

# Celto – Gallo – Roman

Studies of the MTA-ELTE Research Group for  
Interdisciplinary Archaeology

edited by

László Borhy

Kata Dévai

Károly Tankó



L'Harmattan

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PARIS

2018





MTA - ELTE Research Group for Interdisciplinary  
Archaeology, Budapest



Institute of Archaeological Sciences  
ELTE - Eötvös Loránd University, Budapest

*This volume was produced with the financial support of the Hungarian Academy of Sciences*

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On the cover:

The topography of Brigetio (Map by László Rupnik).

Golden *aureus* of Vespasian (Photo by Dávid Bartus).

The circular trench of the Civil Town of Brigetio (Photo by Kata Dévai).

The trench system in the territory of the Civil Town of Brigetio (Photo by Kata Dévai).

Terrazzo-floor and hypocaustum of a building in the *canabae* (Photo by Dávid Bartus).

Typographic plan and design of cover: Károly Tankó

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Publishing Manager: Ádám Gyenes

ISBN 978-2-343-16091-7

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## PREFACE

The MTA - ELTE Research Group for Interdisciplinary Archaeology, which was established in 1999, launched and undertook several archaeological excavations and investigations under the supervision of research group leader Miklós Szabó, member of the Hungarian Academy of Sciences. The results of these not only contributed to the discipline of archaeology at national and international levels, but they were also directly employed in higher education, in the field of teaching archaeology. The studies found in the present volume closely reflect what the name of the research group conveys: it includes the results of truly interdisciplinary and specifically archaeological investigations conducted by the members of the research group, who are researchers employed by the Hungarian Academy of Sciences (MTA) and faculty members of the Institute of Archaeological Sciences of the Eötvös Loránd University (ELTE). This volume mainly presents the scientific results of two major projects that have been running in France and Hungary for decades. One part of the book is related to ancient Bibracte (modern Mont Beuvray), where French–Hungarian investigations have been carried out since 1988. By uncovering the old *forum* and *basilica*, the Hungarian research team made a significant discovery concerning the urban planning of the entire Mediterranean region in the Late Republic and Early Imperial Period. The other part presents the results of multifarious investigations that have been conducted in the form of planned excavations, rescue excavations, and aerial archaeological investigations in the territories of the civil town, the legionary fortress, and the civilian settlement outside the fortress (*canabae*) of ancient Brigetio (modern Komárom/Szőny) since 1992. The Gallo-Roman and Pannonian Roman regions are geographically linked by Povegliano, located in North Italy. Its Celtic cremation burials were uncovered and analysed by the members of the MTA - ELTE Research Group for Interdisciplinary Archaeology. Due to the process of Romanization, the Italian Celts and the Gauls became “Romans”, that is members of the same huge cultural *koine*, which equally comprised Italy, Gaul and Pannonia. Accordingly, the study volume discusses the process of Romanization through “the eyes of the Romans.” It describes the transformation from the aspect of the history of women’s fashion attested by the analysis of representations and archaeological finds, and through the establishment of trade relations demonstrated by the analysis of thin-walled pottery that appeared in Pannonia during the settlement of the Italian population in the first century AD. Finally, the analysis of a Late Roman settlement located outside the Roman Empire, belonging to a Germanic people, called the Quadi, has also been included in this study volume. Although the Quadi were closely connected with the Romans for centuries, in times of both peace and war, they were not affected by the process of Romanization, unlike the Gauls, Celts, and Pannonian peoples.

As noted above, the results of investigations conducted by the MTA–ELTE Research Group for Interdisciplinary Archaeology have, in fact, been the most rapidly and directly employed in the field of higher education, the teaching of the upcoming generation of archaeologists. Since the beginnings, the supervisors of the research group have put an emphasis on involving university students at graduate and postgraduate levels, as well as PhD students in the processing of the uncovered archaeological finds. With their BA and MA theses, and PhD dissertations, these students have achieved and produced impressive scientific results even in an international comparison.

I would like to express a particular gratitude to Miklós Szabó, the founder, and from 1999 to 2011 leader of the MTA–ELTE Research Group for Interdisciplinary Archaeology for the launch of the research programs, the cultivation and expansion of international scientific relations as well as collaborations, furthermore for the encouragement and support of talented young researchers. Finally, my thanks go to my colleagues, and to my former and current students for their outstanding performance in their work and achievements in the field of a wide range of research programs under my supervision since 2012. In the preparation and editing of this study volume I was assisted by Dr. Kata Dévai, research fellow, and Dr. Károly Tankó, senior research fellow, for whose painstaking work I am deeply thankful.

Budapest, summer 2018

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# THE USE OF AERIAL PHOTOGRAPHY IN THE TOPOGRAPHICAL RESEARCH OF BRIGETIO: THE ARCHIVE IMAGERY

LÁSZLÓ RUPNIK – ZOLTÁN CZAJLIK – DÁVID BARTUS

The Roman site of Brigetio is situated in the northern part of Transdanubia near the state border between Hungary and Slovakia. Brigetio is one of the four settlements with legionary fortress in Pannonia, besides Vindobona, Carnuntum and Aquincum. Although systematic excavations in Brigetio have been started in 1992, providing important results concerning the civil town, large scale comprehensive topographical research on the whole territory of the Roman town has been carrying out only since 2013. The main objective of our recently started project is to expand the boundaries of traditional research using non-destructive methods such as aerial photography and geophysical survey. The present paper gives a brief summary of the aerial archaeological activity in Brigetio and its surroundings with particular regard to the archive imagery and many aspects of its applying. Our research has been supported by the National Research, Development and Innovation Office (grants number 108667 and 119520).

## Brief history of research

Since the detailed history of aerial archaeological research in Brigetio was discussed earlier,<sup>1</sup> we confine ourselves to present only the main stages here. Besides some presumable attempts before the Second World War, non-archaeological aerial photography was the only source of information until 1994, in which regard the pioneer work of Zsolt Visy should be mentioned,<sup>2</sup> especially the documentation of

*burgi* on the *limes* section of Brigetio. Similarly, the northern city wall of Brigetio was identified based on archive aerial photos by Emese Számadó.<sup>3</sup> Between 1994 and the beginning of the 2000's aerial archaeological research was focused mostly on the presumed marching camps in the vicinity of the Roman settlement.<sup>4</sup> Similar features were photographed in the first half of the 1990's by Ivan Kuzma on the northern side of the *limes*, in the territory of the present Slovakia.<sup>5</sup> Rectangular fortifications and remains of Roman roads were also documented in 1997-1998 by René Goguy. From 2008 onwards, successful aerial remote sensing surveys have been carried out by Zoltán Czajlik<sup>6</sup> and Máté Szabó,<sup>7</sup> with the aim of the detailed topographical study of the Roman settlement. Systematic aerial photography of the surroundings of Brigetio including Roman roads, villa settlements and the aqueduct has been started in 2015.

