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INHALT – CONTENTS

Abbreviations 9

Transformation und Konfrontation mit der römischen Tradition in der Spätantike und im frühen Mittelalter – Romani und Barbaren in West- und Ost-Mitteleuropa / Facing and Transforming the Roman Tradition in the Late Antiquity and the Early Middle Ages – Romanness and the Barbarians in Western and Central Europe
Budapest, 10th–11th November 2016

Péter Kovács: Et semper habitatio imperatorum est – Notes on the imperial residences in Pannonia in the Late Roman period 13

Friderika Horváth – Anett Miháczi-Pálfi – Sándor Évinger – Zsolt Bernert: Barbarisierte Römer – Romanisierte Barbaren? Interpretationsmöglichkeiten der fremden Komponente am Beispiel des Gräberfeldes von Somogyszil 39

Anett Miháczi-Pálfi: Form- und herstellungstechnische Analyse der Bügelfibeln von Balatonszemes aus dem dritten Viertel des 5. Jahrhunderts 67

Vujadin Ivanišević – Ivan Bugarski: Transformation of burial space in the cities of Northern Illyricum during the Late Antiquity 91

Orsolya Heinrich-Tamáska – Roland Prien: Keszthely-Fenékpuszta in der Spätantike: Ein Vorbericht über die deutsch-ungarischen Ausgrabungen zwischen 2009 und 2017 119

Róbert Müller: Romani et Barbari in der Keszthely-Kultur 147

Adrienn Blay: Überlegungen zur Bedeutung und Gültigkeit des Begriffs „Keszthely-Kultur“ und weitere mögliche Ansätze 167

Hajnalka Herold: Settlements of the Avar Khaganate 187

Levente Samu – Falko Daim: Die Pseudoschnallen in der Awarenzeit und ihre Transformation 205
Sonngard Hartmann: Materialanalyse der Pseudoschnallen aus Dunapentele 243

Ádám Bollók: Mortuary display, associated artefacts, and the resurrection of the body in early Christian thought: Some considerations for archaeologist 245

Sebastian Brather: ‚Christianisierung‘ im archäologischen Vergleich: Merowinger- und Mährerreich 271

Béla Miklós Szőke: Spätantike Reminiszenzen im Karpatenbecken des 8.–9. Jahrhunderts? 291

How long was the ninth century A.D. in the Carpathian Basin? New Data – New Approaches, Budapest, 8th–9th December 2015

Szabina Merva: Methodological approaches to the archaeology on ninth–tenth-century sites in Hungary. The current state of research 311

Zbigniew Robak: Chronology and periodisation of imports of Carolingian military equipment in the Carpathian Basin between the eighth and the tenth centuries 327

Krešimir Filipec: Zwei Kirchen aus dem 9. Jahrhundert in Lobor und ihr Inventar 345

Miklós Takács: How long indeed was the ninth century AD in the Carpathian Basin and the adjacent territories? Consclusions of a conference 363

Reports

Elek Benkő – Gergely Csiky – Beatrix Darázsy – Gyöngyi Kovács – Gabriella Kulcsár – Balázs Gusztáv Mende – Krisztián Oross – László Sópajti-Tóth – Tivadar Vida: The medium-term strategic plan of the Institute of Archaeology of the Research Centre for the Humanities of the Hungarian Academy of Sciences and its scientific activity in 2016 and 2017 373

ANTAEUS 35–36 (2017–2018) 187–203

HAJNALKA HEROLD

SETTLEMENTS OF THE AVAR KHAGANATE

Zusammenfassung: Dieser Beitrag präsentiert eine kritische Zusammenfassung der Forschungssituation zur Siedlungsarchäologie des Awarischen Khaganats. Die relevanten Fundstellen befinden sich im Karpatenbecken (das heutige Ungarn und angrenzende Gebiete) und können in das 7. bis 9. Jahrhundert datiert werden. Es sind mehr als 600 Siedlungsstellen bekannt, die meisten von ihnen kennen wir allerdings nur durch Geländebegehungen, Ausgrabungen wurden nur an wenigen Fundorten durchgeführt. Viele der bekannten awarenzeitlichen Siedlungen liegen an oder in der Nähe von römischen Fundstellen. Die Verbindungen zwischen Siedlungen dieser beiden Perioden stellen daher einen wichtigen Aspekt in der Erforschung awarenzeitlicher Siedlungen dar. Um awarenzeitliche Siedlungen auf mehreren Ebenen zu betrachten, besteht dieser Aufsatz aus drei Teilen: Siedlungsobjekte, Siedlungsstrukturen und Siedlungsmodelle.

Keywords: settlement features, settlement, continuity, fieldwalking survey, Roman, early medieval and Avar period

This study reviews and discusses the archaeology of settlements in the territory of the Avar Khaganate. These sites are located in the Carpathian Basin (present-day Hungary and adjacent areas) and can be dated to *c*. the seventh to ninth centuries AD. Many of the known Avar-period settlements are located at or in the immediate vicinity of former Roman sites. Considering the nature of connections between settlements of these two periods is therefore a crucial aspect of understanding Avar-period settlement dynamics. In order to address Avar-period settlements at different scales, this article is divided into three main parts: settlement features, intra-site perspectives, and inter-site models.

