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FROM VESSEL TO COMMUNITY.
Possibilities of investigating the function of a special Bronze Age vessel type

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This paper attempts to reconstruct the use of fermenting vessels and their role in Middle Bronze Age communities. Vessels of this type can be found in the record of several periods of the Bronze Age in the Carpathian Basin but seem to be the most widespread in the Middle Bronze Age (2000/1900–1500/1400 cal BC). Storage vessels with internal knobs and special decoration have been associated with the production of dairy products or the fermentation of alcoholic beverages, but it is not possible to reconstruct their function based on typological and ethnographic analogies alone. Clarifying the actual function of this rare vessel type, often found in special context as part of so-called structured deposits, could provide loads of new information on the culinary habits of people in the first half of the 2nd millennium BC and their social context.

Keywords: Bronze Age, fermenting vessel, community, functionality, spatial organisation

FERMENTING VESSELS IN THE LIGHT OF COMMUNITY EVENTS

The research of ceramic vessels with different methods yields a large part of the data required to understand how prehistoric societies functioned. The design and decoration of a vessel are based on the needs of the group in the manufacturer's or user's environment and the potters' creativity, compliance, craftsmanship, and skills.[2] That results in features that are recurring consistently or are unique, as appearing, among others, on Middle Bronze Age vessels.

The present study focuses on a single vessel type which, based on its appearance, usual find context, and condition, comprises probably not completely ordinary items.[3] The main aim of the research of this type was to understand to what degree the members of the community could access these vessels and whether the vessel type was rather common or functioned as an accessory on special occasions. However, separating these two spheres, which were much more closely linked in prehistoric societies than today, is highly problematic and, in many cases, impossible from a distance of several thousand years. The processes related to specific events can be identified mainly through their outcome, like the ritual burning of houses in the Bronze Age (Chapman 1999; Tringham 2005; Szeverényi 2013, 216–220), the hiding of various objects (e.g., Kovács 1978; V. Szabó 2004; Ilon 2012, 19), or unusual burials (e.g., pit burials inside settlements; Szeverényi et al. 2020, 366–373).

As a special event, the communal meal or feast has long been of great interest in archaeological research (Kalla, Raczky & V. Szabó 2013). Such events are not only a meal shared by the members of the community but also occasions of major significance. Community events bring structure into the life of human groups on both the supra-settlement level and on a smaller scale (family, cooperating households, families linked by marriage, units linked by economic interest; Dietler & Hayden 2001). Being part of a community consists of many elements, of which this study focuses on cooperation, an aspect rather challenging to discuss in archaeological research. Cooperation, an essential element of life, is a neglected aspect in

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[2] Several studies and books discussed the creativity of individuals, the choices of community members, and the pottery styles of small communities (e.g., Sofaer 2017).
[3] The project entitled "In the footsteps of Middle Bronze Age gastronomy: scientific and biographical analyses for determining the function of 'fermenting vessels'" was carried out within the framework of the Új Nemzeti Kiválóság Program [New National Programme of Excellence] 2021/2022.

scientific interpretation, not only when outlining communities but also when discussing the find context of particular items. From an archaeological point of view, culture, cultural expectations, beliefs, attitudes, traditions, and the phenomenon of cooperation can be interpreted mainly at the community level.

Although the archaeological traits of communal meals from the Middle Bronze Age of the Carpathian Basin are pretty rare and mainly represented in indirect ways only (Csányi & Tárnoki 2013), distant analogies and indirect phenomena indicate that the custom was also in practice there. Based on their appearance and the occasional special find context, fermenting vessels may also be interpreted as records or one-time accessories of such events (Gucsi & Szabó 2018).

But how do we get from an object or only a fragment found in a pit in a Bronze Age settlement to community events? To do that, it is necessary to examine the everyday and special tasks of a community. Daily tasks include, among others, subsistence- or work-related activities, such as food production, the accumulation of surplus, and the storage of goods; that is, all tasks linked directly to the survival of the group in a given social structure (Dietrich & Heun 2012). Moreover, the planning and maintenance of community spaces can also be listed here. Any series of actions that can be linked to festivals and rituals can be considered non-daily or special. Whatever the task, it is important to highlight the strength of the community and the cooperation that promotes its formation and development.

