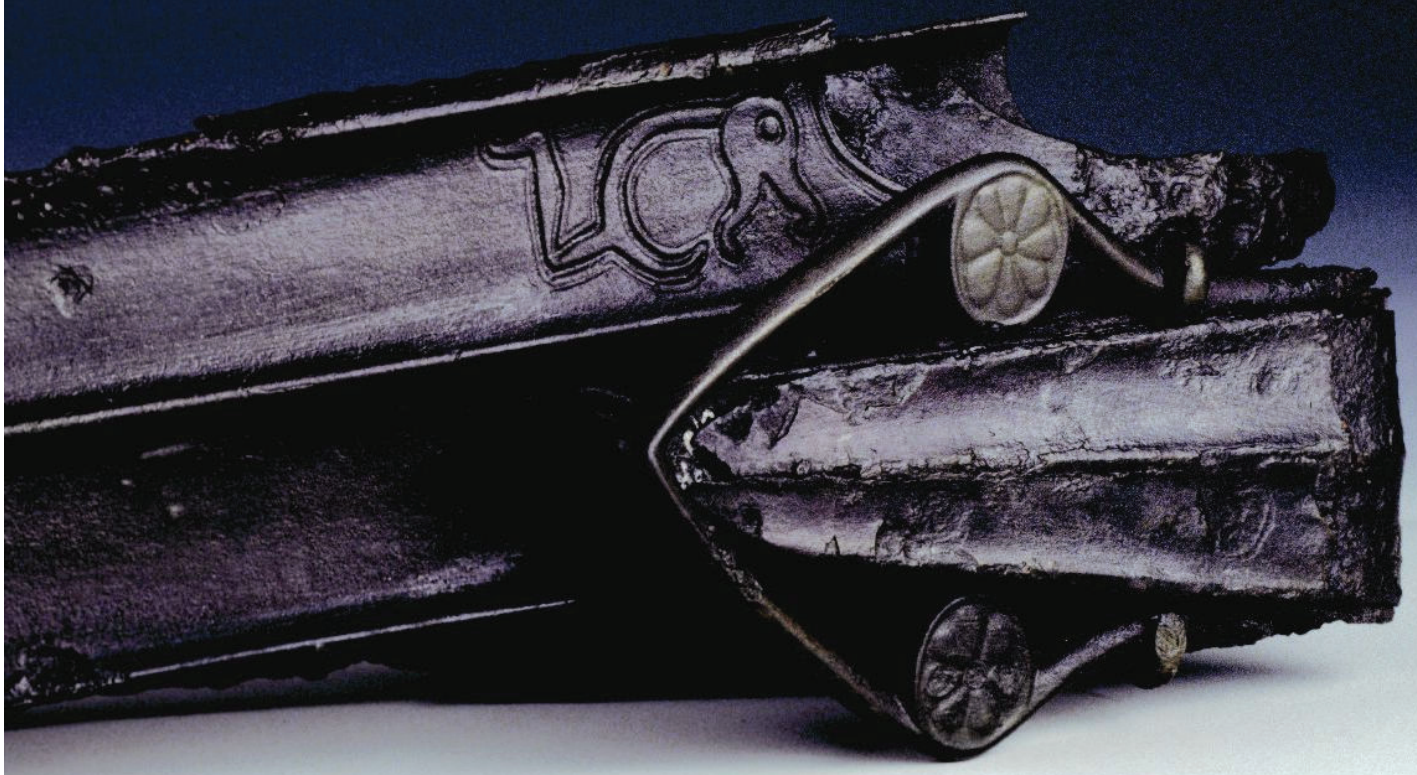
Studia archaeologica Nicolae Szabó LXXV annos nato dedicata

Sous la direction de
LÁSZLÓ BORHY
avec Károly Tankó et Kata Dévai



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sous la direction de

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Le rempart de l'oppidum de Szent Vid à Velem (Photo: Z. Czajlik)
L'oppidum de Budapest - Gellérthergy (Photo: Z. Czajlik)
Une tombe celtique de Sajópetri (Photo: K. Tankó)

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LECTURIS SALUTEM !

75 ans, dont plus de 50 dans la recherche. Nous, anciens et actuels élèves du professeur Miklós Szabó, membre de l'Académie des sciences, ancien président de notre université, fondateur de département et d'institut, nous fêtons un anniversaire plus particulier que ceux fêtés tous les ans voire tous les cinq ans. Nous célébrons son 75e anniversaire, ce qui nous donne l'occasion, à nous, élèves, collègues et amis qui enseignons et menons nos recherches à l'Institut archéologique de ELTE et dans l'équipe de recherche interdisciplinaire archéologique de l'Académie des sciences et de ELTE, de manifester notre appartenance scientifique. Non seulement en tant qu'individus, bien que ce panégyrique en forme de recueil d'études soit le fruit du travail d'auteurs et de coauteurs individuels, mais tous ensemble car la somme de ces écrits reflète la carrière d'enseignant et de chercheur de Miklós Szabó depuis son départ du Musée des Beaux-Arts et sa nomination au grade de maître de conférences à l'Université Eötvös Loránd en 1987. A l'époque, nous, étudiants en fin de cycle puis jeunes diplômés, nous nous demandions quelles étaient ses motivations : quitter un poste prestigieux de dirigeant pour une position subalterne. Sans oublier que cette décision allait nous motiver dans nos choix de commencer nos carrières à l'université plutôt que dans un musée, sa justesse a été confirmée et sa raison éclairée par les années suivantes. Parallèlement à son arrivée à l'université ont commencé les fouilles qui continuent toujours à Bibracte, il a bientôt fondé le Département d'archéologie classique dont il est devenu le directeur, et quelque temps après, il a été nommé directeur de l'Institut archéologique qu'il avait créé lui-même et qui fête ses 20 ans en 2015. En quelques années, il est devenu vice-président, puis président de notre université et membre de l'Académie hongroise des sciences. Etant donné qu'à l'époque de la fondation du Département d'archéologie classique, l'enseignement de l'archéologie au sein de notre université avait un passé de près de deux siècles, nous ne pouvons pas dire que le nouveau département soit parti de zéro, mais nous pouvons affirmer que Miklós Szabó lui a donné une orientation entièrement nouvelle. Quelques années avant le changement de régime, il a lancé un programme de recherche international sur trois sites, en Hongrie (Velem-Szentvid, Budapest-Gellérthegy) et en France (Mont Beuvray-Bibracte). En s'appuyant sur les jeunes enseignants de l'Institut archéologique, il a créé un programme d'enseignement et de recherche que nous continuons à suivre de nos jours malgré certains changements, et il n'a cessé d'en renouveler le contenu pour permettre à de nouvelles générations d'enseignants-chercheurs de commencer leurs carrières intégrant les programmes mentionnés plus haut.

Ce volume, publié à l'occasion du 75e anniversaire de Miklós Szabó, est l'œuvre d'anciens élèves (enseignants, chercheurs ou doctorants) qui travaillent à l'Institut archéologique de l'Université ELTE et dont les activités sont liées directement ou indirectement à la carrière du professeur Szabó. Les travaux réunis tentent de refléter la richesse et la complexité des recherches de notre ancien professeur ainsi que ses vues sur l'archéologie classique. Les travaux des élèves plus anciens rappellent les débuts, le renouvellement des cadres de l'enseignement et de la pratique de l'archéologie provinciale romaine et le nouvel élan pris par la pluridisciplinarité grâce à la photographie aérienne, tandis que la publication de fouilles conduites à l'étranger illustre l'importance des liens anciens et modernes dans le contexte international.

Celtes et Romains, interdisciplinarité et archéométrie, sources, inscriptions et matériel archéologique, la Gaule et la Pannonie, Eduens et Boïens, archéologie classique et archéologie provinciale romaine, art et iconographie, amphorologie et céramologie, artisanat et commerce, théorie et pratique : des thèmes et des domaines qui s'entremêlent de par les écrits des élèves et de leurs élèves en prouvant que ce choix d'il y a bientôt 30 ans a été non seulement un bon choix, mais aussi un choix dont les effets bénéfiques sont durables. Ils constituent des fondements sur lesquels les générations suivantes, voire celles à venir, peuvent construire. Nous lui en sommes reconnaissants, non seulement lors de son 75e anniversaire, mais d'une manière continue. Mais un anniversaire, surtout celui d'une importance spéciale, nous permet d'exprimer cette gratitude dans les cadres d'un événement festif, dans des conditions particulières.*

Fait à Budapest, le 3 juillet 2015.