Remains of more than 600 settlements are known from the territory of the Avar Khaganate.[1] However, most of these are only known as surface scatters of finds from fieldwalking. The majority of these settlement remains were identified during fieldwalking surveys for the long-term project 'The Archaeological Topography of Hungary',[2] but fieldwalking surveys have also been carried out in various smaller regions.[3] Based on this research history, only some parts of the territory of the Avar Khaganate have been investigated, and therefore the geographical distribution of the settlement remains is regionally very different, as can also be seen on the map of all settlements and settlement remains of the Avar Khaganate published by József Szentpéteri.[4] Excavations have only been undertaken at few settlement sites, and most of these excavations uncovered but a small part of the Avar-period settlements. Larger excavated sections of Avar-period settlements are only available from a limited number of sites, and no Avar-period settlement has been fully excavated so far. It is important to bear in mind these limitations resulting from research history

[1] *Szentpéteri 2002* 437–578.
[2] *MRT 1–10.*
[3] E.g. *Cseh 1993*; *Simon 1983.*
[4] *Szentpéteri 2002* Karte 2.

when discussing results available on Avar-period settlements, as they impact upon our knowledge of the settlement history of the Avar period.[5]

Settlement features

When attempting to reconstruct what Avar-period settlements looked like, the first question is what units these settlements comprised: Where did the Avar-period population reside? Where did they prepare food? Where did they store food supplies? How did they produce the necessary goods, tools, and equipment? The types of settlement features excavated at Avar-period settlements provide information relevant for answering these questions. The following main types of settlement features have been uncovered at Avar-period settlements:[6]

Settlement features for habitation

– Sunken-featured buildings (*Grubenhäuser*):[7]

These are buildings that are in part sunken below ground level; they are mostly preserved as rectangular pits. There are various different suggestions for the reconstruction of the above-ground part.[8] In this area of Europe, sunken-featured buildings are mostly regarded as buildings for human habitation; a different use (e.g. storage, cellar) is likely especially in the case of sunken-featured buildings without an over or hearth. While there is a variety of construction types, so far none of these appears to be limited to certain geographical regions or chronological phases. No sunken-featured buildings were uncovered at some Avar-period settlements (e.g. at Zillingtal [Völgyfalva], eastern Austria;[9] see *fig. 1* for the location of sites mentioned in this paper). Whether the reason for this is that the sunken-featured buildings were situated outside of the excavated areas, or that some Avar-period settlements comprised only ground-level buildings, could only be determined by the excavation of settlements in their entirety.

– Post-holes, structures made up of a series of post-holes:[10]

Post-holes can occur as construction elements in sunken-featured buildings, or near ovens. Structures made up of a series of post-holes very likely represent remains of ground-level buildings in most cases. However, some of these structures might also be interpreted as remains of fences or pens. Structures made up of a series of post-holes have only been found in very few cases at Avar-period settlements, possibly as a result of the excavation methods employed in this region. With the refinement of excavation techniques, it is to be expected that more post-built structures will be excavated at Avar-period settlements in the future. This could fundamentally change our current image of Avar-period settlements.

Numerous Avar-period post-holes were uncovered at Zillingtal. Some of them are part of a *c*. 5.5×4.5 m construction that can most likely be interpreted as remains of a building, but it cannot be completely ruled out that it represents remains of a pen. Post-holes were also excavated within the main building of the Roman villa at Zillingtal; they cut though a Roman screed floor

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[5] Elements of this article are based on the chapter *Siedlungsarchäologie des Awarenreiches* (*Herold 2010* 157–166). Other summaries of Avar-period settlements, covering mostly a part of the territory of the Avar Khaganate, include *Kory 2002; Bugarski 2008; Zábojník 2008; Odler 2012.*

[6] Jozef Zábojník offered a similar discussion of Avar-period settlement features, including more details, but limited to the territory of present-day Slovakia *(Zábojník 1988)*. Peter Šalkovský included some settlement features from the territory of the Avar Khaganate, especially from present-day Slovakia, in his summary of early medieval houses *(Šalkovský 2001)*.

[7] E.g. *Bóna 1973* 37–38.

[8] *Šalkovský 2001* 79, Abb. 44.

[9] *Herold 2010.*

[10] E.g. at Zillingtal *(Herold 2010)*.

