

A QUARRIED EXCAVATION SITE Late Bronze Age Relics Unearthed in a Gravel Pit near Muhi¹

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East of the village of Muhi, in the direction of Nyékládháza, there are huge gravel pits, many of which have already been abandoned, flooded, and transformed into popular modern resorts. Recently, new gravel extraction sites have also been opened, and so a rescue excavation of the Muhi-III kavicsbánya (gravel pit) site took place in 2019. After months of excavation, the artifacts are still in the process of being cleaned and restored, and so until this work is complete, it is only possible to outline a brief overview of the important and remarkable finds. Features have been excavated from several periods (Middle Neolithic, Late Bronze Age, and Early Iron Age), but the most significant ones are those from the Late Bronze Age. These finds reveal information about a place of intensive human activity, a settlement on the border of different European cultural zones that participated in long-distance trade. These influences are reflected in varied elements of material culture. The large quantities of metal and ceramic finds brought to light in various conditions can be dated to the so-called pre-Gava period based on finds from the major features (urn graves, vessel hoards), and thus provide new information on the Late Bronze Age history of the Sajó-Hernád plain.

Keywords: Late Bronze Age, pre-Gava period, settlement, multiperiod site, long-distance trade, Northeast Hungary

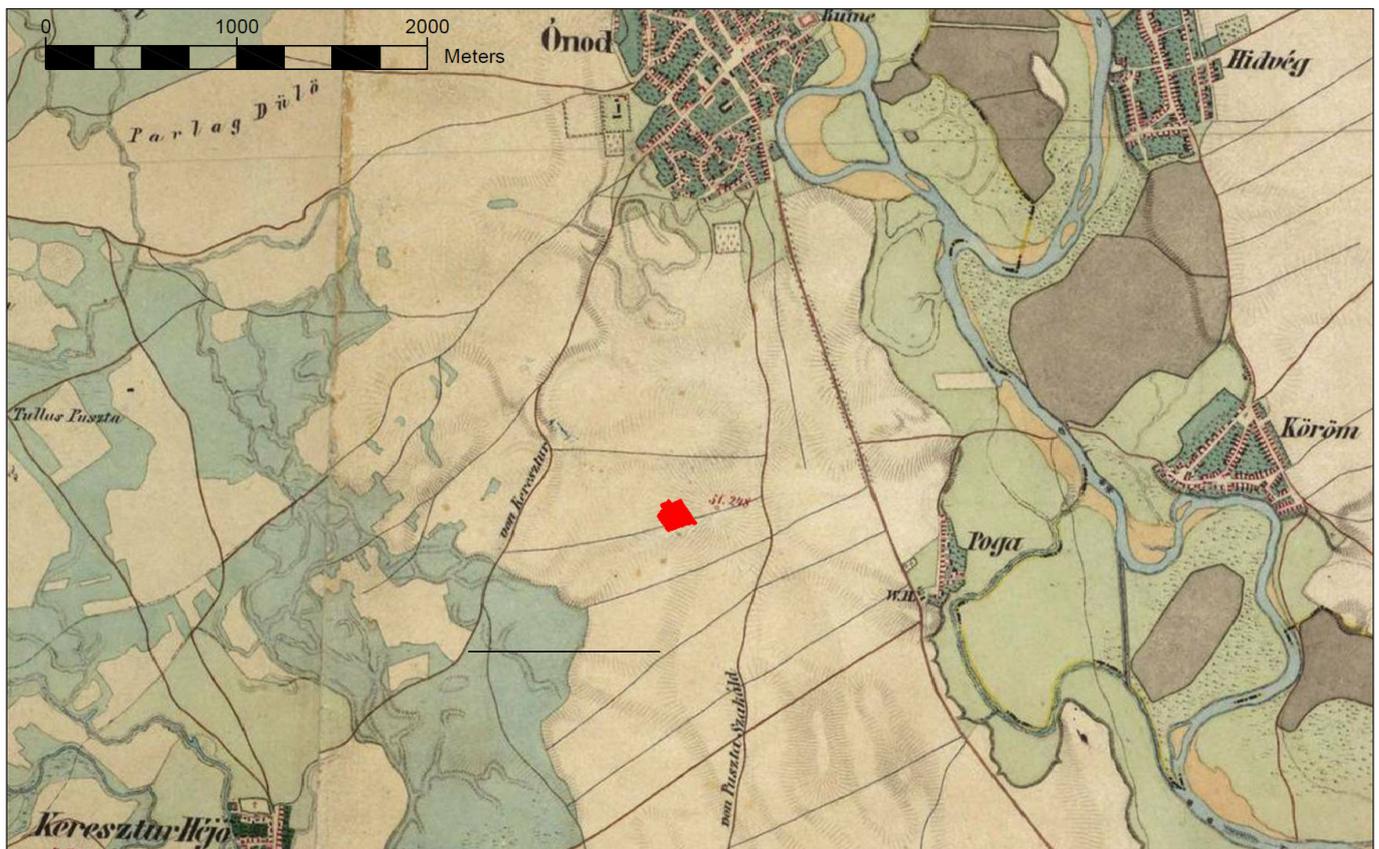


Fig. 1. The Muhi-III. Kavicsbánya site on the 2nd military survey of Hungary (Made by: A. Weisz)

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The village of Muhi is located on the edge of the Bükk Mountains and the Great Hungarian Plain at the confluence of the Sajó and Hejő rivers, close to significant trade routes and waterways (Fig. 1). Due to the favourable conditions of the area, several well-known archaeological sites intensively used during the Late Bronze Age are associated with the settlement. In September 2004, extraction operations were begun without prior notification by the owner of the quarry at the time. Due to this, the previously unknown site on the north side of the roundabout at the intersection of the Nyékládháza-Tiszaújváros and Muhi-Hejőkeresztúr roads came under the jurisdiction of the archaeologists of the Herman Ottó Museum. The experts who arrived at the site halted the quarrying activity, started surface collection, and opened two research trenches. The stray finds and the seventeen excavated features suggested the existence of a section of a settlement related to the Neolithic Tiszadob group, and of a Late Bronze Age, pre-Gava period population (Koós,