CHARACTERISTICS AND POSITIONS OF THE VESSEL TYPE UNDER STUDY

To understand the function of a particular vessel type, it is also necessary to know the other vessels of the same pottery style. Thinking in terms of large functional groups, vessels may be classified as equipment for storage, cooking (processing and preparation), and presentation and consumption. However, these groups need to be treated flexibly, keeping in mind that certain items may have different functions depending on the food or drink associated with them in a particular situation. While their forms put fermenting vessels amongst those for storage, the related preconceptions and the supposed function pigeonhole them with cookware. Actually, the truth may lie between these interpretations (*Fig. 1*): the unique design of fermenting vessels may allow storing the 'product' in them.

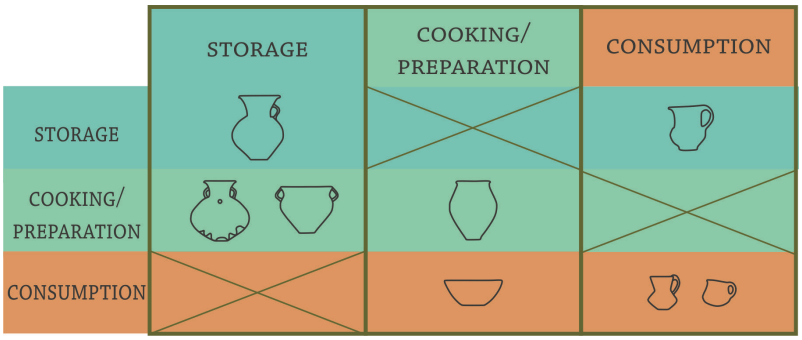


Fig. 1. "Basic" Middle Bronze Age pottery sets and their functional classification.

Fermenting vessels in this form are present from the Early Bronze Age (Patay & Patay 1965, 166), although a different variation already occurs during the Copper Age (Bondár 2008, 57). Such vessels can also be found in Late Bronze Age sites, but mainly in the earlier phases and in small numbers. Based on our current knowledge, the vessel type became widespread in the Carpathian Basin during the Middle Bronze Age (Szathmári 2009).

The form of fermenting vessels is identical to storage vessels, reflecting the design and quality of the urn-shaped vessels of the period. The internal surface is often roughened up to the top of the belly or incised with regular or irregular lines; the vessels often have knobs and/or sometimes cross-shaped ribs on the bottom. The bottom of the vessel can be flat or curved. They have four holes surrounded by ribbed applied decorations under the shoulder, which do not appear on other vessels. Akin to the pottery of the era, the variation of the Koszider Period, a transitional stage between the Middle and Late Bronze Age, is characterised by a lavishly decorated external surface (*Fig. 2*).

The applied decoration around the holes below the shoulder appears on vessels mainly in the late Middle Bronze Age Vatya Culture (Bóna & Nováki 1982, XXXII. 11; LXVI. 1; Vicze 2011, Pl. 186/2). Two motifs can be distinguished: the one resembling coeval moustache-shaped metal pendants and the other resem-

