

MEGYASZÓ-HALOM-OLDAL DŰLŐ: NEW DATA IN THE TUMULUS CULTURE RESEARCH FROM NORTH-EASTERN HUNGARY

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Abstract: A rescue excavation was carried out in 2013 close to the village Megyaszó, with some new finds that can enrich the Tumulus culture research. At the excavated area, 10 cremation burials and a feature belonging to some kind of funerary practice were discovered. Furthermore, four pits and a small part of a ditch were unearthed as well. The features found at the field suggest that a new, partially explored cemetery and a fairly excavated settlement could have been found. The following article is based on my bachelor degree thesis from 2015.

Keywords: Late Bronze Age, Tumulus culture, cremation burials, settlement, North-eastern Hungary

INTRODUCTION

In August 2013 a rescue excavation took place near the village Megyaszó, in Borsod-Abaúj-Zemplén County, in the north-eastern region of Hungary. The excavation was carried out by the co-workers of the Herman Ottó Museum, Miskolc. The excavated trail runs from northwest towards southeast, on the west side of the main road between Megyaszó and Szentistvánbaksa villages.

The trail was about 30 cm wide and 3 m deep. At the south-eastern part three Late Bronze Age burials and some settlement features turned up as work for an Irrigation Development Programme wiring has begun. As a result of these finds, a rescue excavation had been initiated and a total of 17 features has been documented on 6–7th August 2013. Ten of these features are burials (S1, S2, S3, S7, S9, S11, S12, S13, S16 and S17), one feature is considered to be related to some kind of funerary rite (S10), four features are documented as pits (S4, S8, S14, S15), and one feature is defined as a ditch (S6). One of the previously documented posthole features disappeared after digging a few cm deeper, consequently it might have been a natural phenomenon (S5).

During the rescue excavation, the lower lying pits (S14, S15) and the ditch (S6) were only uncovered to some extent due to lack of time, these features were not further disturbed by the investment works.

TOPOGRAPHY OF THE SITE (*Fig. 1*)

The geographical position of the site is quite advantageous. Megyaszó is lying in the North Hungarian Mountains, within one of the northern Hungarian basins, called the Hernád Valley (PÉCSI et al. 1972, 5–12; DÖVÉNYI 2010, 214–219, 849). The basin is constantly shaped by the river Hernád. The source of it is in Király hill, in Slovakia (FÜLEP–KISS 1999, 5). The river connects the Slovakian and Hungarian valleys with each other, creating an approximately 660 km² micro-region (FRISNYÁK 2006, 285). The river creates 3–4 km wide floodplains here and there, which is quite beneficial for farming lifestyle (FRISNYÁK 2007, 53–54). The annually recurring flood lays down a layer of sludge, which produces topsoil and a good quality pastureland (FRISNYÁK 2006, 286). The Hernád Valley not only historically, but also geographically connects two regions, which makes it an “ecological corridor” between the two localities (FÜLEP–KISS 1999, 18). Consequently the area offers a good passage route and interregional connections between the Carpathians and the lowlands. Furthermore this “polycultural zone”, is surrounded by hills and lower mountains that offer a fruitful field for agriculture, animal husbandry and for the exploitation of forest resources (FRISNYÁK 2006, 285). The site lies north of Megyaszó village, on the west side of the Megyaszó–Szentistvánbaksa road, on

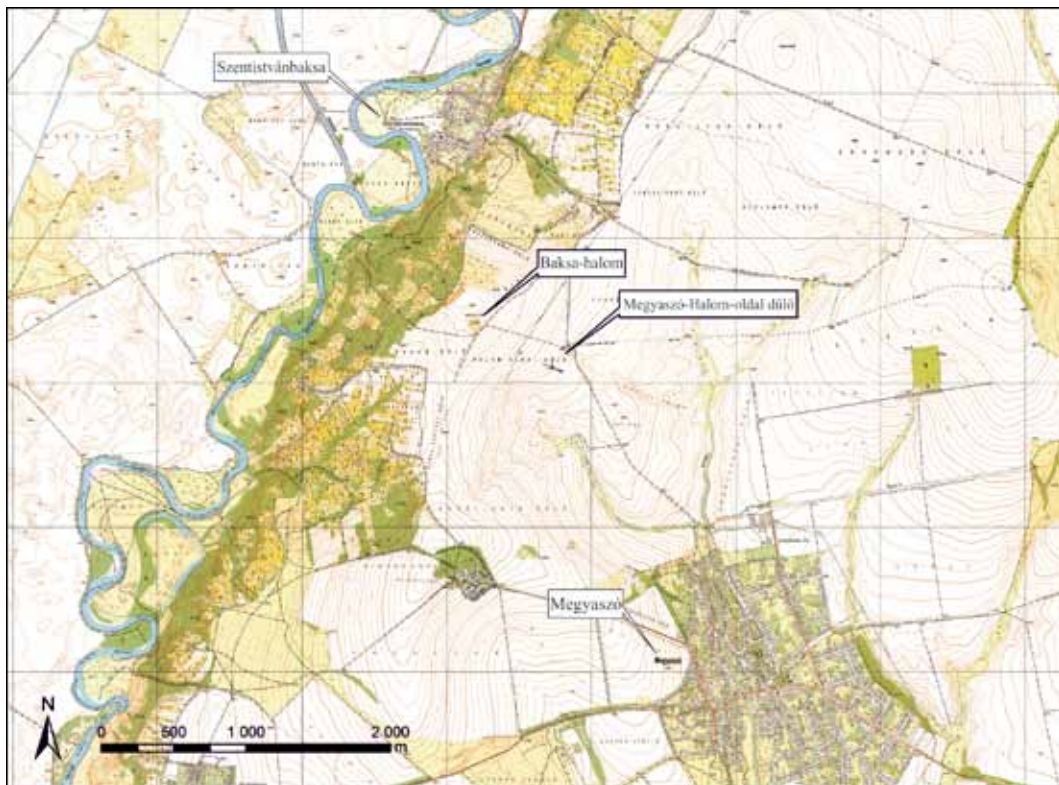


Fig. 1. Location of Megyaszó-Halom-oldal dűlő eastward to the river Hernád
 1. kép. Megyaszó-Halom-oldal dűlő elhelyezkedése a Hernád folyótól keletre

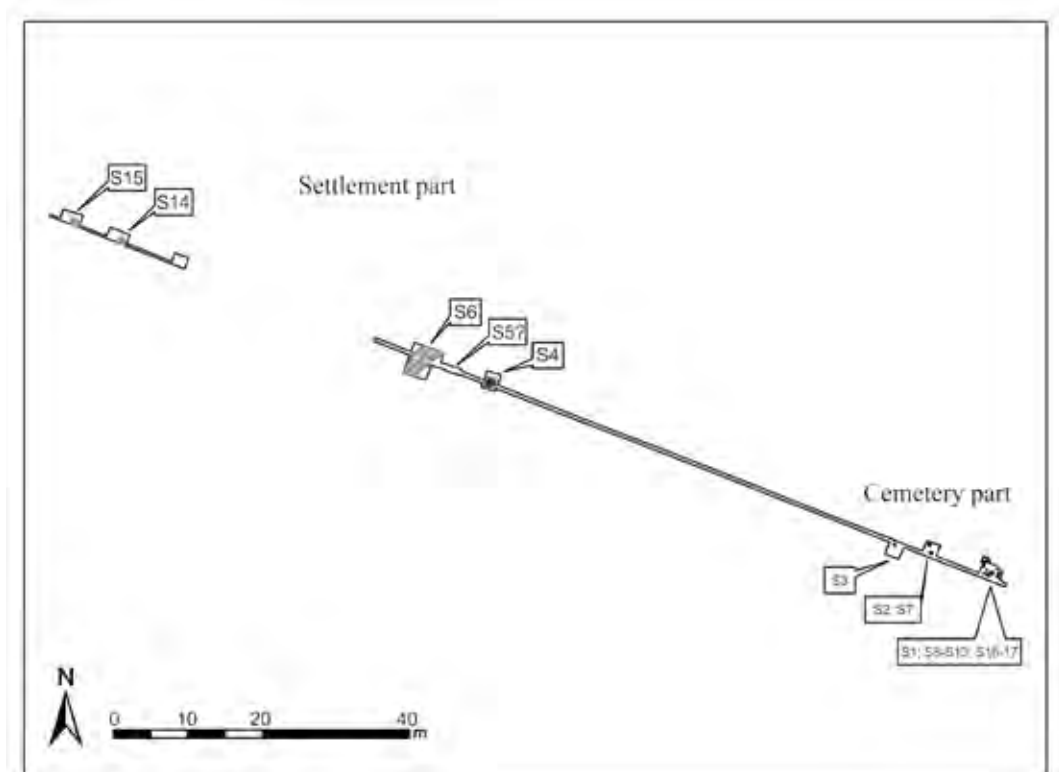


Fig. 2. The total surface of the site
 2. kép. A teljes lelőhely felszínrajza

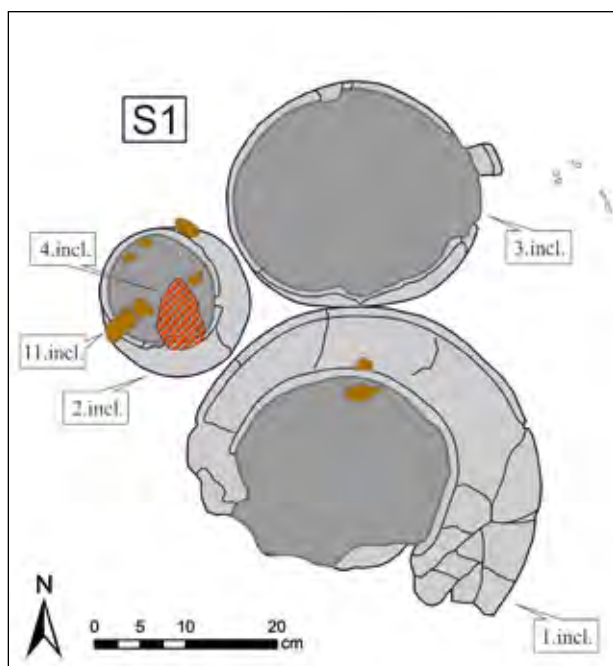


Fig. 3. Grave S1
3. kép. 1. objektum

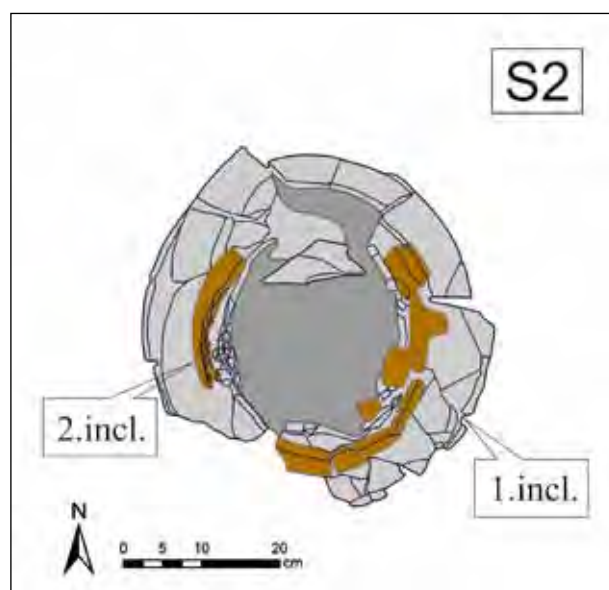


Fig. 4. Grave S2
4. kép. 2. objektum

a sloping hillside (Fig. 2), atop which the well-known Baksa-halom can be found (RÓMER 1869, 146–147; 1870, 60–62; HAMPEL 1870, 254–257).

FEATURE DESCRIPTIONS

S1 (grave, Fig. 3; Table 1. 1/1–8)

Urn grave. During excavation the grave's contour was not noticeable, however three vessels came to light, which were rather damaged by the drainage works. The absolute depth of the grave is -36–65 cm. The 1st grave incl. (Table 1. 1/1),¹ an urn was positioned to the SE side of the assemblage. The south side of the grave was disturbed by digging a trail for the Irrigation Development Programme. The 2nd incl. (Table 1. 1/2), a medium-sized, amphora-shaped vessel laid to the west from the 1st incl. The 3rd incl. (Table 1. 1/4) was broken at the belly line. It was probably an urn, located to the north of the previous two. Above the 2nd incl. a small piece of daub (4th incl.) came to light. After further excavation process a pit was documented as feature S8. The grave could have been dug into this pit later, and this piece of daub could have possibly fallen into the grave while the hole was dug. The vessels were taken

out *in situ* and the dismantling has been completed at the museum.

All 3 vessels contained ashes. In the 1st incl. the ash layer was 5–6 cm thick, and it included many large, identifiable bone pieces. 2 small mugs (5th and 6th incl. Table 1. 1/3, 5) were put inside the urn, on top of the ashes 5 cm apart from each other. Many black clay beads were scattered in the urn with 0.5–1 cm diameter (9th incl. Table 1. 1/8), which increased in number while dehydrating the ashes. Moreover from the western part of the 1st urn a bronze ring (*Noppenring* – 8th incl. Table 1. 1/7) was found. Inside the 2nd vessel the ash was 3–4 cm thick. A very fragmented vessel has fallen into this amphora-shaped ceramic, which might have been a bowl (11th incl.). In the 3rd incl. the ash layer was 6 cm thick, and another mug was placed on the top of it (7th incl. Table 1. 1/6).

The two larger pottery (1st and 3rd incl.) contained bigger bone pieces, while the smaller vessel had micro fragmented ashes. The result of the anthropological analysis suggests that the urns held the remains of two *Infans I.* aged children, one might have been 3–4 years old, the other even younger (K. ZOFFMANN 2015, 1).

¹ For the description of inclusions, see Catalogue, at the end of this paper.

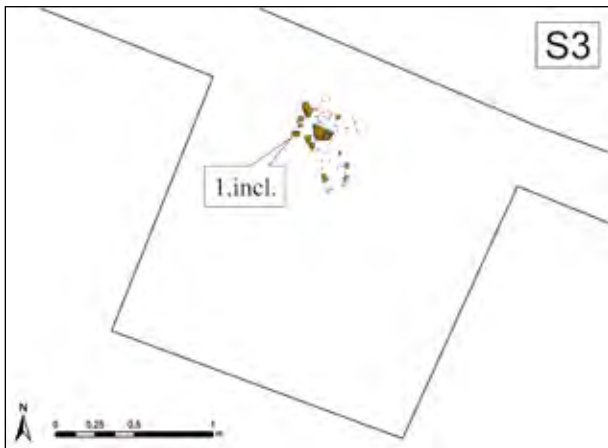


Fig. 5. Grave S3
5. kép. 3. objektum

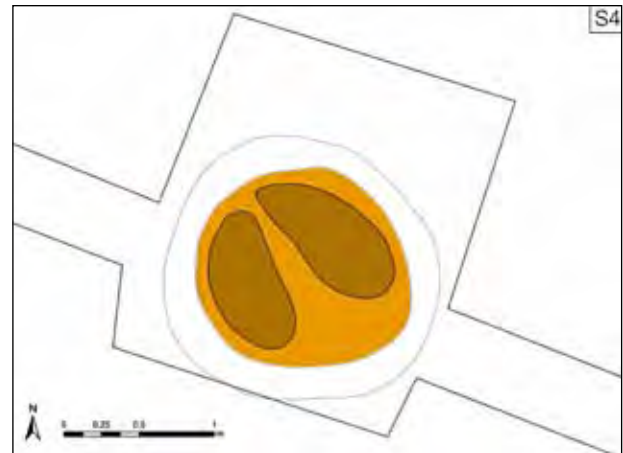


Fig. 6. Pit S4
6. kép. 4. objektum

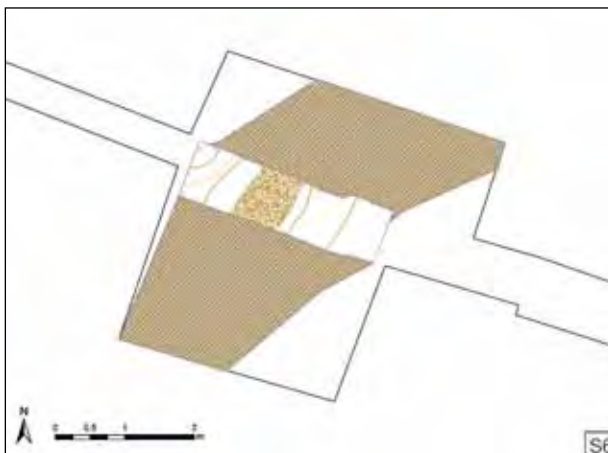


Fig. 7. Ditch S6
7. kép. 6. objektum

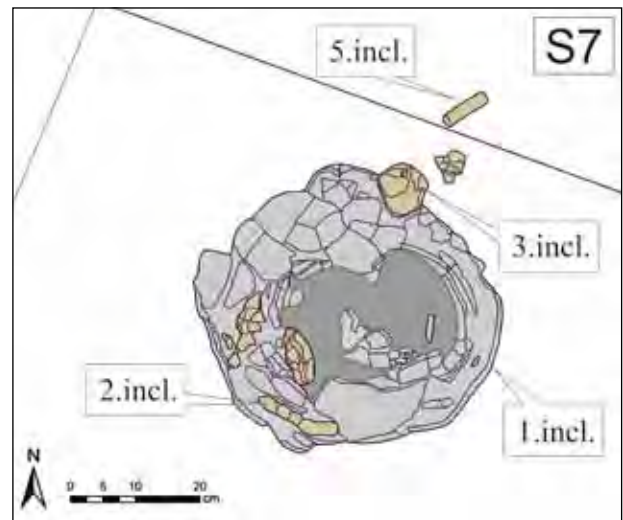


Fig. 8. Grave S7
8. kép. 7. objektum

S2 (grave, Fig. 4; Table 2. 2/1–3)

Urn grave. The urn was damaged during the removal of the upper humus. The grave's outline was not visible. The absolute depth of the grave is -36–54 cm. The top of the large-sized vessel (1st incl. Table 2. 2/1) and the covering bowl (2nd incl. Table 2. 2/3) broke during the mechanical works, but all fragments were collected. The grave seemingly contained 2 vessels. It was taken out *in situ* and fine dismantling continued at the museum. The ash layer was 5–6 cm thick in the urn. The fragments of the bowl fell into the urn. A small mug (3rd incl. Table 2. 2/2) was placed on top of the ashes.

According to the anthropological results the grave belonged to an *adultus woman* (K. ZOFFMANN 2015, 1).

S3 (grave, Fig. 5; Table 2. 3/1)

Urn grave. Strongly damaged and fragmented grave. The grave's contour was not evident. The absolute depth of the grave is -45–64 cm. Due to mechanical works the grave became further broken. On the basis of the collected ceramic pieces (1st incl.) after restoring the vessel the grave can be classified as an urn grave. During the excavation a covering bowl was also presumed but the ceramic fragments belonged only to the urn.

The scattered ashes were also taken to anthropological examination. The heavily damaged grave could have preserved the remains of an older, *adultus-maturus woman* (K. ZOFFMANN 2015, 1).

S4 (pit, Fig. 6; Table 6. 14/ 1–12; Table 7. 15/1–10; Table 8. 16/1–10; Table 9. 17/1–8; Table 10. 19/1–4; Table 11. 23)

Medium-sized, round-shaped, relatively deep, strongly broadening storage pit. The widest diameter measured by the upmost part of the pit is 190×190 cm, at -46 cm depth it is 142×152 cm. It was filled with grey, loose, ashy humus. The filling is seemingly alike with the humus of features S14 and S15 to the northern direction. Considering the similarities, it can be presumed that these 3 pits could have belong to the same Late Bronze Age settlement layer. Even though the two northern pits could not have been done, pit S4 was completely excavated. The composition of findings is quite complex. Two complete (1st and 2nd incl. Table 6. 14/1, 2) and several fragmented mugs (3rd incl. Table 6. 14/3–6, 8, 10) were found, as well as numerous other pottery fragments (4th incl. Table 6. 14/7, 9, 11–12; Table 7. 15/1–10; Table 8. 16/1–7, 9). Furthermore animal bones (6th incl. Table 9. 17/1–8), pebble and grinding stone (7th incl. Table 10. 19/1–4), daub fragments (5th incl.), and two chipped stone tools (8th incl. Table 8. 16/8, 10) were also excavated.

S5 (natural feature)

At the beginning of the excavation it appeared to be a posthole, but during mechanical works, within 5 cm, it disappeared.

