

## STORAGE PITS FROM THE LATE ROMAN FORT BY THE RÁKOS STREAM DATA ON THE SUPPLY OF THE LATE ROMAN ARMY

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*The paper analyses fourteen storage pits unearthed in a Roman fort established by the Danube in the Barbaricum, at the estuary of the Rákos Stream, in today's District 13 of Budapest. Two types of storage pits were unearthed; their find material and context dated both to the second half of the 4th century AD. The pits, which were most probably used for storing cereals, were not established for commercial purposes but for keeping produce that was part of the supply of the garrison by the Rákos Stream. Similar storage pits (in a Late Roman context and established for keeping military supplies) were also unearthed at the forts of Paks-Dunakömlőd (Lussonium), Ságvár, and Alsóhetény.*

**Keywords:** Late Roman Period, storage pit, fort at Rákos Stream, military supply

### RESEARCH ON THE LATE ROMAN FORT BY THE RÁKOS STREAM

Antal Haliczky conducted the first excavation in the area of the fort by the Rákos Stream in 1815. Recent fieldwork started in 2018 under József Beszédes (Budapest History Museum, BHM) and is still going on to this day.<sup>2</sup>

The modern excavations, concerning large areas, reached the subsoil and brought to light several features which had not been discovered during the first (and, up to 2018, only) dig – mainly because early archaeologists focused on the wall remains and stone buildings in the first place and did not notice or did not consider worth unearthing negative structures. Therefore, storage pits, of which fourteen were discovered until 2020, represent a previously unknown feature type on the site, which may contribute to a better understanding of the function of the fort and the answering of general economic-historical questions related to the era (*Fig. 1*).

The Roman Period fort wedged between the Danube and the estuary of the Rákos Stream was investigated first by Antal Haliczky, who excavated the site in 1815. Besides, Iván Paur, János Érdy, Flóris Rómer and Ferenc Salamon researched the fort, while Gusztáv Zsigmondy surveyed it first (HAVAS 2019, 118).

The fort, 76 x 86 metres, became known from the publications of Antal Haliczky, who referred to the complex as ‘*hídvár*’ (‘bridge fort’) (HALICZKY 1820, 14), while it appears in early scholarly literature as ‘*Contra Aquincum*’ and later ‘*Transaquincum*’ (for a summary, see VISY 2000, 58).

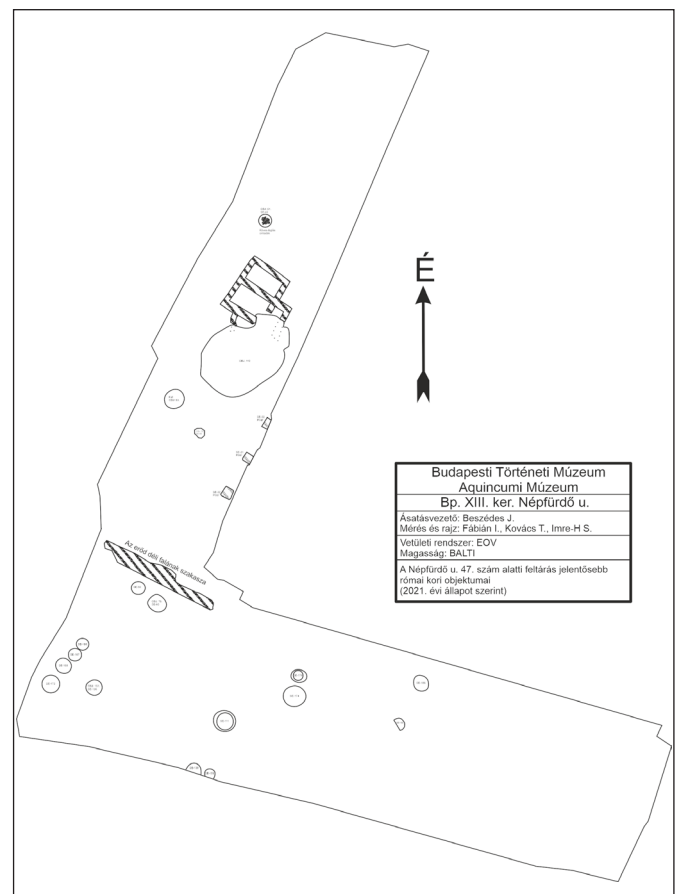


Fig. 1. Ground plan of the excavation with the main Roman features.