Au nom des élèves, collègues et amis :

László Borhy

* Traduit par: Dávid Szabó

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REMAINS OF A CELTIC SETTLEMENT AT RÁCKERESZTÚR

Zoltán Czajlik – Károly Tankó – Lőrinc Timár – Balázs Holl

The identification, topographical research and test excavation of the sites was an important goal of our aerial archaeological project, conducted between 2007 and 2011, in order to discover the potentials as well as the limitations of how aerial photography could be applied in topographical research. In the course of our research project, we explored three Celtic settlements (Harc–Janyapuszta,[1] 2007; Báta–Öreghegy, 2008;[2] Ráckeresztúr–Malontai út mellett, 2008) and a Roman watchtower (Tolna–Mözs, András Bödőcs, 2010).

Aerial photography, evaluation and rectification, and magnetometry and fieldwalking provided the basic information, followed by the spatial analysis of the finds and, finally, the results were verified by test excavations, with a strong emphasis on the dating of the identified archaeological structures.

We identified the site at Ráckeresztúr–Malontai út mellett on June 5, 2003, using aerial photography[3] (Fig. 1) and we carried out the fieldwalking on March 28, 2006. After snowmelt, we found pottery sherds, metal mounts and animal bones on the freshly ploughed surface and we collected slag and lumps of iron slag near the hill. The finds had a moderate dense surface scatter and were concentrated in a distinct area, near the structures observed in the aerial photos. The identified pottery fragments dated from the Middle La Tène period. After the identification of the site in the field, we took further aerial photos on May 30, 2007, and June 6, 2008; and we rectified the images from 2003, 2007 and 2008. We noted that the embankment of Motorway M6 in 2005 did not affect the archaeological site, but the diversion of the Szent László Stream to the south destroyed the settlement's features (mainly pits) on the stream's bank.

We continued the exploration of the site between October 16 and November 6, 2008, using our aerial photo-map and the results of the fieldwalking. After a magnetometry survey and grid sampling, we evaluated the new information and started a small-scale excavation on the settlement's northeastern edge, at the foot of the hill, that resulted in the uncovering of two buildings. A short excavation report has been published,[4] along with other articles on the possible reconstructions of the unearthed Celtic building.[5] The aerial archaeological evaluation of the site has been published as a case study in our article on aerial photography in Hungary.[6]

In 2009 and 2010, we repeatedly photographed the surroundings of the Celtic settlement and the valley of the Szent László Stream from the air and we also carried out fieldwalkings over sites that seemed to be promising – however, we did not identify any other Celtic settlements or cemeteries.

The geographic background (Fig. 2)

The geomorphology of northeastern Transdanubia is characterised by a series of fault-lines in a northwest to southeast direction. Its most prominent part is the Móri-árok Trench that provides a passage through the Transdanubian Mountains. However, this geological feature is pres-

1 Czajlik *et alii* 2010.

2 Czajlik 2010, see also Szabó 2012.

3 Czajlik 2004, 114, fig. 5.

4 Czajlik 2009a.

5 Timár 2009; Timár 2010.

6 Czajlik 2009b.

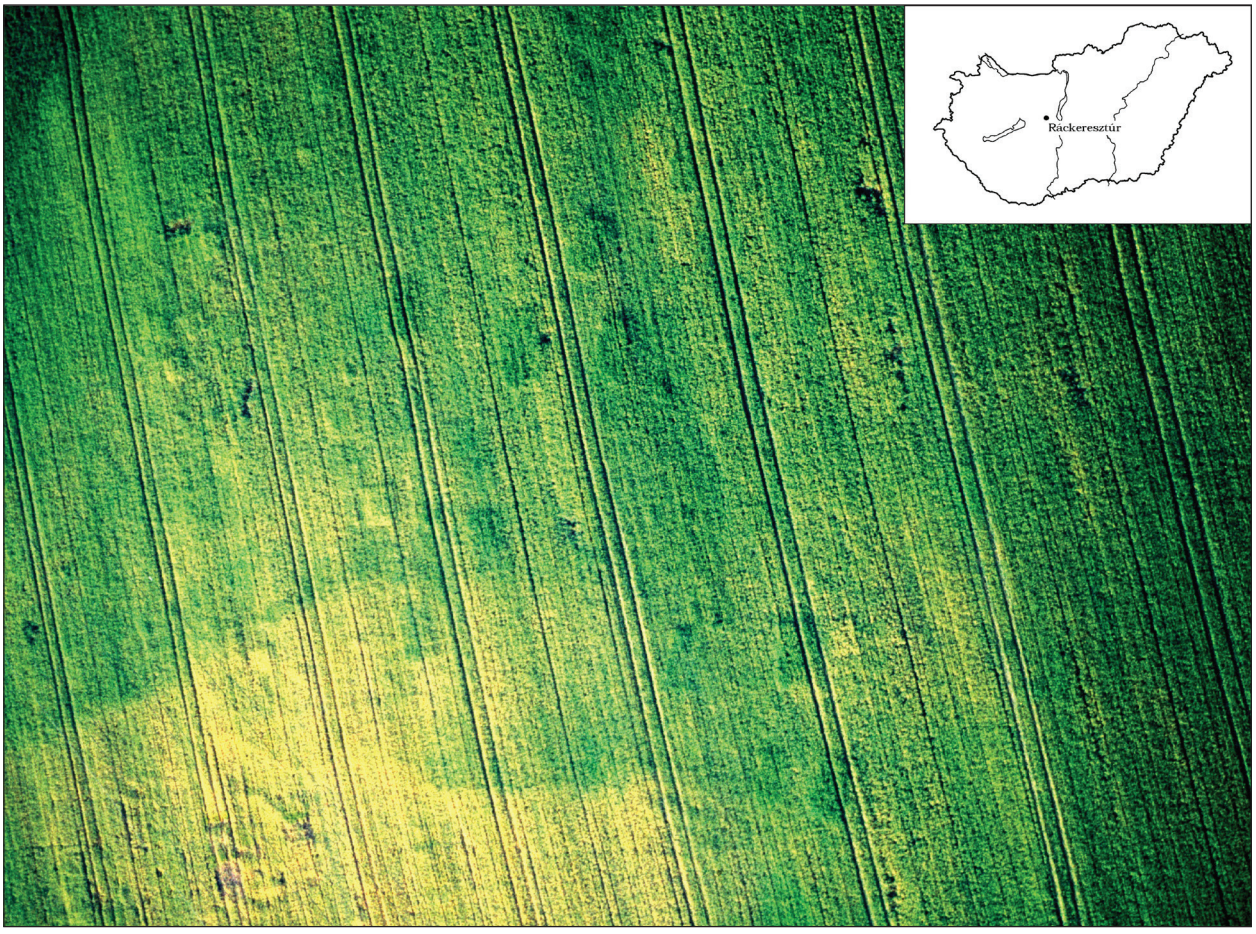


Fig. 1. Ráckeresztúr–Malontai út mellett. Remains of a settlement made up of sunken featured buildings (aerial photography: Zoltán Czajlik, June 5, 2003).

ent in many other parts of the mountains, not only at the junction of the Gerecse and Bakony Mountains, but also along the rivers and streams flowing into the Danube. These watercourses are the Által-ér and the Kenyérmezei Stream from the northwest, and the Váli-víz, the Szent László Stream and the Benta Stream from the southeast. Among these, the Szent László Stream formed the longest and most significant valley, which has a broad valley floor at Ráckeresztúr and had considerable meanders in the historic times south of the modern settlement. According to the 18th–19th century maps and descriptions made before the wetland was drained, the valley was occupied by a marshland downstream from Martonvásár. Due to its low gradient, the stream bed covers the greater part of the valley floor.

