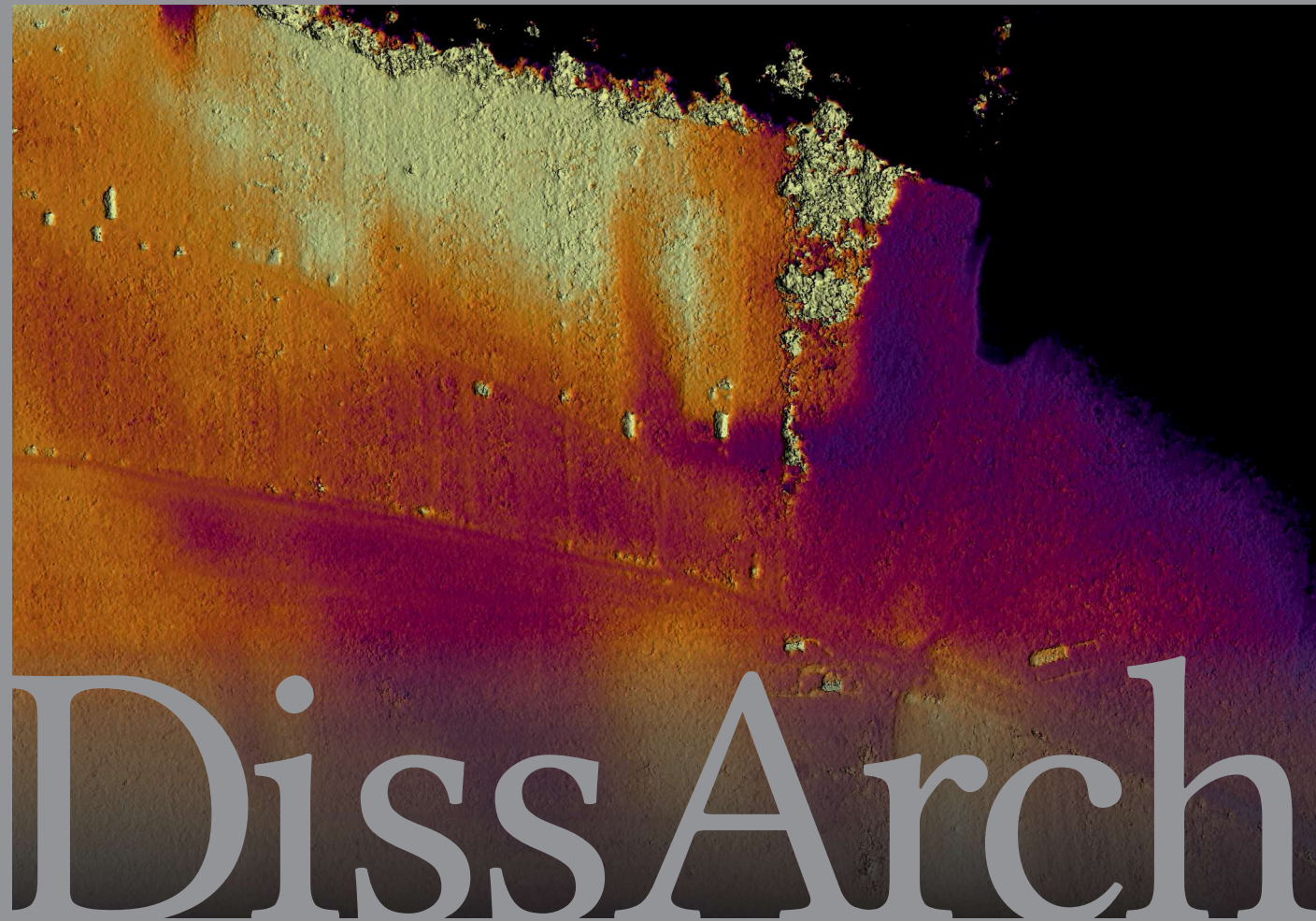


DISSERTATIONES ARCHAEOLOGICAE

ex Instituto Archaeologico

Universitatis de Rolando Eötvös nominatae



DissArch

Ser. 3. No. 11. | 2023

Dissertationes Archaeologicae
ex Instituto Archaeologico
Universitatis de Rolando Eötvös nominatae

Ser. 3. No. 11.

Editor-in-chief

Dávid BARTUS

Editorial board

László BARTOSIEWICZ (Stockholm University, Stockholm, Sweden)

Ondřej CHVOJKA (University of South Bohemia, České Budějovice, Czech Republic)

Zoltán CZAJLIK (Eötvös Loránd University, Budapest, Hungary)

Miroslava DAŇOVÁ (University of Trnava, Trnava, Slovakia)

Mario GAVRANOVIĆ (Austrian Archaeological Institute AAS, Vienna, Austria)

Hajnalka HEROLD (University of Exeter, Exeter, United Kingdom)

Tomáš KÖNIG (Comenius University, Bratislava, Slovakia)

Tina MILAVEC (University of Ljubljana, Ljubljana, Slovenia)

Gábor V. SZABÓ (Eötvös Loránd University, Budapest, Hungary)

Tivadar VIDA (Eötvös Loránd University, Budapest, Hungary)

Technical editor

Gábor VÁCZI

Proofreading

Katalin SEBŐK,

Emilia GRANDI, Zsuzsanna REED, Robin P. SYMONDS

Cover picture

Bence SIMON

Aviable online at <http://ojs.elte.hu/dissarch>

Contact: dissarch@btk.elte.hu

Support: vaczi.gabor@btk.elte.hu

ISSN 2064-4574 (online)

Publisher

László BORHY

© ELTE Eötvös Loránd University, Institute of Archaeological Sciences

© Authors

Budapest 2024



PKP
PUBLIC
KNOWLEDGE
PROJECT



DOAJ

ERIH PLUS
EUROPEAN REFERENCE INDEX FOR THE
HUMANITIES AND SOCIAL SCIENCES



CONTENTS

ARTICLES

- Attila PÉNTEK – Norbert FARAGÓ 5
Obsidian-tipped spears from the Admiralty Islands
in the Oceania Collection of the Museum of Ethnography in Budapest
-
- Máté MERVEL 33
New archaeobotanical finds from the Baradla Cave
-
- László GUCSI 47
Black or white, possibility or necessity? Virtual restoration of encrusted pottery
for the better interpretation of their design
-
- JÓZSEF PUSKÁS – Sándor-József SZTÁNCSUJ – Lóránt DARVAS – Dan BUZEA –
Judith KOSZA-BERECZKI 77
Chronology of the Bronze Age in southeast Transylvania
-
- János Gábor TARBAY 179
A looted ‘hoard’ from ‘Szabolcs-Szatmár-Bereg County’
-
- Szilvia JOHÁCZI – Bence PÁRKÁNYI 203
Same but different: A new possible scheme on late archaic black-figure vases
-
- Károly TANKÓ – András KOVÁCS 215
Celtic plough and land use based on agricultural tool finds from the *oppidum* of Velem-Szent Vid
-
- Csilla SÁRÓ 233
A brooch with a name stamp from Győr-Ménfőcsanak-Széles-földek (Pannonia, Hungary)
-
- Kata DÉVAI 255
Roman head-shaped glass vessels from Hungary
-
- Nikolaus G. O. BOROFFKA – Leonid M. SVERCHKOV 265
Kakhramontepa in Southern Uzbekistan: A 4th–6th-century AD monument in context
-
- Pavel SOKOLOV – Bence GULYÁS 283
Recently discovered early medieval grave from Serbin

Bence GULYÁS – Eszter PÁSZTOR – Kristóf FEHÉR – Csilla LIBOR – Tamás SZENICZEY – László Előd ARADI – Réka FÜLÖP – Kyra LYUBLJANOVICS	293
<hr/>	
Tisza-kürt-Zsilke-tanya: An interdisciplinary analysis of an Early Avar Period cemetery	
Gergely SZENTHE – Norbert FARAGÓ – Erwin GÁLL	443
<hr/>	
Chronological problems of the 7th–10th-century AD Carpathian Basin in light of radiocarbon data	
Bence GÓRA	493
<hr/>	
Household pottery of an urban noble house and craftsmen in Visegrád: Late medieval pottery finds from 5 Rév Street	