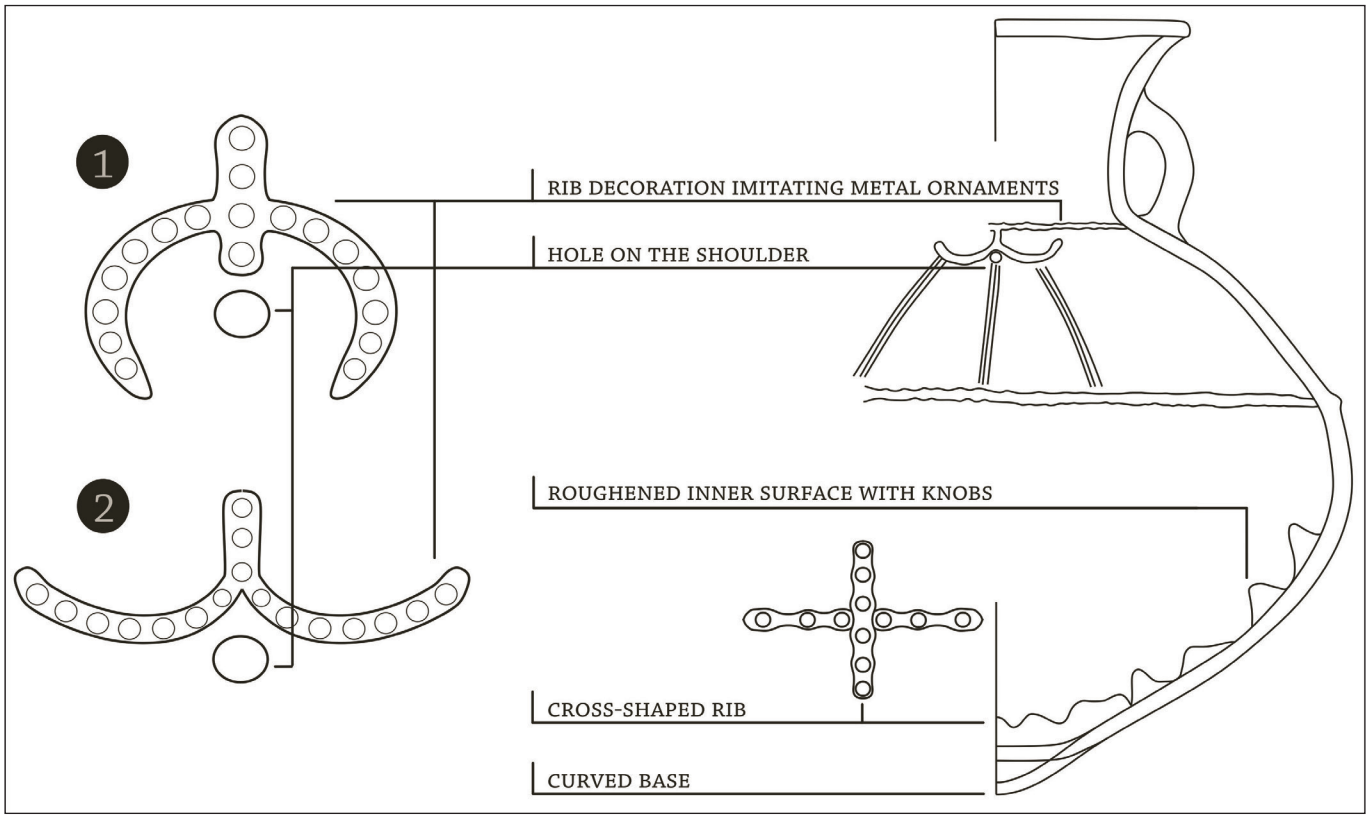


Fig. 2. Characteristics of fermenting vessels.

bling lunulae. While moustache or swallow tail-shaped pendants were more typical in the area of the Transdanubian Encrusted Pottery, lunulae were more common in Vatya sites along the Danube or east of that. The record of the Vatya settlements I have studied so far contained exclusively specimens with one or the other motif. For example, while the record of Budajenő–Hegyi-szántók[4] contained exclusively pieces with moustache-shaped decoration (that linked the settlement with Transdanubia); only applied lunulae have been recovered from the area of Budapest, at Budapest, III., 291 Királyok útja and the area between the Sorompó, Folyamőr, and Bogdáni Streets (former Buszesz[5] *Figs. 2, 4*). The shaping of the metal ornaments on the vessels had a double purpose: it made the item stand out from the "regular" inventory and served as an expression of community-level group identity both within and beyond the boundaries of the settlement (Koncz & Szilágyi 2017, 203).

Most fermenting vessel fragments were recovered from settlement pits[6] or structured deposits, the latter referring to non-random, intentionally created and arranged find assemblages (Richards & Thomas 1984). Besides, there are some grave finds, but their occurrence rates are negligible.

