

ANTÆUS

35-36

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*Communicationes ex Instituto Archaeologico
Academiae Scientiarum Hungaricae*

35–36/2018

Sigel: Antaeus

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the Library of the Institute of Archaeology, Research Centre for the Humanities,
Hungarian Academy of Sciences
H-1097 Budapest, Tóth Kálmán u. 4.

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The publication of this volume was supported by a special grant of the Hungarian Academy of Sciences

HU ISSN 0238-0218

Desktop editing and layout by Archaeolingua
Printed in Hungary by the Prime Rate Kft.
Cover by H&H Design

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ABBREVIATIONS

AAC	Acta Archaeologica Carpathica (Kraków)
ActaAntHung	Acta Antiqua Academiae Scientiarum Hungaricae (Budapest)
ActaArchHung	Acta Archaeologica Academiae Scientiarum Hungaricae (Budapest)
ActaMusPapensis	Acta Musei Papensis. A Pápai Múzeum Értésítője (Pápa)
ActaOrientHung	Acta Orientalia Academiae Scientiarum Hungaricae (Budapest)
AFD	Arbeits- und Forschungsberichte zur Sächsischen Bodendenkmalpflege (Berlin)
Agria	Agria. Az Egri Múzeum Évkönyve (Eger)
AHN	Acta Historica Neolosiensia (Banská)
AHSb	Archaeologia Historica. Sbornik (Brno)
AiO	Archäologie in Ostwestfalen (Saerbeck)
AiWL	Archäologie in Westfalen-Lippe (Langenweißbach)
AKorr	Archäologisches Korrespondenzblatt (Mainz)
Alba Regia	Alba Regia. Annales Musei Stephani Regis (Székesfehérvár)
ANBad	Archäologische Nachrichten aus Baden (Freiburg i. Br.)
AncSoc	Ancient Society (Louvain)
Annales	Annales. Histoire, Sciences Sociales (Cambridge)
Antaeus	Antaeus. Communicationes ex Instituto Archaeologico Academiae Scientiarum Hungaricae (Budapest)
AntTard	Antiquité Tardive. Revue Internationale d'Histoire et d'Archéologie (IVe–VIIe siècle) (Paris)
AÖ	Archäologie Österreichs (Wien)
AP	Arheološki Pregled (Beograd)
APN	Arheologija i prirodne nauke (Beograd)
AR	Archeologické Rozhledy (Praha)
ArchA	Archaeologia Austriaca (Wien)
ArchÉrt	Archaeologiai Értésítő (Budapest)
ArchHung	Archaeologia Hungarica (Budapest)
ArchKözl	Archaeologiai Közlemények (Budapest)
ArchLit	Archaeologia Lituana (Vilnius)
ArchSC	Archeologie ve středních Čechách (Praha)
ARG	Archiv für Religionsgeschichte (Berlin)
Arrabona	Arrabona. A Győri Xantus János Múzeum Évkönyve (Győr)
ASt	Augustinian Studies (Charlottesville)
AV	Arheološki Vestnik (Ljubljana)
BAR IS	British Archaeological Reports, International Series (Oxford)
BÁMÉ	A Béri Balogh Ádám Múzeum Évkönyve (Szekszárd)

BBD	Bericht der Bayerischen Bodendenkmalpflege (München)
BBVF	Bonner Beiträge zur vor- und frühgeschichtlichen Archäologie (Bonn)
BHVg	Bonner Hefte zur Vorgeschichte (Bonn)
BMMK	A Békés Megyei Múzeumok Közleményei (Békéscsaba)
BRGK	Bericht der Römisch-Germanischen Kommission (Berlin)
BudRég	Budapest Régiségei (Budapest)
Carinthia	Carinthia I. Zeitschrift für geschichtliche Landeskunde von Kärnten (Klagenfurt)
CarnuntumJb	Carnuntum Jahrbuch. Zeitschrift für Archäologie und Kulturgeschichte des Donauraumes (Wien)
CChSG	Corpus Christianorum Series Graeca (Turnhout 1977–)
CChSL	Corpus Christianorum Series Latina (Turnhout 1953–)
CCRB	Corso di Cultura sull'arte Ravennate e Bizantina (Ravenna 1959–1989)
Chiron	Chiron (München)
CIL	Corpus Inscriptionum Latinarum (Berlin 1863–)
CommArchHung	Communicationes Archaeologicae Hungariae (Budapest)
CPh	Classical Philology (Chicago)
CPP	Castellum Pannonicum Pelsonense (Budapest – Leipzig – Keszthely – Rahden/Westf.)
CSEL	Corpus Scriptorum Ecclesiasticorum Latinarum (Salzburg 1866–)
Cumania	Cumania. A Bács-Kiskun Megyei Múzeumok Közleményei (Kecskemét)
CurrAnt	Current Anthropology (Chicago)
Diadora	Diadora. Glasilo Arheoloskoga Muzeja u Zadru (Zadar)
DissPann	Dissertationes Pannonicae (Budapest)
DMÉ	A Debreceni Déri Múzeum Évkönyve (Debrecen)
DOP	Dumbarton Oaks Papers (Washington)
EME	Early Medieval Europe (Oxford)
FBBW	Fundberichte aus Baden-Württemberg (Stuttgart)
FMS _t	Frühmittelalterliche Studien. Jahrbuch des Instituts für Frühmittelalterforschung der Universität Münster (Berlin)
FolArch	Folia Archaeologica (Budapest)
FontArchHung	Fontes Archaeologici Hungariae (Budapest)
FR	Felix Ravenna (Faenza)
Germania	Germania. Anzeiger der Römisch-Germanischen Kommission des Deutschen Archäologischen Instituts (Mainz)
GGM	C. Müller (ed.): Geographici Graeci Minores (1855–1861)
GRBS	Greek, Roman and Byzantine Studies (Durham)
GSAD	Glasnik Srpskog Arheološkog Društva (Belgrade)
HAM	Hortus Artium Medievalium (Zagreb)
Hermes	Hermes. Zeitschrift für klassische Philologie (Wiesbaden)
HGM	Historici Graeci Minores (Lipsiae 1870)

