



The
Danube Limes
in Hungary

ARCHAEOLOGICAL RESEARCH
CONDUCTED IN 2015–2020

PÉCS 2020

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The Danube bend at *Lugio* (Dunaszekcső, Baranya county)



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Foreword

The study of Roman frontiers has been a pivotal subject of the academic hub at Pécs for long decades. Its researchers were pioneers of Hungarian aerial archaeology (*Aerial Archaeological Archive of Pécs*), and have been conducting archaeological excavations and complex non-invasive surveys throughout the Ripa Pannonica. Associate researchers provided the scientific background for the UNESCO World Heritage Nomination of the Hungarian section of the Danube Limes. The Archaeology Department at the University of Pécs has been a prominent agent of Roman provincial archaeology in Hungarian higher education.

This volume is a continuation of the work long begun. We strive to promote Roman frontier studies by organizing workshops, hosting public venues and providing channels to publish recent findings concerning the limes. This publication, available both as a hardcover book and a digital issue, offers insight into exciting and valuable research novities previously unpublished. In the future we aim to continue this tradition and regularly publish recent research results on the Roman limes.

We also aspire to complement traditional publications with flexible and up-to-date online data collection. The Frontiers of the Roman Empire is a unique academic subject. It is a vast historic complex encompassing a multitude of monuments and sites of varying complexities and features, over different social and geological landscapes spanning three continents and more than five centuries. This inherent complexity of Roman frontiers is coupled by a divergent research history, resulting in inevitable bias. These difficulties have been recognized by previous research, but only the digital era brought about a set of solutions to overcome them.

To address and resolve these preexisting conditions, one must treat Roman monuments and sites in an adaptable, complex yet manageable framework, which promotes future redefinitions, meeting the needs of continuously expanding knowledge on its subject of study. Such criteria were kept in mind when creating the CLIR database (<https://clir.hu>), an online data collection and analytics tool tailored to meet the needs of scholars and professionals working with Roman frontiers. This year, the bulk of the work done at CLIR Research Center revolved around creating and fine-tuning the framework of this online platform.

Apart from creating the scientific framework, we also pursue furthering knowledge by conducting research of our own (visit <http://clir-research.hu> to see more of our projects and works).

We kindly thank all authors for their contributions, we look forward to continuing work on the limes as a joint venture.

Pécs, 21 November 2020

Gergő István Farkas
director

Research on Roman temporary camps around Brigetio (Komárom-Szöny) in 2019

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Abstract

Roman temporary camps are special archaeological sites. They appear on aerial photographs, but are invisible on the ground, and lack finds. In the Central Danube region the largest concentration of these nearly untraceable sites were discovered in the environs of Brigetio. The first camps were discovered through aerial survey in 1994, and the number of the camps has grown with the years. These sites have also been studied by field surveys in the past but all of these ended with negative results. In 2019, a very effective but new method was applied here, which is very similar to battlefield archaeology and uses metal detector-aided field survey. Using this method at four Roman temporary camps (BRI VIII–XI) resulted in a number of key findings in just one day of research.

Keywords

Northwest Hungary, Brigetio, Roman temporary camps, Marcomannic Wars; field survey with metal detector

Research background

The landscape guards humanity's footprints from the beginning. It could be a small imprint in the mud, or a giant ecological one. The ancient Roman army had its own footprints too, the temporary camps. These traces of the operations are faint, hard to notice, and when its position is known it is difficult to obtain information. In the case of Brigetio (Komárom-Szöny, Komárom-Esztergom County, Hungary) the Roman army „stumbled in one place” which resulted nearly 30 temporary camps. These camps are known from numerous aerial photographs. Some of these was taken in the 70'es but the first major step forward was in 1994 thanks to Otto Braasch's aerial archaeological work.¹ The next step was the Culture 2000 and FRE Danube Limes UNESCO WHS program when fourteen new sites were discovered.² On these photos the playing card shaped traces of the trenches are clearly visible. This data markedly supports the site's ancient Roman origin, but no more than that. It is logical to link the temporary camps near Brigetio to the Marcomannic Wars, but we need more evidence to prove this theory. These sites have also been studied by field surveys in the past but all of these ended with negative results (Zsolt Visy's limes research, FRE Danube Limes UNESCO

¹ VISY 1995, 216–218; VISY 2000, 32–36; BRAASCH 2003; VISY 2003, 34–38; SZABÓ 2016, 26.