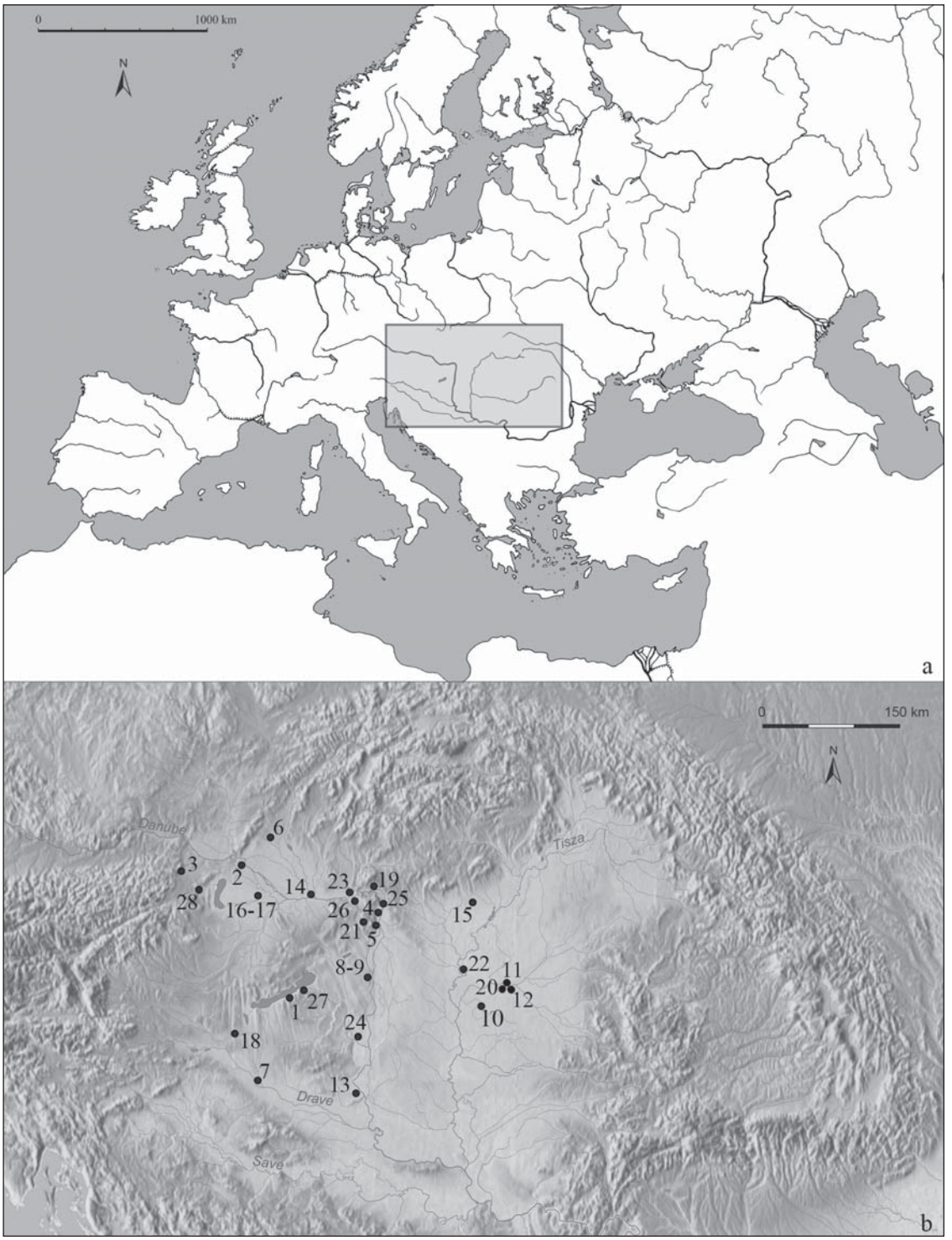

Fig. 1. a: Location of the study area in Europe, b: location of sites mentioned in the text and main rivers of the region; sites: 1. Balatonőszöd-Temető-dűlő, 2. Bratislava-Rusovce II Bergl, 3. Brunn am Gebirge, 4. Budapest III-Filatorigát, 5. Budapest XI-Kende utca, 6. Cífer-Pác II, 7. Drávaszentes-Régi falu, 8. Dunaújváros-Alsófoki-patak, 9. Dunaújváros-Öreghegy, 10. Eperjes, 11. Gyoma-Site 133, 12. Hunya-Csárdavölgy, 13. Kölked, 14. Komárno, 15. Kompolt-Kistéri-tanya, 16. Lébény-Bille-domb, 17. Lébény-Kaszás-domb, 18. Nagykanizsa-Inkey-kápolna, 19. Nógrádverőce-Dunamező-dűlő, Kereszt-domb, 20. Örménykút, 21. Páty-Malom-dűlő, 22. Rákóczifalva-Bagi-földek, 23. Štúrovo-Obid, 24. Szekszárd, 25. Szigetmonostor-Horányi őrtorony, 26. Tokod-Várberek (Roman camp), 27. Zamárdi-Kútvölgyi-dűlő, 28. Zillingtal; rivers: Danube, Tisza, Drave, Save (Base maps by Institute of Archaeology, Hungarian Academy of Sciences; study area and sites by Hajnalka Herold)

and their orientation diverged from that of the Roman walls. Some of them are arranged in a row that runs parallel to a small ditch dating from the same (post-antique) chronological phase.[11] Both the row of post-holes and the ditch could be interpreted as parts of a ground-level building. These two groups of settlement features at the Zillingtal site added new elements to our previous image of Avar-period settlements. Future research will show whether or not ground-level and sunken-featured buildings existed simultaneously at Avar-period settlements, or if there were different types of settlements, some with ground-level buildings and others with sunken-featured buildings.

A notoriously difficult aspect of post-holes and post-hole structures is dating; a number of such features have recently been identified by development-led excavation, for example, at the Rákóczifalva-Bagi-földek site.[12] As some of the post-holes contained Avar-period pottery, and the post-hole structures had a similar orientation as other Avar-period settlement features and did not cross-cut the latter, these features very likely date from the Avar period.[13] However, most sites of development-led excavations contain settlement features from multiple periods, which makes their exact dating difficult. Future excavations will show if post-built structures were a regular part of (some) Avar-period settlements.

– 'Yurts':[14]

Round settlement features have been excavated at some Avar-period settlements and were designated as yurts by the excavators.