The loess plateaus marking the boundary of this area towards the Benta and Váli Valleys are scarce in water sources in their natural state, and were therefore less attractive for human settlement. It is hardly surprising, then, that all the settlement remains we identified in the Ráckeresztúr area lay close to the stream, mostly on its right bank or on the hills overlooking the stream. There were many settlements around the great meander that has since been transformed into an oxbow lake. Although they have a rich soil, we have not identified any settlement remains on the loess plateaus to date.

Technical background of the non-invasive research

In 2003, we used a Nikon F60 camera with a Nikkor 50 lens and Fuji Velvia 50 film, which we replaced with a Nikon D60 with a Nikkor 50 lens in 2007. Later, in 2008, a Nikon D300 camera was used with a Nikkor ED24/70 lens. The geodesic surveys and the contour maps were made with a Trimble GeoXH precision GPS device. Using Overhauser GEM Systems GSM-19 magnetometers in a horizontal variometer array, Sándor Puszta prepared the geophysical survey. The raw data was processed along the following protocol:

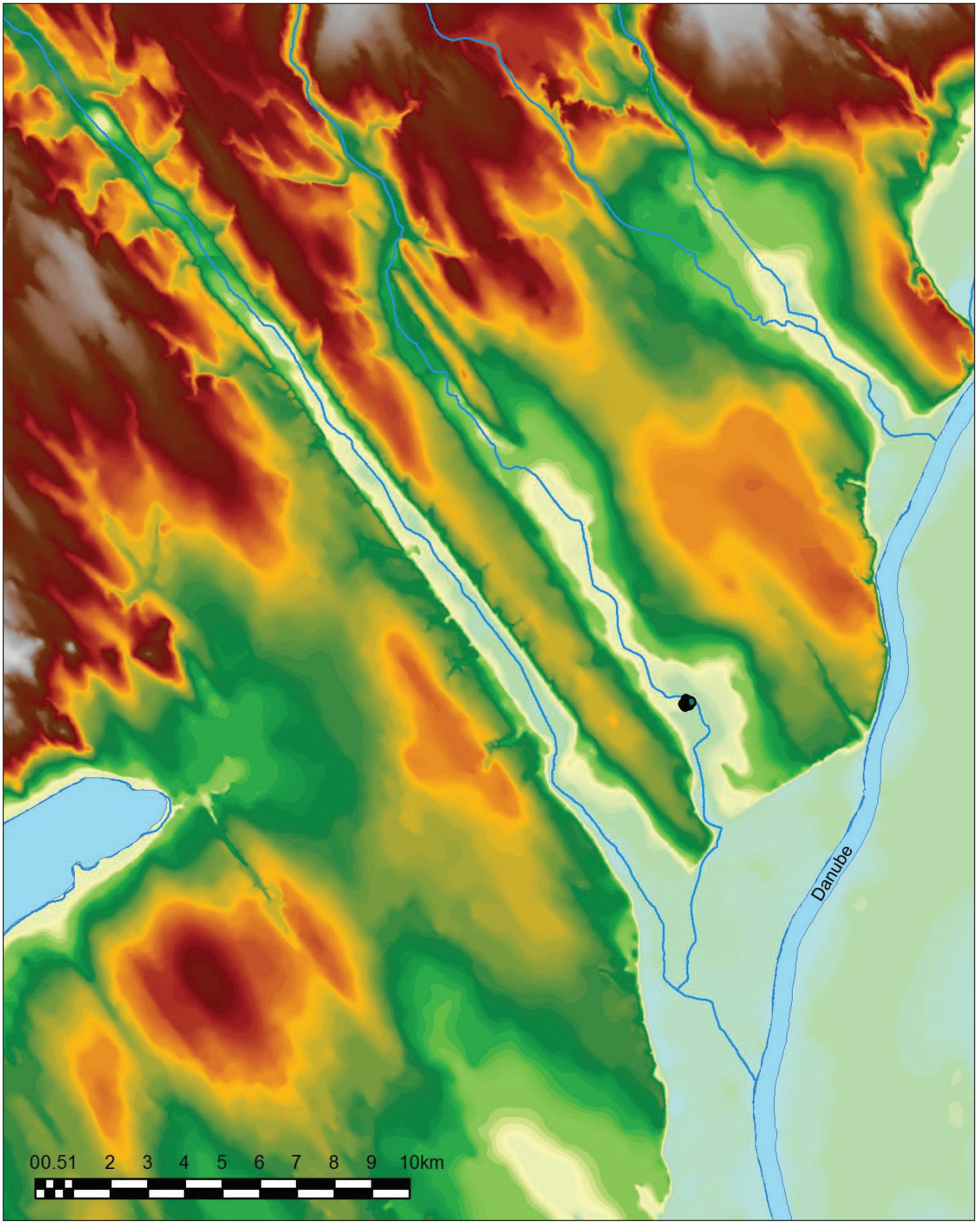


Fig. 2. The Benta Stream, the Szent László Stream, the Váli-víz and their morphological situation, and the research area (black) south of Ráckeresztúr (Balázs Holl and András Jáky).

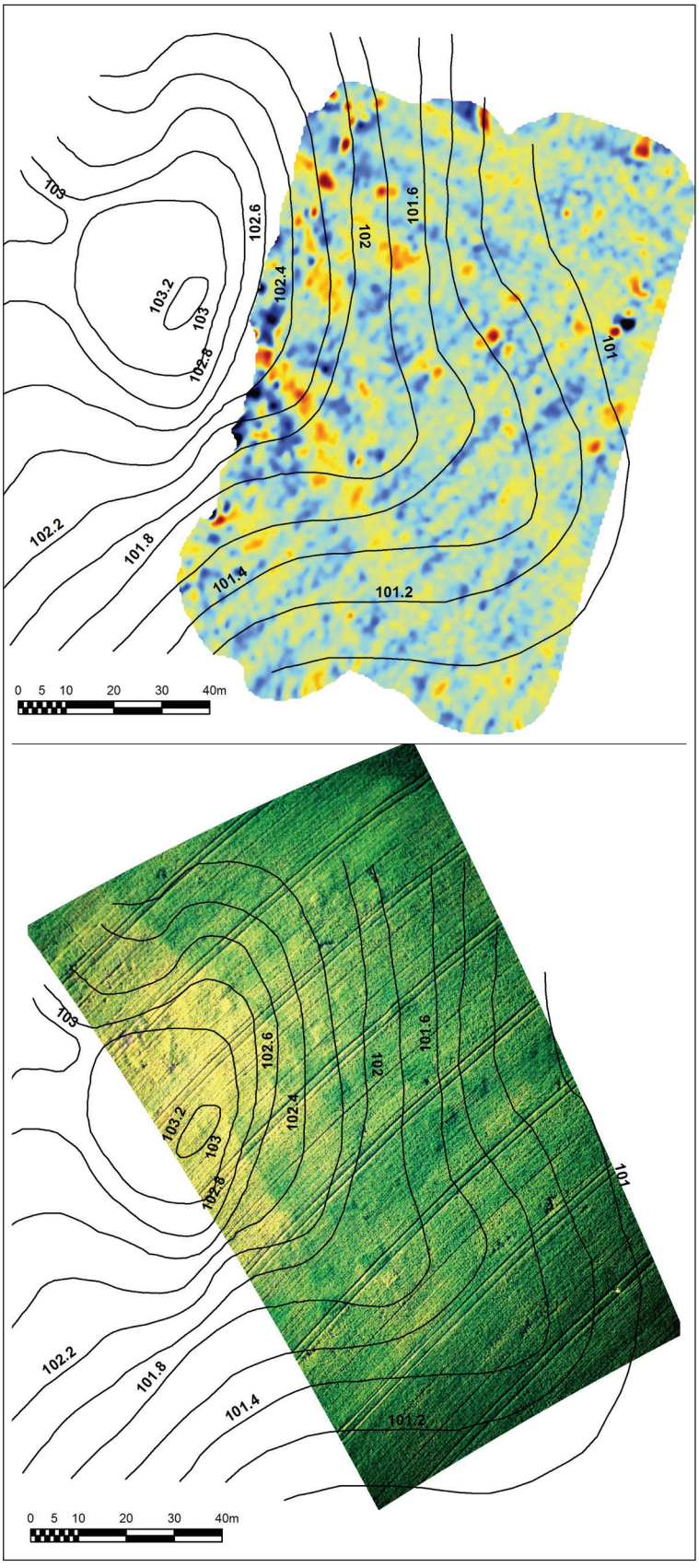
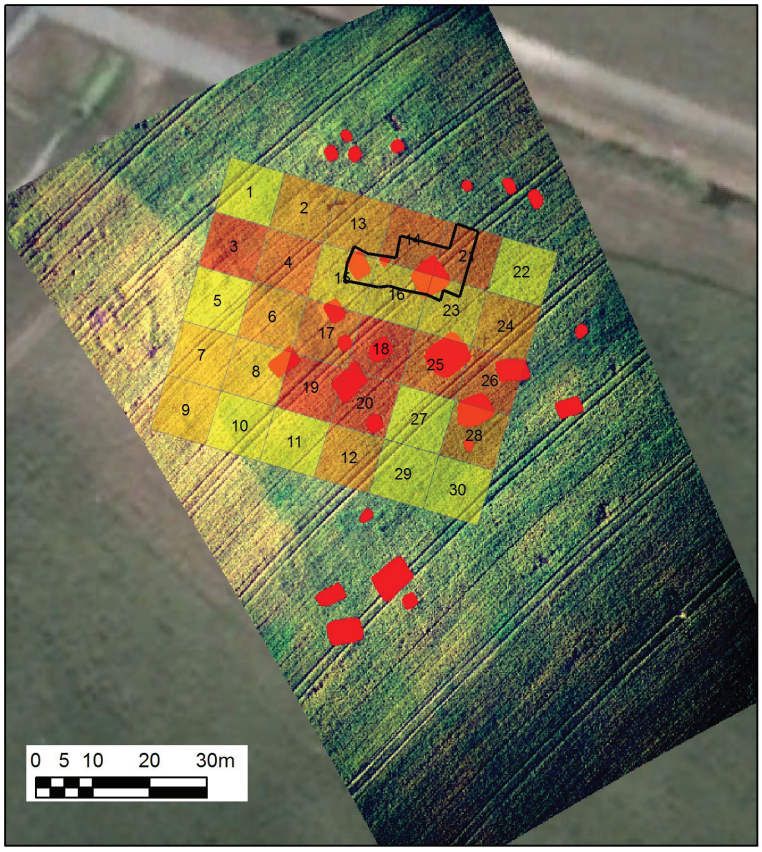


