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ABBREVIATIONS

AAC	Acta Archaeologica Carpathica (Kraków)
ActaArchHung	Acta Archaeologica Academiae Scientiarum Hungaricae (Budapest)
ActaMusPapensis	Acta Musei Papensis. A Pápai Múzeum Értesítője (Pápa)
Acta Botanica Hungarica	Acta Botanica Hungarica. A quarterly of the Hungarian Academy of Sciences (Budapest)
Aetas	Aetas. Történettudományi Folyóirat (Szeged)
Agria	Agria. Az Egri Múzeum Évkönyve (Eger)
AgrSz	Agrártörténeti Szemle (Budapest)
AKorr	Archäologisches Korrespondenzblatt (Mainz)
Alba Regia	Alba Regia. Annales Musei Stephani Regis. Az István Király Múzeum Évkönyve (Székesfehérvár)
Antaeus	Antaeus. Communicationes ex Instituto Archaeologico (Budapest)
AÖ	Archäologie Österreichs (Wien)
AR	Archeologické Rozhledy (Praha)
ArchA	Archaeologia Austriaca (Wien)
Archaeometry	Archaeometry (London)
Archeometriai Műhely	Archeometriai Műhely. Elektronikus Folyóirat (Budapest)
ArchÉrt	Archaeologiai Értesítő (Budapest)
ArchHung	Archaeologia Hungarica (Budapest)
Arrabona	Arrabona. A Győri Xantus János Múzeum Évkönyve (Győr)
AV	Arheološki Vestnik (Ljubljana)
BAR-IS	British Archaeological Reports – International Series (Supplementary) (Oxford)
BudRég	Budapest Régiségei (Budapest)
Burgen und Schlösser	Burgen und Schlösser. Zeitschrift für Burgenforschung und Denkmalpflege (Heidelberg)
Cahiers LandArc	Les Cahiers LandArc (Fleurance)
Castrum	Castrum. A Castrum Bene Egyesület Hírlevele (Budapest)
CommArchHung	Communicationes Archaeologicae Hungariae (Budapest)
Cumania	Cumania. Bács-Kiskun Megyei Múzeumok Közleményei. Acta Museorum ex Comitatu Bács-Kiskun (Kecskemét)
Demográfia	Demográfia. Népeségtudományi Folyóirat (Budapest)
DissPann	Dissertationes Pannonicae (Budapest)
DuDolg	Dunántúli Dolgozatok (Pécs)

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Érem	Az Érem (Budapest)
ÉT	Élet és Tudomány (Budapest)
Ethnographia	Ethnographia. A Magyar Néprajzi Társaság Folyóirata (Budapest)
FMTÉ	Fejér Megyei Történeti Évkönyv (Székesfehérvár)
FolArch	Folia Archaeologica (Budapest)
FontArchHung	Fontes Archaeologici Hungariae (Budapest)
FÖ	Fundberichte aus Österreich (Wien)
Föld és Ember	Föld és Ember. Negyedévenként Megjelenő Tudományos Szemle (Budapest)
FrK	Földrajzi Közlemények (Budapest)
Geomorphology	Journal of Geomorphology (New York)
Gesta	Gesta. Historical Review (Miskolc)
Gymnasium	Gymnasium. Zeitschrift für Kultur der Antike und humanistische Bildung (Heidelberg)
GySz	Győri Szemle (Győr)
Határtalan Régészet	Határtalan régészet. Archeológiai Magazin. A Móra Ferenc Múzeum Régészeti Magazinja. Régészeti Ismeretterjesztő Magazin (Szeged)
HungArch	Hungarian Archaeology. E-Journal (Budapest)
Hungarian Studies	Hungarian Studies. A Journal of the International Association for Hungarian Studies and Balassi Institute (Budapest)
Jahrbuch des RGZM	Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz (Mainz)
JAMÉ	A Nyíregyházi Jósza András Múzeum Évkönyve (Nyíregyháza)
JAS	Journal of Archaeological Science (London)
JCAA	The Journal of Computer Applications in Archaeology
KDMK	Kuny Domokos Múzeum Közleményei (Tata)
KMMK	Komárom-Esztergom Megyei Múzeumok Közleményei (Tata)
Korall	Korall. Társadalomtörténeti Folyóirat (Budapest)
KRMK	A Kaposvári Rippl-Rónai Múzeum Közleményei (Kaposvár)
LDMK	A Laczkó Dezső Múzeum Közleményei (Veszprém)
MatArchSlov	Materialia Archaeologica Slovaca (Nitra)
MFME StudArch	A Móra Ferenc Múzeum Évkönyve – Studia Archaeologica (Szeged)
MHKÁS	Magyarország honfoglalás kori és kora Árpád-kori sírleletei (Budapest)
MittArchInst	Mitteilungen des Archäologischen Instituts der Ungarischen Akademie der Wissenschaften (Budapest)
MNy	Magyar Nyelv (Budapest)
Múzeumcafé	Múzeumcafé. A Múzeumok Magazinja (Budapest)

Múzeumi Hírlevél	Múzeumi Hírlevél. A Kalocsai Múzeumbarátok Köre Kiadványa (Kalocsa)
MRT	Magyarország Régészeti Topográfiája (Budapest)
Ókor	Ókor. Folyóirat az Antik Kultúrákról (Budapest)
Ősrégészeti Levelek	Ősrégészeti Levelek. Prehistoric Newsletter (Budapest)
PA	Památky Archeologické (Praha)
PBF	Prähistorische Bronzefunde (München)
PNAS	Proceedings of the National Academy of Sciences (Washington, D. C.)
Quaternary Int	Quaternary International. The Journal of the International Union for Quaternary Research (Oxford – New York)
RégFüz	Régészeti Füzetek (Budapest)
Remote Sens	Remote Sensing (Tulsa)
Savaria	Savaria. A Vas Megyei Múzeumok Értesítője (Szombathely)
SbNM	Sbornik Národního Muzea v Praze Ser. A. (Praha)
SlA	Slovenská Archeológia (Bratislava)
SMK	Somogyi Múzeumok Közleményei (Kaposvár)
SSz	Soproni Szemle (Sopron)
Studia Hercynia	Studia Hercynia. Journal of the Institute of Classical Archaeology (Praha)
ŠtZ	Študijné Zvesti Arheologického Ústavu Slovenskej Akadémie Vied (Nitra)
Századok	Századok. A Magyar Történelmi Társulat Közlönye (Budapest)
Turul	Turul. A Magyar Heraldikai és Genealogiai Társaság Közlönye (Budapest)
UPA	Universitätsforschungen zur prähistorischen Archäologie (Bonn)
VAH	Varia Archaeologica Hungarica (Budapest)
VMMK	A Veszprém Megyei Múzeumok Közleményei (Veszprém)
WMMÉ	A Wosinsky Mór Múzeum Évkönyve (Szekszárd)
ZalaiMúz	Zalai Múzeum (Zalaegerszeg)
ZbSNM	Zborník Slovenského Národného Muzea. Archeológia (Bratislava)
ZfAM	Zeitschrift für Archäologie des Mittelalters (Köln)

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**COMPLEX ARCHAEOLOGICAL RESEARCH
 OF A BRONZE AGE HILLFORT AND A MEDIEVAL VILLAGE
 AT SZÉKESFEHÉRVÁR-BÖRGÖND (HUNGARY)**

Zusammenfassung: Vorliegende Studie konzentriert sich auf die Erforschung der archäologischen Fundorte unweit des heutigen Börgönd (Komitat Fejér, Ungarn) und untersucht die Auswirkung der Umweltbedingungen hinsichtlich der Niederlassung. Auf dem erforschten Gebiet liegen ein bronzezeitliches Erdwerk und die dazugehörigen Satellitensiedlungen, bzw. eine mittelalterliche Kirche mit Dorf. Zwischen 2019 und 2023 führten wir in mehreren Etappen Fundortanalysen mit Drohnen durch und nahmen geophysische Analysen (Bodenradar, Magnetometer) und Nachforschungen mit Metalldetektoren vor. Die Ergebnisse, die sich aus der Verarbeitung der gesammelten Daten und Funde ergaben, verglichen wir mit den umweltarchäologischen Bezügen der historischen und kartographischen Quellen. Auf dieser Grundlage zeichneten sich die hydrographischen Veränderungen des Velencer Sees ab, woraus hervorging, dass sich die Siedlungen in Zeiten der Gewässerregulierung auf einer niedrigeren Terrainebene befanden.

Keywords: Bronze Age hillfort, medieval settlement, metal detector survey, geophysical survey, find distribution, material culture, historical waterscapes

Börgönd (earlier Börgöndpuszta) is located in eastern Transdanubia (Hungary). Today, it belongs to the administrative area of Székesfehérvár, the seat of Fejér County, halfway between Budapest and Lake Balaton. It lies about 10-12 km south-east of the historic town centre and about 2.5-3 km away from the built-up part, on the western fringes of the Dinnyési-fertő, a part of the marshland around Lake Velence. Currently, Börgönd is a dead-end village with about 450-500 residents, some 750 m away from Road No. E66 (*fig. 1*).

The research area is about 1.5 km south of the inhabited part of the village, on a hill stretching north-south by the marshland. The greater part of the elevation is ploughed, save for a kilometre-long strip on a slope and a south-western stretch of the hilltop, covered by a dense, shrubby secondary black locust forest. The stretch extends to 40×120 m with a straight, 30 m-wide, shrubby strip at its western end. This strip, now difficult to walk even on foot, aligns with the current dirt road network crisscrossing the fields. The forested part appears on the satellite images as a characteristic patch in the shape of a number 1; the highest point, known as Szent László-hegy [Szent László Hill] or Lászlóhegy is positioned at its north-eastern end (*fig. 2*).

The extent of the non-submerged plain between the reeds and wetlands of the Dinnyési-fertő and the elevation in focus depends highly on the weather. A dirt road runs there northwest-southeast from Fő utca [‘Main Street’] in Börgönd towards Seregélyes, the neighbouring settlement. Today, this dirt road turns west just before reaching Seregélyes and joins a side road of Road No. E66. However, sections of its former path are still visible on satellite images, outlined by forest belts marking the boundaries between plots, and (nearly) impassable byroads in fields.



Fig. 1. The position of Börgönd (Börgöndpuszta) on the outskirts of Székesfehérvár on a geomorphologic map of Hungary (©Zsóka Varga)

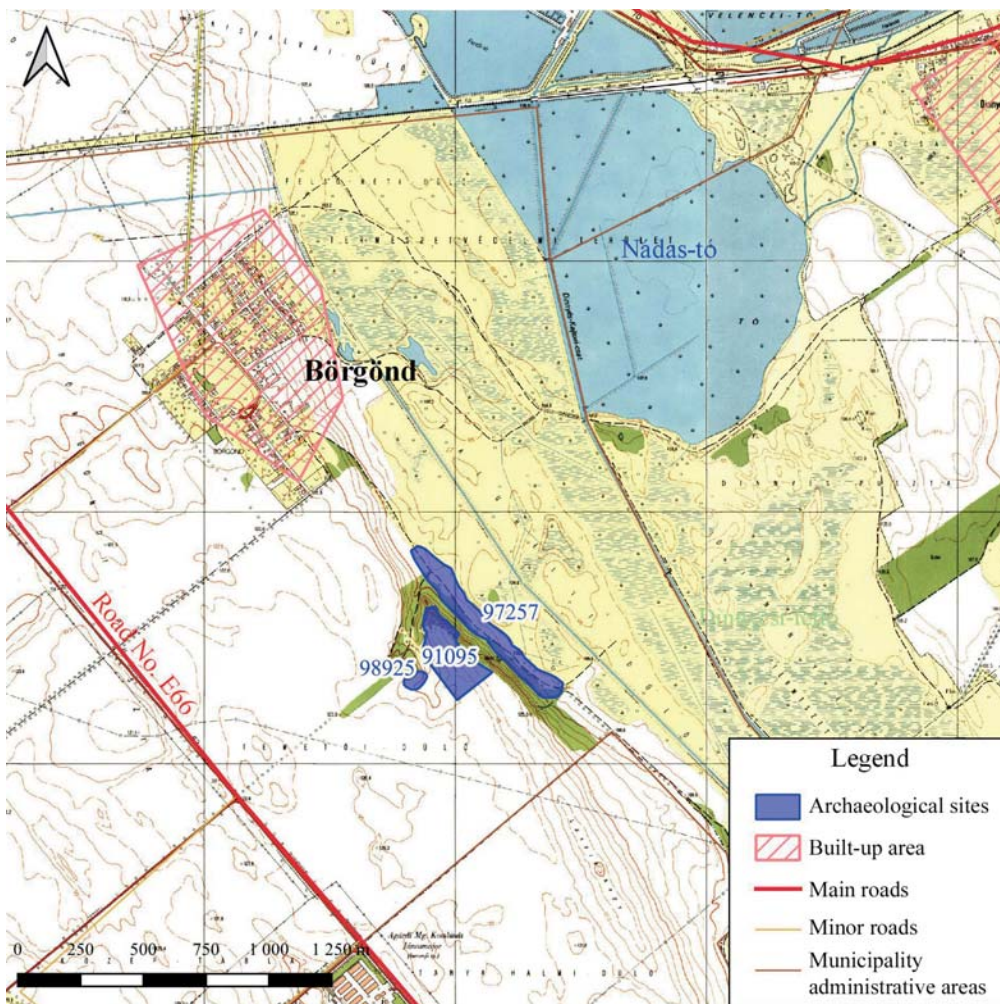


Fig. 2. The position of the research areas in relation to Börgöndpuszta (©Zsófia Nádai)

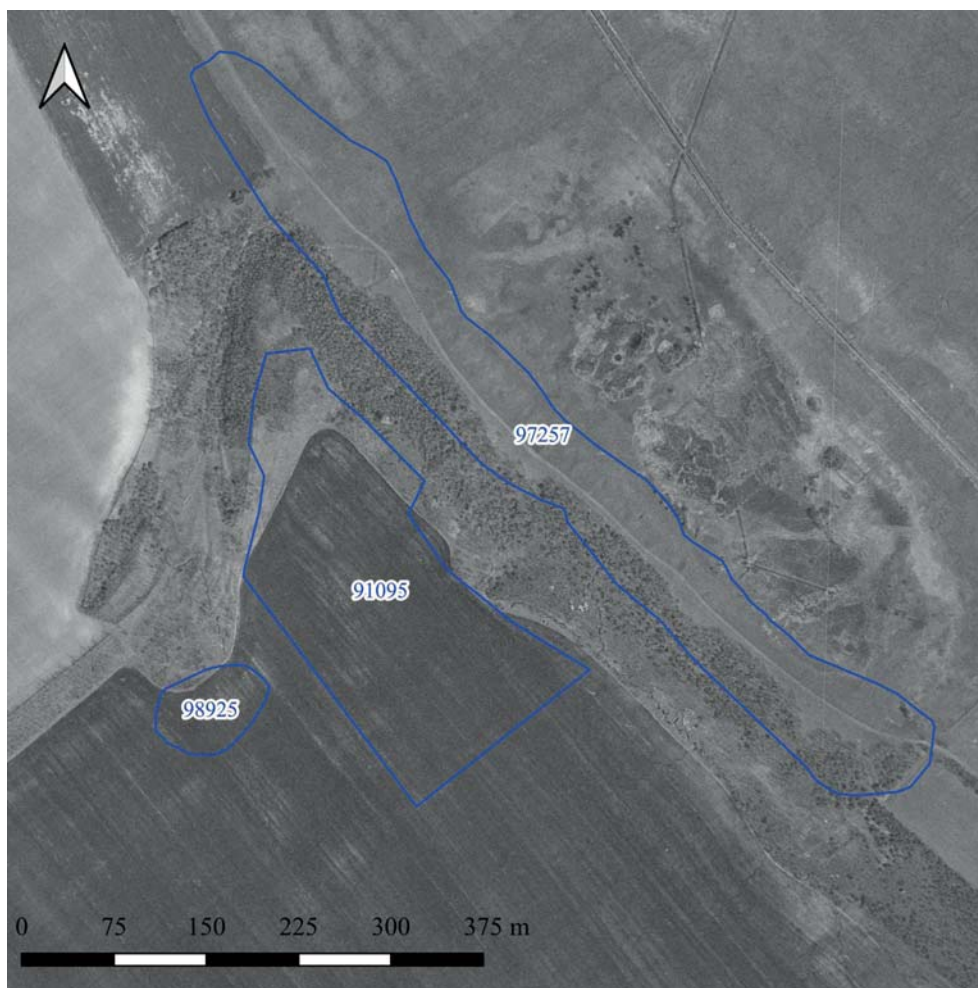


Fig. 3. Military aerial photo from 1968, showing the path of the one-time road and the mounds of the medieval houses (©Ákos Ekrik, ©Zsófia Náday, source: Digital Aerial Image Archives of the Lechner Knowledge Center Non-Profit Ltd. 1968-0037-6939, <https://www.fentrol.hu/hu/legifoto/113844>)

The first archaeological site in the area was identified thanks to this dirt road, which originally ran right beside the forested part (fig. 3), until the local agricultural cooperative decided to move its path to the east, closer to the swamp in 1979. Cropmarks showing its former path are still visible on satellite images and ortophotos (fig. 4). The work required the uneven terrain to be levelled, revealing that the small protrusions are in fact the debris of one-time houses containing pottery in abundance. The workers of the cooperative reported the discovery to the local museum in Székesfehérvár, and Zsuzsanna Bánki conducted archaeological observation on the site, publishing the results in *Régészeti Füzetek* in a short report titled Börgönd-Horgos-oldal.¹ Máté Stibrányi surveyed the site as part of his PhD research in 2008, collecting late medieval pottery in the known area of the one-time village and Árpád Age sherds up the hill. He also supposed, based on historical maps, that the church of the medieval village was situated at the south-western end of the shorter arm of the number 1-shaped forest patch, at the entrance of the double valley cutting into the hill.²

¹ Bánki 1979 110. Based on the field documentation, the research was certainly conducted on the Székesfehérvár-Börgönd, Faluhelyi-dűlő [ID No. 97257] site.

² Stibrányi 2015 11. Enlisted as Székesfehérvár-Börgönd, Temetői-dűlő [ID No. 98925] in the Central Register of Archaeological Sites in Hungary (IVO).