Settlement features for the preparation of food

– Ovens:[15]

Most ovens of the Avar period are located inside sunken featured buildings. They were most likely used for heating and baking. The so-called free-standing, or outdoor ovens that are not part of a building are less widespread in the Avar period than in the subsequent centuries.[16] They are mostly interpreted as baking ovens.[17] There are several construction variants of ovens in the Avar period: some were built of stones and others of clay/loam. Stones from Roman buildings or Roman bricks were often used for building stone ovens of the Avar period in previously Roman territories.[18] However, no other regionally different groups of Avar-period ovens have been identified. There are several specific types of Avar-period ovens, for example, those identified as desiccation/drying ovens,[19] or ovens for smoking foodstuffs.[20] No ovens were uncovered at some settlements; at Zillingtal, for example, only furnaces for iron smelting were found, but no ovens for food preparation.

Settlement features ensuring water supply

– Wells:[21]

Wells have only become known from Avar-period settlements in the last decades. In most cases, they have a rectangular timber-lined structure, which provides excellent opportunities for

[11] *Herold 2010* Plan 2.
[12] *Kondé 2015*.
[13] *Kondé 2015* 84.
[14] E.g. *Zábojník 1988* 413, fig. 11.
[15] E.g. *Bóna 1973* 39–40.
[16] *Takács – Vaday 2004* 9.
[17] However, some archaeologists assume that these outdoor ovens were used for craft production, e.g. *Takács – Vaday 2004* 9.
[18] E.g. *Kiss 1988* 180.
[19] E.g. *Tomka 2004* 425.
[20] *Belényesy – Mersdorf 2004* 57, fig. 12.
[21] A comprehensive discussion of wells known from Avar-period settlements can be found in a conference volume published by the Archaeological Institute within the Research Centre for the Humanities at the Hungarian Academy of Sciences, 26th volume of the Antaeus.

14C and dendrochronological analyses. However, there are also wells without a timber lining. If the presence or absence of a timber lining depends on the ground water level (i.e. the timbered construction survives only at high ground water levels), or if there were in fact two different types of wells, cannot be decided with certainty.

No wells were uncovered at the Avar-period site of Zillingtal. The reason for this is probably that the settlement was situated close to a stream and thus no wells were necessary for ensuring the water supply. In contrast, several wells were excavated at the site of Brunn am Gebirge, also located in eastern Austria.[22]

Settlement features for multiple purposes

– Pits of various shapes (e.g. cylindrical,[23] trough-shaped,[24] irregular,[25] large pit with cattle skeletons[26]):

Many pits can be interpreted as settlement features for the storage of foodstuffs. Especially cylindrical and trough-shaped pits are likely to have served this purpose, and many of them probably had a wooden or wattle lining.[27] Some archaeologists assume that some of the trough-shaped pits were used as a pigsty.[28] The roasting pits used in iron metallurgy have a similar shape and can only be identified as roasting pits based on the slag found in them.[29] Especially irregular pits can be seen as pits resulting from clay/loam extraction. Clay/loam was used for the walls of buildings as well as for the building of ovens. Special pit types, such as the large pit with cattle skeletons from the site of Hunya-Csárdavölgy, are known from some settlements, but their function cannot be identified with certainty. In publications, 'refuse pits' are often mentioned. Refuse was deposited in many pits after the pits no longer fulfilled their primary function. This is, however, a secondary function for pits of various primary purposes, and it is unlikely that these pits were initially dug by the Avar-period population to serve for collecting refuse.[30]

Two types of pits were excavated at Zillingtal: cylindrical and irregular pits. The irregular pits belonged to the earlier settlement phases, while the cylindrical ones were part of the later phases. The ceramic fragments in the two pit types were clearly different, with many large fragments recovered from the cylindrical pits, and few small fragments from the irregular pits. However, the functions of the two different pit types could not be identified with certainty.

– Ditches:[31]

Ditches have been uncovered at many Avar-period settlements. They have been interpreted as drainage ditches, as marking the boundaries of the settlement area or of 'plots', or as animal pens.[32] No ditches clearly related to the Avar period were uncovered at Zillingtal; the so-called 'ditch' in Trench 0513 cross-cut Avar-period settlement features and was in all probability a post-Avar watercourse.

So far, no types of Avar-period settlement features have been identified that could only be found in one region, or in certain regions. However, based on the different natural environment in different parts of the Avar Khaganate, it is to be expected that we will be able to distinguish

[22] *Stadler – Herold 2003*.
[23] E.g. at Zillingtal *(Herold 2010)*.
[24] E.g. *Szőke 1992* 149, Abb. 2.
[25] E.g. at Zillingtal *(Herold 2010)*.
[26] *MRT 8* 287 (description of the pit) and 286, Abb. 19 (general plan of the entire excavation area).
[27] *Tomka 1998* 47–48.
[28] *Szőke 1992* 135–136.
[29] *Gömöri 2000.*
[30] *Tomka 1998* 47–48.
[31] E.g. *Bóna 1973* Plans I–III.
[32] *Bóna 1973* 64–66.

regionally different settlement features once a larger number of Avar-period settlements are excavated and published.

Settlement features for the production of various objects and tools

– Settlement features related to iron working (roasting pits[33] and furnaces for iron smelting[34]):

As mentioned above, roasting pits have a similar shape as trough-shaped pits; their use as a roasting pit can only be identified based on the slag found in their fill. Different chronological and/or regional types of furnaces for iron smelting are known.[35] Three iron smelting furnaces were uncovered at Zillingtal.[36]

– Settlement features related to pottery production: [37]

The Avar-period pottery kilns known to date are vertical two-chamber kilns.[38] The two chambers were separated by a grid made of clay/loam; the lower chamber served as the combustion chamber, while the upper chamber contained the vessels to be fired. Given that vessels were placed in the upper chamber from above, it is likely that the top of the kiln had to be sealed by clay/loam before each firing.[39] The use of baking ovens for firing pottery is mentioned repeatedly in publications.[40] In principle, it is possible to use baking ovens for this purpose, but it is difficult to demonstrate this archaeologically. The same applies to pits that the Avar-period population could have used for pit-firing their ceramic vessels.

