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Yellow Pottery in the Late Avar Period

Avar and Árpáadian Age Populations along the Maros River

Settlement History Research in the Hungarian Part of the Maros Valley

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Abstract: Review article of a PhD thesis submitted in 2022 to the Archaeological Doctoral Programme, Doctoral School of History, Eötvös Loránd University, Budapest, under the supervision of Miklós Takács.

The research behind the dissertation comprises a basic large-scale evaluation of the material record of primarily Avar Period (7–9th-century) settlements. The study area is located in the Lower Tisza Region and the southern part of the Körös–Maros Interfluve, including the southern part of the Southern Tisza Valley and the entire Marosszög microregion, north of the River Maros, on the lands between Szeged-Öthalom and Csanádpalota/Nagylak.

Keywords: Lower Maros Valley, Avar Period settlement history, changes in settlement structure, changes in pottery style, radiocarbon date

The chronological and geographical scope of research

The research behind the dissertation¹ comprises a basic large-scale evaluation of the material record of primarily Avar Period settlements in the study area. The interpretation is framed by the necessary introduction of both the Gepid antecedents and the following Árpáadian Age. While the chronological scope of the work is the 6–13th centuries AD, it mainly deals with the find material of 7–9th-century settlements due to their abundance.

The geographic framework of the research does not represent a closed area (Fig. 1). The study area is located in the Lower Tisza Region and the southern part of the Körös–Maros Interfluve, including the southern part of the Southern Tisza Valley and the entire Marosszög microregion,² as well as the southern part of the Csongrád Plain, east of Makó in the Körös–Maros Interfluve. The entire area is located within Csongrád–Csanád County. The analysed archaeological sites are positioned in or at the fringes of the former floodplain of the Tisza and Maros rivers, including the surroundings of Szeged, Hódmezővásárhely, Óföldsék, Makó, Apátfalva, Magyarcsanád, and Csanádpalota. Major infrastructural development projects in recent decades in the area were a key component in the choice of the study area. As a result of these projects, 6–13th-century find material was unearthed

1 DOI: [10.15476/ELTE.2021.019](https://doi.org/10.15476/ELTE.2021.019)

2 *DÖVÉNYI* 2010, 187–194, 274–292.

north of the River Maros, on the lands between Szeged-Öthalom and Csanádpalota/Nagylak. I worked on many of the related excavations as a lead archaeologist.³ As such, the dissertation is the final step of the research that started with these excavations.

Background and research goals

The most frequent find of settlement excavations of the Migration Period (and other historical periods) is pottery. Despite this, a chronological classification of the 6–13th-century household pottery record has not yet been carried out. It is also difficult to distinguish (both in chronological and stylistic terms) between the pottery of the Hungarian Conquest Period and the Early Árpadian Age.⁴ The main reason for this is the small number of publications on settlement material compared to those analysing cemeteries and burials. That is especially true for the study area of my research, where the available literature only contains brief references to the record of settlements. As long as the publications related to this period almost exclusively focus on cemeteries, we can only see one aspect of the past—and it must be kept in mind that some object types present in the settlement record never appear in burials.

Consequently, the goal of this dissertation was to analyse the large quantity of collected settlement material from the period and make the results accessible to the broader professional community. It became clear already at the excavation that the amount of information these assemblages offer can provide a solid basis for regional comparison via case studies of several analysed sites. Comparing the datasets collected from each site would provide the first step toward a more detailed understanding of the settlement history in the study area.

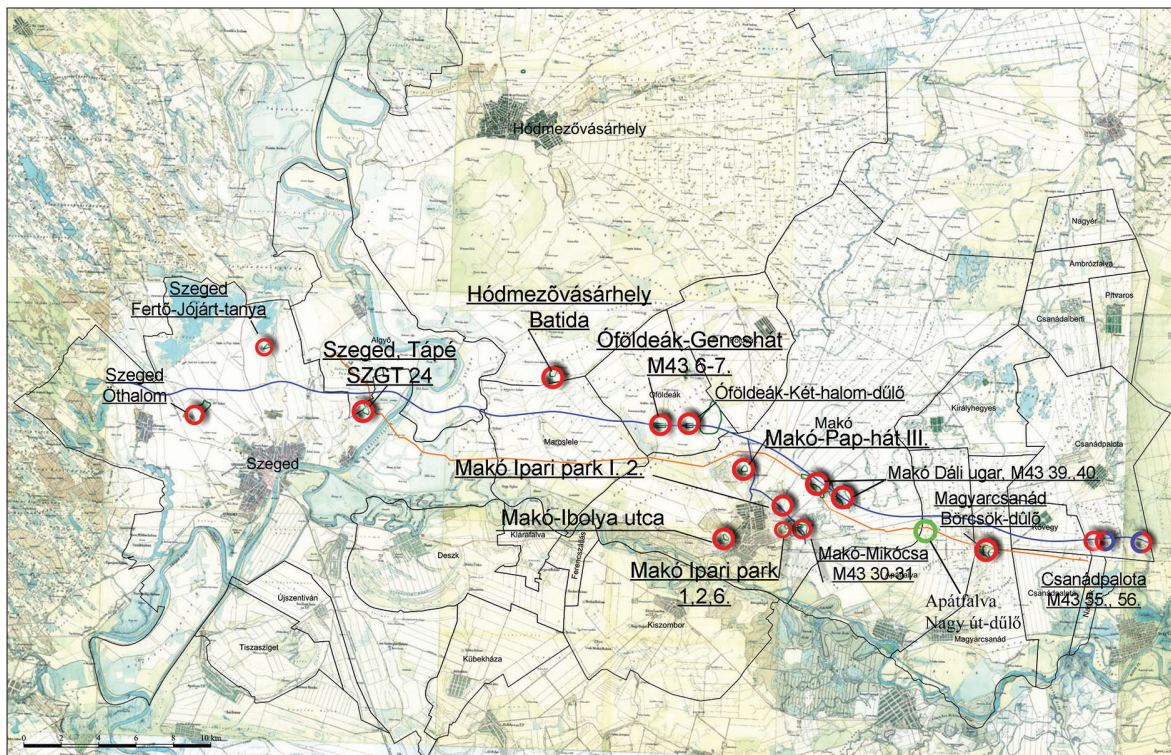


Fig. 1. Map of the analysed archaeological sites in the study area. Green: Gepid Period, red: Avar Period, blue: Árpadian Age. Blue line marks the path of the M43 motorway (by Sándor Péter Zoltán)

3 BENEDEK – PÓPITY 2010; PÓPITY 2010; PÓPITY 2012a; PÓPITY 2012b; PÓPITY 2012c; PÓPITY 2014; PÓPITY 2015; PÓPITY – WILHELM 2009.