FIELD REPORTS

Gábor V. SZABÓ – Péter MOGYORÓS – Péter BÍRÓ – András KOVÁCS – Károly TANKÓ – Farkas Márton TÓTH – Dániel URBÁN – Marcell BARCSI	603
<hr/>	
Investigations of an Early Iron Age Siege 2: Preliminary report on the archaeological research carried out at Dédestapolcsány-Verebce-bérc and Dédestapolcsány-Várerdő between September 2022 and the end of 2023	
Dávid BARTUS – Melinda SZABÓ – Lajos JUHÁSZ – Ákos MÜLLER – Rita Helga OLASZ – Bence SIMON – László BORHY – Emese SZÁMADÓ	625
<hr/>	
Short report on the excavations of the Legionary Bath of Brigetio in 2023	
Bence SIMON – László BORHY – Dávid BARTUS – Rita Helga OLASZ – Melinda SZABÓ – Ákos MÜLLER – Mátyás PENG – Zoltán CZAJLIK – Dániel HÜMPFNER – Zsombor KLEMBALA	641
<hr/>	
The fort of <i>Ad Mures</i> (Ács, Komárom-Esztergom County, Hungary): New investigations on the northern section of the <i>ripa Pannonica</i>	
Bence SIMON – Szilvia JOHÁCZI – Ákos MÜLLER – László RUPNIK	655
<hr/>	
Excavation of a Roman settlement in the northwestern hinterland of Aquincum (Óbuda, Hungary) at Pilisszentiván	

THESIS REVIEW ARTICLES

Eszter MELIS	667
<hr/>	
Northwest Transdanubia from the end of the Early Bronze Age until the Koszider Period: Reworked and extended PhD thesis abstract	
Bence GULYÁS	701
<hr/>	
Cultural connections between the Eastern European steppe region and the Carpathian Basin in the 5th–7th centuries AD: The origin of the Early Avar Period population of the Trans-Tisza region	

Investigations of an Early Iron Age Siege 2

Preliminary report on the archaeological research carried out at Dédestapolcsány-Verebce-bérc and Dédestapolcsány-Várerdő between September 2022 and the end of 2023

Gábor V. SZABÓ 

Institute of Archaeological Sciences, ELTE Eötvös Loránd University, Budapest, Hungary
vasagab@gmail.com

Péter MOGYORÓS 

Budapest History Museum, Budapest, Hungary;
Institute of Archaeological Sciences, ELTE Eötvös Loránd University, Budapest, Hungary
mogyipeti5@gmail.com

Péter BÍRÓ 

National Archaeological Institute, Hungarian National Museum, Budapest, Hungary
biro72@gmail.com

András KOVÁCS 

Institute of Archaeological Sciences, ELTE Eötvös Loránd University, Budapest, Hungary
kovacsandras2069@gmail.com

Károly TANKÓ 

HUN-REN – ELTE Research Group for Interdisciplinary Archaeology, Budapest, Hungary
csishtar@gmail.com

Farkas Márton TÓTH 

Budapest History Museum, Budapest, Hungary
toth.farkas@btm.hu

Dániel URBÁN 

National Archaeological Institute, Hungarian National Museum, Budapest, Hungary
urbdaniell@gmail.com

Marcell BARCSI 

Budapest History Museum, Budapest, Hungary;
Institute of Archaeological Sciences, ELTE Eötvös Loránd University, Budapest, Hungary
bmarcell602@gmail.com

Received 18 March 2024 | Accepted 22 March 2024 | Published 26 March 2024

Abstract: A research team of the Institute of Archaeological Sciences of the Eötvös Loránd University continued the fieldwork between 1 September 2022 and 31 December 2023 on two Early and Middle Iron Age sites, Dédestapolcsány-Verebce-bérc and Dédestapolcsány-Várerdő, in the frame of a project investigating Early Iron Age crises. New excavation trenches were opened at the fortified settlement in the north of the Bükk Mountains (Northern Hungary).

One was an extension of a trench opened in 2022, where remains of a burnt house had been identified. Metal detector surveys recovered some new fascinating stray metal finds (e.g., an *akinakes*, battle axes, and the bronze protective sheath of a sword) and new assemblages (iron tool deposits and a hoard of gold jewellery and amber beads). Eleven more graves were excavated in the cemetery (Várerőd) north of the coeval settlement. The most interesting grave was the burial of an adult man with rich grave goods such as an ironworking toolkit, pottery, and other items.

Keywords: Early Iron Age, fortified settlement, Hallstatt Culture, Vekerzug Culture, Scythian influence, early ferrous metallurgy, industrial centre

Introduction

The archaeological investigation¹ of Dédestapolcsány-Verebce-bérc, an Early and Middle² Iron Age hillfort, was resumed in 2020 as a part of a research project led by Gábor V. Szabó, investigating crises at the end of the Late Bronze Age and the beginning of the Early Iron Age. The site, situated in Northeast-Hungary, is exceptionally rich in findings. A complex contact network can be outlined based on the find material retrieved thus far, including pins with analogies in the Northwest Balkans,³ brooches that are common on Hallstatt Culture sites,⁴ and bridle ornaments and strap dividers of a type appearing in the Kuban and the North Pontic Region.⁵ Previous research has revealed that intense ferrous metalworking was carried out on the one-time settlement, as proven by the large number of discovered iron objects, the small assemblages comprising pieces of iron raw material, and a deposit of 98 iron ingots weighing approximately 150 kg in total.⁶

- 1 The research was supported by Grant No. 138768 by the National Research, Development and Innovation Office.
- 2 Hungarian scholars tend to use the term 'Middle Iron Age' more often lately (perhaps [KEMENCZEI 1985](#) and [KEMENCZEI 1986](#) used it first), while others refer to the period between 700 BC and 400 BC as 'Early Iron Age'. The term 'Middle Iron Age' has been used by some Hungarian researchers to distinguish between the periods of two supposed archaeological cultures (the Mezőcsát Culture and the Vekerzug Culture—the latter previously also called Alföld Group) in Northeast Hungary and the Great Hungarian Plain in 900–400 BC. Thus, Hungarian researchers refer to the period of the Mezőcsát Culture or pre-Scythian Period as Early Iron Age, whereas to the Vekerzug Culture (700–400 BC) as Middle Iron Age (see a summary in [KEMENCZEI 2001](#), 9–24, 189–190). In contrast, in the chronological framework of the Hallstatt Culture of Central Europe, also covering Transdanubia, the period between 850/700 and 450/400 BC is referred to as Early Iron Age or Hallstatt Period, divided into an Early, a Middle, and a Late phase (see, e.g., [NEBELSICK 1997](#), 68–83). Comparing the two systems, one can see they are more or less equitable. Thus, the pre-Scythian Period, i.e., the Early Iron Age in Eastern Hungary, is more or less coeval with the early or older phase of the Hallstatt Culture, i.e. the Early Iron Age in Central Europe. The Scythian Period, i.e., the Middle Iron Age in Eastern Hungary, is thus more or less coeval with the middle and late phases of the Hallstatt Culture, i.e., the Middle Iron Age in international archaeological literature (see the chronological comparison chart in [ĐURKOVIČ et al. 2018](#), 89. 3.I. kép). We suggest that in the future, Hungarian research will use the term 'Early Iron Age' and divide it into an early, a middle, and a late period only concerning Central Europe. Even if using the traditional chronological system in Eastern Hungary is not incorrect, it can lead to misinterpretations in international research.
- 3 [MAJNARIĆ-PANDŽIĆ 2002](#); [V. SZABÓ et al. 2022](#), Fig. 3.7.
- 4 [V. SZABÓ 2022](#), 10. kép b.5; [V. SZABÓ et al. 2022](#), Fig. 3.8–9; [KOZUBOVÁ 2022](#), 137, Abb. 11.
- 5 [GALANINA 1997](#), Taf. 16.169,173,179,195,289, Taf. 21.166–173,179–180,188–189,191,195, Taf. 22.87–88,233–238,270–271,275,279–282, Taf. 23.291–292, Taf. 24.378–379, Taf. 25.332–334,339,347,381–382; [REINHOLD 2007](#), Abb. 30.RfkC; [MAKHORTYKH 2017](#), Ris. 9–10; [V. SZABÓ et al. 2022](#), Fig. 6.
- 6 [V. SZABÓ et al. 2022](#), 296, Fig. 4, Fig. 18.