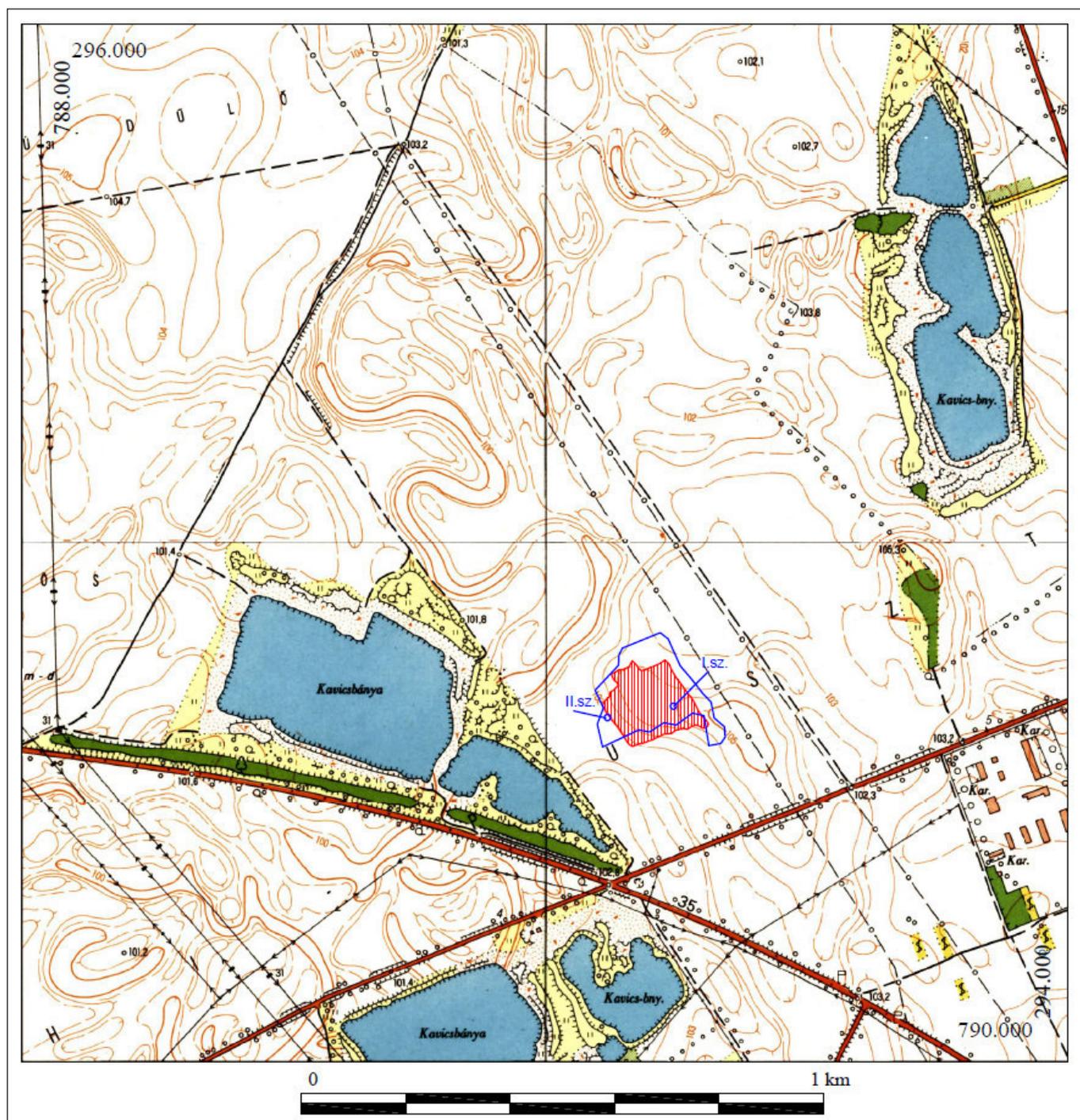


Fig. 2. Location of the site

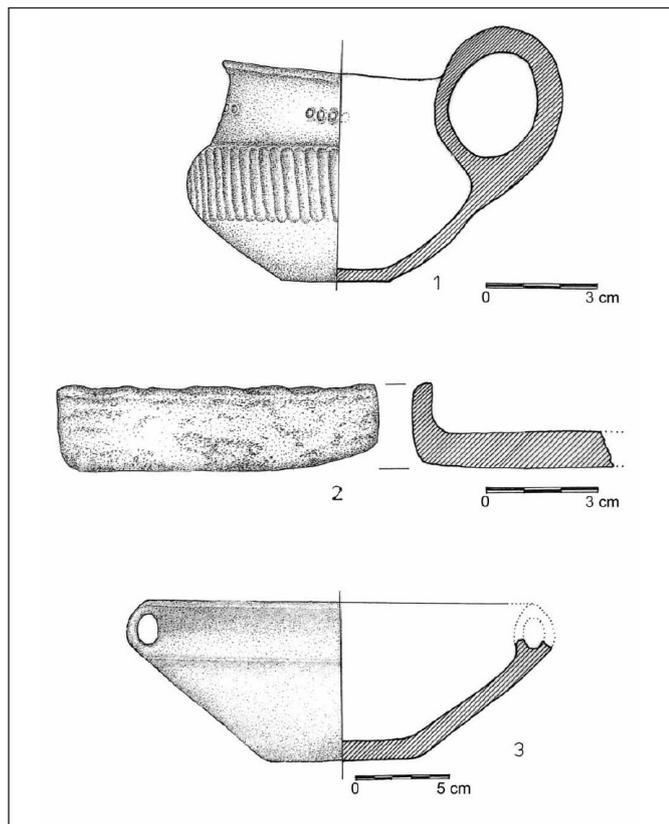


Fig. 3. 1–3 Vessels from feature no. 13 (Koós, 2015, 165. 11. t.)