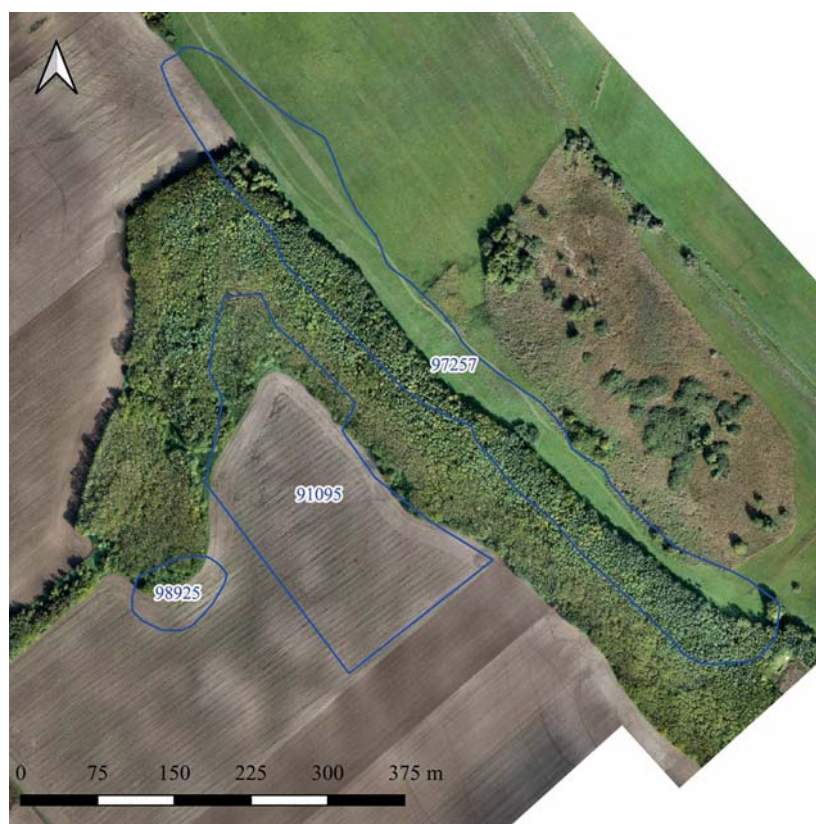


Fig. 4. Ortophoto of the 3D photogrammetry survey showing the research area
(©Adrián Berta, ©Ákos Ekrik, ©Zsófia Nádaí)

Stibrányi and Gábor Váczi have also identified a small hillfort, of only 0.6 ha, of the Vatya culture on Szent László-hegy above the medieval village.³ Based on pottery collected on the intensive settlement on a plateau south of the fortification, they dated the construction and use of the hillfort to the period between the end of the Early Bronze Age and the end of the Middle Bronze Age.⁴ Later, Bálint Savanyú surveyed the site, determining the extent of the Bronze Age settlement.⁵

A team from the Archaeological Institute of the Research Centre for the Humanities of the Hungarian Research Network (AI HUN-REN) started investigating the medieval features of the site within the frame of the project *'Medieval and Early Modern Period archaeological topography of the area of Székesfehérvár'*, part of the *'Árpád-ház'* [Árpád Dynasty] programme, in 2019. At the same time, Ágnes Kovács from the King St. Stephen Museum (Szent István Király Múzeum, hereinafter as SZIKM) in Székesfehérvár, unearthed a pit of the Vatya culture during the archaeological observation of soil condition tests in the area. She has decided to improve her knowledge of the Bronze Age fortification and settlement and started a metal detector survey project within the frame of the Community Archaeology Programme of SZIKM. The investigations have been concerted since 2021 to gain as much information on the site as possible by applying non- and minimum-destructive methods. Particular emphasis has been laid on the relationship of the one-time inhabitants with the landscape and the outlining and comparing of the ways of how they interacted with and used their environment.

³ Registered as Székesfehérvár-Börgönd, Lászlóhegy [ID No. 91095] in IVO.

⁴ Váczi – Stibrányi 2008 208–211.

⁵ In 2015, according to IVO.

Methods

The areas of all settlements were surveyed first; next, a team of volunteers from SZIKM conducted multiple metal detector surveys using their own equipment. Geophysical surveys were carried out using a magnetometer and a ground-penetrating radar (GPR); besides, the site was drone-mapped. A third field walking campaign was conducted in December 2023, with a focus on recording possible elevation changes and other soil marks in the sparse vegetation⁶ (*fig. 5*).

A SENSYS MAGNETO® MXPDA 5-channel pushcart magnetometer system with FGM-650 vertical fluxgate gradiometers with 0.5 m spacing, capable of detecting anomalies to a depth of 0.75-1 m, was used for the survey. With a progress of about 4-5 km/h, this system recorded the x, y, z, and nT values of a 0.5 × 0.08 m data point grid of the surveyed area. The recorded data were corrected in real time by an RTK-assisted GNSS system.

Raw data were displayed on a GeoTIFF raster image with a 0.25 m/pixel resolution, which was processed in multiple steps using Magneto®Arch 3.01-12, Snuffler 1.32, and Quantum GIS 3.26.1. This method is based on the observation that archaeological phenomena have their own magnetic field due primarily to the different remanent magnetic fields in their components; this field is different to its environment and can be measured (and, thus, separated) using a magnetometer. While this method is effective for locating anomalies, i.e., features of archaeological interest, it cannot be used alone or directly to determine their age.⁷

Altogether, 6.7 ha were surveyed this way in two goes and four parts, following the changes in land cover (first three fields of 4.05, 2.2, and 0.25 ha, with another 0.2 ha next time; in the north-western and central zones, the forested strip bordered and divided the surveyed plots). The second survey trip focused on the supposed 0.2 ha area of the medieval church building; we started with clearing the field from shrubbery and then surveyed it with a finer, 0.25 m sensor grid (partially overlapping the area of the previous survey).

The area of the medieval church building was also GPR surveyed in three small zones (BOR2: 22 × 25 m, BOR3: 18 × 48 m, BOR4: 5 × 12 m) using a Malå GX 450HDR GPR device with 450 mHz nominal frequency and 0.5 m spacing in Object Mapper mode. With such setting, the device was suitable for detecting buried buildings and structures in particular.⁸ Raw data were processed in GPRSlice and displayed and evaluated in QuantumGIS 3.26.1.

The 3D photogrammetry survey of the terrain was made using a DJI Phantom 4 RTK unmanned aerial vehicle (*fig. 4*). Data were georeferenced during recording by a DJI D-RTK2 device. Raw data were processed using Agisoft Metashape and displayed in digital terrain model (DTM) (*fig. 6*) and orthomosaic images for further evaluation.⁹

As the four sites in the study area – two Bronze Age and two medieval ones – are more or less distinct, they can be discussed separately in this paper. First, the geographical setting is presented, then the results of the research on the Vanya culture features: the research history of the site, the structure of the hillfort with analogies from the culture, and the recovered find material.

Next, the results of the investigations in the area of the supposed church and the medieval village are discussed, involving the presentation of the related historical sources, the evaluation

⁶ We are grateful to all participants for their efforts, including Csaba Bartha, Márton Bohn, Attila Csiki, Tamás Danka, Krisztián Felgyői, Endre Fogarasi, Gyula Gyulay, Dömötör Kovács, Zsuzsanna Lencsés, András Megyeri, Attila Mihályi, Csaba Molnár, Csaba Nagy, Zoltán Németh, Attila Pápai, József Pásztor, Gábor Tarbay, László Vadon, Dávid Varga, and Dénes Veszei. The geophysical surveys were led by Adrián Berta, with the participation of his colleagues of HUN-REN: Elek Benkő, Ákos Ekrik, Ágnes Kolláth, Bianka Gina Kovács, Tibor Marton, Eszter Melis and Zsófia Náday.

⁷ Schmidt et al. 2015 59–67.

⁸ Schmidt et al. 2015 77–88.

⁹ Westoby et al. 2012.

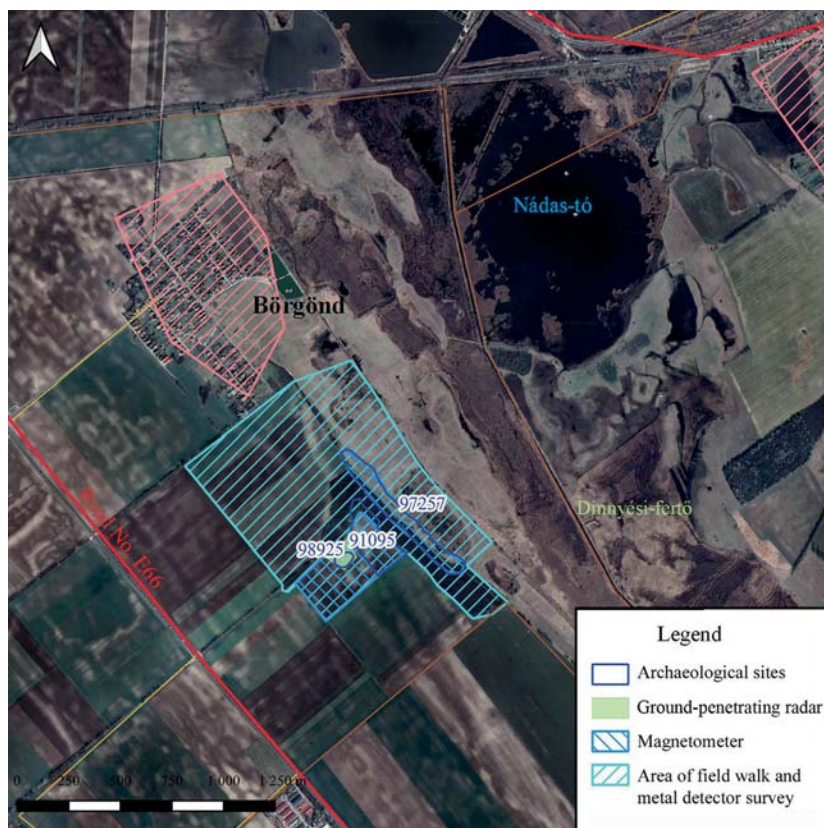


Fig. 5. The position of the geophysical survey zones (©Zsófia Ná dai)

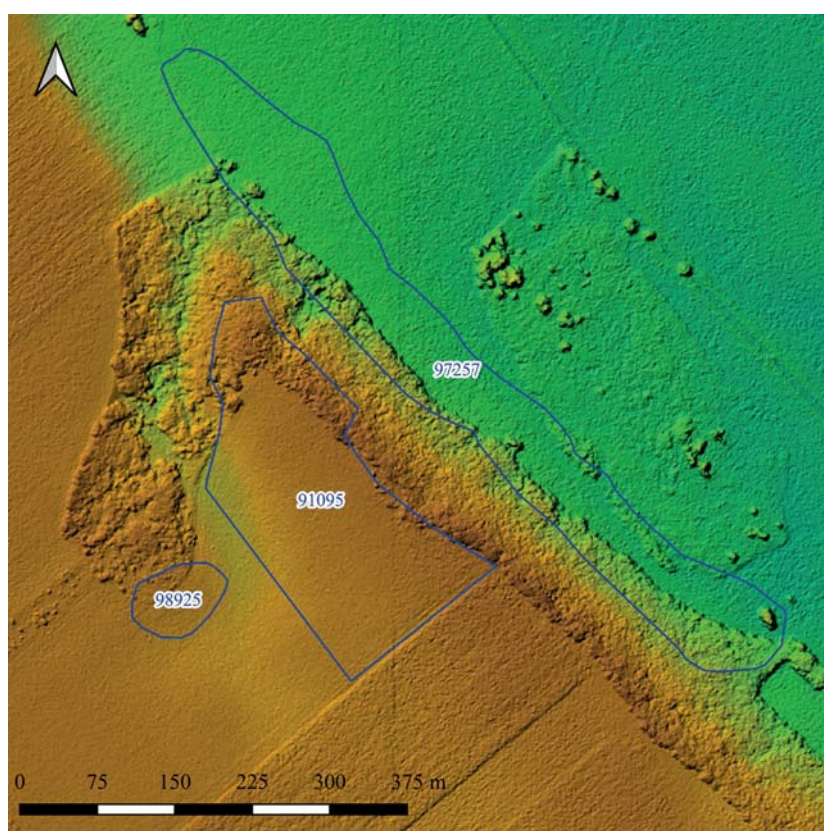


Fig. 6. Digital terrain model (DTM) of the research area (©Adrián Berta, ©Ákos Ekrik, ©Zsófia Ná dai)

of the data gleaned by non-destructive and metal detector surveys, and the find material. It is followed by a summary of our conclusions regarding the position, dating, and characteristics of the church and the village, also collecting their analogies and shedding light on their connections with other settlements. Lastly, we draw our conclusions regarding the sites' relationship with the wider landscape and its changes through time.

The geological setting of Börgönd and its surroundings

In geological terms, Börgönd is part of the Central Mezőföld microregion, which, albeit located in Transdanubia, is similar to the Great Hungarian Plain. It is practically an eroded alluvial cone, gently sloping towards the Danube River in the south-east and divided by shallow valleys. The proportion of open water and wetlands in the region is 0.6% today. Most parts have chernozem soil, but alluvial meadow soils and humic sandy soil also occur. Currently, most fields are ploughed and divided by forested strips or dirt lanes.¹⁰ According to the geological map of Hungary (*fig. 7*), the northern part of the higher terrain, including Szent László-hegy, next to Börgöndpuszta is loess, while the area south of it is sand; the lands east of the higher terrain consist of riverine and paludal deposits, surrounded by eluvial and deluvial deposits, until the next village, Seregélyes.¹¹ The eluvial and deluvial deposits mark the areas of previous watercourses and waterlogged areas, of which only the Dinnyési-fertő (the relic of the one-time western basin of Lake Velence) has remained after the water regulation. Lake Velence is a relatively young formation, dating back to the Old Holocene Period about 10,000 years ago.¹² Originally, Lake Velence formed in two perpendicular grabens: the northeast-southwest depression, which is its basin today, and a northwest-southeast-directed one in the place of today's Dinnyési-fertő. The western basin, continuously filled with the deposit of the Császár-víz Stream, appears on historical maps as Nádas-tó [the name meaning Lake of Reeds].

In its natural state, the water system of Lake Velence was characterised by great diversity: the water level could fluctuate by up to 2–2.5 m, bringing about dramatic changes in the shoreline. Even a slight rise in water level could push the shallow southern shoreline outwards by 100 m.¹³ Alder carrs and small gallery forests surrounded the lake; the open water surface was bordered by a wide strip of reeds in the northern and a narrow strip in the southern zone. The coastline was also diverse, with open water, reed-grass, reeds, sedges, and meadows in different proportions.¹⁴ The swamps of the Nádas-tó were drained in the 18th century by canals.¹⁵ Lake Velence remained untouched by human landscaping activity until the mid-19th century. It suffered the first major transformation during the construction of the Budapest–Fiume railway line in the mid-19th century when the current basin was severed from Nádas-tó.¹⁶

The sites south-east of Börgönd, i.e. the people who settled there, adapted their lifestyle to the natural setting. This original environment, giving a frame to human presence in archaeological and historical periods, may be best reconstructed from the water regulation map of Lake Velence from 1791 (*fig. 8. 1*),¹⁷ the maps of the Habsburg military surveys (*fig. 9*), and a cadastral map from the end

¹⁰ Csorba 2021 26–27.

¹¹ Geological key sections of Hungary by the Mining and Geological Survey of Hungary (MBFSZ).

¹² Ádám 1955 319; Ádám 1959 221, 225; Boromisza 2012 89.

¹³ Boromisza 2012 89–90.

¹⁴ Boromisza 2012 89.

¹⁵ Ádám 1955 324; Ádám 1959 218.

¹⁶ Boromisza 2012 90.

¹⁷ MNL OL Map Archive, S 12–Div. XIII.–No. 220:1 (<https://maps.hungaricana.hu/hu/MOLTerkepetar/5232/>).

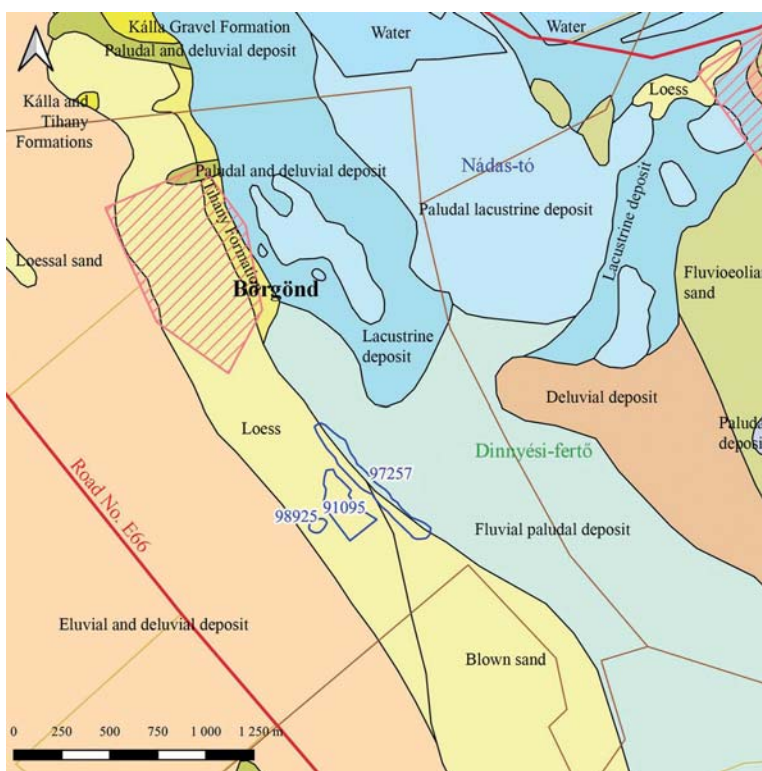


Fig. 7. Soil types based on the geological map of Hungary and the known perimeters of the sites (©Zsófia Nádaï, source: Mining and Geological Survey of Hungary (MBFSZ) https://map.mbfisz.gov.hu/fdt_alapszelvenyek/)

of the 19th century (*fig. 8. 2*).¹⁸ In some cases, these provide a good starting point for the research of the relation between the one-time settlers and their environment, as the settlement marked as 'Börögnd' or 'Börögndpuszta' in these Early Modern Period maps is in the place of today's Börögnd. A prominent feature marked on these maps is the hill range stretching in a northwest-southeast direction following the west border of the wetlands of the so-called 'Nádas-tó' or 'Szerecsenyi-Nádas-tó'. On its west and south sides the elevation continues in the low, undulating hills of the Mezőföld.

A glimpse at these historical maps also reveals that the roads from Székesfehérvár towards Seregélyes ran through this area from north-west to south-east, following the valleys and elevations. By the time of the second Habsburg military survey (1858), the path of the main road from Székesfehérvár had been straightened and ran in the line of today's Road No. E66 (*fig. 9. 2*),¹⁹ but the map of the first Habsburg military survey from 1783 (*fig. 9. 1*)²⁰ shows the road network of the area as it was in the Early Modern Period.²¹ On this map, the regional road (marked by a relatively thick line) bypassing Börögndpuszta from the west turns slightly eastward south of the settlement and runs between the two hill ranges.²² The same map marks smaller roads running in and out of Börögnd, showing the settlement site as a junction point.

