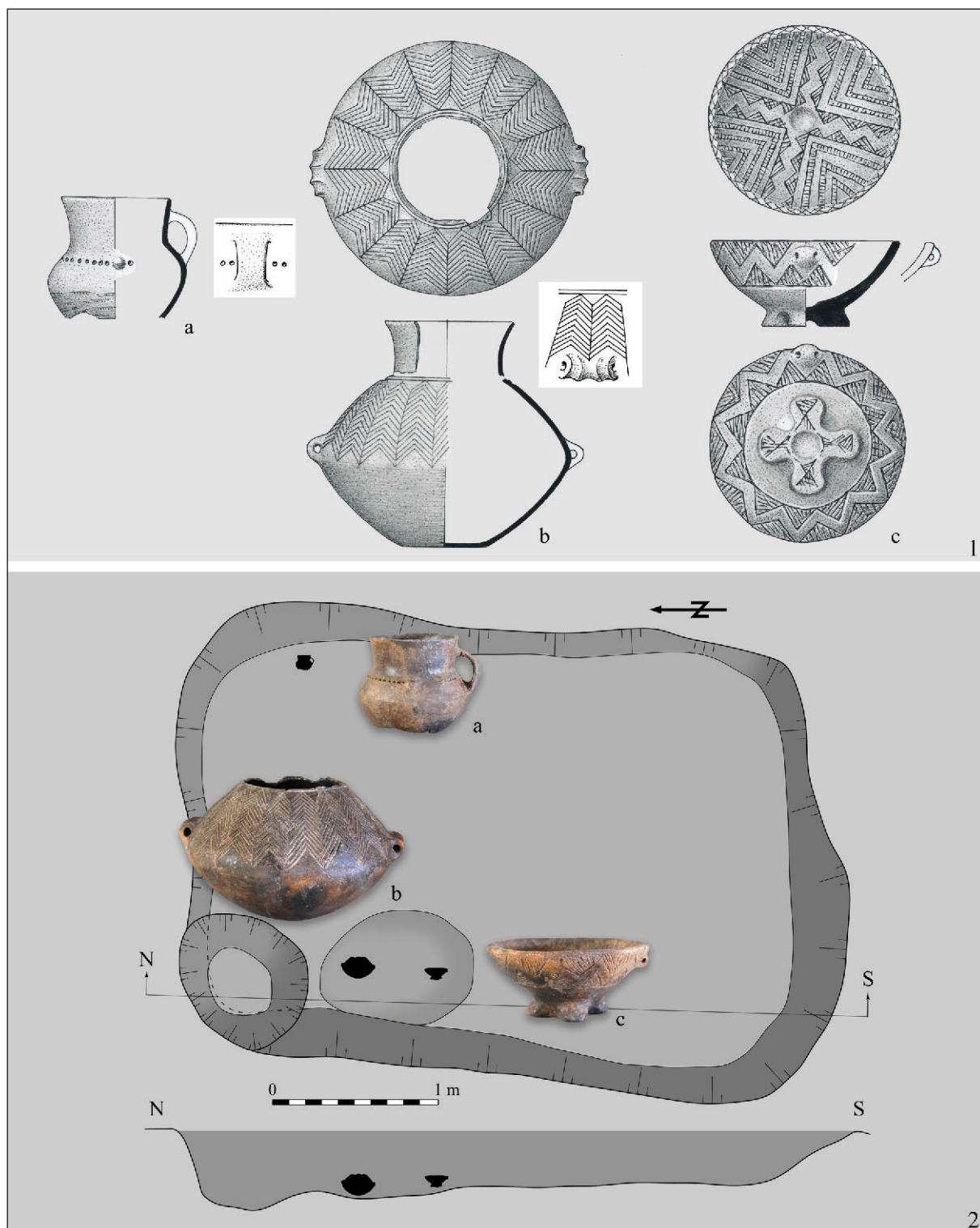


Fig. 4. Ordacsehi-Kécsimező — finds (1) from the Feature 99 (2)

2012; FURHOLT 2008; 2009; SACHSEE 2008; 2010; BONDÁR-RACZKY 2009). The Baden communities were witnesses of interesting times because several major innovations made their appearance during this period. The rescue excavations preceding

the construction of the M7 Motorway have provided fresh insights into this period in southern Transdanubia (see BONDÁR 2007). The preliminary and final reports on several sites investigated in the region have been recently published (e.g.,

SIKLÓSI 2004; FÁBIÁN–SERLEGI 2007; 2009; HORVÁTH 2008; 2009; 2011a; 2012; NAGY 2011), which have also shed fresh light on the final phase of the Baden period.

