

Agrarian technology in the medieval landscape

Agrartechnik in mittelalterlichen Landschaften

Technologie agraire dans le paysage médiéval

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Jan Klápště

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Broad rig, extending over 12ha, is highlighted by the rich green pasture at the abandoned township of Learable in the strath of Kildonan, Highland (Great Britain). The settlement was cleared to make way for sheep in 1815. Crown Copyright, RCAHMS DP 080129.

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Foreword

Claudia Theune
President of the Ruralia Association

The Ruralia association – Jean-Marie Pesez Conferences on Medieval Rural Archaeology organizes international conferences on current research topics of rural living environments. The meeting in Smolenice Castle, Slovakia, which took place in September 2013 put a debate in the foreground on a genuinely rural issue - agrarian technology in medieval landscapes. I like to warmly thank Matej Ruttkay, Peter Bednár, Marek Voječek and Barbara Zajacová as organizers for this initiative and for the realization of the conference. I am also most grateful to Jan Klápště for helping with this important topic.

Colleagues from all over Europe gathered to provide new results on aspects of agrarian technologies in rural landscape studies as such key subject of rural archaeology is often neglected. The comparative approach should consider the regional diversity of agricultural landscape in different European regions and the diversity consider the regional diversity of agricultural landscapes in different European regions and the diversity that occurs over time.

The main focus of the conference was concentrated on agrarian technologies in the medieval landscape as seen in different European countries. Landscape analyses has become and it is an appropriate moment to consider the underlying technologies that facilitated

agrarian development in the medieval and modern period but also in a *longue durée* perspective. It should be stressed that it was a target of the conference that beside archaeological records also iconographical, written and cartographic sources should be considered to gain a multifaceted insight to different and similar formations.

Changes and also continuous developments result from bottom-up as well as top-down processes. And while production technologies have generally been interpreted as key determinants of change, this remains a wide subject area for new insights and critical analysis. So it was asked to present new research results concerning special research questions as cultivation, livestock husbandry, gardening, viticulture, woodland management, agents and agencies of change.

Over 30 colleagues from almost 20 countries accepted the invitation and presented their research. Many of them could submit a manuscript and the publication thereof was supervised by a peer reviewing process. We now have the pleasure to present to the scientific community a tenth volume of the Ruralia proceedings with 27 substantial articles with a wide range of interdisciplinary analyses on agrarian technologies in medieval and modern landscapes.



Ruralia – a retrospect: 1994–2014

Alan Aberg, Honorary President

With the meeting of Ruralia at Smolenice our conferences have completed their tenth colloquium in a series that began in Prague in 1995. My library attests to the achievements of the committee and editor in arranging and publishing this sequence of meetings, with our proceedings taking up a significant space on its shelves, and this is perhaps a time to reflect on where and when our history began.

The real origins of course lie beyond our first meeting in the researches of Maurice Beresford, John Hurst, Jean-Marie Pesez, Zdeněk Smetánka and others, who demonstrated the importance of an archaeological contribution to our understanding of medieval rural society. The time, however, at which it was decided to inaugurate the Ruralia colloquiums is 1992, when the York Archaeological Trust, the Society for Medieval Archaeology and York University organised the International Conference on Medieval Europe at York. The meeting was planned on the basis of eight parallel sessions on different subjects e.g. urbanism, maritime studies, etc, and rural settlement made up one of these. Its programme included forty-two papers given by delegates from sixteen countries, and every session was marked by high attendance, and enthusiastic discussions that continued into the evenings. It was this level of interest during the four days at York which led to further discussion with Johnny De Meulemeester, André Matthys and Zdeněk Smetánka on maintaining this impetus and arranging regular meetings of a forum to hold together those who had met in York.

A first step was arranged at the Service des Sites at Monuments national of Luxembourg, thanks to the good offices of John Zimmer and on the 17th June 1994 an informal working party met, when André Bazzana, Terry Barry, Haio Zimmermann, Jean-Marie Pesez and Jean-Michel Poisson joined the group from York, to formulate the way forward. It was agreed to plan a conference at Prague in 1995, to invite papers from across Europe, to ask that papers be presented in English, French or German, and that a committee be constituted to arrange the colloquium in Prague. To obtain wider representation and devise the programme for Prague André Ervynnek, Petr Sommer and Zdeněk Smetánka were invited to join the committee and this met on 4th November, 1994 at the Division du Patrimoine, Région wallonne, Namur. Heiko Steuer was in-

vited but could not attend due to other commitments. It was this advisory group that agreed on the name 'Ruralia'. Petr Sommer and Zdeněk Smetánka offered the assistance of the Institute of Archaeology, Prague, as the publisher of our proceedings, and the pattern was set for our colloquiums of choosing a theme for each meeting within the terms of reference of European rural settlement between the Early and High Middle Ages. For the first meeting in 1995 it was accepted that we try to obtain an overview of current research and wider representation on the committee to cover all European countries. Some eighty delegates attended the inaugural colloquium that founded the series we have now celebrated.

Since 1995 our proceedings, edited by Jan Klápště, have appeared in a succession of volumes that document our history. In that period some four hundred delegates have attended our colloquiums and we have heard over three hundred papers on aspects of medieval rural settlement. We must not however pretend that our common objective has ended yet, and remember it has instead opened up the complexities of the subject and the benefits of interdisciplinary study. Archaeologists, building historians and environmental scientists have all offered us an insight into their research and knowledge that has opened new lines of enquiry.

Ruralia I carries a foreword by our then President, Jean-Marie Pesez, which summarises our hopes in 1995 when we set out on this path. Following his premature death in 1998 it was decided to dedicate our conferences to his memory, and his name was added to our title. The wide representation of European colleagues on our international committee reflects how far we have taken that ambition, and we have settled into a pattern of meetings at varied European venues, where we have benefited from the support of many institutions and government agencies. The chance to understand the varied regional landscapes and formats of medieval rural settlement under expert leadership is a key factor in research, while the constant support of the Institute of Archaeology, Charles University, in Prague has been equally important in disseminating publication. We have been fortunate to have had Jan Klápště as our editor, who has ensured that Ruralia appears regularly and promptly after each meeting. No review of the past of Ruralia can fail to pay tribute

to Johnny De Meulemeester, who as Secretary and President served tirelessly to promote our subject and who saw from the beginning the need for the wider European horizons we have put at the core of our objectives. Christopher Gerrard in his review of Ruralia

I for Medieval Archaeology wrote “..... if the chronological and geographic spread of papers is balanced and the themes well focused, then something really worthwhile can emerge”. That for Ruralia is an objective to be cherished and retained for the future.