The latest historical event, which had an important effect on the research conducted in the area was World War II, when the Szent László-hegy was built into a gun emplacement. Zig-zag lined

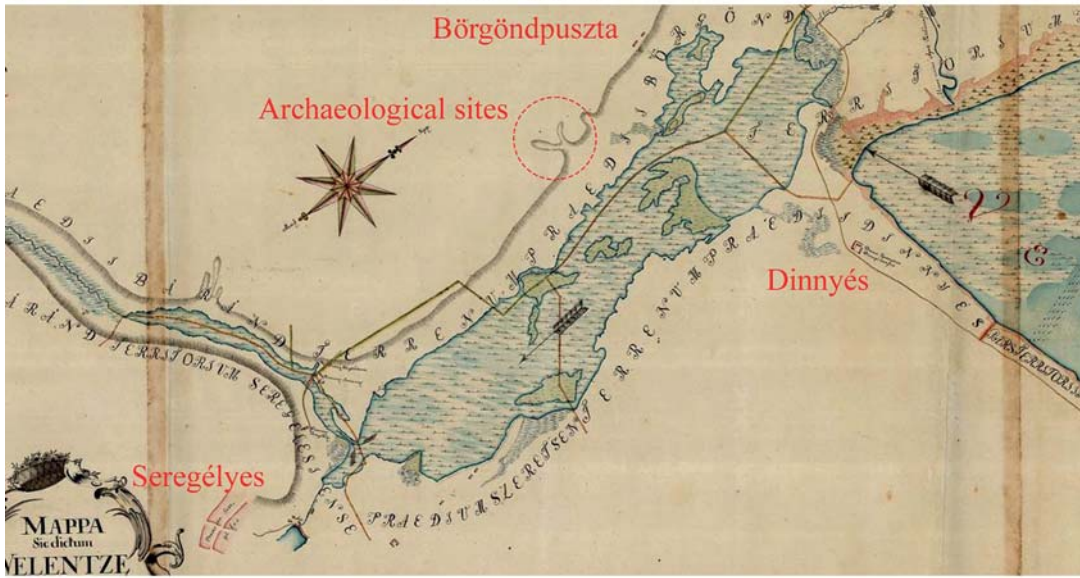
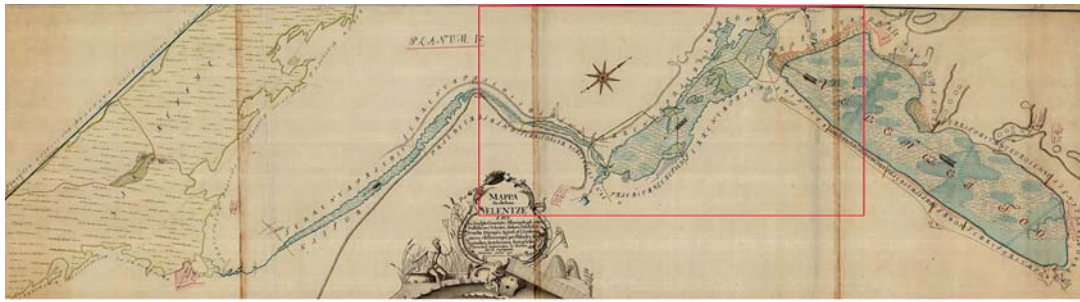
¹⁸ Stibrányi 2015 115.

¹⁹ Kovács 2002 insert no. 20.

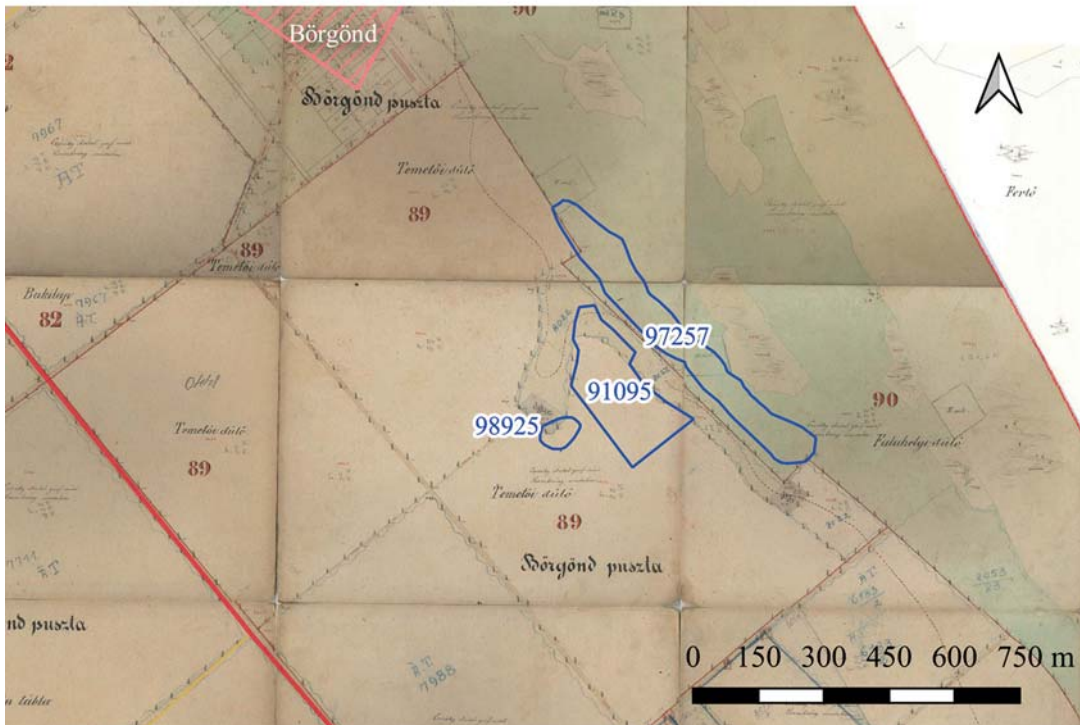
²⁰ Kovács 2002 insert no. 4.

²¹ Stibrányi 2015 69–70.

²² Stibrányi 2015 Maps 29, 37–38. In his PhD dissertation, Máté Stibrányi reconstructed this path for the medieval dirt road between Börögnd and Seregélyes.



1



2

Fig. 8. 1. Water regulation plan of Lake Velence from 1791 (©Zsófia Nádai, Source: MNL OL Map Archive: S12-Div.XIII-No. 220:1 (<https://maps.hungaricana.hu/hu/MOLTerkeptar/5232>); 2. Section of the Cadastral map from 1884. (Source: <https://maps.arcanum.com/en/map/cadastral/>)

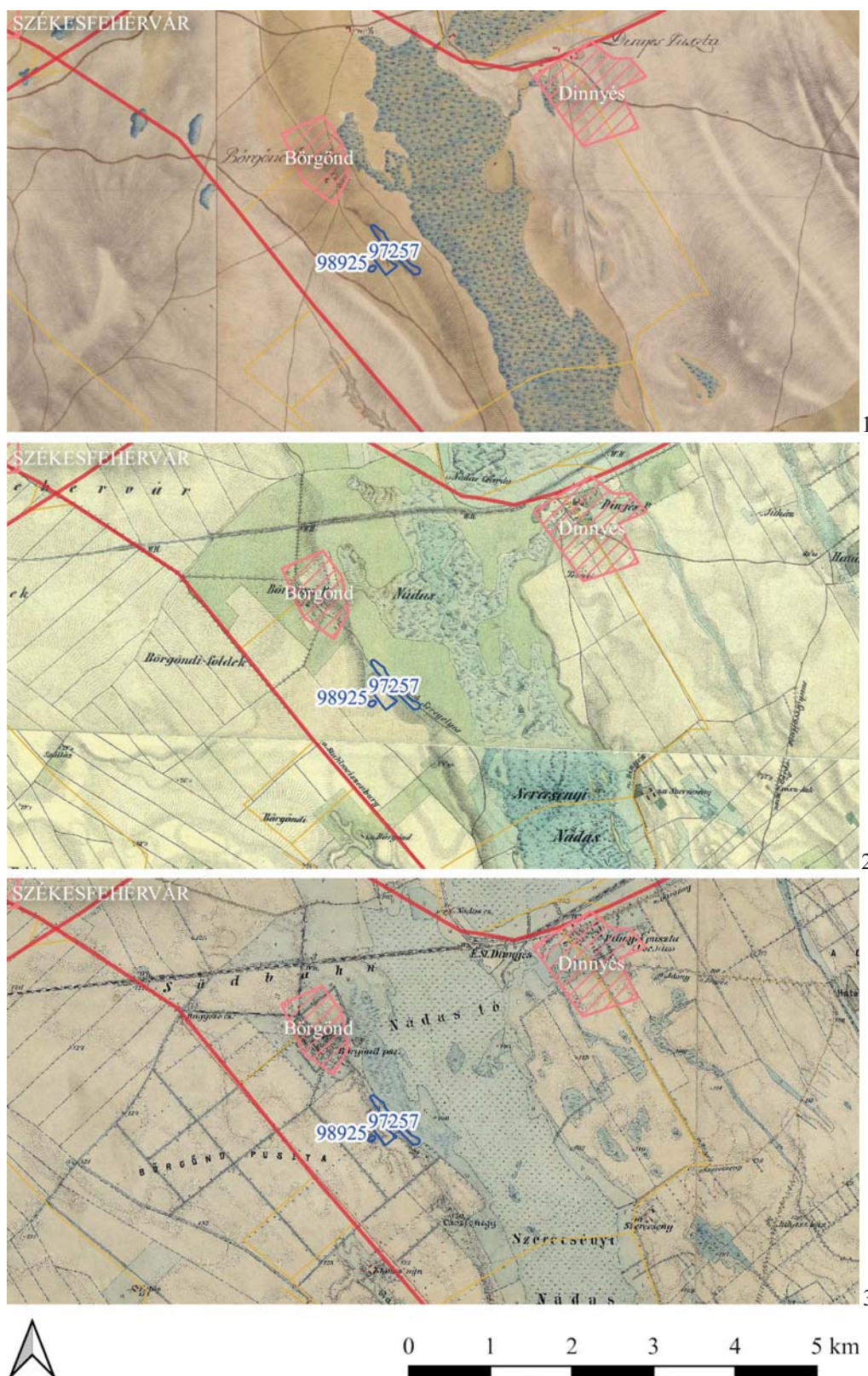


Fig. 9. Sections of the Habsburg military surveys (©Ákos Ekrik, ©Zsófia Nádai): 1. The study area on a map of the First Habsburg Military Survey from 1783 (<https://maps.arcanum.com/hu/map/firstsurvey-hungary/>); 2. The study area on a map of the Second Habsburg Military Survey from 1858 (Source: <https://maps.arcanum.com/hu/map/secondsurvey-hungary/>), 3. The study area on a map of the third Habsburg Military Survey from 1882. (Source: <https://maps.arcanum.com/hu/map/thirdsurvey75000/>)

entrenchments run along the edges and through the forest strip on the hill and various types of ammunition and shells are scattered in the whole vicinity. These phenomena make field-walking more difficult and have a disturbing effect on the metal detector, magnetometer, and GPR-surveys.

Archaeological sites

Börgönd, (Szent) Lászlóhegy [ID No. 91095], a Bronze Age fortified settlement

The site and its research history

Szent László-hegy is a low hill and the highest point of the hill range in the study area. The hill's eastern slope decreases severely into the swampland. The north-western site towers above a steep gully, thus ending in the north in a pointy, triangular protrusion, where the hillfort of the Middle Bronze Age Vatyá culture is located.²³ After the first publication, the site has been known by academia as Székesfehérvár-Börgöndpuszta-Lászlóhegy,²⁴ while its official name in the Central Register of Archaeological Sites in Hungary (IVO) is Székesfehérvár-Börgönd-(Szent) Lászlóhegy. The northern part of the hillfort falls in the forested strip separated from the ploughlands by a ditch by its southern edge. The fortification continues on the ploughland in the south; the ditch closing off this settlement part was still visible in the early 2000s. The northern and eastern sides of the hillfort are accompanied by a 10-12 m wide terrace in the steep hillside.²⁵ As barely any archaeological finds were collected outside the ditch in the ploughed field, the area inside it – about 165 m long and of 1.5 hectares – was identified as the site.²⁶ The hillfort, on an about 20-25 m high elevation, towers above the surrounding marshlands, offering a great view of the glittering open water of Lake Velence on one side and the range of the Velence Mountains, home to another Middle Bronze Age centre, Pákozdvár, in the administrative area of today's Pákozd.²⁷

The relationship between the settlement and the lake was probably much closer in the Bronze Age than today. The hillfort at Börgönd was positioned only ca. 600-800 m away from the western basin of Lake Velence; thus, its setting is closely similar to that of other coeval hillforts of the Vatyá culture in the Vál Valley (Baracska, Kajászó, and Vál),²⁸ which were all established on the top of a high plateau at the edge of the broad valley of a stream. Besides, similar is the setting of some hillforts in the catchment area of Cikola-víz, a stream in the south-eastern part of Fejér County (e.g., Perkáta-Forrás-dűlő, Perkáta-Faluhelyi-dűlő: the fortified settlements are positioned on the higher, southern zones of the loess plateaus, often by the edge, next to a steeply sloping side.²⁹

In terms of climate history, the Middle Bronze Age fell into the Beech phase of the Subboreal stage of the Old Holocene Period. The average temperature increased after the cold climate characterising the Early Bronze Age, and the weather became markedly wetter. As floods were frequent, rivers abounded with water, and groundwater levels were high. Settlements were usually established on top of flood-free elevations next to floodplains.³⁰

²³ Váczai – Stibrányi 2008.

²⁴ See, e.g., Reményi 2012 277, 279; Szeverényi – Kulcsár 2012 295, 316.

²⁵ Váczai – Stibrányi 2008 208; Terei et al. 2011 87.

²⁶ Váczai – Stibrányi 2008 209; Terei et al. 2011 87.

²⁷ Marosi 1930 53; Horváth – Kozák – Pető 2001a 13–14.

²⁸ Szeverényi – Kulcsár 2012 298–301. A large settlement of the Vatyá culture was identified in the administrative area of Baracska, also on the plateau at the edge of the Vál Valley, in 2022. The site was registered in IVO as Baracska, Keleti-dűlő (ID No. 8595).

²⁹ Reményi et al. 2013 55.

³⁰ Somogyi 1987 29; Reményi 2005 3.

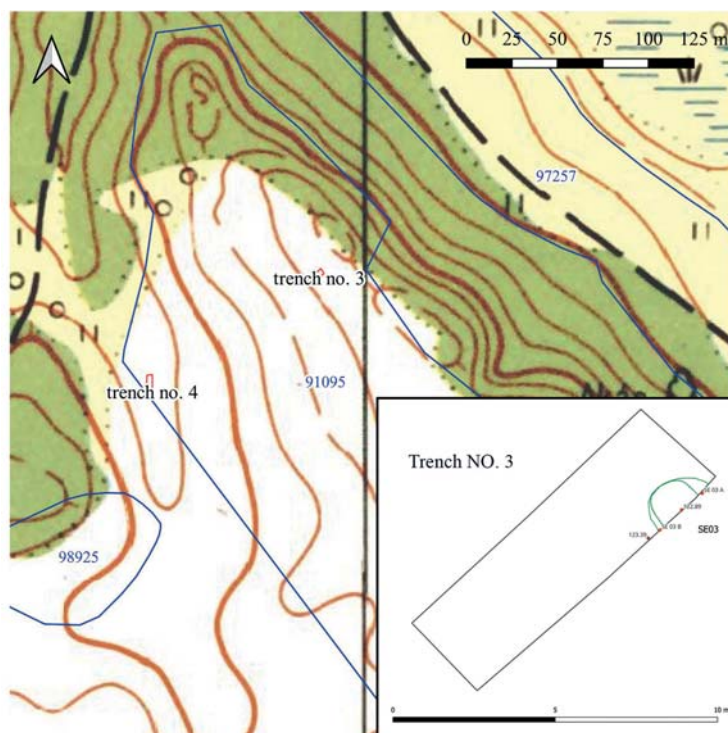


Fig. 10. Survey of the soil condition tests in the hillfort in February 2020 (drawing and digitizing by SZIKM)

Research on the Bronze Age hillfort in 2020–2021

In February 2020, the company cultivating crops on the field opened a trench in the area of the site to check the soil's condition (*fig. 10*). Luckily, the works were reported to the museum, and the discovered archaeological features were documented properly. The 2.5×10 m trench No. 3 deepened gradually towards the south-west; its deepest point was 2.20 m from the current surface. The archaeologists from SZIKM identified three features in it.

- SE-1: hard, thin, light grey plaster layer, like a trodden surface, at a depth of 0.55–0.60 m, covered by a layer of humus mixed with ash, pottery fragments, animal bones, and yellow clay. Its extent could not be determined (*fig. 11. 1*).
- SE-2: Upside-down-trapezoidal-profile soil stain under the topsoil in the southern and northern profiles at the middle of the trench. It could be assigned to the Vatyá culture based on its grey-brown, ashy fill with clay and soot inclusions; it could be a pit or a ditch (*fig. 11. 2*).
- SE-3: Red, ashy, sooty soil stain of a pit with a small vessel in the profile wall at the south-eastern end of the trench. The part falling in the area of the trench was unearthed. It was a large beehive-shaped storage pit with potsherds, animal bones, and a spindle disc in its loose, ashy, and sooty fill. The pit also contained four fine miniature pottery bowls (*fig. 11. 3*).

It was clear from the profile of the trench that the Bronze Age settlement in this part is single-layered, and its features start relatively high, right under the topsoil. The 2020 survey yielded numerous surface findings, mostly potsherds and grindstone fragments, which were scattered in an area considerably bigger than the registered extent of the site; however, the settlement ditches were not visible anymore on the ploughed field.