S6 (ditch, Fig. 7; Table 5. 12/1–3; Table 9. 18/1–4; Table 10. 20/1; Table 11. 24)

Partially excavated ditch. It was recovered during dredging up the eastern part of the feature, while the western part and the bottom could not have been unearthed due to lack of time. The complete size must have been over 350×50 cm, which would mean a large ditch, but it was not wholly cut through so the exact size is unknown. The relative depth is ca. 330 cm. The side is steeply sloping and it can probably be deeper than 3 m, but it was not excavated further as the investment works did not go deeper. The feature contained several fragments of ceramics (1st incl. Table 5. 12/1–3), animal bones (3rd incl. Table 9. 18/1–4), some daub (2nd incl.) and a piece of grinding stone (4th incl. Table 10. 20/1).

S7 (grave, Fig. 8; Table 2. 4/1–6)

Urn grave. It is located a meter away from grave S2. During mechanical works the top of the grave was damaged. The grave's contour was not noticeable. The absolute depth is -36–50 cm. The urn (1st incl. Table 2. 4/1) and the covering bowl (2nd incl. Table 2. 4/2) was



Fig. 9. *In situ* position of the spiral ring from grave S7
9. kép. A 7. objektum spirálgyűrűjének *in situ* elhelyezkedése

taken out *in situ*, and it was disassembled at the museum. A further cup (3rd incl. Table 2. 4/4) laid north to the urn, and another mug handle (5th incl. Table 2. 4/5) was found in the NE direction. The ashes were 6 cm thick in the urn, and a small mug (4th incl. Table 2. 4/3) was put onto the top of the ash layer. The larger, less calcined ashes contained a few charcoal pieces. A small bronze spiral ring (6th incl. Table 2. 4/6) stuck to the vessel's body (Fig. 9).

According to the anthropological results, the grave belonged to an *adultus woman* (K. ZOFFMANN 2015, 1).

S8 (pit, Fig. 10; Table 5. 13/1–6; Table 10. 21/1–4)

A probable storage pit, with indeterminable outlines. The humus was clayey and brown. The exact size was not measurable, as none of the edges were recovered within the excavation trench. The pit, which was used presumably as a storage pit, contained most of the graves (feature S1, S9, S10, S11, S12, S13, S16 and S17). As the edges of the pit were not identifiable the finds of this pit are only a part of the assemblage. The finds consisted of fine and domestic pottery (1st incl. Table 5. 13/1–3, 5–6), rubble and grinding stone fragments (2nd incl. Table 10. 21/2–4), daub (3rd incl.), slag (4th incl. Table 10. 21/1) and a piece of obsidian (5th incl. Table 5. 13/4).

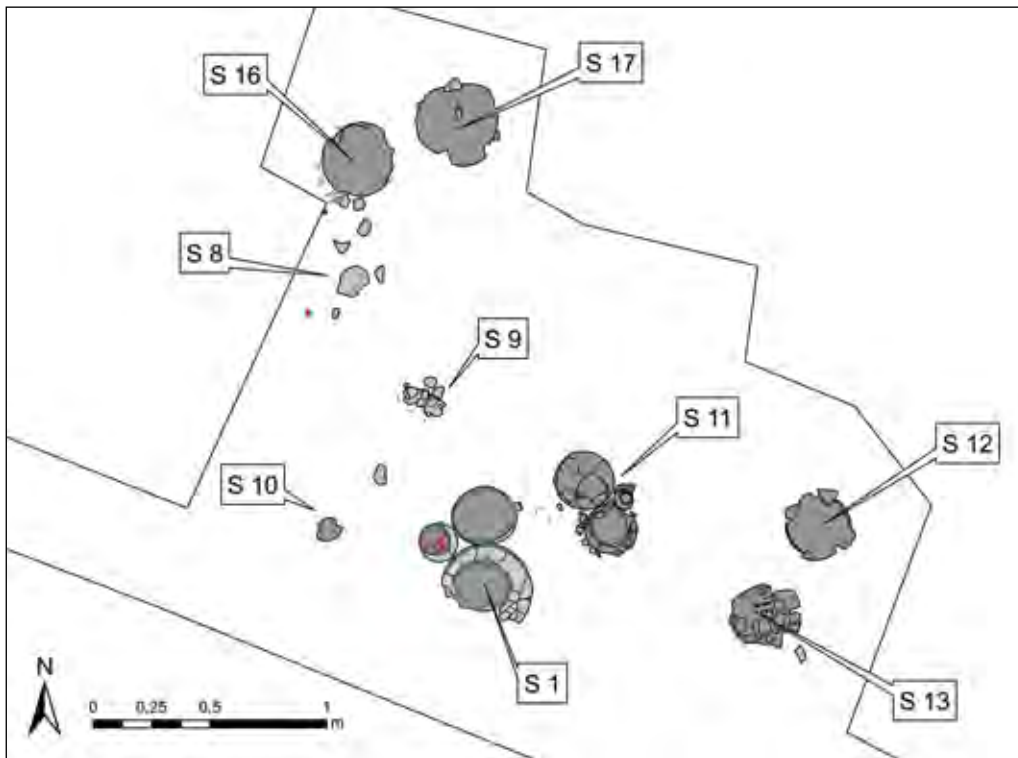


Fig. 10. Position of pit S8 and the graves dug into its ground
10. kép. A 8. objektum elhelyezkedése és a felszínébe ásott sírok

S9 (grave, Table 3. 5/1–2; Table 10. 22/1–2)

Scattered cremation grave. It is a strongly disturbed, but probably separate grave. Some fragmented pottery was found, one of which may have belonged to a bowl (1st incl. Table 3. 5/1), and another possibly to a knob-decorated mug (2nd incl. Table 3. 5/2). Some rubble stone also came to light (3rd incl. Table 10. 22/1–2) near the grave. These might have been used as grave markers. These kind of markers were common by various Tumulus culture graves from other sites, but it would be the only example in Megyaszó-Halom-oldal dűlő. However, the grave may have been dug into pit S8, so the rubble stones could simply fell from the pit near the burial.

The ashes were scattered around the ceramics. The remains were examined anthropologically. The ashes are of definite human origin, though neither the age nor the sex could have been identified (K. ZOFFMANN 2015, 1). Therefore it can be stated that an extremely poorly preserved burial was found.

S10 (feature, Table 3. 6/1)

The feature contains only a handled mug (1st incl.), which laid 50 cm apart from grave S1. There was no apparent pit contour, and no ashes in the surrounding area. It cannot be decided for certain whether it is a part of pit S8 or a strongly fragmented/symbolic burial.

S11 (grave, Fig. 11; Table 3. 7/1–6)

Urn grave. No outline of the pit was documented. The grave consisted of 6 vessels. Two of the ceramics were used as urns, covered by bowls and 2 mugs were placed on top of each other separately from the urns. The vessels were collected *in situ* and they were taken apart at the museum. One of the bowls (1st incl. Table 3. 7/1) hid the fragmented neck of a larger vessel, an urn (6th incl. Table 3. 7/5). The other bowl (2nd incl. Table 3. 7/4) covered a larger mug (3rd incl. Table 3. 7/6). One of the smaller mugs (4th incl. Table 3. 7/2) was damaged at the upper part during the excavation works, the other is complete (5th incl. Table 3. 7/3).

The broken urn was full of poorly burnt ashes, from which the parts of femur, skull and teeth were recognizable. The large, covered mug also contained ashes, and some scattered ashes were around the vessels. All the remains belonged to one individual, who was an *Infans I.* aged child (K. ZOFFMANN 2015, 1).

S12 (grave, Fig. 12; Table 4. 8/1–4)

Urn grave. There was no sign of a grave fill contour. The grave was strongly damaged even the ash container bowl (1st incl. Table 4. 8/1) was broken. Among the pieces of the bowl some other pottery fragments came to light. After restoration a total of 4 vessels could be separated. The grave consisted of a broken-handled

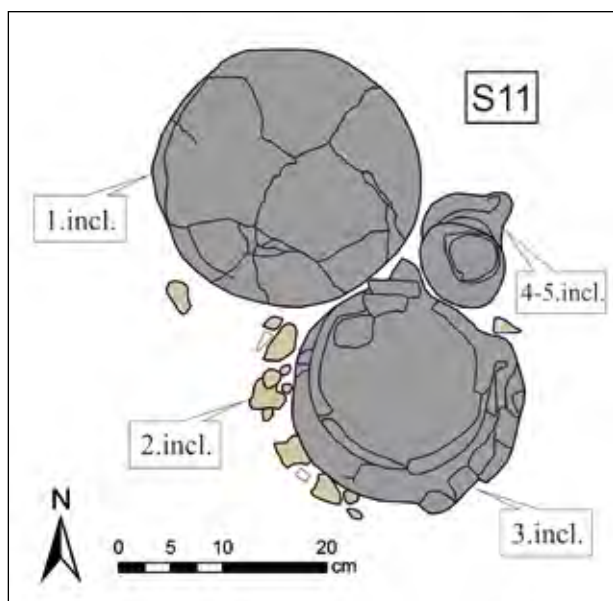


Fig. 11. Grave S11
11. kép. 11. objektum

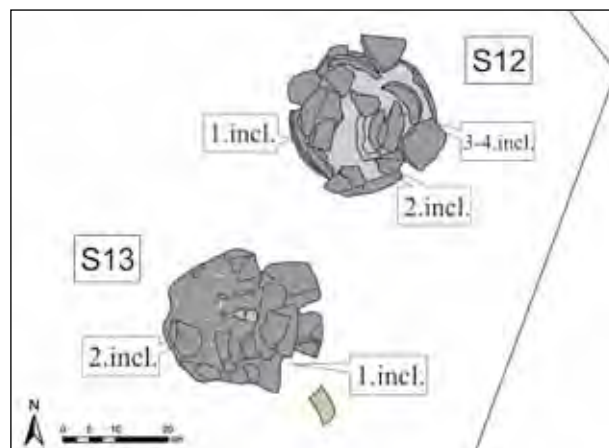


Fig. 12. Grave S12 and S13
12. kép. 12. és 13. objektum

pitcher (3rd incl. Table 4. 8/3), the side-part of a globular vessel (4th incl. Table 4. 8/4) and a complete mug (2nd incl. Table 4. 8/2).

During excavation it seemed that grave S12 and S13 could belong together because a thin line of ash was noticed between the burials. Since the grave was seriously damaged, no ashes could be collected. During fieldwork it was not clear, but after restoration it is obvious that both features contained a specific set of pottery, such as a vessel for the ashes, a bowl and a cup or mug. This set of pottery can be identified in most of the burials at this site. By this specified set, these features can be handled separately, despite the fact that there was no preserved human remains in grave S12.

S13 (grave, Fig. 12; Table 4. 9/1–2)

Severely damaged urn grave. The contour of grave fill was not identifiable. There was a thin line of ash between grave S12 and S13. They were considered to be joint grave, but based on the pottery sets, 2 different graves can be assumed. After conservation 3 vessels are known from this grave. A strongly fragmented pot with fluted decoration (1st incl. Table 4. 9/2) contained the ashes. Among the fragments some thick-walled, orange-coloured pieces came to light, which may have belonged to a bowl (2nd incl.) that could cover the urn. The whole grave was taken out *in situ* and dismantled at the museum. Here a small mug was found on top of the ashes (3rd incl. Table 4. 9/1).

The ashes are poorly burnt, thus the material contained some identifiable bones. The small-sized bones could have belonged to an *Infans I.* aged child, confirmed by the anthropological results (K. ZOFFMANN 2015, 1).

S14 (pit)

A probable storage pit. Excavation and investment works took place at the same time. While digging the channel a brownish-grey humus stain became outlined in the yellow subsoil. The mechanical work started from the northern direction where the pit was found and documented as S14. It is approx. 120×120 cm wide and at least 3 m deep. Since the investment has not affected the pit any further, it was not excavated completely. The feature first came to light at the depth of 2.5 m, but it was not dug lower than 3 m, however it certainly continues deeper. The round-shaped, ashy spot is similar to pit S4 southward, so they may have belonged to the same occupation level. The excavated layer did not contain any finds.

S15 (pit)

A possible storage pit. The same brownish-grey humus stain was discovered together with S14 in the yellow subsoil. It was also dismantled from the northern side, like S14. The pit is approx. 130×130 cm, and it could similarly be deeper than the 3 m deep investment level. The ashy, round-shaped humus spot began at the same depth of 2.5 m. This pit is also similar to

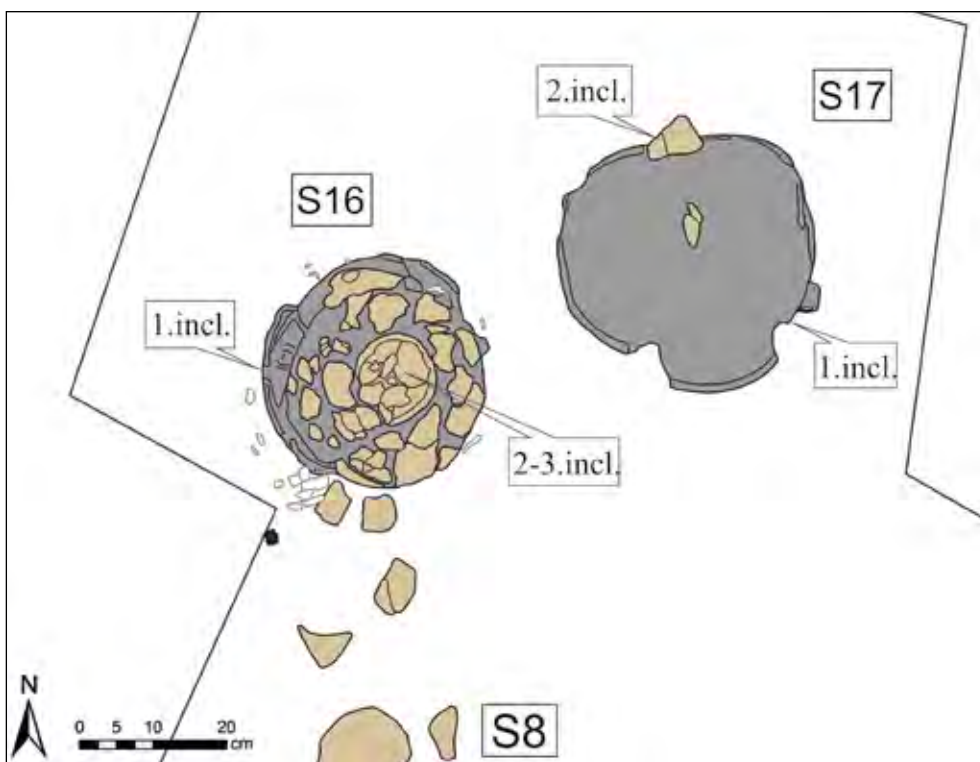


Fig. 13. Grave S16 and S17
13. kép. 16. és 17. objektum

the southern pit S4. The 3 pits may belong to the same level. The pit was partly excavated, and the uncovered layer did not contain any finds.

S16 (grave, Fig. 13; Table 4. 10/1–3)

Urn grave. One of the graves dug into pit S8. It is located at the northernmost corner of the excavation trench, beside grave S17. The outline of the grave fill was not visible, its absolute depth is -30–50 cm. On the southern side of the urn a solitary human phalange was found, which was slightly burned. The urn (1st incl. Table 4. 10/1) was covered with a fragmentary bowl. It was taken out *in situ* and the dismantling took place at the museum. After restoration, further ceramic pieces suggest 2 pots. One of them is a thick-walled, dark brown, ring-footed vessel (2nd incl. Table 4. 10/2) while the other is a finer, thin-walled, orange vessel with channeled decoration (3rd incl. Table 4. 10/3).

The urn was completely full of ashes, which contained some larger calcined pieces. Based on the anthropological examination the burial could preserved the remains of an *adultus man* (K. ZOFFMANN 2015, 1).

S17 (grave, Fig. 13; Table 5. 11/1–3)

Urn grave. Located near grave S16. The contour of the grave fill was not clear. The absolute depth is -28–46 cm. The urn (1st incl. Table 5. 11/1) was *in situ*

lifted, dismantling continued at the museum. Among the ashes, the broken rim of the urn was found, as well as some other pottery pieces, which might belonged to a covering bowl (2nd incl. Table 5. 11/2). A small mug (3rd incl. Table 5. 11/3) was placed on top of the ashes.

The ashy layer was 15 cm thick and contained some large calcined pieces. Some micro fragmented ashes were also found beside the urn up to grave S16. The two graves however cannot be handled as one, because the anthropological results reveal that this grave belonged to an *adultus-maturus woman* (K. ZOFFMANN 2015, 1).

TYPOLOGY

From the 10 features defined as burials a total of 40 inclusions were found, which can be divided into three main groups. The main group of ceramics contains 37 vessels overall that can be separated into 6 formal groups. These groups can be further refined to sub-groups based on their ornamentation. The 2nd major group includes bronze findings, which means 2 spiral rings that can be sorted into individual subgroups. The 3rd major group is established for clay bead inclusions.

CERAMICS

In spite of the relatively low amount of ceramic inclusions, a fairly wide variety of shapes and decorations can be detected, which show a well-delineated taste.

Moreover, forms may reveal relations with neighbouring cultures, as well. The majority of vessels placed next to the dead, were large storage vessels, bowls and mugs. A few examples can be found for cups, jars, and amphora-shaped vessels. The potteries can be classified into subunits by their shape, by the presence or absence of handles or whether they have incised or impressed decorations or knobs.

I. Large vessels (Fig. 14)

According to the certainly determined ceramics there are a total of 9 urn graves and a scattered burial. Grave S1 contained two large vessels or urns, while in grave S12 a bowl might have held the ashes. Therefore the 9 large vessels were in 8 graves. The amount of large vessels take 22.5% of the total amount of pottery, thus large vessels are the most common for ash storage.

I.A.1. Undecorated biconical vessels

A single uncertain example can be classified into this subunit. It was in grave S11 and only a fragmentary piece has survived between the rim and the shoulder line (Table 3. 5/7). As there are no signs of either handles or knobs, it is more reliable to outline an undecorated group. Although it is likely that it had handles or knobs or both, just as the rest of the large vessels, but without any additional piece, it cannot be categorised together with other vessels.

I.A.2. Biconical vessels with strap handles

Two vessels can be classified into this group from grave S1 and S3 (Table 1. 1/4; Table 2. 3/1). In both cases the upper part of the urn is broken, so the upright rim and the conical-shaped neck are missing. They have 2 handles that are located on both sides below the belly line.²

I.A.3. Biconical vessels with strap handles and knobs

Three almost complete vessels belong to this group from grave S1, S2 and S7 (Table 1. 1/1; Table 2. 2/1; Table 2. 4/1). The shape is identical to the I.A.2. type vessels,

but some knobs are added, either on the shoulder or on the belly line.³

The distribution area of all I.A. type vessels can be clearly outlined. This vessel type can be found in several Tumulus cemeteries, but there are numerous examples from Piliny sites as well. Similar vessels are known from both the Zagyvapálfalva and Bárca groups of the Piliny culture (KEMENCZEI 1968, 180).

I.B. Biconical vessel with channeled decoration, strap handle and knobs

This is the most ornamented piece of vessel from grave S13 (Table 4. 2/9). Tibor Kemenczei has determined this type as a jug (KEMENCZEI 1968, 181), but it can be handled as an urn deriving from its function. Although it is highly fragmented, still the outcurving rim, the biconical shape, the vertically channeled decoration and the knobs are perfectly reconstructable. A middle part of the handle was also found.⁴

A rather reduced variant has been used by the Piliny culture, like a mug, while larger pieces were preferred by the Tumulus culture. The form has its roots in the Bodrogszerdahely group of the Middle Bronze Age Füzesabony culture (KEMENCZEI 1963, 178–179; 1967, 277–278). It is more typical of the early phase of the Tumulus material culture (KEMENCZEI 1964, 7), so they might have begun to use it in the Rei. Br. B2 till the Rei. Br. C phase, when Piliny culture also began to apply it.

I.C.1. Decorated conical vessel with straight neck

The vessel has a typical outcurved rim, upright neck, rounded shoulder and conical shape. This urn from grave S16 (Table 4. 10/1) is slightly deformed, but the essential formal features can be deduced. Some incised lines on the neck, an impressed chain of dots on the shoulder, and some rough, an inch thick verti-

2 There are 4 parallel examples from the Tumulus cemetery of *Halmaj*: KEMENCZEI 1968, 166–176 (9. kép 17; 10. kép 7; 11. kép 15; 12. kép 11); and further examples are known from Piliny sites like *Zagyvapálfalva*: KEMENCZEI 1967, 259 (Abb. 14, 9); *Bodrogkeresztúr*: KEMENCZEI 1984 (Taf. XXXI. 12, 16); *Košice*: FURMÁNEK 1968 (Obr. 3. 5); *Ónod*: KEMENCZEI 1984 (Taf. XL. 1).