² SZABÓ – VISY 2011, 107–108.

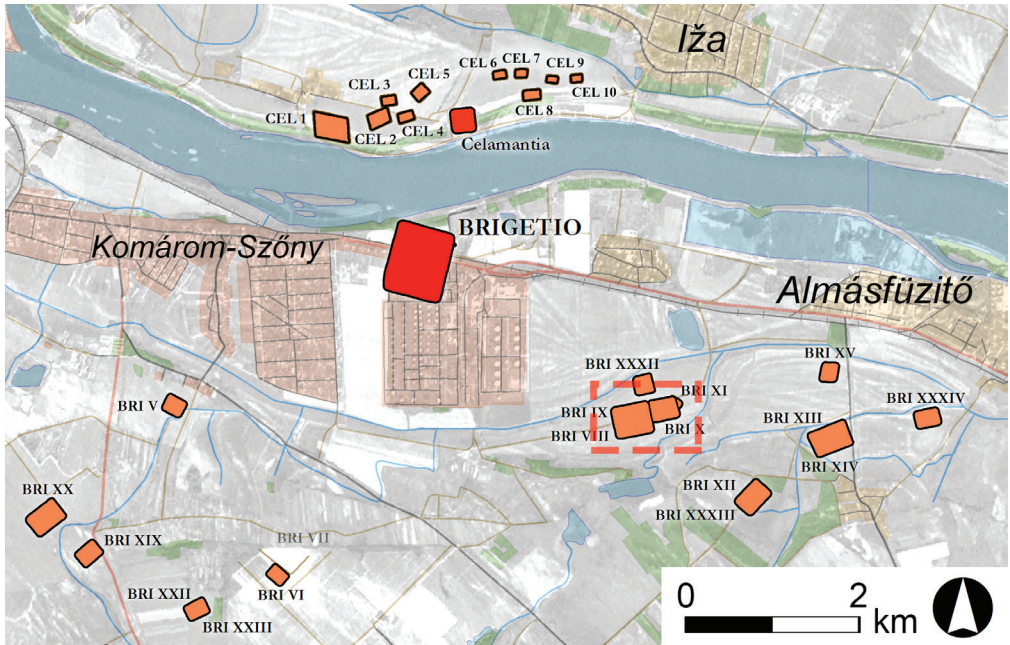


Fig. 1. Roman temporary camps near Brigetio (map: Máté Szabó)

WHS, Klapka György museum's researches in Komárom).³ In the framework of the WHS nomination of the Danube Limes, some temporary camps had been examined by geophysical survey and small-scale excavation between 2015-2016.⁴ (Fig. 1.)

What have we done?

According to the methodology of Austrian, Czech and Slovakian researches related to temporary camps of the Marcomannic Wars,⁵ in our examination⁶ we also tried to use a methodology which could give us as many information as possible about these sites. This method is perhaps most similar to battlefield research and uses non-invasive archaeology (aerial survey, metal detecting, field survey, GIS processing).⁷

It was important to define the research area, which basically followed the line of the temporary camps' trenches identified and mapped by aerial photographs. After the area was marked out, the field surveying was started with metal detector with the cooperation of the so-called „Museum friendly” metal detectorists. All the small finds were gathered from the layer disturbed by ploughing, and measured using geodetic accuracy GPS (in the following: GNSS). It was an important part of the research to record the track logs of all participants. We did this using a mobile application, and the

3 SZABÓ – VISY 2011, 107.

4 For further references, see NAGY – STIBRÁNYI and SZABÓ et al. 2020 in this volume.

5 For further references, see GROH et al. 2015; KOMORÓCZY – VLACH 2019; RAJTÁR 2019.

6 These research basically related to my MA thesis; KISS 2020.

7 SCOTT et al. 2000; SCOTT – McFEATERS 2010.



Fig. 2. The result of the field research (red dots: Roman finds, black dots: Track Log, left centered: orthophoto of the drone aerial survey) (map: Máté Szabó)

information obtained in this way clearly shows the distribution of research intensity in the field.

The field research with this methodology was done in the area of four temporary camps: BRI VIII – XI. It took a single day with seven detectorist participating in the investigation. At the end of the day, one hundred and eleven finds were measured in total, from these only twenty-one were dated to the Roman period. There were finds from other periods, including Medieval and Modern artifacts. During the field research, the opportunity to conduct an aerial archaeological observations also occurred.⁸ The corners of BRI VIII – IX camps were visible in the wheat field, and the continuation of the trenches were identifiable in ploughing. In addition to aerial photographs, we measured Ground Control Points (GCP). Using these recordings, we could generate an image-based 3D model and a proper orthophoto map with geodetic accuracy. (Fig. 2.)