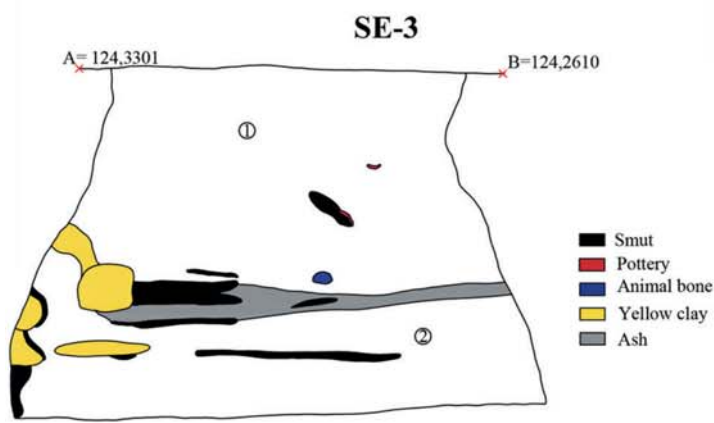
Two one-day metal detector surveys were conducted in the ploughed part of the site on 29 July and 4 August 2021 after reaping. Pottery and grindstone fragments were collected from about the same area as the previous year. No potsherd was found in the forested strip due to the thick



1



2



1. Dark gray soil layer mixed with fragments of clay, charcoal, daub and some ash
2. Light gray soil layer mixed with fragments of clay, smut, charcoal, daub and a lot of ash

0 1 m



3

Fig. 11. Profiles of the soil condition test trench (Trench No. 3): 1. SE-1; 2. SE-2; 3. SE-3 (photos by Ágnes Kovács, drawing by Teofil Rétfalvi)

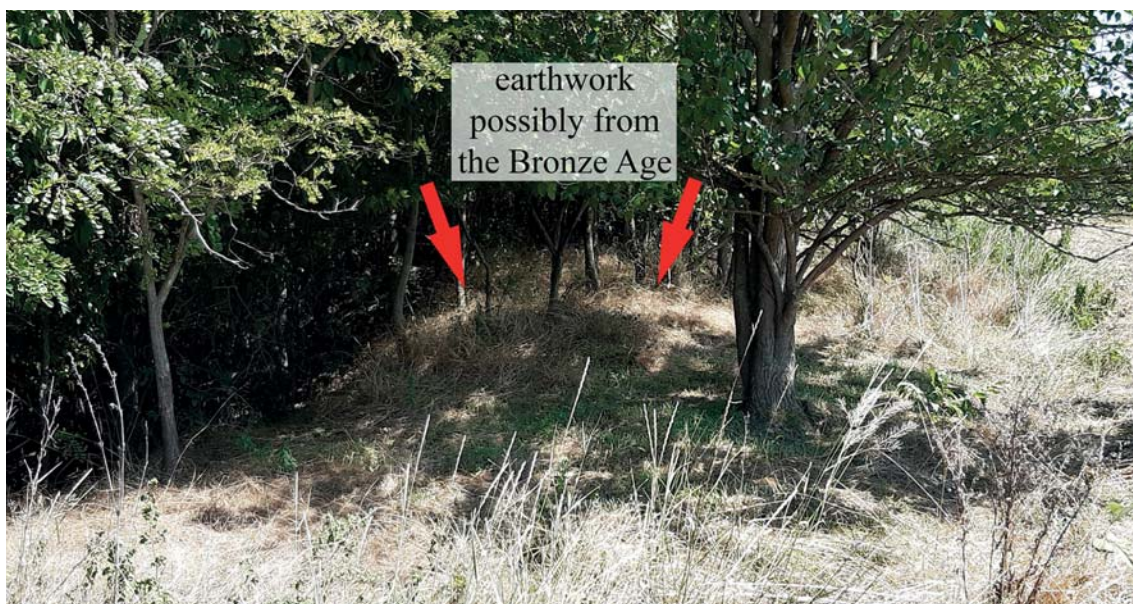


Fig. 12. Surface of the hillfort in July 2021 (©Ágnes Kovács)

undergrowth, but a beautiful crescent-shaped pendant was recovered from the northern, fortified centre of the site (*fig. 13. b. 7; fig. 15. 7*). Also, the remains of an about one metre-high earthen rampart of unknown age were observed in the forested strip bordering the ploughed field from the northeast. While the shape and size of this earthwork are similar to those at the eastern edge of the Vatyá hillfort at Kajászó-Várdomb,³¹ its chronological position is unknown.

Our team also investigated the Bronze Age hillfort, carrying out a magnetometer survey there on 14–16 July 2022 (*fig. 13*). The crops had been reaped on the fields above the hillfort by then, but the surface was covered by a thick blanket of drying crop stems, preventing them from conducting a metal detector survey in the area. Vatyá-style potsherds and the fragment of a polished stone axe were collected from the field at the northern zone of the hillfort.

The structure of the hillfort

The semicircular ditch at the northern corner of the ploughed field on the magnetometer survey (*fig. 13. a*) image matches the soil stain on a 2015 satellite image by Google Earth, highlighted on the map with a red dashed line. Máté Stibrányi and Gábor Váczi detected the remains of probably this ditch on the surface.³² The outline of the ditch is not clear anymore in the 2017 satellite image and is barely discernible in the one taken in 2023. All important bronze finds that could be assigned to the Vatyá culture were discovered in the soil stain of the ditch, including a bronze dagger found in the topsoil layer (*fig. 13. b. 2*). The southern end of the ditch extends slightly over the registered perimeters of the site, roughly matching the surface find scatter recorded by Máté Stibrányi and Gábor Váczi in their first survey.

Another ditch starts south of the arched trench on the magnetometer survey map. This second ditch is probably the continuation of another ditch observed in the 2017 satellite image and roughly matches the surface find scatter recorded in 2020 and 2021. Some pottery sherds and a few grindstone fragments were collected in this outer zone of the site.

Based on the above, we believe the hillfort constitutes of diverse parts. The actual hillfort, of 0.6 ha, stood at the northernmost point of the site, which is currently under the forested strip

³¹ Terei et al. 2011 65.

³² Váczi – Stibrányi 2008 209, Abb. 2.

(*fig. 13. a. 1*).³³ A settlement engirded by the semicircular ditch lay south of it (*fig. 13. a. 2*); its surface abounded with findings in the early 2000s and 2020–2021 (the bronze finds collected at that time can also be linked with this settlement). Based on the intensity of the surface finds' scatter and the composition of the find material (*fig. 13. b*), the hillfort and the settlement were an important centre in the period.

The investigations in 2020–2021 outlined another settlement part outside the arched ditch of the settlement around the hillfort. Agricultural activity (probably ploughing) has disturbed the surface of this outer settlement extensively, but the surface find scatter recorded in 2020–2021 (*fig. 12*) closely matches the line of the second ditch identified on the magnetometer survey map and the satellite image. Conclusively, there must have been a second, less intensive settlement zone, also engirded by a ditch, outside the arched ditch of the central settlement; this hypothesis is also supported by the dense scatter of features (probably pits) in the area in question (*fig. 13. a. 3*).

The plateau continues ca. 5–10 m below the hillfort on its northern side but still markedly above the marshy plain. The fourth Bronze Age settlement part was discovered there; it was probably also an external settlement of the hillfort (*fig. 13. a. 4*). The trench opened in this part in 2020 provided evidence that this part is single-layer.

Finds from the Bronze Age hillfort

The pottery collected from the area of the hillfort is rather fragmentary. The only vessels with a full profile are the four small bowls recovered from SE-3, a pit in the soil condition test trench opened in 2020 (*figs. 14–15*).

1. Highly burnished, small bowl with everted rim, a concave upper side, and a slightly convex, rounded bottom with an omphalic, flat base. Black, made of sand-tempered clay. The sharp belly line is decorated by a circular row of short, vertical strokes, with three parallel lines of horizontal strokes below. The omphalic base is also surrounded by a circle of short, radial strokes in three concentric circles. The incised strokes and lines were filled with white lime paste. A single band handle connects the rim with the belly line (*fig. 14. 1*).³⁴
2. Highly burnished small bowl with an everted rim, a concave upper side, and a slightly convex, rounded bottom with an omphalic, flat base. Black and dark grey, with beige spots; undecorated. Made of sand-tempered clay. A single band handle connects the rim with the belly line (*fig. 15. 1*).³⁵
3. Highly burnished miniature bowl with everted rim, a concave upper side, and a slightly convex, rounded bottom with an omphalic, flat base. Black inside and dark grey outside, with beige spots; made of sand-tempered clay. A single band handle connects the rim with the belly line (*fig. 15. 2*).³⁶
4. Highly burnished miniature bowl with everted rim, a concave upper side, and a slightly convex, rounded bottom with an omphalic, flat base. Dark grey inside and light grey outside, with brown spots; made of sand-tempered clay. The belly line is decorated with a circular row of short, vertical strokes connected to the omphalic base with four bundles of three lines forming a cross. The bottom corner of each quarter is filled with a triple stroke. The incised patterns were filled with white lime paste, the remains of which are still visible at points (*fig. 14. 2*).³⁷

³³ *Váczai – Stibrányi 2008* 208.

³⁴ Inventory number in the collection of the King St. Stephen Museum in Székesfehérvár: Inv. No. SZIKM 2023.4.1.1. Diameters: rim 7.4 cm, base 1.4 cm; height: 3.4 cm.

³⁵ Inv. No. SZIKM 2023.4.1.2. Diameters: rim 7.5–8 cm, base 1.3 cm; height 3.5 cm.

³⁶ Inv. No. SZIKM 2023.4.1.3. Diameters: rim 7.7–7.9 cm, base 1.5 cm; height 3.3 cm.

³⁷ Inv. No. SZIKM 2023.4.1.4. Diameters: rim 7.8 cm, base 1.8 cm; height 3.5 cm.

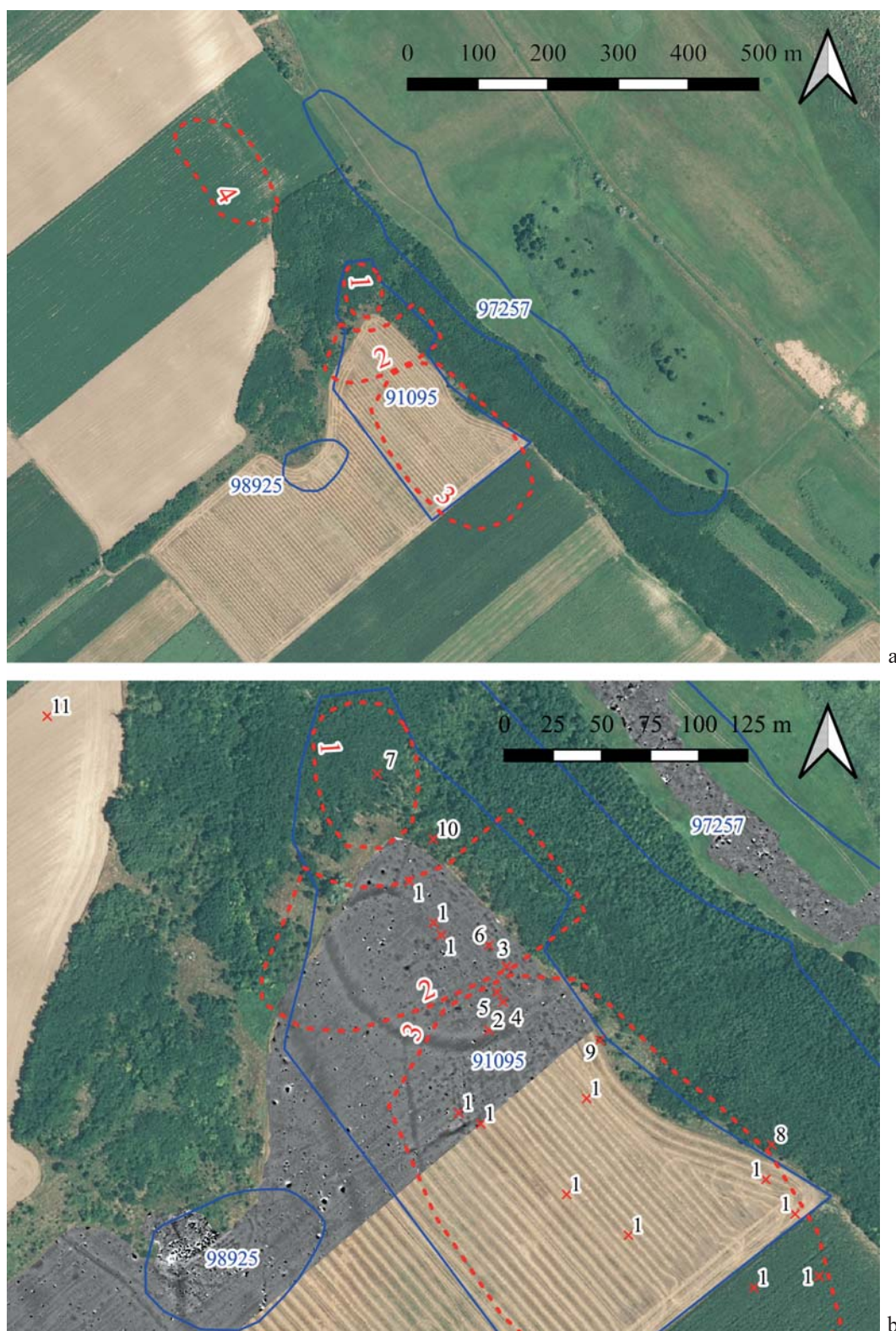


Fig. 13. a. Structure of the hillfort studied in 2020–2022: 1. Semicircular ditch; 2–3. Outline of the ditches based on the satellite images from 2023; 4. Satellite settlement. b. Metal detector finds in the area of the hillfort during the field walk campaign 2020–2022, overlaid on the results of the geophysical survey. Red crosses mark the distribution of Bronze Age finds: 1. Pottery sherd; 2. Bronze dagger; 3. Bronze spearhead (*fig. 19. 3*); 4. Bronze awl (*fig. 19. 4*); 5. Wheel-shaped pendant (*fig. 19. 5*); 6. Bronze pendant fragment; 7. Lunula pendant (*fig. 19. 7*); 8. World War II trench; 9. The bund ditch; 10. The beginning of the bund ditch; 11. The northern edge of the hillfort (Find distribution survey by SZIKM ©Ágnes Kovács, ©Zsófia Náday)



Fig. 14. Decorated miniature bowls from SE-3: 1. Inv. No. SZIKM 2023.4.1.1; 2. Inv. No. SZIKM 2023.4.1.4. (©Zsóka Varga, ©Ágnes Kovács)



Fig. 15. 1. Undecorated miniature pottery vessel (Inv. No. SZIKM 2023.4.1.2); 2. Undecorated miniature pottery vessel (Inv. No. SZIKM 2023.4.1.3); 3. Bronze socketed spearhead (Inv. No. SZIKM 2023.4.3.1); 4. Bronze awl with a rectangular profile (Inv. No. SZIKM 2023.4.3.4); 5. Chipped stone saw made from a crescent-shaped splinter (Inv. No. SZIKM 2023.4.8); 6. Triangular bronze dagger (Inv. No. SZIKM 2023.4.2.1); 7. Bronze wheel-shaped pendant (Inv. No. SZIKM 2023.4.3.2); 8. Knapped stone saw (Inv. No. SZIKM 2023.4.3.8.) (©Zsóka Varga, ©Ágnes Kovács)

Miniature bowl variants first appeared in the Vatyá culture in its classical Szigetszentmiklós phase. This find group includes small conical bowls and downsized imitations of large bowls, often on a low pedestal.³⁸ Such miniature vessels were still in fashion in Phase I of the Vatyá culture but disappeared by Phase II.³⁹

Their elaboration, shape, and decoration assign the small bowls found in Börgönd to the Late Vatyá pottery style; the dark, black-yellow brown spotted, burnished surface and the careful elaboration are characteristic of Phase III of the culture.⁴⁰ The rim of the bowls is wider than the shoulder, and the bottom part is slightly convex rather than straight, i.e. it follows the Vatyá pottery style instead of that of the Nagyrév culture.⁴¹ By their shape, the bowls found in Börgönd could be identified as a Vatyá type that is considered to be the predecessor of the so-called 'kettle-hat helmet-shaped' bowls: their wide, flared rim continues in a concave neck, and their lower part is also slightly convex. This formal variant first appeared in Phase II of the Vatyá culture and remained in fashion in the following phases, too.⁴²

The circular row of short strokes on the belly line of the bowls is a characteristic of Vatyá phase II-style bowls,⁴³ while the concentric circles and the fourfold division of the bottom part are typical of kettle hat-shaped bowls like, for example, the one recovered from a grave in the Late Vatyá culture cemetery at Dunakeszi-Kopolya: that bowl is also decorated with a fourfold-divided pattern with short strokes and tiny circle imprints.⁴⁴ Another bowl from the same cemetery is an upsized version with similar decoration to the small bowls found in Börgönd (with a circular row of short strokes on the belly line, fourfold division of the bottom by lines, and short incisions in the quarters).⁴⁵ Similar decoration appears on a small early Koszider-style bowl from Grave 748 of Dunaújváros-Duna-dűlő, a cemetery: the base of the vessel is surrounded by concentric circles, the outermost consisting of small circles itself, and the bottom is divided in four by straight triple line bundles.⁴⁶

Concentric circles and motifs arranged in circles are another characteristic of kettle-hat-shaped vessels, the base of which is almost always adorned with some circular pattern. For example, the whole bottom part of such a bowl found in Cegléd-Öregszőlők is covered in concentric circles.⁴⁷

Although a shape akin to the bowls' from Börgönd and the concentric circle motif appear already in Phase II of the Vatyá culture, their design, elaboration, and connection with the decoration of kettle-hat-shaped bowls suggest they are younger, probably dating to the Vatyá III–Koszider phase. Small bowls are part of the Vatyá pottery inventory, albeit their number is low. For example, a small bowl with a rim of only 12 cm in diameter was recovered from the area of the hillfort at Börgönd in the early 2000s,⁴⁸ and a relatively small bowl, of only 14.5 cm in diameter and 6.6 cm high, was found in the neck of the urn in Grave 5 at the cemetery of Dunaújváros-Duna-dűlő.⁴⁹ The smallest bowl in that cemetery comes from Grave 748, dating to the early Koszider phase;⁵⁰ its shape and decoration are similar to that of the pieces from Börgönd,

³⁸ *Vicze 2011* 67.

³⁹ *Vicze 2011* 115.

⁴⁰ *Bóna 1975* 60.

⁴¹ *Vicze 2011* 99.

⁴² *Vicze 2011* 115, 122.

⁴³ *Vicze 2011* 116.

⁴⁴ *Kovács 1989* Abb. 8. 2.

⁴⁵ *Kovács 1989* Abb. 8. 4.

⁴⁶ *Vicze 2011* Pl. 182. 9.

⁴⁷ *Bóna 1975* Taf. 43. 6.

⁴⁸ *Váczai – Stibrányi 2008* 209–210, Taf. 3. 8.

⁴⁹ *Kutzián 1945* 511, 516, fig. 4. 6.

⁵⁰ *Vicze 2011* Pl. 182. 9.

and its rim is ca. 12 cm in diameter. As the size of the few small Vatyá bowls ranges 12–16 cm, the bowls recovered from the Börgönd site, with rim diameters of only 7.5–8 cm, are unusually small, resembling, in this respect, the miniature vessels of the neighbouring Transdanubian Encrusted Pottery culture (TEPC) instead (see, e.g., the miniature bowls in Grave 14 of Királyszentistván).⁵¹ In the border zones of cultures, pottery styles of diverse cultures became gradually more and more similar in the Koszider phase;⁵² therefore, the miniature bowls from Börgönd may be interpreted as a mark of the intensification of interaction between Vatyá and TEPC communities at that time.

The 2021 metal detector survey yielded relatively few Bronze Age metal finds. All five artefacts presented below were discovered in the 20–30 cm thick topsoil layer and could not be assigned to archaeological features (*fig. 15. 3–8*). Besides these, the Bronze Age metal record of the site comprises a crescent-shaped pendant fragment and three tiny bronze nuggets.

1. Triangular bronze dagger with a flat blade and V-profile cutting edge; its tip broke off. The heels are also damaged; originally, the shoulder or hilt-side end of the blade was probably rounded. The hilt was fastened with four rivets to the blade, two of which (in the two inner holes) persisted, while the other two are missing from the outer holes. The rivets are simple, with round, flattened heads (*fig. 15. 6*).⁵³
2. Bronze socketed spearhead; two matching fragments, incomplete. The spearhead's fuller widens at the transition, strengthening the socket. The socket's edge is reinforced with three ribs (*fig. 15. 3*).⁵⁴
3. Wheel-shaped pendant. Openwork, with a cross in the outer ring. The centre of the cross is adorned with two small, round, conical knobs, the smaller on top of the bigger (*fig. 15. 5*).⁵⁵
4. Small lunula (crescent-shaped bronze pendant) with a triangular profile. The suspension loop is rolled backwards, while the arms of the crescent swirl inwards and the tips touch (*fig. 15. 7*).⁵⁶
5. Thin tapered bronze awl; one end broke off (*fig. 15. 4*).⁵⁷

Dagger

Triangular bronze daggers with rounded shoulders first appeared in the Carpathian Basin at the end of the Early Bronze Age; their hilt, made from organic material, was fastened with usually 3–5 rivets to the blade. Tibor Kovács believed their appearance here to mark southeast European influence in the region; the oldest known example was found in Grave 9 of the Pitvaros cemetery.⁵⁸ Triangular daggers with riveted-on hilts spread quickly along the Danube, becoming regular additions to graves of the Kisapostag and Vatyá cultures. The dagger found at Börgönd is relatively small and undecorated; it has no central ridge, the shoulder is rounded-trapezoidal, while the blade is tapered and has a flattened-plum-pit-shaped profile. Based on its shape and size, it could be dated to the oldest phase of the Vatyá culture.⁵⁹ Its closest analogies are also known from early Vatyá cemeteries, including two pieces from Ercsi-Sinatelep⁶⁰ and three from Biatorbágy-Szarvasugrás.⁶¹ Viktória Kiss dated the triangular daggers without a central ridge

⁵¹ *Bóna 1975* Taf. 225. 4–9.