3 There are similar examples from the Tumulus sites of *Halmaj*: KEMENCZEI 1968, 171, 176 (10. kép 1; 10. kép 11); *Detek*: KEMENCZEI 1968, 171 (9. kép 6); *Egyek-szőlőbég*: KOVÁCS 1966, 167–176 (10. kép 15; 21. kép 11); *Tiszafüred*: KOVÁCS 1975 (Plate 10, 102/1); and Piliny sites like *Zagyvapálfalva*: KEMENCZEI 1967, 254–259 (Abb. 3, 1; Abb. 8, 12; Abb. 11, 16; Abb. 16, 8); *Bodrogkeresztúr*: KEMENCZEI 1984 (Taf. XXXI. 13, 14; Taf. XXXII. 10, 13; Taf. XXXIV. 22); *Šafarikovo*: FURMÁNEK 1977b (Taf. VIII. 64/12).

4 Analogous pieces are from the Tumulus sites of *Mubi*: KEMENCZEI 1963 (3. kép 14); *Mezőcsát*: KOVÁCS 1966 (17. kép 5); *Tiszafüred*: KOVÁCS 1975 (Plate 18, 184/1; Plate 26, 271/1); and the Piliny site of *Šafarikovo*: FURMÁNEK 1977b (Abb. 7, IV/1).



Fig. 14. Typological order of large storage vessels, urns
14. kép. Nagyméretű tárolóedények, urnák típusábrázolása

cal channeled decoration on the belly line can be seen. Furthermore, there are 2 broken handles and 2 knobs on the shoulder with fluted decoration.⁵

This type of vessel is more common in the Piliny sites and can be dated to the Rei. Br. C. With some ornamental changes this form was used until the Rei. Br. D phase (KEMENCZEI 1967, 270).

I.C.2. Conical vessel with strap handles and knobs

Unlike the other two-handled, knob-decorated vessels, this one from grave S17 has a rather elongated shape (Table 5. 11/1). The longer body and short neck is characteristic to the pots of the Tumulus culture.

Thus, a large pot could have been used as an urn. The handles are located in the middle of the body and the 2 opposite knobs on the neckline.⁶

T. Kemenczei dates the cemetery of Nagybátony to the early stages of the Piliny culture to the Rei. Br. B2-C period, thus the form can be dated to this phase (KEMENCZEI 1984, 14).

II. Bowls (Fig. 15)

A total of 11 bowls were found in the 10 graves. The bowls of grave S1, S9 and S17 were destroyed in such an extent that even the thickness of their walls is difficult to measure. Bowls are more frequently placed into graves than large vessels. These 11 pieces of bowls are 26.8% of all ceramic inclusions.

5 Some parallels to the form, with varying decorations are known from the Piliny sites of *Šafarikovo*: FURMÁNEK 1981 (44; Abb. 6, 6); *Zagyvápálfalva*: KEMENCZEI 1967, 259 (Abb. 15, 1); *Piliny-Borsos*: KEMENCZEI 1967, 233 (Abb. 16, 1).

6 Similar form has been found in the Piliny site of *Nagybátony*: KEMENCZEI 1984 (Taf. II. 4); PATAY 1954 (2. kép 5). In other parallel cemeteries, this form is missing.

II.A.1. Undecorated, strongly profiled bowls

Two fragments can be classified into this group from grave S7 (Table 2. 4/2) and S9 (Table 3. 5/1). Since only fragments remained, just as the I.A.1. vessel type, it is not certain whether these bowls were decorated or not. There are no traces of handles or any other decoration, so it is relevant to create an undecorated group as it would not be appropriate to classify them to other groups. Only fragments survived from other similarly dated sites as well. It is possible that these bowls might have had 1 or 2 handles, but forms without handles may have existed too (KEMENCZEI 1968, 181). Similar types can be found in both Tumulus and Piliny cultural regions.⁷

The local Middle Bronze Age population and the Western Tumulus communities had already used these types of bowls (KEMENCZEI 1968, 181). In the Carpathian Basin these outcurving-rimmed bowls were constantly used during the Tumulus period, and it is likely that Piliny culture might have took this type from the Tumulus culture (KEMENCZEI 1967, 275–276).

II.A.2. Strongly profiled bowls with strap handle

There are two single handled examples that represent this group from grave S11 (Table 3. 7/1) and S12 (Table 4. 8/1). These are less fragmented. The handled types are a lot more represented, since they can be found in almost every cemetery from Northern Hungary.⁸

As this type was used since the Middle Bronze Age, and both the Tumulus and Piliny cultures preferred it, this form covers a broader time spectrum, from the Rei. Br. B1 to Br. D (KEMENCZEI 1968, 181).

II.A.3. Strongly profiled bowls with knobs

The form is alike to the first group, but in this case 2 or 3 knobs were added to the shoulder. The bowl of grave S2 had 3 knobs (Table 2. 2/3) while on the fragmentary bowl of grave S11 only 1 knob was visible (Table

3. 7/4), however it can be assumed that there might have been at least two pieces. The knob-decorated bowls usually bear two handles, as single-handled and knobbed pieces are less frequent.⁹

The basis of this type might have come from the Tumulus culture, as the form without knobs was also common here (KEMENCZEI 1984, 16). It can also be noted about the large vessels that the shape belonged to the Tumulus culture, but the decorations were added by the Piliny culture. It can be dated from Rei. Br. B2–C to Br. D.

II.B.1. Flat-based, conical bowl with fluted decoration

It is from grave S16 (Table 4. 10/3), which was broken on its belly so the shape above the incurving neckline cannot be reconstructed. The rim could have been outcurving or inverted as well. Based on the fragments of the body it had a conical shape, vertical channeled decoration and 2 opposite handles.¹⁰

The handles on other vertically channeled vessels were usually located above the belly line, but this bowl's handles are below it. Since the exact reconstruction from fragments is hard, thus dating is difficult as well. It can most probably be dated to the Rei. Br. C period.

II.B.2. Ring-footed conical bowl

It is also from grave S16 (Table 4. 10/2), which is similarly fragmented and difficult to identify above the belly line. Based on the bottom diameter, and the inclination of the side, it may be the part of a larger vessel, such as a ring-footed bowl. The original curving of the neck and rim cannot be reconstructed. No decoration can be reconstructed.¹¹

Plain vessels and bowls with footings were quite common in the Tumulus culture. The Carpathian Tumulus culture might have taken over the form from

7 Related pieces are known from the Tumulus cemeteries of *Halmaj*: KEMENCZEI 1968, 176 (10. kép 12); *Detek*: KEMENCZEI 1968, 167 (4. kép 17); and Piliny sites of *Vizslás*: KEMENCZEI 1984 (Taf. XIV. 21, 23); *Litke*: KEMENCZEI 1984 (Taf. X. 23; Taf. XI. 6).

8 Parallel examples are from the Tumulus cemeteries of *Tiszafüred*: KOVÁCS 1975 (34; Plate 31, 335/3); *Detek*: KEMENCZEI 1968, 167–171 (4. kép 2; 4. kép 10; 7. kép 5; 7. kép 13; 9. kép 7); *Halmaj*: KEMENCZEI 1968, 171–176 (9. kép 18; 11. kép 8; 12. kép 8); and from the Piliny sites of *Litke*: KEMENCZEI 1984 (Taf. IX. 12); *Méra*: KEMENCZEI 1984 (Taf. XXXVI. 16); *Patnavr*: KEMENCZEI 1984 (Taf. XII. 13); *Zagyvapálfalva*: KEMENCZEI 1967, 237–243 (Abb. 4, 1; Abb. 5, 2; Abb. 5, 5; Abb. 5, 15; Abb. 9, 9; Abb. 10, 20).

9 The single handled, knobbed type is missing from the Tumulus cemeteries of *Detek* and *Halmaj*. The analogous pieces are more common in Piliny cemeteries, like *Nagybátony*: KEMENCZEI 1984 (Taf. IV. 9); *Szurdokpüspöki*: KEMENCZEI 1984 (Taf. XIII. 19); *Zagyvapálfalva*: KEMENCZEI 1967 (Abb. 1, 4; Abb. 10, 18; Abb. 15, 2).

10 There are two parallel examples to this type from the Piliny sites of *Litke*: KEMENCZEI 1984 (Taf. VII. 5); *Bükkaranyos-Földvár*: KEMENCZEI 1984 (Taf. XXV. 15).

11 It has several similar examples from Tumulus sites like *Halmaj*: KEMENCZEI 1968, 171–176 (10. kép 5; 12. kép 2); *Detek*: KEMENCZEI 1968, 171 (8. kép 4); *Egyek-szőlőbegy*: KOVÁCS 1966, 162, 172 (2. kép 22; 11. kép 4); and Piliny sites like *Nagybátony*: KEMENCZEI 1984 (Taf. III. 10); *Litke*: KEMENCZEI 1984 (Taf. VIII. 28; Taf. X. 10); *Zagyvapálfalva*: KEMENCZEI 1967 (Abb. 9, 4; Abb. 11, 4).

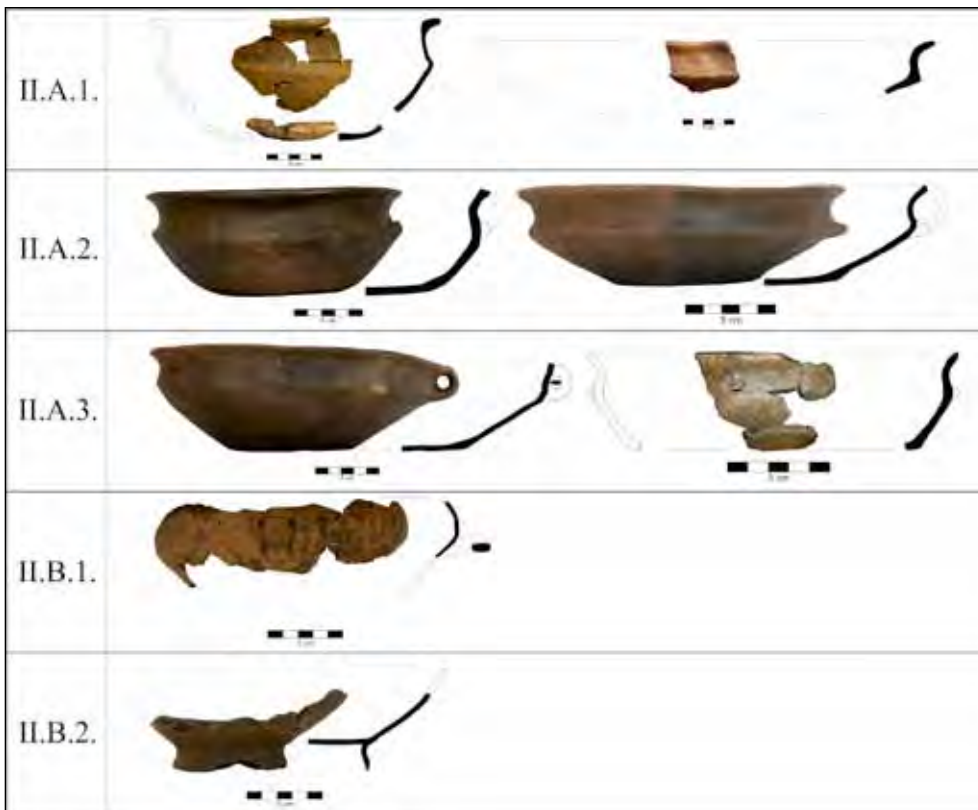


Fig. 15. Typological order of bowls

15. kép. Tálak típusablázata

the Bohemian area, and could have transmitted it to the Piliny culture (KEMENCZEI 1968, 181). Since the pottery's exact, complete form is not known, it is not suitable for dating.

III. Mugs (Fig. 16)

A total of 14 mugs were found. 13 of these can be definitely connected to burials while one of them, feature S10 might have had a function related to some kind of secondary ceremony (KEMENCZEI 1968, 171; FÜLÖP-VÁCZI 2014, 416). The distribution of mugs are different in each grave. In grave S1 and S11 there were 3–3 pieces, while in grave S7 two pieces came to light. Other graves contained a single mug, while in grave S3 and S16 mugs were missing. One of the mugs from grave S7 was represented by a sole fragmented handle (Table 2. 4/5), so the precise classification is impossible and it was not added to any group in this typology. The large number of mugs makes them the most common findings in graves; among all ceramic inclusions, 34% of them are different shaped mugs.

III.A. Conical mugs

There is only one complete and another strongly fragmented mug that can be classified into this group. The fragmented piece can be reconstructed by the shape

and the thickness of wall. The whole, undecorated piece was found in grave S1 (Table 1. 1/6), while the fragmented one was in grave S9 (Table 3. 5/2).¹²

It is a quite ordinary form, and there was not much attention paid to its development and quality. This type is relatively common in both Tumulus and Piliny sites, but the specific chronological and spatial distribution cannot be outlined. These are not significant for dating.

III.B.1. Undecorated compressed globular-shaped mugs

It is the most common mug type in the cemetery. Two pieces were found in grave S11 (Table 3. 7/2–3), and one piece from grave S12 (Table 4. 8/2) and S13 (Table 4. 9/1). Each piece has a handle from the rim running to the belly line.¹³

¹² There are some similar pieces from the Piliny sites of *Zagyvapálfalva*: KEMENCZEI 1967 (Abb. 10, 9); *Szurdokpuszpöki*: KEMENCZEI 1984 (Taf. XIII. 21, 24); *Sáfarikovo*: FURMÁNEK 1977b (Taf. I. 12/21); and from the Tumulus cemetery of *Tiszafüred*: KOVÁCS 1975 (Pl. 2, 12/2; Pl. 29, 316/1).

¹³ Numerous parallels can be found from Tumulus sites like *Detek*: KEMENCZEI 1968 (7. kép 11, 12, 14); *Tiszafüred*: KOVÁCS 1975 (Pl. 1, 4/3; Pl. 1, 6/5; Pl. 2, 14/1; Pl. 2, 15/1; Pl. 2, 19/4; Pl. 3, 32/1; etc.); *Egyek-Szálóhegy*: KOVÁCS 1966 (2. kép 1–2, 13, 16–17, 21; 4. kép 2, 5–6, 12; 6. kép 2, 9, 13, 15; 7. kép 2–3, 5, 9–10, 16; etc.); and from Piliny sites like *Zagyvapálfalva*: KEMENCZEI 1967 (Abb. 3, 16; Abb. 7, 11; Abb. 8, 9; Abb.

This form was quite widespread in all areas of the Tumulus culture, and also the Bodrogszerdahely group preferred it (KOVÁCS 1966, 194). Piliny culture has taken over this mug shape, but the undecorated mugs didn't become characteristic. This type existed through the whole Tumulus period, from the Rei. Br. B1 to Br. D phase.

III.B.2. Compressed globular-shaped mugs with impressed decoration

The mug of grave S17 belongs to this subgroup (Table 5. 11/3). There are 3 impressed dots in a row, which were repeated three times on the shoulder line.¹⁴

The three-dotted motif is more frequent on the neck or belly part of larger storage vessels and jars. Since only a few mugs are decorated with this pattern, it can be assumed that this is just a contingent decoration. Less decorated mugs can be dated similarly to the previously described III.B.1 type.

III.C.1. Undecorated biconical mugs with handles

This group contains the mug from grave S7 (Table 2. 4/3) and the sole mug from feature S10 (Table 3. 6/1).¹⁵

In contrast to the compressed globular-shaped mugs, this type is more frequently decorated. Biconical mugs are more spread at Piliny sites and within the territory of the Egyek group (KEMENCZEI 1967, 279), while they are rarely present in the Tumulus culture. The form can be dated within the Rei. Br. B2-D period.

III.C.2. Decorated biconical mugs with handles and knobs

Three mugs can be categorised into this subgroup, from grave S1 (Table 1. 1/5), grave S2 (Table 2. 2/2) and S11 (Table 3. 7/6). All 3 mugs are equipped with 3 knobs. The first one is decorated with three vertically incised lines below the handle, the second has 3–3 impressed dots in a row on the shoulder line. The third is decorated

with 3 dots on the shoulder, while on the belly line there are 3 knobs that are surrounded by 3–3 semi-circular grooved lines. The biconical, knob-decorated form is more general than the plain variant.¹⁶

The small-sized mugs with minor modifications can be found in all Late Bronze Age material culture. It became more frequent in the Piliny culture and the Egyek group, but Tumulus tradition can be traced (KEMENCZEI 1967, 279). As smaller mugs can be found at sites with the Bodrogszerdahely group's influence, it can be dated from Rei. Br. B2 onwards. The larger variant of mugs could have developed in the North Hungarian area by enlarging the small ones (KEMENCZEI 1968, 181). They are also widespread in the Piliny culture, especially in the early stages of the Bárca group, where the rich trimming of lines, fluting and decoration with knobs are the most characteristic (KEMENCZEI 1965, 14). Kemenczei has dated this form from the Rei. Br. C period (KEMENCZEI 1964, 21–22).

III.C.3. Biconical mug without handles

Only a single mug represents this subunit from grave S1 (Table 1. 1/3), which has typical knobbed decorations on the belly line. The vessel is strongly deformed. It could have had handles as well, but the traces are hardly noticeable, as the supposed location was entirely hidden during restoration. Without the unmistakable sign of handles, it can be interpreted as handleless.¹⁷

This vessel was also placed on top of the ashes in the urn, therefore it had the same function as similarly arranged mugs. Parallel vessels from Halmaj were somewhat larger and these contained the ashes, so T. Kemenczei defined them as urns (KEMENCZEI 1968, 180). This type can be found both in the eastern and western regions of the Carpathian Tumulus culture,

15, 7); *Vizslás*: KEMENCZEI 1984 (Taf. XIV. 8–10, 12–13, 16–17); *Bodrogkeresztúr*: KEMENCZEI 1984 (Taf. XXXIV. 6, 13–15); *Košice*: FURMÁNEK 1968 (Obr. 3. 4); *Šafarikovo*: FURMÁNEK 1977b (Taf. I. 6/6; Taf. XII. 94/2).

14 All the examples from the previous group can be listed here based on the form. Decorated ones are from the Tumulus sites of *Egyek-Szőlőhegy*: KOVÁCS 1966 (2. kép 20); *Tiszafüred*: KOVÁCS 1975 (Pl. 22, 233/1; Pl. 25, 265/3). These dots are usually combined with knobbed decoration.

15 Comparable examples are from the Piliny sites of *Sály-Vízoldal*: KEMENCZEI 1984 (Taf. XVII. 20); *Zagyvapálfalva*: KEMENCZEI 1967 (Abb. 10, 10); *Bodrogkeresztúr*: KEMENCZEI 1984 (Taf. XXXI. 9, 10); *Šafarikovo*: FURMÁNEK 1977b (Taf. VI. 56/27; Taf. XII. 101/12); and the Tumulus site of *Mubi Princitánya*: KEMENCZEI 1965 (5. kép 10).

16 Similar pieces are from the Tumulus cemeteries of *Tiszafüred*: KOVÁCS 1975 (Pl. 6, 59/3; Pl. 7, 79/1; Pl. 11, 120/1; Pl. 17, 174/7); *Halmaj*: KEMENCZEI 1968 (10. kép 14; 12. kép 19); and Piliny sites like *Szécsény*: KEMENCZEI 1984 (Taf. XIII. 12); *Zagyvapálfalva*: KEMENCZEI 1967 (Abb. 7, 2; Abb. 10, 12–13; Abb. 12, 14; Abb. 13, 13). There are formal parallels to the larger mug of grave S11, with different motifs, from the Tumulus cemeteries of *Detek*: KEMENCZEI 1968, 171 (9. kép 16); *Halmaj*: KEMENCZEI 1968, 176 (11. kép 16); and Piliny sites of *Bodrogkeresztúr*: KEMENCZEI 1965, 14 (1. kép 10), KEMENCZEI 1984 (Taf. XXXIII. 9); *Abaijszántó*: KEMENCZEI 1965, 14 (1. kép 11); *Litke*: KEMENCZEI 1984 (Taf. VIII. 10, 12); *Zagyvapálfalva*: KEMENCZEI 1967 (Abb. 10, 16).

17 Some comparable pieces were found in the Piliny sites of *Jászberény-Cseróhalom*: KEMENCZEI 1984 (Taf. XVI. 15); *Šafarikovo*: FURMÁNEK 1977b (Taf. XVIII. 48/16); and the Tumulus cemetery of *Halmaj*: KEMENCZEI 1968 (11. kép 12; 12. kép 17);



Fig. 16. Typological order of mugs
16. kép. Bögrék típus-táblázata

and even the Central European Tumulus communities used this form (KEMENCZEI 1968, 180).¹⁸ Václav Furmánek has used the term amphora-shaped vessel, and handled this type of ceramic as the basis of the later advanced amphorae of the Kyjatice culture (FURMÁNEK 1977b, 305). Dating involves a broad period of time from Rei. Br. B1 to the transition between Rei. Br. D/Ha A1.