Fig. 3. Ráckeresztúr–Malontai út mellett. Comparative map of the magnetic anomalies of the site (top, Fractal Technology, Sándor Puszta and Balázs Holl, October 2008) and the archaeological structures identified by aerial archaeology (bottom, Zoltán Czajlik, June 5, 2003).



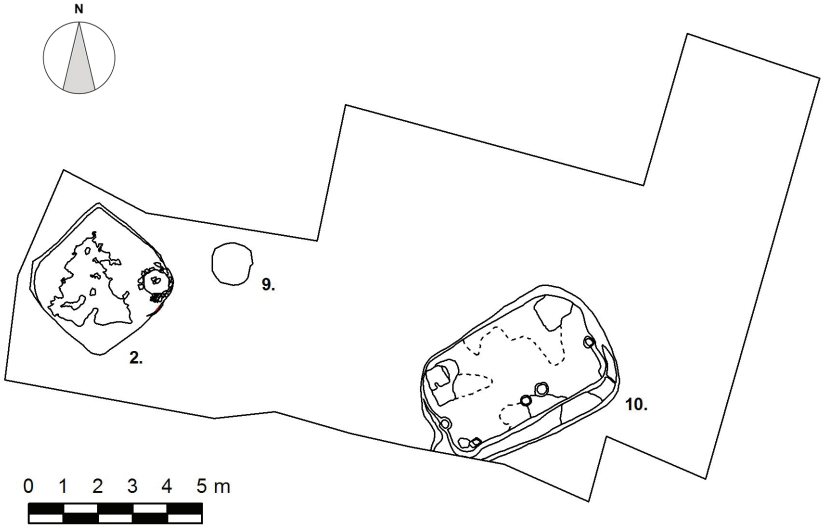


Fig. 4. Ráckeresztúr–Malontai út mellett. Comparative map of the results of aerial archaeology, grid sampling and excavated area. Plan of the excavation (Balázs Holl and Lőrinc Timár).

band-pass filtering, measuring gain compensation, optimum filtering for noise reduction, base correction. An area of 60 x 50 metres was surveyed by grid sampling.

Evaluation of the non-invasive research

Of the three instances of aerial photography, only the one in June 2003 was performed at the time of optimal vegetation coverage. At that time, we could observe the buildings' and pits' marked contours in the ripening winter wheat. In 2007 and 2008, maize was planted in this area and only the site's extent could be identified. The conditions were rather favourable when the geophysical survey and the grid sampling were performed. Although the surface was even and the winter wheat had just sprouted, the survey's results were not unambiguously positive. The map of magnetic anomalies (Fig. 3) showed not only the archaeological structures, but also a great number of other features, caused by either the geological changes or the pieces of discarded concrete originating from the construction of the motorway.

In view of the above, the archaeological structures were harder to identify with geophysics, compared to the aerial photographs. They only became visible on the final composite map. The aerial photos showed nine larger and five smaller buildings as well as a number of pits, while the geophysical survey indicated the presence of no more than five buildings. Thus, aerial photography proved to be more efficient in this case and provided more information (Fig. 3).

For the grid sampling, the area was divided into 30 units, each measuring 10 x 10 metres. As we have mentioned in the above, although conditions were favourable, only few finds could be collected from the surface. The density of the finds of Celtic origin was 0–7 pieces/m2 (we have to remark here that we encountered the same problem at the time of the first field-walking in 2006, when we only found two pottery sherds that could be securely identified). Despite the low number of finds, the units with a denser scatter of pottery sherds corresponded to the archaeological structures identified in the aerial photos of 2003. The majority of the Celtic vessel fragments probably originated from the larger buildings on the site's middle part (Fig. 4).

Results of the test excavation (Fig. 4)

We excavated three structures between October 28 and November 6, 2008. One of these appeared as a lighter spot in the aerial photo; as it later turned out, it proved to be a nest of the rodents that were rampant in the field, demonstrating one of the fundamental problems in the identification of structures in aerial photos. During field-walking, we found that a number of other features that were identified as pits from the aerial photos of 2003 proved to be rodent nests instead of archaeological structures. One of our surprising findings was that one of the archaeological structures, a smaller building (Feature 2, size: 3.5 x 2.5 metres) contained no finds, implying that its former occupants had emptied it before its abandonment.

The building's rectangular pit was relatively shallow compared to the present surface. We uncovered an oven in its southeastern corner, with pottery sherds from the early medieval Árpádian Age in its baking surface, which indicated the date of the building.

The other building, a typical sunken featured rectangular building (Feature 10, size: approx. 5.6 x 4.0 metres) with rounded corners, lay significantly deeper. Its depth, measured from the shovel-shined surface (after the removal of the humus), was approx. 90 cm, and the pit's walls were almost vertical. There were two smaller pits with a diameter of 30 cm in the axis of the pit, which could be interpreted as postholes. The soil still retained the imprint of one of the posts at the time of the excavation. Unfortunately, the soil was strongly disturbed by the rodents and it was difficult to observe the finer details.

The building yielded a relatively high number of Late Iron Age finds; the majority of the 408 objects brought to light during the excavation came from this feature. When we excavated the building, we could identify and separate the debris of its structure from the finds originating from outside the building. It must here be noted that the finds from Feature 24 and 31 included pottery sherds that predate the Late Iron Age, suggesting that this site was also occupied during an earlier, but yet not identified period of prehistory.