HOMÉ	A Herman Ottó Múzeum Évkönyve (Miskolc)
HZb	Historijski Zbornik (Zagreb)
ILS	H. Dessau (ed.): <i>Inscriptiones Latinae Selectae</i> (1892–1916)
IMS	<i>Inscriptiones de la Mésie Supérieure I–VI</i> (1976–1982)
JAMÉ	A nyíregyházi Jósa András Múzeum Évkönyve (Nyíregyháza)
JAOS	<i>Journal of the American Oriental Society</i> (Michigan)
JLA	<i>Journal of Late Antiquity</i> (Boulder)
JPMÉ	A Janus Pannonius Múzeum Évkönyve (Pécs)
JRGZM	<i>Jahrbuch des Römisch-Germanischen Zentralmuseums</i> (Mainz)
JRS	<i>Journal of Roman Studies</i> (London)
JThS	<i>Journal of Theological Studies</i> (Oxford)
KSIA	Краткие сообщения Института Археологии АН УССР (Киев)
MAA	<i>Monumenta Avarorum Archaeologica</i> (Budapest)
MBAH	<i>Münstersche Beiträge zur Antiken Handelsgeschichte</i> (Münster)
MBV	<i>Münchner Beiträge zur Vor- und Frühgeschichte</i> (München)
MEFRA	<i>Mélanges de l'École Française de Rome, Antiquité</i> (Rome)
FMFÉ	A Móra Ferenc Múzeum Évkönyve (Szeged)
FMFÉ MonArch	A Móra Ferenc Múzeum Évkönyve – <i>Monographia Archaeologica</i> (Szeged)
FMFÉ StudArch	A Móra Ferenc Múzeum Évkönyve – <i>Studia Archaeologica</i> (Szeged)
MGAH	<i>Monumenta Germanorum Archaeologica Hungariae</i> (Budapest)
MGH	<i>Monumenta Germaniae Historica</i> 1–15 (1877–1919; repr. 1961)
MhBV	<i>Materialhefte zur Bayerischen Vorgeschichte</i> (Kallmünz, München)
MIÖG	<i>Mitteilungen des Instituts für Österreichische Geschichtsforschung</i> (Innsbruck – Graz)
MittArchInst	<i>Mitteilungen des Archäologischen Instituts der Ungarischen Akademie der Wissenschaften</i> (Budapest)
MPK	<i>Mitteilungen der Prähistorischen Kommission der Österreichischen Akademie der Wissenschaften</i> (Wien)
NZ	Niški Zbornik (Niš)
PA	<i>Památky Archeologické</i> (Praha)
Phoenix	<i>The Phoenix. The Journal of the Classical Association of Canada</i> (Toronto)
PLRE	<i>Prosopography of the Later Roman Empire</i> , 1: A. H. M. Jones et al. (eds) (1970); 2 and 3: J. R. Martindale (ed.) (1980–1992)
Pontica	<i>Pontica. Studii și materiale de istorie, arheologie și muzeografie</i> (Constanța)
PWRE	A. Pauly – G. Wissowa et al. (Hrsg.): <i>Realencyclopädie der classischen Altertumswissenschaft</i> (1893–)
Radiocarbon	<i>Radiocarbon. Published by the American Journal of Science</i> (New Haven)
RdAm	<i>Revue d'Archéométrie</i> (Rennes)
RégFüz	<i>Régészeti Füzetek</i> (Budapest)
RGA	<i>Reallexikon der Germanischen Altertumskunde</i> (Berlin – New York)
RIC	H. Mattingly – E. A. Sydenham et al. (eds): <i>Roman Imperial Coinage</i> (1923–67)

RIU	Die römischen Inschriften Ungarns (Budapest)
RKM	Régészeti Kutatások Magyarországon. Archaeological Investigations in Hungary (Budapest)
RLÖ	Der römische Limes in Österreich (Wien)
RÖ	Römisches Österreich (Wien)
RVM	Rad Vojvođanskih Muzeja (Novi Sad)
SA	Советская Археология (Москва)
SAI	Археология СССР. Свод археологических источников (Москва)
Saopštenja	Saopštenja (Beograd)
Savaria	Savaria (Szombathely)
SC	Sources Chrétiennes (Lyon)
SCIVA	Studii și Cercetări de Istorie Veche (București)
SHP	Starohrvatska Prosvjeta (Zagreb)
SJT	Scottish Journal of Theology (Cambridge)
SIA	Slovenská Archeológia (Bratislava)
SMK	Somogyi Múzeumok Közleményei (Kaposvár)
SMP	Studia Mediaevalia Pragensia (Praha)
Spomenik	Spomenik Srpske kraljevske akademije (Beograd)
Starinar	Starinar (Beograd)
StudArch	Studia Archaeologica (Budapest)
ŠtZ	Študijné Zvesti Archeologického Ústavu SAV (Nitra)
SzMMÉ Tisicum	A Szolnok Megyei Múzeumok Évkönyve (Szolnok)
TTH	Translated Texts for Historians (Liverpool)
TVMK	A Tapolcai Városi Múzeum Közleményei (Tapolca)
VAH	Varia Archeologica Hungarica (Budapest)
Viminacium	Viminacium. Zbornik Radova Narodnog Muzeja (Požarevac)
VMMK	A Veszprém Megyei Múzeumok Közleményei (Veszprém)
WMMÉ	A Wosinsky Mór Múzeum Évkönyve (Szekszárd)
ZalaiMúz	Zalai Múzeum (Zalaegerszeg)
ZfA	Zeitschrift für Archäologie (Berlin)
ZfAM	Zeitschrift für Archäologie des Mittelalters (Köln)
ZGy	Zalai Gyűjtemény (Zalaegerszeg)
Ziridava	Ziridava. Muzeul Judetean (Arad)
ZNMN	Zbornik Narodni muzej Niš (Niš)
ZRNM	Zbornik Radova Narodnog Muzeja (Beograd)
ŽAnt	Živa Antika (Skopje)