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The water regulation works in 1874–87 included the dredging out of the Fördő Island east of the Hajógyári Island, revealing four bridge pier pile bundles; the line of these pointed towards the fort at Rákos Stream, proving that a bridge connected the fort and the garrison of Aquincum on the opposite bank in Roman times (NAGY 1942, 747; ZSIDI 1999; NÉMETH 1999, 142–144; CSIKI 2013). In the mid-20th century, János Szilágyi from BHM conducted fieldwalk sessions on the site (SZILÁGYI 1949, 73); he referred to the fort already as *Transaquincum*.<sup>3</sup> The identification of the fort represents a complex problem; however, Zsolt Mráv believes that the fort name *castellum contra Tautantum* in the *Notitia Dignitatum* (*Not. Dign. Occ. XXXIII. 55*) can only be the fort under today's Március 15-e Square because *Mons Teutanus* (*Mons Teutani*) can only be Gellért Hill and, thus, *Contra Aquincum*, the other fort name (which appears in several Late Roman sources) 'becomes available' for the fort at Rákos Stream, corroborating the scholarly consensus of the time of the first excavation in the 19th century (MRÁV 2009, 374).

New fieldwork on the site started in 2018, its first phase covering the southern and south-eastern part of the fort and its close area. Several features were authenticated: a relatively long section of the southern fort wall, an inner building with multiple rooms and an apsidal end (which János Szilágyi identified as the headquarters), and the bases of three columns along the eastern fort wall. Besides the excavations brought to light numerous negative structures – a well with a stone brim, clay extraction pits, and storage pits – which have remained unnoticed during the 19th-century digs which focused mainly on stone wall remains.

Based on the find material, Beszédes believes that the fort was erected in Late Roman times and has no antecedents in the early or middle Roman Imperial Period,<sup>4</sup> especially as all 2nd- and 3rd-century AD stamped brick and stone monument fragments in the walls of the fort were *spolia* (repurposed, in a secondary position). These finds included a brick with a *cohors VII Breucorum Anoniniana* stamp, an altar stone erected for the health of Emperor Gordian III and his wife, an altar of Mithras, an altar stone devoted by a *decurio* of *Aquincum municipium* to *Silvanus Domesticus*, etc.<sup>5</sup> According to Beszédes, the well-known passage in the *Consularia Constantinopolitana*, referring to AD 294, also corroborates the hypothesis that the fort was erected in the Late Roman Period: '*his coss. castra facta in Sarmatia contra Aquinco et Bononia*', which may easily refer to the construction of the fort at the Rákos Stream about the problem of localisation, see (KOVÁCS 2001). The *Notitia Dignitatum* also reports on the late Roman troops garrisoned in the fort: '*auxilia vigilum contra Acinco [trans]in barbarico*' (*Not. Dign. Occ. XXXIII. 48*).

## STORAGE PITS IN THE FORT BY RÁKOS STREAM AND THEIR FIND MATERIAL

Round pits with beehive-shaped or downward-widening walls, at least a metre in diameter and depth, are usually identified as storage pits (BALASSA & ORTUTAY 1982, 160).

In the Roman Period, several constructions were used for storing food, including grains. The biggest and most complex were the *horreum* and the *granarium*, stone buildings with thick walls reinforced by buttresses and often more than one floor. The diverse storage pit types were way simpler than these; such pits were sunken structures sealed with a lid, and their creation and maintenance required considerably less resource and energy investment than that of a surface structure made from wood or stone.

Storage pits could be used, besides the long-term storing of grains, for storing processed food (e.g., flour in bags), but data indicate that sometimes their owners even kept oil, wine, and clothes in them (VARRO I. 57, 5–25).

Only two of the fourteen storage pits at Rákos Stream were inside the fort, while the remaining twelve were found by the foot of the external wall where soldiers could easily keep an eye on the stock. The pits could be classified into diverse types: most (twelve) had vertical or almost vertical walls, and two were beehive-shaped.