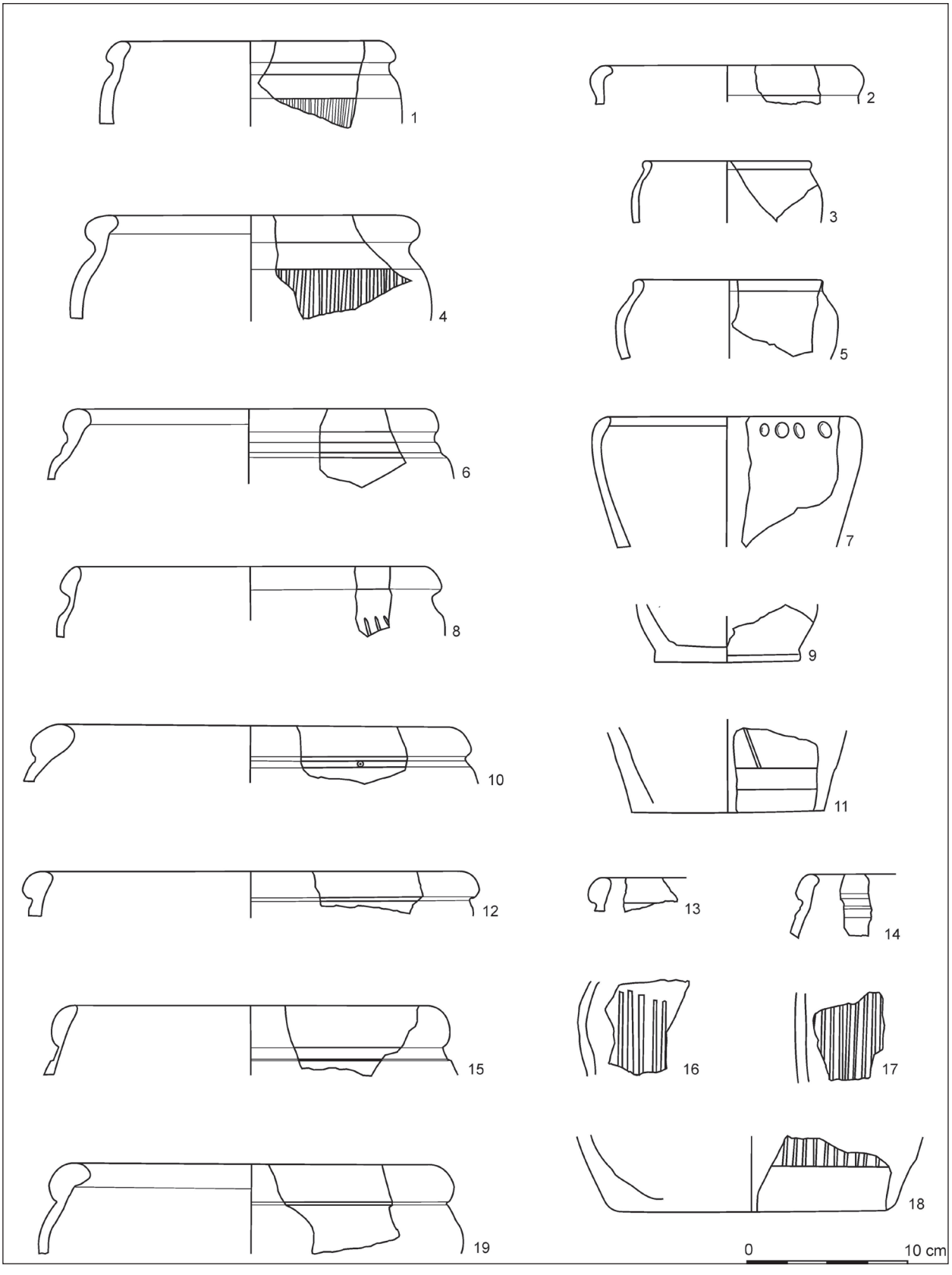


Fig. 5. Ráckeresztúr–Malontai út mellett. Finds of the excavation (Adrienn Blay – Károly Tankó).

The building's debris contained Late Iron Age pottery sherds only. The number and the type of the sherds provided information on the nature and date of the site. We used the assessment method created for the study of the Sajópetri site, which was subsequently adopted for other sites too.[7]

The finds from Ráckeresztúr were dominated by wheel-turned wares (83%) and there were relatively few fragments from hand-thrown wares (17%). Among the wheel-turned wares, the proportion of fine ware belonging to Types CTFC and CTFS was lower (36%) than of household pottery of Types CCTC, CCTS and CCTG (47%). This is hardly extraordinary, given that the site was a settlement,.

Graphite-tempered clay was used for 13% of the pottery fragments, which can be considered a significant proportion. The hand-thrown pottery is represented by coarse ware (CNTGS and CNTGC), and we did not find any fine wares among them.

Another important technological feature of the pottery is the type of firing. It could be observed that regardless of the manufacturing technique, vessels were generally fired in a reducing atmosphere (88%), while firing in an oxidising atmosphere was employed only in 12% of the examples.

The excavated pottery was very fragmentary. Most of the pottery sherds (74%) were body sherds, while rim sherds (14%) and base sherds (12%) accounted for a smaller proportion. The minimal number of individuals is 79 (NTI: 19%), the number of the typologically identifiable fragments is 32 (NTI: 8%). There are only a few vessel types that could be defined within the typologically identifiable individuals. Spherical bowls (Type I.2.1) and bowls with indrawn rim (Type I.2.2) were represented by one fragment each, and both were of the hand-thrown variant (Fig. 6.15–16).

Type I.5.1, a hand-thrown vessel resembling a flower pot with finger-impressed rim, is represented by a single sherd (Fig. 5. I.7). There was a higher number of S-profiled bowls of Type II.1.1 (Fig. 6.1, 3–4, 6, 8, 11, 13–14), many of which were decorated with multiple grooves on the neck or around the shoulder (Fig. 6. 3, 6, 11, 13).

The highest number of identifiable sherds came from situlae of Type II.2 (Fig.5.1–6, 8, 10, 12–17, 19), most representing graphite-tempered ware (CCTG), although often appearing as household ware without graphite tempering (CCTS). The majority of the sherds came from variant II.2.2 with combed surface, while variant II.2.1 without combing was represented by two sherds (Fig. 5.3, 5). Wheel-turned pots are usually underrepresented due to the form of their fragments. There was only a rim and a body sherd belonging to Type II.3 that we could identify (Fig. 5.3 and 5).

There were no other artefacts that could be used for dating the structures, and thus we have to rely on the pottery. According to our present knowledge, the pottery found in the building uncovered at Ráckeresztúr can be compared with the ceramic inventory from the La Tène B2-C1 period settlements of the Carpathian Basin.

We had the opportunity to study some contemporaneous sites of Transdanubia (Dunaszentgyörgy, Harc–Janyapuszta, Paks–Gyapa, Tolna County). Similarly to Ráckeresztúr, wheel-turned wares dominated the pottery from these sites, in sharp contrast with the northern Hungarian region, where the ratio of the two major technological groups is equal,[8] although the number of identifiable individuals is low from a typological aspect. Type II.2 is easy to recognise, even in a very fragmentary state, and it is therefore overrepresented in the studied pottery assemblages. Wheel-turned bowls of Type II.1.1 with an S-shaped profile are also well represented among the finds.

These two types can be regarded as the "type fossils" of the La Tène period and their variants from Ráckeresztúr were widespread across the eastern Celtic territory from the beginning of the LT B2 phase.[9] From a chronological aspect, the lack of stamped decoration and the high proportion of smoothed-in decoration are decisive. The smoothed-in bands and wavy lines framed by horizontal lines appear on many vessels from Ráckeresztúr (Fig. 6.9, 12, 17). Although this type of ornamentation is