SZABINA MERVA

**METHODOLOGICAL APPROACHES TO THE ARCHAEOLOGY
OF NINTH–TENTH-CENTURY SITES IN HUNGARY.
THE CURRENT STATE OF RESEARCH**

Zusammenfassung: Im Mittelpunkt des Beitrags steht eine Überprüfung des Konzepts des 9. und 10. Jahrhunderts in der archäologischen Forschung von Ungarn. Es wird die theoretische „Umgangsperiode“ aus der Perspektive der Archäologie des 10. Jahrhunderts unter besonderer Berücksichtigung der Keramik- und Siedlungsforschung behandelt. Das Thema deckt die Chronologie des Zeitraums und die Interpretation der archäologischen Zeugnisse aus verschiedenen Forschungsansätzen ab und weist auf die aktuellen, den typischen Datierungsverfahren zugrunde liegenden Überlegungen hin. Die Studie befasst sich zudem mit der Frage der kulturellen Kontinuität und Adaptation in der Töpferkunst und schließlich mit den aktuellen wissenschaftlichen Datierungsmethoden der behandelten Funde.

Keywords: methodology, research approaches, chronology, cultural adaptation, scientific methods, settlement archaeology, ninth–tenth-century sites, Carpathian Basin

One of the primary research issues of the archaeology of early medieval sites in Hungary is how we should conceptualise the ninth century. Should we lengthen the “short ninth-century period” with a “longer tenth century beginning earlier”, or is it the other way round: did the material culture dated to the earlier phase possibly survive after the Hungarian Conquest period? Should we resolve the problem by eliminating the chronological gap? Naturally, there are different answers to this question in different regions of the Carpathian Basin – yet, it would be reasonable to define a “contact period” for the time of the Hungarian Conquest and the ensuing decades, especially if we assume the survival of the previous population. The present paper investigates this issue mostly from the perspective of the archaeology of the tenth century. My observations concerning the methodology of Hungarian research are based on ceramic studies and settlement archaeology.

Chronological problems

Any discussion of the social organisation in the Carpathian Basin during the tenth century from an archaeological perspective must consider the surviving late Avar and Slav populations,¹ which, for example, raises issues concerning the relationship between the ancient Hungarians and the surviving ninth-century population groups, their ratio, the point at which assimilation occurred, and the time-frame from which standardised finds, specifically standardised ceramics, appear as “typical” tenth–eleventh-century pottery. Theoretical estimates by Hungarian historians and an archaeologist about the ratio of the surviving groups and the incoming population at the time of the Hungarian Conquest in the Carpathian Basin vary significantly. While Gábor Vékony viewed

¹ *Dienes 1972 22; Istvánovits 2003 442–449.*

the ancient Hungarians as a not too populous military layer,² Gyula Kristó proposed 30%,³ András Róna-Tas estimated 40%,⁴ while according to György Györffy, the newcomers accounted for 80% of the population.⁵ Currently, we take the survival of the ninth-century population into the tenth century for granted, even though we have to admit that this is still no more than a supposition: at present, the archaeology of cemeteries does not confirm this theory.⁶ There are no more than half a dozen cemeteries in Hungary where the graves of the ancient Hungarians overlie the late Avar and the ninth-century horizon, and even in these cases, it remains to be established whether we can speak of the continuity of the population or merely of the use of the same burial location.⁷ On the one hand, we find proposals to date some artefact types up to the end of ninth century,⁸ while on the other, there have been efforts to correct, or at least to modify, the currently established chronology through the earlier dating of the appearance of the ancient Hungarians' find material.⁹ Yet another chronological solution in those regions of the Carpathian Basin where the survival of the ninth-century population has been proven is to consider the possibility that there was a revival of paganism after the Carolingian horizon. It is important to add that the latter situation appears to be possible on the sites in the Lower Zala Valley in Hungary.¹⁰ Besides these different research approaches, László Kovács distinguished three main types of sites from the given period following his overview and classification of the relevant cemeteries in the Carpathian Basin. The sites whose use continued after the Hungarian Conquest are as follows: Group I: the ninth–twelfth-century cemeteries of rural settlements; Group II: graveyards (churchyard cemeteries) spanning the ninth–tenth centuries; Group IIIA: cemeteries of rural settlements used from the mid-ninth century until the late ninth–early tenth century; and Group IIIB: tenth–eleventh-century graves on the territory of some late Avar burial grounds.¹¹ It must here be noted that the sites of Groups I–IIIA tend to lie not in the central part of the Carpathian Basin but in Upper Hungary (Slovakia) and in Romania.

A short overview of the chronology of the period's settlements seems in order: similarly to the cemeteries, this is rather problematic. Metal finds are rarely recovered from settlements, but if so, their dating is based on the chronology of the cemeteries,¹² and thus dating the settlements through metal objects would involve the danger of circular reasoning. Using pottery analysis, we can mostly date to a wider time interval. First-hand experience indicates that ceramic chronology is suitable for creating a relative chronology, but not more, unless we resort to generalisations for the assessment of a specific site. The automatic labelling of periods as eighth–ninth-century and

² *Vékony 2001* 99–100.