The ribbed, roughened inner surface clearly shows that the vessel had a distinct functional role since these details, not visible on the completed product, could only be created by inserting additional steps in the technological process of vessel making (Szathmári 2009, 302). The holes under the shoulder (emphasised by a decoration resembling metal objects), previously interpreted as 'soul holes' (Bóna 1975, 28), also seem to be functional. While relatively few studies have discussed these features or attempted to reconstruct their function, the number of related theories is considerable (Tóth 2008, 63–65). It was reconstructed as a tool

[4] The site lies at the western fringes of the Vatya culture's core area.

[5] Short for the one-time Budapest Liquor Factory.

[6] It is complicated to determine the type's rate of occurrence for several reasons. First, it is only possible to distinguish between the vessel type in question and storage vessels based on certain parts of the exterior (e.g., holes under the shoulder with applied decoration around, roughened internal surface). Second, as settlement pottery finds – especially when fragmented – are rarely processed and published, fermenting vessel fragments from waste or storage pits often remain unavailable for research.

for preserving food (fermentation) (Szathmári 2009, 302), i.e., making butter (Horváth 1974, 61[7] Németi 2011; Pozsgai & Savanyú 2016) or alcoholic beverages (Patay & Patay 1965, 166). The holes may be associated with the escape of gases released during the fermentation process or the suspension of the vessels. The latter interpretation is supported by the fact that some pots have curved bases and cannot stand on their own.

SAMPLING AND TESTING METHODS

The present study includes samples collected from the settlements of the Vatya culture in and around Budapest.[8] The majority of these sites can be dated to the Middle Bronze Age, between 2000/1900–1500/1400 cal BC (*Fig. 3*). Vessels from several types of settlements (fortified settlements, settlements without any enclosures) and features were analysed; fermenting vessels found both in simple waste pits and structured deposits were equally included in the analysis. Besides fragments with heavy secondary burn marks, two fragments from an Early Bronze Age (Budapest XI, Soproni út) and a Late Bronze Age settlement (Budapest XVII, Rákoscsaba-Majorhegy) were also included in the sample set. In addition to the original aim of the project (to define the actual function of fermenting vessels), developing research methodology was also important. The scientific analysis of secondarily fired pieces might be problematic if the vessel had been exposed to heat high enough to make further analysis difficult or impossible.

The analysis of the fermenting vessel finds included three directions: 1, analysis of the artefact: analysis of the vessels' appearance (shape, quality, decoration, use marks); 2, context analysis: mapping the spatial distribution of the vessel type within the settlements (spatial data analysis, analysis of activity zones); 3, scientific analysis: identification of the former contents (organic matter residue analysis). Lately, Organic