## Archive exposures

A significant part of the Roman settlement is covered by an oil refinery and the belonging living quarters which were built during and after the Second World War (Fig. 1). These construction works and the continuous expansion of the village have caused a devastating effect on the archaeological features. Since the size

1 RUPNIK – CZAJLIK 2013. For a complete bibliography on the archaeological research of the civil town, see BORHY 2014.

2 VISY 1985, 53-57; VISY 2003, Figs. 32 and 35.

3 SZÁMADÓ 2010, Fig. 14.

4 BRAASCH 2003, 44, Abb. 1-2; VISY 1995, 216-218, Abb. 9-14; VISY 2003, Figs. 36-55; SZABÓ – VISY 2011, 107.

5 KUZMA 1995, 64; RAJTÁR 1997, 122.

6 BORHY *et alii* 2011; RUPNIK – CZAJLIK 2013; BARTUS *et alii* 2014, Figs. 2-3.

7 SZABÓ 2011, 153-158.



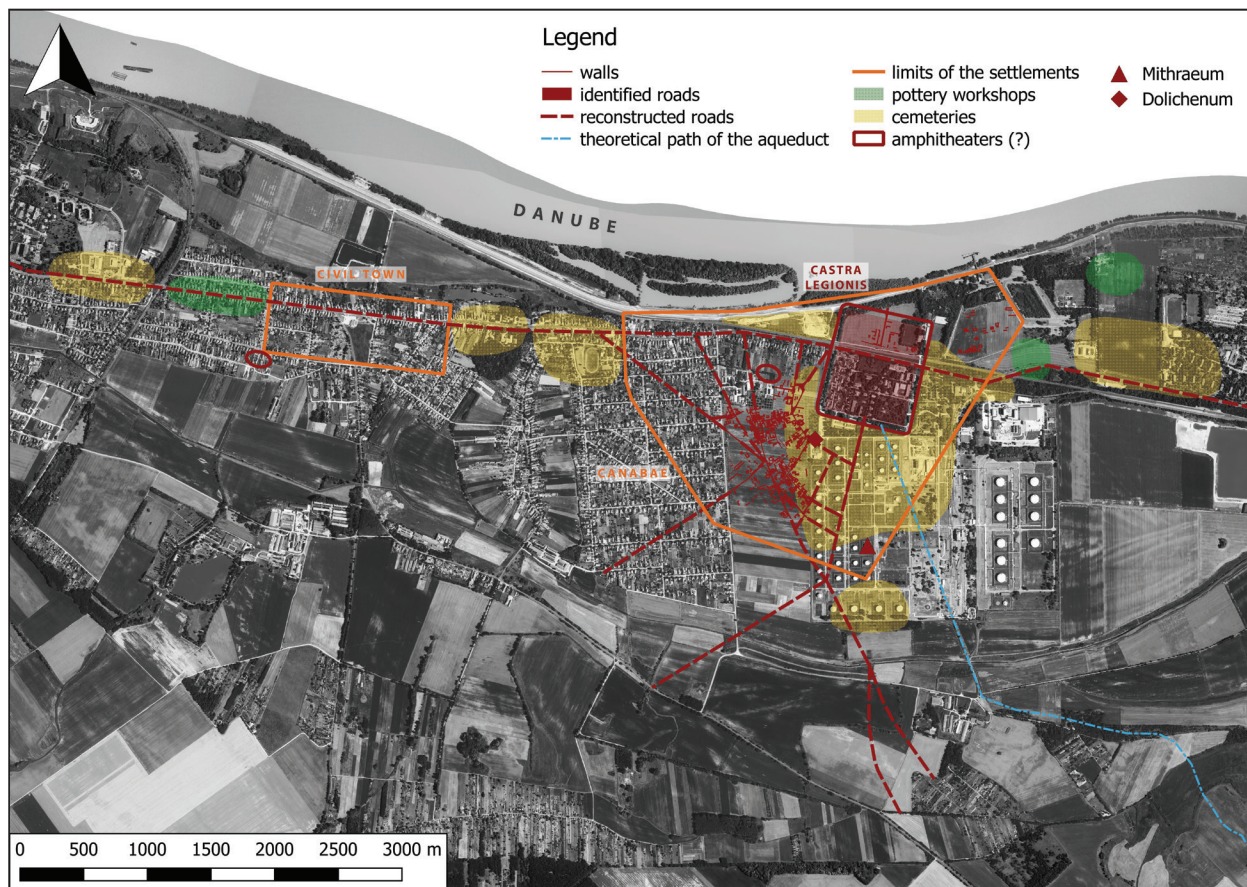


Fig. 1. The elements of the Roman Brigetio according to our current knowledge (Map by L. Rupnik).

and number of open areas suitable for aerial archaeological research are limited by the modern built environment, our interest turned to archive imagery. According to current knowledge the Hungarian pioneer of aerial archaeology, Sándor Neogrády unfortunately did not take any photos of Brigetio, but several – mostly vertical – exposures taken originally for mapping or military reasons after the 1940's are of much use. The most important source of these pictures is the Military History Institute and Museum in Budapest. Many of the pictures are well known and were also used by the earlier research (see above), but we tried to involve these images into an integrated, complex, GIS-based procedure.

Some other images have been located by means of Internet sites. Especially the Fold3 online archive has proved to be useful during our research. We were not able to gain access to the RCAHMS National Collection of Aerial Photography yet, but this archive will hopefully become one of our most important resources soon.

A significant part of archive images have been rectified in order to get the data as accurate and valuable as possible. Despite of the gingerly work, some distortion and inaccuracy might be considered as a result of the rectifying process. The relatively high flying altitude and the limits of resolution have made the interpretation of archaeological features more difficult in case of these images, however, several results based on multiple pictures have been concluded.

As far as we know the earliest vertical images related to the area of Brigetio were taken during the spring of 1940 (Fig. 2),<sup>8</sup> reflecting the state of the ploughlands and the field system in the research area and its surroundings before the above-mentioned construction works. The resolution is not enough to recognize small details, however, several archaeological features can be identified. The dark soil mark of the *fossa* around the legionary fortress

<sup>8</sup> Three photographs have been taken on this section of the *Ripa Pannonica*: MHIM 69395, 69396, 69397.