4 TAKÁCS – VADAY 2012, 745–756; TAKÁCS 2012a; TAKÁCS 2012b; MERVÁ 2012; RÁCZ 2019, 49–50.

Data sources and research methods

The dissertation is based on a 334-page catalogue of features and finds from 22 partially excavated settlements. The most relevant pieces are presented in photos and profile drawings across 291 plates. Besides, when available, the illustrations include a survey map and profile drawings and, occasionally, photos and reconstruction drawings of the features from which the artefacts were recovered. Of the twenty-two settlements, one is Gepid Period, nineteen were Avar Period, and two were Árpáadian Age. The emphasis is on the Avar Period between the three, mainly due to the amount and quality of the related find material. The Gepid site of Apátfalva-Nagy út-dűlő was analysed as a point of reference to refine the evaluation of Early Avar materials. However, the Gepid catalogue (introduced only in the Appendix) is not considered complete, as descriptions and photos are only provided for the most characteristic features and artefacts. The analyses of the Avar Period settlements have been completed. As a result of previous misclassification (on the field and during the processing of the related find material), the actual amount of the settlement materials from these sites often only became apparent during the data collection phase, unexpectedly extending the workload related to the processing of the record of certain sites. As a result, the proportions became somewhat unbalanced: the Árpáadian Age record is only discussed as a point of reference, although a complete description of the materials from the Early and Late Árpáadian Age Csanádpalota sites is included in the catalogue.

The Avar Period record, the focus of this study, is represented by 410 features from nineteen sites covering an excavated area of 512,000 m² in total. Of the related features, 233 are pits, twenty-eight open-air ovens, 103 buildings (houses), thirty-eight ditches and ditch segments, six wells, and two solitary postholes. In the past 7–8 years, I described and catalogued 1.1 tonnes of pottery from Avar Period settlements. The regional Avar typo-chronology is based on 12,552 pieces or 659.8 kg of ceramics. My goal was to complete data collection within the given timeframe and geographical perimeters. I therefore also studied the stone (210.9 kg), daub (123.2 kg), and slag findings (17.4 kg) from the sites included in the analysis (Tab. 1). The use of a weight-based inventory of artefact types aimed at facilitating site comparisons. Weight was measured independently from the number of pieces, thus providing a constant value. The chronological and settlement-based structural analysis of the settlement records also utilised an Excel inventory data sheet. The interpretation is supported by 287 in-text figures.

Each site case study follows the same methodology. My goal in creating the catalogue was to describe the artefacts and features from a uniform point of view. That allows a more complex analysis of the introduced sites, materials, and features to create regional trends and models based on the broadest possible evidence. The analysis of individual sites had three distinct sections. The first was a comparative analysis of the material. The second was determining the relative and absolute chronological position of the related record, relying primarily on Tivadar Vida's typological classification of mortuary ceramics⁵ in the process, only supplemented occasionally by radiocarbon (AMS) dates and datable small finds. The AMS dating was conducted in the ATOMKI laboratory in Debrecen.⁶ The third step was to use this chronological framework to present the settlement's structure and features.

5 VIDA 1999.

6 AMS dating was made possible by the financial support of NKFIH within the OTKA project no. 102533 titled *Az átalakulás évszázadai – települési struktúrák, települési stratégiák a Kárpát-medence központi részein a 8–11. században* (*The Centuries of Transformation – Settlement Structures and Settlement Strategies in the Central Parts of the Carpathian Basin in the 8–11th Centuries*). The lead researcher of the project, focusing on the study of early medieval settlements, was Miklós Takács, my supervisor in the doctoral programme (TAKÁCS 2016; TAKÁCS 2019, 263).

Tab. 1. Basic data of the analysed Avar Period settlements (compiled by the author)

site number	name of site	excavated area (m ²)	features (nr.)	pits (nr.)	open-air ovens (nr.)	structures (nr.)	ditch and ditch segments (nr.)	posthole (nr.)	wells (nr.)	pieces of ceramics (nr.)	weight of ceramics (kg)	weight of stone (g)	weight of daub (g)	weight of slag (g)
52778	Csanádpalota-Juhász T. tanya, M43 55, K-i terület	119080	67	42	4	21	0	0	0	2931	133.42	7402	2184	740
52780	Csanádpalota-Juhász T. tanya, M43 55, Ny-i terület		21	8	1	12	0	0	0	537	20.994	2240	0	0
52785	Csanádpalota Országhatár, M43 56	44553	4	0	2	2	0	0	0	107	3.655	320	200	0
55439	Hódmezővásárhely IX. homokbánya, Batida III	122282	51	24	6	20	0	0	1	2377	150.251	30720	13394	1255
42505	Magyarcsanak-Börcsök-dűlő	2984	30	10	0	1	19	0	0	335	9.704	949	5101	2741
52733	Makó, Dáli ugar, M43 39	25868	15	12	0	3	0	0	0	223	11.454	371	694	0
52735	Makó, Dáli ugar, M43 40	33755	9	2	2	5	0	0	0	165	7.947	10265	65	25
80879	Makó Ibolya utca	301	1	1	0	0	0	0	0	88	3.776	37	255	280
60096	Makó Ipari Park 2. ütem 3	3548	15	10	3	2	0	0	0	340	18.426	726	1159	0
60060	Makó, Mikócsa-halom, Ipari park 2–3	16929	22	16	1	3	1	0	1	523	27.185	12510	7239	318
55150	Makó, Mikócsai járandó, M43 30	6146	12	4	0	4	2	2	0	835	51.101	22058	37137	10253
55153	Makó, Mikócsai járandó, M43 31	20314	13	5	0	6	2	0	0	1115	68.852	83641	30448	520
55080	Makó Pap-hát III	842	16	8	2	4	2	0	0	210	4.286	0	0	39
55149	Makó, Ipari park 6	2056	11	9	0	1	1	0	0	481	22.844	652	10121	281
34491	Óföldséák, Gencshát III., M43 6–7	23000	40	27	2	8	1	0	2	921	46.607	1215	3979	386
34498	Óföldséák, Kéthalom-dűlő, M43 8	17186	8	3	0	4	0	0	1	306	16.166	476	1283	0
69629	Szeged Fertő, Jójárt-tanya (CsMD 20)	2342	37	21	2	4	10	0	0	193	8.908	1888	4734	82
20388	Szeged-Öthalom V. homokbánya	63691	13	9	1	2	0	0	1	348	30.38	3405	4342	515
44304	Szeged-Tápé-86. sz. kútkörzet, SZGT 24. kúthely	7305	25	22	2	1	0	0	0	517	23.864	32081	881	0
		512182	410	233	28	103	38	2	6	12552	659.82	210956	123216	17435

Results of settlement research

A central focus of my research was the study of ceramic assemblages from Avar Period settlements to determine chronological changes in production technique and stylistic attributes (shape and decoration). Only similar studies of other regions, based on large amounts of data, will reveal the extent to which these results are area-specific. Based on the analysis of Avar Period ceramic assem-

blages, I tried to divide the use period of each site into distinct phases (Fig. 2). These were broadly correlated with absolute dates using twelve radiocarbon (AMS) dates from five 7th-century sites, facilitated by a slope in the calibration curve for the 7th century (Fig. 3). A comparison of vessel assemblages from contemporaneous sites facilitated the dating of the settlement ceramics. The results suggest that during the approximately 250–300 years of the Avar Period, pottery shapes, types, and compositions underwent significant changes in both the first and second half of the period.