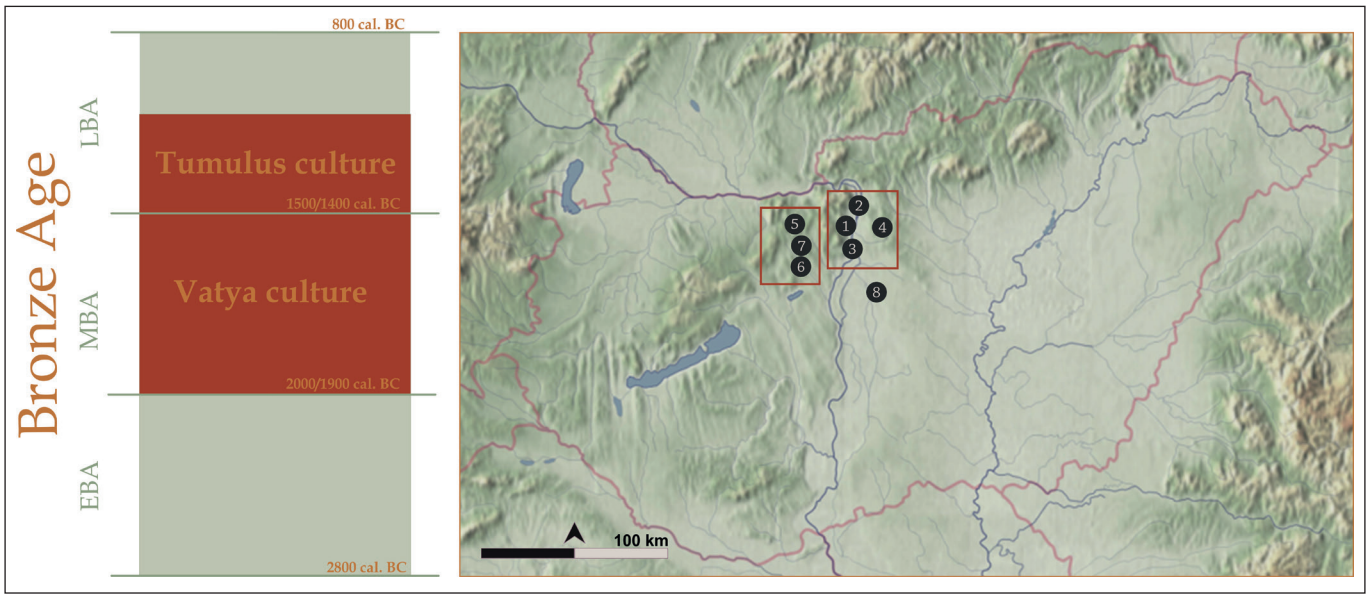


Fig. 3. Spatial and temporal boundaries. Sites included in the study: 1. Budapest, III. the area bordered by Sorompó, Folyamőr, and Bogdáni Streets (former Buszesz); 2. Budapest, III. 291Királyok útja; 3. Budapest, XI. Soproni út; 4. Budapest, XVII. Rákoscsaba-Major-hegy; 5. Budajenő–Hegyi-szántók; 6. Tárnok–Szőlőhegy; 7. Sóskút, site no. 26/4; 8. Kakucs–Turján mögött.

[7] The vessel recovered from Szigliget is not identical in form to the type presented in this study but also has internal knobs.

[8] The sites included in the research are Budapest, District III or the area bordered by Sorompó, Folyamőr, and Bogdáni Streets (former Buszesz) Budapest III, 291 Királyok útja (Szilas 2009; 2017), XI. Soproni út, Budapest, XVII, Rákoscsaba-Majorhegy (Reményi *et al*. 2006), Budajenő– Hegyi-szántók (Gucsi & Szabó 2018), Kakucs–Turján mögött, Tárnok–Szőlőhegy, and Sóskút 26/4 lh. The selected regions and sites have already been discussed in my previous papers. Thus, the site of Tárnok–Szőlőhegy was dealt with in my BA thesis, Budajenő–Hegyi-szántók in my MA thesis. The settlements of Budapest, Királyok út III and Rákoscsaba–Majorhegy are currently being processed as part of my PhD dissertation (in preparation). I am grateful to Gábor Szilas (BTM Aquincum Museum) for the opportunity to examine samples from the area bordered by Sorompó, Folyamőr and Bogdáni Streets (former Buszesz) and Soproni út, while I than the samples from Kakucs I to Gabriella Kulcsár (Archaeological Institute, Research Centre for the Humanities, ELRN).