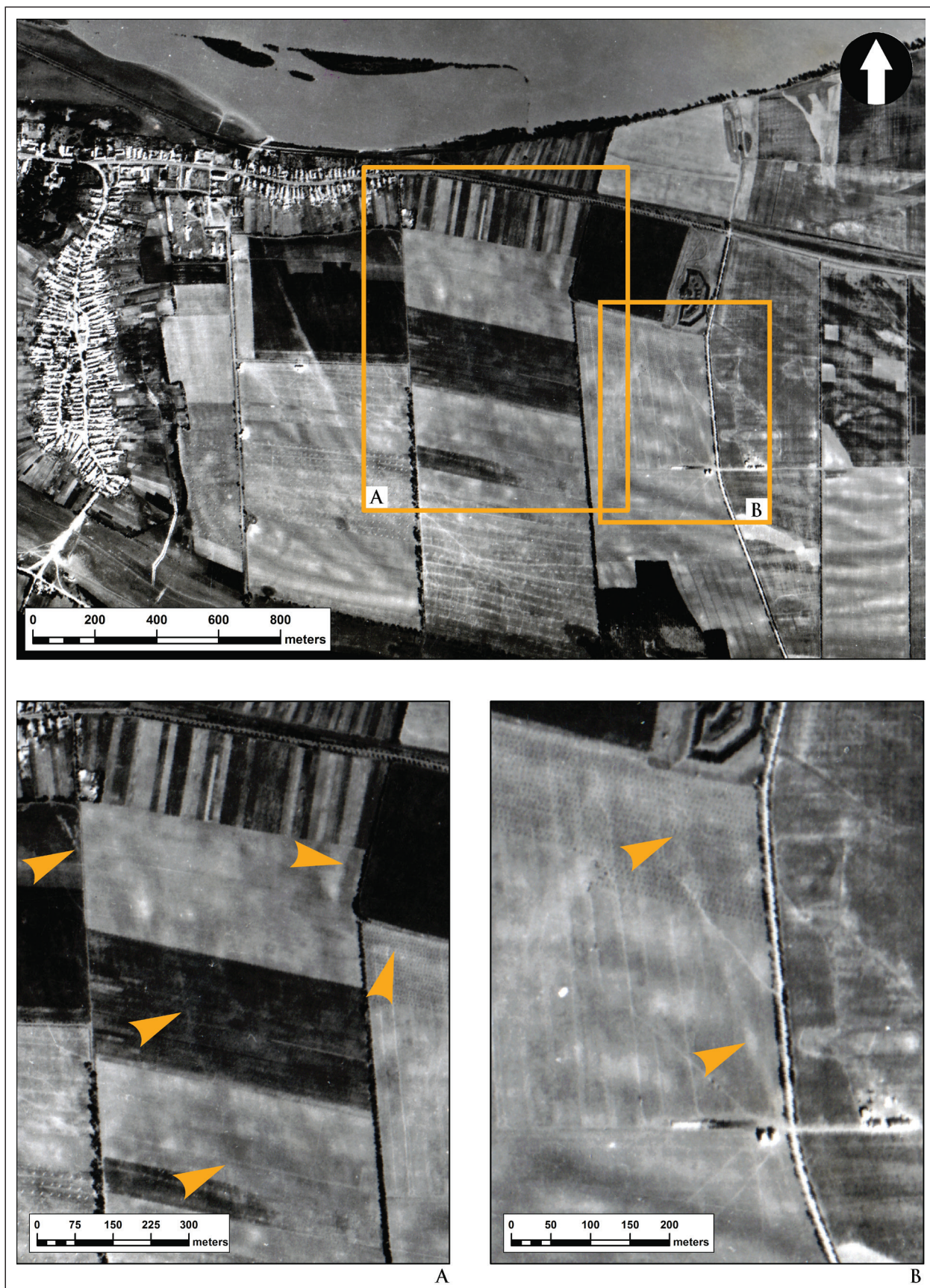


Fig. 2. The area of the *castra legionis* and the *canabae* with the traces of the *fossa*, roads (A) and the aqueduct (B) in 1940 (Source: MHIM 69396).



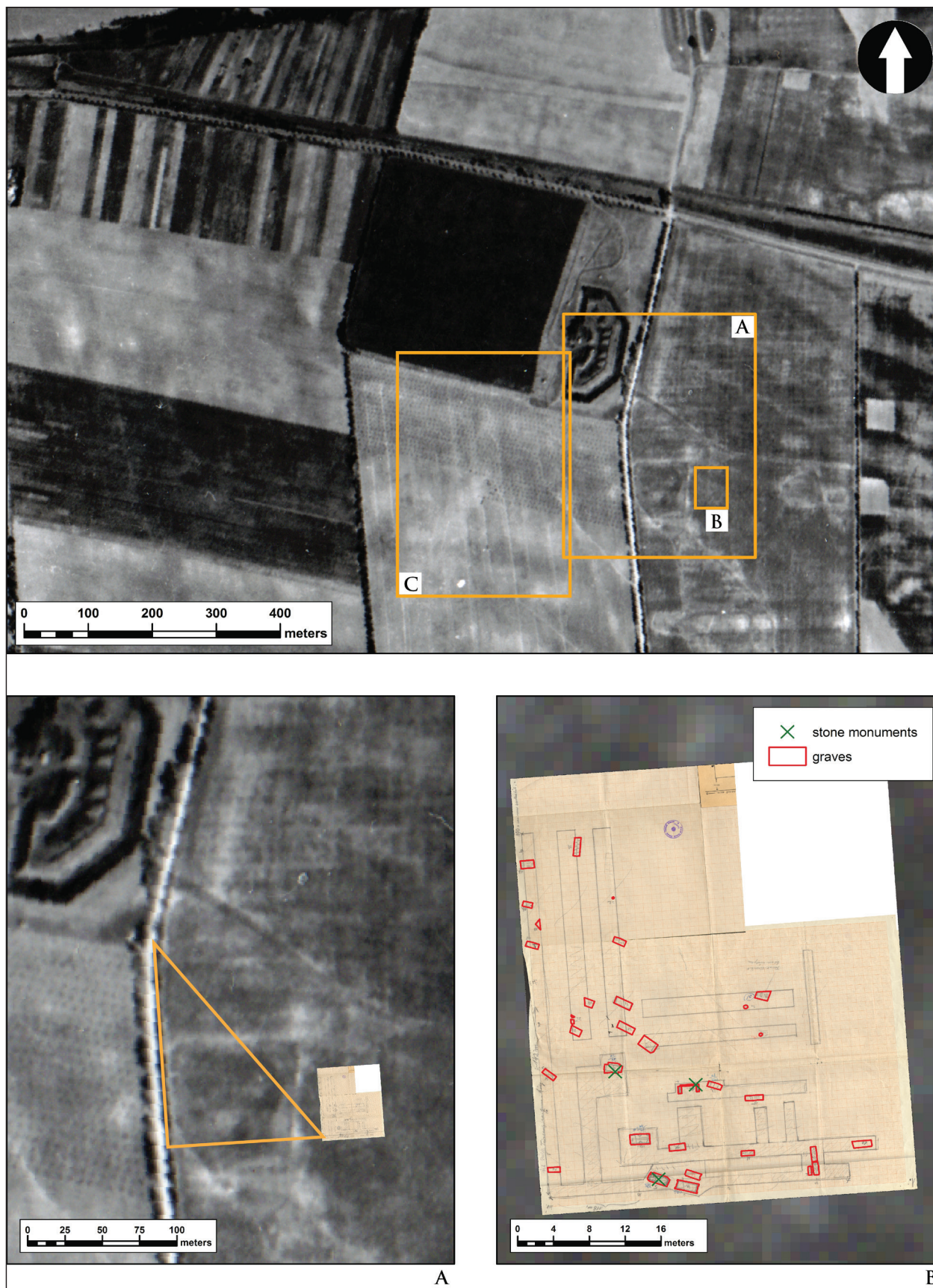


Fig. 3. The location of the cemetery excavated SE from the legionary fortress (A) with the rectified ground plan (B).