IV. Amphora-shaped vessel (Fig. 17)

There is a single example in grave S1 (Table 1. 1/2). It has an outcurving rim, from which 2 handles are running to the shoulder line, so it can be termed as an amphora-shaped vessel, however T. Kemenczei defined this form as a mug (KEMENCZEI 1968, 181).¹⁹

¹⁸ Interpreted as an urn.

¹⁹ Identical forms can be found in the Tumulus sites of *Tiszafüred*: KOVÁCS 1975 (Pl. 1, 4/2; Pl. 2, 10/2; Pl. 21, 218/3; Pl. 23, 240/2); *Egyek-Szőlőbény*: KOVÁCS 1966, 175 (14. kép 12); *Mubi-Csüllődomb*: KOVÁCS 1966, 182 (18. kép 6); and *Piliny* site of *Zagyvapálfalva*: KEMENCZEI 1967 (Abb. 17, 5). Most of the analogous pieces were found in the cemetery of *Tiszafüred*, where a wide variety of vessels were found from the undecorated ones to the quite ornate examples.

These elongated vessels appeared in the cemetery of Detek with or without a single handle,²⁰ while 2 handled pieces are more typical to the material of the Carpathian Tumulus culture (KEMENCZEI 1968, 181). This form is one of the most common pottery types in Tumulus cemeteries. There are handleless, one-, two-, or even four-handled versions of this vessel, along with some simple impressed decorations or sometimes with rich trimming through the shoulder line. This form has rooted from previous Middle Bronze Age cultures (TOČIK 1964, 48; KALICZ 1958, 53–54; KOVÁCS 1966, 194; KEMENCZEI 1967, 208). Undecorated double-handled pieces are more characteristic to the Tumulus culture, thus it can be dated to the Rei. Br. B2-C period, but the form continues to live up to the Rei. Br. D phase. The Piliny culture took over this form and often decorated it, yet it did not spread as much as by the Tumulus culture.

V. Jars (Fig. 17)

Two jars were found in grave S12. Their sizes roughly correspond to one another, but their shape is different. One of the jars only had a surviving side fragment (*Ta-*

²⁰ E.g.: KEMENCZEI 1968 (5. kép 1; 7. kép 9, 24; 8. kép 2).

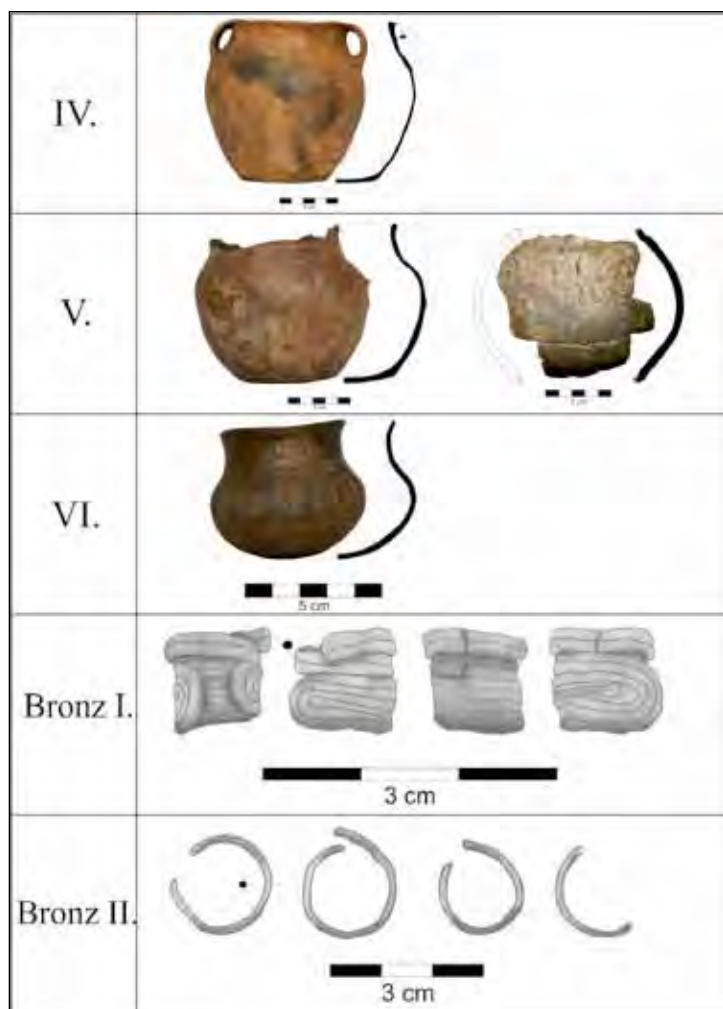


Fig 17. Typological order of the amphora-shaped vessel, jars, cup and bronzes

17. kép. Amphora alakú edény, korsók, csészé és bronzok típusablázata

ble 4. 8/4). Its rim was broken, but the neck seems to be slightly inverted. It has curved shape. Neither decoration, nor traces of handles were visible. The other jar (Table 4. 8/3) was rather deformed, probably on the pyre. It had a handle running from the rim to the belly line. Comparing to the first jar, its body is more elongated, the neck is longer, but it is also undecorated.²¹

Despite the few parallel examples, it can be observed that the form is more common in the Tumulus culture than in the Piliny material. This type developed from previous Middle Bronze Age forms. They are especially common in the Vatyá material culture, so the Northern Tumulus and Piliny cultures might have taken this shape from here (KOVÁCS 1966, 194). V. Furmánek dates

21 Similar pieces can be found in the Piliny site of *Šafarikovo*: FURMÁNEK 1977b (Taf. X. 82/8); and the Tumulus sites of *Mubi-Csüllődomb*: KOVÁCS 1966 (18. kép 2); *Mubi Princ-tanya*: KEMENCZEI 1965 (7. kép 15); among the Berkesz-Demecser type material. Moreover, lots of examples can be found in *Tiszafüred*: KOVÁCS 1975, 9–34 (Pl. 1, 4/4; Pl. 19, 188/1; Pl. 19, 189/2; Pl. 29, 321/1); while this type is missing from Detek and Halmaj.

the findings of *Šafarikovo* to the Rei. Br. B2-C1 (FURMÁNEK 1981, 42), while Tibor Kovács dates it from the Vatyá culture to the early Tumulus culture, which also means the Rei. Br. C period (KOVÁCS 1966, 194).

VI. Cup (Fig. 17)

There was a sole cup in grave S7 (Table 2. 4/4). Some rather faded, finger-sized impressed decorations are detectable on the surface. There were no handles on its compressed globular body.²²

This type is common all over the Carpathian Tumulus culture and the Piliny culture, although there are no similarly decorated examples. Since it has no exemplary temporal or spatial spread, this form is not suitable for dating.

BRONZES

I. Noppenring (Fig. 17)

This type has already been known since the Early Bronze Age in the Central European region (KEMENCZEI 1968, 183; BÁTORA 2000, 319). Its extent involves quite a large area, from Germany through the Carpathians to the Croatian regions. Moreover, they could have been used for a long period as well. The spatial and temporal spreading can be exemplified by a piece from Rifnik,²³ Slovenia, which has an undistinguishable form and size as the Late Bronze Age rings, but other artefacts date the burial earlier, to the Rei. Br. A2 (VINSKI 1961, 32). Another example was found in Bad Wünnenberg, which is dated to Rei. Br. B2 (CAPELLE 2012).²⁴ Furthermore these rings can be made of bronze or gold, and they can be dated based on their shape and size (MOZSOLICS 1973, 51–52).

22 Some analogous, but undecorated examples are from the Tumulus sites of *Detek*: KEMENCZEI 1968, 167 (7. kép 8); *Tiszafüred*: KOVÁCS 1975 (Pl. 25, 260/3; Pl. 31, 336/4); and Piliny sites of *Vizslás*: KEMENCZEI 1984 (Taf. XIV. 19); *Šafarikovo*: FURMÁNEK 1977b (Taf. XV. 23). There are a total of 5 cups from these sites, but none of them has any decoration.

23 VINSKI 1961, 32 (Tab. VI. 6).

24 LWL-Museum für Archäologie; Inv. No.: 1929:305.

The earliest examples in the northern part of the Carpathian Basin are known from the end of the Middle Bronze Age found in the cemetery of Dolný Peter (DUŠEK 1966, Taf. XXXI. 10). These pieces could have been the formal antecedents of other Northeast Hungarian artefacts. Since the publication of Detek and Halmaj,²⁵ these rings are linked to the Tumulus culture, previously they were only known among the Piliny material (KEMENCZEI 1967, 296). These two cemeteries can be dated to the Rei. Br. C1 (KEMENCZEI 1968, 183), to the early Tumulus phase. According to Kemenczei, in contrast to previous understanding, Piliny culture might have taken over this ring shape from the Tumulus culture and not the other way around.

Based on the rather small internal diameter, these rings can be identified as hair ornaments and not as finger rings, yet they were among the ashes, which does not suggest any reconstruction about their original wear. However, the gold pieces from Tiszafüred were in each case found beside the head, which supports their function as hair jewels.²⁶

The *Noppenring* of Megyaszó (Table 1. 1/7) has the closest similar example from Detek, as not only their shape, but also their size are exactly alike, the diameter being 0.9 cm in both cases (KEMENCZEI 1968, 166; 4. kép 6). They belong to the same metal hoard horizon, to the Forró horizon (MOZSOLICS 1973, 52).²⁷

II. *Spiral ring* (Fig. 17)

The 4 fragmentary wire rings (Table 2. 4/6) belonged together as a single piece, but they broke during unearthing as they were strongly burnt. No other fragments or applications were detectable.²⁸ There is a parallel piece from Tállya (KEMENCZEI 1969, 31; XII. tábla 22), in the publication of which T. Kemenczei has noted that these rings were widespread costume elements since the Late Bronze Age to the Early Iron Age, so they are not sufficient for periodisation (KEMENCZEI 1969, 38).

The 4 rings has an average of 2 cm internal diameter, so it might have functioned as finger ring. It was mixed among the ashes. In the cemetery of Tiszafüred,²⁹ where skeleton burials contained similar rings with the same diameter, they were placed next to the head. Rings were also found in the cemetery of Tápé,³⁰ although these were made of gold, yet they were situated behind the nape. Similarly to the *Noppenring*, these wire rings may have served as hair ornaments.

BEADS

This group contains some clay beads (Table 1. 1/8). Fine dismantling was carried out at the museum, where 25 whole and some fragmented pieces of beads were recovered from the ashes. During the washing of the ashes and anthropological research several more of them came along. A total of 44 complete and an equal amount of fragmented pieces were found. Based on their size, the beads might have belonged to the same necklace or belt, and they may have become secondarily burnt on the pyre. The beads were scattered among the ashes, they were in roughly the same quantity in each layer. The jewellery was not intentionally placed in the urn during the burial rite, but rather simply mixed to the ashes.

Similar sized beads were found in Tiszafüred (KOVÁCS 1975, 23; Pl. 14, 157/1–5), but only 5 pieces. These beads were lying between the ribs, so they may functioned as a necklace and not a belt. The closest parallel pieces were found in Halmaj (KEMENCZEI 1968, 176; 13. kép 1). Like the beads of Megyaszó, these are also mostly round shaped along with 4 elongated ones. There is one difference between the two: in Megyaszó, placing the beads into the grave was not intentional, however in Halmaj they were collected into a small mug (KEMENCZEI 1968, 176), to avoid the decomposition of the necklace.

Since the use of clay is general from the very beginning, even for making jewels, the beads have no dating function.

25 Parallel pieces were found in *Detek*: KEMENCZEI 1968, 167 (4. kép 6; 6. kép 7); *Halmaj*: KEMENCZEI 1968, 171 (9. kép 21–22; 11. kép 5; and one more fragment).

26 Rings from *Tiszafüred*: KOVÁCS 1975, 47 (Pl. 21, 217/8; Pl. 30, 326/4).

27 Other similar examples are from the Piliny sites of *Košice*: JÍLKOVÁ 1961 (Obr. 13. 3); *Nagybátony*: PATAY 1954, 42; *Abajszántó*: KEMENCZEI 1984 (Taf. XXX. 25); *Bodrogkeresztúr*: KEMENCZEI 1984 (Taf. XXXV. 9–12); *Piliny*: KEMENCZEI 1984, 20–21.

28 A similar sized piece was found in the cemetery of *Detek*: KEMENCZEI 1968, 166 (4. kép 5); while there is no example from Halmaj.

29 Similar rings were located by the head in *Tiszafüred*: KOVÁCS 1975, 9–21 (Pl. 1, 8/3; Pl. 6, 59/5–6; Pl. 8, 82/8–10; Pl. 13, 148/2–5).

30 Gold rings from the Tumulus cemetery of *Tápé*: TROGMAYER et al. 1975, 61 (Taf. 23, 252/8).

ANALYSIS OF THE GRAVES

BURIAL RITES

In Megyaszó-Halom-oldal dűlő's partial burial site, only cremated graves were found. It is possible that the burial ground may have contained more graves, but without information, it cannot be determined that only cremation rite was practiced. When comparing present known larger cemeteries, some tendencies can be observed among them. Reviewing the burial sites in the Great Hungarian Plain, it can be noticed that by heading north, the proportion of cremation graves are constantly growing (CSÁNYI 1980, 154–155).

Tápé is one of the largest cemeteries and also the southernmost. A total of 680 graves were found that belonged to the Tumulus culture, of which 575 were inhumation and 22 were cremation burials, consequently inhumation dominates in almost 85% (TROGMAYER et al. 1975, 148).

The cemetery of Rákóczifalva is situated in the central part of the Great Hungarian Plain, and has a majority of urn graves. T. Kovács published 78 graves overall, of which 48 were urn burial and 22 were inhumation, i.e. urn ritual prevails in 62% (KOVÁCS 1981, 90).

Jánoshida has a rather equalized depiction, as there are 278 graves, of which 135 belongs to the cremation rite with 103 urn burials. Besides, 132 graves can be classified as inhumation. Approximately 48% belongs to cremation rite and 47% to inhumation, so there is an even proportion of both rites (CSÁNYI 1980, 153–154).

Tiszafüred is also a biritual burial ground. A total of 132 inhumation burials were documented beside 111 cremations, while 122 burials were uncertain (KOVÁCS 1975, 41). According to some observations, this amount may have a majority of cremation. Considering the unspecified graves, cremation ritual begins to dominate.

Mezőcsát is an exception within the tendency. The cemetery has 37 graves that belong to the Tumulus culture, as well as two additional uncertain burials that may correlate with this period (HÄNSEL–KALICZ 1987, 9). However, all of these graves are inhumations (HÄNSEL–KALICZ 1987, 44). It may be either the result of an incomplete excavation, or the influence of other neighbouring cultures.

Emőd-Istvánmajor is located approx. 40 km apart from Megyaszó-Halom-oldal dűlő. The burial site is considered to be fully excavated, and it involves 115 cremation and 5 inhumation burials (HELLEBRANDT 2004, 190). Based on Emőd-Istvánmajor, Megyaszó

might also hide some additional inhumation burials, although this is merely a hypothesis.

The two closest cemeteries are Halmaj and Detek. In both cases, some graves were destroyed before excavation works could begin. Halmaj is less than 10 km apart, while Detek is approx. 20 km far from Megyaszó. 16 graves remained in Halmaj (KEMENCZEI 1968, 171), and 19 graves were found in Detek (KEMENCZEI 1968, 166). All the burials belonged to the cremation rite.

Jobbágyi is the latest and northernmost example for cremation cemeteries. 207 graves were found, each of them cremated (except small children, who were inhumed), out of which a large part of the burials were scattered cremation (FÜLÖP–VÁCZI 2014, 413–416).

According to Marietta Csányi, the burial rite practiced by the Tumulus culture was effected by neighbouring cultures, as Tumulus people usually adopted adjacent funerary customs (CSÁNYI 1980, 155). It is certain that Tumulus culture applied both cremation and inhumation rituals at the same time and side by side, and there was no commitment to only one kind of rite (KALICZ 1958, 58–59; KOVÁCS 1966, 188–189).

The proportion of rituals were influenced by the neighbouring and previous Middle Bronze Age cultures. Proceeding farther north in the Great Hungarian Plain, an increasing number of cremation graves are noticeable. Since the northern Füzesabony and Gyulavarsánd-Otomani cultures and Bodrogszerdahely group (KEMENCZEI 1984, 9) preceded the Tumulus expansion and the northern lying Piliny culture, it appears that cultures in the North-Hungarian region, both previous and new, preferred cremation. Therefore, funerary rite was continuous during the Middle and Late Bronze Age (KEMENCZEI 1963, 177).

Cremation graves can be further categorized in Megyaszó-Halom-oldal dűlő. In nine cases, large containers or bowls were used to store the ashes, while a scattered burial was also found. There is no absolute certainty about the absence of an urn, but the few poorly preserved pottery fragments suggest that. The function of feature S10 is uncertain, as it contained a sole mug without any human ashes. T. Kemenczei remarked some lone mugs described as burials, which makes its determination uncertain (KEMENCZEI 1968, 171). Moreover latest excavations confirm that these sporadic, separate mugs might be related to some kind of secondary burial rites or feastings (FÜLÖP–VÁCZI 2014, 416).

ANTHROPOLOGICAL RESULTS

The anthropological examination was executed by Zsuzsanna K. Zoffmann (K. ZOFFMANN 2015).

In the partial cemetery of Megyaszó-Halom-oldal dűlő 10 graves are known, from which the remains of 10 individuals can be determined. However in two cases, some differences can be observed in the distribution of ashes and graves. During the excavation every vessel that contained ashes was collected *in situ* and carried to the museum, where fine dismantling took place. The ashes were collected separately by layers from each urn. As such, 9 samples were collected from grave S1, 4 samples from grave S2, S7, S11 and S16, 3 samples from grave S17 and only 1 sample from grave S3, S9 and S13. No ashes could be detected in grave S12.

The purpose of separate collection of layers was to note, if any kind of manipulation with the ashes could be observable or not (SØRENSEN–REBAY 2007, 120). It was impossible to notice any regularity by the location of skull, limb or other bone pieces, so the ashes were not arranged to reflect the corpus. Every layer contained each type of bone fragment, which concludes that after removing the body of the pyre, people did not place the ashes consciously into the urn, they simply collected and swept the remains to a vessel.

In addition, the bone pieces were usually micro and rarely meso fragmented, moderately deformed and uniformly greyish white. This may mean that there is no trace how the body was laid on the pyre, because there is no difference by the degree of burning between the left and right, upper or lower limbs (K. ZOFFMANN 2015, 1).

It should be noted that in many cases larger bone fragments were detectable among the ashes, which may suggest the pyre's size or the degree of burning. Thus, the larger the fragments were, the worse the cremation rate or the lower the heat of the bonfire was (P. PEARSON 2001, 7).

Bronze rings and clay beads were mixed among the ashes and all of them were burned, so they may have been worn by the deceased on the pyre (SØRENSEN–REBAY 2007, 120).

At grave S1 a double burial was identified. It contained the ashes of two *Infans I.* aged children. One of them could have been around 3–4 years old, the other even younger. Grave S11 and S13 have also held the remains of *Infans I.* aged children. Grave S16 is the only male burial, who could have been an *adultus*. Female

burials were documented in 4 cases, in grave S2, S3, S7 and S17. Two individuals could have been *adultus* and two deceased *adultus-maturus* aged.

The ashes of grave S9 are definitely human remains, but neither the age nor the gender of the individual could be determined. It was not clear during excavation, whether feature S9 was part of a pit or a burial, due to the strongly fragmented ceramics so anthropology clarified that it could have been a badly preserved grave. A not *in situ* sample was also collected near grave S2. As mechanical excavation has seriously damaged the top of the urn, it is likely that these fragments could have come from the urn and be a part of grave S2.

Altogether, it can be stated that all the collected bones are of human origin and there were no animal remains.³¹

INTERPRETATION OF THE GRAVES

The partial burial ground of Megyaszó-Halom-oldal dűlő consists a total of 10 cremation burials and a feature linked to some sort of burial rite. It is difficult to compare the site to other nearby Tumulus cemeteries because the excavated area is rather small and the full extent of the cemetery cannot be determined. It could have either contained a few graves like the adjacent cemeteries of Detek and Halmaj (KEMENCZEI 1968, 166),³² or it could have been large, similarly to the site of Emőd-Istvánmajor (HELLEBRANDT 2004, 190).³³

The periodization of the site can mainly be based on the ceramic styles and on the coeval cemeteries, not on the few bronze artefacts. Since the grave findings of Emőd-Istvánmajor are unknown, the closest analogous burial sites are Detek and Halmaj. These burial grounds are not only the nearest, but also many analogies can be observed in the funerary rites and the type of inclusions too.

The most striking similarities can be noticed on large vessels. Based on the typology above, I.A.2. and I.A.3. types are the most common. According to T. Kemenczei, these forms could have been evolved in the Carpathian Basin by the Tumulus culture, and were later taken over by the Piliny culture that began to decorate them more frequently (TOČIK 1964, XIII. Taf. 4). These types of vessels were usually used as urns, and spread from

³¹ Comment by Dr. Zsuzsanna K. Zoffmann: “Due to the high degree of fragmentation of the ashes, above described information should be treated with restriction.”