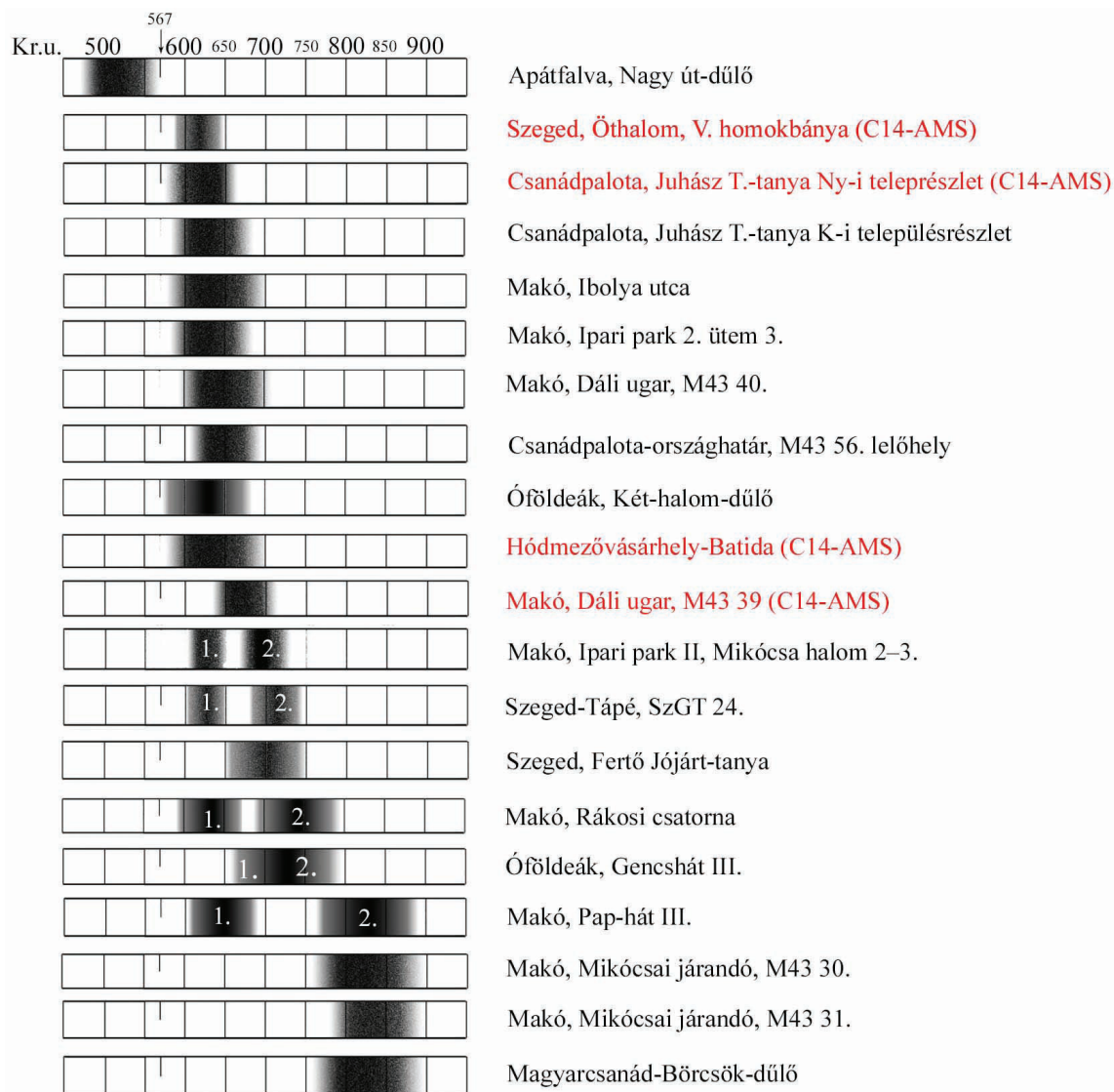


Fig. 2. Presumed relative and absolute chronological position of Gepid and Avar Period settlements. (drawing by the author)

In addition to the analysis of the ceramic material, I also included other types of finding in the evaluation, which contributed to drawing a more complete picture of the settlements. For example, several pieces of daub with impressions from the end of the Late Avar Period provided evidence of log buildings. Stones with mortar, Roman bricks (Fig. 4), an iron key, a bag-shaped mould or crucible (*Beutelförmige Keramiktiegel*; Fig. 5), a raw iron nugget or bloom iron, several bone tools, and a grinding stone refer more broadly to the economic activity of the former residents. These finds also marked new research directions. Placing the local settlement history, as unfolding from the find material, into the context of the Great Hungarian Plain will be the next step in the evaluation.

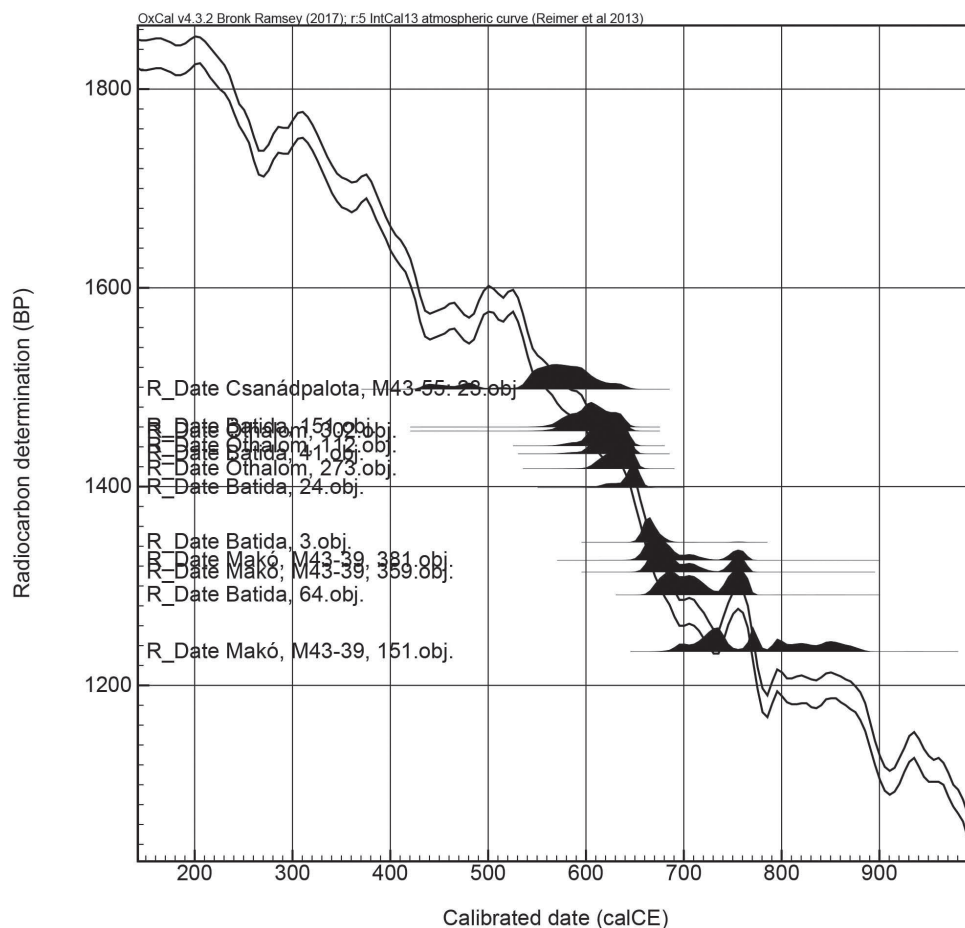


Fig. 3. Twelve radiocarbon (AMS) dates from five 7th-century sites. The unusual precision is the result of a slope in the calibration curve for the 7th century (compiled by the author)