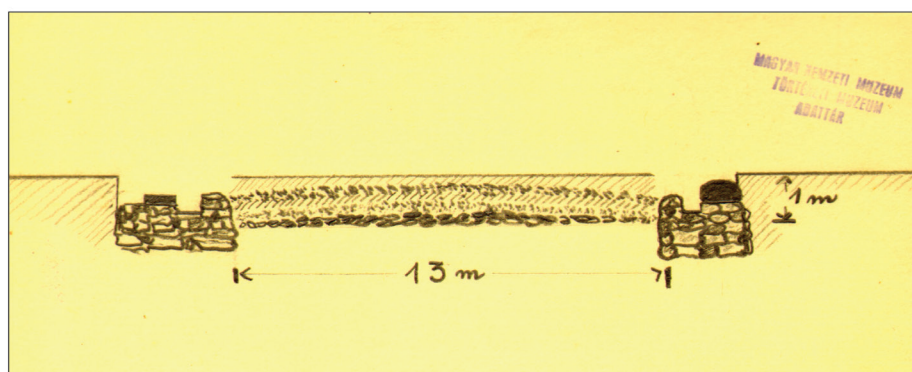
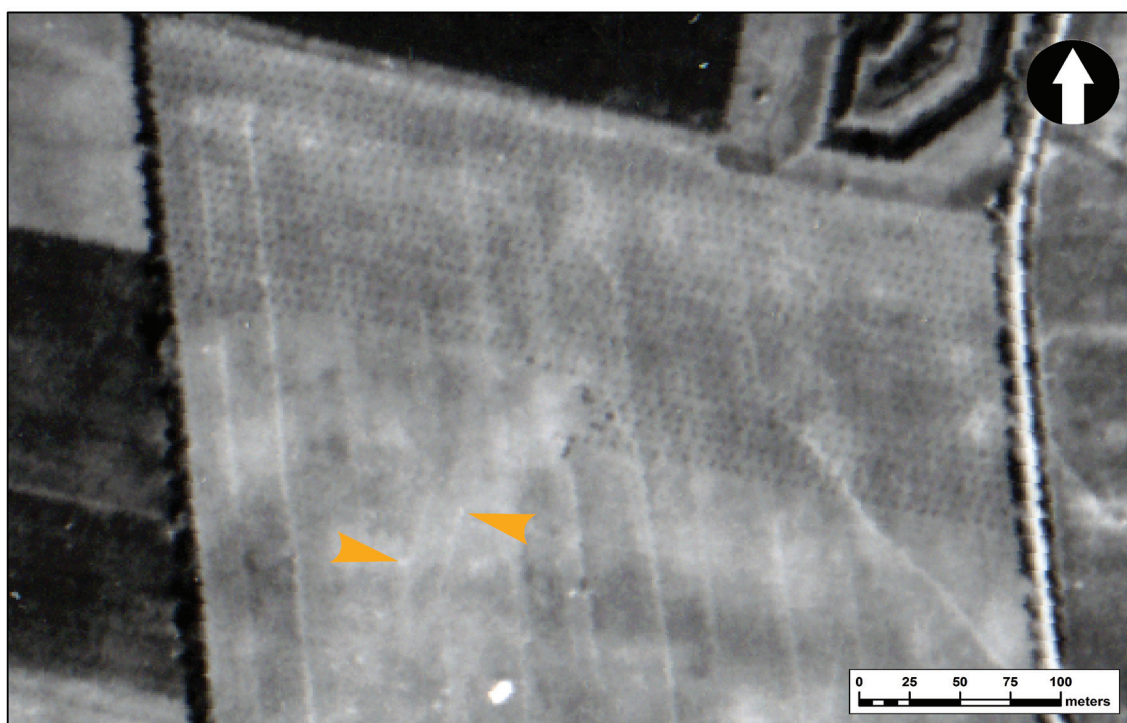


Fig. 4. The location (also see Fig. 3C) and the section of the road and canal excavated by István Paulovics.

can be clearly observed, especially on the west and south side of the *castra*. Other linear features, especially sections of roads are recognizable in the military town (Fig. 2, A). The cart track connecting the manor at Bélapuszta with the main road is visibly continuing in a bright and remarkable soil mark heading NW from a distinct point, then it hits the *fossa* and the wall of the legionary fortress between the southern gate and the SE corner. This feature was not presented on any 18<sup>th</sup>-20<sup>th</sup> century maps or drawings, but its tracing matches the orientation

of the aqueduct described by Rudolf Gyulai.<sup>9</sup> We have good reason to believe that the Roman *aquaeductus* has been documented in this case (Fig. 2, B).<sup>10</sup>

<sup>9</sup> GYULAI 1885, 332-335.

<sup>10</sup> The question on which path the aqueduct was led to Brigetio from the sources near Tata is controversial. István Paulovics draw another conclusion, supposing that the canals excavated by him in 1925 (PAULOVICS 1941, 145-152, Abb. 1-2) following the road heading south from the *castrum* are actually traces of the aqueduct.

Another benefit of this exposures is that they were taken shortly after the archaeological excavations carried out during the 1920's and 1930's by István Paulovics. Although the ground plans of these works are accessible in the archive of the Hungarian National Museum, they can be located nothing but improperly due to the lack of correct measurements and coordinates. The locations of these excavations were often given by the excavators based on the distance from visible surface objects, but we were able to identify them using the vertical photographs. The accuracy of such a rectification is far from comparable to the results of a modern survey, but it is even better than a hand drawn cross on a map. After this process the archaeological features – graves, walls, stone monuments or even single finds – represented on these maps have become sources of vector data. All information of archaeological interest have been digitalized in ArcGIS with points and polygons with their essential data stored in the belonging attribute table. These efforts are first steps in the creation of a comprehensive database of all topographical clue on the Roman Brigetio.

Although presenting all of the validated and rectified data is not possible here, the method can be illustrated through some examples. The first one is a Late Roman cemetery excavated by István Paulovics in 1929,<sup>11</sup> which plan was drawn carefully in a correct scale making the trenches and graves easily recognizable (Fig. 3, B).<sup>12</sup> Nevertheless, the location of the excavation was given by measurements using presumably triangulation between the visible corner of the *castra*, the later totally vanished lane heading Bélapusztá, and the pole of the excavation, which latter must have been the corner of a trench (Fig. 3, A).