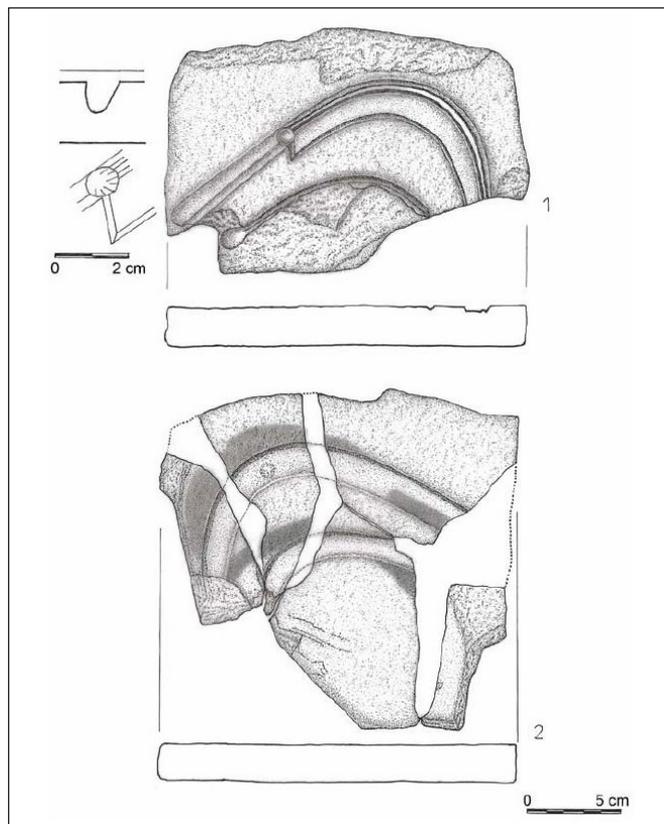


Fig. 4. 1–2 Sickles casting mould and cover plate from feature no. 3 (Koós, 2015, 170. 16. t.)

2015, 148). Of the features, the larger pits and pit complexes were excavated, providing a large number of finds, mostly ceramic artefacts. Pit 13 is of special importance, where a cache of two pieces, a bowl and a cup (Fig. 3), was deposited probably after a religious event or ritual (Koós, 2015, 137, 140–141, 11 t.). Hoards of vessels hidden in pits of a similar age are known amongst the Late Bronze Age finds at the Oszlár–Nyárfaszög (Koós, 2003, 121–125) and Nyíregyháza–Oros, Mega Park (L. NAGY, 2012, 264–268, Taf. 1– 8) sites in the Upper Tisza region. In addition to traces of the sacred life of the people who once lived there, the site revealed traces of their agriculture (grindstones and large containers presumably used to store grain), as well as their industrial activities, including metalworking. This can be deduced from the relatively high number of casting moulds in relation to the small number of excavated features. Moulds for a sickle (Fig. 4), a socketed axe head (Fig. 5, 1) and a spearhead (Fig. 5, 3) were found and identified after the reconstruction of their missing parts (Koós, 2015, 141–145). The site, which was destroyed to an unknown extent, fits into the group of finds of the pre-Gáva (Reincke BD-HaA1) period that unifies the previously