What have been found?

Coins are the first group of small finds discussed in present article. By the end of the day, a total of nine coins were recovered, seven from the Roman period, and the remaining two related to the 17th century. The date of Roman coins varies widely, from the end of the 1st century until the end of the 4th century AD. At first glance, it does not clarify the dating of these camps. There were two coins from the late 1st century and the early 2nd century AD, three from the 3rd century and the last two from the Late

⁸ Special thanks to Tibor Szabó for the drone and Máté Szabó for the aerial archaeology competency.

Roman period. The state of the findings varied. Only in one case was it impossible to determinate the identity of the issuing emperor. The earliest coin is a heavily worn As, which only outlines of a bust on its obverse. Based on this, the issuing emperor was either Emperor Domitian or Trajan, so the coin can be dated to the turn of 1st and 2nd centuries AD.⁹ The next one was also heavily corroded, in addition to the outlines of the bust, a few letters could be observed on the obverse. On the reverse there was a figure standing opposite an altar. Based on these the coin is an As of Emperor Hadrian, minted between AD 125 and 128.¹⁰ Next in the line are three clearly discernible antoniniani. The first find survived in a fragmentary state, however, based on the radiate bust, it could be dated to the reign of Emperor Gallienus (AD 260–268).¹¹ The second is definitely in better condition, with traces of a white metal coating visible on its surface. The obverse depicts an Imperial bust with a radiate crown, the reverse displays the personification of the city of Rome seated on a throne (on the left) with the (standing?) figure of the emperor in front (on the right). This antoninianus was minted by Emperor Aurelian (AD 270–275), due to the lack of mint mark, it can be dated to the period AD 270–275.¹² The third was definitely in good condition. In addition to the imperial mien, most of the legend is also readable: IMP PROBVS P F AVG. On the back, Victoria's figure can be seen with a victory wreath in her hand. Based on these, this antoninianus was issued by Emperor Probus in Rome in AD 280.¹³ The next coin is heavily corroded. The legend completely disappeared, the scene on the reverse is barely visible (Roman soldier stabbing a fallen rider). Based on these data, it is an Ae3 of Constantius II (AD 337–361), its dating cannot be further specified.¹⁴ The last of the coins is in the worst condition. As a result of its corrosion, it was interpretable. On the front only a small detail of the Imperial wreath is identifiable, alongside a flock of the curly hair. Its reverse is completely unrecognizable. In terms of size, it is an Ae4, dated to the late 4th century AD. (**Fig. 3.**)

The next subjects are the brooches. Among other finds, there are two fragmentary and one complete brooches in our collection. The first one is a fragment of a strongly profiled brooch (*kräftig profilierte Fibel*).¹⁵ This bronze fragment is 27 mm long and 8 mm wide. The slightly curved, trapezoidal fragment has a low rib. Due to the fragmentary nature of the find, it was not possible to define it more accurately. The second is also in a fragmentary state. The 2×5 internal chorded string is clearly discernible, but the pin is broken. It has a narrow, longish headplate. The artefact belongs to the so-called Okorág type.¹⁶ This type is mainly characteristic to southern Pannonia, especially the

9 Analogues coins used for interpretation: Domitian: RIC II, 87; RIC II 303; Trajan: RIC II, 577; RIC II 402.

10 RIC 678.

11 Other coins from Emperor Gallienus which provided analogies include RIC 22; RIC 446; RIC 447.

12 RIC 405.

13 RIC 210.

14 Very similar coins: HILL et al. 1960, 41; RIC VIII 46; RIC VIII 72; RIC VIII 80.

15 Similar finds: JOBST 1975, Abb IV.

16 COCIŞ 2004, 8a4 type = MERCZI 216, 1 type / 9. variant. Latest summary on Okorág type fibulae:



Fig. 3. The Roman coins of the field research (photo: Máté Szabó)