Another excavation we were able to locate using an aerial photograph taken in 1940 was concentrated on the Roman road leading southward from the *porta decumana* edged by traces of the aqueduct or canalization on both

sides (Fig. 3, C and Fig. 4). Some bright soil marks, located exactly 240 meters from the gates as it was mentioned in the documentation<sup>13</sup> and publication of the excavation, are showing definitely these features (Fig. 4).<sup>14</sup>

The construction of the oil refinery and belonging facilities carried out during the Second World War meant a devastating effect on the archaeological heritage there. The war-time circumstances had not allowed to perform large scale rescue excavations prior to the construction works. The scientific activity was limited to observations and data collection by László Barkóczi as accurate as it was possible to be at the time. Unfortunately the strategic importance of the refinery did not escape the attention of the Allied forces who carried out several air strikes. The bombings caused huge destruction not only for the industry but also for the Roman ruins themselves under and around the refinery. The bright side of the bombing is the documentation of the air raid by oblique aerial photographs taken by the reconnaissance units.

The landscape in the surroundings of the legionary fortress changed significantly during a single decade, as it can be seen comparing the images from 1940 with the pictures of the next aerial photographical survey in 1951 (Fig. 5).<sup>15</sup> These photos are also of archaeological interest. The *fossa* of the legionary fortress is still indicated by the soil-mark, moreover, traces of the road system of the *canabae* can also be seen. This photograph led several scholars to locate the military amphitheater to the area next to the *limes* road, close to the western gate of the fortress,<sup>16</sup> however, according to the map of László Barkóczi, it was situated farther from the *limes* road and the gate of the fortress.<sup>17</sup> An oval shaped soil mark is visible very close to the place where Barkóczi located the ruins of the amphitheater. The question of location could be decided by geophysical survey

<sup>11</sup> PAULOVICS 1941, 163, Abb. 1.

<sup>12</sup> HNM 104.Sz.II.

<sup>13</sup> HNM 77.B.II.

<sup>14</sup> PAULOVICS 1941, 145, Abb. 1.

<sup>15</sup> MHIM 22924.

<sup>16</sup> VISY 2003, 33, Fig. 32; SZÁMADÓ 2010, 146; SZABÓ 2011, 157-158, Fig. 144.

<sup>17</sup> BARKÓCZI 1949, Map I; BARKÓCZI 1951, 8, Fig 1.





Fig. 5. The aerial image from 1951 showing the soil marks of the roads, the *fossa* and the two possible location of the amphitheatre.



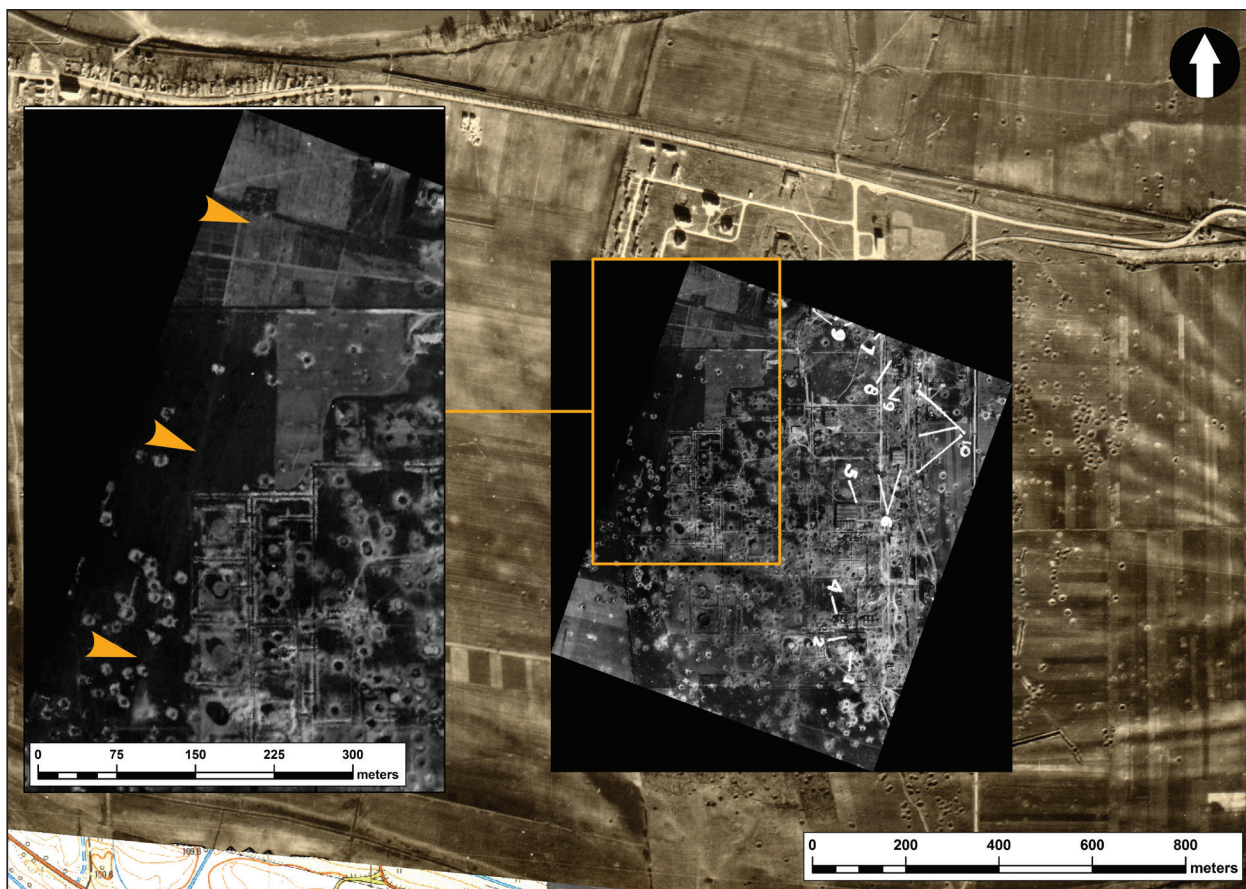


Fig. 6. The *porta decumana* and the road heading south in the aerial reconnaissance image from 1944 (Source: [www.fold3.com](http://www.fold3.com) and Valentin Cseh).

and/or excavations, but the area is covered by living quarters and narrow plots surrounded by fences, which makes the accessibility of the location more difficult. The vertical image from 1951 has proved to be useful for the rectification of other oblique photographs and ground plans made during the Second World War.

We are already in possession of several images taken by the aerial reconnaissance units before and after the bombardments. One of them gives a good example how useful such kind of pictures can be also from the archaeological point of view. The excavation of the *porta decumana* is visible on the photo, as well as a long, straight section (about 600 meters) of the Roman road heading south (Fig. 6). However, there is some inconsistency between the data given by the aerial image and the testimony of László Barkóczi, who described and mapped a shorter road which ends after 300 meters

in a bifurcation.<sup>18</sup> This contradiction cannot be solved at the current state of our research. As it was mentioned above, excavations performed in the war era have been scarcely documented, however, the contemporary ground plan of the oil refinery can be found in the Archive of the Hungarian National Museum, with the archaeological observations illustrated (Fig. 7).<sup>19</sup> Due to the huge size this map cannot be easily digitized and rectified, but on the basis of aerial images we were able to get an output at the end of the process keeping the inaccuracy within the acceptable limit.<sup>20</sup> This map seemed to be a valuable source considering what came to light during the construction of the oil refinery. Enough to

<sup>18</sup> BARKÓCZI 1951, 8, 1. kép.