⁵² *P. Fischl – Reményi 2013* 733.

⁵³ Inv. No. SZIKM 2023.4.2.1. Length 6.3 cm, width 4.1 cm, thickness 0.3 cm.

⁵⁴ Inv. No. SZIKM 2023.4.3.1. Length 9.3 cm, width 3.8 cm, thickness 2.1 cm.

⁵⁵ Inv. No. SZIKM 2023.4.3.2. Diameter 3.2–3.3 cm, thickness 0.3–1 cm.

⁵⁶ Inv. No. SZIKM 2023.4.3.3. Length 2.6 cm, width 2.3 cm, thickness 0.2 cm.

⁵⁷ Inv. No. SZIKM 2023.4.3.4. Length 4.5 cm, width 0.8 cm, thickness 0.5 cm.

⁵⁸ *Kovács 1973* 160–161; *P. Fischl – Kulcsár 2011* 65.

⁵⁹ *Bóna 1975* 49–50.

⁶⁰ *Bándi 1966* 11, 14.

⁶¹ *Mali 2014* 29, 31, 34–35.

to the end of the Early and start of the Middle Bronze Age;⁶² the known analogies of the dagger from Börgönd, a stray find from Somogy County and one found in the area of Büssü in the same county,⁶³ could also be dated to this period. The appearance of bronze daggers in the find material is probably marking the emergence of social inequality and a hierarchical society, where persons of a special social position were provided with a bronze dagger for the afterlife.⁶⁴ However, the distribution of metal grave goods of the early Vatyva culture is still relatively homogenous.⁶⁵

Spearhead

The bronze spearhead was already fragmented upon discovery, and the exact shape of its tip could not be reconstructed. The unique decoration of its socket leaves no questions about its dating: the best analogy to the circular, groovy lines around the socket, imitating ribbing, is known from one of the earliest known spearheads recovered from Grave 35 of the Battonya cemetery of the early Maros culture.⁶⁶

The spearhead, a stray find from Szigetszentmiklós-Felsőtág, bears a similar decoration. A cemetery of the Nagyrév and early Vatyva cultures having been known on the northern outskirts of Szigetszentmiklós, Rózsa Kalicz-Schreiber dated the stray spearhead to the early Vatyva culture or its advanced phase at the latest, which is thus one of the oldest spearheads known from the Carpathian Basin.⁶⁷

The perforation on the socket of the spearhead is perpendicular to the blade, which is also a characteristic of early type variants, as spearheads with a perforation in line with the blade only appeared first in the Koszider phase.⁶⁸ In summary, based on the decoration of the socket and the position of the perforation, the spearhead found at Börgönd is one of the oldest in the Carpathian Basin; like the piece from Szigetszentmiklós, it can be dated to the early Vatyva culture.⁶⁹

Wheel-shaped pendant

Wheel-shaped pendants were widespread in the territory of today's Germany and Switzerland and remained in fashion for a prolonged period from the Göggenhofen phase of the Tumulus culture to the Ha B1.⁷⁰ Only a few examples are known from the Middle Bronze Age Carpathian Basin. Alexandra Gävan published a piece from Nitriansky Hrádok-Zámeček (Slovakia); the casting mould of the object was also found on the site.⁷¹ Besides, another example is known from a depot discovered on the outskirts of Temesnagyfalu (Satu Mare, Romania); Carol Kacsó dated the find assemblage to the Koszider phase.⁷² Flat four-spoke pendants also appear in Tumulus culture context; see the ones from Sopronnyék, dated to after the Koszider Period,⁷³ or the Late Tumulus Period specimen, assigned to the Ópályi hoard horizon, from Felsődobosza.⁷⁴ Four-spoke openwork wheel pendants are incorporated, as central elements, in the design of Kisterenye-type large pendants with rib decoration (known, e.g., from Kisterenye and Rimaszombat);⁷⁵ besides,

⁶² Kiss 1999 155.

⁶³ Kiss 1999 155, Taf. I. 1–2.

⁶⁴ Vicze 2011 108; Mali 2014 44–45; Szeverényi – Kiss 2018 41.

⁶⁵ Bóna 1975 52.

⁶⁶ Kovács 1975 28, Abb. 4. 5, Abb. 5.

⁶⁷ Kalicz-Schreiber 1995 31, 48.

⁶⁸ Szeverényi 2008 59.

⁶⁹ Kalicz-Schreiber 1995 48; Szeverényi 2008 59.

⁷⁰ Wels-Weyrauch 1991 53.

⁷¹ Gävan 2015 132.

⁷² Kacsó 1998 12, 16–17.

⁷³ Mozsolics 1973 53, Taf. 3. 4–6.

⁷⁴ Mozsolics 1973 53, Taf. 47. 32.

⁷⁵ Mozsolics 1973 52–53, Taf. 21, Taf. 40. 8.

the Late Tumulus Period Deposit IV of Velem-Szt. Vid, discovered in 1977, comprised thirteen wheel-shaped pendants.⁷⁶ This latter assemblage included three pendants similar to the one from Börgönd (openwork, with a ‘cross’ in the middle)⁷⁷ Wheel-shaped pendants survive into the Late Bronze Age (see the finds of, e.g., Celldömölk-Sághegy⁷⁸), but the design of the late variants is markedly different from the one found in Börgönd, comprising two concentric circles and at least eight spokes. The design of the pendant discovered in Deposit I of Sióagárd-Leányvár is the closest to our find from the archaeological record of the Urnfield culture.⁷⁹

Crescent-shaped pendant

Two crescent-shaped pendants, a complete and a fragment, were found in the area of the hillfort at Börgönd. The type appeared first at the end of the Early Bronze Age; the oldest specimens were recovered from burials of the Kisapostag culture, while younger ones were frequent additions to Vatya burials, occurring in the record of almost every known Vatya site. Variants of the type also appear in TEPC sites, albeit less frequently than in the Danube Region.⁸⁰ The complete pendant from Börgönd (*fig. 15. 7*), with inward-rolled horns, represents a more closed younger variant. Such a pendant was also found in the Temesnagyfalu depot (mentioned above), which included an analogy to the wheel-shaped pendant.⁸¹

Awl

The last metal artefact is a pointy bronze awl with a rectangular profile; one of its tips broke off. Alexandra Gävan mentions seventeen bronze awls from Bronze Age tell settlements in the Carpathian Basin; however, these all come from layers assigned to the Otomani–Füzesabony cultural complex. Bronze awls may also be found in graves of the Füzesabony culture but are rare in depots.⁸² Ildikó Szatmári published five bronze awls from the Füzesabony-Öregdomb tell settlement.⁸³ Such artefacts are considerably more rare in the western parts of the Carpathian Basin: one is known from a grave of the Kisapostag culture at Zamárdi, and another from a Grave 1 of Márok, a TEPC burial.⁸⁴ The Vatya depot unearthed at Solymár-Várhegy-Mátyásdomb consisted of a bronze awl, a bronze axe, a bronze needle, and several mugs in a bowl.⁸⁵

Stone tools

The stone tools of the hillfort at Börgönd are also worth mentioning. Gábor Váczi and Máté Stibrányi collected a polished mace fragment from the surface in one of their surveys.⁸⁶ Maces are usually linked with important tribal centres; the record of Pákozdvár, the largest Vatya hillfort, included three polished stone mace fragments.⁸⁷

⁷⁶ *Bándi – Fekete 1984* 126.

⁷⁷ *Bándi – Fekete 1984* 116–117, *fig. 20. 2, 4, 5.*

⁷⁸ *Patek 1968* 147; *Patek 1968* Taf. XXVIII. 30–36.

⁷⁹ *Váczi 2014* 45, 47, *fig. 2. 28.*

⁸⁰ *Mozsolics 1967* 87; *Kiss 2012* 111.

⁸¹ *Kacsó 1998* V. 1.

⁸² *Gävan 2015* 115.

⁸³ *Szatmári 2017* 58–59.

⁸⁴ *Kiss 2012* 134.

⁸⁵ *Valkó 1941* 99–100.

⁸⁶ *Váczi – Stibrányi 2008* 209–210, Taf. 3. 5.

⁸⁷ *Horváth – Kozák – Pető 2000* 14–15.

A knapped stone tool was also found on the surface during the metal detector survey in 2021. 1. Saw. Bifacial saw with finely retouched cutting edge, made from a crescent-shaped splinter. With sickle-gloss on both sides of the edge (*fig. 15. 8*).⁸⁸

Knapped stone saws with a serrated, retouched edge are frequent finds in settlements of the Vátya culture, appearing on Bölcse-Vörösgyír,⁸⁹ Igar-Galástya, Lovasberény-Mihályvár, Pákozdpákozdvár,⁹⁰ and Százhalombatta-Földvár.⁹¹ Erzsébet Bácskay analysed the use-wear traces on the tools, concluding that the sheen on them is caused by crop stems with high cellulose content; therefore, knapped saws of this type are also called ‘reaping knife-like sickles’.⁹²

Börgönd, Temetői-dűlő [ID No. 98925], a supposed medieval church site

As mentioned above, Máté Stibrányi identified first the place of the old graveyard of Börgönd village on a cadastral map compiled in 1884,⁹³ showing a fenced-in rectangular area with the surrounding fields marked ‘Temetői-dűlő’ [Cemetery Field]. Tree icons and ‘sz.e.’ (=szálerdő, seedling forest) marking fill the enclosed part, accessible through a today overgrown dirt road amidst the ploughlands (*fig. 8. 2*). The place appears with similar markings on the 1:25 000 and 1:75 000 maps of the third Habsburg military survey, compiled in 1882 (*fig. 9. 3*).⁹⁴ However, the fenced-in area is not marked on the relevant map of the second and first Habsburg military surveys from 1858 (*fig. 9. 2*) and 1783 (*fig. 9. 1*).⁹⁵ On the latter, a small, lonely marking is visible on the north-western side of the western stretch of the hilltop; it is uncertain however, if it is deliberate or a flaw on the map. Otherwise, no ecclesiastic feature is displayed in the area of Börgönd on this earliest survey map. It has also to be noted that none of these historical maps mark the enclosed area as a cemetery in use. They indicate a graveyard and, later, a chapel on the northern edge of the recent settlement instead. It is possible that the abandoned but still known burial site on the hilltop was fenced in and tidied up to some extent in the 19th century (as an act of piety or with a new purpose in mind), but no direct evidence of that has been obtained yet. A village resident told us on one of our outings that he played in the old cemetery as a child in the 1970s and remembers seeing dates from the 1600s and 1700s written on some of the tombstones. He did not know though, when these stones were taken down, neither could find them anymore.

The once fenced-in area is partly ploughed, partly covered by shrubs and seedlings today; during our surveys, we found at its southern and south-western fringes worked stones of various sizes, mortar crumbs, and some bone fragments, and collected medieval potsherds. Besides, we discovered a carved stone fallen in the World War II trench following the edge of the forest. The stone could come from the cemetery but could be a simple landmark, too, as the 19th-century cadastral map has proven that the forested strip was a border between plots at that time.

Geophysical surveys

The magnetometer survey has revealed part of a structure of two concentric circles, in the ploughed part of Temetői-dűlő, on the border of the once enclosed ‘old cemetery’ area (*fig. 16*). The anomaly of the two features does not stand out clearly at points. The biggest distance between two points of the detected part of the outer circle is 55 m. During the first survey, the area of the

⁸⁸ Inv. No. SZIKM 2023.4.3.8, 3.2 × 1.9 × 0.5 cm.

⁸⁹ Horváth – Kozák – Pető 1999 64.

⁹⁰ Horváth – Kozák – Pető 2001a 9, 12, 15.

⁹¹ Horváth – Kozák – Pető 2001b 200.

⁹² Horváth – Kozák – Pető 2001b 200.

⁹³ Stibrányi 2015 115.

⁹⁴ Kovács 2002 insert no. 28.

⁹⁵ Kovács 2002 insert no. 20, insert no. 4.

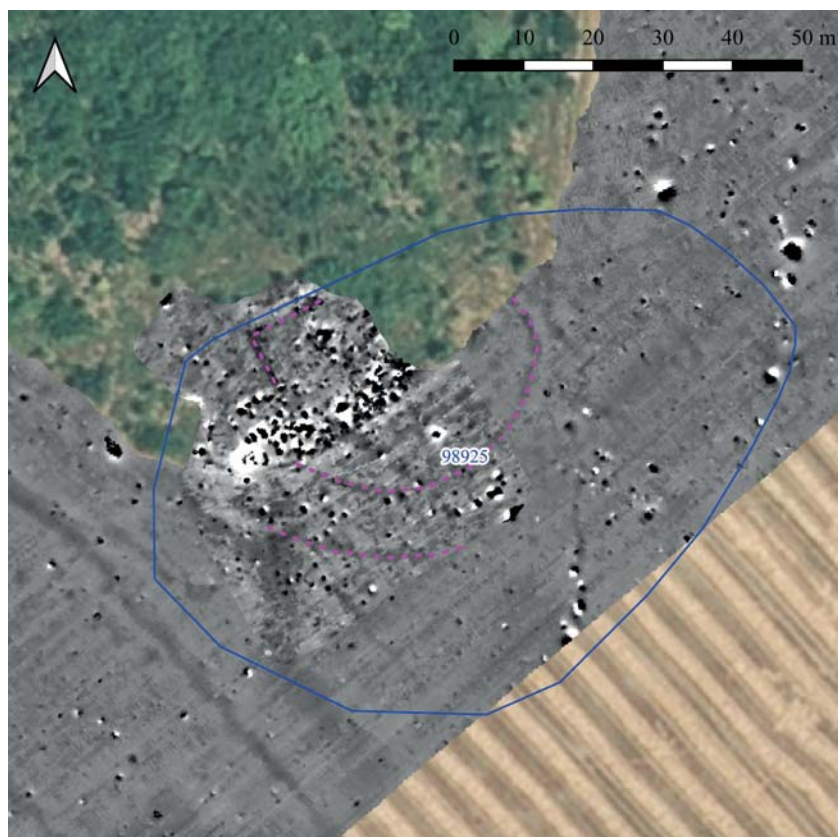


Fig. 16. Magnetometer survey map of Temetői-dűlő (-10/10 nT) (©Adrián Berta)

shrubby and forested strip of land in the northern zone was not accessible; therefore, we started the second survey with clearing the undergrowth in a part of that. After that, the surveyed area could be expanded; this second survey was more accurate than the first, as data were recorded with a 0.25 m sensor spacing. As the area was highly contaminated, no clear image of the part inside the double circular trench could be obtained. The quadrangular corner of a structure was discerned there, but the detail was insufficient to define its character with absolute certainty. Selected parts of this area were also GPR surveyed (BOR2–4) to collect more data. However, even these surveys did not provide suitable information for distinguishing surely identifiable archaeological features.

Pottery finds

Medieval potsherds – four rim, a handle, and a few side fragments – , a few bone fragments, pieces of stone, and mortar crumbs were collected from an area of about 40 × 90 m next to the southern corner of the shrubs covering the hilltop, at and within the concentric double trench structure. All rim fragments came from pots made from clay tempered with medium fine, dark sand and fired to yellow-white. They were part of bulging, everted rims with slightly curved lips and rounded edges (*fig. 17. 1–2*) of about 15–26 cm diameter.⁹⁶ Similar pots are known from Székesfehérvár⁹⁷ and the wider area of the Vértes Mountains,⁹⁸ based on which these fragments could be dated to the second half of the 15th–early 16th centuries. The handle fragment of a

⁹⁶ Inv. Nos. SZIKM 2023.4.5.1–2.

⁹⁷ *Siklósi 1993* 76, figs. 6–7.

⁹⁸ *Kovács 2021; Kovács 2022; Kovács 2023.*

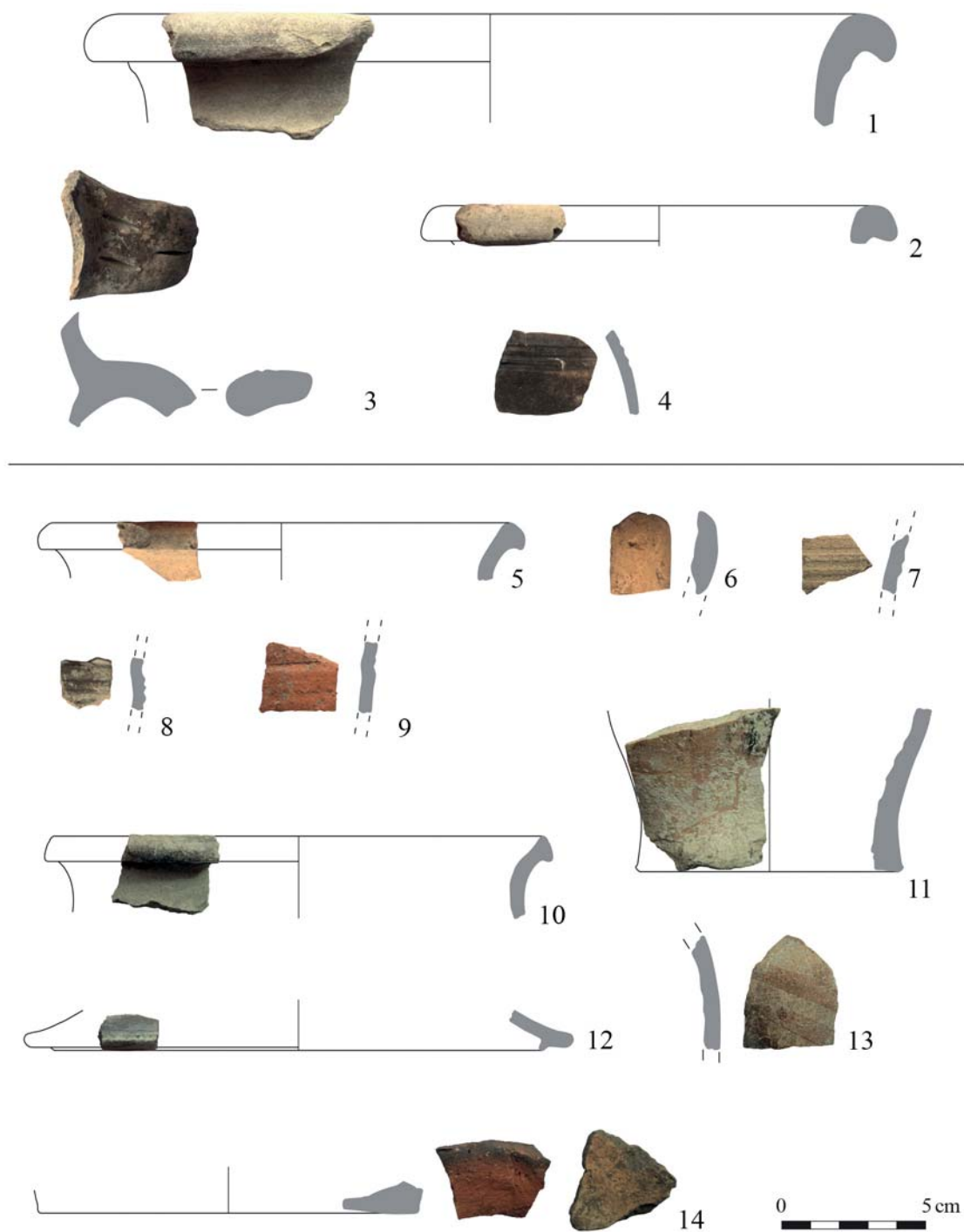


Fig. 17. Surface pottery finds collected in the medieval sites. Fragments 1–4 are from the supposed medieval church site, Temetői-dűlő [ID No. 98925], and fragments 5–14 are from the medieval village site, the area of Faluhelyi-dűlő [ID No. 97257] (©Bianka Kovács, ©Nóra Mészáros)

flat band handle with incisions once belonged to a liquid container, probably a pitcher. It is pale pink, made of clay tempered with fine sand and a few larger, red inclusions (*fig. 17. 3*).⁹⁹ Pitchers with incised decoration on their handles first appeared in the 14th century,¹⁰⁰ but some variants remained in fashion for a longer time;¹⁰¹ thus, the fragment could be dated only approximately to the 14th–15th centuries. The material of some side fragments is akin to the rim fragments; one has three incised lines on the shoulder. The remaining side fragments were made of gravel-tempered clay and fired to red. As they are sooted and burnt outside, they were probably part of cooking pots once. In summary, the pottery collected in the area of the Temetői-dűlő could be dated to the Late Middle Ages.