7 Szabó – Tankó – Szabó 2007; Tankó 2010a.

8 Szöllősi 2010–2013, Fig. 3.

9 Tankó 2010a, 324; Tankó 2010b, 255.

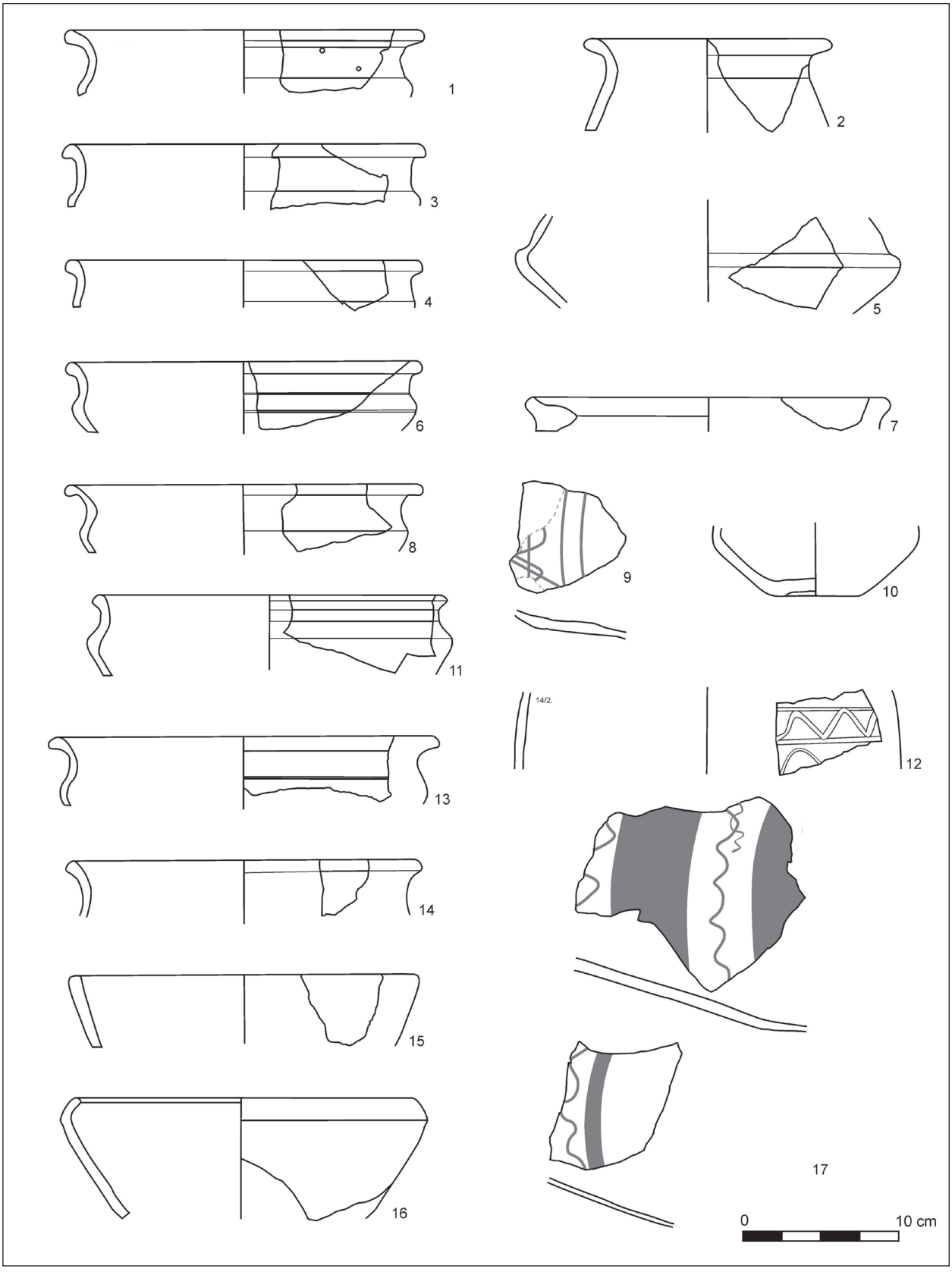


Fig. 6. Ráckeresztúr–Malontai út mellett. Finds of the excavation (Adrienn Blay – Károly Tankó).

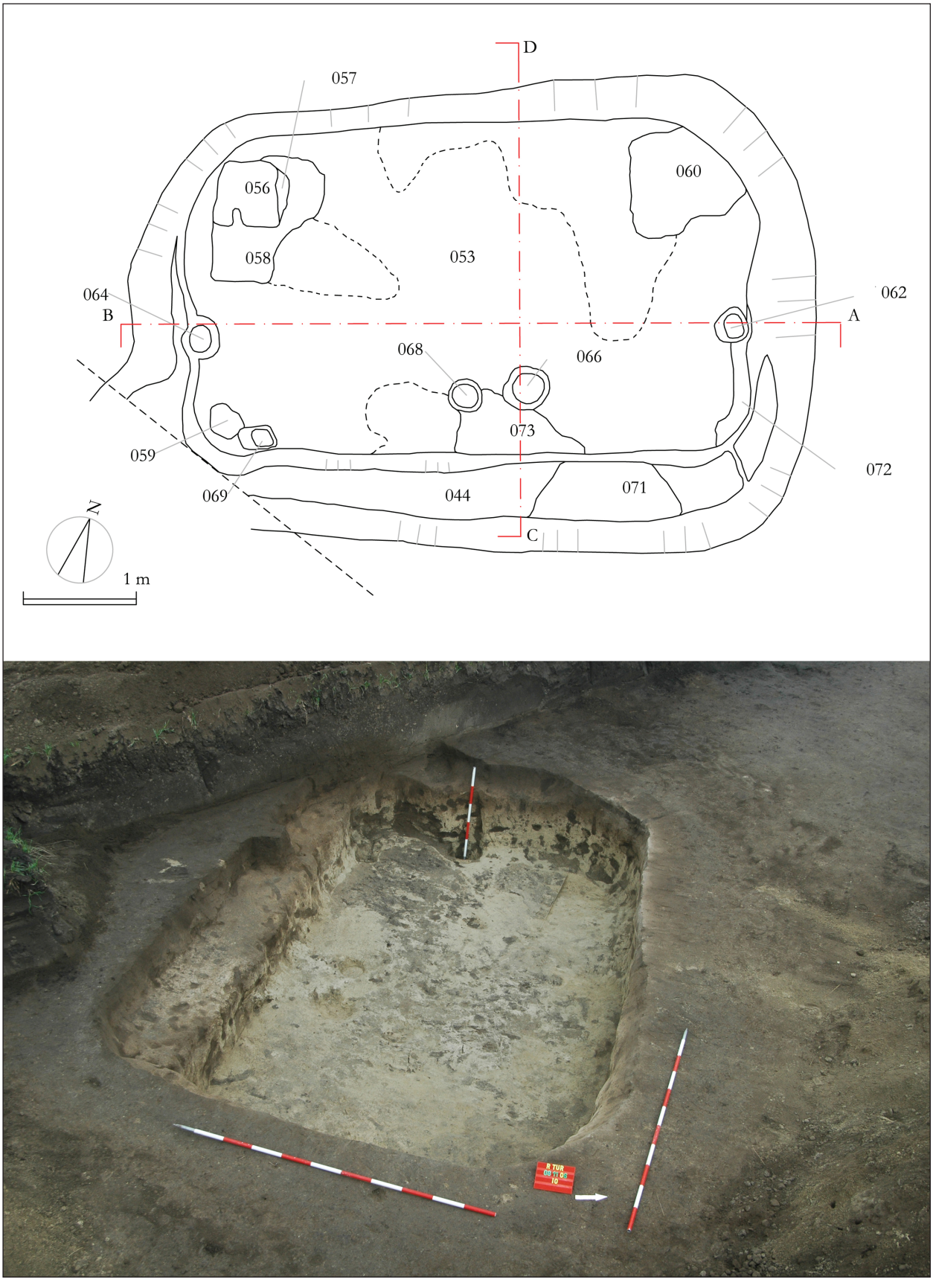


Fig. 7. Ráckeresztúr-Malontai út mellett. Floor plan and view of Feature 10. (Lőrinc Timár and Zoltán Czajlik).

more typical for the Late La Tène period,[10] its appearance can be dated as early as the LT B2 phase.[11]

In general, the typological proportions of the pottery from Ráckeresztúr correspond to those in ceramic assemblages from other contemporaneous sites. In view of the currently known relative chronology, the building from Ráckeresztúr was used between the LT B2 and C1 phases.

The double debris layer and function of the sunken featured Celtic building (Feature 10, Fig. 7)

Sunken featured buildings were known in the Carpathian Basin before the Late Iron Age[12] and we had the opportunity to study[13] similar buildings at Sajópetri–Hosszú-dűlő[14] and Polgár–Site 1. (Király-érpart),[15] which resemble the house uncovered at Ráckeresztúr and date from the same archaeological period.

Due to the favourable conditions that contributed to the preservation of the building and its contents, we were able to study in detail the sections in the case of Ráckeresztúr.