The geographical distribution of settlement features for the production of various objects and tools differs regionally. In the case of iron smelting furnaces, this can partly be explained by research history: the iron smelting furnaces known from western Hungary are largely known through excavations of János Gömöri.[41]

The geographical distribution of the pottery kilns also shows some regional variation: pottery kilns that can be securely assigned to the Avar period are only known from present-day south-western Hungary, from several sites in the Szekszárd area.[42] These kilns were used for firing the wheel-thrown so-called ‘Grey Pottery’; the geographical distribution of this pottery ware is also regionally limited. Based on archaeometric studies by Márta Balla,[43] this regionally limited distribution of ‘Grey Pottery’ is likely to reflect the genuine Avar-period distribution, and not the current state of research, even though in addition to the production centre near Szekszárd, a second production region in the Dunaújváros area can also be assumed. The reason behind this regionally limited distribution is likely the lack of demand for ‘Grey Pottery’ in some parts of the Avar Khaganate, or to put it the other way round, the lack of marketing opportunities for this high-quality ceramic ware in some regions. This likely indicates differences in the economic organisation of different parts of the Avar Khaganate.[44]

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[33] E.g. *Gömöri 2000* 211, Abb. 149.
[34] E.g. *Gömöri 2000* 212, Abb. 151.
[35] For details, see *Gömöri 2000.*
[36] *Mehofer 2010.*
[37] So far, only pottery kilns are known. Pits for the preparation of clay, bases for pottery wheels, or other related features could possibly be identified in the course of a detailed analysis and publication of the pottery workshop excavations from the Szekszárd area.
[38] E.g. *Rosner 1981* 45, fig. 1.
[39] *Rosner 1981* 43.
[40] E.g. *Takács – Vaday 2004* 10.
[41] E.g. *Gömöri 2000.*
[42] *Rosner 1990.*
[43] *Balla 1990.*
[44] For the regionally limited distribution of the ‘Grey Pottery’, see also *Herold 2010* 167–176; *Herold 2015.*

The pottery kilns known from the Kompolt-Kistéri-tanya site[45] and the pottery fragments from their fill appear to share several similarities with the pottery kilns of Örménykút,[46] as also mentioned in their publication.[47] Therefore, it seems likely that these kilns do not date from the Avar period and will therefore not be discussed here at greater length.

In sum, it can be concluded that no regional or chronological groups could be identified to date in the case of Avar-period settlement features *sensu stricto* (settlement features that were not used for the production of various objects and tools). It is to be expected that the application of more detailed excavation methods in the future will result in uncovering a higher number of Avar-period post-built structures. However, it is difficult to predict whether or not it will be possible to identify regionally different ensembles of settlement features (e.g. settlements with only sunken-featured buildings, settlements with only ground-level post-built structures, or settlements that comprise both sunken-featured and ground-level buildings). In any case, the excavation and publication of the Avar-period settlement of Zillingtal demonstrated the existence of ground-level post-built structures, an important advance towards the identification of ground-level buildings at settlements of the Avar Khaganate.

Intra-site perspectives

In addition to various types of settlement features, their spatial configuration also strongly influences the images of settlements. Fully excavated sites would be necessary to draw definite conclusions about the spatial organisation of Avar-period settlements; such sites, however, are not available so far. It is only few Avar-period settlements that have been more extensively excavated and published, and which therefore allow considerations of intra-site spatial organisation. A further difficulty is that even in the case of these few settlements with larger excavated and published sections, the internal chronologies of the sites have not been worked out, meaning that it is unclear which settlement features were used at the same time.

In his analysis of the Dunaújváros-Öreghegy site, the largest fully published Avar-period settlement section to date, István Bóna was more interested in the spatial organisation of the settlement features than the finds from their fills when reconstructing settlement phases, as he himself acknowledges.[48] The first settlement phase comprises only ditches; Bóna leaves the question open whether they belong to the Avar period. The next settlement phase, dated to the early Avar period, consists of sunken-featured buildings and a system of ditches. However, some ditches appear to extend into sunken-featured buildings of the same settlement phase; it seems hardly feasible to assume that such pairs of settlement features would date from the same period. The next settlement phase, also dated to the early Avar period, is made up of two groups of sunken-featured buildings: one group forms a semi-circle, while the second group is located 80 m away and forms a quarter-circle. A few settlement features of the middle Avar period were found in the southern part of the site. Since the finds were only minimally taken into account in the reconstruction of the settlement phases, the separation of the two early Avar phases is tentative at best.

Regrettably, no general plan was published of the Avar-period settlement of Eperjes.[49] According to Csanád Bálint's description,[50] mainly sunken-featured buildings and a system of ditches were found in the eastern excavated area, while in the other excavated area, lying 45 m to

[45] *Takács – Vaday 2004*.
[46] Mentioned in *Herold 2004*.
[47] *Takács – Vaday 2004* 8.
[48] *Bóna 1973* 62, cited in *Fiedler 1994* 308.
[49] *Bálint 1991*.
[50] *Bálint 1991* 76.

the west, several pits, hearths, and outdoor ovens were uncovered.[51] Bálint explains this difference by assuming that the two excavated areas represented different parts of the settlement: one that can be interpreted as an area for habitation, and another that lies between habitation areas.