vicinity of Siscia (Sisak, Croatia), but such pieces are also found in neighbouring provinces, mainly in Moesia Superior, Dalmatia and Dacia.¹⁷ The third one is a complete artefact. In terms of type, it is a triangular, flat knee fibula (*Kniefibel*) in the shape of a dolphin. Its spring is coiled 2×4, with an internal spring, lacking a spring case. The pin is missing entirely. In time and space, the closest parallels are known first from NW Pannonia (MERCZI 2011, B/11 variants¹⁸) and in Dacia (COCIȘ 22 group/l subgroup), which include dolphin shaped knee fibulas amongst animal fibulas.¹⁹ This brooch is dated to AD 170–220.²⁰ In the following the other metal finds will be presented. There are two finds whose Roman origin is conceivable, but uncertain. The first is a bronze hairpin, with a questionable dating.²¹ The next is an iron bucket handle, whose Roman origin cannot be certain, as its function determines the design of this type of object. However there are clearly familiar finds from Roman context.²² The following find's Roman origin is unanimous. At the bottom of the oblong object there is a fractured surface with an iron corrosion. A hole can be discovered at the top of the upper part, which clearly shows the trace of usage. The find is a Roman key without a feather (which was made of iron). Because of the missing feather it is not possible to

MERCZI 2016, 83.

¹⁷ MERCZI 2016, 83.

¹⁸ MERCZI 2011, 41–42.

¹⁹ COCIȘ 2004, 117.

²⁰ COCIȘ 2004, 117.

²¹ Most likely it is from the bronze age: V. SZABÓ 2009, 128, Fig 6; NÉMETH – TORMA 1965, 78–79. If it has Roman origin: COOL 1990, 152 Fig 1/3–4.

²² For example: NAGY 2004, 281.

determinate the type of the lock which pertained to the key. Among the types set up by Dorottya Gáspár, the find's parallel is identifiable in her group IX.²³ Unfortunately it is not dateable with more accuracy within the Roman era. The next find is a circular fitting with a basal transverse rib extending beyond the line of the junction and with a short, flat shank of rectangular cross-section. On the loop parallel notches are visible. The find is closely related to the Roman army, as it is defined as a tie-ring, which was once part of a Newstead-type armour.²⁴ It is classified in category I type i.²⁵ This type of *lorica segmentata* named after the Newstead site may have been used from the first half of the 2nd century to the middle of the 3rd century AD²⁶ This type is no stranger to the Central Danube region, there are fragments from Carnuntum (Bad Deutsch-Altenburg, Austria; dated to the Antoninian era),²⁷ and also from even from the vicinity of Brigetio, namely from Iža/Leányvár (Slovakia).²⁸ The next find is a small lead cube, a dice. By observing the sides there symbols can be discovered: V (=5?); X (=10?); M (=1000?). The object under investigation is most likely identifiable as a Roman dice. Although we do not see the usual scoring on each side, but the use of other symbols is not uncommon amongst Roman dice.²⁹ The next one could be a military belt button. Unfortunately this type of find is so common, that it is not suitable for precise dating. However based on the nature of the site, it is possible, that this find was in military use.³⁰ Among the finds there is a heavily damaged bronze plate. It has a curved edge, followed by two parallel grooves. Most likely, it could have been a tapered copper alloy, which was typically nailed up with an iron spike fixed with lead. They are used primarily as chest mounts.³¹ The next find is a furniture fitting, a campanulate knob in good condition. In terms of type, this is a copper alloy used to decorate furniture or chests in the Roman era. It does not have a more accurate dating value.³² Despite the field surveying with metal detector is focusing to various metal artefacts, among the finds there are three pottery shards. The fragments include a bottom, a rim, and a sidewall fragment. Unfortunately, no decoration, coating or other features were observed on these objects, but these possibly relates to the Roman period. (Fig. 4.)

What has been learned?

What can be expected of a temporary camp, which was used for some weeks or only a couple of days? For the first thought: small number of finds (closely related the army),

23 GÁSPÁR 1984, 147; Further parallel: SZ. BURGER 1984, 74.

24 THOMAS 2003, 109–113.

25 THOMAS 2003, 109.

26 BISHOP 1999; last time: FISCHER 2012, 168–169.

27 BISHOP 1999, 36; BISHOP – COULSTON 2006, 141.

28 BISHOP 2002, 47; RAJTÁR 2019, 452 Abb7 / 24.

29 VASS – PÁNCZÉL 2009, 561; EERKSEN – VOOGT 2017.

30 Some example of such finds from military context: BISHOP – COULSTON 2006 182–184; MRÁV 2010, 40, Abb. 10; RAJTÁR 2019, Abb. 7/21.

