

THE PROBLEM OF “STRUCTURAL INTEGRATION”. A CASE STUDY OF THE 9TH–10TH CENTURY BURIALS (GRAVES 49 AND 50) AT HORTOBÁGY – ÁRKUS

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Abstract: The aim of this study is to discuss the theoretical aspects of the problem of discontinuity and continuity between two major periods, the Late Avar Period and the Hungarian Conquest Period in the light of the unpublished graves 49 and 50 from Hortobágy – Árkus. For this purpose, we provide a sociological model which contributes to the understanding of the emergence of the new power structure. The graves are part of a multiperiod site (burial ground), which connects the Late Avar Period and the Conquest Period and it is a unique example of its kind in the Carpathian Basin. The archaeological observations concerning parallel finds support the dating of the two graves at the end of the 9th century and the beginning of the 10th century and the fact that they probably represent the formative phase of the Hungarian power structure in the Carpathian Basin. The orientation, the horse burial, the characteristics of the grave-pits, and their topographical positions indicate that the two graves belonged to the Late Avar burial site; on the other hand, however, certain material finds reflect a different cultural context associated with Hungarian Conquest Period assemblages. On the base of the material culture and the burial practices we suggest, that through interpersonal relationships, the individuals in that graves could have become part of the socio-political structures emerging in the Late Avar Period, and this allowed them to exchange and access material goods. It is important to underline that their small population groups based on blood ties (clans) could have preserved their customs, and instead of the often interchangeably used “acculturation” term, the material evidence may rather be read as a sign of “structural integration” – as this particular case suggests. “Structural integration” is also an “overlap” phenomenon during which the structural hierarchies of the conquering entity integrate that of the conquered community (or of its individual members) in a vertical way (from top to bottom). Primarily, this does not affect the self-image or internal structure of the group, but changes only its external status, by changing its relation to the dominant group. We believe that this model can be useful for interpreting the case of Graves 49 and 50 at Hortobágy. It seems that only certain elements of the burial representation – primarily those with a strong symbolic meaning, indicating the social status of the individuals, positioning the buried individuals within their social network – have changed (namely, the horse burial, the grave accessories, and their placement in the grave), while other elements which did not play any role from this point of view remained unchanged (the orientation and the features of the burial pit).

Cuvinte-cheie: Hortobágy – Árkus, epoca avară târzie (secolele VIII–IX), epoca „cuceririi maghiare” (secolul al X-lea), practici funerare, cultura materială a secolului al X-lea, integrarea structurală

Rezumat: Scopul studiului este acela de a dezbate aspectele teoretice ale problemei discontinuității și continuității între două epoci, care în literatura de specialitate sunt cunoscute sub denumirile de epoca avară târzie și epoca cuceririi maghiare. În acest scop, în lucrarea de față se dorește aplicarea unui model sociologic pentru a înlesni înțelegerea apariției noii structuri de putere la sfârșitul secolului al IX-lea. Mormintele fac parte dintr-un sit funerar care leagă perioada avară târzie și perioada de cucerire maghiară și este un exemplu unic de acest fel în Bazinul Carpatic. Observațiile arheologice, pe baza analogiilor culturii materiale, susțin datarea celor două morminte la sfârșitul secolului al IX-lea și începutul secolului al X-lea, acestea din urmă reprezentând probabil faza formativă a structurii puterii maghiare din Bazinul Carpatic. Orientarea, înmormântarea cailor, caracteristicile gropilor de mormânt și pozițiile topografice ale acestora indică faptul că ambele morminte aparțineau spațiului funerar al epocii avară târzii, dar pe de altă parte, anumite elemente ale culturii materiale reflectă un context cultural diferit, care poate fi asociat cu perioada de cucerire maghiară (secolul al X-lea). Pe baza analizei culturii materiale și a practicilor de înmormântare, presupunem că, prin relațiile interpersonale, indivizii din mormintele studiate deveniseră parte din structuri socio-politice apărute în urma migrației maghiare în Bazinul Carpatic, la sfârșitul secolului al IX-lea. Este important de subliniat faptul că populațiile organizate pe sistem de clanuri și-au putut păstra obiceiurile și, de aceea, în loc de „aculturație”, termen adesea folosit în literatura de specialitate, folosim mai degrabă termenul de „integrare structurală” – după cum sugerează și acest caz particular. „Integrarea structurală” este, de asemenea, un fenomen de „suprapunere”, în urma căruia structurile entității cuceritoare le integrează pe cele ale comunității cucerite (sau ale membrilor săi) într-un mod vertical (de sus în jos). Acest lucru nu influențează imaginea de sine sau structura internă a grupului, ci schimbă doar statutul extern prin schimbarea relației sale cu grupul dominant. Credem că acest model poate fi utilizat și în cazul interpretării mormintelor 49 și 50 de la Hortobágy. Se pare că doar anumite elemente ale înmormântării – în primul rând cele cu o pronunțată semnificație simbolică, care indică starea socială a indivizilor și poziționează indivizii îngropați în cadrul mediului lor social (?) – s-au schimbat (și anume, înmormântarea cailor, cultura materială care indică statutul social, metoda de acoperire a morților și plasarea lor în mormânt), în timp ce alte elemente care nu au jucat niciun rol din acest punct de vedere au rămas neschimbate (orientarea N–S a celor decedați și caracteristicile uzuale ale gropilor).

INTRODUCTION

The site

The aim of this study is to discuss the problem of discontinuity and continuity between two major periods, the Late Avar Period and the Hungarian Conquest Period. Our analysis is based on two graves, dated to the 9th–10th centuries, from the region of Hortobágy in eastern Hungary. The graves are part of a multiperiod site (burial ground), which connects the Late Avar Period and the Conquest Period and it is a unique example of its kind in the Carpathian Basin. Until recently, there have been found very few similar examples¹ and due to the poor quality of the documentation, these sites could rather substantiate arguments concerning the 9th century abandonment of the Carpathian Basin², and – according to 20th century interpretations – the demographic collapse of the local population³.

In contrast to these examples, however, the burial site at Hortobágy was used by a group whose members belonged to the elite or were closely related to the elite. Due to the unique character of the site and the assemblage, the conclusions to be drawn certainly cannot be generalized. The site, however, offers an excellent opportunity for a case study discussing the problem of

social and cultural transitions between the above mentioned periods, and in the broader context of the Carpathian Basin also allows for reflections on the question of how archaeological research is able to illuminate drastic changes at the dawn of a new era, the analysis of which is made altogether difficult by a chronological hiatus⁴.

External factors: the geographical background (Pl. 1)

Since the 18th century, the Hortobágy is known as a wetland region. It is dissected by low natural levees; to the west, it is bordered by the higher levees of the Tisza, and to the east, by the Hajdúhát microregion (stretching north–south). The floodplain of the Tisza River extends far into the central zone of the region. To the northwest of the site, there is an area gently sloping towards the Tisza. It is dissected by north–south oriented paleo channels and both the Avar period and 10th century finds show that this area was suitable for habitation at that time. The marshland of Csécs dominates the immediate surroundings of the site⁵; the salt meadows which developed in the flood-prone areas could have been used for extensive grazing in the historical times too, whereas for crop farming one finds more suitable conditions further northwest, towards the Tisza (Fig. 1).

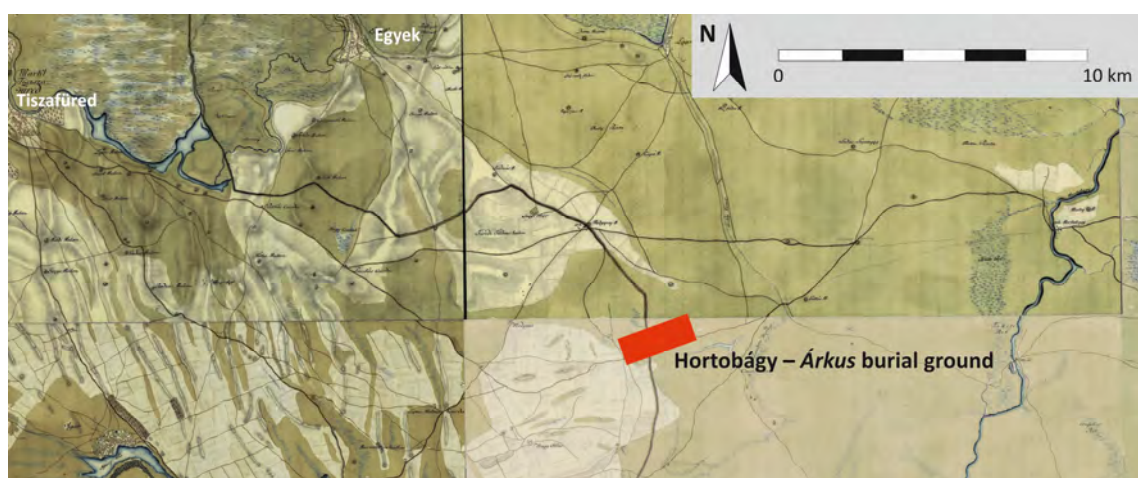


Figure 1. The Hortobágy microregion and the topography of the burial ground.

¹ See below.

² See e.g. Bóna 1984, p. 352. fig. 26 (map). Apart from illustrating the absence of known archaeological sites dating from the 9th century in the Carpathian Basin, the map displays “Slavic” sites in the peripheral zones of the basin.