Potential husbandry strategies in 10th-century settlements in the Carpathian Basin.

A case study: Two early medieval sites along the River Danube¹

Potentielle landwirtschaftliche Strategien in den Siedlungen
des 10. Jahrhunderts im Karpatenbecken. Eine Fallstudie:
Zwei frühmittelalterliche Fundorte an der Donau

Stratégies potentielles d'agriculture dans le Bassin des Carpates du 10^e siècle.
Une étude de cas: deux sites du Haut Moyen Âge le long du Danube

Szabina Merva

Introduction

The present paper discusses various potential husbandry strategies in the Carpathian Basin during the 10th century. It was at this time that the last step in the migration period occurred; namely, when the Ancient Hungarians conquered the Carpathian Basin at the end of the 9th century, and the medieval Kingdom of Hungary was founded a hundred years later.

A general overview of the Carpathian Basin is presented. The Hungarian Conquerors may have modified the overall picture of the agriculture practised in the new territory, with their knowledge transfer concerning husbandry from the Eastern European steppe (Balassa 1973, 248–270). Although we cannot estimate the degree of their effect, there is no doubt that the interaction between the two peoples, the surviving inhabitants and the newcomers, may have extended to agriculture. By presenting two early medieval settlements along the Danube, this study focuses on the detectable husbandry strategies in a brief comparative analysis. The 10th century settlements are not easily identified archeologically, and period itself needs to be studied within the context of 8th and 9th-century developments across the region.

Challenges posed by the data sets

Research of early Hungarian history, i.e. principally of the time before the Ancient Hungarians conquered the Carpathian Basin, is generally the lifeblood of the archaeology of the 10th-century Carpathian Basin:

there is not a single subject that could dispense with it. The question of husbandry poses several problems that – directly or indirectly, but undeniably – pertain to early Hungarian history. The three main points are the following:

Identifying the Eastern European settlement territories of the ancient Hungarians

To understand clearly the importance of the preceding period, it is necessary to consider the role that Khazar Khaganate had been one of the settlement territories of the ancient Hungarians for 300 years. It became important to search for analogues or to compile comparative analyses of data from this territory and, by association, the Saltovo-Mayatskaya culture (Fodor 1975b), by considering graveyards (Bálint 1975; Fodor 1973; 1975b; 1994), by analysis of specific ceramics (Mesterházy 1975; Fodor 1975a; 1984; 1985; Takács 1986), as well as researching linguistic data (Gombocz 1960). It appeared that the influence of the Saltovo-Mayatskaya culture had played an important role in the changes of the ancient Hungarians' life-style, namely that they started to settle down, live in pit-houses and plough the land. Several Hungarian scholars emphasised the Eastern European influence (Fodor 1975b; 2006; Bálint 1975; 1989; 1999 about the research trend, the so called 'Orientpräferenz'). Some archeobotanical analyses also included comparisons with the Saltovo territory (Gyulai 1998, 131). It led to some conclusions that are no longer tenable; namely, that the so-called Levedia cannot be localised in the discussed territory, and the ancient Hungarians had not even lived in the region for years (Türk 2012).

¹ The present paper was written within the framework of the project "Centuries of Transformation. Settlement Structures, Settlement Strategies in the Central Parts of the Carpathian Basin in the 8th–11th Century" (OTKA Grant No. 104533).

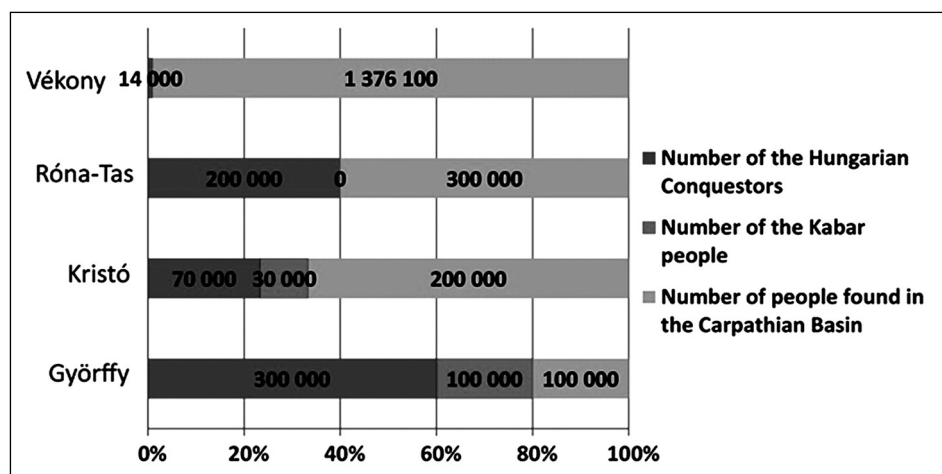


Fig. 1. Rate of estimated number of people at the end of the 9th century, in the Carpathian Basin. After Györffy 1963, 46–47; Kristó 1995, 144; Róna-Tas 1996, 277; Vékony 2001, 99–100.

The relationships between the two populations and their lifestyles

It is important to bear in mind that we have to re-think the questions since there are hardly concrete answers to be given, as we are dealing with a rather unstable system of correspondences. Several significant studies on the lifestyles of the ancient Hungarians exist (see the next section for more details). The research favours either the settled or the nomadic/semi-nomadic lifestyle (see the emblematic scientific debate between Kristó and Takács: Kristó 1995, and the reaction: Takács 1997). Yet it is important to emphasise that the lifestyle of the ancient Hungarians and the lifestyle of the late 9th-century inhabitants across the Carpathian Basin should not be merged as one.