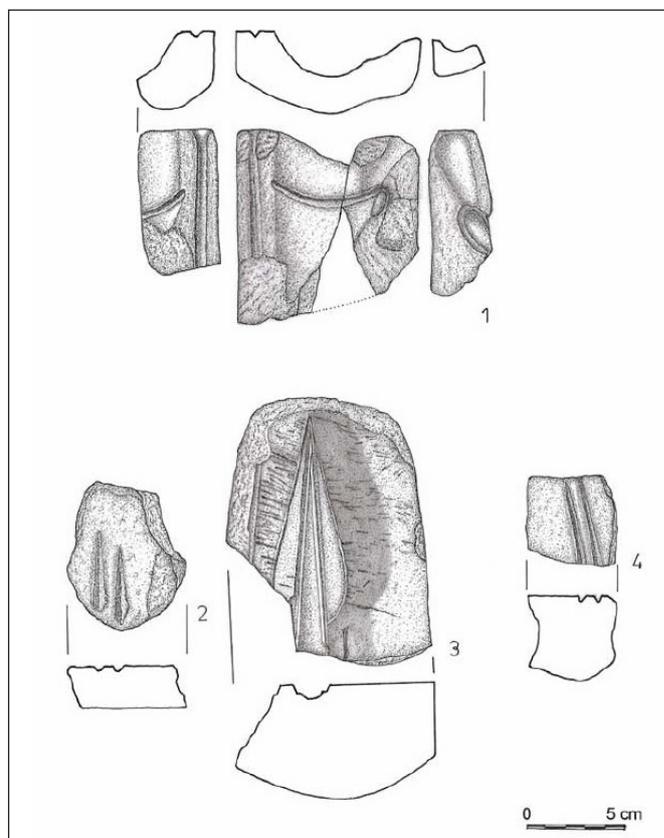


Fig. 5. 1 Socketed axe head casting mould from feature no. 3; 2, 4 Grindstone scattered finds; 3 Spear head casting mould from feature no. 3 (Koós, 2015, 171. 17. t.)

existing regional features and is traceable along the Tisza River from Szeged to Polgár (V. SZABÓ, 2004b, 84–85). A parallel can be drawn between this period, which has been determined to have lasted from ca. 1400 to 1250 BCE by absolute dating and was extremely diverse in its ceramic style, and the Transdanubian Tumulus and Urnfield type ceramic material as well as the pottery of the Piliny culture as a result of similar stylistic features (V. SZABÓ, 2017, 242, 248). The remains of a large, intensively inhabited settlement of the pre-Gava period with a material heritage that combined the various influences and had begun to become uniform could be observed here. The settlement features discovered at that time are an integral part of the excavation results of the further research last year.

The most recent excavation began in September of 2019 (Fig. 6), thanks to a change in the ownership of the target excavation site that occurred in the meantime and resulted in a positive atmosphere sensitive to heritage preservation, as well as to the support of the Herman Ottó Museum in Miskolc. The research area was located slightly to the south of the rescue excavation work zone of 2004, in a square, two-hectare area that had survived despite the quarrying activities. Based on the evaluation of the preliminary GPR survey (Fig. 7), we expected a very dense site and after removing the topsoil by machine to a depth of 0.30–0.70 metres, we were able to observe, excavate and record a total of 803 features (Fig. 8).

The majority of the total excavated features (Fig. 9), 534 in all, can be linked to a Late Bronze Age settlement, a minor part, 37 features, to a section of a Neolithic settlement, and 6 pits, dated mainly by the fast-thrown, grey, biconical jugs with high handles, to the Early Iron Age, pre-Scythian settlement. Of the remaining features, 50 pits were identified as prehistoric due to a lack of finds that would make it possible to date them more accurately. A total of 172 pits of unknown age with no finds were also excavated. Most of



Fig. 6. The target extraction site with the area excavated in its southeast section (Made by: A. Weisz)



Fig. 7. Magnetometer survey of the site (Made by: A. Weisz)

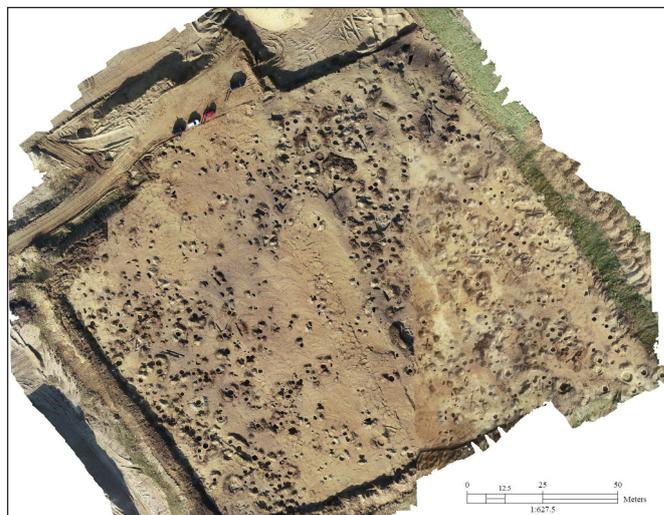


Fig. 8. Drone footage of the excavated features (Photo: G. Kocsis-Buruzs)