³ *Kristó 1995* 144.

⁴ *Róna-Tas 1996* 277.

⁵ *Györffy 1963* 46–47.

⁶ *Kovács 2013* 518.

⁷ For a list of these sites, see *Kovács 2013* 518.

⁸ *Szalontai 1996*.

⁹ *Szőke 2014* 38, raised the possibility of the earlier arrival and settlement of the ancient Hungarians. Some radiocarbon-dated graves are interpreted as an indication of the sporadic appearance of the ancient Hungarians in the late ninth century, *Lőrinczy et al. 2015* 95–100, 107–108.

¹⁰ *Szőke 2005* 26.

¹¹ *Kovács 2013* 515–518.

¹² *Langó 2011*.

tenth–eleventh-century horizons in some regions probably reflects a time-hardened mindset.¹³ It is telling that even if we assume the two horizons consecutively on a particular settlement, we tend to define the chronology in this way, rather than to date and call it a ninth–tenth-century settlement.¹⁴ In my opinion, both solutions simply reflect approaches; just as it would be unfounded to use the latter dating, a dating to the hundred-year interval after the Hungarian Conquest, i.e. to the tenth century, is also uncertain, aside from rare exceptions. There are two main tendencies concerning the chronology of the tenth–eleventh-century period in Hungarian research: the first, a dating to the tenth century,¹⁵ the other, a dating to the tenth–eleventh centuries by assuming the unbroken development of the material culture.¹⁶ A confirmation of one or the other of these two views calls for dating one significant ceramic type, namely the clay cauldron turned on a slow wheel: the traditional dating is from the tenth century, while according to another concept, these vessels can only be dated from the eleventh century onward,¹⁷ while the pottery of the population surviving into the tenth century is regarded as being archaic by invoking certain markers.¹⁸ Actually, the chronological problems in the archaeology of cemeteries and settlements do not overlap completely, and the labels of the horizons are used in a different way. While we tend to call cemeteries of the tenth-century sites of the “Conquest period”¹⁹ and those of the eleventh-century sites of the “early Árpáadian Age”,²⁰ settlements are termed settlements of the “Conquest period” (tenth century),²¹ while sites dating from the tenth–eleventh century are termed “early Árpáadian Age” settlements.²² Although seemingly digressing from the main theme of my paper, it is my hope that the above overview has shown that Hungarian research on tenth- and tenth–eleventh-century settlements ultimately tends to identify exclusively the horizon beginning with the Hungarian Conquest. Opinions are divided only as to the question of how narrow an interval we should date, whether we should separate an archaeological horizon before the foundation of the Medieval Kingdom of Hungary. Given that

¹³ *Herold 2004* 68–75. For the schematic chronology of some early medieval sites, cf. *Herold 2006* 65, Abb. 28, even if some ceramic types (pottery turned on a slow wheel, fired in an oxidising atmosphere in eastern Hungary) are dated to the late ninth century (*Herold 2006* 71). The new generation engaged in early medieval settlement archaeology also uses this chronological framework, with the chronological boundary drawn at the time of the Hungarian Conquest: for some recent work in this field, see *Takács 2013* 41; *Bajkai 2015a*; *Kondé 2017*; *Pópity 2014* (mentioning the difficulty of defining the end of the settlement’s occupation), and my own study: *Merva 2017*. One welcome exception is the well-dated rampart at Zalavár-Vársziget, which has been dendrochronologically dated to the late ninth century, and the ceramic assemblages can be linked to this horizon: *Gergely 2016*, alongside the settlement characterised and dated with special assemblages as well as with 14C to the late ninth–tenth centuries, *Tomka – Merva 2016*.

¹⁴ See the wording, e.g. in *Istvánovits 2003* 252.

¹⁵ *Wolf 2002* 56–57; *Wolf 2003*.

¹⁶ E.g. *Takács 1996a*; *Takács 1996b*; *Takács 2006*.

¹⁷ For a dating from the tenth century, see *Szőke 1955* 90; *Takács 1986* 136–137, *Takács 1993* 453, *Takács 1996c* 336, *Takács 2009* 237; for a dating from the eleventh century, see *Wolf 2003* 100–103.

¹⁸ *Wolf 2003* 96, figs 2–3, fig. 7.

¹⁹ See the general designation, e.g. in the title of the anniversary volume published in 2013: *A honfoglalás kor kutatásának legújabb eredményei* [New advances in the research of the Hungarian Conquest period], *Révész – Wolf 2013*.

²⁰ See the generally used form, as in the title of a prominent study: *A Kárpát-medence honfoglalás és kora Árpád-kori szállási és falusi temetői* [The campsite and rural cemeteries of the Conquest period and the early Árpáadian Age in the Carpathian Basin], *Kovács 2013*.

²¹ *Kovalovszki 1996* 288.