The question concerning social organisation within the Basin during the 10th century is considered, with archaeological perspectives, and must take account of surviving late Avar populations (Dienes 1972, 22; Istvánovits 2003, 442–449). It raises issues associated with, for instance, the relationships between the ancient Hungarians and the people who survived the 9th century; the ratio of these two groups (Fig. 1; Györffy 1963, 46–47; Kristó 1995, 144; Róna-Tas 1996, 277; Vékony 2001, 99–100; Takács 2006b); the point at which assimilation occurred; and the time-frame from which standardised finds, specifically standardised ceramics occurred as “typical” 10th–11th-century pottery. Other considerations include the degree to which surviving populations affected the Hungarians’ lifestyle and *vice versa*, and the extent to which such cultural distinctions and ambivalences are witnessed in husbandry, general overall settlement patterns and building types. As so much of the detailed information required to answer these questions remains outstanding, it remains an area that must be approached cautiously.

Ceramics remain an area of key importance, and when they occur in combination with graves, research-

ers are offered excellent potential. In what is referred to as the Subotcy find horizon, the deceased were buried in graves with a typical Tmutarakan ware jar (Bokij –Pletněva 1989, 88, Fig. 2:5; Fig. 2 : 9). At Korobčino, a jug was recovered that is morphologically similar to the grey or black Saltovo jugs, but its analogues can also be found in the graves of the Volga region (Prihodnuk – Čurilova 2002, 186–189, Fig. 4:2; Fig. 2 : 10). The site of Slobodzeâ, Grave 18, in the Dniester region, revealed as Tankeevka type jug, showing the strong connection between the Subotcy find horizon and the Volga–Southern Ural region (Serbakova –Tasi –Telnov 2008, 118, Fig. 7:3; Fig. 2 : 11). A newly published 8th- to 9th-century cemetery at Proletarski, Grave 1 from the Samara area in the Middle Volga region, has jugs and pots that are general types of this era found in Eastern Europe (Iatsenko 2007, 193–195, Fig. 3:2–3; Fig. 2 : 8). There are three examples from the Volga–Kama–Southern Ural region, namely Bolsije Tigani (Khalikova – Kazakov 1981; Fig. 2 : 6–7), Bolsije Tarhani (Kazakov – Khalikov – Chuzin 1990; Fig. 2 : 2, 4–5) and Tankeevka (Khalikova – Kazakov 1977; Fig. 2 : 3). Like the ceramic finds of the Kushnarenkovskaya culture (Botalov 2012; Fig. 2 : 1), the typical polished Saltovo jars and the Tankeevka-type vessels are rather representative of these sites. We can establish clearly from analysis of their formal and decoration typology, and their texture and tempering, that there are no connections with ceramic assemblages dated from the Hungarian Conquest in the Carpathian Basin (see Fig. 2 : 12–14). These types do not appear in this territory, not even as unique finds. This significant result suggests that we can reconstruct a phenomenon which is generally typical of people with nomadic husbandry, namely that they do not have their own pottery and pottery-tradition (or only in a limited number and low quality), but characteristically use the pottery products of their current environment (see for instance the Avars: Vida 1999, 175–177).