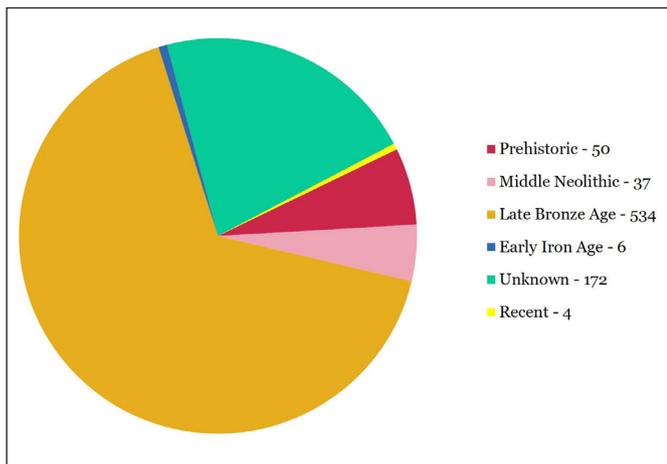


Fig. 9. Classification of the features by period



Fig. 10. Burial S441 (Photo: N. Berta)

the features at the site are round pits that are slightly beehive-shaped or have vertical walls, while a smaller number of them are larger, amorphous shallow clay pits. Regardless of the period, the features proved to be extremely rich in finds.

The majority of the 37 settlement features can be dated with certainty to the Middle Neolithic based on the finds. They are large, amorphous pits probably dug to obtain clay and used only secondarily for household waste storage. Large quantities of ceramic fragments were discovered in these features, including a wide variety from storage vessels to decorated, painted fine ceramics.

We were able to collect a significant amount of mud fragments with imprints of wattle and daub from 212 features, which suggests that the former settlement had wattle-and-daub houses with timber foundations on the ground level due to lack of wooden post structures that would provide us with tangible archaeological observations. In addition to all this, layers and strata with varying amounts of daub were also revealed and documented in the fills of round pits used for the storage of household waste. As with the Neolithic clay pits, a significant amount of ceramic material was collected from the fills of the Bronze Age features. Most of these are fragmentary jugs, cups, bowls, pots and containers featuring a variety of shapes and types. A more accurate and detailed image can be drawn up only following restoration, but based on the fragments, the ceramic finds also vary widely. The metal finds were mainly bronze pins, and 12 whole or fragmentary specimens of these were collected from 11 pits. Along with these fragments, bronze rings, bronze beads and other bronze objects of unknown use were found.



Fig. 11. S441, grave goods 1 (Photo: N. Berta)



Fig. 12. S441, grave goods 2 (Photo: N. Berta)

Burial S441 (Fig. 10) proved to be one of the most important features of last year's excavation. Appearing as a dark, round spot, this shallow grave with slightly narrowing side walls and a horizontal bottom revealed two larger urns (Figs. 11 and 12, grave goods 1 and 2), two smaller, hand-moulded, ornamented cups (grave goods 3 and 4), a dagger with a grip plate (Fig. 13, 1, grave good 5), and a bronze pin with a biconical head (Fig. 13, 2, grave good 8). Based on the bronze artefacts, the grave belongs to the late phase of the Piliny culture known as Reinecke BD.

The design of the two urns with flared rims already existed in the early phase of this culture, although the angle on the belly is not as sharp, and the shoulder is usually undecorated, e.g. Muhi – Princ farm, Ónod – Homokgödör (KEMENCZEI, 1984, 248, Taf. 38. 15; 250, Taf. 40. 2). In the case of the urns that originate from Muhi, the decoration with fluting also appears on the belly and the shoulder of the vessels, along with the stamped dot pattern, and analogies of this, as with the dagger, are known from Börzsöny (KEMENCZEI, 1984, 217, Taf. 7. 26; 218, Taf. 8. 29). The dagger with a grip plate is a characteristic product of the period, but its main distribution area is outside the Carpathian Basin, in the Moravian Basin and Northern Italy (KEMENCZEI, 1988, 26–27). Its closest analogies were found in Bükkaranyos and Felsőzsolca (KEMENCZEI, 1988, Taf. 7. 79–80, 81–82). In the later pieces, the rib reinforcing the blade disappears and the cross-section of the blade becomes an elongated lozenge shape.