³² *Detek* contained 19 graves and *Halmaj* had 16 graves (further graves were destroyed prior to the excavation).

³³ *Emőd-Istvánmajor* consisted of 120 burials.

the Austrian areas to the Czech Basin (KOVÁCS 1966, 192). Several variants decorated with knobs are typical in southwest Slovakia (TOČIK 1964, 48).

There are more undecorated I.A.2. types in Halmaj, which have 2 handles, while in the cemetery of Detek and Zagyvapálfalva there are more of the I.A.3. type, besides some more decorated pieces (KEMENCZEI 1968, 180).³⁴ Older burials were characterized by undecorated potteries, while the younger ones were defined by increasingly complex decorations. This way of development can demonstrate Kemenczei's assumption that Tumulus culture transmitted the pottery forms to the Piliny culture, whom later further developed and decorated them (KEMENCZEI 1968, 180). Megyaszó is more corresponding with the cemetery of Halmaj, as there are more I.A.3. than I.A.2. vessels. As no densely ornate piece was found, the simple, primary forms suggest an early connection between the Tumulus and Piliny culture. Large urns, bowls and mugs show similar changes. Undecorated forms with handles are more frequent in the Tumulus cemeteries. Pieces with incised, impressed, channeled decorations are more common in Piliny findings.

Furthermore, the amount and position of inclusions are also essential elements of ritual. It can be observed in Megyaszó-Halom-oldal dűlő that 7 out of the 10 graves contained a large vessel that held the ashes, on top of which a small mug was placed and the whole urn was covered with a bowl. This simplified order is typical to Tumulus cemeteries.³⁵ Later this tripartite set lived on in the Piliny culture, and in the so called Bárca group as well (KEMENCZEI 1968, 176). In general, bronzes were also placed on top of the ashes, as the 2 bronzes from Megyaszó were also found among the ashes.³⁶

Scattering the ashes is also diverse. Generally, a single individual was placed in the urn, but in Halmaj and Megyaszó there are some cases, when ashes were scattered into several vessels. By Megyaszó's grave S1, the ashes of 2 children were scattered into 3 vessels and in grave S11 the individual's remains were placed into 2 potteries (K. ZOFFMANN 2015, 1). In Halmaj there were a total of 5 cases where ashes were put in 2

or more vessels (KEMENCZEI 1968, 176), but without anthropological examination it is not clear whether the remains belonged to one or more individuals.

Due to the limited information, no conclusions can be drawn with certainty concerning the rite. In the cemetery of Megyaszó social differences are not clearly identifiable and inclusions were not sorted by gender differences. The above mentioned modest graves with a set of 3 vessels are the most common.

Childrens' burials can be emphasised to some extent. The double burial of feature S1 contained the most diverse inclusions. Among the 9 findings there are decorated vessels, bronze jewels and clay beads as well. Grave S11 has also more vessels and the decorated large mug is one of the most beautiful pieces compared to other mugs. S13 contains the regular urn, bowl, mug set, but the I.B. type urn is one of the most attractive urns with its channeled decoration. It cannot be stated that children burials would be richer, but some special treatment can be observed. Children definitely got as many inclusions as adults, often even more (FAHLANDER–OESTIGAARD 2008, 11).

It is difficult to find any differences between male and female burials, as there is no sufficient data for further interpretation. All graves were equipped with the typical urn, bowl and mug set, which sometimes differed by 1 or 2 objects.

Megyaszó-Halom-oldal dűlő could be dated mainly by the similar spectrum of finds from the nearby cemeteries. The shapes and decorations in the cemetery of Halmaj are more specific to the Tumulus culture, while the cemetery of Detek is strongly coloured by the elements of the Piliny culture (KEMENCZEI 1968, 185). Since Megyaszó has a majority of undecorated vessels, it may be nearer in time to the cemetery of Halmaj, which has been dated to the beginning of phase Rei. Br. C. Detek has been dated to the second half of this period. The most typical ceramic forms are the upright-rimmed, conical-necked, large urns that spread intensely in the Rei. Br. C period in Northern Hungary according to T. Kovács (KOVÁCS 1966, 192–193). This time period was further divided by T. Kemenczei, who dates these large urns to the Rei. Br. C1 phase (KEMENCZEI 1968, 180). Therefore this urn type sets Megyaszó's excavated part to the Rei. Br. C period. Bowl and mug forms also support the Tumulus character, while decorations are already showing an early connection to the Piliny culture. Bronze rings are less significant for dating, since their spatial and temporal extent is

34 Undecorated, I.A.2. types are from *Halmaj*: 11 pcs; *Detek*: 1 pc. Richly decorated, I.A.3. forms are from *Halmaj*: 1 pc; *Detek*: 3 pcs.

35 The specific set of vessels can be detected in many Tumulus culture sites, like *Salka I.*: TOČIK 1964, 43–54; *Egyek*: KOVÁCS 1966, 190; *Igrici*; *Halmaj*; *Detek*: KEMENCZEI 1968, 176.

36 KEMENCZEI 1968, 176: All bronzes from *Halmaj* and *Detek* were found among the ashes, except the fragmentary piece of a bronze dagger, which was beside the urn.

too broad. Overall, Megyaszó-Halom-oldal dűlő can be categorized as a classic Tumulus cemetery from the Rei. Br. C period, with some rather rich Piliny influence.

ANALYSIS OF PITS

Near the cemetery, 4 pits were found, 2 of which were not fully excavated meaning that no findings were derived from them (pit S14 and S15). Besides, the extent of pit S8 cannot be determined, as neither its depth nor the edges of it were found during excavation. Its possible interpretation as a pit can be based on its finds. Pit S4 is completely excavated and contained diverse finds.

In pit S4 a wide spectrum of ceramic fragments can be displayed, from poor quality domestic ceramics to the finer, thin-walled vessels. Within the reconstructed pieces, undecorated, III.B.1 type compressed globular mugs (*Table 6. 14/1–4, 6, 8, 10; Table 7. 15/7*), biconical, III.C.1 type mug with handle (*Table 6. 5/14*), and II.A.1 type strongly profiled bowl fragments (*Table 6. 12/14*) can be found. Furthermore, there are some thick-walled handle fragments that probably belonged to storage vessels (*Table 6. 14/9, 11; Table 7. 15/1*), some rim pieces decorated with knobs (*Table 6. 7/14; Table 7. 15/6*), some roughened, probably brushed storage vessel pieces (*Table 7. 15/4, 8*), along with two knobbed fragments (*Table 8. 16/1, 4*) and a finger-impressed vessel (*Table 8. 16/2*). There are also some rim, body and bottom pieces which are less suitable for reconstruction (*Table 7. 15/2–3, 5, 9–10; Table 8. 16/3, 5–7, 9*). Furthermore, 73 other fragments were found which cannot be reconstructed at all and only their wall thickness can provide some information. In pit S8 far less, a total of 23 fragments were found of which five can be emphasised and possibly interpreted. There are 2 rim fragments, one of them probably belonged to a thin-walled mug or jar (*Table 5. 13/5*), the other to a thick-walled storage vessel (*Table 5. 13/2*). A fragment was possibly the bottom of a bowl (*Table 5. 13/1*) while another might have been used as a storage vessel or pot (*Table 5. 13/6*) due to its rough surface and wall thickness. The only notable side fragment was decorated with a knob (*Table 5. 13/3*) and the thickness of its wall suggests it being a storage pot as well.

Three pieces of chipped stone was found. Two of them are dark grey shards of obsidian that occur in the southern part of the Eperjes–Tokaj Mountains, which is close to the present-day village of Tokaj (T. BIRÓ 2004, 3). These shards can be classified as Slovakian obsidians (type C1), as they are characterized by transparent and translucent light, bright glass light, and it was the most commonly used type in prehistory

(T. BIRÓ 2004, 5). Hence raw material came from the adjacent mountains. The surface is formed, but without further examination, their exact function cannot be reconstructed. The third stone was determined as limnoquartzite. This rock is also typical in the Cserhát, Mátra and Tokaj Mountains (SZEKSZÁRDI et al. 2010, 3), and it is generally widespread. It is easily accessible as it can be collected from the surface or near-surface depths (SZEKSZÁRDI et al. 2010, 2). Long lasting instruments could have been created out of them.

No examination took place on the daub material. A total of 6 pieces were discovered, and a piece in grave S1. Since the grave was dug into a probable pit (S8), the daub could have easily fallen into the grave while inhuming the burial. The daubs are bright orange and have small plant marks on the surface, but because of their poor condition, plants cannot be determined. Three pieces can be emphasised, which are compacted and rammed on one side, thus these could have been plastering or parts of a wall. They might have been the elements of a building but their quantity is so low that no conclusions can be made. However, burnt house remains or daubs were sometimes scattered into pits by Tumulus people (SÁNTA 2010, 516; KISS 2007, 220–221).³⁷

There is a single pebble among the finds (*Table 10. 4/19*), which has no activity marks on its surface, so further analysis is not necessary. Rubble stones (*Table 10. 21/3–4*) were only found in pit S8. They are small-sized, and there is no mark of usage on them either. A lone piece of slag was found (*Table 10. 1/21*), which can be from copper or bronze raw material. Without sampling, its origin cannot be determined, but it might be an evidence to some possible metalworking.

There are a total of 8 different grinding stone pieces from the pits. One came from pit S8 (*Table 10. 2/21*) and 7 from pit S4 (*Table 10. 19/1–3*). They are light grey coloured and roughly the same size and they also had the same surface treatment. The parts are not matching, but it can be assumed that the fragments found abreast once belonged together. The flat surface assumes active use.

Animal bones were found in pit S4 (*Table 9. 17/1–8*). A mandible piece could have belonged to a predator, e.g. a larger dog. 11 fragments were of some bovine type, 7 bones pertained to small ruminants, such as sheep or goat, and a small shell fragment was also found.

³⁷ E.g.: Ordacsehi-Bugaszeg.

To sum it up, pits contained a wide range of household waste. It can be carefully presumed that a smaller settlement could have stood here, although no post-holes were found (SÁNTA 2010, 516). Post-holes do not always appear in each Tumulus site, either because Tumulus houses might have been built on the surface (SÁNTA 2010, 517), or the excavation only disturbed the pits near the edge of the settlement (KISS 2007, 220–221).³⁸ It must be pointed out that the excavated area is very small, so it is rather difficult to reach any conclusions based on a few pits and a small amount of finds.

Comparing the finds of the pits, they can be placed to the same time horizon, and the identical soil from pits S14 and S15 associates them there as well. Burials might also help with periodization, since a large proportion of graves were dug into pit S8, which might suggest that pits are older than graves. Although this observation is unconfirmed, since the edges of the pit were not identified. Most of the finds are classic in all periods, such as grinding and chipped stones and animal bones. Dating can be set up on ceramic fragments, which can be categorised by the above mentioned typological groups. Mugs and bowls were in use for a long time that can be placed between Rei. Br. B1-D thus the whole Tumulus period. However, by taking the graves into account, pits can be further refined between the Rei. Br. B1-C phase. Their quantity is less significant, but they are typical to the settled Tumulus culture phase (KEMENCZEI 1968, 181), so the pits might be dated to the Rei. Br. B2 or the beginning of C period.

It is difficult to find analogous Tumulus settlements in this zone, as settlement research is rather underdeveloped in the region. So far, settlements were mainly studied in Transdanubia (ILON 2007, 136; 2. kép) and in the Southern Great Hungarian Plain, especially in Csongrád County (SÁNTA 2004, 66–68; 2009, 266; 2. kép). Nowadays, motorway excavations bring major new information (M3: RACZKY–KOVÁCS–ANDERS 1997; M7: BELÉNYESY–HONTI–KISS 2007).

One slightly younger settlement was found near to Oszlár village (KALICZ–KOÓS 1997, 66–67). Oszlár-Nyárfaszög was discovered as part of the M3 motorway excavation. Late Bronze Age features were dated to Rei. Br. B2-D, but a small idol puts the settlement to the

Rei. Br. C-D phase (KOÓS 2002, 79). These pits may be somewhat younger than the pits of Megyaszó, with some features that belong to the Tumulus culture.³⁹

ANALYSIS OF THE DITCH

During excavation a rather large, V-shaped ditch has appeared (S6). Due to lack of time complete transection was impossible. The full depth and the diameter are not definite. The subsoil was undetectable and the investment level discontinued beyond 3 m, so a minimum depth of 3.3 m can be predicted. The eastern edge unlike the western one, was found, so width can exceed 3.5 m. Finds are similar to the material of pit S4.

14 ceramic fragments were restored but unidentified, since only three pieces could be emphasized and reconstructed. All three have thick walls, so they are probably parts of some storage vessels. The rim fragment (*Table 5. 1/12*) and the side fragment (*Table 5. 12/3*) do not include any more information, while the handle piece (*Table 5. 12/2*) may have run from the rim to the shoulder line.

A fragmentary grinding stone has also been found (*Table 5. 12/1*), which is similar to the ones from pit S4 and S8 based on their raw material, colour and the traces of use on the surface.

A total of 12 daub pieces were also detected. They are similar to the ones from the much smaller pits. Their surface is rather scrubbed, so plant species cannot be determined. There are 2 pieces with compacted surface, which might have been plasters or parts of a wall.

4 animal bone pieces were found. 3 of them could have belonged to some bovine species and 1 is probably the broken shell of a snail (*Table 9. 18/1–4*). Their size does not allow for any exact identification.

The partly explored ditch can be paralleled with the one from the above mentioned Oszlár-Nyárfaszög, as two similarly V-shaped, sharply sloping ditches were found there (KOÓS 2002, 79). The ditches were also circa 3 m wide and 3 m deep, intersected with 2 m wide trenches on several points. The findings are also from the Late Bronze Age (KOÓS 2002, 79), so from the later period of Tumulus culture.

The position of the two sites are similar. Oszlár-Nyárfaszög is located between the river Tisza and the Hejő-főcsatorna a rather prominent area some 90 m above sea level (KOÓS 1998, 501), Megyaszó-Halom-

³⁸ Pits located on the edge of the settlement are from e.g.: Ordacsehi-Bugaszeg.

³⁹ Further Tumulus culture settlements are in: SÁNTA 2010, Fig. 1. 28.

oldal dűlő is located eastwards to the river Hernád near the Harangod Stream approx. 220 m above the sea level. The sites were at higher sea levels and rich in water.

Although the connection between the ditch and the pits is still unclear, it is certain that no similar Tumulus settlement is known from the surrounding North Hungarian region. Moreover the practice of constructing palisades is unusual by this culture (SÁNTA 2010, 520), although there are more known examples by the Piliny culture.⁴⁰ Megyaszó is not classifiable among these sites. However, some influence might have affected the Tumulus culture, as they had interactions with northern populations, which can be remarked on the ceramic forms, and other practises could have become similar as well. Furthermore, the previous Middle Bronze Age traditions might also be taken into account, since tells were often surrounded by ditches (P. FISCHL et al. 2013, 358–362).

HISTORY OF RESEARCH OF THE TUMULUS CULTURE

Research began with the chronological division of the Central Danubian Tumulus culture based on finds from Austrian sites. The first chronological classification is related to Kurt Willvonseder (WILLVONSEDER 1937, 277–281). Western research dates the culture to the Middle Bronze Age period. Later, Richard Pittioni divided this period into three phases (PITTIONI 1954, 359–403). The phases can be distinguished by some significant cemetery finds and also compared to Paul Reinecke's timetable (REINECKE 1924, 43–44): 1. Phase: Mistelbach-Regelsbrunn (Rei. Br. B1); 2. Phase: Pitten-Sieding (Rei. Br. B2); 3. Phase: Maisbirbaum-Zohor (Rei. Br. C-D).

V. Gordon Childe (CHILDE 1929, 418) and Ferenc Tompa (TOMPA 1937, 83–102) were the first, who outlined the Tumulus culture in the Carpathian basin. They both tried to parallel the new objects to the upper levels of Tószeg (Tószeg A-D). Childe connected the finds to the Tószeg B-D period, to the Middle and Late Bronze Age, while F. Tompa dated the Middle and Late Bronze Age to the Tószeg C-D, but he did not mention the Tumulus culture in his chronological table (TOMPA 1937, 102).

A more concentrated research began in the 1950s when Vladimir Miložčić pointed out that research should also deal with a Carpathian Tumulus culture, not only with a Central European one (HÄNSEL 1968, 1). Instead of Tószeg's levels, he created a chronological table with six phases and correlated it with Reinecke's periodization (MILOŽČIĆ 1953, 275). Based on this, the earliest Tumulus period in Hungary could begin in the Tószeg C phase, which is the Rei. Br. A2-B1 phase.

The Hungarian Tumulus research began with Amália Mozsolics, who introduced the first 3 phased division throughout the Bronze Age (MOZSOLICS 1952, 55). Later she refined this division during examining the transition between the Middle and Late Bronze Age (MOZSOLICS 1957, 119–121). This chronology had 6 phases, in which Tumulus culture fell to IV–VI. period of the Late Bronze Age. The IV. period can be paralleled with Rei. Br. C-D.

István Bóna drew up a Hungarian Bronze Age chronological table as well (BÓNA 1959, 223). He divided local Bronze Age into 3 periods. He refined Middle Bronze age into 3 and the Late Bronze Age into 2 subunits. In this division Middle Bronze Age is corresponding to the Rei. Br. A-B1 and Late Bronze Age to Rei. Br. B2-C period. Later I. Bóna reviewed his timeline, mainly “by thinking on the bronze industry development”, but inversely, he placed the Tumulus culture before the Koszider period (BÓNA 1966, 26–29).

Bernhard Hänsel also studied the chronology of the Carpathian Basin (HÄNSEL 1968, 8, Abb. 1; 20–23, Abb. 2), and his aim was to write up a Middle Bronze Age chronology. Hänsel divided the Bronze Age into 3 large periods and to further subunits. However, his timetable is currently not in use, but the revised periodization by his students are still applied today (DAVID 1998; BLISCHKE 2002).

Current research divides the Middle and Late Bronze Age into 3 subgroups (MOZSOLICS 1973, 9–11; BÓNA 1975, 25–26; KEMENCZEI 1984, 7–11). Researchers of the Carpathian Basin often apply the 6 phased timetable of Mozsolics, which has been refined into several subgroups since (MOZSOLICS 1973, 9–11). The northern region of the Carpathian Basin was dated by Furmánek based on all information collected until the end of the 1970s (FURMÁNEK 1977a, 554–563).

Current research suggests that the Carpathian Tumulus culture appeared both in Transdanubia and in the Great Hungarian Plain in the Rei. Br. B1-B2 period, during the transition of the Middle to Late Bronze Age and lasted up to the Rei. Br. D period.

40 Known examples from Slovakia and Hungary are: Gemer/Gömör, Ožd'any/Osgyán, Rimavská Sobota/Rimaszombat, Miskolc, Bükkaranyos-Földvár, Kisterenye-Hársashegy, Piliny-Várhegy, Szécsény-Benczúrfalva (FURMÁNEK 1983, 25; Obr. 1).

The relative chronology of the Carpathian Tumulus culture is based on the works of Slovakian researchers. The currently accepted timetable can be divided into four phases (FURMÁNEK et al. 1999, 64; LICHARDUS–VLADÁR 1997, 289), which are linked to some dominant sites involving some unique materials. In Hungary, relative chronology was developed by Kemenczei (KEMENCZEI 1984, 96).

SUMMARY

The excavation of Megyaszó-Halom-oldal dűlő was carried out in a rather small trench, still many interesting features have come to light. The pits were probably the parts of a smaller settlement and the ditch might have been in connection with them. Additionally 10 cremation burials and a feature linked to some burial rite were uncovered.

The pits belonging to the early Tumulus phase, namely to Rei. Br. B2-C period were not in every case fully explored. Neither the completely excavated pit S4, nor the partly uncovered ditch S6 provides enough detailed information, as the small size of the excavation trench is insufficient to understand the exact role of the ditch and the pits. It is not confirmed if a new settlement has been found as there is no data about either the extent, the structure of the settlement, or about the house types. Even so, it could be motivating to prove in the future, whether a potential new settlement with a probable defensive earthwork was found in the North Hungarian region. This would not only add some new information about the region's occupancy, but perhaps it could form the image of the Tumulus culture a bit, as there is no precedent of settlements surrounded by ditches in this area (SÁNTA 2010, 520).

The cemetery might be younger if feature S8 is defined as a pit. However, since neither the depth nor the edges could have been documented, it is unclear whether it is a pit or not, although finds suggest that it might be. If graves were dug into the pit the cemetery would be younger, which dates to the Rei. Br. C period. Though the adjacent cemetery of Halmaj has similar finds (KEMENCZEI 1968, 171–176), the limited amount of Megyaszó's finds do not allow the cemetery to be refined either to the beginning or to the end of the Rei. Br. C phase.