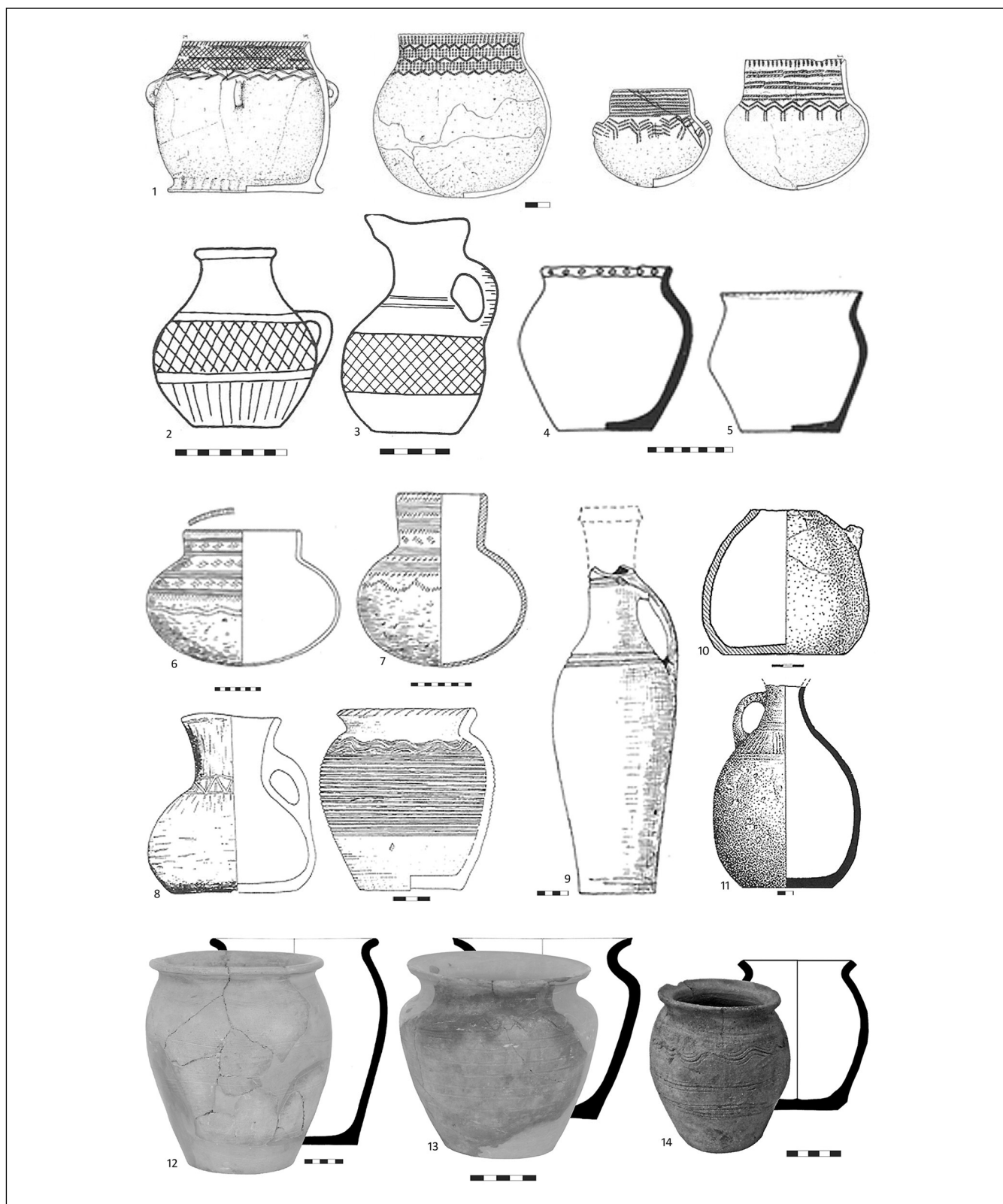


Fig. 2. Pottery from graves in Eastern Europe, which are relevant from early Hungarian history. East of South-Ural: – 1. Site of Uelgi, Kushnarenkovskaya pottery (Botalov 2012, 140, pyc. 11.), The Volga–Kama–Southern Ural region: – 2. Site of Bolsije Tarhani, Grave 250. (Kazakov – Khalikov – Chuzin 1990, 142, 3:12), – 3. Site of Tankeevka, Grave 623. (Kazakov – Khalikov – Chuzin 1990, 150. Taf. 6:12), – 4–5. Site of Bolsije Tarhani, Grave 228, Grave 36. (Kazakov – Khalikov – Chuzin 1990, 138. Taf. 1: 5, 9), – 6–7. Site of Bolsije Tigani, Grave 38, Grave 28. (Khalikova-Kazakov 1981, 114, Fig. 16:33, 121, 23:23), The Samara area in the Middle Volga region: – 8. Site of Proletarski, Grave 1 (Iatsenko 2007, 193–195, Fig. 3:2–3), Dniester region: – 9. Site of Subotcy, Tmutarakan ware (Bokij – Pletnëva 1989, 88, Fig. 2:5), – 10. Site of Korobčino, Saltovo jug (Prihodnük – Čurilova 2002, 186–189. Fig. 4:2), – 11. Site of Slobodzeâ, Tankeevka type jug (Serbakova – Tasi – Telnov 2008, 118; Fig. 7:3), Carpathian Basin: – 12. 8–9th century pottery from the Carpathian Basin (Visegrád, N-Hungary), – 13. 10–11th century pottery from the Carpathian Basin (Visegrád, N-Hungary), – 14. 10–11th century pottery from the Carpathian Basin (Kistokaj-Homokbánya, stray find. NE-Hungary).

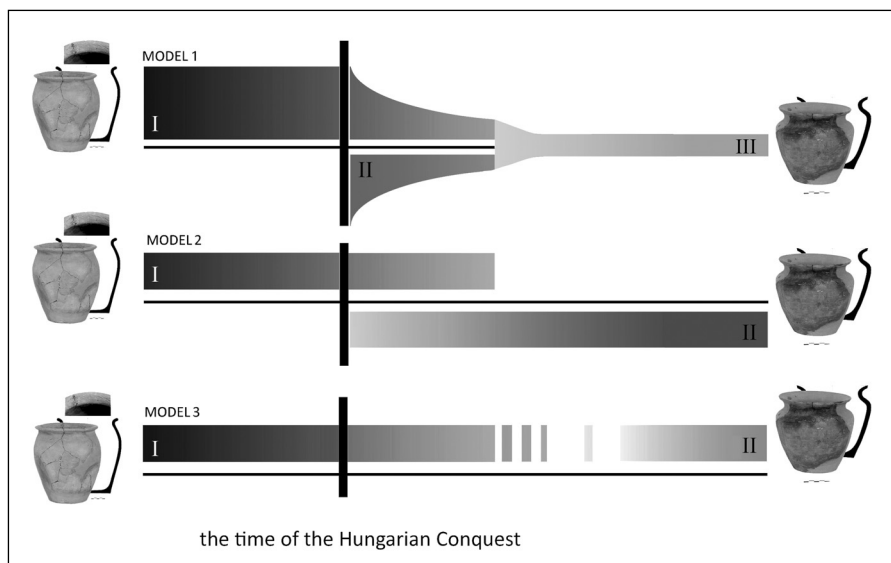


Fig. 3. Modelling the process: the development of the 10th- to 11th-century pottery in the Carpathian Basin. – Model 1: I: late Avarian pottery-tradition, II: the pottery-tradition of the Old Hungarians. III: the standardised 10th- to 11th-century pottery, as the result of the interaction of the two pottery-traditions. – Model 2: I: late Avarian pottery tradition, II: the pottery-tradition of the Old Hungarians. – Model 3: I: late Avarian pottery tradition, II: the standardised 10th- to 11th-century pottery, transformed from the late Avarian pottery-tradition.

If we assume that this also applies to the conquering Hungarians, then we can deduce the more or less standardised settled lifestyle, husbandry, architecture and pottery of the 10th–11th century from the settled lifestyle, husbandry, *Grubenhaus*-type buildings and pottery of the 8th–9th century. (Thanks to late Avar settlement archaeology we can reconstruct the general 8th–9th century lifestyle. (Takács 2009, 698–703; Gyulai 2010, 173–191)). Since none of the above aspects is ethno-specific, the hypothesis cannot be refuted, but, as this reasoning would also simplify the supposedly one-time colourful picture, it would be incorrect to ignore other hypotheses. The conclusion appears to be clear; namely that life in the Basin was not exclusively nomadic, semi-nomadic or permanent settlement, and that much was owed to a sense of continuity from the 8th to 9th century.

Chronological problems

It has been argued, that “the chronology of these settlements is extremely uncertain. The qualification that a settlement can be dated back to the Árpád age (or to the 10 to 11th century) gets us nowhere if we are specifically interested in the conditions at the turn of the 9–10th century.” (Kristó 1995, 12). Two decades later, it remains very difficult to identify Árpadian settlements with traditional archaeological methods.

It cannot be proven that there would have been potters among the ancient Hungarians, and that they would have brought a pottery tradition with them. We cannot therefore define the starting point of the development of the ceramic finds that are considered as typical 10th- to 11th-century pottery, or know when the standardised forms became standard (Fig. 3). I would argue that the most possible solution lies with model 3.