The question of the Gepid–Avar transition

The analysis of the 6th-century Apátfalva-Nagy út-dűlő Gepid settlement provided previously unknown information on Germanic pottery traditions in the area. Based on this record, Germanic pottery tradition, relying mainly on fast-wheel, did not affect the arriving nomadic populations' pottery tradition (which did not involve a potter's wheel). There is but a definitive change in ceramic technology, surface treatment, and decoration practices, suggesting a possible change in population in the middle third of the 6th century.

Characteristics of settlement pottery in the first half of the Avar Period

The settlements (e.g., Hódmezővásárhely-Batida, Szeged-Óthalom V. homokbánya, Csanádpalota-Juhász T.-tanya M43 site no. 55, settlement parts E and W), dated to the first half of the Avar Period (end of 6th and 7th century, i.e., Early and Middle Avar Period), are characterised by a dominance of hand-formed pottery and a lack of Gepidic features. The ceramic record contains a variety of vessel types: pots that widen in the middle and upper third of their body, shouldered globular large storage vessels (*hombár* or *Amphoren*), flat, plate-like bowls, deep bowls, and oven pans; rare types include baking sheets, lids, and handled jars (Fig. 6). The necks of pots and large storage vessels were often conical (*Gefässe mit Trichtermündung*), a characteristic that seems to have become more sporadic towards the end of the 7th century. The analysis was able to confirm the—previously only

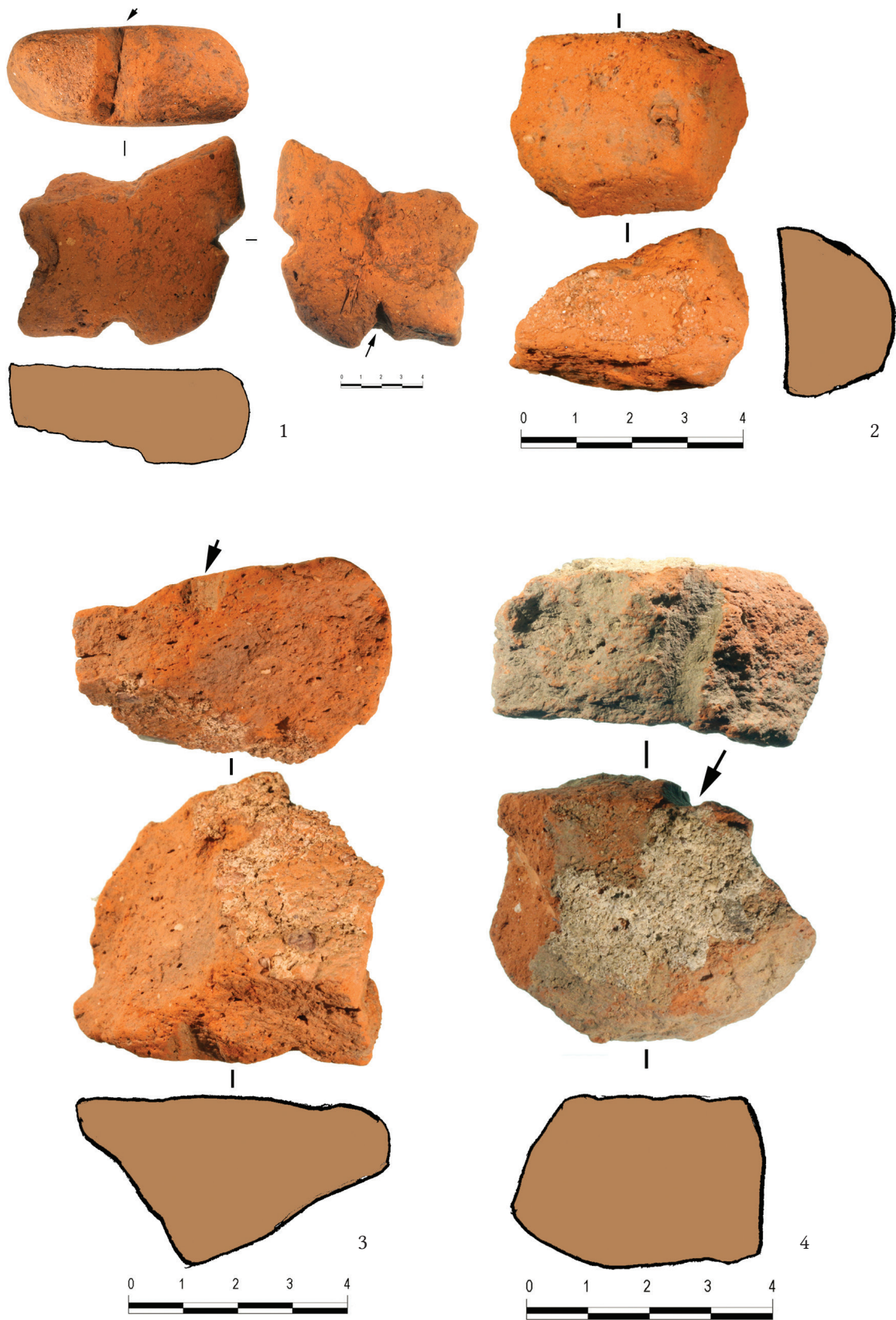


Fig. 4. Selection of Roman brick fragments from the 7th-century Hódmezővásárhely-Batida (drawing by the author)