Only sunken-featured buildings were found in Area A of the settlement at Örménykút, some of which can be dated to the Avar period (settlement phases I–II).[52] They constitute a group that is made up solely of sunken-featured buildings; the orientation of these sunken-featured buildings to the cardinal points varied.

Sunken-featured buildings in a row were uncovered at some sites (e.g. at Hunya-Csárdavölgy).[53] This could be interpreted as a kind of street arrangement; however, the intercutting of some sunken-featured buildings makes it clear that not all settlement features were in use at the same time. This settlement section is only known from a preliminary report, which does not provide information on the relative chronology of the settlement features. Therefore, definite conclusions on a possible street structure at Hunya-Csárdavölgy can only be drawn after the full publication of the site.

In the case of some smaller excavated settlement sections, it was possible to separate settlement phases based on differences in the finds. One example is the settlement of Komárno (Komárom, SK),[54] where the settlement phases could be clearly separated and relatively well dated based on the wheel-thrown 'Grey' and 'Yellow' pottery. However, the excavated settlement section at Komárno is so small that only very few settlement features could be assigned to individual settlement phases, and thus no far-reaching conclusions can be drawn on the spatial organisation of the phases.

The settlement layout of Dunaújváros-Alsófoki-patak,[55] a site located along a stream, is described as 'farmstead-like' by the excavator. Some (sunken-featured) buildings and outdoor ovens constitute clusters in some areas, with the clusters lying 40–100 m apart. The excavator interpreted a large tamped area (no exact measures are given) excavated in the settlement's centre as a 'main square' of the settlement. Ditches that run at an angle of 90 degrees from the hill to the stream were also uncovered. Gyula Fülöp, the excavator, interpreted them as drainage ditches, and also regarded them as marking the boundaries of the single farmsteads. It is unclear from the publication whether this 'farmstead-like' structure applies to all settlement phases. Given that both 'Grey' and 'Yellow' wheel-thrown pottery were found at Dunaújváros-Alsófoki-patak, a long period of occupation can be assumed at the site.

The spatial distribution of the buildings at the Avar-period Germanic settlement of Kölked was described as 'island-like',[56] although it was also pointed out that because of the long occupation and the multiple cross-cutting settlement features at the site, this pattern could not always be clearly observed. In addition to buildings, the site comprised pits, outdoor ovens, wells, and ditch systems. The analysis of the results and findings of this excavation is currently underway, and will provide a firm basis for the evaluation of this site.[57]

Two different spatial arrangements were documented at the neighbouring Avar-period settlements of Lébény-Bille-domb and Lébény-Kaszás-domb.[58] At Lébény-Kaszás-domb, a system of ditches, wells and several pits were uncovered, accompanied by only two sunken-

[51] However, in my view, the outdoor ovens cannot be securely dated to the Avar period based on their ceramic finds (*Bálint 1991* Taf. 18–19, Taf. 20. 13–14).
[52] *Herold 2004* Karte 2.
[53] *MRT 8* 286, Abb. 19.
[54] *Trugly 1996.*
[55] *Fülöp 1984.*
[56] *Kiss 1979* 188; *Kiss 1988* 184.
[57] E.g. *Hajnal 2003; Hajnal 2009.*
[58] *Takács 1996.*

featured buildings. The excavator, Miklós Takács, assumes that these settlement features were complemented by ground-level buildings that did not leave traces that could have been detected during the excavation. At Lébény-Bille-domb, numerous sunken-featured buildings and pits were excavated, but no ditch system was found. The relative chronology of the two sites can only be established after the full analysis of their finds and features.[59]

At the settlement of Balatonőszöd-Temető-dűlő,[60] two different types of spatial organisation were observed in different parts of the excavated area. In some parts, 'farmstead-like' units of 3–6 buildings and some outdoor ovens were uncovered; each of these units covers an area of *c*. 2000 m^2, and they lie some 50–70 m apart. The internal arrangement of these units was described as irregular. In other parts of the excavation, buildings of the Avar period were uncovered that formed a row and had the same orientation according to the cardinal points. These rows of buildings are likely to have produced a very different spatial impression of the settlement to contemporary visitors than the previously described 'farmstead-like' units. Ditches were also uncovered at the site, but they postdate the Avar-period settlement.

At some Avar-period settlements, solely or mainly pits were uncovered (e.g. Gyoma-Site 133,[61] Nagykanizsa-Inkey-kápolna,[62] Brunn am Gebirge-Wolfholz[63]). It cannot be unequivocally decided based on the available evidence whether the absence of buildings at these sites results from buildings having been located outside of the excavated areas, or whether the buildings had been placed at ground level and their remains were not detected during the excavations. The site of Zillingtal, where, in addition to pits, remains of post-built structures were identified (both in the vicinity of the pits and within the buildings of the Roman villa) makes the latter explanation more likely.