The identification of regional late Baden groups in the extensive distribution is a challenging task. At the time Mária Bondár published her overview of the period, most of the late Baden sites were known from southern Transdanubia (roughly 18 of the then known 38 sites, see BONDÁR 1984, Abb. 6). In Viera Němejcová-Pavúková's chronological scheme, the culture's late period can be equated with the Baden III–IV phase (NĚMEJCOVÁ-PAVÚKOVÁ 1981). The limitations of her chronological scheme and its inconsistencies, as well as its incompatibility with the absolute chronological data have been severely criticised (e.g., MAYER 1990; ENDRŐDI 1997, 131; P. BARNA 2003, 114; BONDÁR 2009, 246; HORVÁTH 2011a, 6, 10). The following broad picture can be reconstructed for southern Transdanubia and the southern Balaton region in the light of the current archaeological record.

Relics of the late Baden period are known from several sites in southern Transdanubia (e.g., County Tolna: Aparhant-Felső legelő, Feature 5: BONDÁR 2000, 47; Bonyhád, Dombóvár, Kajdacs, Szakály-Sportpálya: BONDÁR 1982, 40; Dunaszentgyörgy: GYÖRGY 2009; County Baranya: Pécs-Vasas: BONDÁR 1982; Palotabozsok: BANNER 1956, 128–134). The period's most important sites in the southern Balaton region are Balatonőszöd-Temetői dűlő and Balatonkeresztúr-Réti-dűlő, while the most significant site in south-western Transdanubia is Nagykanizsa-Billa. The absolute dates for these sites provide a more accurate indication of when these settlements were occupied. On the testimony of a series of eight radiocarbon dates, the classic phase of the Baden settlement at Balatonkeresztúr-Réti-dűlő was occupied between 3360 and 2920 cal BC (5310–4870 cal BP), with the early sub-phase of the classical Baden period falling between 3360–3110 (68.2%) cal BC (5310–5060 cal BP) and a late sub-phase between 3090–2920 (68.2%) cal BC (5040–4780 cal BP) (FÁBIÁN–SERLEGI 2009, 211–213, Fig. 7-2, Fig. 7-3). These dates harmonise with the other known dates from the Baden distribution (STADLER ET AL. 2001; WILD ET AL. 2001; SIKLÓSI 2009). The small settlement at Nagykanizsa-Billa was occupied during the early and late classical Baden period (P. BARNA 2003). Four of the five radiocarbon dates for this site in-

dicate that its occupation falls between 3329–3025 (68.2%) cal BC and 3089–2928 (68.2%) cal BC (4455±50 and 4400±40 BP) respectively (STADLER ET AL. 2001, Tab. 7). One date, based on a sample from Feature 30, gave a later date of 4080±40 BP, 2839–2500 (68.2%) cal BC (STADLER ET AL. 2001, Tab. 7) (*Table 1*). The archaeological interpretation of the latter radiocarbon dates is still uncertain.² The largest series of radiocarbon dates comes from the Balatonőszöd-Temetői dűlő site: samples from twenty-one Late Copper Age features and one Early Bronze Age feature were submitted for measurements. The currently available dates indicate that the Late Copper Age Boleráz and Baden period can be assigned to between 3519–3373 (68.2%) cal BC and 2458–2291 (68.2 %) cal BC (4680±45 and 3870±50 BP) at this site (HORVÁTH ET AL. 2006; 2008; HORVÁTH 2009, Fig. 5; 2011a; 2012). The latest date of 2458–2291 (68.2%) cal BC (3870±50 BP) comes from Pit 323, whose ceramic material typologically represents the Late Copper Age (Baden III), whose interpretation calls for further studies (*Table 1*).³ These dates suggest that the exact chronological position of the Baden groups settling in the southern Balaton region during the middle third of the 3rd millennium BC remains a controversial issue.