In conclusion, our working hypothesis is that the one-time church – represented by the rectangular corner on the surveys – stood within the double trench. However, this could not be proven indisputably, as no finds could be collected from the shrubby zone, despite our attempts on four field walking campaigns (two metal detector-aided). To gather more accurate information on this part of the site, further magnetometer and GPR surveys must be carried out after clearing the area from the vegetation cover. Repeated field walkings in various states of vegetation could also help the research.

Börgönd, Faluhelyi-dűlő [ID No. 97257], a medieval village site

Zsuzsanna Bánki described the site as a 14th–16th-century village destroyed by fire. She found, amongst other late medieval pottery finds, several cup-shaped stove tiles and hypothesised (without further explanation) that the one-time inhabitants were engaged with fishing in the first place.¹⁰²

The Börgönd (medieval form: *Bwrgwn/Bergen*) toponym first appears in Árpád Age documents. The placename appearing in two transcripts of the deed of foundation of the Veszprém Bishopric from 1009 possibly refers to this settlement. The name ‘*Bergeni*’ appears in a transcript made in the Tihany convent;¹⁰³ however, another transcript, made after the second half of the thirteenth century mentions ‘*Beren*’ instead,¹⁰⁴ which, according to results of recent archival research, may better be identified with one of the few settlements named ‘*Berény*’ in Fejér County.¹⁰⁵ The first certain mention of Börgönd is dated to 1249 when Székesfehérvár shared a border with ‘*Bwrgwn*’.¹⁰⁶ Next, it appears in a document describing the lands of *Noe*, a village mentioned as its southern neighbour (in the forms ‘*Bergen*’ and ‘*Felbergen*’; according to the document, the south-eastern neighbour at that time was ‘*Meed*’).¹⁰⁷ The Árpád Age *Noe* was identified as a settlement on the western outskirts of Kisfalud, part of Székesfehérvár today, and the expansion of the modern village allowed for the excavation of a fairly large part.¹⁰⁸ As *Meed*, later Dinnyésméd, lay in the territory of the recent Dinnyés village, the coeval Börgönd had to be somewhere within its current administrative area, too.¹⁰⁹

⁹⁹ Inv. No. SZIKM 2023.4.5.3.

¹⁰⁰ *Feld* 1987 265.

¹⁰¹ E.g., *Holl – Parádi* 1982 Abb. 159.

¹⁰² *Bánki* 1979 110.

¹⁰³ *Sarnyai* 2022 296–297; Transcript: *MNL OL DL* 4; *DHA* 44–48.

¹⁰⁴ Transcript: *VFL* III.1.a.1. Veszprém eccl. et capit 9; *MNL OL DF* 200655; *DHA*. 8.

¹⁰⁵ *Farkas* 1991 202–203; *Györffy* 1987 354; *Érszegi* 2010 23; *FNESZ* 1. 251.

¹⁰⁶ *Györffy* 1987 354; *Csánki* 1897 321; *MNL OL DL* 640.

¹⁰⁷ *Zsoldos – Thoroczkay – Kiss* 2016 232; *MNL OL DL* 640. *RA* II/4. 211 (no. 4208.).

¹⁰⁸ *Mesterházy* 2017. Enlisted in IVO as Székesfehérvár-Kisfalud-Újtelep [ID No. 29158].

¹⁰⁹ *Györffy* 1987 354, 394.



Fig. 18. Magnetometer survey map of Faluhelyi-dűlő (-20/20 nT). Red arrow marks a ca. 5 × 15 m area with anomalies, probably the remains of a late medieval house (©Ákos Ekrik, ©Zsófia Nádai, ©Adrián Berta)

Geophysical survey

The site's land cover is heterogeneous: it is bordered by wetlands in the east, with a dirt road west of it, followed by a 25–65 m wide meadow and the forested strip. A row of 0.7–0.8 m high bumps, each with an area of ca. 10 × 15–20 m, can be seen between the dirt road and the forest strip; the western end of the row runs under the forest. These mounds could be identified as the remains of the houses of the medieval Börgönd village.¹¹⁰ A magnetometer survey was conducted on about 2.4 ha between the wetland and the forest, revealing nine anomalies right under the bumps on a 300 m long, northwest-southeast directed area, which could thus be identified as said houses. Due to the land cover, they could only be partially investigated; thus, the ground plan of most buildings could not be measured precisely. The houses were parallel, and their main axis was northeast-southwest. The northernmost house also had a perpendicular addition, i.e., its ground plan was probably L-shaped. Besides, north of the houses, the anomaly of a trench running northwest-southeast outlined, which, based on its shape and relative position to the anomalies of the village, is unlikely medieval. This trench is supposed to continue on the other side of the forest and run into the anomaly of the Bronze Age hillfort at the highest point of the terrain (*fig. 18*).

Metal finds

Two metal detector surveys were conducted in the area of the medieval site by the institutions participating in the research and involving the community archaeology team of the county. In the course of these, altogether 34 medieval metal artefacts were collected in July 2021 and August 2022. The finds included several coins, clothing accessories, and tools dating from the first decades of the Árpád Age to the early Ottoman Conquest Period, indicating that the area was continuously inhabited in these centuries.

¹¹⁰ *Stibrányi 2015* 115.



Fig. 19. Metal detector finds from the sites and their close area: 1. Nuremberg-type book corner fitting from 1475–1530 (Inv. No. SZIKM 2023.4.4.3); 2. Bronze finger ring (Inv. No. SZIKM 2023.4.4.8); 3. Cast signet ring, worn (Inv. No. SZIKM 2023.4.3.16); 4. Convex bronze band ring (Inv. No. SZIKM 2023.4.3.17); 5. Bronze band ring with a pair of incised parallel lines (Inv. No. SZIKM 2023.4.4.14); 6. Bronze ring with an engraved capital I (Inv. No. SZIKM 2023.4.4.13); 7. Hammered bronze signet ring with engraved double cross and bird pair from the late 13th–early 14th centuries (Inv. No. SZIKM 2023.4.4.6); 8. Buckle belt with a D-shaped frame (Inv. No. SZIKM 2023.4.4.23); 9. Denar of Duke Leopold VI of Austria (1198–1230) minted in 1220–1230 (CNA Cg4, Inv. No. SZIKM 2023.4.3.18; 1.55 g); 10. Denar of King (Saint) Stephen I of Hungary (997–1038) with ‘REGIA CIVITAS’ legend in the reverse (CHN.I.3, Inv. No. SZIKM 2023.4.4.21; 0.85 g); 11. Denar of Louis II of Hungary from 1524 (CNH.II. 308A, H846; Inv. No. SZIKM 2023.4.3.19; 0.47g); 12. Denar of Duke Frederick the Fair of Austria (1314–1330) (CNA B230, Inv. No. SZIKM 2023.4.3.20; 0.36 g) (©Zsófia Nádai, ©Zsóka Varga)

Covering the whole period from the emergence of the Kingdom of Hungary to the Battle of Mohács, the five coins are great anchors for dating the medieval village.¹¹¹ The series starts with a denar of King (Saint) Stephen I with REGIA CIVITAS in the legend of the reverse, minted between 997 and 1038 (*fig. 19. 10*).¹¹² The next period is represented by a Friesach denar of a type, specimens of which are frequently found in coin hoards from the time of the Mongol Invasion. This piece has another completely unreadable coin corroded onto its reverse side. It was probably issued by Prince Leopold IV of Austria (1198–1230) minted around 1220–1230 in Pettau (*fig. 19. 9*).¹¹³ The next coin, a denar from Vienna with the *Bindenschild*, i.e., the Austrian coat of arms with barry of five on its obverse, was issued by Frederick the Fair (Duke of Austria in 1314–1330) and minted in the early 14th century (*fig. 19. 12*).¹¹⁴ The youngest medieval coin was issued by King Louis II of Hungary (1516–1526) and minted in 1524, two years before the Battle of Mohács, which marked the beginning of the Early Modern Era, intertwining with the Ottoman Conquest Period in Hungary (*fig. 19. 11*).¹¹⁵

The six bronze rings recovered from the site thus far also cover all periods of the Middle Ages. The series includes four simple hammered metal sheet band rings, representing a type present in the medieval record since the Árpád Age.¹¹⁶ The outer side of one of the two undecorated band rings¹¹⁷ is convex (*fig. 19. 2, 4*).¹¹⁸ The two decorated rings could be dated to the Late Middle Ages;¹¹⁹ one is decorated with a capital ‘I’,¹²⁰ while the other features three circular, parallel ribs (*fig. 19. 5*).¹²¹

Signet rings are easier to date. They appeared first in the late 12th century, in context with the spreading of writing and the use of written records, and were popular from the end of the century on.¹²² The find material collected on the site included two bronze signet rings, a hammered and a cast one. Hammered rings were made in the Carpathian Basin from the Hungarian Conquest Period, while casting only appeared – and exclusively amongst signet rings – from the late 14th century. Cast rings imported from the Balkans may be found in the archaeological record up to the 11th century; whether the presence of casting reflects an influence from the Balkans or was a local metallurgical achievement cannot be determined.¹²³ The cast signet ring recovered from the site is heavily damaged: only a part of its bezel survived, and the engraving has become so eroded that it cannot be discerned anymore (*fig. 19. 3*).¹²⁴ By the applied technology, it was made in the 14th–15th centuries at the earliest, but its dating cannot be specified.¹²⁵ The other signet ring was hammered out from a thick metal sheet; the signet in its oval bezel features a double cross with a bird on each side in an oval frame (*fig. 19. 7*).¹²⁶ The birds step outwards and turn their heads back, looking at each other. Originally, the double cross was part of the royal insignia and has become part of the iconography of private signet rings, probably via coins, to express a

¹¹¹ We are grateful to Dr. Csaba Tóth (Hungarian National Museum) for his help with identifying the coins.

¹¹² CNH.I.3. Inv. No. SZIKM 2023.4.4.21, 0.85 g.

¹¹³ CAN Cg4. Inv. No. SZIKM 2023.4.3.18, 1.55 g.

¹¹⁴ CAN B230. Inv. No. SZIKM 2023.4.3.20, 0.36 g. Found a little south of the Faluhelyi-dűlő site.

¹¹⁵ CNH.II.308A, H846. Inv. No. SZIKM 2023.4.3.19, 0.47 g.

¹¹⁶ Horváth 2016 79.

¹¹⁷ Inv. No. SZIKM 2023.4.4.8.

¹¹⁸ Inv. No. SZIKM 2023.4.3.17.

¹¹⁹ Horváth 2016 79–80.

¹²⁰ Inv. No. SZIKM 2023.4.4.13.

¹²¹ Inv. No. SZIKM 2023.4.4.14.

¹²² Lovag 1980 234.

¹²³ Rózsa – Szigeti 2021 268–269.

¹²⁴ Inv. No. SZIKM 2023.4.3.16.

¹²⁵ Litauszky 2012 14; Rózsa – Szigeti 2021 269.

¹²⁶ Inv. No. SZIKM 2023.4.4.6. The ring was found a little north-east of the settlement.

right conferred on the owner by the king.¹²⁷ In the 14th–15th centuries, incised frames gradually vanished from signet images.¹²⁸ Bird representations first appeared in this context in the second half of the 13th century and became increasingly schematic in the 14th–15th centuries; however, the frame in the case of the signet image of the find discussed does not seem to have a dating value.¹²⁹ In summary, the signet ring with the double cross and bird representations was made sometime between the second half of the 13th and the early 14th centuries.

The presence of a book mount in such a tiny settlement may be of special significance (*fig. 19. 1*).¹³⁰ The piece collected in the Börgönd site is a lozengiform, openwork, repoussé corner fitting made from a copper sheet with two adjacent sides bent down and under to fit the corner of the cover, the other two edges lobed and shaped with an unifoil terminal in the fourth corner. The piece features a central prominent truncated conical boss at the stem of the large openwork trefoil acanthus leaf stretching towards it from the opposite corner and dominating the framed field. The leaf motif is enhanced by hatched bands of incised strokes. Small, leafy branches ending in dotted rosettes accompany the two sides of the leaf motif. The straight edges have seven and eight lobes, respectively, adorned by a chased continuous row of dotted semicircles around larger, embossed, round knobs. The repoussé technique and the truncated conical central knob are characteristic of late medieval book corner fittings, and the acanthus motif and the details of its design help specify this dating: the fitting is a specimen of the Nuremberg type, made between 1475 and 1530.¹³¹

The analogies from the territory of the Kingdom of Hungary give a hint at how frequent these fittings were at the time. Almost identical corner mounts, identical up to details like the lobed edges and the chased dot motifs, were found during the excavation of the Szent Zsigmond [St. Sigismund] Church in Buda¹³² and the investigations of the Cistercian monastery in Pilisszentkereszt.¹³³ This type of book fitting was widespread in Central Europe and German territories as well. Such a piece could persist in a historical environment way more favourable in this respect than that of Hungary, i.e. in the Munich Court Library. Elek Benkő published a medieval book cover from the Munich Court Library with a complete set of fittings made in Nuremberg, featuring identical corner mounts.¹³⁴ This book's¹³⁵ binding was made in Master Schedel's bookbinding workshop in Nuremberg at the turn of the 15th and 16th centuries. With 250 persisting bindings, the workshop of Master Schedel was the biggest of the twenty-six of Nuremberg; they often bound the works by Hartmann Schedel, which means that the book fittings were most likely made in Nuremberg.

¹²⁷ King Béla III (1171–1196) included it amongst his royal insignia and had it designed into his coins (CNH.I.112). *Lovag 1980* 233; *Litauzsky 2012* 26–27.

¹²⁸ *Litauzsky 2012* 26–27.

¹²⁹ Different from the usual eagle representations in heraldry. Earlier, Mária Hlatky (*Hlatky 1938*) classified the signet rings with a simple line frame to the turn of the 13th and 14th centuries AD.

¹³⁰ Inv. No. SZIKM 2023.4.4.3.

¹³¹ *Benkő – Barkóczy 2018* 176; *Adler – Ansoerge 2007* 173–174 (ALM 2001/59/529, Abb. 13. 3). As the book corner fitting is a single stray find, it cannot be excluded that it got into the site in context with the reparation or rebinding of an older volume.

¹³² *Ujhelyi 2017* 46–48, Taf. I. 2003.4.3.

¹³³ *Benkő – Barkóczy 2018* 184, fig. 15 below left.

¹³⁴ *Benkő – Barkóczy 2018* 184, fig. 15 centre; *Wagner 2006* 34–35.

¹³⁵ A transcription by Hartmann Schedel around 1500, a collection of manuscripts of the greatest humanists of the era. The Fuggers obtained two volumes for their library from Melchior, Schedel's grandson, and published them in print under the title 'Celtis Collection'. The book discussed got to the Munich Court Library as part of the Fuggers' Library. *Wagner 2006* 34; Münchener Hofbibliothek: <https://mdz-nbn-resolving.de/urn:nbn:de:bvb:12-bsb00015883-3> [last accessed on 22. 06. 2023].

The collection of the Morgan Library and Museum also includes a 15th-century book¹³⁶ bound in leather stretched over wooden plates of 21 × 15.5 cm and fitted with five very similar copper mounts on each side, made around the turn of the 15th and 16th centuries. These analogies help us identify the workshop where the fitting could have been made and the size of the book it covered.

The noteworthy finds of the site also include a bronze belt buckle with a heart-shaped pin guard (*fig. 19. 8*).¹³⁷ It belongs to the type of buckles with a D-shaped frame; one of its close analogies was recovered from 15th–16th-century context in the area of the Royal Palace of Buda,¹³⁸ while another, in the collection of the Hungarian National Museum, was dated to the end of the 14th century.¹³⁹ Another analogy is known from a rural context from Csepely.¹⁴⁰ In summary, the D-shaped belt buckle from Börgönd could be dated to the Late Middle Ages.

The metal detector survey yielded more, mainly late medieval and early modern, artefacts: lead fragments,¹⁴¹ two conical bronze cover plate fragments,¹⁴² fragments of iron fittings and bands,¹⁴³ horseshoes,¹⁴⁴ boot nails,¹⁴⁵ and iron nails.

Pottery finds

As the area of Faluhelyi-dűlő is currently a meadow, pottery could only be collected from molehills in tiny fragments during the first survey of the site. This meagre collection was completed by some larger pieces found while digging for metal objects in the metal detector survey and some finds dug out by wild boars, collected in the third field walking campaign; thus, the current pottery record consists of a few side fragments, three rim fragments, two base fragments, and a broken piece of handle. Two of the rim fragments belonged to pots and one to a lid. The pot rim fragments (*fig. 17. 5, 10*)¹⁴⁶ are similar to the yellow-white pot type described above, and they were also part of vessels with everted, bulging, rounded rims and mouth diameters of 15 and 17 cm, respectively. The third rim fragment (*fig. 17. 12*)¹⁴⁷ belonged to an off-white lid of 17 cm diameter, with a rounded rim and a flange, made from clay tempered with medium-fine sand. A fragment of a vessel base, 8 cm in diameter, is yellow (*fig. 17. 11*),¹⁴⁸ while the other, of a base 12 cm in diameter, is red and coarser, tempered with gravel (*fig. 17. 14*).¹⁴⁹ Based on the burn and soot marks, both belonged to cooking pots. The band handle fragment has an orange shade freckled with dark dots due to the sand temper in its material (*fig. 17. 6*).¹⁵⁰ The side fragments include an orange-coloured piece with red painting, most probably of a liquid container (*fig. 17. 13*),¹⁵¹ exact

¹³⁶ It is a collection of epistles by Gasparino Barzizza, printed in 1470 in the workshop of Michael Udalricus Martinus. The book was part of the library of the Benedictine Monastery of Saint Mang in Füssen, Bavaria. The binding was most likely also made there. Source: <https://www.themorgan.org/incunables/133638> [last accessed on 22. 06. 2023.].