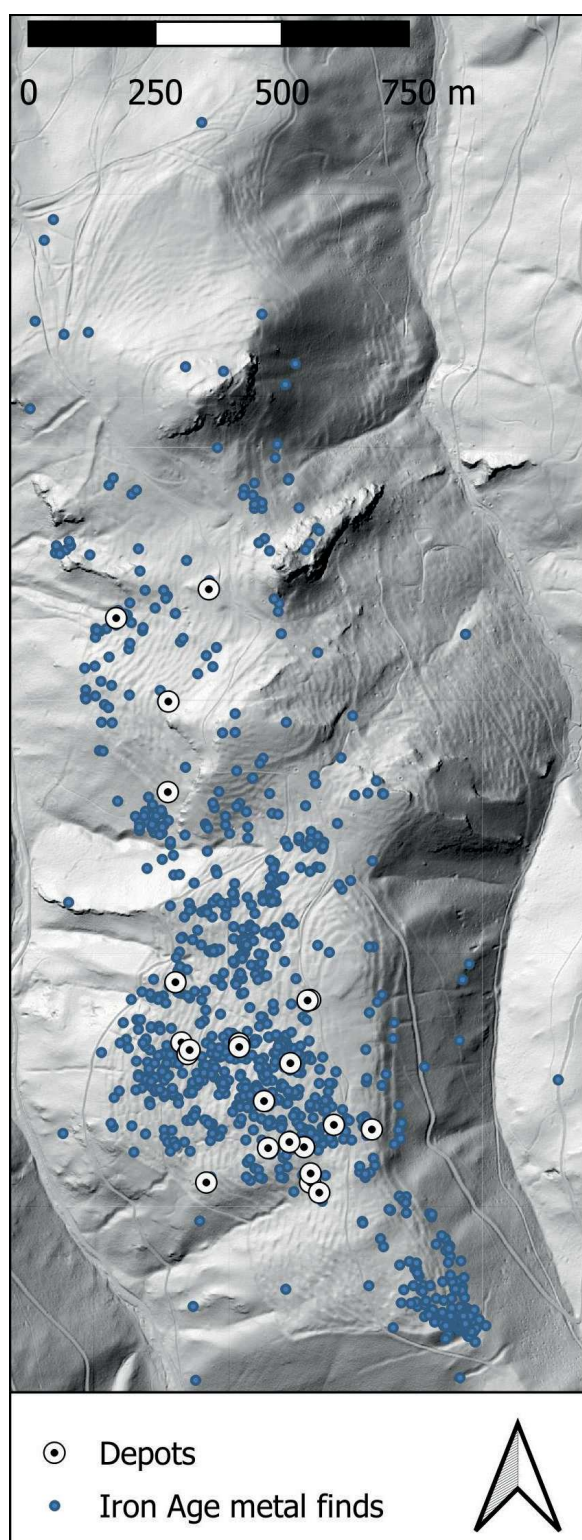


Fig. 1. Distribution of stray metal finds and depots on Dédestapolcsány-Verebce-bérc

Its wealth was probably one of the reasons why the settlement was attacked⁷ in the Ha D1 Period, most likely at its beginning. The event is indicated in the record of the site by more than 600 pieces of early Scythian-type arrowheads found within the settlement and in the southern rampart.⁸ The primary aim of this research was to improve our understanding of the siege and its consequences. Several metal detector surveys were carried out between 2020 and 2022, yielding many metal objects of diverse types. The test trenches of the 2022 campaign were marked out based on the scatter of the metal finds, i.e., the areas where metal and melted bronze objects concentrated were chosen for excavation.⁹ Two of the trenches (1 and 5) covered the remains of buildings: in Trench 1, we found charred wood and burnt debris, which can be interpreted as a destroyed building, and in Trench 5 the stone foundation of another building. The burnt building could have been set on fire during the siege.¹⁰

Research continued after the 2022 excavation campaign. Several metal detector surveys were carried out, and new excavation trenches were opened in the summer of 2023. We aimed to recover the whole burnt building by expanding Trench 1 on the one hand and to find remains of other destroyed buildings that can be linked to the siege on the other. Therefore, three terraces were investigated where closed find assemblages had been discovered during previous surveys (Figs 1–2).

We also focused on investigating the Early and Middle Iron Age cemetery of the settlement at Verebce-bérc (Fig. 2). Our primary questions were: How long has the cemetery been in use? Can any effects of the siege on the use of the cemetery be observed, and if yes, how? Can any burials be dated to after the attack? We also tried to outline the boundaries of the cemetery and, therefore,

7 On the attacks marked by early Scythian arrowheads, see V. SZABÓ 2022; V. SZABÓ – BAKOS 2022.

8 V. SZABÓ et al. 2014.

9 For a preliminary report about the investigations in 2020–2022, see V. SZABÓ et al. 2022.

10 V. SZABÓ et al. 2022, 291, 293, Figs 11–12.

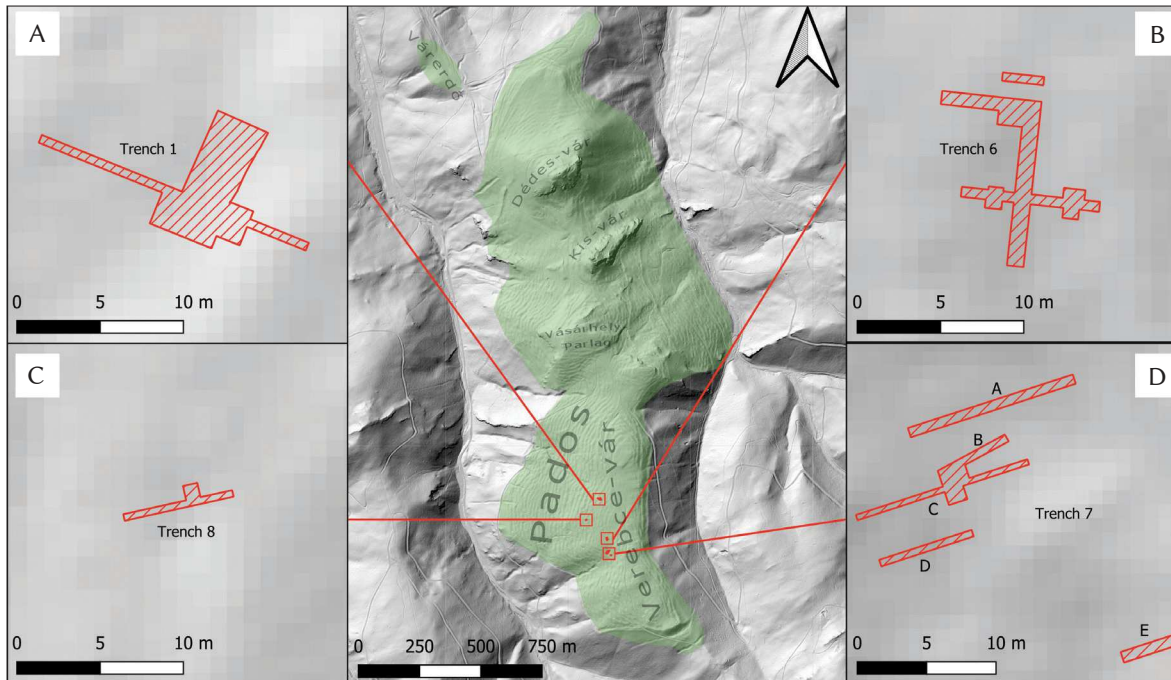


Fig. 2. The location of the trenches of the 2022 and 2023 excavations

focused the metal detector activity on the perimeter of the burial ground as defined by the graves excavated in previous campaigns.¹¹

The cemetery was discovered in 2008 by a metal detector survey team led by Gábor V. Szabó.¹² Four graves were excavated that year and were then evaluated by Farkas Márton Tóth.¹³ Another eleven graves were excavated by a team led by Zoltán Czajlik (ELTE Eötvös Loránd University) in 2011.¹⁴ Although previous publications mention the cemetery as Dédestapolcsány-Verebce-bérc or Dédestapolcsány-Verebce-tető,¹⁵ we decided to distinguish it from the settlement in our research project and, therefore, it will be referred to in the following as Dédestapolcsány-Várerdő.

The topographical setting of the site¹⁶

The Early Iron Age hillfort of Dédestapolcsány-Verebce-bérc is situated on a north-south ridge between the valleys of the Bán Stream and the Baróc Stream. The western and eastern slopes of the ridge were transformed into a system of terraces in prehistoric times.

The southern end and the western side of the settlement were fortified by a structure of ramparts and ditches. Similarly to 2022, this year's investigations focused on the ca. 40-hectare terrace system on the western slope called 'Pados' of Verebce-Vár (Fig. 2). The Dédestapolcsány-Várerdő site, the cemetery mentioned above, coeval with the Dédestapolcsány-Verebce-bérc settlement, is situated along the northern road starting from the settlement. Its dimensions have yet to be determined (Fig. 2).

11 TÓTH 2012; CZAJLIK et al. 2014; TÓTH 2017.

12 V. SZABÓ 2009, 181–182.

13 TÓTH 2012.

14 The analysis of the graves recovered during the 2011 excavation campaign has yet to be completed. CZAJLIK et al. 2014, 2–5; TÓTH 2017, 426–427.