The aerial photos revealed the exact position of the building, which made it possible to start the excavation at the feature's exact location, making the removal of the humus layer over a larger area unnecessary, and thus we could record the longitudinal bank on the pit's southern side. Usually, it is not possible to record the sections of similar archaeological structures, but in this case, the section wall had a considerable height and revealed many interesting details.

The depth of the building's pit is uncommon. The depth of most sunken featured buildings reported in various publications does not exceed 30–50 cm, one possible reason for this being soil erosion. At Ráckeresztúr, it is clearly visible that the building's pit was dug into the yellow subsoil from the overlying soil layers. It was clear that the prehistoric humus was preserved at least partially, similarly as in the case of some other buildings.[16] This does not occur very often: the sections are usually less informative and rarely show more than one layer of fill.

At Ráckeresztúr, we could observe that the fill of the building's pit was not uniform (Fig. 8): there was a thin yellow layer (049) dividing the contents of the pit into upper and lower layers. The colour and texture of this yellow layer was similar to the subsoil, suggesting that it originated from the erosion of the pit's sides. The sides were not vertical above the yellow layer and pottery finds were significantly rarer in the upper layers. We assumed that the finds and the backfill that formed the upper layers came from the surroundings of the building, while the lower layers mainly contained the remains of the building's structural elements and the artefacts from inside the house. In view of the above, the pit's sides below the yellow layer were preserved in their original shape because it was retained by a structural part until it finally perished. This structural part was most likely a wattle construction:[17] in view of the rounded corners and the absence of typical imprints, other wall types can be excluded.

The building from Ráckeresztúr has a longitudinal bench along its southern side. The bench's height is around 50 cm measured from the pit's floor. The sunken featured houses of the La Tène B/C periods include a building type with a bench, which we earlier interpreted as a step.[18] Among many others, the houses uncovered at Sajópetri–Hosszú-dűlő (Features 98.7 and 02.A.93), Polgár–Site 1, Feature 100,[19] Nitra–Sindolka (Features 14/68-85[20] and 186/85[21]) and Balatonmagyaród–Kányavár (Feature 4)[22] belong to this group (Fig. 9), as does Feature

10 Bónis 1969, 175.

11 Szabó 2007, 318; Szöllősi 2013, 36, Fig. 8.

12 Czifra 2006, 173.

13 Timár 2013, 290–292.

14 Timár 2007.

15 Szabó *et alii* 2008.

16 For example, Feature 31 at Ménfőcsanak–Szeles-dűlő and Features 02.A.93 and 98.7 at Sajópetri–Hosszú-dűlő (Timár 2010, 263–266 and 265 fig. 4).

17 The traces of wattle and daub walls were found in many similar buildings (Timár 2007, 213 and 214, fig. 25).

18 Timár 2013, 298; Timár 2007, 209; Szabó *et alii* 2008, 187; and the reconstruction: 195, fig.10.

19 Szabó *et alii* 2008, 187–188.

20 Březinová 2002, 43. fig 8.

21 Březinová 2002, 90 fig. 42.

22 Horváth 1987, 61.

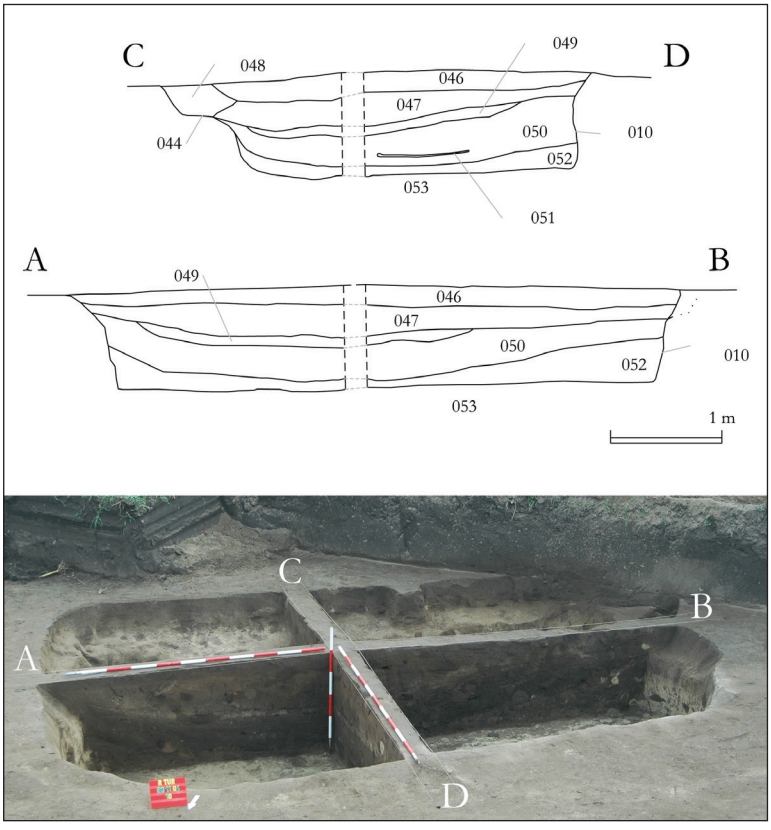


Fig. 8. Ráckeresztúr-Malontai út mellett. Cross-sections of Feature 10. Note the yellow layer in the middle of the backfill. (Lőrinc Timár and Zoltán Czajlik).

10 from Ráckeresztúr. Because these buildings yielded evidence of craft activities (Polgár: warp-weighed loom and soot, Sajópetri: slag and pottery kilns), they were designated as the workshop-type.[23] It seems likely that the bench was associated with an opening of similar width and that it was covered by a kind of porch roof of the type appearing on some Early Iron Age house models from Italy.[24]

Reconstruction of the Celtic sunken featured building

Although sunken featured buildings with an area of 15–25 m^2 and a thatched roof do not need an extremely strong or elaborate superstructure, it is important to understand their structural concept in order to make a reliable reconstruction.[25] Of the three building types distinguished by O. Buchsenschutz,[26] the last one seems to be the most adequate for sunken featured houses, where the roof rests on the top of the wall. This structural concept is suitable for covering rounded corners or irregular floor-plans and the location of the entrance is almost indifferent. Its only drawback is the greater horizontal load on the top of the walls when the opposite rafters are not connected by a joist. Horizontal loading decreases if the roof is pitched at a steeper angle, and thus we may agree with O. Buchsenschutz that houses with this structure probably resembled the proportions of the 7th century BC house-shaped urn from Königsaue (Fig. 10).[27]

We know little about the structural evolution of the houses. Some of them have a mixed structure, like Feature 1 at Balatonmagyaród–Homoki-dűlő, where the roof's ridge was supported by two posts. Other houses, such as the Late La Tène Age House 16 at the Gellérthegy site, had no postholes, implying that the roof was supported by the walls only.[28] Perhaps at one point