The appearance of the Kostolac ceramic style, very much distinct from Baden ceramics, is traditionally interpreted as marking the close of the Baden period in southern Transdanubia (BONDÁR 1984; 1996; 1998; 2002; 2007; ECSEDEY 1985; SZABÓ 1992; SIKLÓSI 2004).⁴ Mária Bondár suggested that Kostolac should be regarded as an independent culture in Austria, Hungary, Slovakia, Romania and Yugoslavia (BONDÁR 2007, 26). In her interpretation, Kostolac was one of the cultural waves marking the end of the Baden sequence — in the

² For a critical appraisal of the dates, see HORVÁTH 2011a, 60, note 75.

³ Pit 1612, whose pottery could similarly be assigned to the Baden III period, yielded a surprising date of 1956–1776 (68.2%) cal BC (3550±50 BP), whose interpretation calls for further studies (HORVÁTH ET AL. 2008, Fig. 3; HORVÁTH 2009, Fig. 5).

⁴ It must here be noted that the material of the Kostolac group appears in entirely different contexts in the group's southern distribution. In the Srem region, in the Banat and in the Lower Danube region, the new settlements of the Kostolac period were in part established on the earlier Baden settlements. In addition to these intensively occupied villages with timber-framed houses, there were also smaller settlements indicated by a few pits only (for a recent overview, see BALEN 2002; PETROVIĆ, J.–JOVANOVIĆ, B. 2002).