15 V. SZABÓ 2009, 181–182; TÓTH 2012; CZAJLIK et al. 2014, 2–5; TÓTH 2017, 426–427.

16 For a detailed geographical topography of the site complex, see NOVÁKI 1988; CZAJLIK et al. 2014, 1–2; V. SZABÓ et al. 2022, 280, Fig. 1.

Results of the metal detector surveys of the autumn of 2022 and 2023

Stray finds

Our image of the fortified settlement has fundamentally changed since 2020 due to the metal detector surveys coordinated by the team of the Institute of Archaeological Sciences of the Eötvös Loránd University. It has become clear that there are no traces of any significant Late Bronze Age occupation on the site other than a few objects and a sickle deposit from the beginning of the Late Bronze Age. The Late Iron Age Celtic occupation is represented by somewhat more objects (bronze and iron brooches, armring fragments, etc.), but they are still far outnumbered by Early Iron Age findings.¹⁷

The composition of the Early Iron Age find material is similar to what we observed in the previous years. Iron ingots, curved-back iron knives and iron socketed axes were the most common finds, while other types were fewer, such as axes with pointy protrusions on both sides (*Ärmchenbeile*), iron bits, and bronze jewellery similar to the ones published in the previous report: bronze loops with side-rings, bow brooches, Donja Dolina-type bimetallc pins (Fig. 3), axe pendants, and fragments of bracelets, multi-threaded rings, or headdresses, etc.¹⁸ Outstanding pieces of jewellery are a solid, crescent-shaped bronze bracelet decorated with impressions and a double spiral bracelet with a seal-like, flat-cut ending (Fig. 4.2–3). A small golden ring with double conical ends was also discovered on the steep eastern slope of the citadel-like plateau of Verebce-bérc (Fig. 5.B).

Several animal-head-shaped bronze strap dividers were found in the previous years, providing clear evidence of the site's eastern



Fig. 3. Selection of bronze findings discovered during the metal detector surveys in 2022 and 2023. 1–3 – ribbed bronze pin with iron core (Donja Dolina-type), 4 – ribbed bow brooch



Fig. 4. Selection of bronze findings discovered during the metal detector surveys in 2022 and 2023. 1 – Side fragment of a riveted bronze vessel, 2–4 – bronze bracelets

17 V. SZABÓ et al. 2022, 285–290.

18 V. SZABÓ et al. 2022, Fig. 3.5–7, Fig. 4.

connections. One such object was also found this year: a bird-of-prey-head-shaped strap divider, which has good analogies in Early Scythian find assemblages east of the Carpathians (Fig. 5.A).¹⁹

2023 was the first year to see the discovery of items of weaponry other than arrowheads.²⁰ The most outstanding weapon we found is an iron Posmuş-type *akinakes* with longitudinal grooves on its hilt (Fig. 6.6). It represents an early variant of the type, most specimens of which have been recovered from Transylvania.²¹ The only specimen known from today's Hungary was found in Tiszabercel (Northeast Hungary).²²



Fig. 5. A – bird-head-shaped bronze strap divider, B – small golden ring jewellery item

A bronze protective sheath was found some 100 metres away from the *akinakes*. Its body bears arrow-shaped perforations, and the upper and central parts are decorated with 4-4 horizontal incised lines (Fig. 6.7). Close, but not identical, analogies are known from the eastern part of the Carpathian Basin,²³ Shvaykovtsy (Western Podolia),²⁴ and Smolenice-Molpír.²⁵

Three single-bit battle axes were found at the same, southwestern, part of the settlement. This type is a characteristic element of the weapon set of Eastern European warrior communities. The shaft hole of all three battle axes is in the middle. The largest one, preserved in exceptionally good condition, has a square (Fig. 6.2), the smallest a rectangular (Fig. 6.3), while the third one an oval cross-section and a disc butt (Fig. 6.1). Similar battle axes are known from the Carpathian Basin, mainly from the cemeteries of the Vekerzug Culture, but the type is also common on sites of the Ferigile Culture in the Lower Danube Region (Romania), as well as in the Eastern European steppe and the forest-steppe.²⁶

Two intact iron spearheads were recovered from the terraces in the western part of the settlement. The blade of one has a diamond-shaped cross-section, being the widest at the lower third (Fig. 6.5). The blade of the other is flat, with a central ridge, and it is the widest at the bottom; it has another rib on its socket (Fig. 6.4). The second spearhead was found *in situ*, but no further objects or archaeological features were discovered around it. These specimens fit well into the spear types of Central Europe and the Balkans.²⁷

19 V. SZABÓ et al. 2022, 290, Note 31.

20 The socketed axes and *Ärmchenbeile* recovered on the site can be interpreted as either tools or weapons (WESSE 1990, 86–92, Abb. 22; PARZINGER et al. 1995, 68; STUDENÍKOVÁ 2000, 76).

21 VULPE 1990, 23–30, Taf. 1.2–6, Taf. 2.7–8, Taf. 3, Taf. 36.B; TOPAL 2015, 35–39, Fig. 2; KOZUBOVÁ – SKAKOV 2015.

22 KEMENCZEI 1984, Abb. 3.3.

23 ROSKA 1942, 205–206, 246. kép 7; PÁRDU CZ 1965, Taf. 22.4; NÉMETI 1982, Abb. 16.6; MARINESCU 1984, Abb. 5.9; KEMENCZEI 2009, 38–39.

24 BANDRIVSKIY 2013, Ris. 5.

25 DUŠEK – DUŠEK 1995, Taf. 1.14.

26 E.g., MELJUKOVA 1964, Tab. 21.8–22; PÁRDU CZ 1965, 180–184; VULPE 1967, 196, Pl. 27.6(110); EGG 1979; PATAY – KISS 2002, 104–105, Fig. 15; KEMENCZEI 2009, 39–43; KOZUBOVÁ 2010; SHELEKHAN 2012, 5–6, Ris. 1.2–3; KOZUBOVÁ 2021, 87, 91, etc.

27 E.g., STÖLLNER 2002, 132, Abb. 53.3; GAVRANOVIĆ 2011, 128–129, Abb. 127–128; KOZUBOVÁ 2013, Obr. 31. Type 1, etc.



Fig. 6. Selection of weapons discovered during the metal detector surveys in 2022 and 2023. 1–3 – Iron battle axes, 4–5 – iron spearheads, 6 – *akinakes*, 7 – bronze protective sheath

Besides weapons, other previously unknown object types were discovered at the settlement. One of them is a side fragment of a bronze vessel made of riveted sheets, perhaps a *situla* (Fig. 4.1);²⁸ the other, a decorated rim fragment of a cast bronze vessel, is possibly a cauldron. Bronze vessel fragments had been discovered on the settlement before: a pair of incised bronze handles, parts perhaps of a large bronze vessel (a *situla* or *cista*²⁹) were found on one of the terraces in the spring of 2022.

Closed find assemblages and deposits with bronze and iron objects

Altogether, six prehistoric closed find assemblages were discovered during the metal detector surveys. Two were found *in situ*, while the objects were displaced or scattered by erosion, animal disturbance, or falling trees in four cases.

Similar to the previous campaigns, several iron ingot assemblages were discovered in 2023.³⁰ However, this time, none of them were found *in situ* but in a secondary position, scattered or piled up and left under trees (Fig. 7), likely by illegal metal detectorists to whom iron ingots have no value at all; thus, they threw them away or just left them at the find spot after checking the disturbed soil.



Fig. 7. Disturbed deposit No. 2023/4, a find assemblage consisting of iron ingots

Fortunately, some closed find assemblages were discovered *in situ*. One of them was stone-covered deposit No. 2023/2, comprising iron tools such as three socketed axes, one *Ärmchenbeil*, a socketed chisel, two iron knives, a long iron awl, two iron bars, and an iron ingot (Fig. 8).

The assemblage could be dated to between the end of the 8th and the first half of the 6th century BC based on the curved-back iron knife³¹ and the *Ärmchenbeil*.³²

Deposit No. 2023/9, a jewellery set in a small pot, was also *in situ*. It consisted of six Ciumbrud-type gold loop ornaments, a bronze bracelet, and over 2,000 amber beads. It also comprised a bimetallic pin broken in two, resembling the Donja Dolina-type, with an iron body and a bronze head with complex applied decoration (Fig. 9). Based on the pin and the Ciumbrud-type gold ornaments, the assemblage was deposited in the Ha C2–D1 Period, i.e., in the second half of the 7th or the first half of the 6th century BC.³³ This assemblage was deposited in the southern quarter of the settlement, in an intensely inhabited zone on the mountain ridge over the terraces at Verebce-Vár, probably close to buildings.³⁴

28 E.g., PATAY 1990, Taf. 47.124; PRÜSSING 1991, Taf. 17.101, Taf. 40.174, etc.

29 E.g., PRÜSSING 1991, Taf. 22.110, Taf. 100.312, Taf. 143.406.

30 V. SZABÓ et al. 2022, 288, Fig. 10, 296, Fig. 18.

31 STÖLLNER 2002, 102–103, Abb. 43.1; KEMENCZEI 2009, 38; GAVRANOVIĆ 2011, 122, Abb. 121; KOZUBOVÁ 2013, 119–120, Type I – variant 1; KOZUBOVÁ 2019, 134.