³ Based on a reference in the 10th century Suidae Lexicon (which became a Russian proverb later on – “they disappeared, like the Avars (Obri)”), and western sources (the Chronicle of Regino, Abbot of Prüm – “*Primo quidem Pannoniorum et Avarorum solitudines per errantes*”, Reginonis Abbatum Prumensis Chronicon A. 889, MGH SS rer. Germ. Hannoveriae 1890, p. 132), 20th century interpretations argued that Pannonia was abandoned in the 9th century (as has been summarized e.g. by Eggers 1995, p. 49–56). This interpretation, however, is rooted in 20th century views concerning the nation-state, the ethnos (mostly treated as a synonym for the modern term “nation” used from the late 18th century in western European and American thought), “people”

and their culture as an undivided entity (see Gellner 1983). According to this way of thought rooting in western national-romanticism, the end of the Avar rule would be equal to a genocide, the dying off of the population in the Carpathian Basin. However, in our opinion, the “disappearance” of the Avars was merely the result of the disintegration of a prestigious elite group, a social entity which embodied the “ethnic” community – as reflected in contemporary sources.

⁴ The collapse of the Late Avar power structure was accomplished in the 820/830’s at the latest; the Hungarians, however, did not appear in this northeastern and eastern regions of the Carpathian Basin before the last third of the 9th century. See e.g. Pohl 2018, p. 376–396; Türk et alii 2015, p. 95–101.

⁵ Concerning the early medieval history of the Hortobágy region, its geographical and hydrographical conditions see Mesterházy 2005; Pinke et alii 2016.

GRAVES 49 AND 50 IN CONTEXT OF THE BURIAL GROUND (Pl. 2)

In the middle section of the burial ground including 51 graves in total, only male individuals buried with horses were found. However, the burial ground, partially destroyed by sand mining, could have consisted of approximately 100 graves in total. The graves were positioned roughly in an east–west oriented row. The earliest ones were dated to the second half of the Middle Avar Period, and they were followed by later graves, stretching in western direction. Our study focuses on the latest (westernmost) graves of the burial ground. In line with traditional interpretations emphasizing the cultural discontinuity during the 8th–10th centuries, the two graves were considered separately from the “Avar” ones, described in the literature as “Conquest Period” graves⁶.

Grave 49 (Pl. 3)

Shape of the burial pit: rectangular.

Orientation: N (348°)–S.

Dimensions: Length = 170 cm; width = ca. 160 cm⁷; depth = 40 cm.

Skeleton of a male individual (*adultus*). Robbed and disturbed grave. Burial with horse. The grave was detected immediately below the eroded surface (topsoil), grown over with grass vegetation. It was perhaps also disturbed by the bulldozer. There were intensive traces of green patina on the bones.

Grave finds:

1/a–d. *Belt mounts*, four pieces, shield shaped, cast from silver, *palmette* decoration with gilded background. In the lower thirds of the straight base parts of the mounts there are pierced oval holes. The space of the motif is framed by pseudo-granules. Each belt mount was fastened with three silver rivets, either cast together with the mount or soldered onto it. Disturbed human skeleton; the bones were found in secondary position (around and above the metatarsal/metacarpal bones of the horse). Length = 2 cm; width = 2.5 cm. (Find no. 1–4: Pl. 3/1–4, pl. 5/1–4, Déri Museum, Debrecen (= further DM), inventory no. 76.1.428–431).

2/a–c. *Belt mounts*, three pieces, heart shaped, cast from silver, gilded background, *palmette* decoration. In the lower thirds of their straight base parts there are pierced oval holes. The motif is framed by pseudo-granules. The motif is transparent on the back side of each mount, since the cast plate is thin. There are three silver rivets on the back side, either cast together with the mount or soldered onto it. The finds were disturbed, found in secondary position among the skeletal remains. Length = 1.8 cm; width = 2.1 cm (Find no. 5–7: Pl. 3/5–7,

pl. 5/5–7, DM, inventory no. 76.1.432–434).

3. Bone handle of a *knife* (?) Front side is convex, back side is flat with a slot for the blade. The heavily oxidised traces of the blade were found scattered among the disturbed human bones. Broken and fragmentary. Length = 9.5 cm; width = 1.6 cm (Find no. 8: Pl. 3/8, DM, inventory no. 76.1.435).

3. *Textile* piece (not inventoried, lost) (Find. no. 9).

5. Fragment of an object made of bark or thin wooden sheet (not inventoried, lost) (Find. no. 10).

Grave 50 (Pl. 4)

Shape of the burial pit: rectangular.

Orientation: N (348°)–S.

Dimensions: Length = 200 cm; width = 190 cm; depth = 40 cm.

Male (*adultus*), heavily disturbed, buried with horse. According to the field notes, the horse skeleton consisted only of the jaw and carpal/tarsal bones, which could be interpreted as a *fractional horse burial*.

Grave finds:

1. Bone, *bow grip*, the two ends and the inner side are indented. Green patina traces on its surface. Length = 15.5 cm, width = 2.6 cm. Found in the middle of the grave, amongst the disturbed bones of the skeleton (Find no. 1: Pl. 4/2, DM, inventory no. 76.1.436).

2. *Loop* made from a broad copper alloy plate, with two open, twisted-back ends. The back plate is heavily fragmented. The front plate is decorated with a four leaved rosette motif – filled with linear veins – framed with a line of round punches between two engraved lines. At the stem of each leaf of the rosette, there is a small circular punch. The leader remains were found next to the loop. Length = 3 cm, width = 2.9 cm, thickness = 0.9 cm. It was found among the displaced skeletal remains (Find no. 2: Pl. 4/2, pl. 5/8, DM, inventory no. 76.1.438).

3. *Leather remains* conserved by copper oxide (Find no. 3, DM, inventory no. 76.1.437)

4a–b. Two greyish-yellowish *flint sherds*. 4a. Length = 2.0 cm; width = 1.7 cm; 4b. Length = 2.5 cm; width = 1.7 cm (Pl. 4/3–4, DM, inventory no. 76.1.439–440).

BURIAL CUSTOMS (Pl. 2)

Since the burials were disturbed, the archaeological observations are of relative little value. The orientations of the two graves perfectly match that of the others – NW–SE, NNW–SSE –, and a uniform structure and arrangement applies to the whole group as well. The shallow depth and rectangular form of the grave pits are characteristic to burials with horses since the Late Avar

⁶ See Mesterházy 2005, p. 387.

⁷ The grave was heavily disturbed, but measurements could be read from the plan of the grave.

Period. However, the lack of burial containers (chamber, coffin) is conspicuous – and it was reliably documented – as it does not match the Avar Period burial customs.

Furthermore, according to the field notes, performed by the archaeologist E. M. Tóth, Grave 50 contained a fractional burial with horse; yet, the paleontologist Sándor Bökönyi noted that the bones belonged to two specimens⁸. The site diary of E. M. Tóth also refers to Grave 49 as a burial with horse; Bökönyi's notes, however, do not refer to horse bones, and the drawing of the grave does not show horse bones either, only human bones (however, one single bone in the central part of the pit could be interpreted as a metatarsus/metacarpus of a horse). Thus, it is not possible to argue that this grave contained a complete horse similarly to the Avar Period graves, but only horse remains⁹, similar to Grave 50. If at all, the missing (or unidentified) horse bones on the drawing could rather support the second option.

As generally known, horse sacrifices were of central significance in the burial rituals of some early medieval societies. This type of ritual distinguished the individual from the generally characteristic level of ritual “energies”, defining and recalibrating the identity of his family (or social group), as well as his legacy in the presence of those who attended the funeral¹⁰. The material value of the horse and the harness, and the cultural significance of the horse burial both indicate the role of these individuals within their social network. From a materialistic point of view, the slaughtered and buried animal can be considered as a grave “accessory”. Considering the reconstructed views of ancient societies, and of the Avar population on the otherworld¹¹, the horses were placed in the graves to accompany the dead¹². This, however, should not be treated separately from the function of the horse burial as the social “insignia” of the person and his family, as coherent manifestations of a cultural tradition.

ANALYSIS OF THE GRAVE FINDS (Pl. 3–5)

Mounted belts were undoubtedly prestige objects, although there is little knowledge concerning the details of their “function”, *i.e.* the role of decorative belts as cultural “markers” in different societies, including those of nomadic cultural traditions¹³.

The belt mounts from Grave 49 are different from the

Late Avar Period examples, regarding both their shapes and decorations. Based on their shapes, two groups could be distinguished: 1. Shield shaped mounts with similarly shaped base parts (four pieces); 2. Heart shaped mounts with similarly shaped base parts (three pieces). The decorative patterns and the techniques used are practically identical in the two groups, which prove that the two variations belong to one and the same set. Some researchers have considered the *palmettes* and the mount shapes as archaic elements¹⁴, others noted the connection to the “Chinese version of *palmette* ornaments”¹⁵. This type of ornament has been referred in the literature as “interconnected *palmettes*” and “floral motif”¹⁶.

Besides the ornament-historical relevance of analogous finds, however, we are primarily interested in the chronological context. According to current interpretations, the parallels of the belt mounts from Grave 49 are known from the first half of the 10th century (Sered, Grave 1/57¹⁷) and the second half of the 10th century (Nógrádsáp, Grave “A”¹⁸) as well. Apparently, this distribution is limited to the northern part of the Carpathian Basin, and more specifically to the area surrounding the Hortobágy. There are also other parallels known from more distant places, but these are unfortunately accidental finds whose exact dating is questionable (Blatné, Budapest – *Farkasrét* and Szerencs – *Kácsatető*¹⁹). All in all, it is important to underline that in the Carpathian Basin similar pieces are known only from the 10th century, and they have no connections to the ornamental or technical traditions of the Avar Period.

However, based on the calibrations, as one can see in Fig. 2, Grave 49 can most probably be dated, between 771 and 950.