Graves are characterized by simple forms and uniformity and not by rich inclusions. The population of this cemetery expressed themselves mainly by decorating the ceramics and not by bronze wealth. During the earliest Tumulus phase the typical male and female accessories were emphasised, while in the classical period

homogeneity began, perhaps due to a more balanced social division. However, bronze artefacts did not disappear they were merely transferred to the hoards. At the end of the Middle Bronze Age and during the Koszider Horizon the number of hoards was increasing, but still it had no effect on grave inclusions, yet in the classical Tumulus period it had a greater impact (P. FISCHL et al. 2013, 363–364).

Grave ceramics are clear evidence of the different influences between cultures. Rivers have a great role by connecting distinct regions. This is exemplified by the Hernád Valley, which connects the Košice Basin and the Great Hungarian Plain (FRISNYÁK 2006, 285). In general, ceramics are locally crafted, so the shapes and decorations are copied and further developed by each community (P. FISCHL et al. 2013, 364).

The burial rite is less distinguished by the Tumulus culture. While Middle Bronze Age burials were performed by strict rules, later biritual cemeteries appeared during the Koszider Horizon (P. FISCHL et al. 2013, 362). It can be observed by Tumulus cemeteries that both inhumation and cremation rites were practiced, depending on the particular adjacent area which had an effect on the culture (MARKOVÁ–ILON 2013, 825; CSÁNYI 1980, 154–155).

Cultures should not be interpreted as before, when classification system used a specific pattern. Both ceramics and bronzes were classified based on formal characteristics and cultures were outlined around these types (HANSEN 1996–1998, 9). According to current views, this is no longer tenable. There is often an overlap among types, as intense relationships were between communities which affected their material culture as well (BLISCHKE 2002, 260–271). Settlements and cemeteries are good examples for active connections at the so-called “cultural” borders. The ceramics of Megyaszó show that styles can be mixed, and forms can be taken by neighbouring communities. According to our present knowledge, Megyaszó and Halmaj are Tumulus cemeteries with strong Piliny impacts, while Detek and Zagyvapálfalva are Piliny cemeteries with Tumulus influences, so material cultures are overlapped.

The Koszider “Horizon” and Tumulus “culture” are more like a longer period of time, in which relations between the communities become wider and cultural differences began to fade due to intense communication (P. FISCHL et al. 2013, 357). These broader and vivid relationships can be observed on the few finds of Megyaszó-Halom-oldal dűlő's burials and pits, which greatly combines the forms of the Tumulus culture with the influence of the Piliny culture.

CATALOGUE

Grave S1

1. incl.: Upright-rimmed, straight-necked, with strongly profiled shoulder, compressed globular-shaped, flat bottomed large vessel with 2 knobs on the belly line and 2 handles below the belly line. Dark brown, black spotted exterior and interior. It contained ashes and bone pieces.

H.: 29.8 cm; Rd.: 19 cm; Bd.: 12.5 cm; Tw.: 0.7 cm.

Inv. No.: 2014.52.1. (*Table 1. 1/1*)

2. incl.: Slightly outcurving-rimmed, round-shouldered, conical, amphora-shaped vessel, with 2 handles running from the rim to the shoulder line. Light brown, black spotted exterior and interior. It contained ashes and bone pieces.

H.: 13.8 cm; Rd.: 11.6 cm; Bd.: 7.8 cm; Tw.: 0.5 cm.

Inv. No.: 2014.52.2. (*Table 1. 1/2*)

3. incl.: Broken at the belly line, conical-shaped, flat-bottomed large vessel with 2 band handles below the belly line. Light, dark brown spotted exterior and interior. It contained ashes and bone pieces.

h.: 15.4 cm; Bd.: 10.9 cm; Tw.: 0.7 cm.

Inv. No.: 2014.52.3. (*Table 1. 1/4*)

4. incl.: Two small sized, plant-imprinted daub. They are unsuitable for precise determination of plant species. Reddish-orange.

H1.: 5.7×4.2 cm; H2.: 2.2×1.7 cm.

Inv. No.: 2014.52.10.

5. incl.: Upright-rimmed, widening-necked, biconical-shaped mug without handles, but with 3 knobs on its belly line. Brown, black spotted exterior and interior.

H.: 9.4 cm; Rd.: 4.7 cm; Bd.: 3.6 cm; Tw.: 0.4 cm.

Inv. No.: 2014.52.4. (*Table 1. 1/3*)

6. incl.: Biconical-shaped, slightly outcurving-rimmed, straight-necked, round-bottomed mug with a handle running from the rim to the belly line, under the handle there is a three-lined incised motif, along with 3 knobs on the belly line. Light brown, orange spotted exterior and interior.

H.: 5.4 cm; Rd.: 5.6 cm; Tw.: 0.3 cm.

Inv. No.: 2014.52.5. (*Table 1. 1/5*)

7. incl.: Upright-rimmed, slightly conical-shaped mug with a handle running from the rim below the belly line. Orange, grey spotted exterior and interior.

H.: 5.8 cm; Rd.: 6.2 cm; Bd.: 2.8 cm; Tw.: 0.4 cm.

Inv. No.: 2014.52.6. (*Table 1. 1/6*)

8. incl.: Double-folded, round-intersectional, open-ended spiral ring made of bronze wire, so-called *Noppenring*. Recent fractures are observable. Burnt and restored.

H.: 1.2 cm; h.: 1.3×1.3 cm; Id.: 0.9×0.9 cm; W.: 1.1 g.

Inv. No.: 2014.52.7. (*Table 1. 1/7*)

9. incl.: Mostly round-shaped, and a few elongated-shaped clay beads. They are burnt, black on all surfaces. A total of 44 complete and many fragmented pieces.

H.: 0.4–1.6 cm.

Inv. No.: 2014.52.8. (*Table 1. 1/8*)

10. incl.: This inclusion was cancelled, as it turned out to be a dental piece during washing.

11. incl.: Bottom pieces of a strongly fragmented vessel, possibly a bowl. Dark brown, black spotted. A total of 9 pieces.

H.: 0.9×1.5 cm – 5×3.4 cm; Tw.: 0.8 cm.

Inv. No.: 2014.52.9.

Grave S2

1. incl.: Upright-rimmed, widening-necked, biconical-shaped large vessel with 2 broken band handles below the belly line, and with a knob on the belly line. Black exterior and interior. It contained ashes and bone pieces.

H.: 27.8 cm; Rd.: 20.6 cm; Bd.: 15.1 cm; Tw.: 0.6 cm.

Inv. No.: 2014.52.11. (*Table 2. 2/1*)

2. incl.: Outcurving-rimmed, strongly profiled, short-necked, conical-shaped bowl with a handle running from the rim to the shoulder line and with 3 knobs on the shoulder. Dark brown, black spotted exterior and interior.

H.: 8.3 cm; Rd.: 26.7 cm; Bd.: 11.3 cm; Tw.: 0.5 cm.

Inv. No.: 2014.52.12. (*Table 2. 2/3*)

3. incl.: Outcurving-rimmed, long conical-necked, bulging mug with a handle running from the rim to under the belly line, decorated with 3 small knobs on the belly and with several groups of 3 incised dots. Orange, red spotted exterior and interior.

H.: 6.8 cm; Rd.: 5.4 cm; Bd.: 2.3 cm; Tw.: 0.3 cm.

Inv. No.: 2014.52.13. (*Table 2. 2/2*)

Grave S3

1. incl.: Round-shouldered, conical-shaped side fragment of a large vessel with band handle and with 3 incised dots on the shoulder. Black exterior and interior. The broken surface is brown.

h.: 15.7 cm; Bd.: 14 cm; Tw.: 0.6 cm.

Inv. No.: 2014.52.14. (*Table 2. 3/1*)

Pit S4

1. incl.: (complete mug): Outcurving-rimmed, widening-necked, compressed globular-shaped, round-bottomed mug with a broken handle running from the rim to the belly line. Grey exterior and interior.

H.: 5.4 cm; Rd.: 5.3 cm; Tw.: 0.4 cm.

Inv. No.: 2014.52.62. (*Table 6. 14/1*)

2. incl.: (complete mug): Outcurving-rimmed, short widening-necked, slightly compressed globular-shaped, round-bottomed mug with a broken handle running from the rim to the belly line. Orange, grey spotted exterior and grey interior.

H.: 5.7 cm; Rd.: 4.7 cm; Tw.: 0.3 cm.

Inv. No.: 2014.52.63. (*Table 6. 14/2*)

3. incl.: (mug fragments): a total of 6 pieces.

3/A: Slightly outcurving-rimmed, short widening-necked, compressed globular-shaped, flat-bottomed side fragment of a mug with a broken handle running from the rim to the belly line. Dark brown exterior and interior.

H.: 5.2 cm; Rd.: 4.8 cm; Tw.: 0.4 cm.

- Inv. No.: 2014.52.64. (*Table 6. 14/3*)
 3/B: Broken-rimmed, widening-necked, biconical-shaped, round-bottomed side fragment of a mug. Light brown, grey, black spotted exterior and interior.
 h.: 5.7 cm; Tw.: 0.4 cm.
 Inv. No.: 2014.52.65. (*Table 6. 14/4*)
 3/C: Broken on its belly line, conical-shaped, flat-bottomed fragment of a mug with a handle running to the belly line. Grey, dark grey spotted exterior and interior.
 h.: 3.3 cm; Bd.: 3.2 cm; Tw.: 0.3 cm.
 Inv. No.: 2014.52.66. (*Table 6. 14/5*)
 3/D: Broken on its shoulder and below the belly line, bulging side fragment of a mug with a broken handle running to the belly line. Grey, light brown spotted exterior and interior.
 h.: 3.4 cm; Tw.: 0.4 cm.
 Inv. No.: 2014.52.67. (*Table 6. 14/6*)
 3/E: Outcurving-rimmed, widening-necked rim fragment of a mug. Broken on its shoulder. Grey exterior and interior.
 h.: 4.7 cm; Rd.: 6.9 cm; Tw.: 0.4 cm.
 Inv. No.: 2014.52.68. (*Table 6. 14/8*)
 3/F: Horizontally outcurving-rimmed, widening-necked, rim fragment of a mug. Broken on its shoulder, with a handle running from the rim. Dark grey exterior and interior.
 h.: 3.2 cm; Rd.: 5 cm; Tw.: 0.4 cm.
 Inv. No.: 2014.52.69. (*Table 6. 14/10*)
 4/A. incl.: Outcurving-rimmed, upright-necked, thick-walled, smooth-surfaced rim fragment of a larger storage vessel with a broken handle running from the rim to the shoulder. Light brown, black spotted exterior and interior.
 h.: 7.9 cm; Rd.: 35 cm; Tw.: 0.9 cm.
 Inv. No.: 2014.52.70. (*Table 6. 14/7*)
 4/B: Outcurving-rimmed, narrow-necked, widening-shouldered, smooth-surfaced rim fragment with a handle running from the rim to the shoulder. Light grey exterior and interior.
 h.: 5.2 cm; Rd.: 13 cm; Tw.: 0.5 cm.
 Inv. No.: 2014.52.71. (*Table 6. 14/9*)
 4/C: Smooth-surfaced, wide fragment of a band handle that runs to the body of a vessel. Light brown, grey spotted exterior and interior.
 h.: 4.2 cm; Tw.: 0.9 cm.
 Inv. No.: 2014.52.72. (*Table 6. 14/11*)
 4/D: Outcurving-rimmed, strongly profiled, short-necked, probably conical-shaped rim fragment of a bowl. Broken on its belly line, and decorated with a half-broken knob on the shoulder. Grey exterior and interior.
 h.: 3.4 cm; Rd.: 19 cm; Tw.: 0.5 cm.
 Inv. No.: 2014.52.73. (*Table 6. 14/12*)
 4/E: Slightly outcurving-rimmed, widening-necked, bulging-shaped, smooth-surfaced rim fragment with a handle running from the rim to the shoulder. Light, dark brown spotted exterior and interior.
 h.: 5.9 cm; Rd.: 16 cm; Tw.: 0.6 cm.
 Inv. No.: 2014.52.74. (*Table 7. 15/1*)
 4/F: Slightly outcurving-rimmed, short-necked, widening-shouldered, smooth-surfaced, pebble tempered, rim fragment of a possible bowl with a probable knob. Grey exterior and interior.
 h.: 3.1 cm; Tw.: 0.8 cm.
 Inv. No.: 2014.52.75. (*Table 7. 15/2*)
 4/G: Straight-rimmed, straight-necked, widening-shaped, smooth-surfaced, pebble tempered rim fragment. Grey exterior and interior.
 h.: 3.8 cm; Tw.: 0.5 cm.
 Inv. No.: 2014.52.76. (*Table 7. 15/3*)
 4/H: Slightly brushed, sand tempered, curving side fragment, probably belonged to a large storage vessel. Light brown, grey spotted exterior and interior.
 h.: 13.6 cm; Tw.: 0.6 cm.
 Inv. No.: 2014.52.77. (*Table 7. 15/4*)
 4/I: Broken-rimmed, short-necked, conical-shaped, smooth-surfaced side fragment, possibly belonged to a smaller bowl. Light brown, grey spotted exterior and interior.
 h.: 2.9 cm; Tw.: 0.5 cm.
 Inv. No.: 2014.52.78. (*Table 7. 15/5*)
 4/J: Smooth-surfaced, pebble tempered side fragment with a broken handle. Grey exterior and interior.
 h.: 3.4 cm; Tw.: 0.6 cm.
 Inv. No.: 2014.52.79. (*Table 7. 15/6*)
 4/K: Broken on its shoulder line, compressed globular-shaped, smooth-surfaced, broken at the bottom, grog tempered side fragment of a mug or jar. Grey exterior and interior.
 h.: 7.9 cm; Tw.: 0.6 cm.
 Inv. No.: 2014.52.80. (*Table 7. 15/7*)
 4/L: Slightly brushed on the surface, sand tempered, slightly curving side fragment, possibly belonged to a large storage vessel. Brown, black spotted exterior and interior.
 h.: 9.7 cm; Tw.: 1 cm.
 Inv. No.: 2014.52.81. (*Table 7. 15/8*)
 4/M: Broken on its belly line, flat-bottomed, smooth-surfaced, polished, sand tempered bottom fragment of a fine ceramic. Orange exterior and interior. The broken surface is black.
 h.: 3.2 cm; Bd.: 7.5 cm; Tw.: 0.4 cm.
 Inv. No.: 2014.52.82. (*Table 7. 15/9*)
 4/N: Sharply outcurving-rimmed, upright-necked, smooth-surfaced, grog tempered rim fragment. Light brown exterior and interior.
 h.: 2.6 cm; Tw.: 0.6 cm.
 Inv. No.: 2014.52.83. (*Table 7. 15/10*)
 4/O: Broken on its shoulder line, curving, smooth-surfaced, grog tempered side fragment with a knob on the shoulder. Dark brown, grey spotted exterior and interior.
 h.: 9.9 cm; Tw.: 0.7 cm.
 Inv. No.: 2014.52.84. (*Table 8. 16/1*)
 4/P: Rough-surfaced, grog and pebble tempered, thick-walled, slightly curving fragment of a possible storage vessel, with a V-shaped finger-impressed decoration. Light brown, yellow spotted exterior, light brown interior.
 h.: 8.6 cm; Tw.: 1 cm.

Inv. No.: 2014.52.85. (*Table 8. 16/2*)
4/Q: Flat-bottomed, smooth-surfaced, grog tempered bottom fragment. Brown exterior and interior.

h.: 3.6 cm; Bd.: 7 cm; Tw.: 0.8 cm.

Inv. No.: 2014.52.86. (*Table 8. 16/3*)

4/R: Curving-shaped, smooth-surfaced, grog tempered side fragment with a knob. Light brown exterior and interior.

h.: 3.3 cm; Tw.: 0.7 cm.

Inv. No.: 2014.52.87. (*Table 8. 16/4*)

4/S: Curving-shaped, flat bottomed, smooth-surfaced, grog tempered bottom fragment. Light brown, black spotted exterior and interior.

h.: 2.8 cm; Bd.: 7 cm; Tw.: 0.6 cm.

Inv. No.: 2014.52.88. (*Table 8. 16/5*)

4/T: Curving-shaped, flat-bottomed, slightly brushed, grog tempered bottom fragment. Orange, grey spotted exterior and interior.

h.: 6.4 cm; Bd.: 9 cm; Tw.: 0.6 cm.

Inv. No.: 2014.52.89. (*Table 8. 16/6*)

4/U: Flat-bottomed, smooth-surfaced, grog tempered, thin-walled bottom fragment. Grey exterior and interior.

h.: 2 cm; Bd.: 8.5 cm; Tw.: 0.6 cm

Inv. No.: 2014.52.90. (*Table 8. 16/7*)

4/V: Flat-, thick-bottomed, smooth-surfaced, grog tempered bottom fragment. Grey exterior and interior.

h.: 3.1 cm; Bd.: 7 cm; Tw.: 0.7 cm.

Inv. No.: 2014.52.91. (*Table 8. 16/9*)

4/additional fragments: A total of 73 pieces. Smooth-surfaced, undecorated fragments. Most of the pieces are side fragments, but there are some rim and bottom fragments, which are not reconstructable. Two-third of these pieces are below 2 cm in size.

h.: 1.4×1.7 cm – 6.5×8.7 cm; Tw.: 0.3–1 cm.

Inv. No.: 2014.52.92.

5. incl.: A total of 5 pieces of daub. 2 of them are small-sized with visible plant imprints on its surface, but precise determination is not possible. Reddish-orange.

H.: 1.4 cm; h.: 1.9×3.3 cm – 2.2×3.2 cm.

Inv. No.: 2014.52.93.

3 larger pieces of daub with smoothed surface, which might have been the part of a plastered wall. The other sides has some plant imprints, but they cannot be precisely determined. Reddish-orange.

H.: 3 cm; h.: 3.4×5.3 cm – 7.5×9.3 cm.

Inv. No.: 2014.52.93.

6. incl.: A total of 21 pieces of animal bones. One of them may have belonged to a carnivore, probably to a large dog. 11 pieces could have belonged to bovines, while 8 could have been smaller ruminants, such as sheep or goat. A small shell fragment has also been found.

h.: 0.6×2.5 cm – 5.8×6.6 cm.

Inv. No.: 2014.52.94. (*Table 9. 17/1–8*)

7/A. incl.: Strongly fragmented grinding stone, smooth on its used surface, while rough on its broken sides. Light grey.

H.: 5.9 cm; h.: 5.9×8.1 cm.

Inv. No.: 2014.52.95. (*Table 10. 19/1*)

7/B: Strongly fragmented grinding stone, smooth on its used surface, while rough on its broken sides. Light grey.

H.: 5.4 cm; h.: 5.5×6.8 cm.

Inv. No.: 2014.52.95. (*Table 10. 19/2*)

7/C: Strongly fragmented grinding stone, smooth on its used surface, while rough on its broken sides. Light grey.

H.: 6.2 cm; h.: 3.9×6.4 cm.

Inv. No.: 2014.52.95. (*Table 10. 19/3*)

7/D: Pebble, which's one side is smooth, the other side is covered with scale. Orange.

H.: 1.7 cm; h.: 2.4×4.0 cm.

Inv. No.: 2014.52.95. (*Table 10. 19/4*)

7/additional grinding stone fragments: A total of 4 pieces. Light grey.

h.: 3.9×4.2 cm – 8.3×11cm.

Inv. No.: 2014.52.95.

8/A. incl.: Rough-surfaced, chipped obsidian shard, which has no trace of use on it. Dark grey.

H.: 3.5 cm; h.: 2.3×1 cm.

Inv. No.: 2014.52.96. (*Table 8. 16/8*)

8/B: Rough-surfaced, chipped limnoquartzite shard, which has no trace of use on it. Light yellow.

H.: 2.4 cm; h.: 2.3×1.3 cm.

Inv. No.: 2014.52.97. (*Table 8. 16/10*)

Ditch S6

1/A. incl.: Straight-rimmed, smooth-surfaced, grog tempered, thick-walled rim fragment. Grey, black spotted exterior and interior.

h.: 3.9×3.7 cm; Tw.: 1 cm.

Inv. No.: 2014.52.45. (*Table 5. 12/1*)

1/B: Smooth-surfaced, grog and pebble tempered, curved band handle fragment. Orange.

h.: 5.6×2.6 cm; Tw.: 1.7 cm.

Inv. No.: 2014.52.46. (*Table 5. 12/2*)

1/C: Rough, brushed-surfaced, slightly curved-shaped, grog and pebble tempered side fragments probably belonged to a storage vessel or a pot. Light brown, orange exterior and interior.

h.: 8.2 – 7.3 cm; Tw.: 0.6 cm.