<sup>19</sup> HNM 54.Sz.I.

<sup>20</sup> The estimated inaccuracy is not higher than 10 meters which sounds terrific but regarding the circumstances it is better than any earlier attempt.



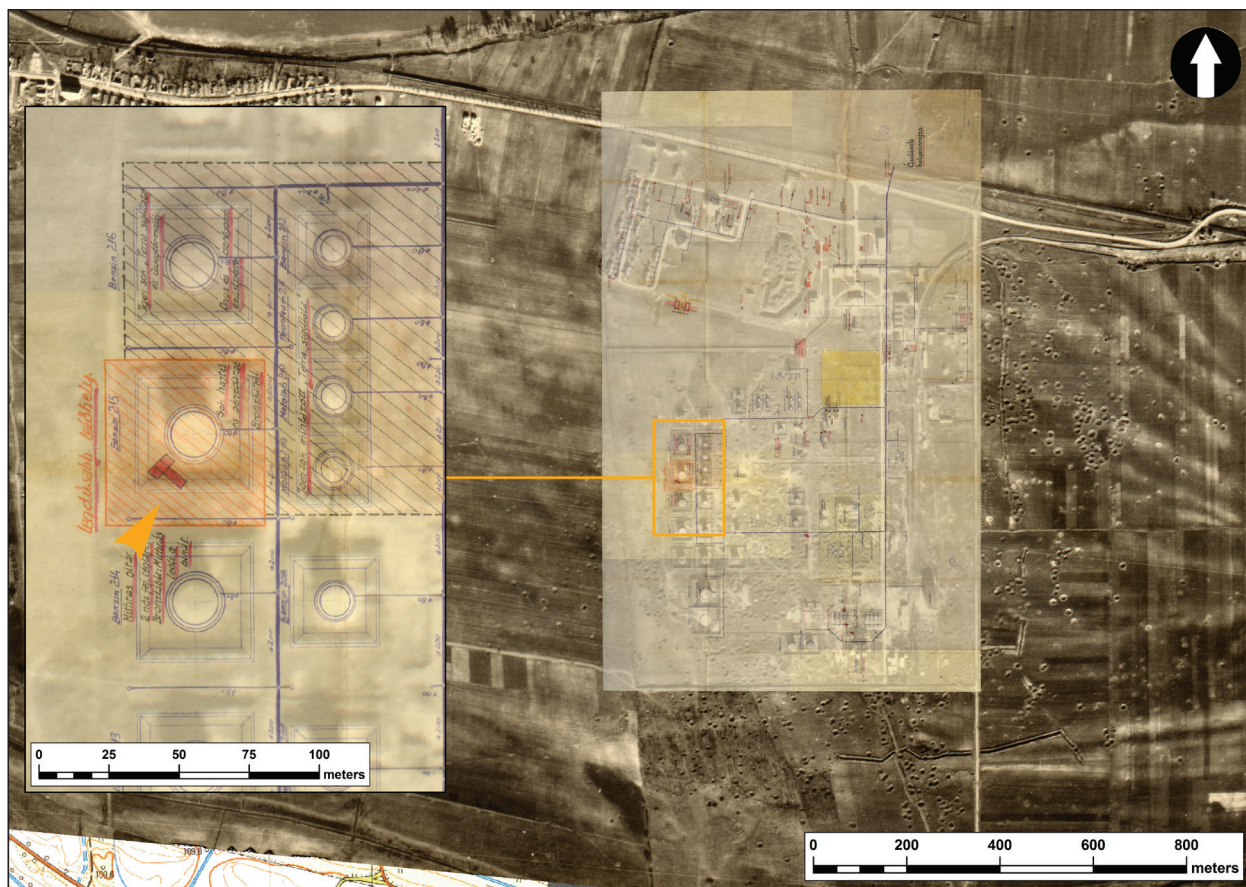


Fig. 7. The reconstructed place of the Mithraeum.

mention the case of the Mithraeum which was found (and demolished at the same time) in 1943 in the place of an oil storage drum, which was described by László Barkóczy as the last one built before the end of war.<sup>21</sup> His report would remain useless without the implied map whereon the site of the shrine is clearly identifiable (Fig. 7).

Last but not least, the war destruction and the bomb craters have become rectifiable with the help of the images, which is very useful for filtering the geophysical data and identifying some mysterious crop-marks. They make also possible to avoid such unfavorable zones during the preparation of an excavation or geophysical survey.

#### Oblique exposures

As it was well illustrated above, the aerial archaeological survey of Brigetio and

its surroundings was started by Otto Braasch and René Gougey after the meltdown of the communist regime in Eastern Europe and Hungary. The research has been continued by Zoltán Czajlik who carried out several campaigns between 2008 and 2015 in order to document the plough lands suitable for aerial remote sensing. Due to his activity the collection of aerial photographs taken in and around the Roman settlement have been expanding year by year in the laboratory of ELTE–Eötvös Loránd University in Budapest. Such a huge amount of images allowed us to make a photo mosaic and map the topographical information (Fig. 8). Many plots were documented in two or even three different times which made possible to improve the quality of the interpretation. During the process we used the Airphoto Special Edition and ArchMap 9.3 softwares. The detailed discussion of this issue exceeds the limits of the present paper, therefore we are aiming to

<sup>21</sup> BARKÓCZI 1951, 8, Fig. 1.





Fig. 8. The photomap of the research area based on the oblique images taken between 2008 and 2015 by Zoltán Czajlik.