Looking at the broader cultural “dimension”, *i.e.* beyond the Carpathian Basin, the picture becomes more complex. The most distant analogy is a similarly decorated heart shaped belt mount, which was found at the excavation of Nishapur, and could be dated to the 9th to 10th centuries²⁰. The closest parallels whose decoration match with the Hortobágy finds down to the smallest details – including both the larger (shield shaped) mounts and the smaller (heart shaped) mounts – are known from a burial site in Lyada (Grave 20), and they could be dated also to the 10th century²¹. Unfortunately, other eastern analogies are all stray finds (Uelgi, Ingushetia, Mostovskoy region, Hazarskaâ Kolleksiâ²²), which could not be dated precisely (Fig. 3-4).

⁸ Hungarian Academy of Sciences, Institute of History, Archaeological Database.

⁹ On the fractional horse burials in the Avar Period, see Kiss 1962, p. 156–158.

¹⁰ See to the social roles of the funeral in early medieval contexts *e.g.* Effros 2003; Halsall 2003.

¹¹ For a summary of evidence, see Csiky 2016, p. 155–158.

¹² Kiss 1962, p. 158; Daim 2003, p. 52–56.

¹³ For the role of the mount decorated belt in general see Daim 2001, p. 144–146.

¹⁴ Bollók 2015, p. 250.

¹⁵ Komar 2018, p. 140–141.

¹⁶ Briefly discussed by Bollók 2015, p. 249–250.

¹⁷ Točík 1968, p. 49, Taf. XLI/1–24.

¹⁸ Fodor 1996, p. 400–401; Horváth 2019, p. 152–158.

¹⁹ Budapest – *Farkasrét*: Dienes 1973, fig. 2/1–28; Komar 2018, p. 100, fig. 2, 4; Blatné: Nevizánszky 1990, obr. 52/1–6, 8–12; Szerencs – *Kácsatető*: Fodor 1996, p. 175, 174, fig. 1.

²⁰ Allan 1982, fig. 25.

²¹ Voronina 2007, ris. 18a, cv. ris. 15, cv. ris. 16; Komar 2018, p. 140, fig. 45/3.

²² Türk 2011, vol. II: fig. 362; Komar 2018, fig. 72/11–12.

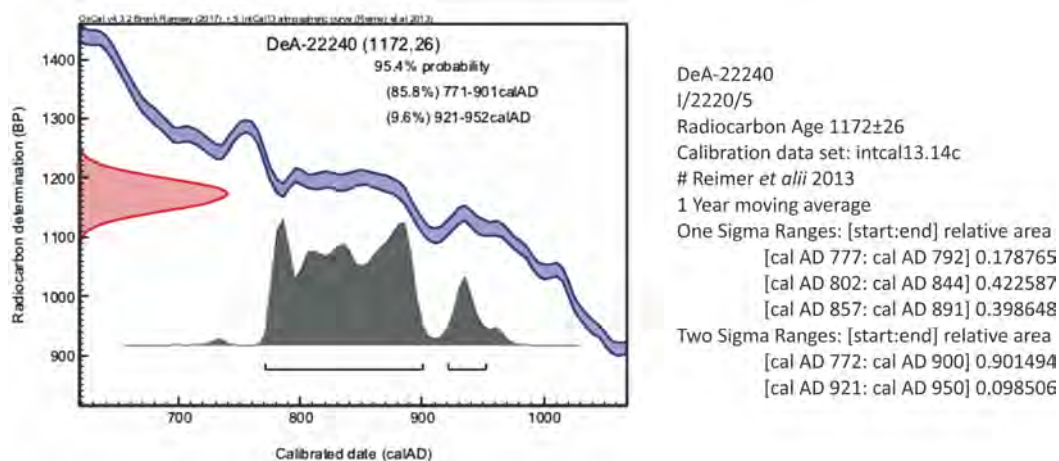


Figure 2. ¹⁴C analyses of samples from Grave 49.



Figure 3. The analogies of the belt mounts of Grave 49 from Hortobágy – Árkus (according to Fodor 1996, p. 174: 1, p. 401: 1; Allan 1982, fig. 25; Komar 2018, p. 100, fig. 2; 4, p. 140, fig. 45/3, fig. 72/11–12; Točík 1968, p. 49, Taf. XLI/1–2).



Figure 4. The geographical distribution of analogies of the belt mounts of Grave 49 from Hortobágy – Árkus (1. Nishapur; 2. Budapest – Farkasrét; 3. Nógrádsáp – Grave "A"; 4. Uelgi; 5. Ingushetia; 6. Mostovskaya region; 7. Lyada – Grave 20; 8. Szerencs – Kácsatető; 9. Sered, Burial ground I, Grave 1/57; 10. Blatné; 11. Hazarskaâ Kolleksiâ (Krasnodar and Kuban region); 12. Hortobágy – Árkus Grave 49).

Furthermore, a possible connection to the older, 9th century material is substantiated by the belt loop from Grave 50 (it is on the eastern side of Grave 49), which – from a typological point of view – connects more closely to the material culture widely used also during the latest phase of the Late Avar Period. On the other hand, its ornaments bear the characteristics of the 9th and 10th century, which occurred also in the Hungarian cultural context.

The earliest analogue of the circular punched line, closing the chiselled line on one side of the ornamental decoration (*i.e.* the palmette), is known from the latest grave (Grave 51) of the Late Avar burial ground at Pitvaros – *Víztározó*²³. However, as the end date of the absolute chronology of the Avar period is debatable²⁴, a close dating based on a single parallel find would be rather speculative. The second half of the 9th century should be considered, as analogies of the belt loop from Grave 50 at the Hortobágy site are known from the sites of the Saltovo horizon²⁵.

In summary, the archaeological observations concerning parallel finds support the dating of the two graves to the end of the 9th century and the beginning of the 10th century. In the light of the high level of similarity, their occurrence must have been the imprint of direct

contacts between the steppe and the Carpathian Basin. Most likely, these contacts were due to the intensification of E–W communication following the Hungarian conquest. Theoretically, however, one could also feasibly argue for the intensification of contacts within the post-Avar communities in the late 9th century prior to the Hungarian conquest. All these points imply the obvious: the “Avar” population at Hortobágy survived the fall of the Khaganate and remained at the Hortobágy site until the Hungarian Conquest – although at that time the Avars could not be considered anymore as a political “ethnos”²⁶.

In any case, the existence of these two funeral assemblages implies three prerequisite conditions:

- a) As the two graves were integral parts of the Avar burial site, the Avar group must have survived the Hungarian conquest as a “post-Avar” community;
- b) Following the conquest, they must have built a relationship with the members of the formative elite of the Árpád Period, establishing (from their own point of view maybe rather stabilising) their status within the new socio-political structure;
- c) Finally, this new relationship did not force them to abandon their old group identity (as such a move would have

²³ Bende 1998, Fig. 4/4; Bende 2017, p. 79–81, Fig. 27/1.

²⁴ Concerning this theoretical issue see footnote 3; see also Szenthe 2020, p. 56–57.

²⁵ Komar 2018, p. 192; Türk 2011, p. 150, Fig. 352.

²⁶ Pohl 2018, p. 17–20, 44–47.

resulted in the dissolution of the “post-Avar” community). Apparently, in the time of rapid social changes in the aftermath of the Hungarian conquest, the three criteria could be considered as simultaneous only for a short time.

Thus, this particular case suggests that the material evidence should rather be read as signalling a process of “structural integration”, instead of the often interchangeably used term “acculturation”. However, this could be also a first step towards the “acculturation” of post-Avar communities in the Carpathian Basin.

In what follows, we are going to address the problem of structural integration more closely.

**GRAVES 49 AND 50 AT THE HORTOBÁGY BURIAL SITE;
THE PROBLEMS OF THE MICRO-ENVIRONMENT AND OF
THE MIGRATION PERIOD BURIAL HORIZON; THE
“STRUCTURAL INTEGRATION” OF THE POST-AVAR
POPULATION (Fig. 5–6)**

Regarding what socio-historical conditions the above observed archaeological phenomena reflect, we are of the opinion that it is more appropriate to describe the present stage of the process by the concept of “structural integration” rather than “acculturation”²⁷. The two are obviously not identical. “Structural integration” connects more closely to the political sphere²⁸. Its purpose is not assimilation (of individuals or groups) *per se*, but it is rather the organizing principle of mutual political/social relations of communities. In our view, integration is bound to adaptation as well as to the capacity to do so. It modifies the cultural character of the respective entity(s) and from this point of view, “structural integration” goes hand in hand with “acculturation”, which is ultimately the fulfilment of the process of integration, which may release and reshape community identities, and lead ultimately to the formation of the political “ethnos”²⁹. Structural integration is also an “overlap” phenomenon, during which the structural hierarchies of the conquering entity integrates that of the conquered community (or of its individual members) in a vertical way (from top to bottom).

Primarily, this does not affect the self-image or internal structure of the group, but changes only the external status, by changing its relation to the dominant group.

We believe that this model can be useful for interpreting the case of Graves 49 and 50 at Hortobágy. It seems that only certain elements of the burial representation – primarily those with a strong symbolic meaning, indicating the social status of the individuals, positioning the buried individuals within their social network – had changed (namely, the horse burial, the grave accessories, the covering the dead, and placing them in the grave), while other elements which did not play any role from this point of view remained unchanged (the features of the burial pit). Thus far, we explored the typological and artistic connections of the finds from the two graves, demonstrating the simple fact that analogue pieces from 10th century horse-burials are known in the Carpathian Basin. Nonetheless, it is just as much significant to observe that belt mounts with similar shapes and decorations are completely missing from the burial grounds of the earlier period (the 8th–9th centuries, *i.e.* the Late Avar or Post Avar period).