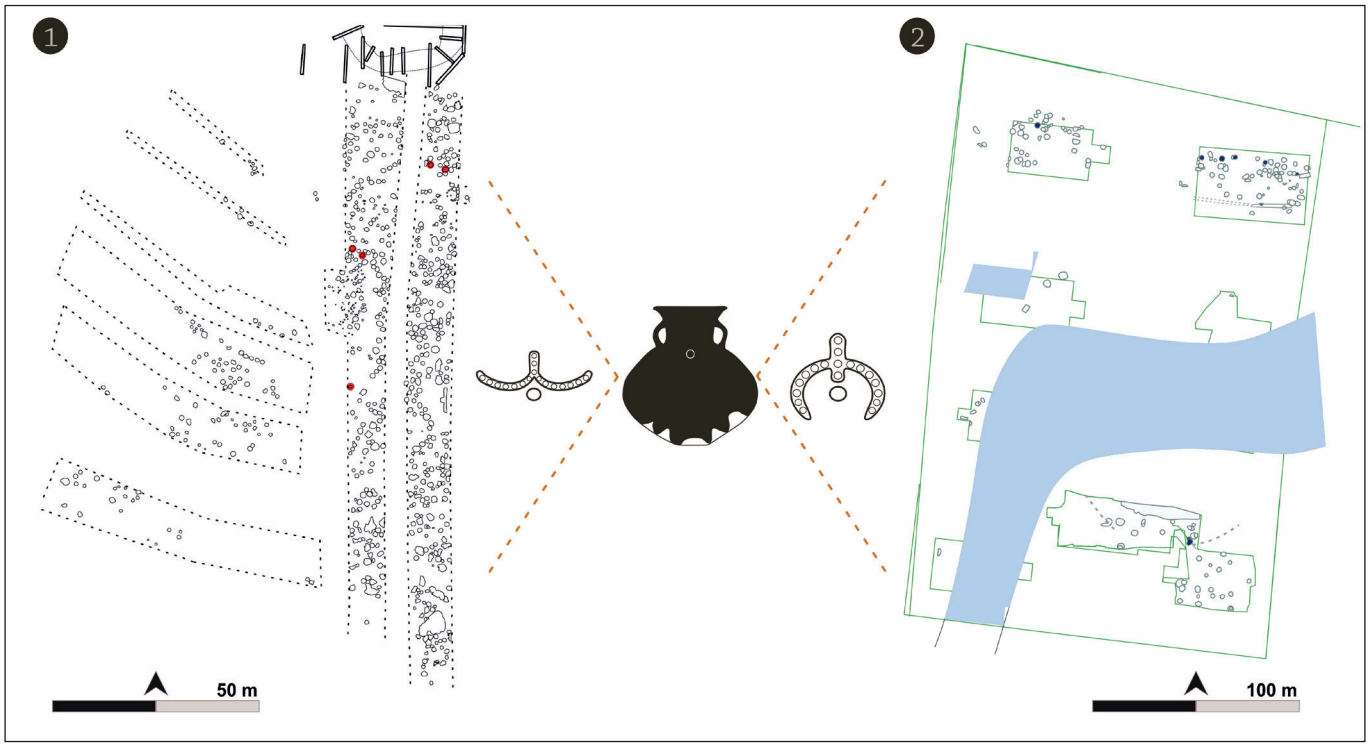
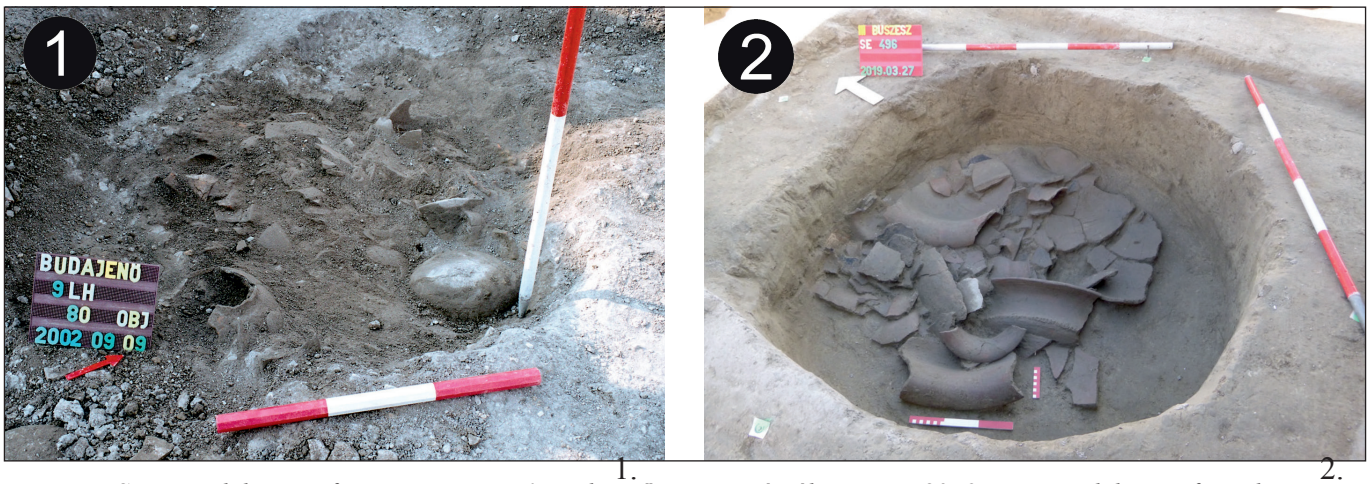