32 WESSE 1990, 168, Abb. 55.III.3B.

33 KEMENCZEI 2009, 85; KOZUBOVÁ 2019, 108; DIZDAR – KAPURAN 2021, 154–175.

34 The composition of the assemblage is similar to the deposit found in Bánov-‘Skalky’ (Czech Republic),



Fig. 8. Deposit No. 2023/2, a find assemblage consisting of iron tools

The objects of other assemblages were scattered in small areas, covering a few square metres, likely due to heavy erosion. One such deposit was No. 2023/5, consisting of 26 bronze phaleras of various sizes and types (Figs 10–11). Based on their types, the assemblage could be dated to the second half of the 7th or the first half of the 6th century BC.³⁵

Deposit No. 2023/7 consisted of objects lying close to each other (Fig. 12.A): two fragments of a bronze phalera (Fig. 12.3), an iron *Ärmchenbeil* (Fig. 12.4), and cross-shaped bronze strap dividers (Fig. 12.1–2). The objects could be dated between the end of the 8th and the first half of the 6th century BC.³⁶



Fig. 9. Deposit No. 2023/9 in excavation. The find assemblage consists of a bronze pin, a bronze bracelet, gold loop jewellery items, and amber beads

which consists of ornaments for females and is dated to the Ha D1b Period (575–550 BC) (GOLEC et al. 2023). Although the precise dating of the assemblage from Dédestapolcsány is still to be determined, we believe it is a period older than the Bánov deposit.

35 MARINESCU 1984, 77; TÓTH 2012, 72.

36 WESSE 1990, 168, Abb. 55.III.3A; METZNER-NEBELSICK 2002, 356–357; TRACHSEL 2004, 479; GAVRANOVIĆ 2011, 240, Abb. 248.

Deposit No. 2023/8 consisted of melted bronze and iron fragments scattered over 5×3.8 metres. A bronze loop with side rings dated this assemblage to the second half of the 7th and the beginning of the 6th century BC. The finds were discovered 5–10 cm below the surface. A curved-back iron knife was also found in this area; however, it lay 30 cm below the surface.



Fig. 10. Deposit No. 2023/5 *in situ*



Fig. 11. Selection of finds from deposit No. 2023/5

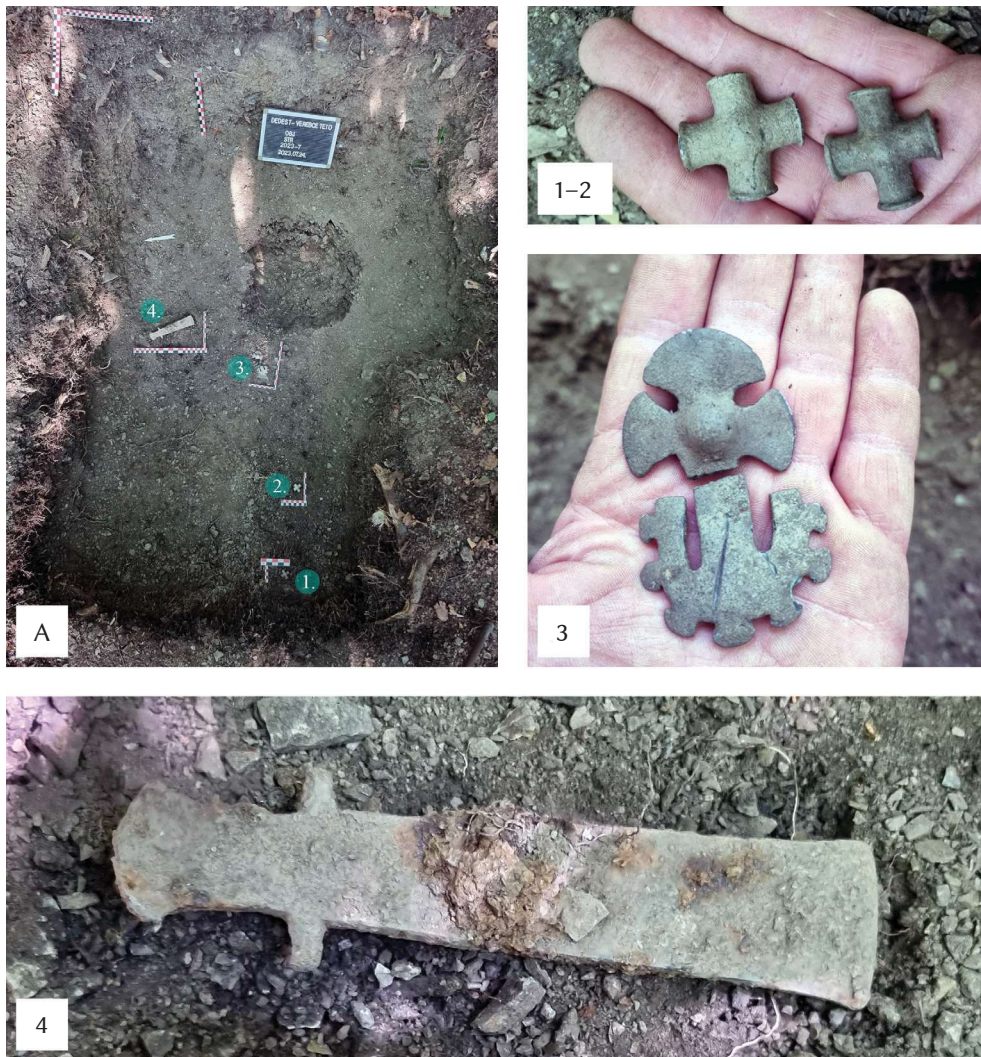


Fig. 12. Deposit No. 2023/7

The 2023 excavation campaign at Dédestapolcsány-Verebce-bérc

Trench 1

Trench 1 (Fig. 2.A) was opened in 2022 on a terrace where a concentration of four horse-head-shaped strap dividers and an iron bit had been discovered. In that year, the charred remains of joined beams were observed at the centre of the trench.³⁷ The trench profile clearly showed that the construction continued north of it. We re-opened the trench in summer 2023 to follow the wooden structure and uncover as much of it as possible.



Fig. 13. Trench 1. A – debris of the building, B – collapsed storage vessel in the debris, C – charred planks at the northern side of the trench, D – burnt beam structure

37 V. SZABÓ et al. 2022, 291, Fig. 11.

The original trench was expanded to the north by 5×3 m, during which the profile walls were kept (Fig. 13.A). We could observe the same stratigraphy as in 2022: the upper, 15–20 cm deep, black forest humus covered a thick, yellowish-brown cultural layer, a result of erosion, mixed with pottery and burnt daub pieces. This yellowish-brown layer became wider towards the inner side of the terrace and, thus, the terrace above. It covered a greyish-black layer mixed with ash and numerous finds. The ashy layer covered the remains of the building's structural elements and burnt debris. The charred remains of the beam—probably the ground sill of the building—found last year could be followed along the trench as a black strip of scorched soil, 10 cm wide at places. We did not reach the northern corner of the house; that remained a task for the next excavation (Fig. 13.A).

Besides the charred beam, large spots with the charred remains of rows of wooden planks were found (Fig. 13.C–D). They might have belonged to the floor, the collapsed walls, or the roof of the house.

Two new postholes were discovered on the western side of the trench (Fig. 13.A); the posts may have supported the roof. An oval pit was found near the eastern wall of the house. It was cut 40 cm deep into the bedrock, and its sides were burnt red. Ashy grey and red soil layers mixed with burnt debris alternated in its fill, from which a few large burnt daub pieces with wooden beam and plank imprints were recovered.

A collapsed storage vessel was found between the central posthole and the pit with burnt sides. The large vessel has an everted rim, cannelures on the neck, and a lug on its belly. Its body features traces of strong secondary firing (Fig. 13.B).

The trench yielded other finds, too: a large quantity of Early and Middle Iron Age sherds, daub pieces with imprints, a few animal bones, fragments of grinding stones, spindle whorls, and a bronze bracelet (Fig. 4.4).

Based on the position of the charred beams and planks, the burnt daub pieces bearing plank and beam imprints, and the postholes, a surface building of at least 6×5 m could be reconstructed. It had a timber-framed superstructure with plank walls, their outer faces plastered with clay. The burnt debris, the charred wood, and the secondarily fired pottery indicate a heavy fire, which might be related to the siege of the settlement.