Although coffins were generally in use in the Avar period, they were not found in these graves. Grave 49 was possibly a burial with horse and Grave 50 definitely contained a fractional horse burial, which indicates that the burial customs were not fully identical to what is typical to the Late Avar graves either.

On the other hand, some of the documented features of these two disturbed burials do connect to the late Avar Period. Apparently, the orientation, which is almost N–S, and the shape of the pits³⁰.

Summing up, the orientation, the horse burial, the characteristics of the grave-pits, and their topographical positions indicate that the two graves belonged to the Late Avar burial site; on the other hand, certain material finds reflect most probably a different cultural context associated with Conquest Period assemblages.

The socio-psychological process of structural integration can be outlined as follows:

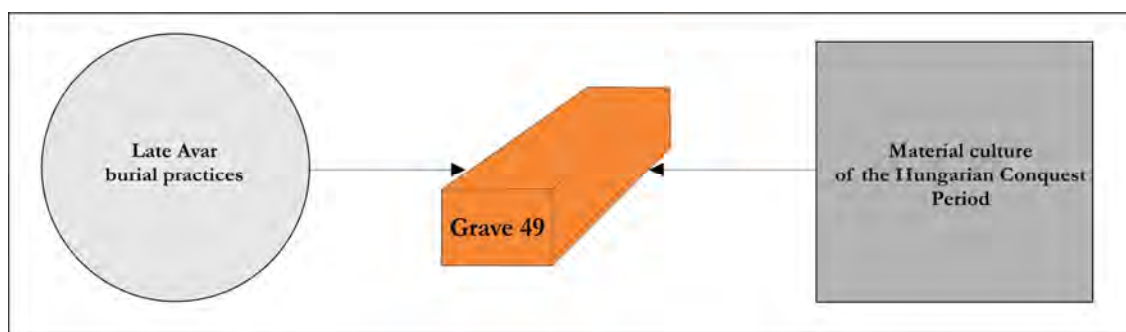


Figure 5. Connections between material culture and burial customs in case of Grave 49.

²⁷ For a summative discussion: Dennis 2009. Critically assessed by Murphy 1964, p. 845–854.

²⁸ Gergely *et alii* 2010, p. 182.

²⁹ Pohl 2018, p. 17–20, 44–47.

³⁰ The typical Conquest Period burials were fractional horse burials, and W–E oriented (Fodor 1996, p. 39).

The two graves at Hortobágy – *Árkus* may represent the formative phase of the Hungarian power structure, when elements of the new identity (exclusively connected to the new structure and bearing the potential to create new communities and reshape former social groups) had not fully developed.

The process leading to the emergence of an integrated elite most probably unfolded quickly – at least from an archaeological perspective –, and it could have been accelerated by the circumstance that after the collapse of the Avar Khaganate hardly any well organised social entity remained in the conquered territory for more than half a century.

Exemplifying the mixing of Avar Period and Conquest Period “structures”, the Hortobágy site is almost the only one of its kind, known so far, since “structural integration” as a cultural phenomenon – expressed in the cultural landscape – remains mostly invisible from an archaeological perspective. There is but one identical case known from Szarvas – *Kákapusztá*, where two or three Hungarian Conquest Period “settlers” were reported by the archaeologist within an Avar group³¹. The similarities between the two examples are striking: Grave 16 fits into the pattern of the other, “Avar” burials, as shown by the shape and orientation of the burial pit, but the grave accessories (metal finds) are characteristic of the 10th century, and there is also a fractional horse burial in the grave. As for the other graves, their orientation is different, complying with the pattern typical in the Conquest Period. Instead of referring to Hungarian “settlers”, it seems more reasonable to think again of the structural integration of a post-Avar community during the Conquest Period; however, in the light of the material finds, they were of lower status than the Hortobágy group. This case similarly brings up the issue whether social (and economic) statuses inherited in the Avar period could be transferred. This seems to be the case here, underlining the feasibility of the arguments on structural integration. The “inner” structures of integrated groups – in as much as this did not pose any risk for the dominant group – could remain basically unchanged.

The relationship or ratio of the mixed cultural features/elements – either inherited or newly acquired by the integrated group –, clearly show the integration of this group to the Hungarian power structure, which was of higher prestige. Certain objects (belt mounts) appear as dress accessories, which were of high representative value, and together with the horse burial they display a

high “energy level” as a progressive representative element, (re)positioning the status of the dead, as well as of the group, within the new power structure. In contrast to this, other features representing the traditions labelled as “Avar” (the shape and orientation of the grave, and its topographical position) can be interpreted as elements of local cultural continuity and community life, and as constituents of deep cultural structures – through the enactment of those (low-ranking) individuals who were entrusted with the task of performing the burial, *i.e.* making the burial-pits.

At last, after the burial of the dead in Graves 49 and 50, the abandonment of the burial site was the sign of the acculturation followed by the structural integration acculturation: the Avar community ceased to “exist” and was dissolved in the newly formed, heterogenous³², eastern type power structure, the “steppe state”³³.

Perhaps this process explains the broader picture, namely, when looking at the microregion as whole, we see the distribution of Late Avar burial sites, but there is only one (so far unpublished) 10th century site known from *Bajnok-halom*³⁴. Due to the difficulties in dating the archaeology of this site more precisely within the 10th century, connections between Hortobágy – *Árkus* and the *Bajnok-halom* site could not be evidenced. About 15 km to the south from our site, there was a single grave found at Nádudvar – *Mihályhalom* and there is a fragment of a burial site known at Nagyhegyes – *Elep-Mikelapos*, which can be dated to the second half of the 10th century on the basis of the available evidence³⁵. There are several other sites known in the microregion of the Hortobágy (practically within the boundaries of the Hortobágy National Park)³⁶, however, it was either impossible to date them more precisely (*i.e.* within the 10th century), or they could be dated only to the second half of the 10th century, and not earlier (*Töröklaponyag*, *Karcag* – *Tilalmas Állami Gazdaság*, *Kunmadaras* – *Határhalom*)³⁷. The finds from *Tiszafüred* – *Majoros* could not be dated precisely either³⁸; on the other hand, the completely excavated burial site at *Tiszafüred* – *Nagykenderföldek* could be dated to the period starting from the middle of the 10th century. According to the laconic archaeological report, it had been already abandoned around 970/980³⁹. Thus, in the immediate vicinity of our site – which was used in the late Avar Period and during the whole 9th century, and has a rich archaeological record compared to any other sites in the whole Carpathian Basin – there are no other burial sites dated to the early phase of the Conquest Period (*i.e.*

³¹ Szalontai 1987–1989.

³² On the genetical heterogeneity of the burials at Karos – *Eperjesszög*, burial ground II, see Neparáczki *et alii* 2019.

³³ Pohl 2003, p. 271–272.

³⁴ *Gazdapusztai* 1965, p. 229; a stirrup, a snuffle, arrowheads, a knife, a buckle, quiver parts, bronze buttons, and horse limb bones were recovered from the grave of an armed man. Zoltai 1910, p. 32; Mesterházy 2005, p. 389.

³⁵ Csallány 1959, p. 308–309, Abb. 16/1–2; Kovács 1989, p. 47–48, no. LXXII.

³⁶ *Tiszacsege* – *Rákóczi út*: Kralovánszky 1962–1964, p. 42; Egyek: Fodor 1996, p. 218, 217, fig. 4.

³⁷ Mesterházy 1966–1967, p. 131–178; Fehér *et alii* 1962, p. 45, no. 528; p. 50, no. 603.

³⁸ Fodor 1996, p. 290.

³⁹ Fodor 1996, p. 290, p. 453, plan 11.

the first two thirds of the 10th century). As of now, one may conclude with some reservations – considering that this is based on the current state of research – that the two graves and the belt mounts are the only features in this narrow geographical area that can be dated to the last decades of the 9th century and the beginning of the 10th century.

As for the broader region, and the surroundings of the Hortobágy, the pattern of Avar Period settlement show an entirely different picture. Along the levees of the Tisza and in the Hajdúhát region, there are large burial sites connected to “village” type settlements, while in the low-lying area of the Hortobágy, there are smaller and more modest burial groups – these often date back to the very end of the Avar Period. According to the excavating archaeologist, Éva Garam, the Avar burial site at Tiszafüred – *Majoroshalom* could have been used until relatively late, i.e. the late 9th century⁴⁰.

How should we interpret this phenomenon? Based on the current state of research, we suggest that what we “see” in the microregion of the Hortobágy is the result of the above discussed historical process, namely, “structural integration” and the reshaping of power structures. As a *negative consequence*, the Conquest Period burial sites remain completely absent in the microregion. This also means that in this particular geographical area, one should not really look for a marked change in the demographic conditions at the end of the 9th century / beginning of the 10th century.

Nonetheless, when looking at the broader geographical area around the microregion of the Hortobágy and its Conquest Period archaeology, the picture becomes more differentiated. To the southeast, one finds a fine example of the so called “*sabretache plate - circle*”⁴¹, namely, the sabretache plate of Báránd⁴². In the surroundings of Báránd, beyond the eastern perimeter of the Hortobágy, there is the completely excavated burial site at Püspökladány – *Hízó föld*, the starting date of which could be set around 960/970⁴³. As for the burial with horse at Hajdúszoboszló – *Bercsényi street 49* and the sites in the Hajdúszoboszló – *Downtown area* and Kaba⁴⁴, it is not possible to give a precise dating (within the 10th century), and only the Hajdúszoboszló – *Árkoshalom* burials could

be dated to the second half of the 10th century⁴⁵. The Hajdúszovát – *Hegyeshatárrhalom* site can be only hypothetically dated to the 10th century⁴⁶.