Glimpses of the Third Millennium BC in the Carpathian Basin

Period	Site/Feature	Laboratory no.	BP date	cal BC	References
Late Baden, Southern Transdanubia					
Baden IIA	Balatonőszöd-Temetői dűlő, B-2689	Deb-13381	4110 ± 50	2857–2581 (68.2%) 2875–2500 (95.4%)	HORVÁTH ET AL. 2008, Fig. 3; HORVÁTH 2009, Fig. 5.
Baden IIB–III	Balatonőszöd-Temetői dűlő, B-1489, S-37 human burial	Deb-13389	4200 ± 35	2887–2704 (68.2%) 2897–2671 (95.4%)	HORVÁTH ET AL. 2008, Fig. 3; HORVÁTH 2009, Fig. 5.
Baden III	Balatonőszöd-Temetői dűlő, B-323	Ki-16687	3870 ± 50	2458–2291 (68.2%) 2472–2202 (95.4%)	HORVÁTH 2011a, 50, Tab. 1.
Baden III–IV	Nagykanizsa-Billa, Feature 30	VERA-846	4080 ± 40	2839–2500 (68.2%) 2863–2489 (95.4%)	STADLER ET AL. 2001, Tab. 7.
Vučedol, Southern Transdanubia					
Vučedol B	Zók-Várhegy Pit 1977/34	Bln-3309	4160 ± 50	2874–2674 (68.2%) 2886–2587 (95.4%)	DELLA CASA 1995, 572.
Vučedol C	Zók-Várhegy Pit 1977/36	Bln-3310	4120 ± 50	2860–2585 (68.2%) 2876–2505 (95.4%)	DELLA CASA 1995, 572.
Vučedol, Fazies Neusiedl	Neusiedl am See Grave 1	ETH-25186	4160 ± 55	2875–2671 (68.2%) 2888–2581 (95.4%)	RUTTKAY 2002; STADLER 2002.
Vučedol, Fazies Neusiedl	Neusiedl am See Grave 1	VERA-2213	4130 ± 35	2861–2626 (68.2%) 2873–2581 (95.4%)	RUTTKAY 2002; STADLER 2002.
Vučedol (?)	Nagykanizsa	Bln-1633	3930 ± 65	2550–2301 (68.2%) 2579–2206 (95.4%)	FORENBAHER 1993, 241.
Somogyvár–Vinkovci, Transdanubia					
Makó/Somogyvár–Vinkovci	Győrszemere-Tóth tag	Deb-3069	3995 ± 56	2618–2462 (68.2%) 2837–2309 (95.4%)	FIGLER 1996, 9, note 8.
Somogyvár–Vinkovci/“Vučedol”	Nagyárpád	Bln-1634	3885 ± 40	2459–2309 (68.2%) 2472–2210 (95.4%)	RACZKY ET AL. 1992, 43; FORENBAHER 1993, 241.
Somogyvár–Vinkovci	Nagyárpád	Bln-1945	3900 ± 60	2468–2299 (68.2%) 2566–2203 (95.4%)	RACZKY ET AL. 1992, 43.
Somogyvár–Vinkovci	Szava	Bln-1640	4000 ± 50	2574–2471 (68.2%) 2836–2346 (95.4%)	RACZKY ET AL. 1992, 43.
Late Somogyvár/ proto-Kisapostag	Balatonőszöd-Temetői dűlő, B-2104	Ki-16688	3460 ± 60	1879–1693 (68.2%) 1928–1626 (95.4%)	HORVÁTH 2011a, 50, Tab. 1.
Somogyvár–Vinkovci, Slavonia					
Vinkovci	Vinkovci-Hotel	Z-1817	3809 ± 138	2465–2044 (68.2%) 2833–1881 (95.4%)	DURMAN–OBELIĆ 1989, 1003–1004.
Vinkovci	Vinkovci-Hotel	Z-1818	3835 ± 140	2475–2046 (68.2%) 2838–1892 (95.4%)	DURMAN–OBELIĆ 1989, 1003–1004.
Vinkovci	Vinkovci-Duga ulica Grave 40	KIA-29563	3881 ± 25	2456–2309 (68.2%) 2465–2291 (95.4%)	KALAFATIĆ 2006, 23–24, Tab. A.
Somogyvár–Vinkovci, Slovenia					
Vinkovci	Josipovac Punitovački-Veliko polje, 31	KIA-35439	3926 ± 24	2472–2350 (68.2%) 2484–2308 (95.4%)	HIRSCHLER 2009, 145.
Vinkovci	Josipovac Punitovački-Veliko polje, 210	Beta-261089	3840 ± 40	2428–2206 (68.2%) 2461–2155 (95.4%)	HIRSCHLER 2009, 145.
Vinkovci	Založnica	ZAL	–	2495–2460 (68.2%) 2500–2425 (95.4%)	VELUŠČEK–ČUFAR 2003, 126–128, Pril. 1.
Somogyvár–Vinkovci	Krog-Za Raščico (325, 324, 357, 360, 361 water reservoir, sec. III., qu. 35)	Ruder Bošković Institute	3777 ± 89	2341–2040 (68.2%) 2468–1973 (95.4%)	ŠAVEL 2006, 141.
Somogyvár–Vinkovci	Krog-Za Raščico Features 539–540 (sec. I., qu. 1)	Ruder Bošković Institute	3710 ± 75	2205–1978 (68.2%) 2341–1894 (95.4%)	ŠAVEL 2006, 141.
Late Vinkovci	Blatna Brezovica–Zornica	Z-1934	3785 ± 100	2401–2041 (68.2%) 2480–1941 (95.4%)	DIRJEC 1991, 196.

Table 1. Radiocarbon dates for the Late Copper Age/Early Bronze Age transitional period from Transdanubia, Croatia and Slovenia. The dates were calibrated using the OxCal v4.1.7 programme and the IntCal09 calibration curve (<https://c14.arch.ox.ac.uk/oxcal/OxCal.html>)

archaeological record, this is reflected by the appearance of separate pits with Kostolac material on Baden settlements (BONDÁR 2007, 26). In her assessment of the Balatonőszöd settlement, Tünde Horváth suggested that the Kostolac style spanned a broader period and she proposed a new model for its appearance and chronology, as well as a new interpretation of the Kostolac phenomenon (HORVÁTH 2009, 112; 2011a, 51–52). Two sites on Lake Balaton occupy a key position for clarifying the relation between late Baden and Kostolac: Ordacsehi-Major, one of the largest Kostolac settlements, and Balatonboglár-Berekre-dűlő, a site that yielded the currently known highest number of Kostolac cremation graves (Fig. 3. 1, 13).