31 GÁSPÁR 1980, 80.

32 ATKINSON – PRESTON 2015, Fig 504, 85.



Fig. 4. The Roman metal finds of the field research (photo: Máté Szabó)

from a short period of time. In contrast to when someone looks at the artefact collected from the site, which can be dated to the Roman era, an interesting duality is presented. On one hand, despite their meagre quantity, coins displays a wide chronological range, from both early and Late Roman periods. On the other hand, when examining the other Roman artefacts, the more accurately dateable finds belong to the second half of the 2nd, or the turn of the 2nd and 3rd century AD (dolphin shaped knee fibulae, Newstead *lorica segmentata* fragment). In addition, the presence of Newstead *lorica segmentata* fragment suggests the presence of legionaries at the site. The chronological diversity suggests that, while the small finds reinforce the site's relation to the Marcomannic Wars, the coins show another endowment of the area. The terrace islands of the Danube play an important strategic role in the region, which did not cease after the Marcomannic Wars were over. This is attested by the finds recovered. When examining the finds, it is worth comparing them with their counterparts from across the Danube. The camps around Iža/Leányvár are closely related to the camps near Brigetio. This relationship is also shown via artefacts. Many knee fibulae, military equipment fragments (including military belt fittings and Newstead *lorica segmentata* fragments), keys were recovered from Slovakian sites. The difference between the temporary camps on both sides of the Danube is that, while all of the finds north of the river (including coinage) represent a short chronological period related to the Marcomannic Wars, coins from the southern camps (BRI VIII-XI) also attests a subsequent strategic importance of the area, including Roman presence. The methodology used during the research is not perfect. There are many invasive and non-invasive methods to supplement it, if adequate support is available. The finds related to the Roman era are just a little fragment of the entire find material (19%), which should not be overlooked. However, if more research were carried out using similar methods in the area of temporary camps near Brigetio, our knowledge of these sites would increase greatly.

Bibliography

- ATKINSON – PRESTON 2015 M. Atkinson – S. J. Preston, Heybridge, *A Late Iron Age and Roman Settlement: Excavations at Elms Farm 1993–5*, vol. 1–2 (Essex, 2015).
- BISHOP – COULSTON 2006 M. C. Bishop – J. C. N. Coulston, *Roman Military Equipment from the Punic Wars to the Fall of Rome* (Oxford, 2006).
- BISHOP 1999 M. C. Bishop, The Newstead 'lorica segmentata'. *Journal of Roman Military Equipment Studies* 10 (1999), 23–43.
- BISHOP 2002 M. C. Bishop, *Lorica Segmentata – vol. I: A Handbook of Articulated Roman Plate Armour, JRMES Monograph No. 1* (The Armatura Press, 2002).
- BRAASCH 2003 O. Braasch, Die Donau hinab – archäologische Flüge in Ungarn. In: Zs. Visy (ed.), *Régészeti műemlékek kutatása és gondozása a 3. évezred küszöbén* (Pécs, 2003), 41–66.
- SZ. BURGER 1984 A. Sz. Burger, Későrómai sírok Aquincumban. *Budapest Régiségei* 25 (1984), 65–118.
- COCIS 2004 S. Cocis, *Fibulele din Dacia Romană = The brooches from Roman Dacia* (Cluj-Napoca, 2004).
- COOL 1990 H. E. M. Cool, Roman metal hair pins from Southern Britain. *Archaeological Journal* 147, 1 (1990), 148–182.
- EERKENS – VOOGT 2017 J. W. Eerkens – A. de Voogt, The evolution of cubice dice. From the Roman through post-medieval period in the Netherlands. *Acta Archaeologica* 88, 1 (December 2017), 163–173.
- FISCHER 2012 Th. Fischer, *Die Armee der Caesaren. Archäologie und Geschichte* (Regensburg, 2012).
- GÁSPÁR 1980 D. Gáspár, A pápasalamoni kincslelet ládaverete. *A Veszprém Megyei Múzeumok Közleményei* 15 (1980), 77–86.
- GÁSPÁR 1984 D. Gáspár, Régi kulcsok és záruk. *Technikatörténeti szemle* 15 (1984), 131–162.