Just as it remains difficult to identify 9th- to 10th-century cemeteries (Tomka 2010), it is also of keen interest to discover settlements that survived the Hungarian Conquest. It is even difficult to identify the sites that started in that time, as the first settlements of the Hungarians in the new territory. Despite a plentiful corpus of pottery, the difficulty lies in the fact that it has a broad chronology that cannot be refined more closely than a two-hundred-year interval (that is, the 10th to 11th century). These unsolved chronological problems can doubtlessly be attributed to the lack of some basic research. Besides the fact that there are only a couple of settlements from the early Árpád age (that is, 10th to 11th century) that have been analysed exhaustively, a very important starting point of 10th-century settlement archaeology was published recently. The study in question discusses those sites from the given period that include excavated metal and carved-bone artefacts of 10 to 11th-century date, since these finds are more narrowly dateable because of cemetery-chronology, and can serve as fixed points for the contemporary settlements. There are however only 48 such sites that can be included in this analysis, representing a total of 102 artefacts from the whole Carpathian Basin (Langó 2011).

The available database, and problems of sampling

In order to draw conclusions about the husbandry strategies of the period based on the settlement archaeology of the early Árpád age, it is important to note the order of magnitude of the available data, namely: 1. the number of the settlements that can be dated to the given period; 2. the number of the analysed and published settlements; 3. the number of sites where

archaeobotanical and archaeozoological research has been carried out. In this connection one is confronted by the fact that there is not a single published early Árpád age settlement where both archaeobotanical and archaeozoological analyses have been done.

1. The number of the sites that are relatively well-dated to the so-called early Árpád age based on metal or carved bone finds is surprisingly low (Langó 2011). Furthermore, most of these sites are ongoing excavations and their stratigraphic information has not been outlined, making it impossible to see how large and what type the given settlement would have been. Of these, there are only six agricultural tools from five sites. (Langó 2011, 247) This assemblage of sites sits within a larger corpus of 732–781 locations where excavations have occurred on early Árpád age settlements across the Basin within Hungary.²

2. The number of *completely* analysed and published sites (with reliable dating) is also unfortunately extraordinarily low (seeing some dominant excavations: Horedt 1979, Lázár 1998; Herold 2004; Simonyi 2010). In the absence of suitably dated settlement horizons, the scientific sampling can encumber the exact and proper interpretation. Sampled features and settlements remain unanalysed and unpublished. The only sources about their chronology are previous reports, and several times their dating may have to be reconsidered. The chronology of individual features is also uncertain. Instead of a detailed analysis, the chronology of the feature has tended to be equated with the chronology of the site.

3. It had been estimated that only 12 sites dating from the 9th to 12th century were subject to archaeozoological and archaeobotanical analyses (Bartosiewicz 2008, 85). This modest number has grown in recent years. An archaeozoological analysis was available from 17 settlements of period in 2013 (Daróczy-Szabó 2013, 129, Fig. 55). Presently I have knowledge of a further six early Árpád age settlements where archaeozoological analysis has been completed at Győr-Ece, within a 9th- to 10th-century settlement horizon (Daróczy-Szabó 2009); at Esztergom-Szentgyörgymező, within a 10- to 11th-century context; at Visegrád-Várkert, in 8th- to 11th-century levels; at Szabolcs and at Sály-Lator, during the 10th to 11th century (Vörös 2009, 134, Fig. 2.); and at Ménfőcsanak-Szeles dűlő, in a 10- to 11th-century context (Bartosiewicz 1995, 374, Fig. 22.).

There is only a single site that has had archaeobotanical analysis which is dated back to either the beginning of the 10th century or within the 10th century

proper, at Lébény-Billedomb (Gyulai 2010, 197; Gyulai 1998, 134). In addition, there are a further seven sites of 10th- to 11th-century age: Kardoskút-Hatablak, Tiszaörvény, Endrőd, Keszthely-Halászcserda, Esztergom-Kovácsi, Visegrád-Várkert dűlő, Szabadkígyós-Páliget (Gyulai 1998, 133–138). It is important to note again that none of these sites has been fully analysed. There is also a small assemblage of other sites mentioned where food, drink and other remains are documented or analysed (Gyulai 2010, Tab. 1, 394–437), and there are some 20 sites dated to the 12th century, where seed and fruit remains have been documented (Gyulai 2010, Tab. 2, 438–441).

The dating issues and the very small number of properly assessed sites caution against drawing too many general insights from such a limited dataset.

Geographical conditions, lifestyle and the potential husbandry strategies

Other disciplines are useful for providing insight, including contemporary historical sources, linguistic data, paleoclimatologic evidence, and ethnographic information, all of which can provide useful information to assist in a broad-based reconstruction of the picture. Several contemporary written sources survive, and these suggest a more or less nomadic lifestyle (see Djayhani, Ibn Rusta, Gardízi and Leo the Wise: Kovács-Veszprémy 1995). For its part, the linguistic data can be quite revealing, even if the time, place and the circumstances of the vocabulary adaptation are uncertain. There are, for instance, several plant names that survive, along with words associated with cultivation, and animal breeding that are Finno-Ugric, Turkish or Slavic loan-words.

Finno-Ugric words include: *köles* (common millet), *kenyér* (bread), *csegely* (wedge-shaped ploughland), *fűt* (bunch), *meggy* (sour cherry), *fű* (grass), *ág* (twig), *falu* (village), *ház* (house), *nyomat* (track), *vág* (cut), *tér* (area) (Lakó 1967–78; Zichi 1923, 2–40). The most important Bulgarian-Turkish words connected with farming from before the conquest were: *eke* (plough), *árpa* (barley), *búza* (bread wheat), *arat* (reap), *sarló* (sickle), *bogyla* (hay stack), *tarló* (stubble-field), *őröl* (grind), *gyümölcs* (fruit), *alma* (apple), *körte* (pear), *mogyoró* (hazelnut), *dió* (walnut), *kökény* (sloe), *galagonya* (blackthorn), *som* (cornel-berry), *bor* (wine), *gyom* (weed), *gyertyán* (hornbeam), *gyűrűfa* (ringtree), *kőris* (ash-tree), *tátorján* (a kind of flower) (Zichi 1923, 49–65; Gombocz 1960, 20–21; Ligeti 1986, 287–294). Some additional Bulgarian-Turkish words are connected to horse breeding, as well as other animals: *nyereg* (saddle), *fék* (curb), *eb* (dog), *róka* (fox), *nyest* (mart), *nyúl* (rabbit), *farkas* (wolf), *lúd* (goose), *öszvér* (mule), *tehén* (cow), *ökör* (ox), *borjú* (calf), *barom* (cattle), *kecske* (goat), *disznó* (pig).