Inv. No.: 2014.52.47. (*Table 5. 12/3*)

1/ additional fragments: A total of 14 pieces, mostly side and rim fragments, which cannot be reconstructed. They are smooth-surfaced, grog tempered, undecorated.

h.: 1.4×1.8 cm – 7.3×8.2 cm.

Inv. No.: 2014.52.48.

2. incl.: A total of 12 pieces of daub, which has some impressed traces on it, however it is not certain whether they are originated from plants. 2 pieces has a smoothed surface, which might have been the part of a plastered wall. Orange.

h.: 1.4×1.5 – 2.7×4.8 cm.

Inv. No.: 2014.52.49.

3. incl.: A total of 4 animal bone pieces. 2 of them belongs to a larger herbivorous, probably to a bovine, one of them cannot be precisely identified, and one piece belongs to some kind of snail.

h.: 1×1.2 – 2.5×4.4 cm.

Inv. No.: 2014.52.50. (Table 9. 18/1–4)

4. incl.: Strongly fragmented grinding stone, smooth on its used surface, while rough on the broken sides. Light grey.

H.: 3.9 cm; h.: 3.4×4.4 cm.

Inv. No.: 2014.52.51. (Table 10. 20/1)

Grave S7

1. incl.: Broken-rimmed, widening-necked, round-shouldered, biconical-shaped, flat-bottomed vessel with 2 knobs on the shoulder and 2 handles on its belly line. Black exterior and interior, polished. It contained ashes and bone pieces.

h.: 29.7 cm; Bd.: 11.2 cm; Tw.: 0.9 cm.

Inv. No.: 2014.52.15. (Table 2. 4/1)

2. incl.: Horizontally outcurving-rimmed, short-necked, strongly profiled, conical-shaped, flat bottom, rim, and side fragments of a bowl. A total of 15 pieces. Dark brown, dark grey spotted exterior and interior.

h.: 7.8 cm; Rd.: 23 cm; Tw.: 0.6 cm.

Inv. No.: 2014.52.16. (Table 2. 4/2)

3. incl.: Slightly outcurving-rimmed, short-necked, compressed globular-shaped, round-bottomed, small cup with finger-sized impressed decoration on its shoulder, and without handle. Dark brown, grey spotted exterior and interior.

H.: 4.8 cm; Rd.: 4.5 cm; Tw.: 0.3 cm.

Inv. No.: 2014.52.18. (Table 2. 4/4)

4. incl.: Slightly outcurving-rimmed, widening-necked, biconical, flat-bottomed mug with a handle running from the rim to the belly line. Orange, light brown spotted exterior and interior.

H.: 6.8 cm; Rd.: 6.7 cm; Bd.: 3.5 cm; Tw.: 0.5 cm.

Inv. No.: 2014.52.17. (Table 2. 4/3)

5. incl.: Smooth-surfaced, oval cross-sectioned, grog tempered handle of a mug. It was assumed to be a clay bangle, but after examining the broken edges, it fits to a mug, which might have been perished. Dark brown, black spotted. The broken surface is brown.

h.: 1.7×6 cm.

Inv. No.: 2014.52.19. (Table 2. 4/5)

6. incl.: Round-intersectional, open-ended spiral ring made of bronze wire. It broke into 4 rings.

H.: 0.2 cm; h.: 1.6×2 – 2×2.3 cm; Id.: 1.6–1.8 cm; W.: 1.2 g.

Inv. No.: 2014.52.20. (Table 2. 4/6)

Pit S8

1/A. incl.: Broken below its belly line, thick-walled, smooth-surfaced, grog tempered, flat bottom fragment. Dark grey exterior and interior.

h.: 3 cm; Tw.: 0.9 cm.

Inv. No.: 2014.52.52. (Table 5. 13/1)

1/B: Straight-rimmed, smooth-surfaced, grog tempered rim fragment. Orange exterior and interior.

h.: 3.5 cm; Tw.: 0.8 cm.

Inv. No.: 2014.52.53. (Table 5. 13/2)

1/C: Smooth-surfaced, grog tempered side fragment decorated with a knob. Dark brown exterior and interior.

h.: 3.1 cm; Tw.: 0.7 cm.

Inv. No.: 2014.52.54. (Table 5. 13/3)

1/D: Outcurving-rimmed, short-necked, bulging-shaped, smooth-surfaced, grog tempered rim fragment. Dark brown exterior and interior.

h.: 5.4 cm; Tw.: 0.5 cm.

Inv. No.: 2014.52.55. (Table 5. 13/5)

1/E: A total of 3 pieces of rough surfaced, thick-walled, grog and pebble tempered, flat bottomed, probably the bottom fragments of a storage vessel. Orange, light brown spotted exterior and interior.

h.: 2.3 cm; Bd.: 8 cm; Tw.: 1 cm.

Inv. No.: 2014.52.56. (Table 5. 13/6)

1/additional fragments: A total of 23 undecorated pieces. Smooth- and rough-surfaced fragments, grog and pebble tempered. Most of them are around 4 cm.

h.: 1.6×1.8 cm – 5.3×6.2 cm.

Inv. No.: 2014.52.57.

2. incl.: Strongly fragmented grinding stone, smooth on its used surface, while rough on the broken sides. Dark grey.

H.: 5.7 cm; h.: 4.5×4.7 cm.

Inv. No.: 2014.52.58. (Table 10. 21/2)

Small-sized, rough-surfaced rubble stone. There is no trace of use on it. White, dark brown spotted.

h1.: 2.9×4.1 cm; h2.: 3.0×3.3 cm.

Inv. No.: 2014.52.58. (Table 10. 21/3) Inv. No.: 2014.52.58. (Table 10. 21/4)

3. incl.: Small-sized daub, with hardly visible plant imprints on its surface. It is unsuitable for precise determination of plant species. Orange.

H.: 2.3 cm; h.: 2.6×3.0 cm.

Inv. No.: 2014.52.59.

4. incl.: Rough-surfaced, probably a copper or bronze slag. Dark grey, brown. The surface is patinated.

H.: 5.5 cm; h.: 9×13.9 cm; W.: 466 g.

Inv. No.: 2014.52.60. (Table 10. 21/1)

5. incl.: Rough-surfaced, chipped obsidian shard, which has no trace of use on it. Dark grey.

H.: 1.4 cm; h.: 0.6×1.3 cm.

Inv. No.: 2014.52.61. (Table 5. 13/4)

Grave S9

1. incl.: Outcurving-rimmed, strongly profiled, short-necked, conical-shaped bowl, broken on its belly line. Light, dark brown spotted exterior and interior.

h.: 6.2 cm; Rd.: 42 cm; Tw.: 0.7 cm.

Inv. No.: 2014.52.21. (Table 3. 5/1)

2. incl.: Broken on the neck and below the belly line, with a broken handle, decorated with a knob, probably the fragment of a mug. Orange exterior and interior.

h.: 4.3 cm; Tw.: 0.6 cm.

Inv. No.: 2014.52.22. (Table 3. 5/2)

Additional fragments: A total of 5 pieces, smooth-surfaced, grog tempered side fragments. They cannot be reconstructed.

h.: 2.4×3.2 cm – 2.9×3.8 cm.

Inv. No.: 2014.52.24.

3. incl.: Two small-sized, rough-surfaced rubble stones. There are no traces of usage on them. There are some reddish spots on the smaller piece. White, dark brown coloured.

H1.: 3 cm; h1.: 6.6×4.3 cm; H2.: 2.5 cm; h2.: 3.6×3.9 cm.

Inv. No₁.: 2014.52.23. (*Table 10. 22/1*) Inv. No₂.: 2014.52.23. (*Table 10. 22/2*)

Feature S10

1. incl.: Outcurving-rimmed, straight-necked, biconical-shaped, round-bottomed mug with 3 small knobs on its belly line, and with a broken handle running from the rim to the belly. Orange exterior and interior.

H.: 5.1 cm; Rd.: 5.5 cm; Tw.: 0.4 cm.

Inv. No.: 2014.52.25. (*Table 3. 6/1*)

Grave S11

1. incl.: Horizontally outcurving-rimmed, strongly profiled, short-necked, conical-shaped, slightly round-bottomed bowl with a broken handle running to the shoulder on one side. Light, dark brown exterior and interior.

H.: 7.8 cm; Rd.: 20.3 cm; Bd.: 9.3 cm; Tw.: 0.6 cm.

Inv. No.: 2014.52.26. (*Table 3. 7/1*)

2. incl.: Outcurving-rimmed, strongly profiled, short-necked, conical-shaped bowl, probably with 2 knobs on the belly line. A total of 14 pieces. Dark brown exterior and interior.

h.: 5 cm; Rd.: 20 cm; Tw.: 0.5 cm.

Inv. No.: 2014.52.27. (*Table 3. 7/4*)

3. incl.: Outcurving-rimmed, profiled, short-necked, bulging, conical-shaped, flat-bottomed large mug, decorated with 3 dots on the shoulder, with 3 knobs on the belly line that are surrounded by 3–3 semi-circular grooved lines, and a handle from the rim running to the shoulder. Orange, brown spotted exterior and interior. It contained ashes and bone pieces.

H.: 9.8 cm; Rd.: 12.8 cm; Bd.: 8 cm; Tw.: 0.5 cm.

Inv. No.: 2014.52.28. (*Table 3. 7/6*)

4. incl.: Broken-rimmed, damaged, but widening-necked, bulging, compressed globular-shaped, round-bottomed mug, probably undecorated, with a broken handle running from the rim to the belly line. Orange, grey exterior and interior.

h.: 4.2 cm; Bd.: 2.2 cm; Tw.: 0.3 cm.

Inv. No.: 2014.52.29. (*Table 3. 7/2*)

5. incl.: Outcurving-rimmed, widening-necked, bulging, compressed globular-shaped, round-bottomed mug with a handle running from the rim to the belly line. Light, dark brown spotted exterior and interior.

H.: 5.4 cm; Rd.: 5 cm; Tw.: 0.4 cm.

Inv. No.: 2014.52.30. (*Table 3. 7/3*)

6. incl.: Probably straight-rimmed, conical-necked, broken on the shoulder and belly line, with 0.1 cm sized irregularly impressed dots on the neck. Possibly belonged to a bulging vessel. Black exterior and interior. It contained ashes and bone pieces.

h.: 7.3 cm; Tw.: 0.7 cm.

Inv. No.: 2014.52.31. (*Table 3. 7/5*)

Grave S12

1. incl.: Horizontally outcurving-rimmed, strongly profiled, short-necked, conical-shaped, flat-bottomed, broken bowl, with a handle running to the shoulder line. Light, dark brown spotted exterior and interior.

H.: 5.6 cm; Rd.: 19.8 cm; Bd.: 8.5 cm; Tw.: 0.6 cm.

Inv. No.: 2014.52.32. (*Table 4. 8/1*)

2. incl.: Slightly outcurving-rimmed, widening-necked, bulging, compressed globular-shaped, round-bottomed mug with a handle running from the rim to the belly line. Orange, dark brown spotted exterior and interior.

H.: 5.6 cm; Rd.: 4.6 cm; Tw.: 0.4 cm.

Inv. No.: 2014.52.33. (*Table 4. 8/2*)

3. incl.: Broken-rimmed, incurving-necked, bulging, conical-shaped, flat-bottomed jar with a broken handle running to the belly line. Brown exterior and interior.

h.: 11.5 cm; Bd.: 8.4 cm; Tw.: 0.7 cm.

Inv. No.: 2014.52.34. (*Table 4. 8/3*)

4. incl.: Broken-rimmed, incurving-necked, bulging, compressed globular-shaped, broken-bottomed side fragment of a vessel. Light brown spotted exterior and brown interior. The broken surface is brown.

h.: 11.5 cm; Tw.: 0.6 cm.

Inv. No.: 2014.52.35. (*Table 4. 8/4*)

Grave S13

1. incl.: Outcurving-rimmed, widening-necked, biconical-shaped, broken-bottomed, with knob and channeled decoration on the belly line, and with a broken band handle. A total of 32 fragments, from which 20 piece is under 2 cm. Dark brown exterior and interior. It contained ashes and bone pieces.

h.: 10.9 cm + 4.6 cm; Rd.: 9 cm; Tw.: 0.6 cm.

Inv. No.: 2014.52.36. (*Table 4. 9/2*)

2. incl.: Thick-walled, heavily fragmented, smooth-surfaced, grog tempered, undecorated side part of a vessel. A total of 5 pieces. Orange, brown spotted exterior and interior. The broken surface is orange.

h.: 1.9×3.4 cm – 4.9×8.1 cm; Tw.: 0.7 cm.

Inv. No.: 2014.52.37.

3. incl.: Straight-rimmed, slightly widening-necked, bulging, compressed globular-shaped, round-bottomed mug with a handle running from the rim to the belly line. Orange, dark brown spotted exterior and interior.

H.: 5.2 cm; Rd.: 4.4 cm; Tw.: 0.3 cm.

Inv. No.: 2014.52.38. (*Table 4. 9/1*)

Grave S16

1. incl.: Outcurving-rimmed, straight neck-lined, round-shoulder, conical-shaped, decorated with some incised lines on the neck and an impressed chain of dots on the shoulder. Some rough, an inch-thick vertically channeled decoration is on the belly line with 2 broken handles, and 2 knobs on the shoulder. Restored, the bottom is missing. Black exterior and interior, polished. It contained ashes and bone pieces.

H.: 21.8 cm; Rd.: 16.5 cm; Tw.: 0.6 cm.

Inv. No.: 2014.52.39. (Table 4. 10/1)

2. incl.: Broken on its belly line, conical-shaped, thick-walled, smooth-surfaced, grog tempered, short foot-ringed vessel. A total of 6 pieces. Dark brown, black spotted exterior and interior.

h.: 3.6 cm; Bd.: 8.1 cm; Tw.: 0.6 cm.

Inv. No.: 2014.52.40. (Table 4. 10/2)

3. incl.: Broken above its belly line and on the bottom, bulging-shaped, thin-walled, with channeled decorated on the belly and with 2 handles. A total of 18 pieces. Orange exterior and interior.

h.: 6.7 cm; Tw.: 0.5 cm.

Inv. No.: 2014.52.41. (Table 4. 10/3)

Grave S17

1. incl.: Broken-rimmed, slightly conical-necked, round-shouldered, conical-shaped, flat-bottomed storage vessel with 2 knobs and 2 handles. Light and dark brown spotted exterior and interior. It contained ashes and bone pieces.

H.: 28.7 cm; Bd.: 12.2 cm; Tw.: 1 cm.

Inv. No.: 2014.52.42. (Table 5. 11/1)

2. incl.: Heavily fragmented, thick-walled, smooth-surfaced, grog and pebble tempered, probably bowl bottom fragments. A total of 33 pieces. Grey, black spotted exterior and interior.

h.: 1.8 cm; Bd.: 12 cm; Tw.: 1 cm.

Inv. No.: 2014.52.43. (Table 5. 11/2)

3. incl.: Outcurving-rimmed, widening-necked, compressed globular-shaped, round-bottomed mug with a handle running from the rim to the belly line, decorated with 3–3 impressed dots on the shoulder. Grey, brown spotted exterior and interior.

H.: 5.5 cm; Rd.: 5.1 cm; Tw.: 0.3 cm.

Inv. No.: 2014.52.44. (Table 5. 11/3)

Stray finds

1. Find: A total of 5 fragments, from which 1 might have belonged to a conical, smooth-surfaced mug with a handle running to the belly line. The other 4 are smooth-surfaced, grog tempered pieces that cannot be identified.

Find spot: E-797696, N-320118. Date: 01.08.2013.

h_{mug} : 3×5 cm; h_{other} : 1.3×1.7 cm – 2.2×3 cm.

Inv. No.: 2014.52.98.

2. Find: Outcurving-rimmed, two-lobed mouthed, filtered on the neck, glazed neck fragment of a jug from the early modern period. Light yellow glazed.

Find spot: Megyaszó-Fenyér-dűlő, E-799432, N-315428 (141 m.). Date: 01.08.2013.

h.: 10.4 cm; Rd.: 6.5 cm; Tw.: 0.5 cm.

Inv. No.: 2014.54.1.

3. Find: Heavily fragmented, smooth-surfaced grinding stone piece. Grey.

Find spot: Megyaszó-Fenyér-dűlő, E-799422, N-315393. Date: 01.08.2013.

H.: 5.3 cm; h.: 13.9×18.5 cm.

Inv. No.: 2014.54.2.

4. Find: 2 rubble stones. The bigger one is smoother on the surfaced, it might have been grinding stone. Dark grey. The smaller one has a rough surface, without any trace of usage. White, dark brown spotted, with a reddish patch on one side.

Find spot: Megyaszó-Isten-hegy. Date: 07.08.2013.

H_1 : 6.6 cm; h_1 : 6.8×13.2 cm; H_2 : 2.3 cm; h_2 : 3.7×3.9 cm.

Inv. No.: 2014.55.1.

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ABBREVIATIONS

Bd. – bottom diameter

H. – complete height

h. – measurable height (by fragments)

Id. – internal diameter

incl. – grave/pit inclusions

Inv. No. – inventar number in museum

Rd. – rim diameter

Tw. – thickness of wall

W. – weight

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MEGYASZÓ-HALOM-OLDAL DŰLŐ: ÚJABB ADATOK AZ ÉSZAKKELET-MAGYARORSZÁGI HALOMSÍROS KULTÚRA KUTATÁSÁHOZ

Kulcsszavak: késő bronzkor, halomsíros kultúra, hamvasztásos temetkezések, település, Északkelet-Magyarország

2013. augusztus 6–7-én a miskolci Herman Ottó Múzeum munkatársai megelőző feltárást végeztek Megyaszó község közelében. Az ÉNy–DK-i irányú szelvény mintegy 30 cm széles és 3 m mély volt.

Az ásatás során összesen 17 objektumot találtak, melyből 10 temetkezés (S1, S2, S3, S7, S9, S11, S12, S13, S16, S17), egy bolygatott sírhoz vagy gödörhöz kapcsolható (S10), négy pedig valószínűleg tárológödör volt (S4, S8, S14, S15). Emellett egy árok rész (S6) is átvágásra került. Egy korábban oszlophelynek feltételezett objektumról (S5) megállapították, hogy természetes jelenség folytja.

A korai halomsíros kultúrához, tehát a Rei. Bz. B2-C periódushoz köthető gödrök közül a 14. és 15. objektumot nem tárták fel teljesen. A 4. objektum és a feltehetően ugyanehhez a telephorizonthoz kapcsolható 6. objektum árok részlete nem szolgál elegendő információval, mely alapján a településrészlet pontos kiterjedését, szerkezetét vagy a házak típusait rekonstruálni lehetne.

A temetőrészlet a telepnél fiatalabbnak tekinthető, ha a 8. objektumot gödörként határozzuk meg, melyre leletanyaga enged következtetni. A sírok e gödörbe történt beásása alapján a temetőrészlet későbbi, a Rei. Bz. C periódusra tehető. A sírokat egységesült, letisztult forma jellemzi. Megyaszó-Halom-oldal dűlő temetőrészletében nem határozhatóak meg egyértelmű szociális különbségek, sem nemek szerinti mellékletadások.