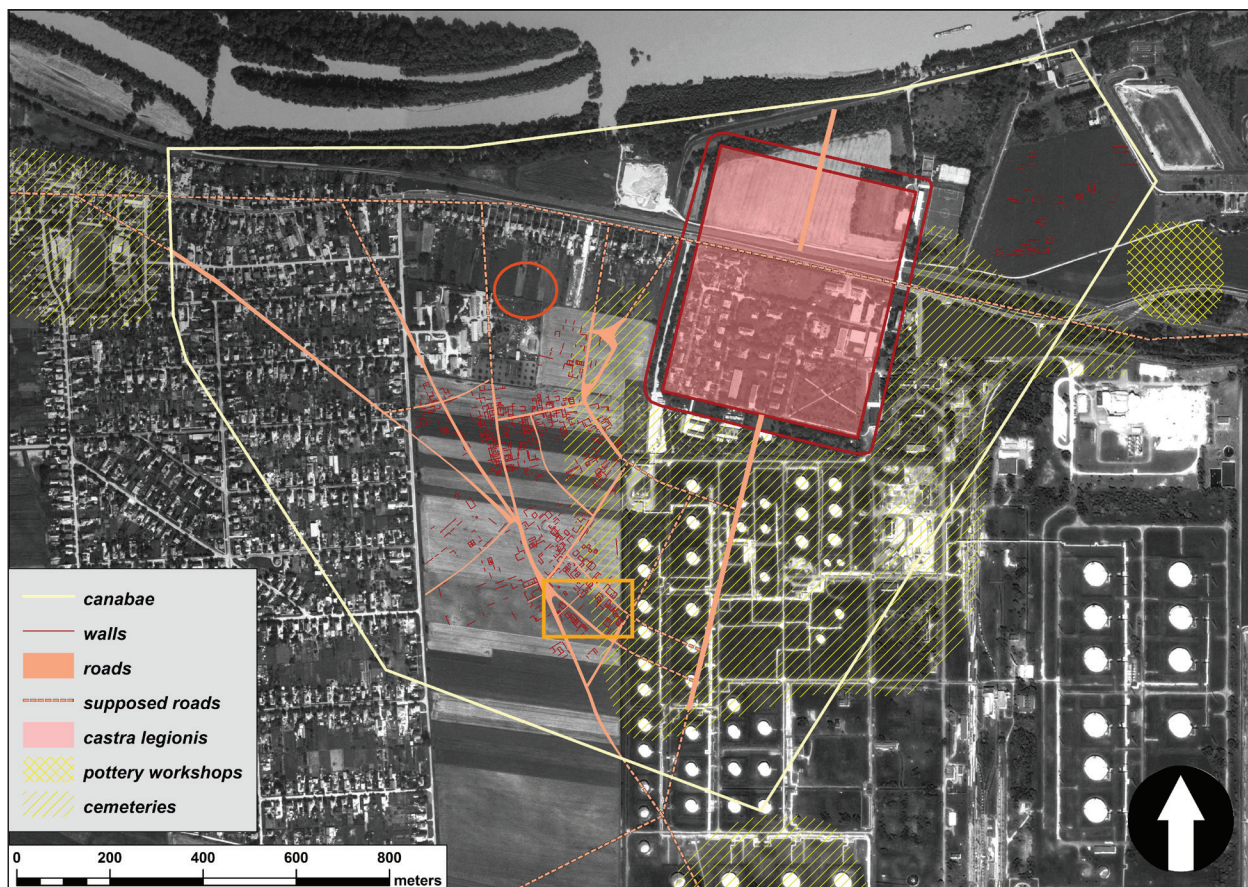


Fig. 9. The structure of the *canabae*.

highlight only some aspects and topographical elements which are connected to the archive and modern aerial imagery of the studied area. According to the crop and soil marks being visible in these pictures the structure of roads enmeshing the military town can well be reconstructed. The system appears not to be orthogonal, rather the tracing of the streets was influenced by the SW corner of the fortress and the two main routes heading westwards and southwards from the *castra* (Fig. 9). Such an orientation of the roads would seem logical if they wanted to avoid the circulation running to Aquincum having pass through the legionary fortress. The relief of the area has also specified a similar structure.

The marks of the bomb craters are also visible in the aerial archaeological imagery. They have different appearance according to their filling, which can either be composed of stones or not (Fig. 10), however, the destruction caused by them is remarkable.

#### SUMMARY

The first stage of a research program we have launched three years ago in order to understand better the topography of the Roman Brigetio is closing to an end. Alongside the aerial archaeological survey other non-invasive methods, such as validation of archive data, fieldwalking, magnetometric and GPR measurements have also been involved in this project, moreover, several excavations have been carried out under the leadership of László Borhy, Dávid Bartus and Emese Számadó on the site. In the present paper, we wanted to highlight how archive data can provide valuable source of information even in a disadvantageous situation. The final outcome of our research is going to be a complete catalogue and evaluation of all topographical items, following the methodology of the well-known research of Carnuntum<sup>22</sup> and Novae.<sup>23</sup>

<sup>22</sup> Recently: DONEUS *et alii* 2013.

<sup>23</sup> E.g. TOMAS 2014.