² Based on Miklós Takács's lecture on the conference of "Hadak útján", in 2012.10.04., Visegrád, Hungary.

tyúk (chicken) etc., as well as: *karám* (sheepfold), *ól* (pound), *karó* (post), *vályú* (trough) (Gombocz 1960, 5, 9; Ligeti 1986, 237–239, 244–245, 278–287; Vörös 1997, 57–58).

Environment and husbandry

One sees across part of the region a continuity of the forest steppe, and with this (in the Transylvanian Basin, the Partium and the Hungarian Great Plain) the use of husbandry methods that had existed in the greater forest steppe region to the east (Hortobágyi – Simon 1981). But with the similarities there were also differences. The “little climatic optimum”, which existed between 900 and 1300 AD creating the warmest conditions in two millennia, also resulted in a much smaller area of land suitable for pasture (Rácz 2008, 52, 56).

Lifestyle – social stratification – ethnicity?

The title of the section is provocative, especially in view of the wider limitations, yet it only presents the characteristic approach of former research briefly summarized as follows. We cannot discuss the concepts of nomadic and semi-nomadic lifestyle within the framework of this study, but there are many publications aimed at their clarification (see the summary by Szabadfalvi 1997). It should be emphasised that researchers primarily build upon the Hungarian animal-breeding of the 19th to 20th century. Most researchers believe that extensive farming was undoubtedly part of the lifestyle of the ancient Hungarians, or at least for the groups at the top of their social hierarchy. The debate is about the focus within their husbandry, as well as about the significance of cultivation to the life of the Hungarians arriving from the East. Naturally, no exclusiveness is meant in the case of nomadism either (Szabadfalvi 1997, 69–70, 73, 77). The starting point of theoretical discussion is that the 10th-century social and/or ethnic groups – preferring different natural environments – would have preferred different husbandry strategies.

A characteristic approach of previous research was that the conquering Hungarians were nomadic people who had their lands tilled by Slavic people (see the summary concerning the early ethnic interpretation of common people: Langó 2007, 88). Archaeology, however, suggests that the reality was more complex. Béla Szőke discussed the question in 1962: the number of the conquering Hungarians exceeded that of the resident populations. The analysis of the graveyards of common people, which are identified as an anthropologically less homogenous common people of the conquerors, suggests that they conducted a settled life-

style and engaged in farming, in contrast to the lifestyles of their lords (Szőke 1962, 101).

According to Györffy, the semi-nomadic lifestyle could have been characteristic in the Great Plain flatlands, while on the forested hills and mountain ranges small livestock farming was practised together with slash-and-burn farming (Györffy 1977, 405).

Special attention was devoted to the correspondence between soil types and various husbandry strategies and social groupings. The first consideration was by Gyula László, who argued that the late Avar and the Hungarian settlement territory complemented each other (László 1944, 67). He also created the so-called “double conquest hypothesis” (László 1944, 95–101). Németh subsequently pointed out that the graveyards of the common people, which were more numerous, were always found in the fertile loamy, loess grassland and the forest soils of the Great Plain and Transdanubia, and in each case close to the rivers swarming with fish. The sandy grasslands of the Great Plain were not occupied, people settled in fertile areas. This can be explained by crop production (Németh 1973). With a similar logic, Bálint showed that certain, putative 10th-century social and/or ethnic groups preferred different trends in the field of husbandry, as the map of the various cemetery-types suggests. According to this observation, the super-stratum and the sub-stratum lived in geologically separate territories, since the burial sites of the elite with horses and rich enclosures can be found in the sandy soil steppe regions (Nyírség, Duna-Tisza region, Mezőföld, Small Plain) (Bálint 1980, 35–52).

Gyulai observed migrating livestock alongside a limited extent of cropping and tillage in his considerations of the archaeobotanical and the archaeozoological results from Árpád-age sites. The fact that sheep and cattle bones dominate the faunal remains, which is quite typical for a nomadic lifestyle, does not contradict the predominantly stock-farming lifestyle of the ancient Hungarians, who arrived in the Basin with farming and crop-producing skills (Gyulai 2010, 196).

Environmental circumstances – lifestyle?

One of the most important questions is how the husbandry of the two groups (i.e. the surviving late Avars and the ancient Hungarians) can be separated, if they were separated at all. Traditionally the choice of settlement area was thought to have been determined by the preference for suitable geological, microclimatic, hydrological, vegetational circumstances to suit a pre-existing tradition of exploitation. However, there is certain data that suggests an opposite phenomenon; the surviving late Avars, for instance, as the descend-

ants of the Hungarian Conquerors who settled down and were assimilated to the existing circumstances over, adapting to the natural environment, and changing their husbandry accordingly. Overall, it appears that agriculture was nuanced west and east of the Danube, because of different environmental circumstances (see some examples in Gyulai 2010, 197–203). This is not a specific feature of the 10th to 11th century, but it is generally held for the whole of the Árpád age (for instance, see: Vörös 2000).

The two main approaches show the complexity of the question. Naturally, the two factors do not exist independently of each other and neither of them can be excluded, even if it is hard to imagine that a generation or two after the conquest, the descendants would have given up the knowledge and tradition they had brought with themselves from Eastern Europe.

It underlines the requirement for complex analyses when excavating individual sites. To cite an example, which is merely a tiny, worked out piece of the mosaic: the investigation of the geohistory of Bátorliget marshland (Sümegi – Gulyás 2004) drew attention to what was an unknown circumstance: an artificially created fish pond was radiocarbon-dated to the 10th century (Takács 2004, 268–272), immediately challenging the accepted views of early Hungarian lifestyles.

Comparative case study: the settlement of farmers and the settlement of craftsmen

Such a lengthy introduction and discussion of the challenges facing this line of research is necessary to show the significance of the next short, but published comparative analysis of the husbandry strategies of two early medieval settlements, which is the focus of this paper (Fig. 4 : 1). Fortunately, archaeozoological and archaeobotanical analyses have been partially or fully carried out in both instances, and the present writer has been responsible for the stratigraphic reports. As the research lies firmly within the field of settlement archaeology, the traditional intellectual framework based on the research of extensive nomadism and nomadic buildings (yurts) has been excluded.