Finds from the region of Derecske, however, further nuances the picture. Not long ago, in 2016, in the outskirts of Derecske, in the area of the *Nagymező-dűlő*, a burial site consisting of three graves was excavated⁴⁷. Among them, Feature 643 and its radiocarbon dating is of interest now. According to the calibration curve plateau – spanning the 9th century – there is 93.5% probability that the individual in this grave was buried the latest by 895. On the other hand, the possibility of a later date (925–940 AD) should be considered too, based on the two-sigma value. This means, that we are dealing here either with a 9th century grave⁴⁸ (however, this would contradict the results of the typo-chronological assessment), or perhaps a *first generation* Conquest Period grave⁴⁹, when accepting the possibility of the 925–940 date and that the individual could have died in 925⁵⁰. In any case, it is a significant fact that this burial group is situated only 25 km away from our site, and it has the earliest date among the known sites in the neighbourhood, which is very close to the dating of Grave 49 at Hortobágy – Árkus.

Other burial sites in Derecske and its surroundings could be dated to the second third of the 10th century (the single grave of a woman in Derecske – *Földesi street*⁵¹), and to the second half of the 10th century (Derecske – *the farmstead of dr Balogh János*⁵² and Konyár – *Vénkert*⁵³). Among the Conquest Period sites situated to the north from this area, the archaic type golden belt mount found in Debrecen is of primary importance⁵⁴. There were also other graves found in different places in Debrecen (*Szabolcs street*, *Szepes*, and *Vincellér street*⁵⁵) which were dated to the 10th century. To the northeast of the Hortobágy region, in the outskirts of Hajdúböszörmény, two graves were found which could be dated to the first third of the 10th century (Hajdúböszörmény – *Vidipusztá*, *Erdős-tanya*, male burial⁵⁶; another grave was found in 1902⁵⁷). There are other burial sites there too in Hajdúböszörmény – *Bodaszőlő*, Büdöskút, and in the neighbouring area, but they are much later (Hajdúdorog – *Gyulás*, – *Temetőhegy* and – *Vágóthegy*⁵⁸).

⁴⁰ Garam 1995, p. 420.

⁴¹ Gáll, M. Lezsák 2018.

⁴² M.- Nepper 2002, vol I: p. 453, fig. 253, vol. II: pl. 365–366.

⁴³ AH 1996, p. 245; M.- Nepper 2002, vol. I: p. 220; Bodri 2018, p. 294–296, Map 10.

⁴⁴ M.- Nepper 2002, vol. I: p. 122, vol. II: pl. 113.; Fehér *et alli* 1962, p. 39, no. 374; Hampel 1905, vol. II: p. 537–538.

⁴⁵ M.- Nepper 2002, vol. I: p. 58–121, vol. II: pl. 25–112.

⁴⁶ Fehér *et alli* 1962, p. 39: no. 376.

⁴⁷ Berta *et alli* 2018, p. 11–17.

⁴⁸ Radiocarbon dates from two other graves at this site could perhaps help in deciding this question.

⁴⁹ On the concept of the “first generation” and its sociodemographic and archaeological interpretation see: Gáll 2013, vol. I: p. 804–805.

⁵⁰ Unfortunately, the age of the female individual was not specified in the report.

⁵¹ Csallány 1959, p. 293, Abb. 11/1, Abb. 13/1.

⁵² M.- Nepper 2002, vol. I: p. 42–43, vol II, pl. 11/1–3.

⁵³ Mesterházy 1974, p. 224.

⁵⁴ Fodor 1996, p. 218, p. 217, fig. 2 (with further literature).

⁵⁵ Kralovánszky 1962–1964, p. 37; Mesterházy 1974, p. 223, note 91, p. 224.

⁵⁶ Kovács 1983.

⁵⁷ Hampel 1902, p. 437–439.

⁵⁸ Fodor 1996, p. 226–232.

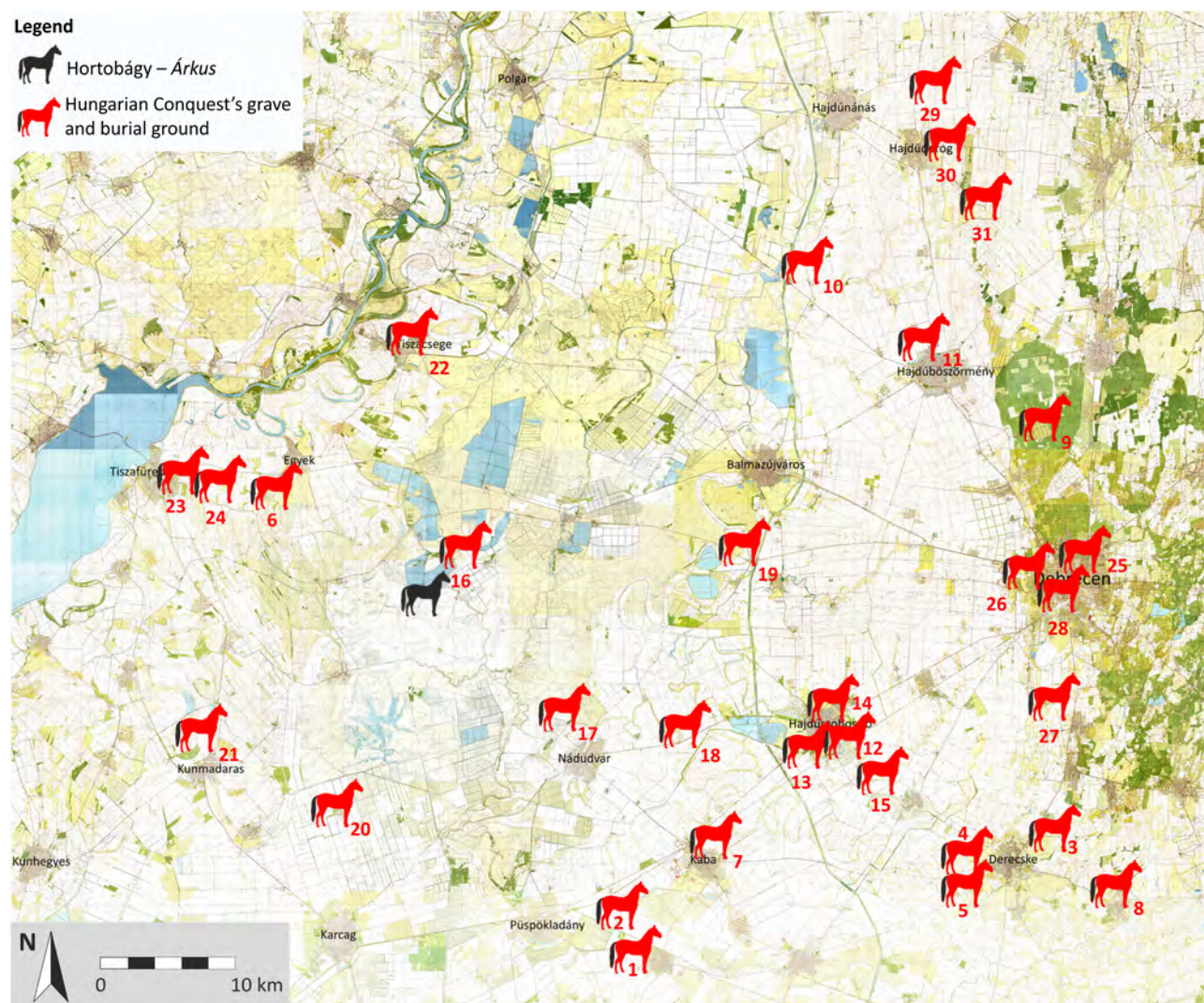


Figure 6. Map of Conquest Period burial sites and scattered finds around the Hortobágy region (see List 1 at the end of the main text).

CONCLUSIONS

1. There is no evidence of a significant demographic change/internal migration at the beginning of the 10th century in the immediate vicinity of Hortobágy. Within a few dozen kilometres radius from our site, however, there are some relevant signs. In our opinion, the sites at Hajdúböszörmény – *Vidipusztá*, *Erdős-tanya*, Hajdúböszörmény – 1902, and those in the area of Debrecen, and perhaps the graves at Derecske – *Nagymező-dűlő* can be dated to the early 10th century.

2. These burials – dating from the first and second thirds of the 10th century – could already represent new population groups coming from the east, but one cannot

exclude the possibility of the above described structural integration of local groups, the acculturation of the Post-Avar population⁵⁹. From a social historical perspective, this can be explained by the mobile lifestyle of communities inhabiting the flatlands of the central parts of the Carpathian Basin. One may conclude that the mid-range nomadism of these communities⁶⁰ and their reduced numbers may explain the rare occurrence of their necropolises and the small number of graves.

Apart from being just a false impression based on the current state of research, the singularity of the “Hortobágy-model” might be due to several conditions. It is possible that this group (of Avar elite warriors) was “in the right place at a right time”, very close to the

⁵⁹ The burial site at Alba Iulia – *Stația de Salvare* is also an example of this in the archaeological context of the Transylvanian Basin (Gáll 2010, fig. 18; Gáll 2013, vol. I: p. 189, fig. 50).