¹³⁷ Inv. No. SZIKM 2023.4.4.23.

¹³⁸ *Horváth 2016* 94–95.

¹³⁹ *Lovag – Kovács – Garam 1999* 92.

¹⁴⁰ *Kovalovszki 1969* 247, fig. 35.

¹⁴¹ Inv. Nos. SZIKM 2023.4.3.23–24.

¹⁴² Inv. Nos. SZIKM 2023.4.4.16, SZIKM 2023.4.4.20; *Horváth 2016* Taf. XXXVIII, fig. 2.

¹⁴³ Inv. Nos. SZIKM 2023.4.4.4, SZIKM 2023.4.4.9, SZIKM 2023.4.4.17.

¹⁴⁴ Inv. Nos. SZIKM 2023.4.4.5, SZIKM 2023.4.4.18. The horseshoes were dated to the 15th century based on the design of the nail groove. *Gere 2003* 29.

¹⁴⁵ Inv. No. SZIKM 2023.4.3.21.

¹⁴⁶ Inv. No. SZIKM 2023.4.4.28.

¹⁴⁷ Inv. No. SZIKM 2023.4.4.30.

¹⁴⁸ Inv. No. SZIKM 2023.4.5.4.

¹⁴⁹ Inv. No. SZIKM 2023.4.4.36.

¹⁵⁰ Inv. No. SZIKM 2023.4.5.5.

¹⁵¹ Inv. No. SZIKM 2023.4.4.33.

analogies to which are known from 15th-century contexts in Székesfehérvár¹⁵² and the Castle of Csókakői.¹⁵³ Save for two, the rest of the side fragments are either fine yellow or coarser red; a red and two yellow pieces are decorated with incised lines (*fig. 17. 7–9*).¹⁵⁴ Besides, there is a single grey sherd of a vessel representing the so-called Austrian ware, which is but too uncharacteristic for specifying its dating within the 13th–16th century range. A T-profile rim fragment¹⁵⁵ of a red pottery cauldron with gravel temper and a thick, tiny fragment with crushed lime temper prove that the area was inhabited already in the Árpád Age.

Conclusions

Bronze Age

Fortifications of the Vatya culture

At the end of the Early Bronze Age, the Kisapostag and Nagyrév cultures amalgamated along the Danube, and a new cultural unit, the Vatya culture, emerged, which persisted throughout all three phases of the Middle Bronze Age; based on the radiocarbon sequences of Százhalombatta-Földvár and Kakucs-Balla-domb, this equals to about 2000/1900–1500/1450 BC, i.e., the Rei Bz A2–B1 phases.¹⁵⁶

The early Middle Bronze Age fell in the middle phase of the Subboreal climatic stage, characterised by a warmer climate and more precipitation compared to the previous one. Favourable climatic conditions and Early Bronze Age technical innovations like, for example, the plough, the use of draught animals, and the manuring of fields brought about a considerable population increase. This was the heyday of Bronze Age tell settlements in the Carpathian Basin.¹⁵⁷

In the Vatya culture's time, life continued uninterrupted in the tell settlements established by communities of the Nagyrév culture on the right bank of the Danube. These large centres were started around 2300/2200 BC, i.e., at the end of the Early Bronze Age, and accumulated a sequence of occupation layers reaching up to 6 m by the end of the Middle Bronze Age. Hillforts, the flagship settlement types of the Vatya culture, only emerged in the second half of its life, on top of elevations, often near water – along streams discharging into the Danube, the valleys of the Sárvíz, Váli-víz, and Benta streams, and the Velence Mountains. At the same time, the tells on the right bank of the Danube were fortified, and new hillforts were established along a former branch of the river; the easternmost Vatya hillfort is Alpár-Várdomb at the right bank of the Tisza River. The latest overview of the culture enlists 53 hillforts and fortifications.¹⁵⁸

Vatya hillforts were established usually on (loess) plateaus with steep sides towering above the surrounding plain and providing excellent views in all directions. The tapered end of the plateau was usually closed by a deep, V-profile trench; the 'severed' small area was the actual fortification or 'small fort', while the settlement (the 'big fort'), often also surrounded by a ditch, stretched on the other side of the trench. Settlement features are frequently identified also outside this second trench. The exact structure of Vatya hillforts is dissimilar as they were always adapted to the actual terrain.

¹⁵² *Siklósi 1983* Abb. 4.

¹⁵³ *Kovács 2023* fig. 9.

¹⁵⁴ Inv. Nos. SZIKM 2023.4.5.5–7.

¹⁵⁵ Similar to the type b defined by Miklós Takács for the clay cauldrons of the Little Hungarian Plain (*Takács 1996* 169, Abb. 16).

¹⁵⁶ *Jaeger – Kulcsár 2013* 289; *Kiss et al. 2019* 187.

¹⁵⁷ *Reményi 2005* 1–3; *P. Fischl – Reményi 2013* 727.

¹⁵⁸ *Dani et al. 2019* 853.

However, Vatyá hillforts share some structural elements, including the V-shaped trenches and lesser levelled terraces. The geophysical survey of Perkáta-Forrás-dűlő I has revealed a Vatyá hillfort where the ditch was accompanied by another feature, perhaps a palisade wall.¹⁵⁹ At Alpár-Várdomb, the earthen rampart was constructed from the fill of the trench when it was dug, and had no internal support structure.¹⁶⁰ In contrast, the rampart at Pákozdvár was reinforced with stones in a clay ‘mortar’ in two or three rows under the earthen surface.¹⁶¹ The geophysical survey has outlined a deep ditch around the settlement at Kakucs-Turján, dividing the inhabited part of the site into three parts. The three settlement parts seem to have had diverse functions: most settlement features concentrated in one part, with significantly less household waste in the second next to it (probably because it was built up later), while only wells and water reservoirs in the third zone, probably used for pasturing animals.¹⁶²

While the fortified Vatyá settlements of Early Bronze Age origin along the right bank of the Danube are real tells with a thick layer sequence, that of the hillforts established in Phase 2 or 3 of the Middle Bronze Age is significantly thinner with fewer occupation horizons; therefore, these were considered earlier ‘pseudo-tells’.¹⁶³ The 2.5 m-thick layer sequence of Sárbogárd-Bolondvár comprised six occupation horizons,¹⁶⁴ the ca. 1.5 m-thick sequence of Aba-Bolondvár eight horizons,¹⁶⁵ while the completely excavated small fort of Lovasberény-Mihályvár proved to be single-layer on the highest part and multi-layer in the lower western and north-western zones.¹⁶⁶ In summary, while the thin occupation layer of the Börgönd hillfort is rare amongst similar settlements of the Vatyá culture, it also occurs in other sites, like Lovasberény-Mihályvár.

The simplest Vatyá hillforts are single-layer settlements engirded by a ditch. Besides, some are divided into two parts, while recent research has identified some consisting of three or more distinct zones.¹⁶⁷ At Perkáta-Forrás-dűlő, a linear structure, perhaps a one-time road, led from the ditch of the small fort to the second settlement part, also surrounded by a trench.¹⁶⁸ Field walks conducted in the last couple of years resulted in the identification of settlement features around several Vatyá hillforts, including the western side of Vál-Pogányvár, the southern side of Kajászó-várdomb, and around Aba-Bolondvár and Ercsi-Bolondvár. In summary, the tripartite structure of the Börgönd settlement and the settlement part on the northern side of the fortification match the characteristics of coeval settlements in Fejér County.

The fortified settlements stood at a distance of 5–10 km from each other, providing the backbone of the Vatyá settlement network, with a dense sub-network of single-layer open settlements of various sizes between them: Börgönd-Szent-László-hegy lays 6 km north-north-east from Aba-Bolondvár and 7.5 km south-south-east of Székesfehérvár-Csala-Rózsahegy. Moreover, the hillfort of Börgönd is situated in the border zone of two cultural complexes: Bálint Savanyú unearthed a TEPC settlement at Székesfehérvár-Hosszúéri-dűlő és Ezres-puszta között [‘between Hosszúéri-dűlő and Ezres-puszta’], only 15 km in the north-west, in 2014 (*fig 20*).¹⁶⁹

The research in the Benta Valley at the north-eastern fringes of Fejér County made possible the reconstruction a distinct geopolitical unit in the study area, which at the time of the Vatyá

¹⁵⁹ *Reményi – Pető 2015*.

¹⁶⁰ *Bóna – Nováki 1982 64*.

¹⁶¹ *Marosi 1930 56*.

¹⁶² *Jaeger et al. 2021 198–200*.

¹⁶³ *Bóna 1992 24; Reményi 2012 276*.

¹⁶⁴ *Bándi 1960 150*.

¹⁶⁵ *Kovács 1963 131*.

¹⁶⁶ *F. Petres – Bándi 1969 173*.

¹⁶⁷ *Dani et al. 2019 853*.

¹⁶⁸ *Reményi – Pető 2015*.

¹⁶⁹ *Pozsgai – Savanyú 2016 9*.

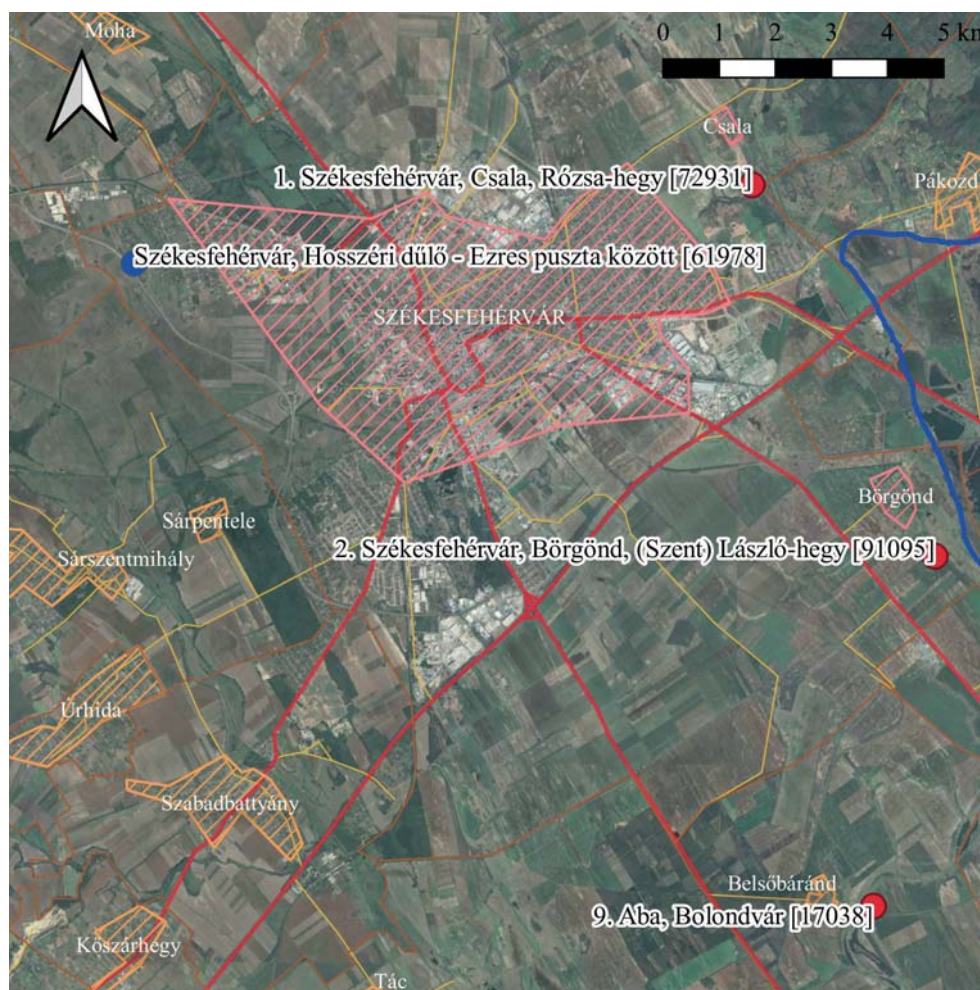


Fig. 20. Fortified settlements around Székesfehérvár-Börgönd-(Szent) László-hegy. Red dots: Vatya culture, blue dot: Transdanubian Encrusted Pottery culture (©Ágnes Kovács, ©Zsófia Nádai)

culture belonged under a single rule with its centre on the tell settlement by the Danube and four minor fortified settlements throughout the valley, guarding the life of the smaller and bigger open settlements between them.¹⁷⁰ Probably a similar formation existed in the valley of the Váli Stream on the eastern bank of Lake Velence at the time.¹⁷¹

The question arising in context with the hillfort of Börgönd is whether a similar formation existed also around Lake Velence. The coastal area of the lake has not been investigated systematically, and the current built-up density hinders any research considerably. IVO contains five Vatya settlements around the lake (sites Nos. 2, 4, 6, 7, and 8 on *fig. 21*), and Gábor Váczí presented some more he had identified in the area in a summary published in 2003, including Site No. 3 on the survey map of *fig. 21*, which is actually two sites, a Vatya phase II–III settlement and a Vatya–Koszider phase cemetery next to it.¹⁷² Only a part of the Vatya cemetery at Velencefürdő is enlisted in the central site register as ‘Gárdony, Berzsényi Dániel utca 8’.

¹⁷⁰ Earle – Kolb 2010 73; Szeverényi – Kulcsár 2012 294–298.

¹⁷¹ Szeverényi – Kulcsár 2012 298.

¹⁷² Váczí 2003 41–45, 49.



Fig. 21. Sites of the Middle Bronze Age Vatya culture around Lake Velence. Vatya sites, marked by red dots: 1. Székesfehérvár-Csala-Rózsa-hegy; 2. Székesfehérvár-Börgönd-Szent-László-hegy; 3. Velencefürdő (cemetery and settlement in *Váczi 2003*, enlisted as ‘Gárdony, No. 8 Berzsényi Dániel Street’ in IVO); 4. Kápolnásnyék-Vörösmarty Múzeum; 5. Velence-Meszlényi-kastély (in *Váczi 2003*, enlisted as ‘Velence, Bágyom-ér partja’ dated to the Bronze Age in IVO); 6. Sukoró-Koldusárok; 7. Nadap-Kőbánya [Stone Quarry]; 8. Pákozd-Pákozdvár.

Bronze Age sites, marked by yellow dots: 1. Székesfehérvár-Kisfalud-Felsőmajor; 2. Gárdony-Szemere Béla and Deák Ferenc streets; 3. Sukoró-Országút alatti-dűlő; 4. Sukoró, Lapos-dűlő
(©Ágnes Kovács, ©Zsófia Nádai)

As the location of another late Vatya site identified by Gábor Váczi at Velence-Meszlényi-kastély [Velence-Meszlényi Castle]¹⁷³ matches that of a Bronze Age site under the name ‘Bágyom-ér partja’ in the central register, the two sites are probably the same. Besides, he mentions a site at Velence-Szőlőhegy without further specification.¹⁷⁴

The site at Székesfehérvár-Csala-Rózsa-hegy is enlisted in IVO as ‘Bronze Age’; this could be specified in a survey conducted in February 2023, when typical Vatya-style pottery and a sherd with wrapped stick¹⁷⁵ imprints, characteristic of the Kisapostag culture, were collected from the surface. The Bronze Age pottery record retrieved from the area of the Börgönd hillfort comprised similar fragments.¹⁷⁶ Csala-Rózsa-hegy is currently far from Lake Velence, but it is

¹⁷³ *Váczi 2003* 41, 49.

¹⁷⁴ *Váczi 2003* 41–43, 49.

¹⁷⁵ Also known as reeled stick in the literature. *Vicze 2011* 71–72.

¹⁷⁶ *Váczi – Stibrányi 2008* 209–211.

situated on the bank of Császár-víz, the stream filling the lake, next to the supposed bank of the former Nádas-tó.

IVO includes several 'Bronze Age' sites from the area of Lake Velence; based on their location, we believe these also belong to the Vatya culture.

The precise extent of Nádas-tó, the former western basin of Lake Velence, is unknown. On the sketch published by László Ádám¹⁷⁷ it is pretty similar to the map of the current reeds around the lake by Gábor Mezősi.¹⁷⁸ Therefore, the path of the blue line marking the probable boundary of the reeds in prehistory in the survey map in *fig. 21* was determined by merging the two. This reconstruction is necessarily imprecise as the lake's shoreline changed rapidly before the construction of an artificial shoreline in the 19th and 20th centuries; thus, the Bronze Age extent of the lake is impossible to reconstruct precisely.

The survey map also reveals that the sites of the Vatya culture surround the lake. Communities of the Kisapostag culture settled at corners of Lake Velence already in the Early Bronze Age – the known sites being Kápolnásnyék-Vörösmarty Múzeum at the south-eastern, Székesfehérvár-Börgönd-Szent-László-hegy at the south-western, and Székesfehérvár-Csala-Rózsa-hegy at the north-western corner. These settlements survived into the Middle Bronze Age, up to the Koszider phase, and their network became completed by settlements newly established by Vatya communities. Besides known late Vatya sites (e.g., the cemetery at Velencefürdő and Velence-Meszlényi-kastély)¹⁷⁹ the settlements at Börgönd¹⁸⁰ and Csala-Rózsa-hegy probably persisted up to the Koszider phase.

The Middle Bronze Age settlements around Lake Velence were established in very diverse ecological settings: plainlands and near the lake by the southern shore, as well as on top of hills somewhat away from the water on the northern and western sides. Besides, there is Pákozdvár, the largest Vatya settlement, which was built on top of a stretch of the Velence Mountains towering above the lake. Despite Pákozdvár lying in a forested mountain region unsuitable for crop cultivation, Arnold Marosi collected ten litres of 'charred wheat' from one of the settlement pits excavated in 1925.¹⁸¹ Currently, no Middle Bronze Age geopolitical formations like those in the Benta and Váli valleys could be outlined around the lake. This area was probably also densely inhabited, and the settlements belonged under more than one rule.