Their find material contained exclusively Late Roman artefacts, including glazed potsherds and fragments of stamped bricks with a good dating value. Pottery with a burnished pattern is a characteristic of

<sup>3</sup> The toponym is problematic as *trans*, when used for marking a place in geographic descriptions in Latin, always refers to an area or zone, not a single place or point beyond something else. The author of the *Notitia Dignitatum* usually used '*contra*' to refer to specific places (MRÁV 2009, 390).

<sup>4</sup> Personal communication by József Beszédes on 15. 11. 2022.

<sup>5</sup> József Beszédes will provide a comprehensive overview of these stone relics in a separate study currently in preparation.





Fig. 2. Pitcher with smoothed decoration from Feature SE-43 (Inv. no. 2019.8.1745; photo by Péter Komjáthy, BHM)

their record (Fig. 2). Endre Tóth associated this ware with the newcomer Carpians and dated its appearance in their dwelling area after their settlement in the 3rd century AD, while in non-Carpian territory (including Transdanubia) from the early 4th century AD (HORVÁTH 2011, 625; TÓTH 2009, 110–113).

Yellow or yellow-green glazed pottery (Fig. 3) became popular in garrisons along the *limes* around the second third of the 4th century AD.

Most bricks recovered by early research from the site could also be dated to the Late Roman Period (HAVAS 2019, 120), just like the bricks in the fill of the storage pits. The bottom of Features 61 (Fig. 4), 182 (Fig. 5), and 197 (Fig. 6) were lined with a horizontal brick layer, and the bricks found in Feature 180 were also stained with traces of mortar, meaning they were reused for the lining of the pit's bottom. Most stamped bricks in the storage pits bore the stamp of the *quadriburgium*; Gábor Horti assessed this brick type and dated it to the Late Roman Period

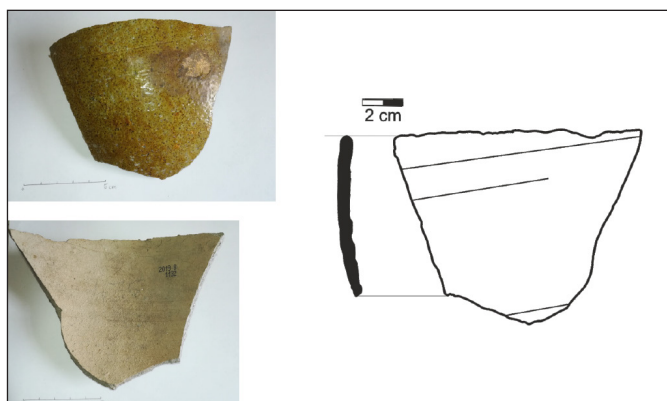


Fig. 3. Glazed pottery fragment from Feature SE-60 (photo by Kata Rudan, BHM)



Fig. 4. Feature 61 (SE-43) in excavation, with a brick layer on its bottom



Fig. 5. Feature 182 (SE-180=SE-1062) in excavation, with a brick layer on its bottom



Fig. 6. Feature 197 (SE-186) in excavation, with a brick layer on its bottom

(HORTI 2009, 166). As the bricks have been found in three pits in a regular arrangement, lining the pit's bottom, they must be considered part of the storage pits' construction rather than waste in their fill, thus providing information about the time of their establishment.

### THE ISSUES OF MILITARY SUPPLY AND ANALOGIES

Securing a steady supply for the troops stationed in the provinces was essential for Romans. Besides money, soldiers were entitled to another kind of permanent and obligatory remuneration, which required the mobilisation of vast resources: food. Rations (*frumentum*), i.e., daily food, were essential for the soldier. Rations could be crops, flour, bread, and other food, like oil and vegetables. Besides people, military animals had to be fed, too; they also required crops and other kinds of fodder (SIMON 2019, 103–104).