⁶⁰ The problem of assessing kinship ties between individuals buried at different sites and in different regions constitute a novel field of research and poses interesting methodological challenges for future research, which can be understood only through studying the social

networks of communities in the 9th–10th centuries. To this purpose, archaeogenetic methods are instrumental! The results of comparative archaeogenetic analyses stunningly proved that the mother of a child, who was buried in Grave 236 at Szeged – *Óthalom*, *V. homokbánya*, was interred 140 kilometres from there, at Harta – *Freifelt* (see Csősz, Mende 2015, p. 374).

geographical area, which could be defined – on the basis of historical and archaeological evidence – as the core region⁶¹ of the Hungarian power structure in the north-eastern part of the Carpathian Basin. Due to their acculturation following their structural integration, they developed a new identity, typical for the new elites of the 10th century, and so the Hortobágy-community “ceased to exist”. In all probability, the descendants of the very last members of the group – if there were any – could be buried somewhere nearby, in one of the burial sites used by the 10th century elite.

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REFERENCES

- Gergely et alii 2010 – A. Gergely, R. Papp, A. Szász, G. Hajdú, A. Varga A. (eds.), *Antropológiai – etnológiai – kultúratudományi kislexikon*, Budapest, 2010.
- Fodor 1996 – I. Fodor (ed.), *The Ancient Hungarians*, Budapest, 1996.
- Allan 1982 – J. W. Allan, *Nishapur: Metalwork of the Early Islamic Period*, New York, 1982.
- Bende 1998 – L. Bende, *A pitvarosi késő avar kori temető 51. sírja (Adatok a késő avar kori lószerszámok díszítéséhez.)*, MFM-SA 4, 1998, p. 195–230.
- Bende 2017 – L. Bende, *Temetkezési szokások a Körös-Tisza-Maros közén az avar kor második felében*, SAP 8, Budapest, 2017.
- Berta et alii 2018 – N. Berta, F. Harangi, K. E. Nagy, A. Türk, *Újabb adatok a 10. századi textilek kutatásához. Honfoglalás kori temető Derecske–Nagymező-dűlő lelőhelyről*, MR 2018, ősz / autumn, p. 10–17.
- Dennis 2009 – K. M. Dennis, *Acculturation*, in: G. Ritzer (ed.), *The Blackwell Encyclopaedia of Sociology*, Malden – Oxford – Victoria, 2009, p. 14–16.
- Bodri 2018 – M. Bodri, *Belső időrend vizsgálata Püspökladány–Eperjesvölgy 10–11. századi temetőjében*, in: T. K. Hága, B. Kolozsi (eds.), *Sötét Idők Tülei. A kontinuitás fogalma, kutatásának módszerei az 5–11. századi Kárpát-medence régészetében. 2014-ben Debrecenben megrendezett konferencia kiadványa*, Tempora Obscura 4, Debrecen, 2018, p. 291–303.
- Bóna 1984 – I. Bóna, *A népvándorlás kor és a korai középkor története Magyarországon*, in: A. Bartha, Gy. Székely (eds.), *Magyarország története I. Előzmények és magyar történet 1242-ig*, Budapest, 1984, p. 265–374.
- Bollók 2015 – Á. Bollók, *Ornamentika A 10. századi Kárpát-Medencében: forma történeti tanulmányok a magyar honfoglaláskori díszítőművészethez*, Budapest, 2015.
- Csallány 1959 – D. Csallány, *Ungarische Zierscheiben aus dem X. Jahrhundert*, ActaArchHung 10, 1959, p. 281–325.
- Csikó 2016 – G. Csikó, *A sztyeppei nomádok hitvilága*, in: T. Vida, E. Tóth, I. Takács (eds.), *Szent Márton és Pannónia. Kereszténység a római világ határán. Időszaki kiállítás vezetője. Pannonhalma, Apátsági Múzeum, 2016. június 3. – szeptember 30.; Szombathely, Iseum Savariense, 2016. június 3. – november 30.*, Pannonhalma, 2016, p. 152–160.
- Csós, Mende 2015 – A. Csós, B. Mende, *Archeogenetikai vizsgálatok Szeged-Kiskun dorozsma-Hosszúhát és Szeged-Öthalom lelőhelyek 10. századi népességén*, in: A. Türk, G. Lőrinczy, A. Marcsik, *Régészeti és természettudományi adatok a Maros-torkolat nyugati oldalának 10. századi történetéhez*, SAP 4, Budapest, 2015, p. 371–376.
- Daim 2001 – F. Daim, *Byzantine Belts and Avar Birds. Diplomacy, Trade and Cultural Transfer in the Eight Century*, in: W. Pohl, I. Wood, H. Reimitz (eds.), *The Transformations of Frontiers. From Late Antiquity to the Carolingians*, TRW 10, Leiden – Boston – Köln, 2001, p. 143–188.
- Daim 2003 – F. Daim, *Vom Umgang mit toten Awaren. Bestattungsgebräuche im historischen Kontext*, in: J. Jarnut, M. Wemhof (eds.), *Erinnerungskultur im Bestattungsritual*, Archäologisch-historisches Forum, München, 2003, p. 41–60.
- Dienes 1973 – I. Dienes, *Honfoglaláskori veretes tarsoly Budapest-Farkasrétről*, FolArch 24, 1973, p. 177–217.
- Effros 2003 – B. Effros, *Merovingian Mortuary Archaeology and the Making of the Early Middle Ages*, Berkeley – Los Angeles – London, 2003.
- Eggers 1995 – M. Eggers, *Das „Grossmährische Reich“. Realität oder Fiktion?*, Monographien zur Geschichte des Mittelalters 40, Stuttgart, 1995.
- Fehér et alii 1962 – G. Fehér, K. Éry, A. Kralovánszky, *A Közép-Dunamedence magyar honfoglalás- és kora Árpád-kori sírletei*, RT 2, Budapest, 1962.
- Garam 1995 – É. Garam, *Das awarenzeitliche Gräberfeld von Tiszafüred*, CAPH 3, Budapest, 1995.
- Gazdapusztai 1965 – Gy. Gazdapusztai, *5. Balmazújváros, Hortobágy – Árkus (Kom. Hajdú-Bihar) (VIII)*, in: *Archäologische Forschungen Im Jahre 1964*, ArchÉrt 92, 1965, p. 229–249.
- Gáll 2010 – E. Gáll, *Burial Customs and the Question of 10th Century Population in the Transylvania*, AAC 45, 2010, p. 271–314.
- Gáll 2013 – E. Gáll, *Az Erdélyi-medence, a Partium és a Bánság 10–11. századi temetői*, vol. I–II, MHÁ 6, Szeged, 2013.
- Gáll, M. Lezsák 2018 – E. Gáll, G. M. Lezsák, *A view from the West to the East. An analysis of the characteristics, chronology, and distribution of the sabretache plates in the 10th century*, ZAM 46, 2018, p. 85–111.
- Gellner 1983 – E. Gellner, *Nations and Nationalism*, Oxford, 1983.
- Halsall 2003 – G. Halsall, *Burial Writings: Graves, Texts and Time in Early Merovingian Northern Gaul*, in: J. Jarnut, M. Wemhof (eds.), *Erinnerungskultur im Bestattungsritual*, Archäologisch-historisches Forum, München, 2003, p. 61–74.
- Hampel 1902 – J. Hampel, *A nemzeti múzeumi régiségtár gyarapodása 1902-ben*, ArchÉrt 22, 1902, p. 419–448.
- Hampel 1905 – J. Hampel, *Altertümer des frühen Mittelalters in Ungarn*, vol. I–III, Braunschweig, 1905.
- Horváth 2019 – C. Horváth, *Nógrád megye honfoglalás és kora Árpád-kori temetői és sírletei*, MHÁ 11, Budapest – Szeged, 2019.
- Kiss 1962 – A. Kiss, *Az avar kori lovastemetkezés szokásának vizsgálata*, JPMÉ 1962, p. 153–162.
- Komar 2018 – O. Komar, *A korai magyarság vándorlásának történeti és régészeti emlékei*, SAP 11/MÖTK 5, Budapest, 2018.
- Kovács 1983 – L. Kovács, *A Hajdúböszörmény – Erdős tanyai honfoglaló sírlelet (Adatok az avar- és a honfoglalás kori szaluk elterjedéséhez)*, HMÉ 5, 1983, p. 19–53.
- Kovács 1989 – L. Kovács, *Münzen aus der ungarischen Landnahmezeit*, FAH 19, Budapest, 1989.
- Kralovánszky 1962–1964 – A. Kralovánszky, *Hajdú-Bihar megyei régészeti kutatások 1944–1961*, DMÉ 1962–1964, p. 31–45.
- Mesterházy 1966–1967 – K. Mesterházy, *Adatok a honfoglaláskori magyar köznépi család szerkezetéhez. A matrilineáris nagycsalád*, DMÉ 1966–1967 (1968), p. 131–178.
- Mesterházy 1974 – K. Mesterházy, *Régészeti adatok Hajdú-Bihar megye területe IX–XIII. századi településtörténetéhez I*, DMÉ 1974 (1975), p. 211–266.
- Mesterházy 2005 – K. Mesterházy, *The Hortobágy in the Hungarian Conquest Period*, in: I. Juhász, E. Gál, P. Sümegi (eds.), *Environmental Archaeology in North-Eastern Hungary*, VAH 19, Budapest, 2005, p. 387–393.

⁶¹ In this respect, see Fodor 1996, p. 71–123; Révész 1996, p. 193–206, fig. 123.