²² *Lázár 1998*.

the chronology of a period oft-times involves an interpretation too, the theoretical background to dating is hardly unique to Hungarian scholarship.²³

Adapted to the chronological framework based on the research of cemeteries, settlement archaeology grapples with the same chronological issues: by pre-defining certain periods, it excludes even the possibility of continuity, even if it is assumed. In my opinion, if we think in terms of surviving population groups, the goal should be to deal with two types of settlements: (1) settlements occupied without a break at the turn of the ninth–tenth centuries, and (2) settlements whose occupation began in the late ninth–early tenth century (the “first settlements of the ancient Hungarians”).²⁴

To avoid misunderstandings, it must here be noted that the dating of eighth–tenth-century as well as of ninth–tenth-century settlements encountered in preliminary reports is only a framework-like chronology and does not imply continuity.²⁵ Although the category “ninth–tenth century” does occur in a comprehensive study on medieval settlement archaeology in Hungary, it is important to underline that the survey was also based solely on preliminary reports, not on fully assessed sites. Consequently, the chronological category in the study suggests the idea of continuity rather than a fully confirmed chronology.²⁶

Let me add one other remark concerning the chronological problems of cemeteries and settlements. Let us recall Gyula László’s emblematic view that the mapping of the late Avar and Conquest period sites (or, more precisely, of cemetery sites, exclusively) revealed that they spatially complemented each other.²⁷ Even though it is obvious that the population buried in the cemeteries chose a specific area for settling down, a clear difference can be observed at present, which either reflects a genuine difference in the preferred areas, or merely the different research results of the two fields of archaeology. However, in contrast to the situation regarding contemporaneous cemeteries, the growing number of settlement excavations has demonstrated that multi-layered sites with both an “eighth–ninth”- and a “tenth–eleventh”-century horizon are not rare occurrences. In the wake of the assessment of an increasing number of early medieval sites, the settlement patterns of several regions can be redrawn (*fig. 1*), the excavated early medieval

²³ The same mechanism can also be noted in Slovakian scholarship: for the generally defined phase of sites dated to the second half/last third of the ninth–early tenth century (“younger Great Moravian period”) based on pottery analysis as evidence of continuity: see, e.g. *Hanuliak – Kuzma 2015* 338; *Hanuliak 2008* 293; *Hanuliak 2015* 148; *Hanuliak 2016* 142. The study of continuity through seventh–tenth-century pottery can be noted in Romanian ceramic research. See the chronological phase of the later ninth century and the first decades/earlier tenth century, *Cosma 2011* 32–37, for example, the site of Alba Iulia (city, Alba County)–“Stația de salvare/Cemetery no. I” is assigned to this phase, *Cosma 2011* 147–151. It should here be noted that some surprising results were obtained in the case of a few graves, which were identified as “Great Moravian” based on the traditional archaeological definition and were initially dated to the ninth century (*Dostál 1966* 15–17); however, the 14C data indicated that these graves represented interments of the late ninth–earlier tenth century. For the archaeometric data, see *Macháček et al. 2016* 166–169, 498–499.

²⁴ This approach conforms to the concept of Kovács’s classification (*Kovács 2013*).

²⁵ Obviously, the sites with a preliminary framework-like dating do not resolve the question – but then, neither was it the overall goal to address the problem itself through the construction of these chronological frames. Some examples: the preliminary dating of the Hajdúböszörmény-Kadarcs-part site (*Anders et al. 2006* 248) and the Hajdúnánás-Fekete-halom site (*Anders 2004* 225). For the latter, see the publication of the analysed site, *Bajkai 2015b*.

²⁶ This chronology appears in a paper reviewing the medieval settlements in Hungary, see *Takács 2009* 224, Abb. 1. The article presents another figure also, which suggests an “ideal” chronological continuation, but this is a reflection of the author’s approach, rather than a confirmed chronology. See *Takács 2009* 225, Abb. 2. It is instructive to compare it with the figure showing the German research situation of dating various pottery types in different regions: *Schreg 2012* 4, Abb. 2.

²⁷ *László 1988* 16, fig. 4.