Fig. 4. Distribution of fermenting vessels at the sites of Budajenő– Hegyi-szántók and Budapest, III. Királyok útja 291

Residue Analysis (ORA) has become an established method of archaeological investigation: some of the organic matter that had penetrated the walls of ceramic vessels during its use can be detected, and lipid residues can be used to infer quite accurately what was stored in the vessels. It is also possible to distinguish between vegetable oils, animal body fat, milk fat, ruminant or non-ruminant fats, or even fats from freshwater or marine animals.[9]

A total of 16 samples were selected from 8 settlements. The sherds mainly came from the bottom third of the vessels or the hole and rib zone around the shoulder. Altogether, six were recovered from a context different from average waste pits. Structured deposits excavated in Budajenő–Hegyi-szántók and the area bordered by Sorompó, Folyamőr, and Bogdáni Streets (former Buszesz) contained a large number of vessels, mainly storage vessels and pots, and a smaller number of jugs, mugs, and bowls, most of which showed signs of secondary burning (*Figs. 5, 6*). Secondarily fired ceramics as a particular find type have long been



1. 2.

*Fig. 5. Structured deposits from excavations. 1. Budajenő–Hegyi-szántók, Feature 80; 2. structured deposit from the area bordered by Sorompó, Folyamőr, and Bogdáni Streets (former Buszesz) in Budapest, District III (*Szilas *et al. 2020, Fig. 7. 12).*

[9] At the time of the preparation of this study, the results of the scientific analysis of the selected fragments are under evaluation.