Győr-Ménfőcsanak-Szeles dűlő (NW-Hungary) – the settlement of people dealing with animal breeding

The site is located in Győr, in Northwestern Hungary. The excavated part of the early Árpád age site is situated near the old unregulated watercourse of the Rába River, on a longitudinal expanse of alluvium

(Fig. 4 : 2). There were three excavations in the area during the 1990s (Takács 2006, 537–538; 2006, 539; Egry et al. 1997, 72–73). From a settlement area measuring 2.5 ha in size, some 200 settlement features were excavated, among them rectangular ditches that are interpreted as sheepfolds and represent evidence for intensive farming (Fig. 4 : 3). Besides the general types of pit-houses, a special stockhut of round plan (Sabján – Takács 2002) also appears at the site. The dating of the metal finds and a coin find (1048 AD *terminus post quem*) provide independent chronological insight, which is set alongside the stratigraphic record and an archaeomagnetic data (Márton 1996, 393, Table 1.), to help determine the chronological phases of the settlement. The archaeozoological results harmonise with the indications that are revealed in the features. Only 11.41 % of the bones are pig; 22.87 % caprovine; about 12.10 % horse, and 51.57 % cattle³ (Fig. 4 : 5). The archaeobotanical results in turn indicate the presence of a wide spectrum of cereals (comprising various types of wheat, rye, barley, millet and some weed). There was also some species of wild and raised fruits (Jerem 1995, 18). The soil analysis shows that it was rich in organic matter, which would be advantageous for cultivation (Jerem 1995, 16–17). According to the information from the excavations, it may have been the settlement of a community dealing with intensive cattle-breeding, and cultivation may possibly have played a significant role.

Visegrád-Várkert dűlő – the surviving 8th- to 11th-century site and early Árpád age artisan settlement

The site is located in North Hungary at the Danube Bend, on the slopes to the river bank in Visegrád (Fig. 4 : 6). The slope is geographically structured by smaller combs and gullies. The latest phase of the site is perhaps integrally related to the early royal centre, which was mentioned in a charter of Veszprém from 1009 AD (Györffy 1992, 52). According to the written source the name of the centre is *Vyssegrad civitates*, an undoubtedly West Slavic toponym. During the researches from the 1950s (led by I. Méri and J. Kovalovszki), an. 0.4 ha area was excavated. In the course of eighteen excavations, 37 houses, 11 pits, 2 outdoor ovens and 3 features connecting with metal smelting were investigated, along with, late Árpadian age church and 463 graves. Half of the settlement features are radiocarbon-dated to the end of the 8th century to 9th century. The remaining evidence belongs more generally to the 8th to 10th century, or 10th to 11th century.

³ The present author wishes to thank László Bartosiewicz for the archaeozoological results.