Therefore, based on the archaeological evidence available to date, four main spatial arrangement types can be identified for Avar-period settlements:

– 'farmstead-like' structure (spatial units made up of sunken-featured buildings, outdoor ovens, and groups of pits; the units are situated 50–80 m from each other): e.g. Dunaújváros-Alsófoki-patak, Balatonőszöd-Temető-dűlő

– 'street-like' rows of sunken-featured buildings (sunken-featured buildings with the same orientation according to the cardinal points, situated next to each other): e.g. Hunya-Csárdavölgy, Balatonőszöd-Temető-dűlő

– mainly sunken-featured buildings (sunken-featured buildings with different orientations according to the cardinal points, situated in close proximity to each other): e.g. Örménykút 54, Dunaújváros-Öreghegy, Eperjes, Lébény-Bille-domb

– mainly pits (possibly associated with archaeologically mostly undetected ground-level buildings; or serving as the non-residential part of a settlement, where the residential part is made up of a set of sunken-featured and/or ground-level buildings situated at a distance from the pits): e.g. Gyoma 133, Nagykanizsa-Inkey-kápolna, Brunn am Gebirge, Eperjes, Lébény-Kaszás-domb.

As mentioned above, a full assessment of finds and features is not available for most Avar-period settlement sites, meaning that these four spatial arrangement types need to be confirmed by a full analysis of sites. This is the only way to ensure that settlement features of the same chronological phases are used to retrace spatial arrangements, and that settlement types are not assessed based on settlement features of different chronological phases. A new impetus for this type of research can be expected from the analysis of Avar-period settlements from large-scale

[59] *Takács 1996* 382.
[60] *Belényesy – Mersdorf 2004; Szabó 2016.*
[61] *Vida 1996.*
[62] *Szőke 1992.*
[63] *Stadler – Herold 2003; Herold 2002.*

development-led excavations.[64] Even though, similarly to previous excavation projects, these excavations only covered sections of Avar-period settlements, the uncovered areas are on a much larger scale. Once the full publication of such sites will become available, including the internal chronology of the settlements, which will provide information on which settlement features were in use at the same time, we can expect new insights into the spatial arrangement of Avar-period settlements.

Another area that is likely to see considerable development in the upcoming decades is the use of absolute dating, mainly 14C, but also dendrochronology, in the analysis of Avar-period settlements.[65] While the measured absolute dates can provide previously unavailable precision in the dating of organic finds (mainly wood, as well as animal and human bone), special attention needs to be paid to linking these dates and finds to the period of use of the settlement features they originate from, as well as to retracing the relation of single settlement features to the overall history of a settlement. Absolute dates might, in the future, provide a basis for the routine differentiation of seventh, eighth, and ninth-century settlements, for which we do not currently have reliable evidence.[66]

Inter-site models

Most settlement remains of the Avar Khaganate known to date are located in south-eastern Hungary. As already mentioned, they were identified during fieldwalking surveys for the long-term project 'The Archaeological Topography of Hungary'.[67] The majority of the sites was merely recorded by these surveys; excavations were carried out at few sites only, and no more than a handful of these excavations have been analysed and published. However, fieldwalking surveys for 'The Archaeological Topography of Hungary' project were undertaken not only in south-eastern Hungary, but also in other regions.[68] It is noteworthy that a considerably lower number of Avar-period settlement remains were identified in western Hungary and in the region directly east of the Danube Bend (County Pest) than in south-eastern Hungary.[69] This most likely reflects a different population density in different regions and/or the existence of different settlement forms.

Western Hungary was once part of the Roman province Pannonia; the *limes* was situated along the Danube. A frontier zone under Roman influence lay north and east of the *limes*. The post-Roman history of this region, and the possibility of a population continuity after the withdrawal of the Roman imperial administration in the fifth century, have not received sufficient scholarly attention. At some sites, both in the area of the earlier province Pannonia, and in the frontier zone under Roman influence in southern Slovakia, Avar-period settlement features have been uncovered in close proximity to Roman settlement features, and/or Roman objects have been found that were in secondary use during the Avar period.

Some Avar-period settlement sites that overlay Roman settlements can be identified from publications:[70] Bratislava-Rusovce II Bergl (Pozsony-Oroszvár, SK); Budapest III-

[64] E.g. *Bajkai 2015; Kondé 2015.*

[65] Such analysis has already been carried out (e.g. *Stadler – Herold 2003*), but it is likely that absolute dates will become more widespread in future publications of Avar-period settlements.

[66] While a detailed analysis of settlement finds, and the establishment of links to finds from cemeteries (where possible), can provide a useful means for establishing relative chronologies of settlement sites (both intra and inter-site; e.g. *Pópity 2015*), linking these chronological sequences to absolute dates is, in my opinion, not possible without the scientific dating of related organic finds.

[67] *MRT 6; MRT 8; MRT 10.*

[68] E.g. *MRT 5; MRT 9.*

[69] *Szentpéteri 2002* Karte 2.

[70] All sites, with the exception of Zillingtal and Budapest III-Filatorigát, are cited after *Szentpéteri 2002* 437–578.