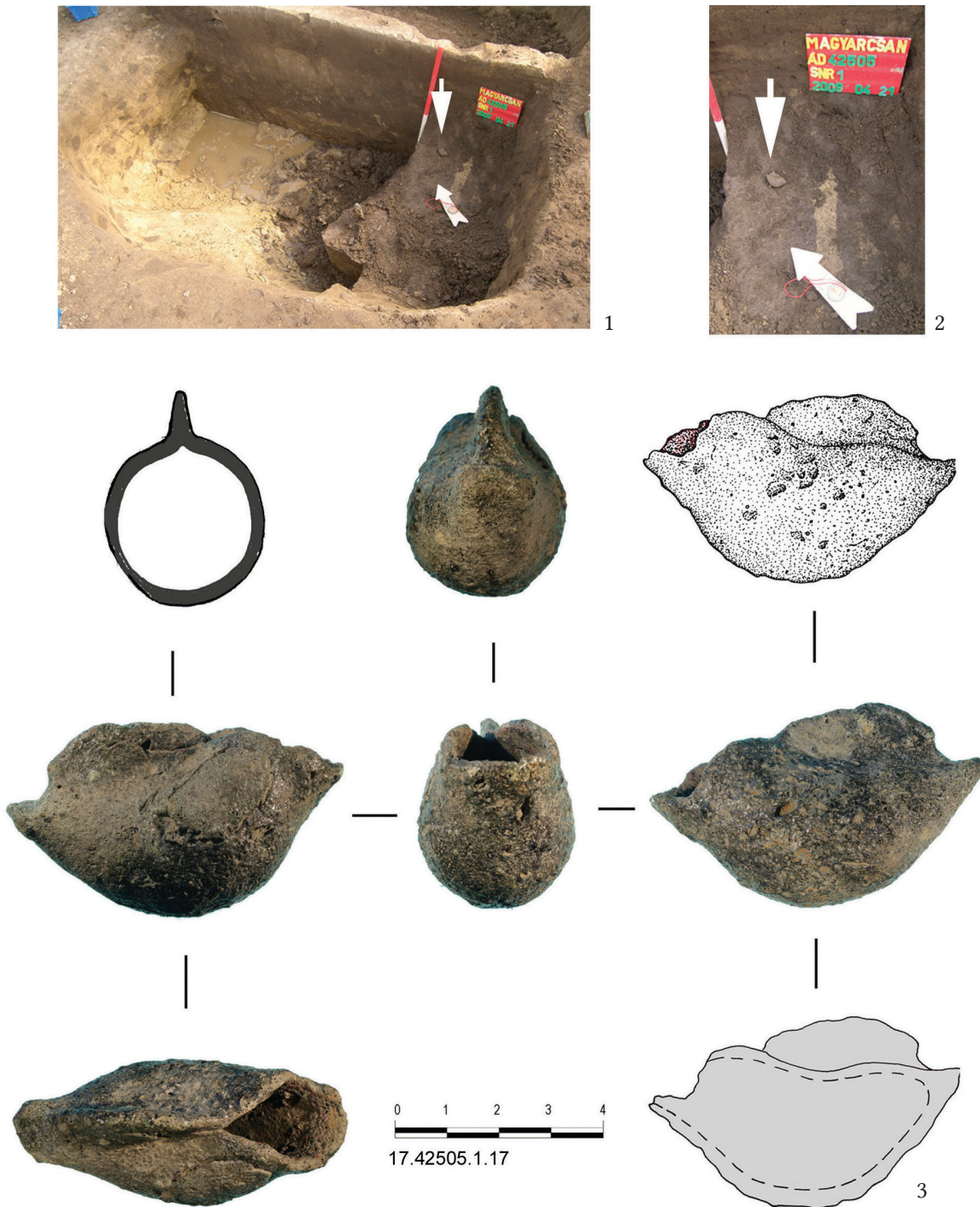


Fig. 5. A bag-shaped mould or crucible (*Beutelförmige Keramiktiegel*) from Magyarcsanak-Börcsök-dűlő, Feature 6 (photos and drawing by the author)

assumed⁷—presence of baking bells on settlements in the first half of the 7th century. Fragments of these bells were found together with black painted pottery on Hódmezővásárhely-Batida. AMS dating confirmed the early dating of this vessel type at both Hódmezővásárhely-Batida, and Szeged-Öthalom. Baking bells remained in use until the end of the Avar Period in the region and even appeared in the Early Árpadian Age (Csanádpalota-Juhász T.-tanya, M43 site no. 55).

7 HAJNAL 2008, 285; VIDA 2016b, 383–384, note 208.

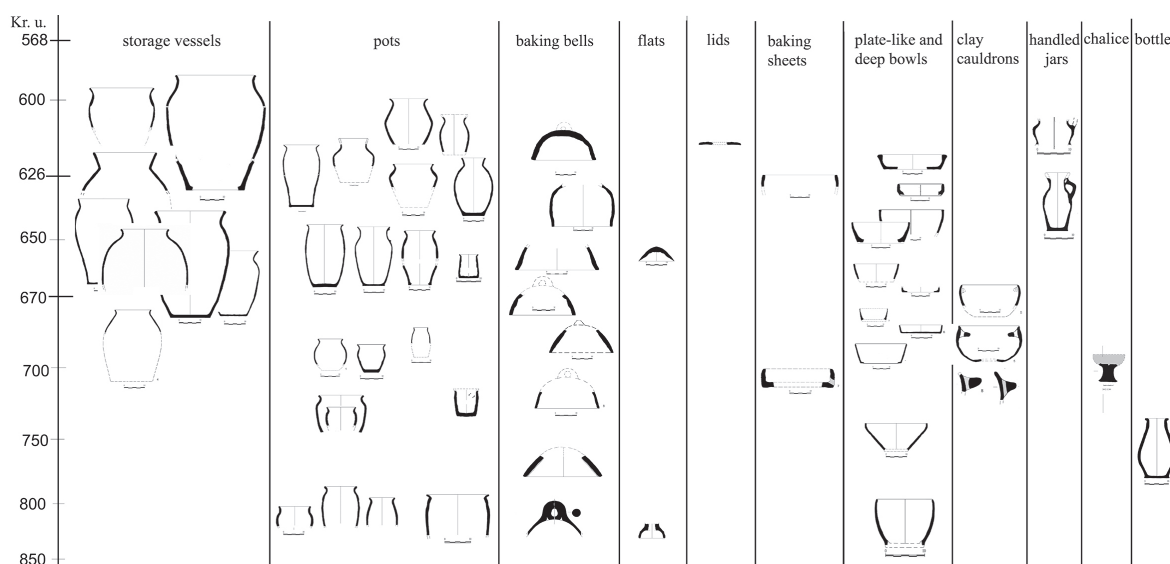


Fig. 6. Hand-formed pottery types from the first half of the Avar Period in the study area (drawing by the author)

Surprisingly, hand-formed clay cauldrons seem to be rare in the region. Between the two certain and two uncertain examples identified so far, only specimens of the type that mimic metal cauldrons could be identified. The most complete example (a 9.4-litre vessel) was found at Makó-Dáli ugar, M43 site no. 39 (Fig. 7). According to current data, hand-formed cauldrons were only used in the last third of the 7th and the first quarter of the 8th century in the region.⁸ No cauldrons were found among the thousands of ceramic fragments from the considerably larger Late Avar Period sites.

Limited decoration of hand-formed pottery is a basic characteristic of the Avar Period. In its first half, most decorative motifs adorned the rim (Fig. 8), less frequently the shoulder, and only rarely the entire body of vessels (Fig. 9). The motifs included impressed (finger impressed, combed, incised line, comb-punctured, plant-impressed, stamped [*Stempelverzierung*], and twisted-cord) and applied (Vida III Bc type) decorations and black drip-painting.⁹ Multiple vessel fragments with *gynaecomorph* decoration (imitating the female body) were found among lug-decorated vessels (*Buckelgefässe*) in Hódmezővásárhely-Batida. The appearance of applied decoration emphasizing the female sex attributes is so far unparalleled in Avar context.