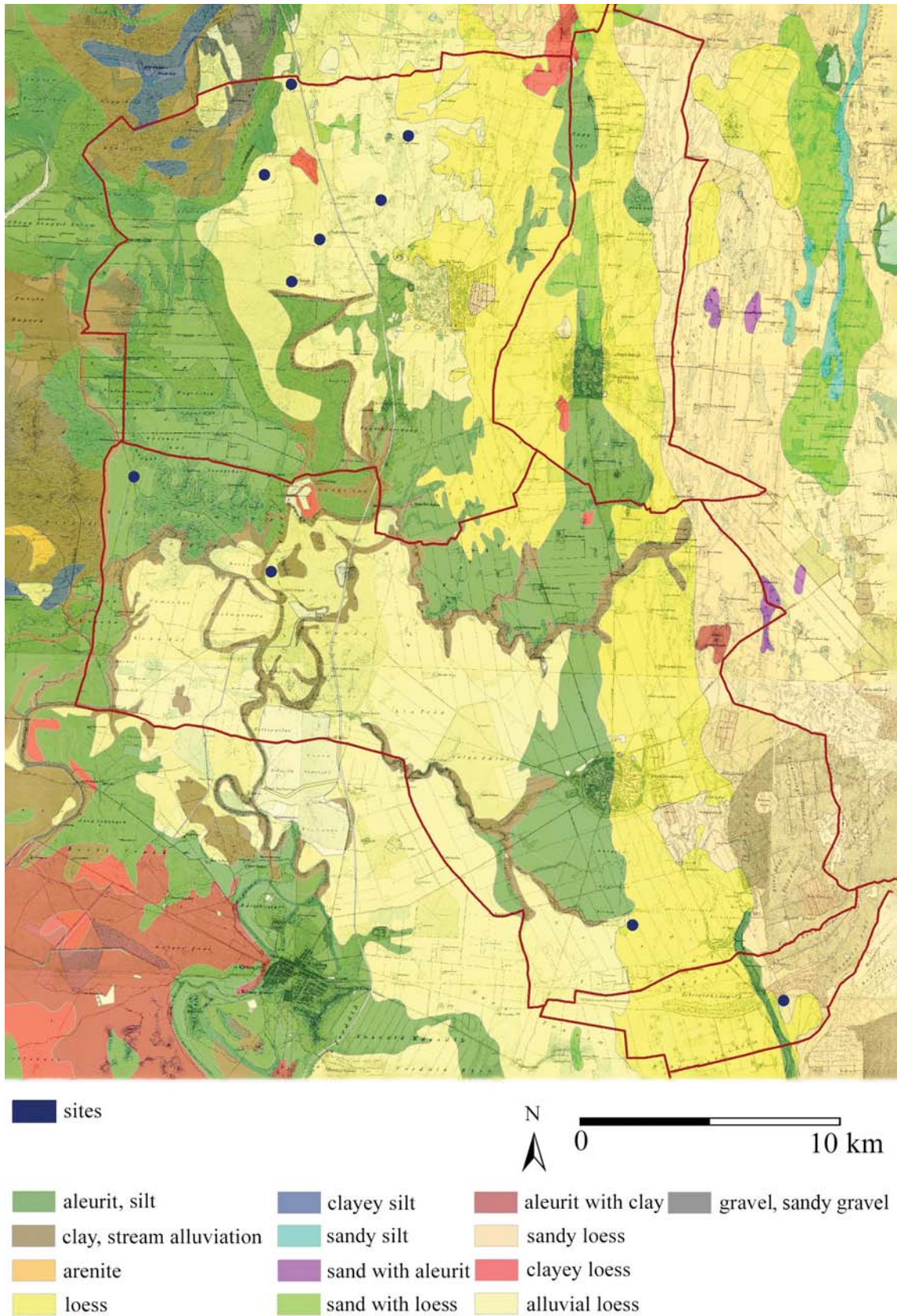


fig. 1. Excavated multi-layer settlements occupied during the eighth–ninth centuries as well as the tenth–eleventh centuries in the Hajdúhát and Hortobágy regions (eastern Hungary). Background: Second Military Ordnance Survey (1806–1869) and geological map (resource: Geological and Geophysical Institute of Hungary, Budapest)

settlements in the Hajdúhát and Hortobágy regions in eastern Hungary, with confirmed dating).²⁸ We have little to go by when searching for an explanation of why the same population whose cemeteries – with a few exceptions – did not overlap with earlier burial places, regularly inhabit the same area where communities lived during the previous period. Since Hungarian research is unable to accurately date sites either to the critical phase, the turn of the ninth–tenth centuries, or to a wider interval, from the mid-ninth to the mid-tenth century – and, as mentioned in the above, originally did not aspire to do so – settlement archaeology cannot answer the question either, of whether we are simply faced with a continuity in the occupation of the same area or something more. Does the difference between the cemeteries and settlements of the same period only reflect the chronological problems of the cemeteries, or does it mirror a different approach to the area used, i.e. that in contrast to the selection of a place for settlement, the choice of burial place involved mainly ideological, but not practical factors.

To offer a picture of the general interpretation of tenth-century pottery in Hungarian research, a review of the prevalent concepts in the period's scholarship seems in order. The standard opinion is that there are two significant ceramic types, namely vessels with ribbed neck²⁹ and clay cauldrons turned on a slow wheel that were typical in the eastern homelands of the ancient Hungarians, and which they brought to the Carpathian Basin as an eastern legacy.³⁰ It must be borne in mind that during the localisation of certain Eastern European settlement territories, researchers invoked ceramic types from settlements,³¹ but not grave goods that can be relevant for the early history of the Hungarians – although, true enough, clay cauldrons, being a cooking vessel type, were never deposited in graves. According to recent research, it would appear that the Saltovo culture has no relevant connection with the tenth–eleventh-century pottery of the Carpathian Basin³² and that convincing formal parallels to the clay cauldrons can rather be found in the Lower Danube region.³³ As far as studies on “vessels with cylindrical, ribbed neck” are concerned, I have to note that looking through the relevant literature, it seems obvious that the single common attribute of these vessels, the cylindrical ribbed neck, is widespread in both time and space, and that accordingly, there are more or less good formal analogies wherever we look, from the Volga region to Bavaria.³⁴ Consequently, it seems unwarranted to associate the formal

²⁸ The map was prepared in collaboration with Rozália Bajkai, when checking and confirming the dating of early medieval settlements in the Hajdúhát and Hortobágy regions in eastern Hungary. I wish to thank my colleagues in the Déri Museum, Debrecen, and in the Archaeological Institute of the Eötvös Loránd University, Budapest, who excavated the mapped sites.

²⁹ *Mesterházy 1975; Fodor 1985.*

³⁰ *Fodor 1977; Takács 1986.*

³¹ *Fodor 1975; Fodor 1977; Fodor 1984;* for a critique of searching for parallels on settlements in the Saltovo-Majacka distribution, see *Türk 2010*, 282, note 188.

³² *Türk 2010* 283–284.

³³ Knowing that the production of cauldrons called for a specialised potting technique and that there are several prominent analogies from the Balkans, especially from north-eastern Bulgaria (e.g. *Dončeva-Petkova 1990* 108, Taf. 2. 1A–B), Miklós Takács suggested that they spread in the Carpathian Basin through Balkanic influences (*Takács 2012* 431).