Until lately, Middle Bronze Age fortified settlements were seen as keeps for protecting the residents from the attacks of Tumulus culture people at the end of the period and evaluated accordingly.¹⁸² The current scientific consensus, however, implies a less violent and more intricate web of reasons behind the dawn of tell cultures at the end of the Middle Bronze Age, while hillfort settlements – the ones with a thin layer sequence just as well as the great tells – are interpreted as centres performing complex social and economic functions.¹⁸³

Vatya hillforts are closely linked with metallurgical activities. A bronzesmith's workshop was unearthed at Lovasberény-Mihályvár, and casting moulds and metalworking tools are frequent finds on other sites, too. Besides, depots were usually hidden in and around hillforts, indicating a social aspect of metallurgy in this period: the elite that could afford to accumulate bronze items for a hoard lived in the fortified centres.¹⁸⁴ Some particular prestige items, like the ones made from amber, amongst the finds of hillforts indicate that the residents participated in long-distance

¹⁷⁷ Ádám 1955 326, fig. 5.

¹⁷⁸ Mezősi 2011 162, fig. 3. 13.

¹⁷⁹ Váczi 2003 45, 47–48.

¹⁸⁰ Váczi – Stibrányi 2008 211.

¹⁸¹ Marosi 1930 57.

¹⁸² Bóna 1975 58; Bóna 1992 24; Szeverényi – Kulcsár 2012 288–292.

¹⁸³ Reményi 2012 276; Szeverényi – Kulcsár 2012 291–292; P. Fischl – Reményi 2013 726.

¹⁸⁴ P. Fischl – Reményi 2013 733.

trade. While long-lived tells on the plainland were always established amidst fertile arable lands, hillforts can also be found in mountainous settings like, e.g., the Gödöllő Hills and the Buda Mountains, or the best example, Pákozdvár, an important local (perhaps tribal) centre in Fejér County. The exchange of goods – especially lithic and metal raw materials and/or products – must have been substantial in the subsistence of mountain settlements, just like wool production and the trading of wool products.¹⁸⁵

The Vatyá settlement network, consisting of fortified and minor open settlements, has always been seen as a hierarchical system reflecting a gradually more stratified society.¹⁸⁶ At the same time, some believed a simple hierarchical model is unsuitable for describing the Vatyá inhabitation pattern¹⁸⁷ and, albeit there are signs of social stratification, the community-centred perspective should be highlighted instead amongst the agents at work in organising the Vatyá society.¹⁸⁸ The pottery record of Kakucs-Turján outlines a homogenous and not-so-stratified community.¹⁸⁹

Bronze Age Börgönd

The settlement at Székesfehérvár-Börgönd-Szent László-hegy was established by a community of the Kisapostag culture at the end of the Early Bronze Age. During the Middle Bronze Age, it became a fortified settlement of the Vatyá culture, persisting throughout the period. It was probably a single-layer settlement with three settlement parts and another outer settlement north of the small fort. At the end of the Middle Bronze Age, the resident community probably maintained close connections with nearby TEPC communities, as suggested by the four encrusted bowls found in the settlement area. The bronze dagger and spear, also found there, could belong to a warrior who lived in the Börgönd settlement in its early phase. Lake Velence, which expanded almost to the site, must have played an important part in the life of the inhabitants, as did agriculture, based on the grindstone fragments and the sickle blade in the record.

Medieval Börgönd

Following the mentions in 1249 and 1298 (see above), Börgönd does not appear in documents for a long time, until 1558, when, after the cease of the line of Tamás Zedgyes, it became a property of the Treasury; the text refers to the village in the current form of its name, without the ‘*Fel*’ [Upper] affix.¹⁹⁰ This name appears regularly from the mid-17th century in documents related to the possession disputes of local landlords; a record in 1660 mentions it as *puszta* [abandoned].¹⁹¹ Its borders were surveyed in 1701; a related testimony reveals that it had an Ottoman owner before.¹⁹² On the relevant maps of the first Habsburg military survey and later surveys, the village is displayed where it stands today with the name ‘*Börgöndpuszta*’; however, the ‘*Felbergen*’ [Upper Bergen] name in the 1298 document implies the existence of a ‘*Bergen*’ or ‘*Albergen*’ [Lower Bergen], i.e. that the settlement consisted of two parts at that time. One of the two settlements was certainly the one identified by our surveys, but currently, there is no evidence of whether the other lay where the village is today – save for some uncertain information.

Alán Kralovánszky, archaeologist of the King St. Stephen Museum in Székesfehérvár, unearthed a part of a Late Avar Period (8th–9th-century) cemetery in a rescue excavation related

¹⁸⁵ Reményi 2012 279–280; P. Fischl – Reményi 2013 728.

¹⁸⁶ Reményi 2012 278; P. Fischl – Reményi 2013 729.

¹⁸⁷ Dani et al. 2019 856.

¹⁸⁸ Earle – Kolb 2010 74.

¹⁸⁹ Jaeger et al. 2021 206.

¹⁹⁰ City Archive and Research Centre. The History of Székesfehérvár (<https://albaarchivum.hu/tortenet-osszefoglalo-szekesfehervarrol/>).

¹⁹¹ Farkas 1991 221–222.

¹⁹² Móra 1972 220–221.

to the construction of grain silos by the local agricultural co-operative in 1960. He could only save the site because the local teacher, having learned about the workers finding bones upon digging, notified the museum. Upon arrival, Kralovánszky found the features he later identified as the remains of a late medieval or early modern period house and the related pits above the graves mostly excavated away and could only document their deepest part on the bottom of the silo pit.¹⁹³ As he has given non-matching and rather broad periods for the dating of the features in the excavation report and the short summary of the results in the yearbook of the museum, it can only be stated that the area was in use preceding the establishment of the modern-day Börgöndpuszta. It must be noted, however, that the site of the 1960 rescue excavation lies along the same dirt road as the settlement site in our study area.

Based on the above, a working hypothesis can be formulated: Felbergen, the part closer to Noe, was situated at least partially where the village stands today, while (Al)Bergen lay south of it along the road, at the foot of Szent László-hegy. Accepting that the church stood in the area of the 'old cemetery' would mean that it stood right between the two settlements. However, as we detected medieval find material in considerable concentrations in the area of the church, it cannot be excluded either that the other settlement core was on the hill around the church building – but neither proven, for the time being, as no certainly medieval buildings could be identified there. Some more surveys in the eastern and southern part of the current settlement, especially in the area of Alán Kralovánszky's 1960 excavation site, may help decide this question, which we plan to go on with shortly.

Find material and residents

The metal record of the site implies that the area of (Al)Bergen was inhabited uninterrupted from the Árpád Age to the end of the Middle Ages. Besides their dating value, the recovered metal objects open a window to the daily life, standard of living, financial state, and education of the inhabitants, just like the connections and significance of the settlement and their changes.

According to the evidence of the Friesach and Vienna denars, the settlement entered the long-distance trade network of the area already in the 13th–14th centuries. The spread of these coins is usually connected with cattle trade.¹⁹⁴ Without further proof, one can only state at this point that the settlement participated in regional trade.

If related to the profane instead of the religious sphere of life, the material relics of literacy, including the signet ring (*fig. 19. 7*) and the book corner fitting (*fig. 19. 1*), can be connected with trade in the first place. The 14th-century signet ring is a high-value prestige item used probably for validating documents and signing contracts on a regular basis, implying active literacy. The late medieval book corner fitting is another evidence of regional trade-related activity but points to a significantly later time. The chronological hiatus between the two finds does not necessarily mean the cease of trading; it must be kept in mind that the current record is a highly selective assemblage of random surface finds. The book fitting, made between 1475 and 1530, might represent an upswing in trade at the end of the period: such fittings were mass-produced in Germany and got to bookbinding workshops in the Kingdom of Hungary by trade, while to the settlements like the one at Börgönd, with books. This book corner fitting has also arrived in the territory of Hungary on the order of an ecclesiastical or lay bookbinding workshop.¹⁹⁵

The fitting was probably part of an eight-part set consisting of four corner fittings, two square mounts, and two buckles; based on its size, it protected a printed book bound in wood boards covered with leather. An analysis of Nuremberg-type sheet metal book fittings has revealed

¹⁹³ Kralovánszky 1963.

¹⁹⁴ Rózsa – Szigeti 2021 269.

¹⁹⁵ Another possibility is that it got to the site with a book bound abroad.

a linear connection between the size of the mounts and the related books. Based on that, the 6.2 cm long corner fitting could belong to a 22–33 cm long book, which is a medium-sized medieval book, falling into the range the specimens of which were most frequently completed with metal fittings.¹⁹⁶

What kind of a book could be the one this corner fitting adorned? It could be seen from the analogies presented above that besides ecclesiastical works, non-religious literature had also gained ground in the period in question; maybe such a book could find its way to Börgönd. Another option is, that the fitting belongs to the missal used in the local church, and it was bound with bought fittings in the bookbinding workshops of the Holy Mary Provostship or the Saint Stephen Hospitaller Convent in the nearby Székesfehérvár.

The lives of peasants and lower nobles did not necessarily differ fundamentally in rural settlements; they can only be distinguished on large-scale excavations based on the remains of bigger houses and the occasional prestige items.¹⁹⁷ The signet ring and the book corner fitting might be such items, but it must be noted that stove tiles, another find group considered a marker of the residences of lower nobility, are currently missing from the record. Thus, at this point, it is only reasonable to suppose the presence of rich peasants at Börgönd.¹⁹⁸

Almost every pottery fragment collected in the area of the two sites of the medieval village could be dated to the Late Middle Ages, with a predominance of finds representing the period right before the destruction of the village, i.e., the second half of the 15th and first half of the 16th centuries. Based on the available analogies, most pottery vessels were made in the wider area, and only a single sherd indicated that products of distant pottery centres also reached the settlement.

Buildings and settlement structure

The geophysical surveys and field walks outlined late medieval surface buildings in the area of the Faluhelyi-dűlő site. Due to the lack of excavation, nothing more can be said about their structure; they could be log houses, timber-framed buildings, or those with diverse types of earthen and daub walls (*fig. 18*).

The extent of the building marked by an arrow on *fig. 18*, the geophysical survey map of the site, can be estimated: the related anomalies were detected in an area of 5 × 15 m. In light of the excavated late medieval residential buildings presented below and ethnographic analogies, this length indicates that the house was multipartite. Multipartite buildings with a living room, a kitchen, and a storage room represent, besides a spatial separation of diverse activities and functions, technological development: innovations in heating systems led to the appearance of smoke-free rooms.¹⁹⁹

The northwest-southeast-directed part of the building with the L-shaped ground plan could also be measured; it was about 6 × 20 m. The size, again, indicates a multipartite residential building akin to the ones unearthed in the medieval Csőt village²⁰⁰ and at Sarvaly.²⁰¹ Based on

¹⁹⁶ Benkő – Barkóczy 2018 184–185.

¹⁹⁷ Ferenczi – Sárosi – Zatykó 2023 179–188.

¹⁹⁸ Proving such hypotheses requires more intensive research of the site and the related archival resources.

¹⁹⁹ Barabás – Gilyén 1987 166.

²⁰⁰ Irásné Melis 2004 183–185.

²⁰¹ Holl 1979 40. Several points of the chapter reconstructing the evolution history of medieval residential buildings at the end of the study are debated.

ethnographic analogies, this part could also be an outbuilding.²⁰² This, however, has to remain a hypothesis until further investigations, as without excavation, one cannot even tell whether the two buildings are coeval.

While the extent of several residential buildings could not be estimated, they provide information on the settlement's structure, as the relatively high built-up density indicates a settlement definitely more developed than a cluster of farmsteads. The northeast-southwest directed patches are parallel, indicating the short ends of the houses facing the street. As the Middle Mezőföld microregion is situated in Transdanubia but is more similar to the Great Hungarian Plain, analogies must have been searched for in both regions. The best examples of late medieval settlement morphology in the latter area are Túrkeve-Móric and Szentkirály.²⁰³ The houses in both usually stand on top of small flood-free elevations, sometimes close to the water, like in Móric. However, in Szentkirály, a two-street village along a crossroads, the dirt road's path and the morphology of the valley determined the position of the houses, and the main factor influencing the choice where to build them was distance from the road rather than elevation.

Without clarifying the extent of the village, it cannot be determined whether the identified buildings belonged to a one-street settlement or a street of a more complex one. The significance of the settlement hints at the former; the dirt road could have been west of the identified houses, and its other side was probably built up akin to this one. It has to be noted, however, that a network of 0.5–1 m deep ditches web the hillside above the remains of the village. Some of these must be natural gulches or World War II entrenchments, but the name 'Horgos-oldal' used for the site by Zsuzsanna Bánki, indicates that some of them were considered roads by the locals because the word *horhos*, appearing here as *horgos*, means 'old (hillside) road deepened by water'.²⁰⁴ The presence of such roads would be logical because if the church was indeed on the hilltop, roads must have led there. However, as finds were sporadic in this part of the site, further conclusions cannot be drawn. The area east of the houses is waterlogged even today, and no finds were recovered from there during our summer outings either, when most of the swamp was dried out, indicating that the eastern limits of the settlement have been found. In the current phase of research, plot sizes and the typical arrangement of the buildings within the plots have remained a question.

Based on the distribution of metal findings, the investigated part of Faluhelyi-dűlő was inhabited already in the early Árpád Age (*fig. 22*). However, the geophysical surveys only revealed late medieval surface buildings and no Árpád Age semi-sunken houses, and the pottery collected from the surface could also be dated to mostly the Late Middle Age. Besides, previous research in the area also yielded almost only late medieval structures and finds. The seeming lack of Árpád Age settlement features may be explained by that the anomalies of the late medieval houses were too strong, covering their signals, or that the Árpád Age settlement core is outside the survey area.

²⁰² Diverse forms of the quadrangular arrangement of buildings in a plot appear in the ethnographic record. The earliest building complexes in Transdanubia with an L-shaped ground plan are known from the excavations of Sarvaly. The outbuilding (usually a stable) was 'turned in' by 90 degrees to effectively use space in the long but thin plots. According to the current academic consensus, these L-shaped building complexes were the predecessors of the closed house complexes characteristic of the Órség region (in western Transdanubia), which consisted of timber-framed surface residential and outbuildings on a stone foundation arranged in a closed rectangle with an inner courtyard in the centre (*Barabás – Gilyén 1987 27–30*).

²⁰³ András Pálóczi-Horváth has compared the available data in *Pálóczi-Horváth 2013*. Móric: 280, *fig. 1*, Szentkirály: 283, *fig. 2*.

²⁰⁴ <https://www.arcanum.com/hu/online-kiadvanyok/Lexikonok-a-magyar-nyelv-ertelmezo-szotara-1BE8B/h-2E554/horhos-30F4B/> [last accessed on 22. 06. 2023].



Fig. 22. Structure of the supposed (Al)Bergen [Lower Bergen]. The traces of medieval houses marked by yellow and the pink crosses mark the distribution of medieval finds: 1. Book corner fitting (fig. 27. 1); 2. Bronze finger ring (fig. 27. 2); 3. Cast signet ring (fig. 27. 3); 4. Band ring (fig. 27. 4); 5. Band ring (fig. 27. 5); 6. Bronze ring (fig. 27. 6); 7. Signet ring (fig. 27. 7); 8. Buckle belt (fig. 27. 8); 9. Denar of Duke Leopold VI of Austria (fig. 27. 9, without coordinates); 10. Denar with 'REGIA CIVITAS' in the legend (fig. 27. 10); 11. Denar from 1524 (fig. 27. 11); 12. Denar of Duke Frederick (fig. 27. 12); 13. Iron fragment; 14. Horseshoe fragment; 15. Roman coin; 16. Bronze fragment; 17. Pottery sherd; 18. Mortar; 19. Bone (©Zsófia Nádai)

Landscape and settlements

People exploited the morphological characteristics of the landscape in both the Bronze Age and medieval times, inhabiting the top of the elevations stretching northwest-southeast. The western coastline of lakes Velence and Nádas and the marshland of today's Dinnyési-fertő fundamentally determined the position of settlements and roads in every historical period. On the relevant map of the first Habsburg military survey (fig. 9. 1), the main road is marked passing through the wider area west of 'Börgöndpuszta' (already where it is today) but closer to it than the modern Route E66, running in the valley between the two hill ranges south of the settlement. Besides, a road crosses (and determines) the medieval village site, running on the shore of Nádas-tó, branching out from the road leading to 'Börgöndpuszta', which itself diverges from the west-east Székesfehérvár–Adony road. An inn (with 'w. h.' = *Wirtshaus* marking) is indicated at the latter junction, suggesting the significance of this route. It seems that the lesser ones connecting the two main roads – leading to ferryable sections of the Danube (Székesfehérvár–Dinnyés–Adony, Székesfehérvár–Seregélyes–Dunaföldvár) – meet and branch out at 'Börgöndpuszta', one of them leading by the supposed medieval church site.

This rather complex road system, as recorded on a survey before most modern water regulations around Székesfehérvár, is probably the result of environmental instability. The water levels of the wetlands were constantly changing, necessitating the development of alternative routes between the crossings at Dinnyés and Seregélyes. These routes, determined by the environment, seem to have existed throughout history, their use constantly changing with the seasons and the destination of the travellers. Throughout history, the role of ‘main road’ seems to have alternated between the one following the shore of Nádas-tó (with less changes in elevation) and the other through the hills (which was drier); the Bronze Age sites in the area seem to be more open towards the latter. The supposed church site, probably determined in the Early Árpád Age, is also clearly oriented towards the higher grounds, while the site of the late medieval village follows the road by the lake. Our knowledge of Roman Period sites in the vicinity is limited; stray finds (Late Roman coins and a ring)²⁰⁵ were recovered from along the lower road and a rather large settlement site is known beside it further to the south.²⁰⁶ Our results indicate that besides climatic changes, primarily water regulation shaped the historic landscape in the area. Waterflow was much less extensively controlled in the Bronze and Early Árpád Ages than in the Roman Period, the Late Árpád Age, and in late medieval times.²⁰⁷ The abandonment of artificial water systems, like dams and canals in the Ottoman Era²⁰⁸ could also play a role in that the lower road and the general area of the late medieval village at Börgönd-Faluhelyi-dűlő became less desirable, which, eventually, could lead to its complete abandonment after the initial destruction, while Börgönd at its current location continued to exist.²⁰⁹ We hope that we can shed more light on these processes by further research in the near future.

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²⁰⁵ Roman gemstone inlaid gold plated bronze ring (Inv. No. SZIKM 2023.4.3.11); Roman coins (Inv. Nos. SZIKM 2023.4.2.4–5, 2023.4.4.7, and 2023.4.4.19).

²⁰⁶ Székesfehérvár, Tanya-halmi-dűlő (ID No. 92173).

²⁰⁷ According to earlier research, vast water regulation works were carried out in the Carpathian Basin in the younger phases of the Árpád Age (12th–13th centuries), which may or may not have been maintained in the less centralised kingdom in the Late Middle Ages. (*Ferenczi 2008* 341–346.) However, the highly important Buda–Székesfehérvár road was probably kept passable, and it also had a crucial influence on the study area.

²⁰⁸ Only a few related features are known around Székesfehérvár, but the massive dams at Pátka (Székesfehérvár, Kórákás-major, ID No. 25353) and Fehérvárcsurgó (Fehérvárcsurgó-Vaskapu, ID No. 21878) hint at their extent and significance.

²⁰⁹ The fact, that the old church site possibly remained in use and the abandoned village persisted as a part of the common knowledge indicate that the wider Börgönd area was more-or-less continuously inhabited, settlers leaving their settlement only in more turbulent periods of the Ottoman Era.

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