Although known from graves, only a few fragments of grey, fast-wheeled pottery of Eastern Transdanubian origin, made by workshops following Germanic pottery traditions, were found in settlements from the first half of the Avar Period. Grit-tempered pots (Vida I B₁ type) appeared in the first half of the 7th century, while ones made of well-processed clay (Vida I B₂ type) in the 7th century and at the turn of the 7th and 8th centuries. With a total of only twenty-three pieces, including two I B₁ type grit-tempered fragments,¹⁰ from seven sites suggests limited use of these ceramic types.

Characteristics of settlement pottery in the second half of the Avar Period

The chronology of the sites suggests that slow-wheeled pottery (Vida II B type) appeared in the region in the last quarter of the 7th – beginning of the 8th century (e.g., Szeged-Fertő, Jójárt-tanya; Szeged-Tápé, SzGT well no. 24, Makó-Mikócsa halom). Its emergence can be related to the start of

8 HAJNAL 2008, 282. 11. kép 5; VIDA 2009, 116; VIDA 2016a, 97–98.

9 VIDA 1999, 113.

10 VIDA 1999, 56.

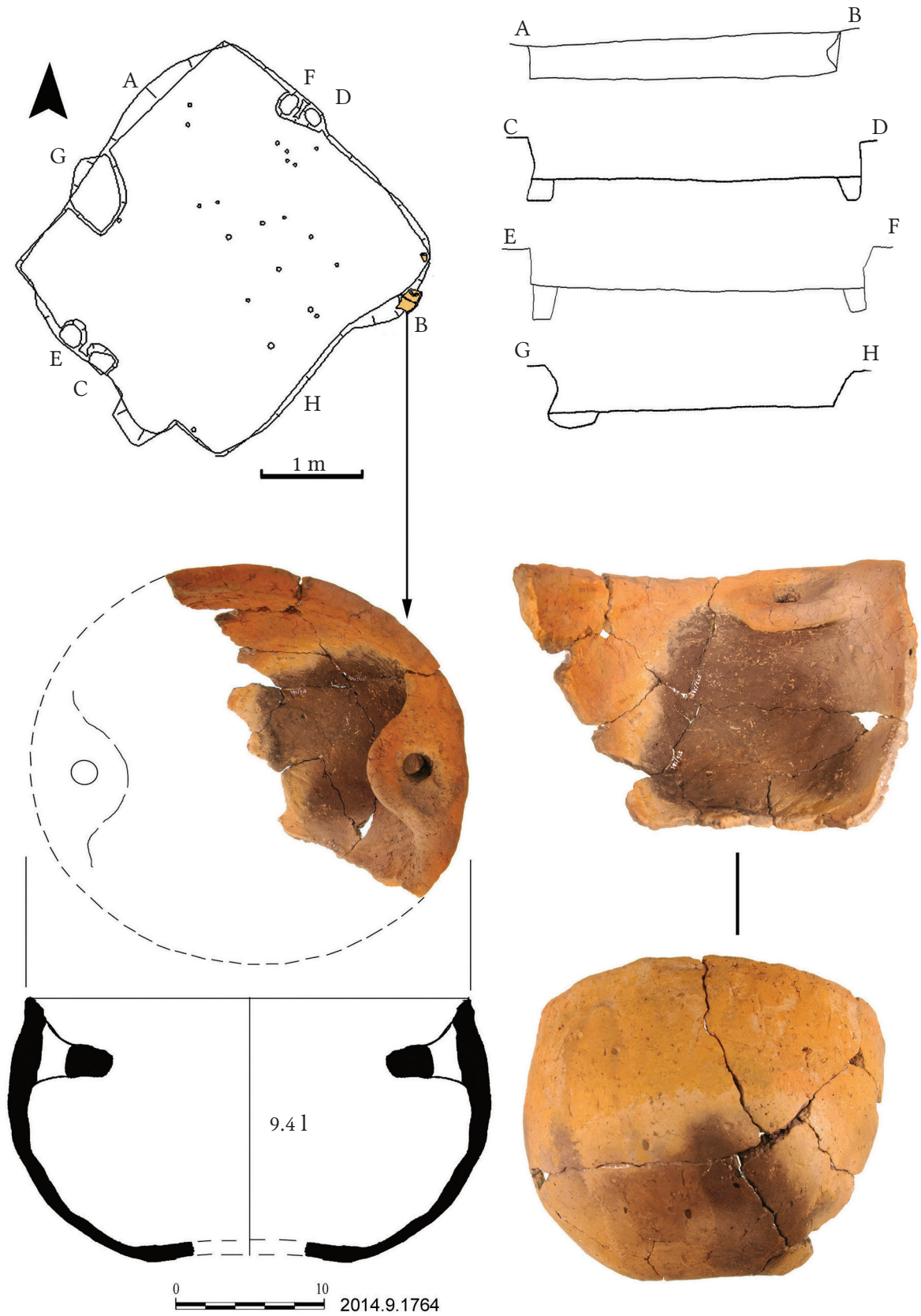


Fig. 7. Hand-formed clay cauldron fragment from Makó-Dáli ugar, M43 site no. 39 (photo and drawing by the author)



Fig. 8. Rim decoration variations of hand-formed pottery from Hódmezővásárhely-Batida. 1 – knife-, 2 – plant-, 3 – finger impressions (photos by the author)