- MGH SS rer. Germ. Hannoveriae 1890 – Reginonis Abbatis Prumiensis Chronicon A. 889, Monumenta Germaniae Historica Scriptores rerum Germanicarum. Red. Fridericus Kurze. Hannoveriae, 1890.
- Murphy 1964 – R. F. Murphy, *Social change and acculturation*, TNYSc 26, 1964, p. 845–854.
- Neparáczi et alii 2019 – E. Neparáczi, Z. Maróti, T. Kalmár, K. Maár, I. Nagy, D. Latinovics, D. – Gy. Pálfi, E. Molnár, A. Marcsik, Cs. Balogh, Sz. S. Gál, P. Tomka, B. Kovacsóczy, L. Kovács, I. Raskó, T. Török, *Y-chromosome haplogroups from Hun, Avar and conquering Hungarian period nomadic people of the Carpathian Basin*, Nature Scientific Reports 9, (16569) 2019 (<https://www.nature.com/articles/s41598-019-53105-5>).
- M.- Nepper 2002 – I. M.- Nepper, *Hajdú-Bihar megye 10–11. századi sírleletei*, MHÁ 3, Budapest – Debrecen, 2002.
- Nevizánszky 1990 – G. Nevizánszky, *Hrobové nálezy z 10. storočia v Blatnom*, AVANS 1988, p. 119–120.
- Pinke et alii 2016 – Zs. Pinke, L. Ferenczi, Gy. Gábris, B. Nagy, *Settlement patterns as indicators of water level rising – Case study on the wetlands of the Great Hungarian Plain*, Quaternary International 2016, 1, p. 1–12.
- Pohl 2003 – W. Pohl, *A Non-Roman Empire in Central Europe: the Avars*, in: H-W. Goetz, J. Jarnut, W. Pohl (eds.), *Regna and Gentes. The Relationship between Late Antique and Early Medieval Peoples and Kingdoms in the Transformation of the Roman World*, Leiden – Boston 2003, p. 571–596.
- Pohl 2018 – W. Pohl, *The Avars. A Steppe Empire in Central Europe*, 567–822, Ithaca – London, 2018.
- Révész 1996 – L. Révész, *A karosi honfoglaláskori temetők. Régészeti adatok a Felső-Tisza vidék X. századi történetéhez*, MHÁ 1, Miskolc, 1996.
- Sőregi 1936 – J. Sőregi, *Jelentés a Déri Múzeum 1936. évi működéséről és állapotáról*, DMÉ 32, 1936, p. 1–89.
- Szalontai 1987–1989 – Cs. Szalontai, *Megjegyzések az Alföld IX. századi történetéhez II. (Szarvas-Kákapusztai késő avar temetője)*, JAMÉ 30–32, 1987–1989 (1992), p. 303–342.
- Szenthe 2020 – G. Szenthe, *Növényi ornamentika a késő avar kori díszítőművészetben (Kr. u. 8. század – 9. század eleje)* Kultúrtörténeti tanulmányok, Budapest, 2020.
- Točik 1968 – A. Točik, *Altmagyarische Gräberfelder in der Südwestslowakei*, ASC 3, Bratislava, 1968.
- Türk 2011 – A. Türk, *A korai Magyar történelem és a szaltovói régészeti kultúrkör*, vol. I–II, PhD Dissertation, Szeged, 2011.
- Türk et alii 2015 – A. Türk, G. Lőrinczy, A. Marcsik, *Régészeti és természettudományi adatok a Maros-torkolat nyugati oldalának 10. századi történetéhez*, SAP 4, Budapest, 2015.
- Voronina 2007 – R. F. Voronina, *Ljadinskie drevnosti. Iz istorii mordvymokši konec IX- načalo XI veka*, Moskva, 2007.
- Zoltai 1910 – L. Zoltai, *I. Ásatások a Hortobágyon. (Ős-, honfoglalás- és Árpád-kori leletek.)*, in: *Jelentések Múzeumunk 1909. évi ásatásairól*, in: L. Zoltai, *Jelentés Debreczen sz. kir. város múzeuma 1909. évi állapotáról*, Debrecen, 1910, p. 32–46.

LIST 1

The funerary sites in the region of Hortobágy from the 10th century (the numbering corresponds to Fig. 6):

1. Báránd – M.- Nepper 2002, vol. I: p. 453, fig. 253, vol. II: pl. 365–366.
2. Püspökladány – *Eperjesvölgy*: M.- Nepper 2002, vol. I: p. 128–295, vol. II: pl. 126–222.
3. Derecske – *the farmstead of dr. Balogh János*: M.- Nepper 2002, vol. I: p. 42–43, vol. II: pl. 11/1–3.
4. Derecske – *Földesi street*: Csallány 1959, p. 293, Abb. 11/1, Abb. 13/1.
5. Derecske – *Nagymező-dűlő*: Berta et alii 2018, p. 11–17.
6. Egyek – *surrounding of Félhalom*: Fodor 1996, p. 218, p. 217: Fig. 4.
7. Kaba: Hampel 1905, vol. II: p. 537–538.
8. Konyár – *Vénkert*: Sőregi 1936, p. 72.
9. Hajdúböszörmény – *Bodaszőlő, Búdöskút*: M.- Nepper 2002, vol. I: p. 47–56, vol. II: pl. 13–24.
10. Hajdúböszörmény – *Vidi pusztá, Erdős-tanya*: Kovács 1983.
11. Hajdúböszörmény – 1902: Hampel 1902, p. 437–439.
12. Hajdúszoboszló – *Bercsényi street 49*: M.- Nepper 2002, vol. I: p. 122, vol. II: pl. 113.
13. Hajdúszoboszló – *Árkoshalom*: M.- Nepper 2002, vol. I: 58–121, vol. II: pl. 25–112.
14. Hajdúszoboszló – *város belterülete*: Fehér et alii 1962, p. 39: no. 374.
15. Hajdúszóvát – *Hegyeshatárhalom*: Fehér et alii 1962, p. 39: no. 376.
16. Hortobágy – *Bajnokhalom*: Zoltai 1910, p. 132; *Gazdapusztai* 1965, p. 229.
17. Nádudvar – *Mihályhalom*: Csallány 1959, p. 308.
18. Nádudvar – *Töröklaponyag*: Mesterházy 1966–1967.
19. Nagyhegyes – *Elep-Mikelapos*: Csallány 1959, p. 309, Abb. 16/1–2.
20. Karcag – *Tilalmas*: Fehér et alii 1962, p. 45: no. 528.
21. Kunmadaras – *Határhalom*: Fehér et alii 1962, p. 50: no. 603.
22. Tiszacséze – *Rákóczi street*: Kralovánszky 1962–1964, p. 42.
23. Tiszafüred – *Nagykenderföldek*: Fodor 1996, p. 290, 453: plan 11.
24. Tiszafüred – *Majoros*: Fodor 1996, p. 290.
25. Surrounding of Debrecen: Fodor 1996, 218, p. 217: 2.
26. Debrecen – *Szabolcs street*: Sőregi 1936, p. 72.
27. Debrecen – *Szepes*: Kralovánszky 1962–1964, p. 37.
28. Debrecen – *Vincellér street*: Mesterházy 1974, p. 223, note 91.
29. Hajdúdorog – *Temetőhegy*: Fodor 1996, p. 226–229.
30. Hajdúdorog – *Vágóthegy*: Fodor 1996, p. 226.
31. Hajdúdorog – *Gyulás*: Fodor 1996, p. 229–232.