Trench 6

Trench 6 (Fig. 2.B) was opened on the same terrace where gold deposit³⁸ No. 2021/1 was found in 2021; now, the aim was to clarify its context. The north-south trench was a metre wide and 12 m long, and its northern end was extended by an attaching 0.8 m wide and 6 m long east-west trench. Under the topsoil layer, a brown, reddish-brown erosion layer covered the yellow, rocky subsoil. A pit and a more or less regular, natural or artificial stone structure were recovered in the trench (Fig. 14). If man-made, the stone structure could be interpreted as the foundation of a horizontal supporting beam.

To further investigate this question, two 0.6 m wide perpendicular trenches were attached to the centre of the trench, stretching 4 m to the east and 3 m to the west. These contained no traces of stone structures. The eastern extension contained an oval, shallow pit with a flat triangular stone in its centre (Fig. 14). The rest of the finds comprised a few Early or Middle Iron Age sherds.

38 V. SZABÓ et al. 2022, 290, Fig. 7.



Fig. 14. Trench 6 from above

Trench 7

Trench 7 (Fig. 2.D) consisted of five separate east-west sondages (7A–E). It was south of Trench 6, on a terrace where deposit No. 2022/9,³⁹ of 94 iron ingots, was discovered in the summer of 2022. We aimed to clarify the context of the deposit: Was there a smithy or a wealthy household that could explain for the presence of such a large quantity of iron raw material? No archaeological features were detected that could justify such a deposit, only a few small stone clusters and pottery. Sondage 7A was cut deep into the slope of the upper terrace, its profile offering a glimpse at the natural erosion processes on the site. The finds of Trench 7 included a small amount of Early and Middle Iron Age pottery, a grindstone, a spindle whorl, and an iron ingot.

Trench 8

Trench 8 (Fig. 2.C) was marked out near the findspot of deposit No. 2022/7,⁴⁰ an assemblage of jewellery items and mounts. Our goal was to find out whether the deposit was related to a building. The eastern end of the seven-metre-long trench covered the slope of the upper terrace. The black, humous topsoil layer covered a thick, yellowish, slaty erosion layer, in which we found some hand-formed Iron Age sherds. The latter covered a dark, brownish, slaty layer, which can either be an erosion layer, too, or a mixture of the soils that slid down from the upper terrace and of this terrace.

39 V. SZABÓ et al. 2022, 296, Fig. 18.

40 V. SZABÓ et al. 2022, Fig. 15.

Most Iron Age hand-formed pottery was recovered from this layer, and a large amount of charred wood remains could be observed there *in situ*. The debris of the building lay beneath it, in a more solid, dark, greyish-black layer with a few slate fragments, in which pottery, charred wood, and a spindle whorl were found. The excavation of the debris remains a task for the next year when, hopefully, another building will be identified.

The excavation of the cemetery at Dédestapolcsány-Várerdő

The burial rites and grave finds of the eleven burials recovered in 2022–2023 are similar to the fifteen graves excavated earlier. However, our knowledge about its community became significantly wider.

All burials unearthed in this period were cremation graves: six scattered and three urned-and-scattered (with the cremains in the vessel(s) or scattered around them). As the human remains were missing from two graves, it could not be determined whether they were symbolic burials or just destroyed by taphonomic processes.

Eight of the burials were covered with piles of stones of various sizes or surrounded by an irregular stone circle. Some of the larger stone heaps covered more than one grave (Fig. 15.B–C,E–F). These heaps, built of natural rocks, are still visible today as small mounds. Sometimes, secondary burials could be observed over a central burial in the stone heap—perhaps kin or other relatives. In these cases, the cremains and goods were buried in the stone pile, or it was enlarged during the burial. Unfortunately, we could not fully recover any of these structures in the forested area.⁴¹ However, during their excavation, we could observe objects and find assemblages (mostly potsherds) between and above the stones (Fig. 15.B), which might be traces of a particular funerary custom or an offering.

The number of grave finds varied from 1 to 21 per grave; in most cases, 3 to 4 items were found beside the cremains. Graves 17 (11 objects) (Fig. 15.B), 21 (21 objects) (Fig. 15.C) and 22 (14 objects) (Fig. 15.D) were outstanding in this regard.

Most grave goods are pieces of poorly preserved and fragmented hand-formed pottery, none of which was wheel-thrown. The pottery record included bowls with inverted rims, small bowls, one-handled cups and mugs, and large urn-shaped vessels.

In addition, curved-back knives (12 pieces), bronze and iron pins (4 pieces), bronze ring jewellery (4 pieces), and iron loops (3 pieces) were recovered from the graves.

Iron tools were brought to light in a surprisingly large number. Most were found in Grave 21, the richest in finds of all, the assemblage of which five pottery vessels, two iron knives, two socketed axes, two pins, an animal bone, a hole or pattern punch, four different types of chisels, an iron anvil, and a pottery or sandstone bar of unknown function (probably a whetstone or a touchstone) (Fig. 15.C).

Pottery spindle whorls (4 pieces) were only found in Grave 22, which, based on its stratigraphical position, was the burial of two individuals. The grave goods—two hair rings with conical ends, melted fragments of bronze jewellery, an iron knife, four pottery vessels, and a perforated polished stone tool (a whetstone or a touchstone)⁴²—suggest that the individual(s) buried there were female(s) (Fig. 15.D).

Animal bones (most probably food offerings) were recovered from two graves (Fig. 15.A,C).

41 The excavation of such a collective burial is among the goals for an upcoming campaign.

42 On the problem of touchstones, see JEŽEK 2020 and GOVEDARICA 2022.



Fig. 15. Selection of graves recovered during the 2022 and 2023 excavation campaigns. A – Grave 16, B – Grave 17, C – Grave 21, D – Grave 22, second layer, E – Grave 26, F – Grave 25

The ‘Scythian-type’ bilobate bronze arrowhead recovered from Feature 18, documented first as a burial, is an important finding regarding the relationship between the cemetery and the siege of the settlement at Verebce-bérc. An upside-down, collapsed pottery vessel and sherd scatters were found north-northeast of the arrowhead amongst the stones. We found no human remains nearby or under it; thus, the context and interpretation of the arrowhead are no clear evidence of the use of the cemetery after the siege, especially because similar arrowheads (a bilobate asymmetrical specimen and a trilobate one with an inner socket) were found in 2008 as stray finds in the area of the graves.⁴³

According to the recently unearthed eleven graves, the use-life of the cemetery can still be dated to the Ha C2–D1 Period, i.e., between the mid-7th and the first half of the 6th century BC, corroborating previous estimations.⁴⁴ A more detailed reconstruction of the social network behind the mortuary community and a refinement of the chronology can be attempted when the conservation of the findings is complete.

Celtic weaponry in the foreground of the settlement’s northern ramparts

An unexpected assemblage was discovered during the metal detector survey of the wider surroundings of the Early Iron Age cemetery in the late autumn of 2022. A Late Iron Age structured deposit was found in the east-west valley between the northern ramparts of the fortified settlement and the Early Iron Age cemetery. The assemblage was hidden on a slope in the foreground of the northern rampart, clearly outside the cemetery’s area.

It consisted of a folded iron sword in its scabbard, an iron shield boss, an iron belt chain, and an iron and a bronze brooch interred in a shallow rectangular pit with rounded corners. The scabbard was decorated with incised continuous tendril motifs. The folded sword was placed into the shield boss, while the iron belt and the brooches were beneath the weapons (Fig. 16). The assemblage displays the characteristic elements of the weaponry and accessories of a 3rd-century BC Celtic warrior.



Fig 16. Late Iron Age weaponry *in situ*

The way the objects were placed is similar to the common burial rite of the La Tène Culture. However, the assemblage contained no human remains or offerings (animal bones, pottery). The irregular context suggests that the deposition is ritual. Analogies to this context are known from other coeval, Middle La Tène Period cemeteries;⁴⁵ they are usually interpreted as symbolic burials. Neither Late Iron Age burials nor objects were discovered in the wider surroundings of the assemblage; we are planning to further investigate the area and publish the findings.