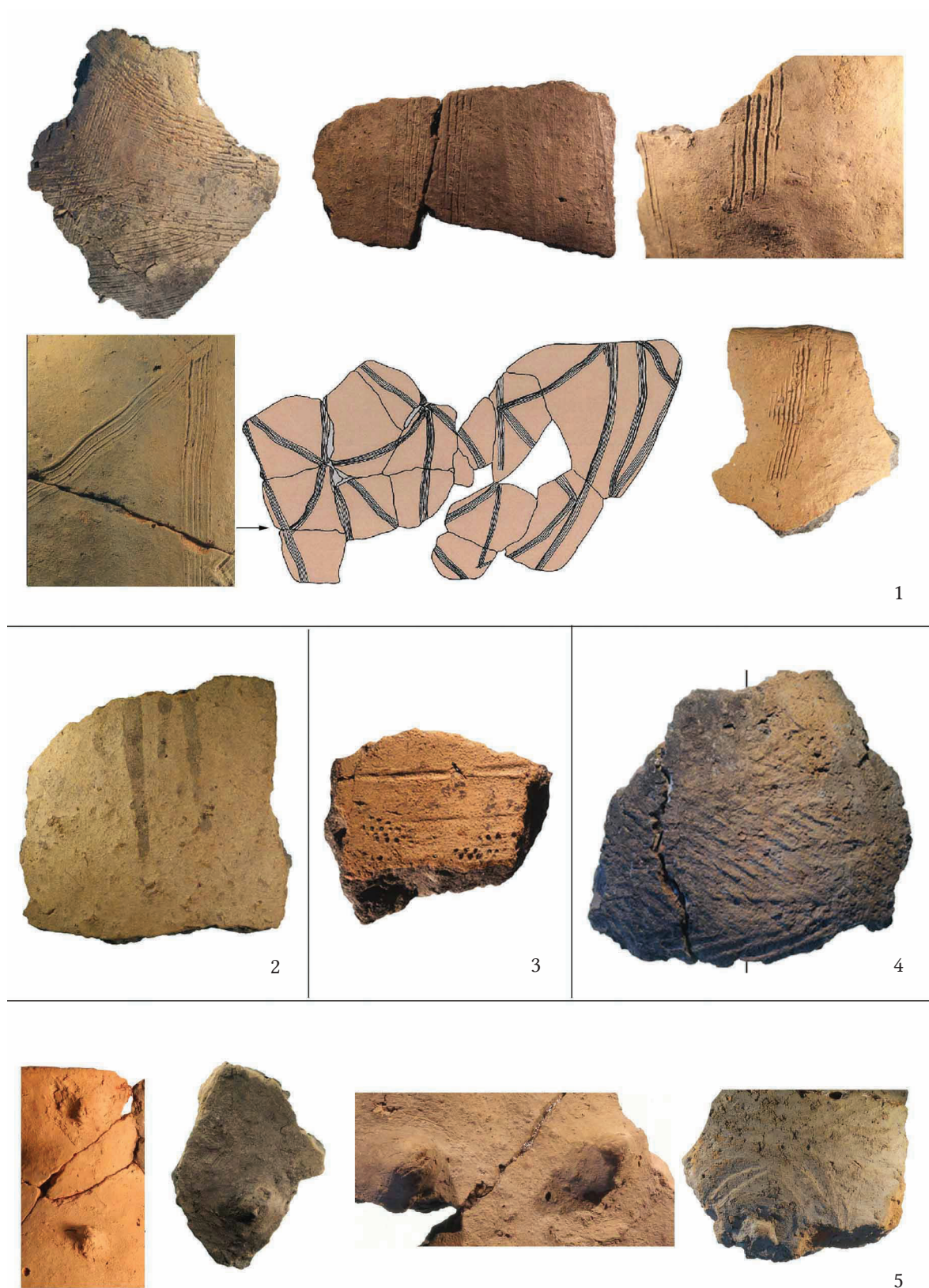


Fig. 9. Selection of motifs decorating hand-formed pottery from Hódmezővásárhely-Batida. 1 – combed line, 2 – black drip-painting, 3 – comb-punctured, 4 – stamped, 5 – applied decoration (photos by the author)

the second half of the Avar Period, that is, the changes that occurred at the end of the Middle and the beginning of the Late Avar period. These can potentially be associated with the arrival of a new population. The new pottery type appears to have gradually spread, slowly replacing hand-formed pottery by the 9th century.¹¹ Thus, large storage vessels, flat, plate-like bowls, and tall pots with conical necks could only be found in find assemblages until the turn of the 7th and 8th centuries. The data set suggests limited use of the deeper flowerpot- and cup-shaped bowls, lids, and pots with a slightly outcurving rim and a widening belly (imitating slow-wheeled vessels) in the Late Avar Period. In addition to these, the appearance of a new flask and a conical bowl type (the latter imitating Late Antique forms) is unique (Óföldreák-Gencshát III). The continued popularity of baking bells among hand-formed vessels is notable; this was the only vessel form that remained in use almost unchanged throughout the entire Avar Period. Over time, their proportion increased, making up about 80–90% of hand-formed pottery. Exceptional finds include the fragments of two clay chalices (*Tonkelche*) from Makó-Mikócsa halom. These are very rare copies of Middle Avar Period metal vessels made locally at the turn of the 7th and 8th centuries. The occurrence of these chalices, together with sand-tempered, slow-wheeled pottery, also helped to date the local appearance of slow-wheeled pottery in the region. The widespread use of slow-wheeling brought about a simplification in the pottery inventory: most pots had wide mouths, emphasized shoulders, and a combed and line decoration covering the whole vessel body. In addition to these, flowerpot-shaped bowls were only occasionally found amongst wheel-made pottery, and the unusual slow-wheeled baking bells appeared in even lower numbers (e.g., Makó-Mikócsai járadó M43 site no. 31, Fig. 10).

Wheel-thrown yellow pottery also occurs in the record of Late Avar settlements between the end of the 7th and the beginning of the 9th century.¹² Although we only have five 100-g pieces from two sites (Makó-Mikócsai járadó M43 site no. 31, Óföldreák-Gencshát III), their presence is helpful for chronological classification. The limited occurrence of the type suggests that they were not produced by local workshops.

No drastic change can be observed in pottery technology in the ceramic record of Late Avar sites in the 9th century (Makó-Mikócsai járadó, M43 sites no. 30 and 31, Makó-Pap-hát III, Magyarcsanád-Börcsök-dűlő IV) or the Early Árpáadian Age Csanádpalota-Juhász T.-tanya site no. 55. This represents a contrast to the earlier changes in pottery technology that accompanied the Gepid–Avar transition. Of hand-formed pottery types, only baking bells remained in use after the Avar Period, while the earliest Árpáadian Age pottery record features characteristics—slow-wheeling and certain formal and decorative elements, including combed and line patterns—that can be traced back to the pottery traditions of the 9th-century local population, indicating, perhaps, the persistence of local Avar groups.

Changes in settlement structure in the Avar Period and the Árpáadian Age

The topographic characteristics of the study area, namely the relationship between the floodplain and the higher, flood-free lands surrounding the Maros and Tisza rivers, fundamentally defined the location and appearance of both Gepid and Avar Period and Árpáadian Age settlements. The fertile lands and freshwater bodies represented important resources for the populations living in this area throughout centuries. The Maros waterway may serve as an interregional exchange corridor,

11 TOMKA 1988, 47; BÁLINT 1991, 43; VIDA 1991a, 391; VIDA 1991b; SZŐKE 1992, 136–137; HEROLD 2004, 61; TAKÁCS – VADAY 2004, 41; HEROLD 2006, 64–65; MESTERHÁZY 2009, 194; VIDA 2017, 206, 71.

12 BIALEKOVÁ 1967, 5–76; GARAM 1969, 207–241; SZŐKE 1994, 258–259; BOGNÁR 2016, 20; KONDÉ et al. 2018, 187, 200, Fig. 14.



Fig. 10. Slow-wheeled baking bells from Makó-Mikócsai járadó, M43 site no. 31 (photos by the author)

as suggested by the presence of non-local stone types, like, e. g., stones with lime mortar and Roman brick fragments, recovered for the first time from Gepid and Avar context.

The communities that settled on flood-free ground on the plains mainly built so-called pit houses. Based on the single Gepid site (Apátfalva), pre-Avar pit houses were rectangular, deep, E–W oriented, and without a hearth. Two posts placed by the mid of the short end walls supported the purlin of the roof. While the settlements were fairly densely built-in, there was no indication of a surrounding ditch.

The abundance of sites outlines a more detailed picture of the settlements of the Avar Period. The related record includes 103 buildings with 94 pit houses, two post-framed houses, a log house, and six log cellars among them.