Kósa, Polett



Table 1. 1. Grave S1: 1–6. ceramics; 7. bronze spiral ring (Noppenring); 8. clay beads
 1. tábla. 1. 1. objektum: 1–6. kerámiamelléletek; 7. bronz spirálgűrű (Noppenring); 8. agyaggyöngyök

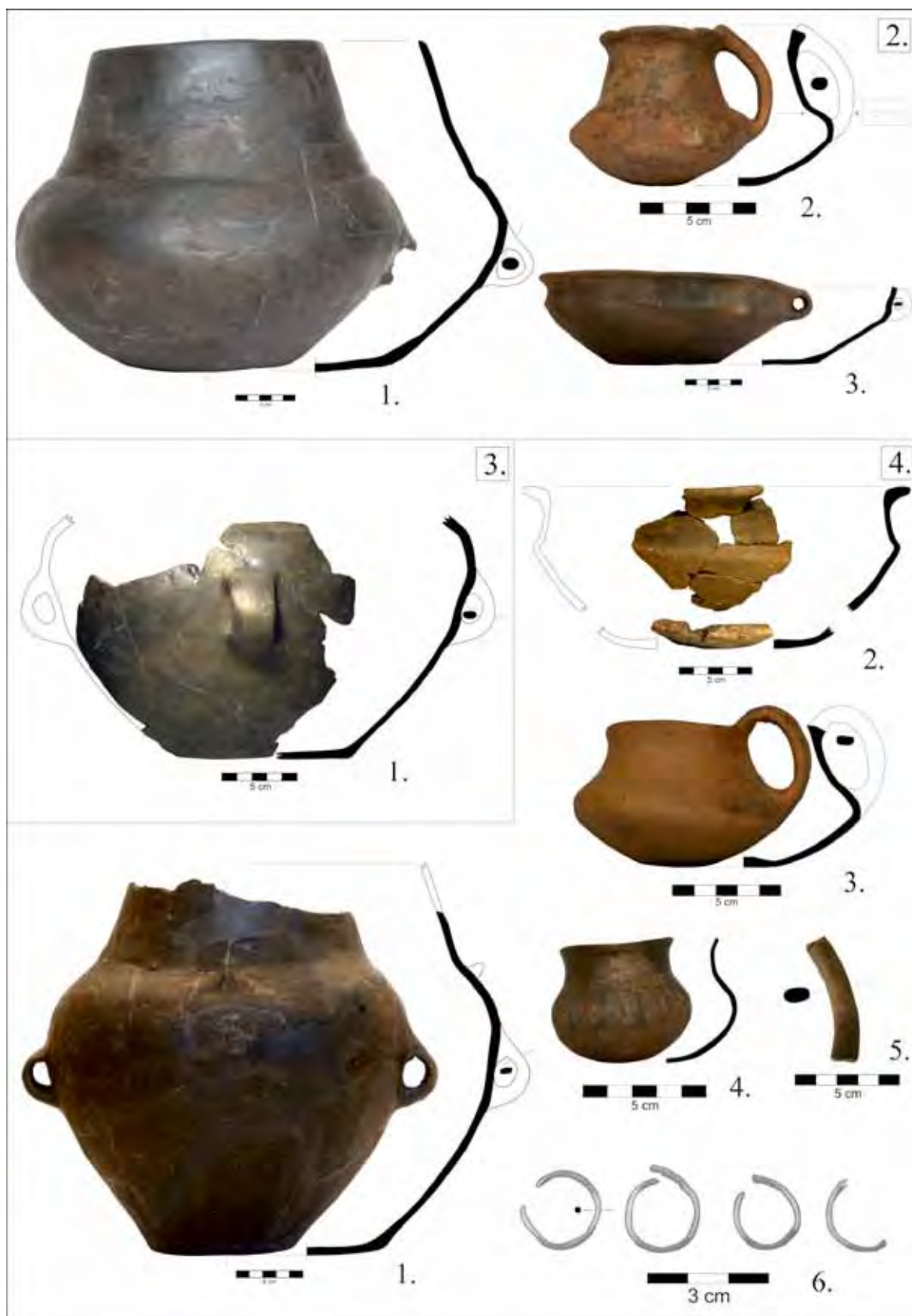


Table 2. 2. Grave S2: 1–3. ceramics; 3. Grave S3: 1. ceramics ; 4. Grave S7: 1–5. ceramics; 6. bronze spiral ring fragments
 2. tábla. 2. 2. objektum: 1–3. kerámiamelléletek; 3. 3. objektum: 1. kerámiamelléklet; 4. 7. objektum: 1–5. kerámiamelléletek;
 6. bronz spirálgyűrű töredékek



Table 3. 5. Grave S9: 1–2. ceramic fragments ; 6. Feature S10: 1. mug belonging to some kind of funerary practice;
7. Grave S11: 1–6. ceramics

3. tábla. 5. 9. objektum: 1–2. kerámiatöredékek; 6. 10. objektum: 1. temetkezéshez tartozó kerámiamelléklet; 7. 11. objektum: 1–6. kerámiamellékletek



Table 4. 8. Grave S12: 1–4. ceramics; 9. Grave S13: 1–2. ceramics; 10. Grave S16: 1–3. ceramics
 4. tábla. 8. 12. objektum: 1–4. kerámiamelléletek; 9. 13. objektum: 1–2. kerámiamelléletek; 10.
 16. objektum: 1–3. kerámiamelléletek



Table 5. 11. Grave S17: 1–3. ceramics; 12. Ditch S6: 1–3. ceramics; 13. Pit S8: 1–3., 5–6. ceramics; 4. chipped stone tool
 5. tábla. 11. 17. objektum: 1–3. kerámiamelléletek; 12. 6. objektum: 1–3. kerámiamelléletek; 13. 8. objektum: 1–3., 5–6. kerámiamelléletek;
 4. pattintott kőeszköz

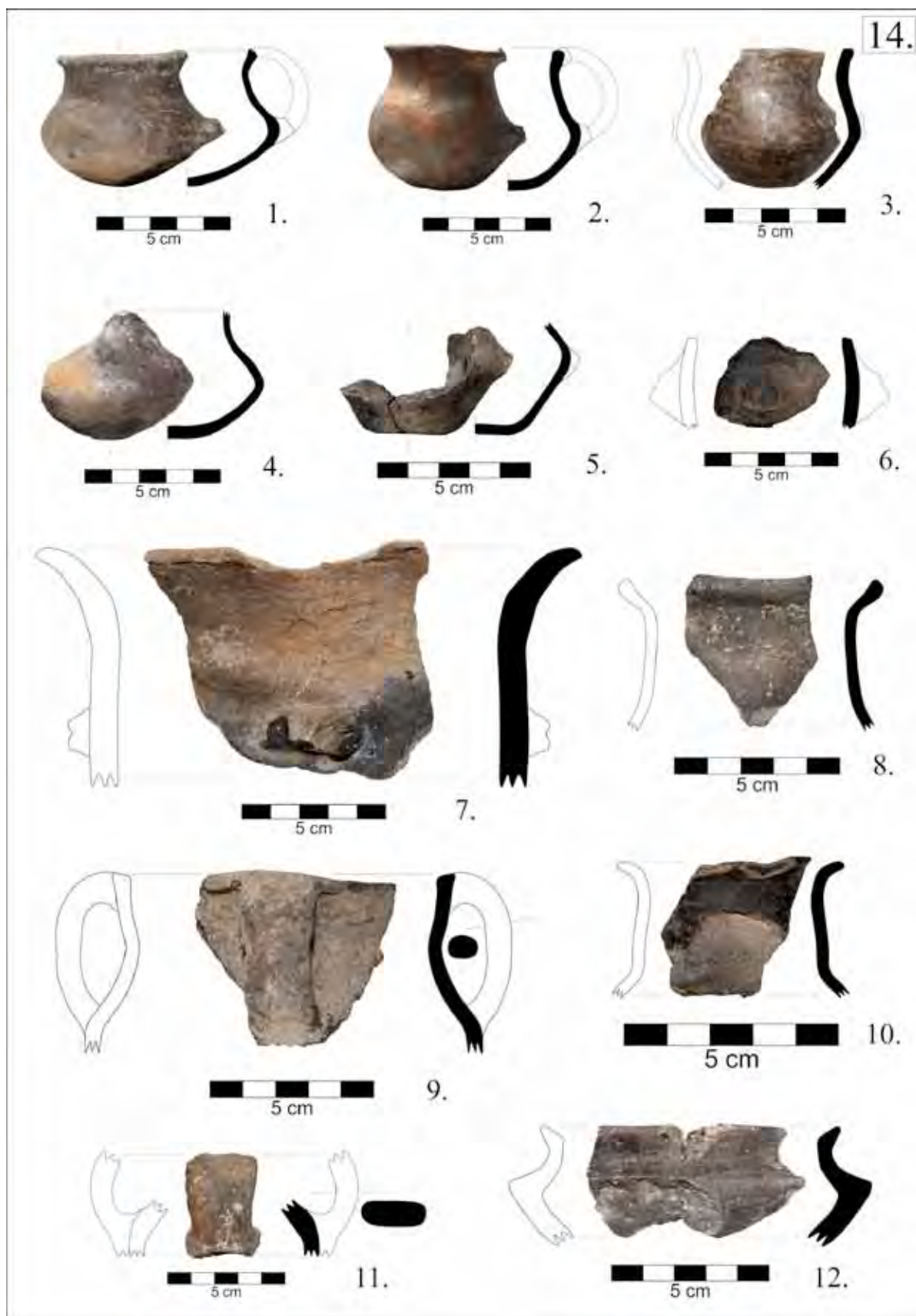


Table 6. 14. Pit S4: 1–12. ceramics
 6. tábla. 14. 4. objektum: 1–12. kerámiamelléletek

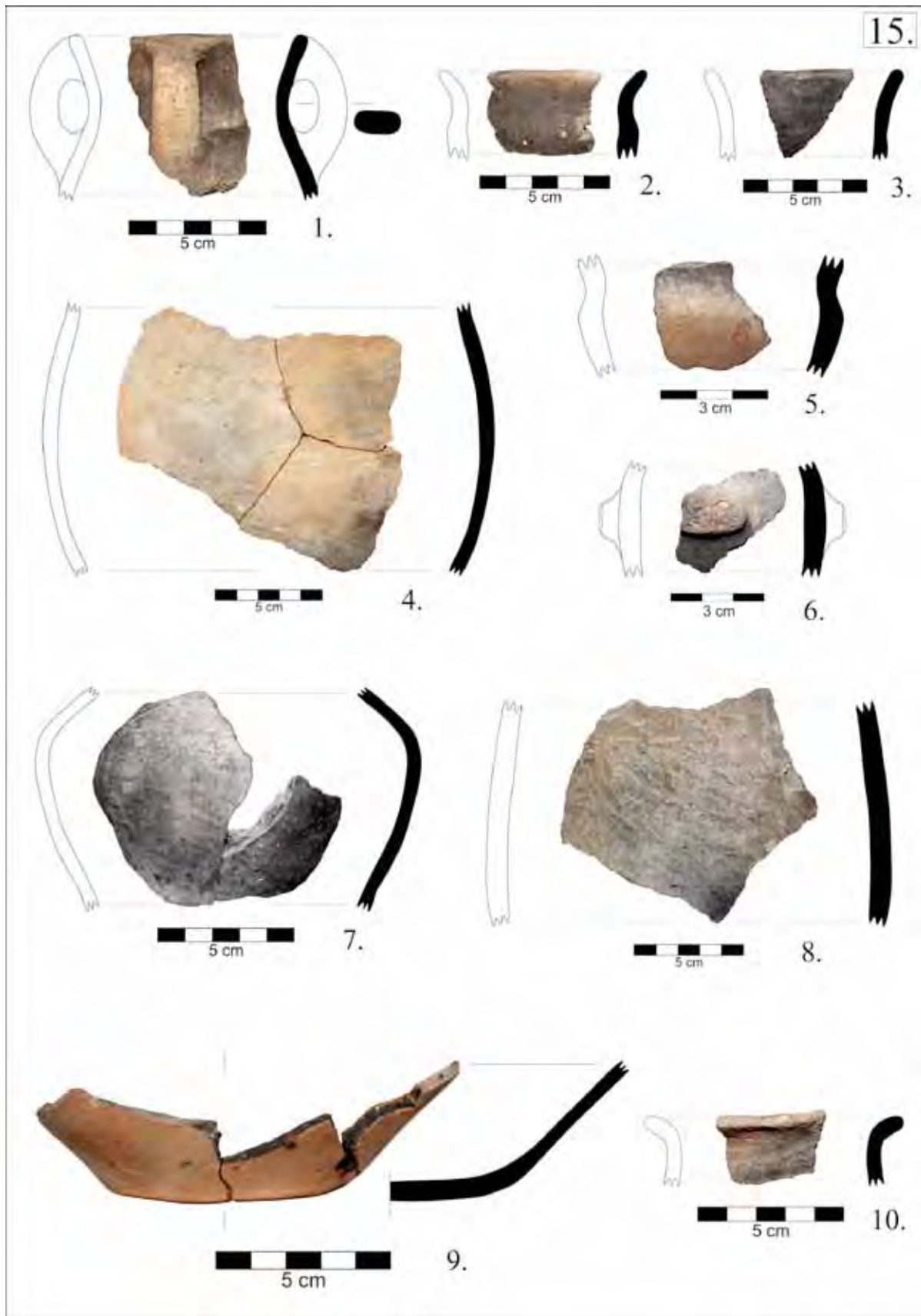


Table 7. 15. Pit S4: 1–10. ceramics
7. tábla. 15. 4. objektum: 1–10. kerámiamelléletek

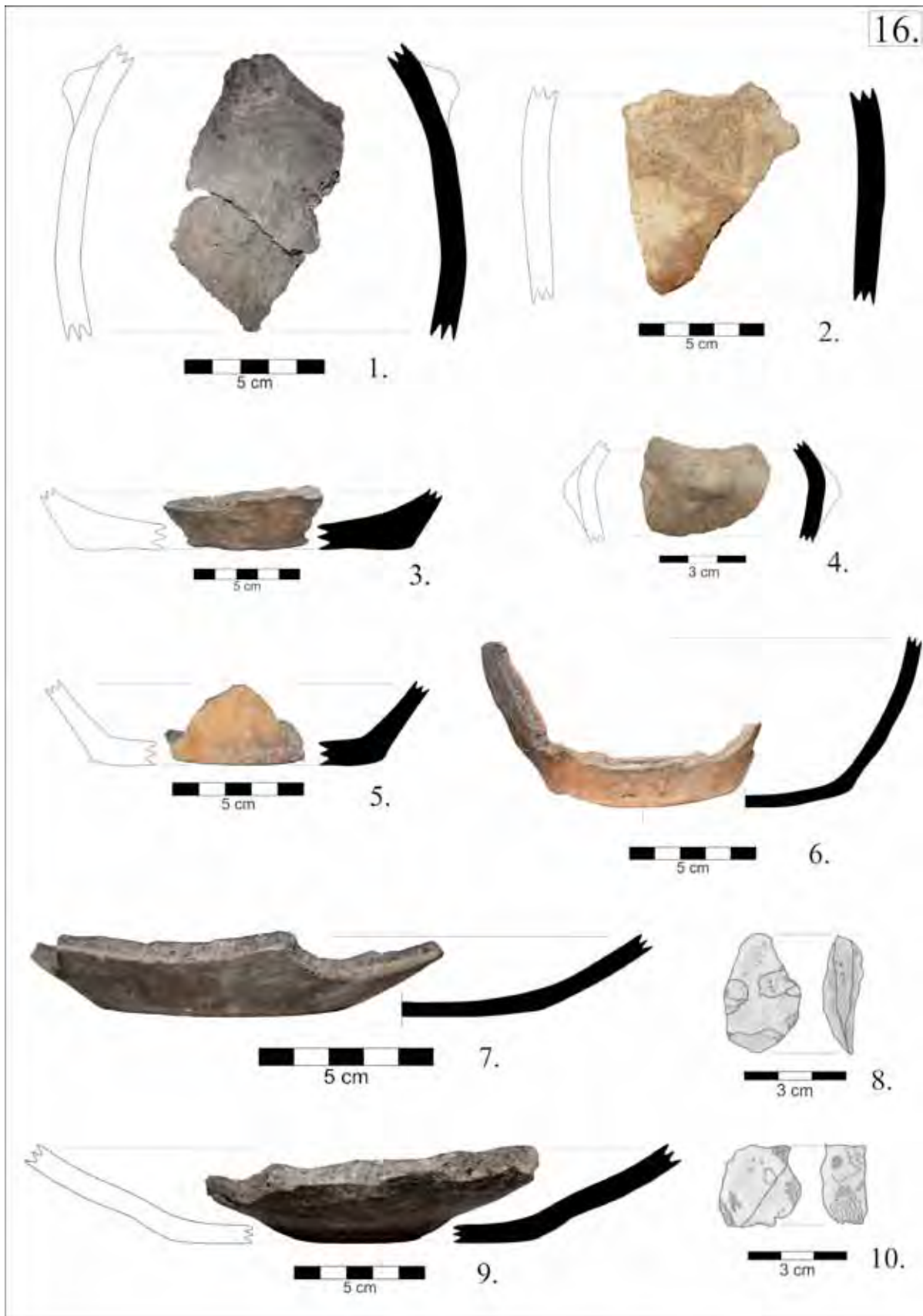


Table 8. 16. Pit S4: 1–7., 9. ceramics; 8., 10. chipped stone tool
 8. tábla. 16. 4. objektum: 1–7., 9. kerámiamelemek; 8., 10. pattintott kőeszközök



Table 9. 17. Pit S4: 1., 3–8. animal bones; 2. shell fragment; 18. Ditch S6: 1–3. animal bones; 4. snail shell fragment
 9. tábla. 17. 4. objektum: 1., 3–8. állatsontok; 2. kagylóbéjtöredék; 18. 6. objektum: 1–3. állatsontok; 4. csigabéjtöredék



Table 10. 19. Pit S4: 1–3. grinding stone fragments; 4. pebble; 20. Ditch S6: 1. grinding stone fragments; 21. Pi S8: 1. slag; 2. grinding stone fragment; 3–4. rubble stone; 22. Grave S9: 1–2. rubble stones

10. tábla. 19. 4. objektum: 1–3. őrlőkőtöredékek; 4. kavics; 20. 6. objektum: 1. őrlőkőtöredék; 21. 8. objektum: 1. salak; 2. őrlőkőtöredék; 3–4. terméskövek; 22. 9. objektum: 1–2. terméskövek

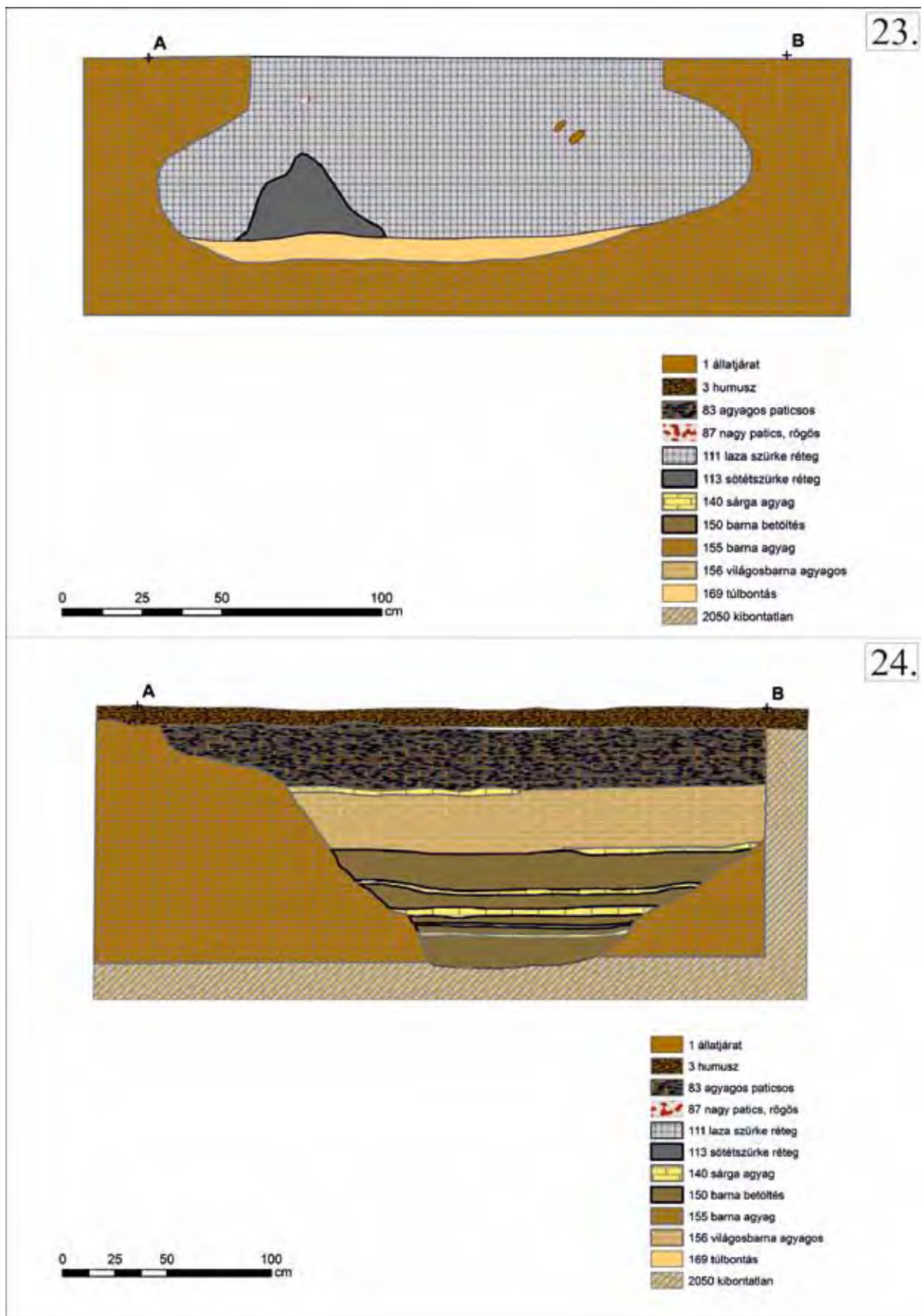


Table 11. 23. Section of pit S4; 24. Section of ditch S6
 11. tábla. 23. 4. objektum metszetrajza; 24. 6. objektum metszetrajza