23 Timár 2007, 217–219.

24 Timár 2010, 266–267.

25 For a detailed discussion, see Timár 2009.

26 Buchsenschutz 2005, 55, 56, fig 4.

27 Buchsenschutz 2005, 55.

28 Bónis 1969, 134, fig. 82.

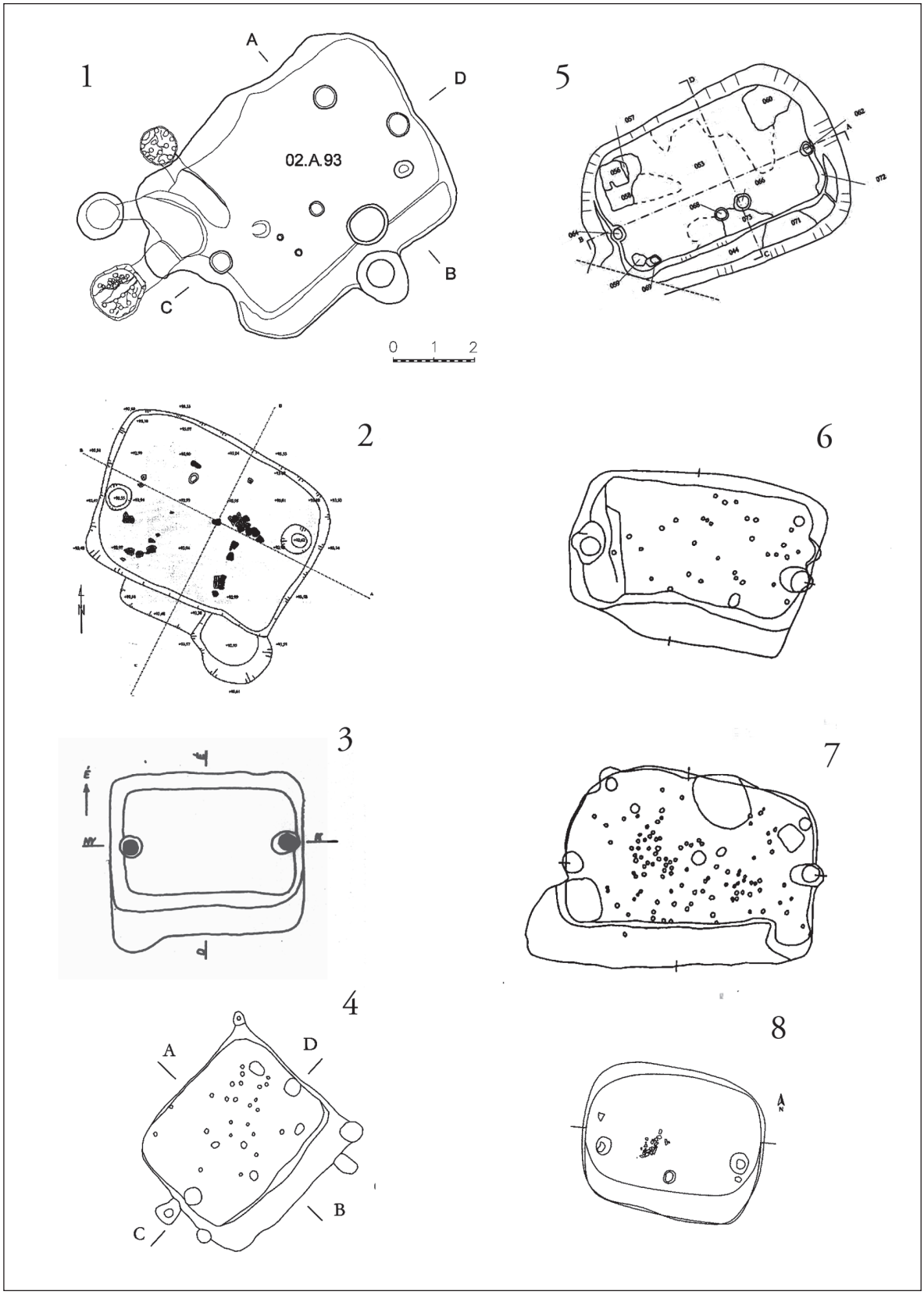


Fig. 9. Workshop-type buildings, 1: Sajópetri, Feature 02.A.93, 2: Polgár–Site 1, Feature 100, 3: Balatonmagyaród–Kányavár, Feature 4 (after Horváth 1987), 4: Sajópetri, Feature 98.7, 5: Ráckeresztúr–Malontai út, Feature 10, 6: Nitra–Sindolka, Feature 186/85 (after Březinová 2002), 7: Nitra–Sindolka, Feature 14/68-85 (after Březinová 2002), 8: Prekmurje–Kotare-baza (after Kerman 2011), all plans to the same scale.

of the structural evolution, posts were omitted from houses, but this assumption is hypothetical at best.[29] House 10 of Ráckeresztúr can be assigned to the first type, which seems to be earlier.

Since it is more than likely that these buildings were workshops, their ceiling could not be lower than approx. 170 cm measured from the floor. In the houses of Sajópetri, the finds indicate blacksmithing activity, which is almost impossible without raising the hands above the head, thus an adequate internal space is vital in this case. The house at Polgár contained a warp-weighed loom.[30] The archaeometric reconstruction of the loom,[31] the famous Early Iron Age depiction on the urn from Sopron[32] and the ancient Greek vase paintings[33] all depict a loom that is at least as tall as a woman. Therefore, we may assume that buildings of the workshop-type had upright, vertical walls.

We prepared our reconstructions with special regard to the key features. The reconstruction of the house found at Polgár is based on its minimal interior space,[34] while the image of the house from Sajópetri relies on hypothetical constructions set in its negative structures.[35] Our reconstruction of the building uncovered at Ráckeresztúr reflects the proportions of the house urns, which were basically more or less schematic portrayals of existing buildings.[36] It is still difficult to decide which reconstruction method is the best, but we hope that future excavations will lead us to a better understanding of this building type.

Conclusion

The settlement we identified in June 2003 consists of sunken featured buildings arranged in two distinct groups. Both groups comprised smaller and larger buildings that had roughly the same orientation (northeast to southwest, following the slope). Since we could observe a relatively large area around the site under the same conditions, there is little likelihood of finding further structures. The small amount of pottery sherds we collected in the field might be related to the small extents of the site.

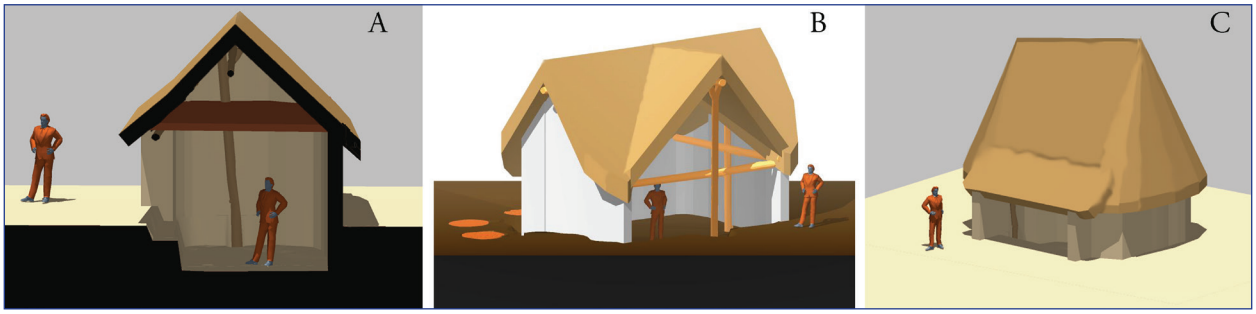


Fig. 10. Reconstructions of Celtic sunken featured buildings from Hungary: Polgár (A), Sajópetri (B) and Ráckeresztúr (C) (Lőrinc Timár).

Our test excavation revealed that the Late Iron Age structures are well-preserved to a significant depth and that the Árpádian Age settlement's buildings were abandoned almost without any artefacts left behind. We excavated the two buildings that lay nearest to the Szent László Stream, which were also very well visible in the geophysical survey's results. We have to remark that the shallower sunken featured house with an oven from the medieval Árpádian Age caused much stronger magnetic anomalies than the larger Late Iron Age building that was deeper, but did not contain burnt surfaces. The sunken featured buildings could be identified on aerial photographs and according to the excavation results, they originate from either the Árpádian Age (smaller buildings with angular corners) or the Late Iron Age (larger buildings

29 Timár 2013, 299.

30 Szabó *et alii* 2008, 187–188.

31 Horváth – Marton 1998.

32 Eibner 1986, 307.

33 For example, the vases of the Penelope Painter or the Amasis Painter: Beazley 1963, 1300, 2; Beazley 1956, 154, 57.

34 Szabó *et alii* 2008, 187.

35 Timár 2007, 217–219.

36 For a more detailed discussion, see Timár 2010, 264–268.

with rounded corners). The number of the latter structures seems to be around 7–9 according to the aerial photographs, which indicates a smaller settlement than the one at Polgár–Site 1 (Király-érpart).[37] Perhaps it was a farm similar to the one known from Kajdacs–Gulyajáró.[38] The dating of the Celtic settlement is based on the pottery finds, which assign the site to the 3rd century BC. The statistical analysis of the pottery assemblage shows a similarity with the southern Transdanubian region due to the relatively high proportion of wheel-turned wares.

Acknowledgments

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[37] Szabó *et alii* 2008.

[38] Czajlik *et alii* 2010, Pl. 1.2.

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