43 TÓTH 2012, 73, 9. t. 2–3.

44 TÓTH 2012, 74; TÓTH 2017, 425, 427.

45 TANKÓ et al. 2016, 310.

Unsolved problems, future research directions

- The exact chronology of the site has remained unclear. We still have no clue when the settlement was founded. The exact time of the siege is still uncertain. We do not know which period of the settlement saw the attack and whether the settlement remained inhabited afterwards.
- There are no radiocarbon dates, partly because (although we have charcoal and charred cereals from palaeobotanical samples) there are only a few animal bones from a closed context, thus eligible for ^{14}C dating.
- We barely know anything about the course of the events of the siege. From how many directions was the settlement attacked? What was the actual scale of destruction?
- Did the siege trigger the hiding of the more than 25 deposits of bronze, iron, and gold objects, or was there a different reason, e.g., some sort of ritual activity?
- We do not know who used the cemetery in front of the northern entrance of the settlement and when: before or after the siege, or both?
- We discovered *tumuli* of different sizes in three areas in the close vicinity of the fortified settlement. However, we do not know yet who built them and when, and who are buried there.
- What were the huge terraces inside the fortifications used for? Besides residential purposes, were they the venues of animal husbandry and plant cultivation?
- It is unclear where the iron raw material weighing more than a ton came from. Was iron mined nearby and brought to the settlement as ingots? Is there any connection between the iron field in the Upponyi Mountains, situated 5–10 km away from the site (and certainly exploited in medieval and early modern times), and ironworking on the settlement? Was there any production of finished metal goods on the settlement? If yes, why have we not found any evidence of such an activity?
- What role did this settlement play in the settlement network of the microregion? Were there any satellite settlements connected to it? Were there any contemporaneous fortified settlements in the region? Where is the agricultural hinterland of the settlement's population?
- What is the relation of the local material culture to the archaeological material of the Vekerzug Culture and the coeval communities in the whole eastern Carpathian Basin?
- What is the direction of the connection network maintained by the settlement's inhabitants? Can we link the 'Scythian-type' weaponry and harnesses to the attackers, or had the locals used these eastern-type objects before the siege? How can the North Balkan connections of the local material culture be explained? How significant is the Balkan connection?

The excavation team included archaeologists Marcell Barcsi, Péter Bíró, Flóra Klinga, Máté Mervel, Péter Mogyorós, Gábor V. Szabó, Géza Szabó, Farkas Márton Tóth and Dániel Urbán, archaeology students Angéla Farkas, András Kovács, Csaba Demeter Nagy, András Stribik, Vivien Szabó and Simon Zalai, metal detector specialist Lajos Sándor, and volunteers Szabolcs Krisztián Csizi, András Gömöri, Szabolcs Ináncsi, Tamás Kapczár and István Vadász.

Special thanks go to Zoltán Fullár (National Institute of Archaeology of the Hungarian National Museum) for his help with the field documentation.

References

- BANDRIVSKIY, M. S. 2013: Kurgany v Shvaykovtsakh i Kotsyubinchikakh – novyy istochnik dlya datirovki zapadno-podol'skoy grupy ranneskifskoy kul'tury (po materialam raskopok 2007–2009 gg.) [Burial mounds in Shvaykovtsi and Kotsyubinchiki: New source for dating of the West Podolian group of the Early Scythian culture (based on the materials from 2007–2009 excavations)]. *Rossiyskaya Arkheologiya* 2013/3, 341–361.
- CZAJLIK, Z. – REMÉNYI, L. – TÓTH, F. M. 2014: New Topographical Results from the Research of Verebce-tető at Dédestapolcsány II. Results from the Topographical Research into the Iron Age Hilltop Settlement and the Graves, as well as the Surrounding Areas. *Hungarian Archaeology* 3/3, 1–9. http://files.archaeo-lingua.hu/2014O/Upload/eng_czajlik_14O.pdf (last access: 24. 02. 2024)
- DIZDAR, M. – KAPURAN, A. 2021: Late Hallstatt Female Head/Hair Decoration in the Southern Carpathian Basin. Temple Rings of the Ciurbrud and Donja Dolina Types. *Archaeologia Austriaca* 105, 149–204. <http://doi.org/10.1553/archaeologia105s149>
- ĐURKOVIČ, Ě. – JEREM, E. – MOLNÁR, A. – TANKÓ, K. 2018. A Kárpát-medence a vaskorban: interdiszciplináris kutatások legújabb eredményei (Das Karpatenbecken in der Eisenzeit: aktuelle Ergebnisse interdisziplinärer Forschungen). In: Heinrich-Tamáska, O. – Winger, D. (eds): *7000 év története: Fejezetek Magyarország régészetéből (7000 Jahre Geschichte: Einblicke in die Archäologie Ungarns)*. Remshalden, 91–116.
- DUŠEK, M. – DUŠEK, S. 1995: *Smolenice-Molpír. Befestigter Fürstensitz der Hallstattzeit II*. Materialia Archaeologica Slovaca 13. Nitra.
- EGG, M. 1979: Eine thrakoskythische Streitaxt aus Hallstatt. *Archäologisches Korrespondenzblatt* 8, 111–117.
- GALANINA, L. K. 1997: *Kelermesskiye kurgany (Die Kurgane von Kelermes. „Königsgraber“ der frühskythischen Zeit)*. Steppenvölker Eurasiens 1. Moskau.
- GAVRANOVIĆ, M. 2011: *Die Spätbronze- und Früheisenzeit in Bosnien*. Teil 1. Universitätsforschungen zur prähistorischen Archäologie 195. Berlin.
- GOLEC, M. – BARTÍK, J. – GOLEC MÍROVÁ, Z. – KUČERA, L. – CHRÁSTEK, T. – KAPUSTA, J. – ŠAMAJOVÁ, K. 2023: Trade, use, offer. The hoard of Bánov – “Skalky” (CZ). *Journal of Archaeological Science: Reports* 50, 1–23. <https://doi.org/10.1016/j.jasrep.2023.104097>
- GOVEDARICA, B. 2022: Decorated Whetstones in the Bronze and the Iron Ages of Eurasia. *Eurasia Antiqua* 24, 91–113.
- JEŽEK, M. 2020: Millennia of continuity in the votive behaviour of Europeans. The testimony of tools for determining the value of metal (Tisíciletá kontinuita votivního chování Evropanů Svědectví nástrojů k určení jakosti kovu). *Archeologické rozhledy* 72, 311–348. <https://doi.org/10.35686/AR.2020.11>
- KEMENCZEI, T. 1984: Skythenzeitliche Akinakes in der prähistorischen Sammlung des Ungarischen Nationalmuseum. *Folia Archaeologica* 35, 33–46.
- KEMENCZEI, T. 1985: Mitteleisenzeitliche Trensen von ostmitteleuropäischem Typ im Alföld. *Folia Archaeologica* 36, 43–66.
- KEMENCZEI, T. 1986: Mitteleisenzeitliche Köcherbeschläge aus dem Alföld. *Folia Archaeologica* 37, 117–136.
- KEMENCZEI, T. 2001: Az Alföld szkíta kora. In: Havassy, P. (ed.): *Hatalmasok a viadalokban. Az Alföld szkíta kora (Sie sind in Kämpfen siegreich. Das Zeitalter der Skythen in der Tiefebene)*. Gyulai Katalógusok 10. Gyula, 7–36.
- KEMENCZEI, T. 2009: *Studien zu den Denkmälern skythisch geprägter Alföld Gruppe*. Inventaria Praehistorica Hungariae 12. Budapest.
- KOZUBOVÁ, A. 2010: Hroby so železnými sekerkami na pohrebiskách zo staršej doby železnej v karpatsko-dunajskom priestore. *Zborník Slovenského Národného Múzea* 104 – *Archeológia* 20, 45–65.
- KOZUBOVÁ, A. 2013: *Pohrebiská Vekerzugskej kultúry v Chotíne na juhozápadnom Slovensku (Die Gräberfelder der Vekerzug-Kultur in Chotín in der Südwestslowakei)*. Dissertationes Archaeologicae Bratislavenses 1. Bratislava.
- KOZUBOVÁ, A. 2019: “Something happened in the east but more in the west and south.” Einige kritische Bemerkungen zu östlichen Einflüssen in der Vekerzug-kultur. *Musaica Archaeologica* 1/2019, 55–185.