³⁴ Some examples, which were cited in the Hungarian archaeological literature: from the Choresm region, partly from Uzbekistan and partly from Kazakhstan (*Mesterházy 1975*), and from the southern Ural and Volga regions, the Ukraine and Moldavia (*Fodor 1985*). Some other suggestions, with further analogies: Merovingian Bavaria (*Haas-Gebhard 1998* 76–77); Moravia, Dolní Věstonice (*Poulik 1948–1950*, fig. 125). *Bálint 2004* 39 proposed a Byzantine origin, from the late antique Near East: Horvat Berachot, Israel, sixth century (*Tsafir – Hirschfeld 1979* 313) and Italy: San Vincenzo, ninth century, glazed pottery (*Patterson 1992* 489, fig. 2. 1–2). Formal parallels can also be found in the Balkans: Dinogetia, tenth century (*Stefan et al. 1967* 161, fig. 98. 9). It should here be recalled that the earlier (possibly ninth–tenth-century) variant of the “type” is attested at the emblematic site of Zalavár-Vársziget: a restored vessel (inv. no. MNM 54.42.21) in the Hungarian National Museum, Budapest (*Cs. Sós 1963* 148, 301, Pl. 89. 1).

correspondence with a common origin; the formal attribute of these vessels, the ribbed neck, may rather have had practical reasons. Another point that needs to be addressed is the issue of the Eastern European grave goods that can be relevant to early Hungarian history. It is worth considering that the characteristic ceramic wares found in the relevant eastern graves³⁵ have no connection whatsoever with the tenth-century ceramic assemblages in the final settlement territory of the ancient Hungarians. This underpins the general phenomenon that the communities in Eastern Europe, who had conspicuously similar metal artefacts as the ancient Hungarians of the Conquest period simply used the unmistakable pottery of the peoples of the given region.³⁶ Not one single piece of these ceramic wares appeared in the Carpathian Basin.³⁷ If we accept this currently emerging picture of the tenth-century pottery of the Carpathian Basin, we can hardly sidestep the question of what factors had possibly affected the development and the standardisation of the pottery we are working with.

Cultural adaptation

Naturally, when discussing this issue, we should not lose sight of the question of cultural continuity and cultural adaptation, which are fundamental to ceramic research. When considering the possible interaction between the pottery traditions of two peoples in the context of the surviving population and the newcomers, it seems evident that during the contact period (the time of the Hungarian Conquest and the ensuing decades), there could – theoretically – have been two different, but contemporaneous pottery traditions as well as two contemporaneous settlement types. Three models can be drawn up for the possible developmental trajectories of tenth–eleventh-century ceramics. The first, that the ancient Hungarians brought their own pottery tradition, which interacted with the pottery tradition of the surviving population and, after a while, a new pottery was created and standardised due to adaptation. The second, a rather unlikely one, assumes that the two pottery traditions had no connection, and that one pottery tradition disappeared with the assimilation of one population by the other. According to the third model, the ancient Hungarians, a mostly nomadic community, simply used the pottery of the population in the Carpathian Basin, as they had done in their eastern homelands. In the latter case, assuming that there had been no potters among the ancient Hungarians and that they had not brought a pottery tradition with them, we can posit a development in which the ninth-century material culture was transformed parallel to the acculturation of the surviving population through interaction with the newcomers, mostly due to the latter's a different needs and culinary culture.

I would argue that the third model has the greatest likelihood. The main source of the pottery of the Conquest period was most likely the pottery of the ninth century in the Carpathian Basin. Late Avar and/or Carolingian decoration types are attested on the ceramic finds of the early Árpádian Age. The treatment of the clay and the wheel turning technique became more or less uniform in the tenth–eleventh centuries. Following the dominance of reduction firing, which produces less fragile pottery (i.e. is a better firing procedure), the standardised ceramic finds of the tenth–eleventh centuries were mostly fired under oxidising conditions.³⁸ Several factors may also

³⁵ For a brief overview, see *Merva 2016a* 396, fig. 2. 397.

³⁶ E.g., the Avars, *Vida 1999* 175–177.

³⁷ The polished jar from Karos-Eperjesszeg (eastern Hungary), Grave II/66 (*Révész 1996* 186, fig. 114) is not a vessel of the Tankejevka type, either in terms of its shape, or its technology. Nevertheless, the cultural connections of this find still remain to be established.

³⁸ This tendency can be seen generally, for instance in the case of some sites on the Little Hungarian Plain. For the petrographic analyses of György Szakmány, their results and their possible archaeological interpretation, see *Merva 2016b* 470.

have influenced the change in the ceramic spectrum (e.g. the presence of vessels with ribbed neck and of clay cauldrons turned on a slow wheel), such as the characteristic diet of communities engaged in intensive cattle breeding³⁹ and technology transfer on the interregional level. Instead of a linear development of pottery technology, we should conceptualise a more complex model. Some steps of pottery production techniques were practiced continuously, others were developed, while the standard of yet other steps declined. Ceramic petrography analyses, a more sophisticated research agenda and a consideration of the limits of possible answers indicate that in view of the assumed low level of the organisation of ninth–eleventh-century pottery production, we should not equate raw material groups with chronological ones in every case, the convincing exceptions being Carolingian table wares or specific vessel types such as clay cauldrons.⁴⁰

In addition to the technological knowledge transfer in the region, some cultural connections were probably also inherited. One of these has already been confirmed and suggests communication with the western Slavic territory: petrographic and SEM-EDX analyses undertaken during the past few years have shown that the graphitic ware appearing in Hungary mainly along the Danube, first attested in the ninth century and not at the time of the foundation of the medieval state as earlier believed, originated from the graphite mines possibly in the region of Český Krumlov in southern Bohemia.⁴¹ It is possible that the inherited cultural traditions had been maintained by potters in the tenth century in the case of sites that had been occupied in the previous period (ninth century) in some contact zones during the Carolingian period. The finds from the Bácsa-Szent Vid domb site and the early medieval site complex at Visegrád have shown that the general concept of the material culture of the tenth century needs to be revised in the light of the complex and partly continuous pottery of the ninth century on the boundary of the Carolingian province of Pannonia and the Moravian territories.⁴²

Scientific dating methods

Let me now turn to the third theme of this paper. This problematic issue can be approached from the perspective of archaeometry. Two important points have to be considered: firstly, whether there are any scientific dating methods that can be used for dating the critical period, and secondly, which sampling strategy is the most appropriate.