Filatorigát;[71] Budapest XI-Kende utca; Cífer-Pác II (Biksárd, SK); Nagykanizsa-Inkey-kápolna; Szigetmonostor-Horányi őrtorony (watchtower); Tokod-Várberek (Roman camp); Zamárdi-Kútvölgyi-dűlő, and Zillingtal.[72] Further Avar-period sites located at Roman settlement sites are known from fieldwalking surveys:[73] Drávaszentes-Régi falu (although it is unclear whether there actually is a Roman site); Nógrádverőce-Dunamező-dűlő, Kereszt-domb;[74] and Páty-Malom-dűlő as well as more than 50 sites from the area of 47 present-day villages in eastern Austria.[75]

However, it is very likely that a large number of Avar-period sites overlying Roman settlements have not been identified.[76] On the one hand, especially at older excavations, settlement finds from the Avar period, which are much less numerous and less clearly identifiable than Roman finds, probably often went unnoticed. And, on the other hand, finds and features from earlier periods are not always mentioned in publications of Avar-period sites. A third reason is that research in Hungary, which – based on the geographical position of Roman Pannonia – would have had the best opportunity for addressing these questions, has mostly concentrated on the 'upper' chronological limit of the Avar period and on the transition to the Hungarian Conquest period, i.e. on questions of the ninth to tenth centuries AD, and not on the beginnings of the Avar period and the possible relationship between Avar-period and Roman sites. There have been some initiatives to explore the relationship between Roman and Avar-period sites, marked by excavations (e.g. at Budapest III-Filatorigát)[77] and exhibitions ("Avars in *Gorsium-Herculia*, *Herculia* in the seventh century", exhibition at the Museum of Székesfehérvár, November 2006–March 2007); however, these have not been followed through to publication so far.

At most Roman sites where Avar-period settlement remains were also uncovered, the relationship between the settlement features and finds from the two periods was either not documented precisely or is not described in detail in the publication; the majority of the publications on these sites are preliminary reports. In addition to Zillingtal, it is only the sites of Budapest III-Filatorigát and Cífer-Pác II where observations on the relative position of the Roman and Avar-period settlement features were recorded. At Budapest III-Filatorigát, various Avar-period settlement features (sunken-featured buildings, pits, wells) formed a C-shaped arc around the building of a second–third-century Roman bath, but none of them cut the Roman building. No Avar-period finds were made within the Roman building, but Roman objects were found in the Avar-period settlement features, including the head of a Roman statue. The ovens of the Avar-period sunken-featured buildings were made of Roman *tegulae* and *imbrices*.[78] At Cífer-Pác II, two sunken-featured buildings, an oven, and 27 pits from the Avar period were uncovered among the building remains of the Roman period without any apparent specific spatial arrangement.[79]

To the best of my knowledge, there is no evidence to date from any site that the Avar-period population had used the Roman-period ruins for habitation. This is also supported by the findings at Zillingtal. Therefore, we can conclude that Roman sites were seen as attractive places for establishing settlements in the Avar period, but the reason for this was not the potential use of Roman

[71] *Schilling 2003.*
[72] *Herold 2010.*
[73] The sites from Hungary are cited after *Szentpéteri 2002* 437–578.
[74] It is not clear from the text whether related excavated remains are available at the site (*Szentpéteri 2002* 524).
[75] The sites were listed and mapped by Falko Daim and Heinz Winter (*Daim 1987* 181–191, Beilagen 2–4; *Winter 1997* 92–173, Karten 1–4).
[76] This is also supported by the fact that in eastern Austria, a region researched in more detail, significantly higher numbers of Avar-period objects have been recorded at Roman sites than in western Hungary.
[77] *Schilling 2003.*
[78] I would like to thank László Schilling for his kind information on the site by email (4–5 January 2007).
[79] *Odler – Kolník 2011* 70, fig. 37.

ruins for habitation. The use of Roman infrastructure such as roads and fields has been suggested as another possible reason for the choice of Roman sites for Avar-period settlements.[80] Possibly, some of these originally Roman settlements were occupied, continuously or intermittently, in the post-Roman period, as shown by the sixth-century coins found at some Roman sites in eastern Austria.[81] However, at most sites, including Zillingtal, no traces of occupation between the Roman (until the late fourth–early fifth century) and the Avar (from the late sixth–mid seventh century) periods were uncovered. The reoccupation of former sites as a means of legitimising power, as argued by Richard Bradley for other periods and regions, is a possible explanation here.[82]

In any case, there are Avar-period settlements both in the territory of the former Roman province of Pannonia and the frontier zone under Roman influence in southern Slovakia, which are not directly connected to any Roman site (e.g. in the Little Hungarian Plain: Lébény-Bille-domb,[83] Lébény-Kaszás-domb,[84] but also along the Danube: Dunaújváros-Öreghegy,[85] and in southern Slovakia: Komárno,[86] Štúrovo-Obid [Párkány-Ebed/Gockern, SK][87]). This means that in the former Roman territories of Pannonia and the frontier zone under Roman influence, there were also other forms of Avar-period settlement activity, which were apparently unrelated to former Roman sites. However, it has to be pointed out that at some of these sites, the use of Roman bricks[88] or (possibly) Roman building stones[89] was observed in the construction of ovens.

Exploring the relationship between Roman and Avar-period settlement features will definitely be an exciting question in the research on the Avar period in the upcoming decades. The excavation at Zillingtal and its analysis and publication provided, for the first time, a detailed record of such Roman and Avar-period connections. For further results on this theme, it is necessary to analyse in detail and publish further excavated sites, as well as to continue excavations at already published sites, including Zillingtal.

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[80] *Daim 1987* 175; *Winter 1997* 75.
[81] *Winter 1997* 75.
[82] *Bradley 2002*.
[83] *Takács 1996.*
[84] *Takács 1996*.
[85] *Bóna 1973*.
[86] *Trugly 1996.*
[87] *Zábojník 1988*.
[88] E.g. Dunaújváros-Öreghegy, *Bóna 1973* 72.
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