There were many ways to obtain the soldiers' rations: the forts collected the taxes in kind, or the state bought food for them (SIMON 2019, 108), mainly from the close area. Research on Roman military logistics in the 4th century AD has presented indirect evidence of how supplies were secured in earlier periods, namely that the state bought provisions for the army only on the occasion of extended military campaigns (SIMON 2019, 120). In such cases, the central organisation of supply was necessary as the troops could not be left to rely exclusively on the stocks and resources of the particular area (often still on the hand of the enemy) where the military actions were performed but needed a contingency reserve as so they may not become vulnerable to the inhabitants of said area (WHITTAKER 1994, 101). Usually, a *praetorianus prefectus* accompanied the troops; his duty was to organise and obtain provisions for them, which he carried out in collaboration with the local *praefectus* (SUOTHERN & DIXON 1996, 79).

By the 4th century, the supply system had been restructured and was no longer run by military officials. Forts close to the frontier had to manage their own supply by obtaining the grain needed for a long period from central collection points and keeping the stocks in *horreums* or other places of storage for longer periods (up to several years; RICKMAN 1971, 288).

Thus, occasionally, large quantities of provisions had to be stored in the garrisons as these were used up only gradually, day by day (SIMON 2015, 246).

The increase in demand by the army brought about the emergence of grain imports. Research in Scotland has revealed that the quantity of grain demanded by the army was much bigger than what the local fields could yield (WHITTAKER 1994, 101). This problem must have arisen exponentially in every newly occupied area at the dawn of the Roman conquests, as the local population had no chance of getting prepared for the sudden increase in demand (WHITTAKER 1994, 101–103). As a consequence, cultivation has undergone a fundamental transformation after the start of the Roman Period. Crop species preferred previously by the local inhabitants became replaced by others with significantly higher yields and more possibilities for use (KENÉZ 2014, 9). Besides wheat, other cereals were produced, including barley, rye, and millet. Barley, extremely popular before the Roman conquest, gradually lost its ground and significance (GYULAI 2005, 89).

Several analogies are known to the storage pits of the fort by the Rákos Stream, e.g., from the Late Roman forts of *Lussonium* (Paks-Dunakömlöd), Ságvár, and Fenépuszta (TÓTH 1975, 189).

István Lengvári reported on two beehive-shaped pits from the excavation of the fort of *Lussonium*. Both features were repurposed as waste pits (Lengvári 1995, 113). The archaeobotanical analysis of their infill has revealed that they contained both high-quality common wheat (*Triticum aestivum subsp. aestivum*) and emmer, a lesser-quality variant (*Triticum dicoccum*). Their joint presence may suggest trade relations between the inhabitants of the province and lands outside the Roman Empire (Lengvári 1995, 116).

Several storage-related military constructions have been unearthed at Ságvár, including *horreums* and storage buildings. *Horreum* no. 1 was located in the western zone of the fort; its walls had stone foundations holding the braces and poles of the rising walls joined into a sill beam. The granaries were put into use right after they were built, even before the *terrazzo* floor had dried, as evidenced by the grain imprints in the then-still-not-completely-dry floor (TÓTH 2009, 32).



A *horreum* was also found inside the Late Roman fort at Alsóhetény, along with some other storage buildings. The *horreum* was built next to the western gate, akin to Fenékpusztá, where it was also located there. This arrangement was efficient as the incoming grain consignments could be stocked immediately. The floor of this building rested on four rows of columns. The excavation also brought to light a mortary layer associated with the one-time floor (TÓTH 2009, 49). The archaeobotanical record of the site included oat remains; research has linked the presence of oats with that of horses for long. Obviously, this cannot be excluded, but it must be noted that oat remains have also been recovered from military and civilian latrines, indicating that the cereal served as food equally for animals and humans (KENÉZ 2014, 10).

### SUMMARY

The Roman fort erected by the Danube River at the estuary of the Rákos Stream (Rákos-patak) in today's District 13 of Budapest was unknown to research for long. During an excavation in 1815, Antal Haliczky surveyed the stone walls and an inner building of the fort, but the research – focusing exclusively on stone walls – failed to notice several Roman features.

A team of BHM started excavating in the area again in 2018; this work is still in progress. The paper presents the assessment of the fourteen storage pits unearthed between 2018 and 2020, with a focus on the questions of chronology and precise function. The fourteen pits represent two types: most of them were cylindrical, with vertical or almost vertical walls, while two were beehive-shaped. No chronological difference could be detected between the two variants, both of which could be dated to the second half of the 4th or perhaps the early 5th century AD.