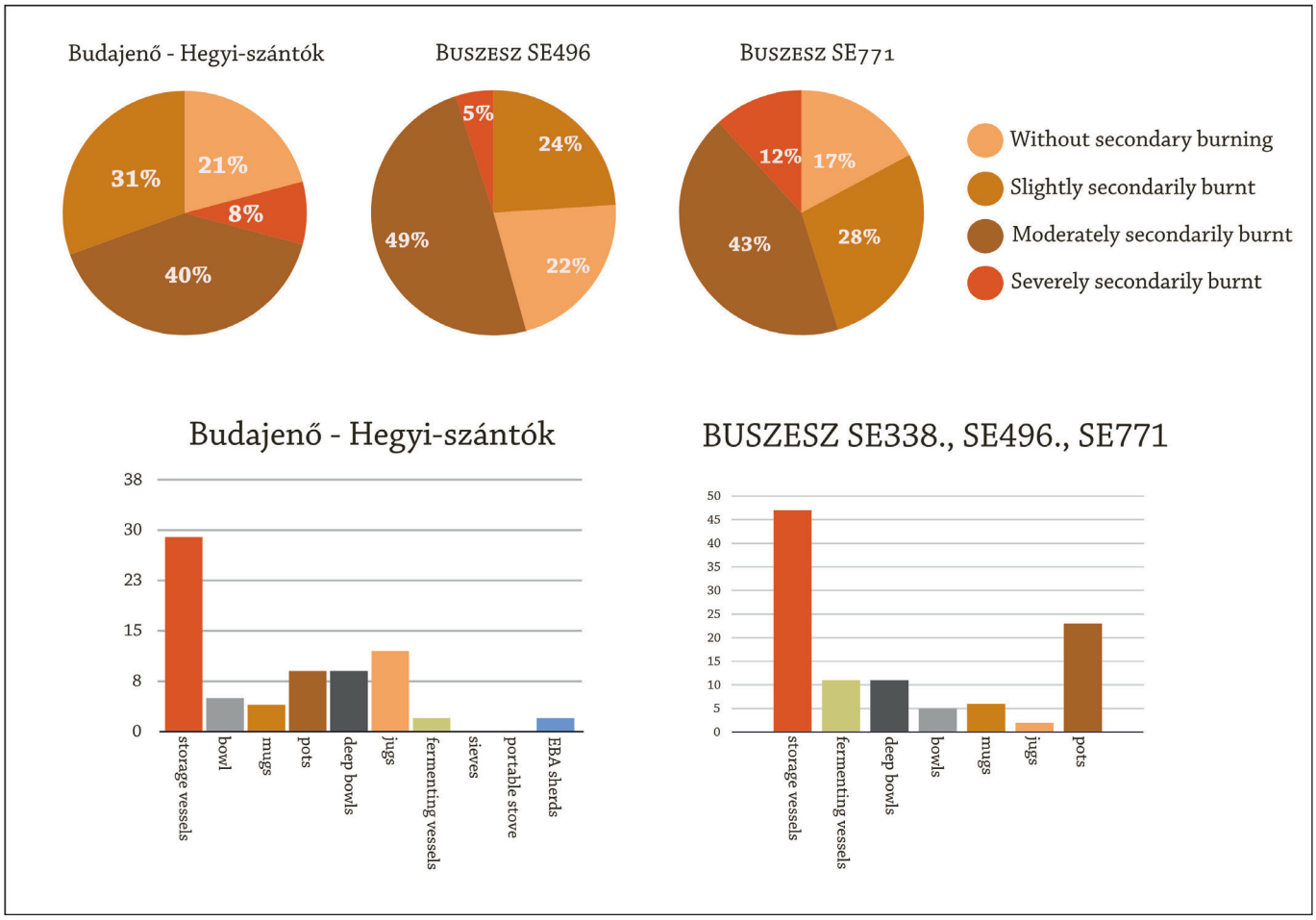


Fig. 6. Secondarily fired vessels and the vessel composition of the structured deposits (based on Gucsi & Szabó 2018, Fig. 3 and Szabó Nóra – Szilas Gábor: Traditions and innovations in the practice of Middle and Late Bronze Age ceramic deposition. Presentation at the XII ΜΩΜΟΣ conference)

known to researchers, but their research potential has only been discovered recently (Fülöp & Váczi 2016; Gucsi & Szabó 2018). It is possible to distinguish between fractures, damages made before and after secondary firing, and the intensity of the heat (weak, medium, strong) that affected them. When analysing the context of the two sites mentioned above, the quantity of the secondarily burnt fragments clearly dominates, as the proportion of the vessels without any trace of secondary burning is below 22% (*Fig. 6*). The find assemblages comprise a high proportion of storage vessels and pots; this composition is entirely different from the pottery deposits of the period, which mainly consist of mugs and jugs. Use marks are clear (use wear, abrasions, etched surfaces) on many vessels. In several cases, large or complete items were hidden in the structured deposits; these pieces also show clear signs of use. The inside of the vessels is heavily worn or etched, which may be indicative of the one-time content. The discovery of structured deposits shed new light on Middle Bronze Age settlements, while previously unknown deposition practices revealed a phenomenon related to communal events, which can be studied by means of archaeological research. Recent observations suggest that fermenting vessels could be at the centre of these find assemblages, which may point to a key role of these vessels for the community.

Geostatistical analyses of activity zones and use of space in the settlements of Budajenő–Hegyi-szántók and Budapest III, 291 Királyok útja showed that, although we are talking about a specific type, the distribution of such vessels in the settlements is not entirely even (*Fig. 4*). The spatial dispersion of the vessels, especially at the latter site, suggests that they were used perhaps at the level of households or cooperating households, meaning that not everyone could possess and use such an object. On the level of communal processes, however, one can assume that small groups of people used such vessels extensively.

CONCLUSIONS

The current results can be gathered around 1, the vessels themselves (use marks, decoration, etc.); 2, their context and location. In summary, fermenting vessels gained ground during the Middle Bronze Age and can mainly be found in settlements. Their location and design suggest they can be seen as functional items related to food production (storage or preparation). They can also be described as special objects because of their clear central role in some find assemblages and the applied decoration that resembles some metal pendants of the period; however, based on their distribution within the settlement, they cannot be considered unique.

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