Dating from the late Baden period, the finds from the settlement at Balatonboglár-Berekre-dűlő included a Kostolac bowl fragment and, even more importantly, the section of a Kostolac burial ground was discovered beside the late Baden settlement (SIKLÓSI 2004; HONTI-NÉMETH-SIKLÓSI 2007, 171). The late Baden settlement, the Kostolac cemetery and the early Vučedol vessel fragment from the cemetery found in the same location led Zsuzsanna Siklósi to suggest the possible symbiosis between the late Baden and Kostolac groups in the southern Balaton region around 3000 BC (HONTI-NÉMETH-SIKLÓSI 2007, 171). The other important settlement of the Kostolac group in a Baden milieu was uncovered at Ordacsehi-Major, where the over fifty features — mostly pits and smaller buildings — containing either exclusively Baden or Kostolac finds lay not in discrete areas of the settlement, but beside each other, suggesting their contemporaneity (BONDÁR 1998; HONTI 2007). This is also supported by the features in which the finds of both groups occurred together. The site also yielded an unstratified bowl ornamented in the Vučedol style (HONTI 2007, 230). Other Kostolac burials have been unearthed at Keszthely-Fenekpuszta on Lake Balaton's southern shore (BONDÁR 1984, 67, Abb. 2. 1, 4) and on the outskirts of Balatonboglár (BONDÁR 1996). Kostolac finds have been reported from late Baden sites in the Pécs area such as Pécs-Vasas and Palotabozsok (BONDÁR 1982; 1984, 69). One of the most important Kostolac sites in southern Transdanubia was discovered at Dunaszekcső-Várhegy (ECSEDY 1985). According to our current knowledge, there was an intensive Kostolac presence in the Pécs area, in the Danube region and in the

Balaton region in southern Transdanubia. There are no radiocarbon dates for the late Baden/Kostolac period from Transdanubia. The dates from the southern distribution of the Kostolac culture span a fairly broad period between 3300 and 2870 (68.2%) cal BC: the samples from Gomolava gave a date of 2920–2820 (68.2%) cal BC for the “end of Kostolac”, 3060–2920 (68.2%) cal BC for the Baden/Kostolac transition and 3290–2930 (68.2%) cal BC for Baden (for a recent overview, see SIKLÓSI 2009, 465; cp. FORENBAHER 1993, 240; PETROVIĆ, J.–JOVANOVIĆ, B. 2002, 298, 303). These dates indicate that Kostolac groups appeared in the south during the classical Baden period in Transdanubia and that the Kostolac presence in Transdanubia can be tentatively dated to 3000–2800 BC.

The relative chronological data would suggest the appearance of Vučedol and, later, of Somogyvár–Vinkovci groups in southern Transdanubia after the end of the Baden and Kostolac period (Fig. 1). The Vučedol complex is an intriguing phenomenon of the transitional period between the Copper Age and the Bronze Age. The ceramic assemblage from Ordacsehi-Major described in the above is an indication of an early Vučedol connection. Sites of the classical and late Vučedol period are known from Zók-Várhegy, Pécs-Nagyárpád and Lánycsók in the Pécs area, Dunaszekcső-Várhegy, a site overlooking the Danube, and Döbrököz and Gyulaj in the Kapos Valley (ECSEDY 1980; 1983; 1985; BONDÁR 2001; for a recent overview, see KULCSÁR 2009a, 238–253; 2012). The currently known northernmost Vučedol site is Somogyvár-Kupavárhegy. The archaeological investigations at Zók-Várhegy and Pécs-Nagyárpád have conclusively proven that these sites were occupied during the classical Baden period, while no traces whatsoever of a late Baden/Kostolac settlement were found. The currently available radiocarbon data indicate that an earlier Vučedol occupation at Zók-Várhegy can be dated to 2874–2674 (68.2%) cal BC (4160±50 BP; Pit 1977/34, Vučedol B), while a later Vučedol occupation to 2860–2585 (68.2%) cal BC (4120±50 BP; Pit 1977/36, yielding various artefacts reflecting local metalworking, Vučedol C; ECSEDY 1983; DELLA CASA 1995) (Table 1). Disregarding the radiocarbon data with a high standard deviation from the northern Balkans,⁵ a

⁵ Radiocarbon dates with a high margin of error published earlier were not taken into consideration. Cp. BENKÓ ET AL. 1989.

handful of dates are also available from the north-western fringes of Transdanubia: the tumulus burial excavated at Neusiedl am See gave dates of 2875–2671 (68.2%) cal BC and 2861–2626 (68.2%) cal BC (RUTTKAY 2002, 150; STADLER 2002) (*Table 1*).⁶ A considerably later date of 2550–2301 (68.2%) cal BC for a sample marked as “Vučedol” comes from Nagykanizsa (FORENBAHER 1993, 241; *Table 1*). However, this site has only yielded Somogyvár–Vinkovci finds and it therefore seems likely that the sample in question was not taken from a Vučedol context (see BONDÁR 2003).