While it is obvious that ceramic chronology cannot provide an answer to correspondences in a larger region or can only offer general answers, we still need to emphasise what first-hand experience tells us: comprehensive overviews and analyses of the grave pottery of the Carpathian Basin as a whole cannot provide an exact chronology of the turn of the ninth–tenth centuries or of the period spanning the tenth–eleventh centuries. As a matter of fact, the custom of depositing ceramic vessels in burials was a considerably rare funerary rite and the situation is further complicated

³⁹ It is possible that there was some connection between the diet as reflected by the archaeozoological data and the spectrum of cooking vessels at the same site. See, for instance, the Ménfőcsanak-Szeles dűlő site (northern Transdanubia, Hungary), with a general cattle dominance and the use of clay cauldrons in the eleventh–twelfth centuries, while at Visegrád-Várkert dűlő (north-eastern Transdanubia, Hungary), where a swine dominance was observed, there was a lack of cauldron-like vessel types in the tenth–eleventh centuries.

⁴⁰ This is confirmed, for example, by the yet unpublished ceramic assemblages from the site of Visegrád-Várkert dűlő, which is currently being assessed in cooperation with Veronika Szilágyi.

⁴¹ *Merva 2016c*, with the petrographic report by György Szakmány and Zsolt Bendő (*Szakmány – Bendő 2016*).

⁴² This would explain, in part, the reasons for the differences in the chronology of ninth–tenth-century settlements in the northernmost areas of Transdanubia and the contemporaneous settlements in western Slovakia and southern Moravia.

by the fact that the rite is not representative in some regions, while there is a higher incidence of grave pottery in others, or at least in some cemeteries in certain other regions. The latter cemeteries generally lie not in the heartland of the Carpathian Basin,⁴³ but in Transylvania and Slovakia, where the sites also have a ninth-century occupation period, suggesting that in these cases, it could have been an inherited, continuous burial rite (see the ninth–twelfth-century cemetery at Čakajovce-Kostolné-dúlő/Csekej in Slovakia,⁴⁴ or the ninth–eleventh-century cemeteries at Alba Iulia-‘Stația de Salvare’/Gyulafehérvár-Mentőállomás in Romania).⁴⁵ The tenth-century cemetery of Rusovce-Wiesenacker-dúlő (Oroszvár, SI)⁴⁶ is also relevant, particularly regarding Moravia. Owing to the spatial irregularity, the data provided by these sites are obviously unsuitable for establishing a settlement chronology, and especially for determining the sub-phases of the tenth century, by moving beyond what we already know. The analysis of the graves in north-eastern Hungary provides an excellent illustration of the homogeneity of tenth-century ceramic finds.⁴⁷ Instead of researching the ceramic vessels in graves, it would perhaps be more useful to analyse the funerary rite of the graves with vessels, but I would not like to digress again from my main theme.

It has become evident that to gain a better understanding of this issue, we have to experiment primarily with the scientific dating of settlement features in the context of the microregion’s one or more sites. Regarding the applicability of the methods for the given interval, i.e. the time of the Hungarian Conquest and an assumed contact period, unfortunately we cannot employ all the methods that are available for dating pottery sherds. Thermoluminescence dating is unsuitable owing to its wide error range ($\pm 10\text{--}15\%$),⁴⁸ as is radiocarbon dating for measuring the temper in ceramics⁴⁹ because organic tempers are not characteristic in this period. The radiocarbon dating of lipids from vessel walls⁵⁰ has not been used in early medieval ceramic research in Hungary, and the promising rehydroxilation dating, which is said to have a considerably small error variance (± 15 years), is currently being tested.⁵¹

Archaeomagnetic dating is employed increasingly more often in Hungarian research. A discussion of the relevance of this method is beyond the scope of the present paper, and I shall add only a single remark: the absolute dating of the raw data of the calibration curves is based on archaeological chronology, and thus it would be inappropriate to allude to its results regarding issues of the ninth–tenth centuries.⁵²

Reviewing the opportunities, radiocarbon dating seems to be the best choice in the research of early medieval settlements. In view of the uncertainties of settlement chronology reviewed in the above, even a one-hundred-year-interval can be seen as being significant information. The radiocarbon dates for some key early medieval sites such as Visegrád-Várkert-dúlő, Ménfőcsanak-Szeles-dúlő and Bácsa-Szent Vid domb (northern Hungary) indicate multilayered sites, supporting and/or complementing the periodisation based on the traditional classification of ceramic research. The relevant data provide the opportunity of distinguishing two horizons within the 2 sigma ranges: the late eighth and the ninth century, and the tenth century and the first third of

⁴³ One exception being the cemetery of Halimba-Cseres in western Hungary (for data on the ceramic vessels of the site, see *Szigeti – Szilágyi 2013*).

⁴⁴ *Rejholcová 1995*.

⁴⁵ *Ciugudean 2007*.

⁴⁶ *Horváth et al. 2012*.

⁴⁷ *Merva 2016d* 68–71.

⁴⁸ *Aitken 1982* 100–102.

⁴⁹ *Gomes – Vega 1999*.

⁵⁰ *Stott et al. 2001*.

⁵¹ *Wilson et al. 2012*.

⁵² *Merva 2012*.

the eleventh century. Combining these data with some more extensively analysed assemblages⁵³ we will have the possibility of a better understanding of the definition of the “contact period” on the regional level through the identification of mixed traditions in the material culture and its correct chronological determination.

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⁵³ Applying classification and statistical analysis to pottery in order to create a relative chronology offers some promising results. For related work in Slovakian and Moravian research, both leaders in this methodology in East-Central Europe, see *inter alia Fusek 1995; Fusek – Samuel 2013; Macháček 2001; Balcárková et al. 2017* 39–210.

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