Fragments of casting moulds and other fragments indicating traces of metalworking suspected to be mould parts were found at the site in thirteen features in total. Only four of these objects, found in the same pit, can be considered with any great certainty to have indeed been used to make bronze objects (Fig. 14). In three out of these four fragments, the negative shape of the objects was carved into the stone. A smooth-polished, flat-surfaced item could probably have been used to grind the finished objects, or possibly during casting as a cover plate with no pattern. These pieces fit into the range of casting moulds revealed at the site during the 2004 excavation in terms of both their shape and function (Koós, 2015, 135, 141–145, plates 16–21). Similar to objects found at that time, burn marks made during casting can be observed on two specimens. The exact function of the finished objects cannot be determined in either case, but it seems certain that the four fragments found last year can be connected to the same pit, in contrast to the fragments of the sickle, socketed axe head and spear moulds recovered and collected from separate features during the earlier research. At the current level of processing and before the restoration and the assessment of the other fragments suspected of being mould parts, it would be premature to assume the existence of a “workshop” equipped for metallurgy at pit S231, but the number of fragments is certainly remarkable. Among the fragments brought to light by the rescue excavation in 2004, specimens made of fine-grained Permian red sandstone were also in use, besides those made from sandstone found in the Bükk Mountains and along the Sajó River. These items probably ended up in the territory of modern-day Borsod-Abaúj-Zemplén County through trade, as the closest sites for this stone are the Balaton Uplands and the Mecsek Mountains (Koós, 2015, 143–144).



Fig. 14. Casting mould fragments recovered from feature S231 (Photo: N. Berta)



Fig. 13. S441, grave goods 5 (1), grave goods 8 (2)
(Photo: M. Gál)

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In addition to the S441 burial urn and the mould fragments, features S042 and S324 at the sites are noteworthy. In both cases, the existence of a cache of vessels can be assumed, but at the current level of



Fig. 15. S324, vessel 1 (Photo: N. Berta)



Fig. 16. S324, cup 3 (Photo: N. Berta)

processing, it is only possible to provide a detailed description of feature S324. Appearing as a round, dark spot, this feature consists of a pit that first slightly narrows and then is beehive-shaped. Its in-fill is mixed with daub and granular, slightly reddish yellowish-brown fill, in which we managed to uncover several whole or fragmentary vessels. Vessel number one (Fig. 15) has a conical neck with a curved, fluted shoulder, a close analogy of which was found at the Muhi-Princ farm site (KEMENCZEI 1965, 3–26; KEMENCZEI 1984, 111, Taf. 38). Its shape is more common in the finds that can be dated to the later, Reinecke BD period, but already appears along with the material of the Tumulus culture in the early 15th century BCE (VICZE, 2011, 140–141). The second vessel is a biconical, finely burnished jug (Fig. 16). The three or four knobs dividing the edge of the belly also appear together with the Tumulus culture and disappear from the find materials of the sites on the Great Hungarian Plain only with the spread of the Urnfield culture. However, until then it is one of the most common and most widely used shapes identified in both settlements and burials (KEMENCZEI, 1984, 18). It occurs at the Nagyvászony burial site (KEMENCZEI, 1984, 214, Taf. 4. 14–15) in the early phase of the Piliny culture as well as among the finds from Magyaszó and Muhi (KEMENCZEI, 1984, 247, Taf. 37. 2–3; 248, Taf. 38. 3–4), dated to its late phase. Vessel number eight (Fig. 17) is a deep bowl with a flared rim and a curved neck showing a sharply angled profile, with strap handles spanning from rim to shoulder. This product of the late Piliny period can be dated to the Reinecke BD period (for example: Jászberény – Cseróhalom, Méra, Ónod – Homokgödör. KEMENCZEI, 1984, 226, Taf. 16. 11; 246, Taf. 36. 16; 249, Taf. 39. 7). By this time, western Urnfield elements had appeared in the pottery, and this piece is an example of this. These elements remained in use until the end of the Urnfield period (Reinecke HaB) (KALICZ-SCHREIBER, KALICZ & VÁCZI, 2010, 252). Common in settlements and burials, they are placed in Urnfield graves as sets composed of 3–4 pieces as well (KUSTÁR, 2000, 12–13; VÁCZI, 2018, 267–268).