One important issue raised by the slightly controversial radiocarbon dates is whether we can assume the survival of Baden groups in the southern Balaton region during the Vučedol B and C periods (*ca.* 2800–2500 BC) as suggested by the late dates from Balatonőszöd-Temetői dűlő. This question can, obviously, only be answered after reliable series of new dates become available. The typo-chronological assessment of the assemblage from Ordacsehi-Kécsimező (*Fig. 4*) described in the above would nonetheless suggest that the vessels represent the yet little known transitional period along Lake Balaton’s southern shore.

The spread of the Somogyvár–Vinkovci ceramic style, which in part emerged in Transdanubia, can be conceptualised as a gradual change (for a recent overview, see KULCSÁR 2009a, 238–253). Even though the history of the central place-like settlements of the Vučedol period, which probably also functioned as metalworking centres, can not be reconstructed without the excavation of these sites, the current evidence suggests that in addition to intensively occupied Vučedol settlements, smaller settlements also appeared in the culture’s settlement network. Various new vessel forms made their appearance in the ceramic inventory, but Vučedol traditions were also preserved as shown by certain vessel types and decorative elements. The gradual cultural transformation involving the simplification of ceramic traditions is amply reflected, for example, by the changes in the decorative style of interior decorated bowls.

The finer details of the internal chronology of the Somogyvár–Vinkovci ceramic style in Trans-

danubia still need to be clarified (BONDÁR 1995; 2001; 2003; KULCSÁR 2009a, 276–354). Advances in this field can be expected from the assessment of the finds brought to light at larger settlement sites. The currently known radiocarbon dates indicate that the Somogyvár–Vinkovci occupation in Transdanubia can be dated between *ca.* 2500/2400 and 2300/2200 BC (Győrszemere-Tóth tag, Nagyárpád, Szava: *Table 1*), which tallies with recent dates published from Slovenian (Josipovac Punitovački, Založnica) and Slavonian (Vinkovci-Hotel, Vinkovci-Duga ulica) sites (*Table 1*). The Slovenian and Slavonian dates include a few late ones from the turn of the 3rd/2nd millennium BC (*Table 1*: Krog-Za Raščico, Blatna-Brezovica). Recent radiocarbon and TL/OSL dates for the late Somogyvár/proto-Kisapostag occupation at Balatonőszöd-Temetői dűlő in the southern Balaton region fit in with these dates (1879–1693 (68.2%) cal BC, *Table 1*, see HORVÁTH 2011a, 50, Tab. 1; HORVÁTH–KULCSÁR 2012a; 2012b). The typo-chronological analyses and the radiocarbon dates both indicate that an earlier and a later period can be distinguished in the Somogyvár–Vinkovci sequence in a few smaller regions.

SUMMARY

One point that emerges clearly from the above broad overview is that additional archaeological investigations and archaeometric analyses based on samples from secure contexts are necessary to eliminate the many uncertainties in the region’s absolute and relative chronology, and to clarify the period’s cultural relations (*Fig. 1, Table 1*). The finds described here offered a glimpse into the transitional period between the Copper Age and the Bronze Age, with a focus on southern Transdanubia. The late Baden, post-Baden/Vučedol and post-Vučedol period spanning the middle third of the 3rd millennium BC was marked by a continuous, gradual change. The more or less identical artefacts and decorative styles appearing roughly synchronously in several regions reflect the period’s cultural contacts spanning extensive territories. The mapping of these communications networks and the clarification of the period’s finer chronological details based on the growing corpus of data will no doubt remain one of the priorities of future research.

⁶ These dates fit in with the date of 2800–2700 BC for Mala Gruda/VelikaGruda (DELLA CASA 1995; PRIMAS 1996, 154); at the same time, the samples from the tumulus burial uncovered at Gruda Boljevića gave a surprisingly early date of “3090–3044 BC” (BAKOVIĆ–GOVEDARICA 2009; GOVEDARICA 2010).

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