- KOZUBOVÁ, A. 2021: 'With a Weapon in Hand and a Horse by Side.' Weapons and Horse Harness in Graves of Vekezug Culture from an Interregional Perspective. *Materiały i Sprawozdania Rzeszowskiego Ośrodka Archeologicznego* 42, 81–112. <http://doi.org/10.15584/misroa.2021.42.5>
- KOZUBOVÁ, A. 2022: „Die eine aus dem Westen, die andere aus dem Süden“. Eine kleine Studie zu Fibeln in der Vekezug-Kultur ('One from the west, the other from the south'. A short study on fibulae in Vekezug culture). *Materiały i Sprawozdania Rzeszowskiego Ośrodka Archeologicznego* 43, 135–158. <http://doi.org/10.15584/misroa.2022.43.8>
- KOZUBOVÁ, A. – SKAKOV, A. 2015: Einige kritische Bemerkungen zur Datierung der Dolche vom Typ Posmuš und ihrer kaukasischen Parallelen. In: Szathmári, I. (ed.): *An der Grenze der Bronze- und Eisenzeit. Festschrift für Tibor Kemenczei zum 75. Geburtstag*. Budapest, 301–316.
- MAJNARIĆ-PANDŽIĆ, N. 2002: Multi-headed "Pins" of the Donja Dolina Type Revisited. *Godišnjak Centra za balkanološka ispitivanja (Jahrbuch Zentrum für Balkanforschungen)* 30, 283–291.
- MAKHORTYKH, S. B. 2017: Niti dlya poyasov konskoy upryazhi na yuge Vostochnoy Yevropy v VII–VI vekakh. do nashey ery e [Harness Fittings in the South of Eastern Europe in 7th–6th Centuries BC]. *Arkheologiya ta davnya istoriya Ukrainy* 23, 166–184.
- MARINESCU, G. 1984: Die jüngere hallstattzeit in Nordostsiebenbürgen. *Dacia* 27, 47–83.
- MELJUKOVA, A. I. 1964: *Vooruzheniye skifov* [Armament of the Scythians]. Sovetskaya arkheologiya D1–4. Moskva.
- METZNER-NEBELSICK, C. 2002: *Der „Thrako-Kimmerische“ Formenkreis aus der Sicht der Urnenfelder- und Hallstattzeit im südöstlichen Pannonien*. Vorgeschichtliche Forschungen 23. Rahden/Westf.
- NEBELSICK, L. D. 1997: Die Kalenderberggruppe der Hallstattzeit am Nordostalpenrand. In: Nebelsick, L. D. – Eibner, A. – Lauermann, E. – Neugebauer, J. W. (eds): *Hallstattkultur im osten Österreichs*. Wissenschaftliche Schriftenreihe Niederösterreich. Wien, 9–128.
- NÉMETHI, I. 1982: Das späthallstattzeitliche Gräberfeld von Sanislău. *Dacia* 26, 115–144.
- NOVÁKI, GY. 1988: Késő bronzkori földvár Dédestapolcsány-Verebce-bércen. *A Herman Ottó Múzeum Évkönyve* 25–26, 81–90.
- PÁRDU CZ, M. 1965: Graves from the Scythian Age at Ártánd (County Hajdú-Bihar). *Acta Archaeologica Academiae Scientiarum Hungaricae* 17, 137–231.
- PARZINGER, H. – NEKVASIL, J. – BARTH, F. E. 1995: *Die Býčí skála-Höhle. Ein hallstattzeitlicher Höhlenopferplatz in Mähren*. Römisch-Germanische Forschungen 54. Mainz.
- PATAY, P. 1990: *Die Bronzgefäße in Ungarn*. Prähistorische Bronzefunde II/10. München.
- PATAY, P. – B. KISS, Zs. 2002: Az alsótelekes-dolinkai szkítakeri temető közöletlen sírjai. (az 1962. és 1964. évi feltárás eredményei) (Die unpublizierten Gräber des skythenzeitlichen Gräberfeldes von Alsótelekes-Dolinka [Die Ergebnisse der Freilegungen der Jahre 1962 und 1964]). *Folia Archaeologica* 49–50, 79–141.
- PRÜSSING, G. 1991: *Die Bronzefunde in Österreich*. Prähistorische Bronzefunde II/5. München.
- REINHOLD, S. 2007: *Die Spätbronze- und frühe Eisenzeit im Kaukasus. Materielle Kultur, Chronologie und überregionale Beziehungen*. Universitätsforschungen zur prähistorischen Archäologie 121. Bonn.
- ROSKA, M. 1942: *Erdély régészeti repertórium I. Őskor*. Thesaurus Antiquitatum Transsilvanicarum. Kolozsvár.
- SHELEKHAN, A. V. 2012: Boyevyye topory skifskogo tipa iz Severnogo Prichernomor'ya [Battle axes of Scythian Type from the Black Sea North region]. *Arkheologiya* 2012/2, 3–13.
- STÖLLNER, T. 2002: *Die Hallstattzeit und der Beginn der Laténezeit im Inn-Salzach-Raum. Auswertung*. Archäologie in Salzburg 3/1. Salzburg.
- STUDENÍKOVÁ, E. 2000: Endbronze- und Hallstattzeitliche eiserne Beile in der Slowakei. *Zborník Slovenského Národného Múzea 94 – Archeológia* 10, 61–78.
- V. SZABÓ, G. 2009: Dédestapolcsány, Verebce-tető. In: Kisfaludi, J. (ed.): *Régészeti Kutatások Magyarországon 2008 – Archaeological Investigations in Hungary 2008*. Budapest, 181–182.
- V. SZABÓ, G. 2022: "A krízisek évszázada." Háborús fenyegetettség és az első lovasnomádok érkezése a Kárpát-medencébe a Kr. e. 9–7. század közötti időszakban. Korok, kultúrák, lelőhelyek. *A Tornyai János Múzeum 2021/2022. évi régészeti előadásainak kiadványa*, 19–41.

- V. SZABÓ, G. – CZAJLIK, Z. – REMÉNYI, L. 2014: Traces of an Iron Age Armed Conflict. New Topographical Results from the Research into Verebce-bérc at Dédestapolcsány I. *Hungarian Archaeology* 3/3, 1–7. http://files.archaeolingua.hu/2014TA/Upload/cikk_Szabo_EN.pdf (last access: 24. 02. 2024)
- V. SZABÓ, G. – BAKOS, G. 2022: Archäologische Spuren der militärischen Bedrohung in ostungarischen Siedlungen vom Ende der Spätbronzezeit und der Früheisenzeit (Periode HaB2–3 und HaC1). In: Krause, R. – Hansen, S. (eds): *Die Frühgeschichte von Krieg und Konflikt: Beiträge der Vierten Internationalen LOEWE-Konferenz vom 7. bis 9. Oktober 2019 in Frankfurt (The Early History of War and Conflict: Proceedings of the Fourth International LOEWE Conference, 7–9 October 2019 in Frankfurt)*. Universitätsforschungen zur prähistorischen Archäologie 383. Bonn, 321–350. <https://doi.org/10.21248/gups.70670> ISBN 978-3-7749-4343-8
- V. SZABÓ, G. – BARCSI, M. – BÍRÓ, P. – TANKÓ, K. – VÁCZI, G. – MOGYORÓS, P. 2022: Investigations of an Early Iron Age Siege. Preliminary Report on the Archaeological Research Carried out at Dédestapolcsány-Verebce-bérc between 2020 and 2022. *Dissertationes Archaeologicae* 3.10, 277–299. <http://doi.org/10.17204/dissarch.2022.277>
- TANKÓ, K. – TÓTH, Z. – RUPNIK, L. – CZAJLIK, Z. – PUSZTA, S. 2016: Short report on the archaeological research of the Late Iron Age cemetery at Gyöngyös. *Dissertationes Archaeologicae* 3.4, 307–324. <https://doi.org/10.17204/dissarch.2016.307>
- TOPAL, D. 2015: The use of bronze in the producing of Early Scythian akinakai. *Tyragetia* 9/24, 29–50.
- TÓTH, F. M. 2012: Korai szkítakori sírok Dédestapolcsány-Verebce-tető lelőhelyen (Early Scythian Age Graves at the site of Dédestapolcsány-Verebce-tető [NE Hungary]). *A Hermann Ottó Múzeum Évkönyve* 51, 63–91.
- TÓTH, F. M. 2017: A Cemetery of the Early Scythian Age in Dédestapolcsány-Verebce-tető. The Research of a New Site Complex in Northern Hungary and its Cultural Connections. In: Miroššayová, E. – Pare, C. – Stegmann-Rajtár, S. (eds): *Das nördliche Karpatenbecken in der Hallstattzeit. Wirtschaft, Handel und Kommunikation in früheisenzeitlichen Gesellschaften zwischen Ostalpen und Westpannonien*. Budapest, 421–431.
- TRACHSEL, M. 2004: *Untersuchungen zur relativen und absoluten Chronologie der Hallstattzeit*. Universitätsforschungen zur prähistorischen Archäologie 104. Bonn.
- VULPE, A. 1967: *Necropola hallstattiană de la Ferigile. Monografie arheologică*. Biblioteca de arheologie 11. București.
- VULPE, A. 1990: *Die Kurzschwerter, Dolche und Streimesser der Hallstattzeit in Rumänien*. Prähistorische Bronzefunde VI/9. München.
- WESSE, A. 1990: *Die Ärmchenbeile der Alten Welt*. Universitätsforschungen zur prähistorischen Archäologie 3. Bonn.