Avar Period settlements usually contained square or, more often, rectangular semi-sunken houses with post-framed rising walls. Akin to Gepid Period buildings, most houses were E–W oriented in the first half of the Avar Period, while NE–SW orientation was also common. In contrast, houses in the Late Avar Period primarily had a NW–SE orientation. The orientation tendencies of houses correspond with that of Early and Late Avar burials in the Trans-Tisza Region.¹³ Hypothetically, this suggests a connection between the two spheres, which needs to be further investigated beyond the investigated region. The inner structure of pit houses became simplified over time. Storage pits dug into the middle of the longer wall and a work- (sitting) pit sunk into the floor were no longer present in Late Avar houses. Oval depressions deepening into the floor and the wall were rare but present throughout the entire Avar Period. While heating infrastructure was rarely part of the pit houses in general, the presence of a hearth/oven inside the building or a pear-shaped oven dug outwards from the wall became more common by the second half of the Avar Period (Fig. 11). There is only one example from the first half of the Avar Period (Hódmezővásárhely-Batida) of a possible inner log wall alongside the external wall.

In addition to pit houses, other house types were also in use; for example, post-framed surface buildings (Hódmezővásárhely-Batida) and log-houses with (Makó-Mikócsai járandó, M43 sites no. 30 and 31) without a log cellar. The internal layout of the buildings and the presence of impressed plaster pieces suggest that certain people lived in residential buildings with more complex structures. The social position or wealth of the occupant could explain these more elaborate constructions, akin to which could not be recorded on any of the analysed Gepid Period and Árpáadian Age settlements.

Pit house was still the most common residential building type in both analysed Early and Late Árpáadian Age settlements. In the early phase, such houses were deep and roughly square, while by the 12–13th century, the shape changed into rectangular. In the Early Árpáadian Age, the orientation of houses was mostly E–W, while in the Late Árpáadian Age, it was uniformly N–S. In most buildings ovens, hollowed out from the corner of the building, served as a heating feature. The purlin was usually held by two posts at the centre of the short walls. The roof, similar to that in most Avar houses, rested on the ground. In one Early Árpáadian Age site (Csanádpalota-Juhász T.-tanya M43 site no. 55), a shallow semi-sunken building with six postholes was found, suggesting that the walls may have risen above ground level.

Ditches are considered significant features in both Avar Period and Árpáadian Age settlements. Thus, the absence of such features from the settlements of the first half of the Avar Period in the study area is striking. It seems that ditches only became important elements of settlement architec-

13 TOMKA 1975; LŐRINCZY 1992, 164–165; LŐRINCZY 1998, 352.

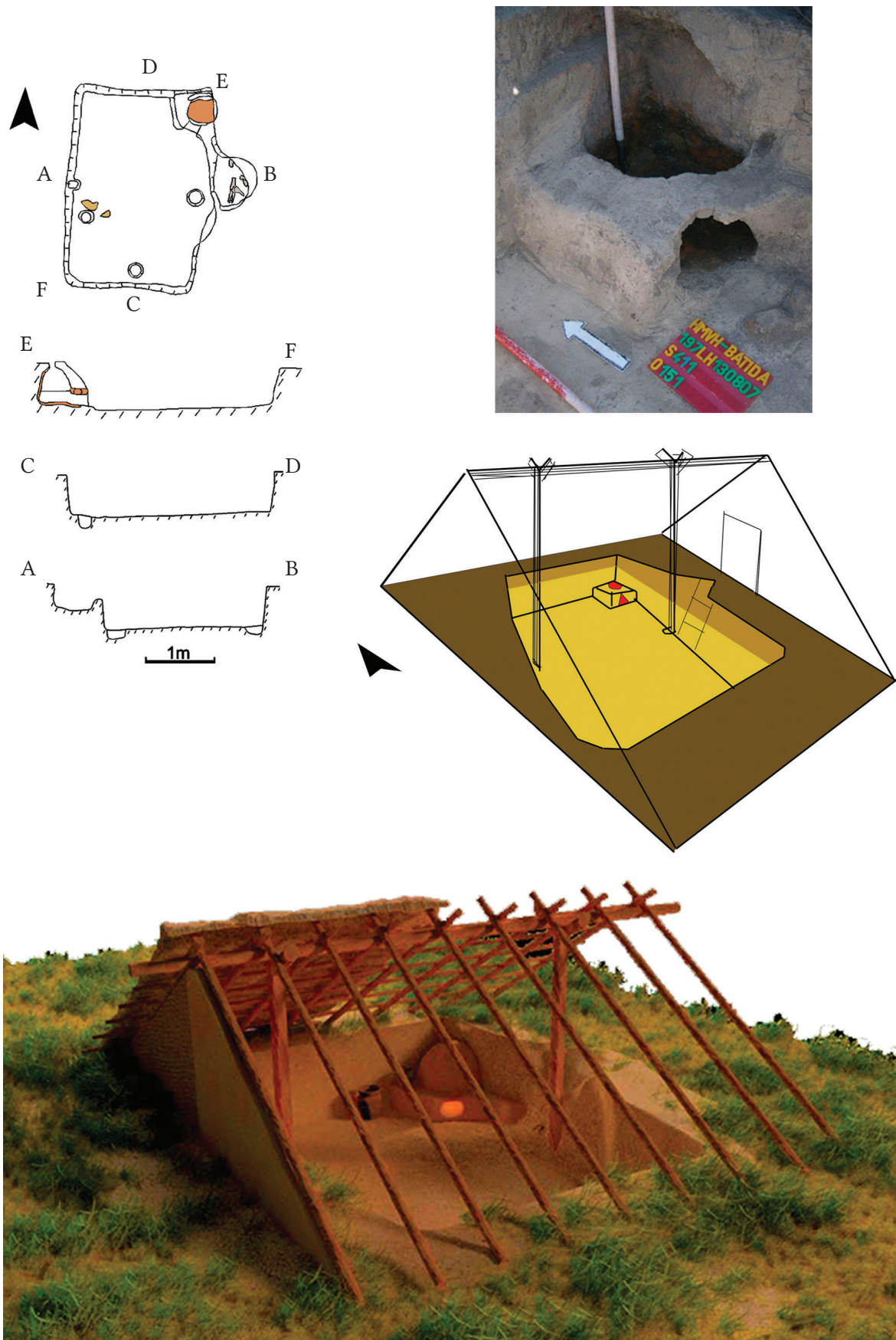


Fig. 11. Reconstruction of a pit house with an internal hearth/oven; Hódmezővásárhely-Batida, Feature 151 (photos by Sándor Varga, drawing by Gergely Donka)

ture in the Late Avar Period, i.e., after the turn of the 7th and 8th centuries, and their role probably increased towards the end of the period. Although available data is limited, a similar shift can be noted between Early and Late Árpadian Age settlements, probably reflecting a shift from a more mobile to a sedentary lifestyle and an associated change in subsistence strategy. Similar processes may result in almost identical changes in the settlement structure on multiple sites in the region, both in the Avar Period and the Árpadian Age.

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