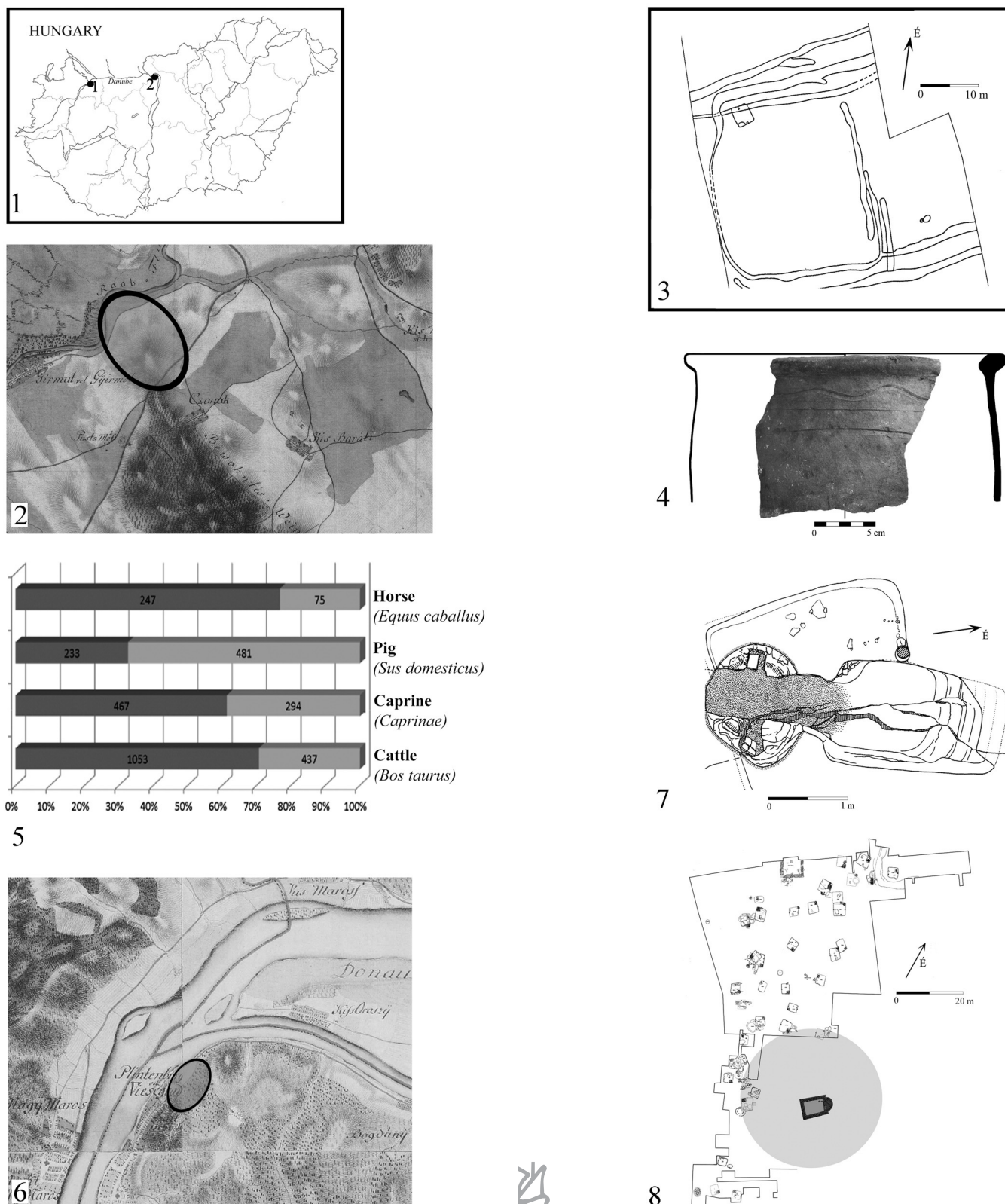


Fig. 4. – 1. Map showing the location of Ménfőcsanak-Szeles dűlő (1), and Visegrád-Várkert dűlő (2). – 2. Ménfőcsanak-Szeles dűlő (NW-Hungary), the site on the First Military Mapping Survey of Austro-Hungarian Monarchy (1763–1785). – 3. The ground plan of a sheepfold at the site of Ménfőcsanak-Szeles dűlő. – 4. The typical early Árpád age vessel type, the clay cauldron, used especially for cooking meat meals, as stew, from the site of Ménfőcsanak – Bevásárlóközpont, Feature 559. – 5. Analysis of the archaeozoological finds from the two sites. Grey: Visegrád-Várkert dűlő (Bökönyi 1974, 431, Vörös 2009, 137, Table 5), Black: Ménfőcsanak-Szeles dűlő (after the previous report of L. Bartosiewicz.) – 6. Visegrád-Várkert dűlő (N-Hungary), the site on the First Military Mapping Survey of Austro-Hungarian Monarchy (1763–1785). – 7. Bronze-melting oven from the site of Visegrád – Várkert dűlő (Kovalovszki 1994, 449, Fig. 2). – 8. Excavation map of the site of Visegrád-Várkert dűlő. (Kovalovszki 1986, Appendix 3).

Continuity of settlement cannot be excluded, and it is certain that – contrary to previous research – an 8th- or 8th- to 9th-century horizon is certainly documented in the case of both this site and of Visegrád-Sibrik domb. In contrast to other early medieval sites, it is conspicuous that there is not a single ditch here (Kovalovszki 1986, 63; Fig. 4 : 8), and there are some bronze-melting ovens as well for skilled metalworking (Kovalovszki 1994; Fig. 4 : 7). The archaeozoological analysis indicates a different profile to that associated with livestock communities. Here, there were ca. 25 % cattle, 17 % caprovine and 4% horse, but the rate of pig bones is relatively high, ca. 28 % (Bökönyi 1974, 431, Vörös 2009, 137, Table 5; Fig. 4 : 5), as well as the rate of poultry is significant. The results suggest a settled lifestyle. It is therefore entirely in keeping that the archaeobotanical remains include some garden vegetables, like the common lentil, chickling vetch, or other seeds, like the wild pea or hemp (P. Hartyányi – Nováki – Patay 1968, 62).

Conclusion

Generally ethnicity has not featured as a principal observation of these two studies, but it is perhaps worth mentioning Visegrád, that there was a continuity in the toponym, suggesting that the 8th- to 9th-century population, which were presumably West Slavic, could have continued on site into the 10th to 11th century. It is also important to emphasise that these settlements cannot be associated with social classes. The indications of a settled lifestyle at Visegrád is in contrast to the 'average' early medieval settlement, and the site clearly also lacked ditches and sheepfolds that are otherwise connected to intensive breeding. It is also surprising that there is not a single early example of the typical ceramic from the period, namely the clay cauldron (Fig. 4 : 4). This may suggest a different gastronomy, compared with the diet of the community in Ménfőcsanak. In the latter settlement, according to the archaeozoological analysis, the predominance of cattle is clear, which is a strong indicator for the practice of intensive cattle breeding, and this is supported by the presence of sheepfolds. The emblematic clay cauldron mentioned above (Takács 1986), which is for cooking stew, is a characteristic part of the ceramic material on this site.

This comparative analysis has highlighted the supposed mosaic-like pattern of early medieval lifestyle and husbandry strategies in the Carpathian Basin, and has demonstrated that a better understanding of the kinds of relevant answers will come from a multi-disciplinary approach where archaeology is the driving force.

Summary

Present paper discusses the potential husbandry strategies in 10th-century settlements in the Carpathian Basin. In the first part of the article the author presents the challenges posed by the data sets, the available database concerning the topic, as well as the problems of sampling. Henceforth the most important points and typical research questions of the research history are discussed. After reviewing the research situation, in the focus of the paper there is a comparative case study. The casework deals with two early medieval settlements along the river Danube, in the case of which archaeozoological and archaeobotanical analyses have been partially or fully carried out, and the present writer has been responsible for the stratigraphic reports. In the case of the site, which can be dated back to the 10th–11th century, the practice of intensive cattle breeding is observable, in contrast to the other site, which is dated from the 8th–9th – and maybe with continuity – to the 10th–11th century, where the handicraft could have been the dominant activity in the life of the settlement.

Zusammenfassung

Im Rahmen der vorliegenden Arbeit wird ein Überblick über die potentiellen landwirtschaftlichen Strategien in den Siedlungen des 10. Jahrhunderts im Karpatenbecken gegeben. Der erste Teil des Artikels stellt Forschungsprobleme und die Datenbasis der einschlägigen Fundorte vor. Des Weiteren wird ein Überblick über die Forschungsgeschichte gegeben bevor schließlich die Landnutzungsstrategien im Rahmen einer Fallstudie vergleichend dargestellt werden. Zwei Siedlungen an der mittleren Donau, zu denen archäozoologische und archäobotanische Auswertungen vorliegen, werden dazu archäologisch ausgewertet. Die beiden Siedlungen unterscheiden sich in ihren chronologischen Laufzeiten, aber auch in ihren wirtschaftlichen Grundlagen: In der ab dem 10. Jahrhundert laufenden Siedlung von Győr-Ménfőcsanak-Szeles dúlő zeigt sich die Bedeutung der Viehzucht. Die zweite Siedlung Visegrád-Várkert dúlő bestand vom 8./9. Jahrhundert kontinuierlich bis ins 10./11. Jahrhundert und wurde überwiegend von Handwerkern bewohnt.

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