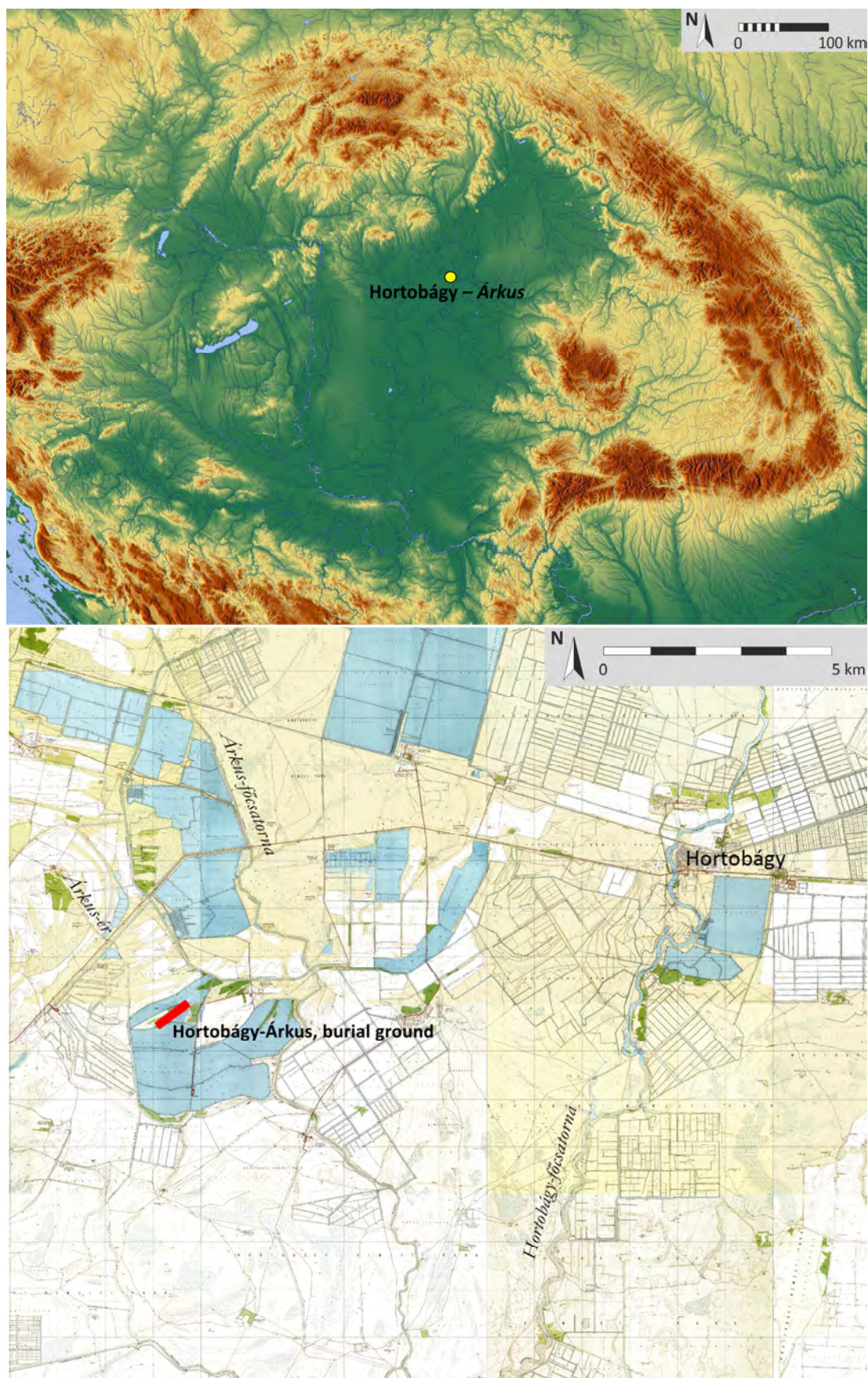


Plate 1. The geographical situation of Hortobágy – Árkus in the Carpathian Basin and the micro-topographic position of the Early Medieval burial ground.

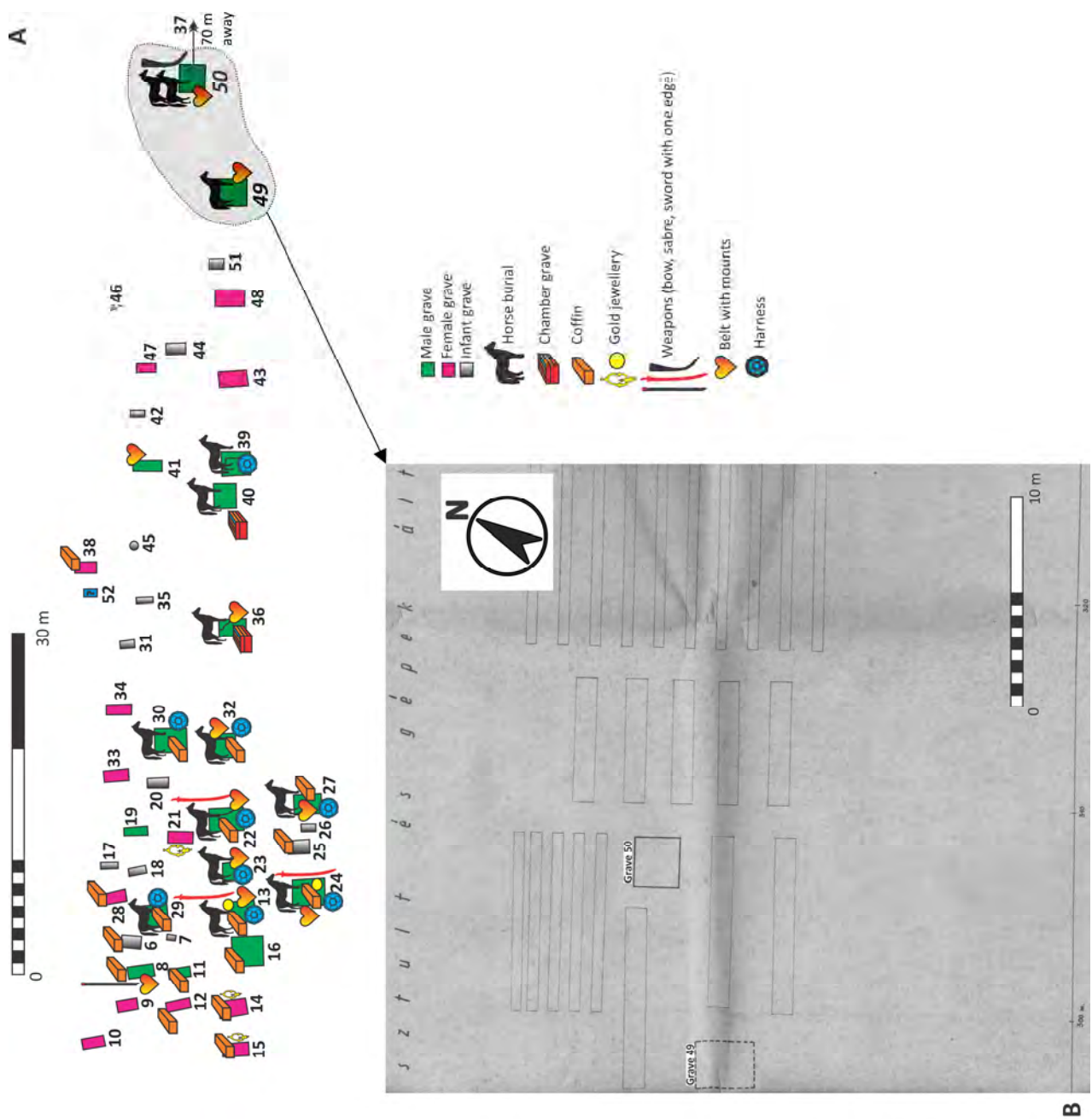


Plate 2. The comprehensive map of the burial ground at Hortobágy – Árkus and the position of the graves 49 and 50.

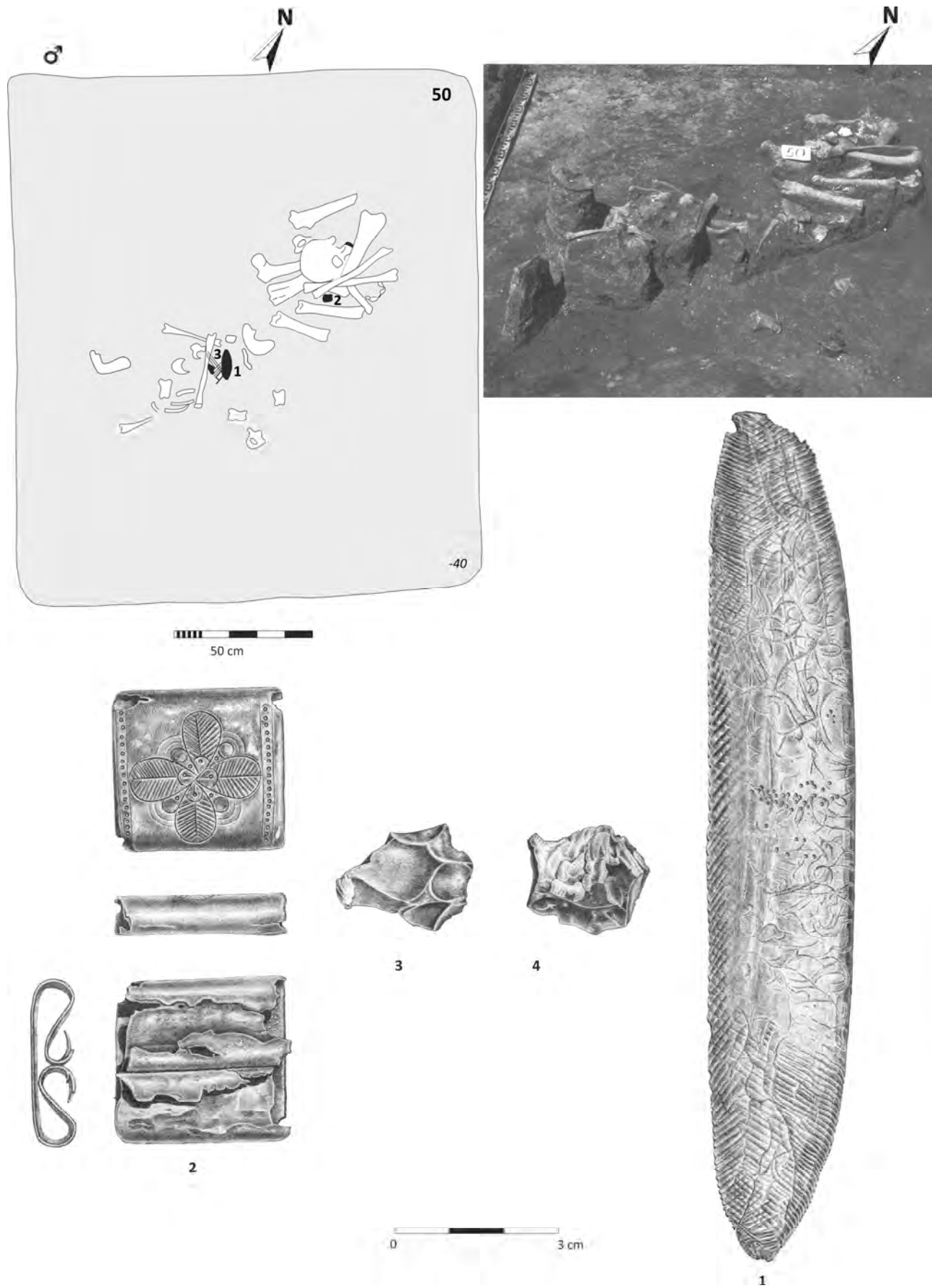


Plate 4. Grave 50: 1–4.



Plate 5. Grave 49: 1–7; Grave 50: 8.