Fig. 17. S324, bowl 8 (Photo: N. Berta)



Fig. 18. The unearthing of cache S042 (Photo: N. Berta)

The other pit that can be interpreted as a cache of vessels is pit S042. Its find materials have not yet been restored, but the photograph taken during recording shows that there is a thick layer with daub appearing first like a dark spot followed by a burnt, black, sooty layer at the top of the round pit with vertical walls (Fig. 18). Under this, there was an assemblage consisting of a large number of jugs, bowls, oval (so-called “fish-frying”) vessels, pots and containers (Fig. 19, 20) in a variety of shapes.

In all cases, it is difficult to interpret why the cache was placed there (CZYBORRA, 1997, 88). Depositing the objects (which may have been for profane or sacred reasons) prevented their re-use, which presupposes that the objects buried may have been used in sacred ceremonies or some kind of ritual performance. In this way, they were thus protected from later, everyday use (CZYBORRA, 1997, 90–91; STAPEL, 1999, 139–141). It is important to point out that for similar vessel hoards of the period, i.e. the Reinecke BD-HaA1, the burned layer is always present in the fill of the pit containing the vessels, so there is a strong possibility that it may also have been part of a sacred event (STAPEL, 1999, 106–115). However, profane reasons for the phenomenon cannot be ruled out. The significant amount of daub and the burned layer may indicate a destroyed household, whose pottery was thrown into this pit after the building burned down (CZYBORRA, 1997, 88; V. SZABÓ, 2004a, 142–143, from a different perspective, see V. SZABÓ, 2004b, 87–88).

A significant portion of this site, more than two hectares at the border of the village of Muhi that also featured a variety of remains from different periods, was destroyed by the activity of sand and gravel extraction. It is difficult even to estimate the precise extent of the site, with several quarry lakes to the west causing severe damage to the archaeological sites in the area over the past century. The site has an outstanding location in terms of trade links, and its find materials provide evidence of trade over remarkably long distances. The 803 features unearthed during the rescue excavation reveal a settlement intensively inhabited even during the Late Bronze Age and the full restoration, evaluation and publication of the finds can only now begin (Fig. 21). The doctoral thesis of Máté Mervel in archaeobotany that deals with the analysis and evaluation of soil samples taken at Late Bronze Age sites in Eastern Hungary constitutes an integral part of this. This research work could also include the Muhi–III. Kavicsbánya site, where soil samples from 90 pits were taken for this purpose. Future scientific studies, including



Fig. 19. Boat-shaped vessel, cache S042
(Photo: M. Gál)



Fig. 20. Pot from cache S042 (Photo: M. Gál)



Fig. 21. Set of cups from pit S666 (Photo: M. Gál)

the macroscopic and petrographic analyses of thin sections of the stone material of the described mould fragments, may shed light on the raw material of the finds, their provenience, and due to this, the presumed trade links of the people that lived in the settlement.

At the current state of processing, we believe Judit Koós, author of the 2004 publication on the rescue excavation, was correct in her opinion dating the mostly destroyed Late Bronze Age settlement section excavated at the Muhi-III. Kavicsbánya site back to the pre-Gáva period, since it is in line with the observations from more than 500 newly excavated features (Koós, 2015, 148). According to the pottery and bronze artifacts recovered, a majority of the material culture of the community was based upon the Piliny culture, while a smaller proportion shares similarities with Tumulus and Urnfield attributes.

Last but not least, we would like to thank Judit Koós and Gábor Váczi for their help in the accurate identification of the types of certain objects, as well as for their comments and useful advice.

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