- GROH et al. 2015 S. Groh – B. Komoróczy – M. Vlach – H. Sedlmayer, Basis of the International Research Project of the Roman Military Camps in the Barbarian Territory to the North of Carnuntum. In: L. F. Vagalinski – N. Sharankov (eds.), *Limes XXII. Proceedings of the 22nd International Congress of Roman Frontier Studies Ruse, Bulgaria, September 2012* (Sofia, 2015), 749–754.
- HILL et al. 1960 J. P. C. Hill – P. V. Carson – R. A. G. Kent, *Late Roman Bronze coinage A.D. 324-498* (London, 1960).
- JOBST 1975 W. Jobst, *Die Römischen Fibeln aus Lauriacum* (Linz, 1975).
- KOMORÓCZY et al. 2019 B. Komoróczy – M. Vlach – C.-M. Hüssen – J. Rajtár, Absolutchronologische Daten aus römischen temporären Lagern im markomannischen Siedlungsraum im Mitteldonaugebiet. In: M. K. Arwowski – B. Komoróczy – P. Trebsche (Hrsg.), *Auf den Spuren der Barbaren – Archäologisch, historisch, numismatisch: Archäologie der Barbaren 2015*, Spisy Archeologického ústavu AV ČR Brno vol. 60 (Brno, 2019), 151–183.
- MERCZI 2011 M. Merczi, Térdfibulák Komárom-Esztergom megyéből. *Komárom-Esztergom Megyei Múzeumok Közleményei 17* (2011), 7–80.
- MERCZI 2016 M. Merczi, Római kori fibulák Érdről. *Komárom-Esztergom Megyei Múzeumok Közleményei 22* (2016), 69–100.
- MRÁV 2010 Zs. Mráv, Egy késő 3. századi, niellóberakással díszített, középgyűrűs bronz szíjvégveret Brigetióból. *Komárom-Esztergom Megyei Múzeumok Közleményei 16* (2010), 13–40.
- NAGY 2004 M. Nagy, Két késő római kori fegyveres sír az aquincumi canabae nyugati szélén. *Budapest Régiségei 38* (2004), 231–316.
- NÉMETH – TORMA 1965 P. Német – I. Torma, A románda későbronzkori raktárlelet. *A Veszprém Megyei Múzeumok Közleményei 4* (1965), 59–90.
- RAJTÁR 2019 J. Rajtár, Die römischen Feldlager in Iža. In: I. G. Farkas – R. Neményi – M. Szabó (eds.), *Visy75. Artificem commendat opus. Studia in honorem Zsolt Visy* (Pécs, 2019), 446–456.

- RIC H. Mattingly – C. H. V. Sutherland – R. A. G. Carson, *The Roman Imperial Coinage, vols. III-IX* (London, 1930–1951).
- SCOTT et al. 2000 D. D. Scott – R. A. Fox Jr. – M. A. Connor – D. Harmon, *Archaeological Perspectives on the Battle of the Little Bighorn* (Norman, 2000).
- SCOTT – McFEATERS 2010 D. D. Scott – A. P. McFeaters, The Archaeology of Historic Battlefields: A History and Theoretical Development in Conflict Archaeology. *Journal of Archaeological Research* 19 (2011), 103–132.
- NAGY – STIBRÁNYI 2020 L. Nagy – M. Stibrányi, Ditches along the Road. Archaeological Geophysical Surveys along the Pannonian Limes between 2015-2017. In: I. G. Farkas – R. Neményi – M. Szabó (eds.), *The Danube Limes in Hungary. Archaeological research conducted in 2015-2020* (Pécs 2020), 13–37.
- SZABÓ 2016 M. Szabó, *Archaeology from above. Episodes from the history of the Aerial Archaeological Archive of Pécs* (Budapest, 2016).
- SZABÓ – VISY 2011 M. Szabó – Zs. Visy, Menettáborok Brigetio környékén. Zs. Visy (lead ed.) – M. Szabó – A. Priskin – R. Lóki (eds.), *A Dunai Limes Program Régészeti Kutatásai 2008–2011 között. Jelentés a Danube Limes UNESCO World Heritage Site pályázat keretében a PTE BTK Régészet Tanszékének kutatócsoportja által végzett kutatásokról = The Danube Limes Project Archaeological Research between 2008–2011. Report on the research carried out by the research team of the Department of Archaeology, University of Pécs within the framework of the Danube Limes UNESCO World Heritage Site project* (Pécs, 2011) 107–112.
- SZABÓ et al. 2020 M. Szabó – B. Fábián – F. Fodor, Research of Roman temporary camps near Brigetio (Komárom-Szőny). Results of the excavations conducted on the BRI V, VI(–VII), X–XI, XIII–XIV, XIX, XXII–XXIII, XXX and XXXII archaeological sites. In: I. G. Farkas – R. Neményi – M. Szabó (eds.), *The Danube Limes in Hungary. Archaeological research conducted in 2015-2020* (Pécs 2020), 77–111.