It must be highlighted that the bottom of at least three, maybe four pits was paved or lined with a layer of Roman bricks (*lateres* and *tegulae*) arranged in a regular pattern and cut to fit; this layer may protect the stored goods from humidity. One of the bricks featured a *Quadriburgium* stamp (Figs. 7–8), specifying the dating of the feature to the Valentinian era or the following period. The *lateres* and *tegulae* built into this insulation layer had mortar remains, suggesting they were reused.

Only two pits were inside the fort; the rest had been established next to the external wall where soldiers could easily keep an eye on the stocks stored in them.



Fig. 7. Fragment of a brick with *Quadriburgium* stamp from SE-197 (photo by Kata Rudan, BHM)

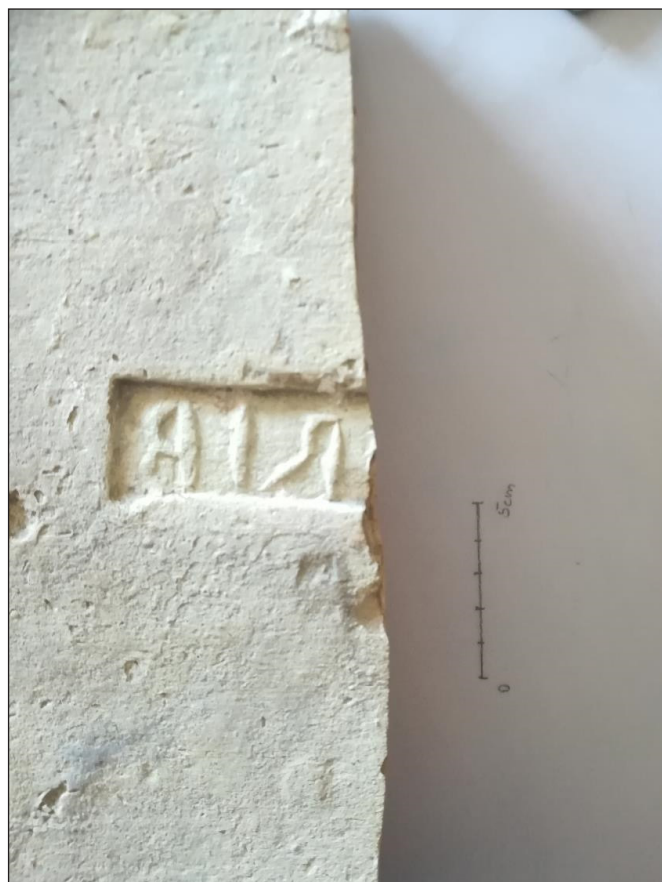


Fig. 8. Fragment of a brick with *Quadriburgium* stamp from SE-111 (photo by Kata Rudan, BHM)

The storage pits (used most probably for storing grain) were not built for commercial purposes but for storing the supply of the garrison of the fort at Rákos Stream. Although the fort was connected with the legion camp in Aquincum by a bridge, it could not provide permanent access to the other side of the river, and the food for the 100–200 military personnel had to be partially supplemented and provided locally.

The fill of the fort's remains contained mostly Late Roman pottery – including main type groups characteristic of the era, i.e., glazed ware, vessels with burnished decoration, and simple 'domestic' utility types – and 4th-century AD stamped bricks.

It is important to note that 1st–3rd-century AD finds were extremely scarce in the area of the fort, indicating that – disproving previous hypotheses – it has no Commodian era or any other previous building phase.<sup>6</sup>

Besides pottery, the other flagship find group of the fort's record was stamped bricks. These included specimens with *Quadr[iburgium]* (Figs. 7–8) and late *Leg[io] II Ad[iutrix]* stamps, both dated to the AD 370s, i.e., the Late Roman Period.

Excavation reports and evaluations of the find material have always tended to neglect storage pits, although a detailed investigation of these features, when completed with archaeobotanical analyses, may provide information which can considerably improve our understanding of the economic history of the period.

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<sup>6</sup> Personal communication by József Beszédes, 18. 11. 2022.

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