- V. SZABÓ 2009 G. V. Szabó, Kincsek a föld alatt. Elrejtett bronzkori fémek nyomában. In: A. Anders – M. Szabó – P. Raczky (eds.), *Régészeti dimenziók. Tanulmányok az ELTE BTK Régészettudományi Intézetének tudományos műhelyéből* (Budapest, 2009), 123–138.
- THOMAS 2003 M. D. Thomas, *Lorica Segmentata. Volume II: A Catalogue of Finds, JRMES Monograph* (The Armatura Press, 2003).
- VASS – PÁNCZÉL 2009 L. Vass – Sz. P. Pánczél, To Play or not to Play? Roman Dice from Porolissum in the Wesselényi-Teleki Collection. In: Sz. Bíró (ed.), *Ex Officina... Studia in honorem Dénes Gabler* (Győr, 2009), 561–572.
- VISY 1995 Zs. Visy, Luftbildarchäologie am römischen Limes in Ungarn. In: J. Kunow (Hrsg.), *Luftbildarchäologie in Ost- und Mitteleuropa. – Aerial Archaeology in Eastern and Central Europe. Forschungen zur Archäologie im Land Brandenburg 3* (Berlin 1995), 213–218.
- VISY 2000 Zs. Visy, *A Ripa Pannonica Magyarországon* (Budapest, 2000).
- VISY 2003 Zs. Visy, *The Ripa Pannonica in Hungary* (Budapest, 2003).

Brigetio környéki római időszakos táborok kutatása 2019-ben

A Brigetio környéki római kori ideiglenes táborokra először 1994-ben figyelt fel a kutatás, Otto Braasch légifelvételének köszönhetően. Archív felvételekről már az 1970-es évekből ismert volt egy-két ilyen lelőhely, azonban 1994-ben hirtelen tizennégyre duzzadt a számuk. A következő években újabb és újabb lelőhelyekkel gyarapodott az ideiglenes táborok sora, így lett Brigetio a Közép-Duna vidék legtöbb ideiglenes táborral büszkélkedő lelőhelye. Az elhelyezkedés és a táborok koncentrációja alapján a kutatás a markomann háborúhoz kötötte a lelőhelyeket. A légirégészeti kutatások mellett számos alkalommal végeztek terepbejárásokat a táborok területein, melyek negatív eredménnyel zárultak. A következő lépésre a 2010-es évek derekáig kellett várni, ekkor a táborok egy részén geofizikai kutatásokat és szondázó ásatásokat végeztek. 2019-ben egy, a területen újnak számító módszer alkalmazásával tettünk kísérletet arra, hogy többet tudhassunk meg ezekről a közel nyomtalan táborokról. Az általunk használt módszer nagyban hasonlít a csatatérkutatásra. Egy nap alatt, kilenc résztvevővel, köztük múzeumbárát fémkeresősökkel végeztünk műszeres leletfelderítést négy ideiglenes tábor (BRI VIII–XI) területén. A kutatást célzottan a táborok árkaik területén végeztük. Leleteket a felső, szántás által bolygatott rétegből gyűjtöttünk, mindegyik bemérését geodéziai pontosságú GPS segítségével végeztük, valamint a résztvevők útvonala is rögzítésre került (Track Log). Lehetőségünk nyílt a BRI VIII–IX táborok északnyugati sarkának légirégészeti megfigyelésére is, a felvételek felhasználásával fénykép alapú 3D modell készült, melyből ortofotót lehetett generálni. A nap végére 111 lelet került bemérésre, melyek közül 21 volt római korra keltezhető. A leletek között 7 érme található, melyek keltezése széles skálán mozog, az Kr. u. 1. század végétől, egészen a Kr. u. 4. század végéig. Három fibula került elő, 2 egygombos erősprofilú fibula töredéke, valamint egy delfint formázó térdfibula. További érdekesség egy szíjszorító, mely egykoron egy Newstead típusú lorica segmentata részét képezte. A leletanyagot vizsgálva kettős kép tárult a szemünk elé. Az érmek nem a lelőhelytől „várható” rövid periódust mutatják, inkább a terület stratégiai fontosságát emelik ki. A további fémleletek azonban igazolják a legiós jelenlétet, és megerősítik a markomann háború idejére való keltezés lehetőségét. Természetesen a módszer nem tökéletes, számos módon lehetne kiegészíteni, eredményesebbé tenni. Mindazonáltal ha több ideiglenes tábor területén is sor kerülne hasonló kutatásokra, az mindenképpen hozzásegítené ezeknek a szükszavú lelőhelyeknek a jobb megismeréséhez.

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Remains of the Roman watchtower Visegrád-Szentgyörgypuszta 1.

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Shadow marks of *Quadrata castellum* and the limes-road (Lébény, Győr-Moson-Sopron county)

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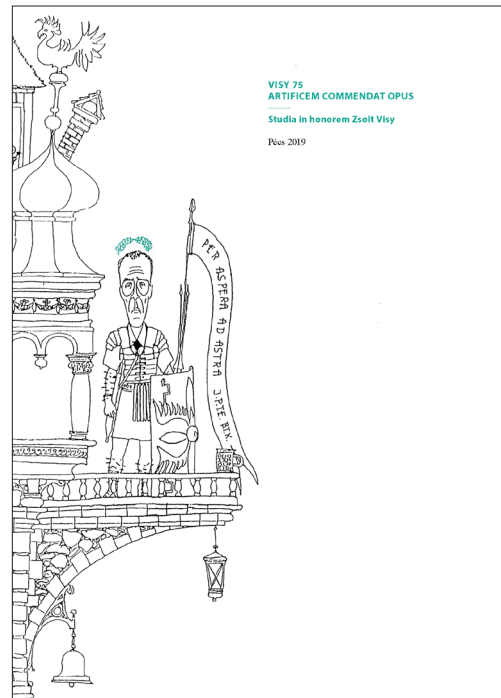
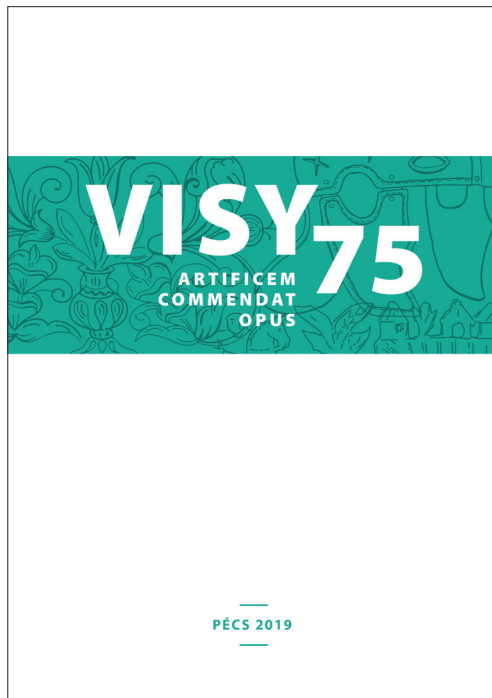
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VISY75 – Out now

At CLIR Research Center, we consider it our important task to publish recent scientific results otherwise unavailable to the community. Our first publication was dedicated to the founder of the CLIR Academic Programme, the renowned researcher of the Roman frontiers, **Prof. Dr. Zsolt Visy**. The 576 page volume contains 35 articles from the disciplines of History and Archaeology in English, German and Italian, penned by 44 authors. Salutations were written by Prof. Dr. David J. Breeze, Dr. Endre Tóth DSC, Katalin Wollák and the editors.

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Farkas, I. G. – Neményi, R. – Szabó, M. (eds.), *Visy75, Artificem commendat opus, Studia in honorem Zsolt Visy* (Pécs, CLIR Research Center, 2019), Kontraszt Plusz Ltd., 576 pp, ISBN 978-963-429-481-8.



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The Roman frontier section of Pannonia has been the subject of extensive studies in recent decades, augmented by constant improvements in digital methodology as well as the pending UNESCO World Heritage Nomination of selected sites and their related touristic development.

Significant discoveries from the last five years have been unpublished so far, thus emerged the idea to collect and present these findings in a standalone volume.

The present book contains eleven articles on the results of recent research conducted on the Hungarian section of Danube limes. Three writings provide overviews on current geophysical prospections and underwater archaeology concerning several sites of the Roman frontiers as well as novities on the monetary history of Pannonia.

The subsequent eight articles present researches from various sites along the Danube, including temporary camps, auxiliary forts, Late Roman fortifications and watchtowers. Seventeen authors contributed to the volume from archaeological institutions and private firms from all over Hungary.