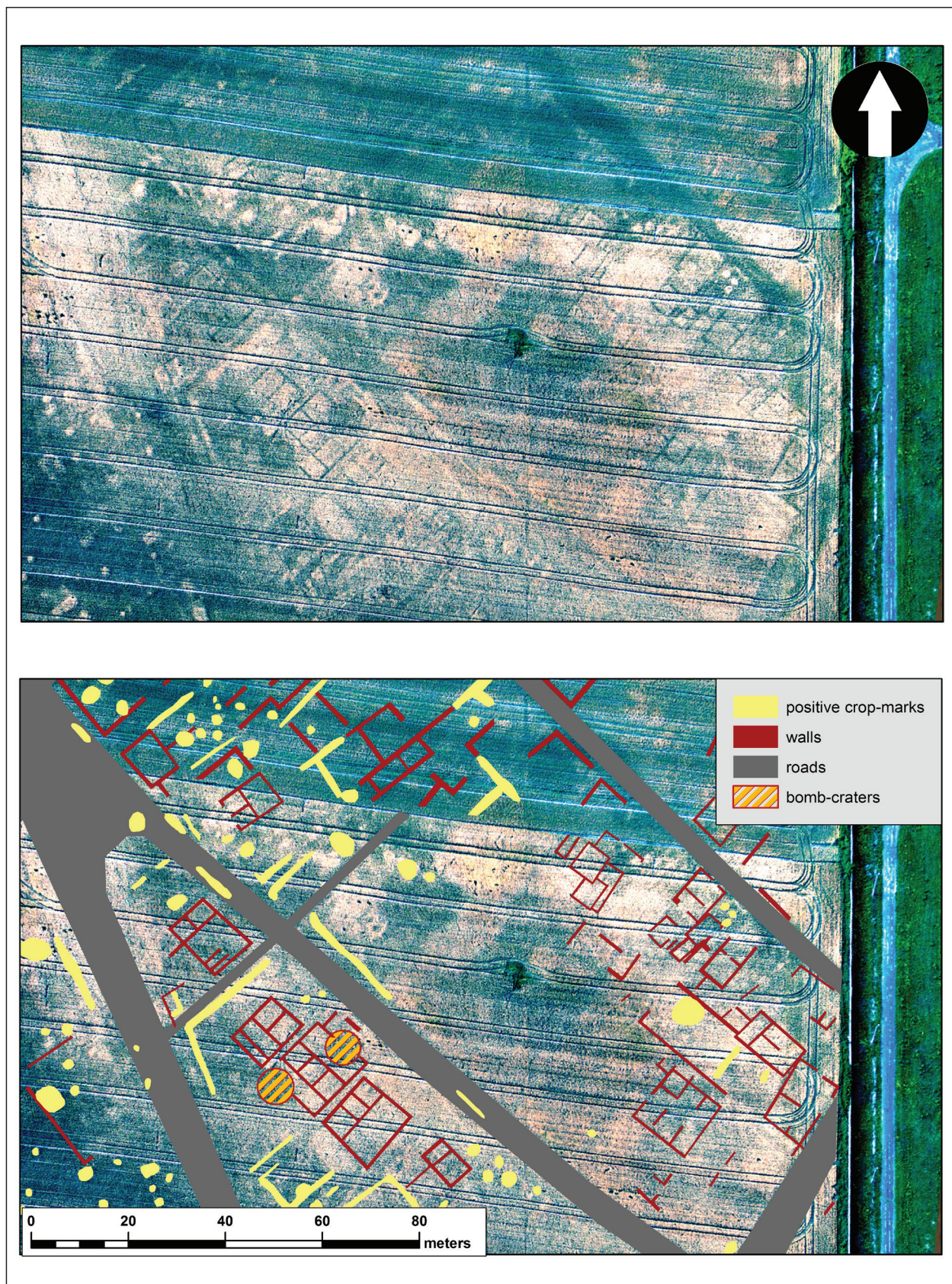


Fig. 10. Section of the *canabae* with crop-marks of roads, pits, walls and bomb craters (Date: 21/06/2012, Zoltán Czajlik).  
This area is displayed with orange rectangle in Fig. 9.



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# ABBREVIATIONS

*In alphabetical order*

- AA = Archäologischer Anzeiger  
AARGNews = Aerial Archaeology Research Group News  
ActaArchBrig = Acta Archaeologica Brigetionensia  
ActaArchHung = Acta Archaeologica Academiae Scientiarum Hungaricae  
ADPV = Abhandlungen des Deutschen Palästina-Vereins  
AEA = Archivo Español de Arqueología  
AEp = L'Année Épigraphique  
AForschMB = Archäologische Forschungen zu den Grabungen auf dem Magdalensberg  
ANRW = Aufstieg und Niedergang der römischen Welt  
ANSMN = American Numismatic Society Museum Notes  
Antaeus = Antaeus. Communicationes ex Instituto Archaeologico Academiae Scientiarum Hungaricae (1970-1985: Mitteilungen des Archäologischen Instituts der Ungarischen Akademie der Wissenschaften)  
AntAfr = Antiquités Africaines  
AnthrAnz = Anthropologischer Anzeiger  
AnthrKözl = Anthropologiai Közlemények  
AntHung = Antiquitas Hungarica - A Klasszikus Örökség  
AntJ = The Antiquaries Journal  
AntTan = Antik Tanulmányok  
AqFüz = Aquincumi Füzetek  
AR = Archeologické Rozhledy  
ArchÉrt = Archaeologiai Értesítő  
ArchKorr = Archäologisches Korrespondenzblatt  
Arrabona = Arrabona. A Győri Xantus János Múzeum Évkönyve  
AW = Antike Welt  
BABesch = Bulletin Antieke Beschaving  
BAR-IS = British Archaeological Reports – International Series  
BJ = Bonner Jahrbücher des Rheinischen Landesmuseums in Bonn und des Vereins von Altertumsfreunden im Rheinlande  
BudRég = Budapest Régiségei  
CahTun = Cahiers de Tunisie  
CarnJb = Carnuntum Jahrbuch  
ČNM = Časopis národního Musea v Praze  
CommArch Hung = Communicationes Archaeologicae Hungariae  
Dacia = Dacia. Revue d'archéologie et d'histoire ancienne



DaM = Damaszener Mitteilungen  
DissArch = Dissertationes Archaeologicae ex Instituto Archaeologico Universitatis de Rolando Eötvös Nominatae  
DissPann = Dissertationes Pannonicae ex Instituto Numismatico et Archaeologico Universitatis de Petro Pázmány Nominatae Budapestinensis Proveniente  
DNP = Der Neue Pauly. Enzyklopädie der Antike  
FiL = Forschungen in Lauriacum  
FolArch = Folia Archaeologica  
Gnomon = Gnomon. Kritische Zeitschrift für die gesamte klassische Altertumswissenschaft  
HistCarp = Historia Carpatica  
HMRK = Heves Megyei Régészeti Közlemények  
HNM = Hungarian National Museum  
HOMÉ = A Herman Ottó Múzeum Évkönyve  
JDAI = Jahrbuch des Deutschen Archäologischen Instituts  
IGL = Inscriptions Grecques et Latines de la Syrie  
LIMC = Lexicon Iconographicum Mythologiae Classicae  
IKARUS = Innsbrucker Klassisch-Archäologische Universitätsschriften  
JAMÉ = Nyíregyházi Jósza András Múzeum Évkönyve  
JRS = Journal of Roman Studies  
JÖAI = Jahreshefte des Österreichischen Archäologischen Institutes in Wien  
KDMK = Kuny Domonkos Múzeum Közleményei  
KMMK = Komárom-Esztergom Megyei Múzeumok Közleményei  
Latomus = Latomus. Revue d'Études Latines  
LIMC = Lexicon Iconographicum Mythologiae Classicae  
LAAJ = Late Antique Archaeology Journal  
MBV = Münchner Beiträge zur Vor- und Frühgeschichte  
MFMÉ = A Móra Ferenc Múzeum Évkönyve  
MHIM = Military History Institute and Museum  
MittArchInst = Mitteilungen des Archäologischen Instituts der Ungarischen Akademie der Wissenschaften (1986- Antaeus. Communicationes ex Instituto Archaeologico Academiae Scientiarum Hungaricae)  
MPK = Mitteilungen der Prähistorischen Kommission  
MRGK = Materialien zur römisch-germanischen Keramik  
NK = Numizmatikai Közlöny  
NMMÉ = Nograd Megyei Múzeumok Évkönyve  
NNM = American Numismatic Society. Numismatic Notes and Monographs  
NumAntCl = Numismatica e Antichità Classiche  
RCRFA = Rei Cretariae Romanae Fautorum Acta  
RE = Paulys Realencyclopädie der classischen Altertumswissenschaft  
RégFüz = Régészeti Füzetek  
RhM = Rheinisches Museum für Philologie  
RKM = Régészeti Kutatások Magyarországon- Archaeological Investigations in Hungary

RLÖ = Der römische Limes in Österreich

RM = Mitteilungen des Deutschen Archäologischen Instituts, Römische Abteilung

RSL = Rivista di Studi Liguri

SchwMüBl = Schweizer Münzblätter

SlovArch = Slovenská Archeologia

SMK = Somogyi Múzeumok Közleményei

SoSchrÖAI = Sonderschriften des Österreichischen Archäologischen Institute

StComit = Studia Comitatensia

StHist = Studia Historica. Historia Antigua

ŠtudZvest = Študijne Zvesti Arheologického Ústavu Slovenskej Akadémie Vied Nitra.

Światowit = rocznik poświęcony archeologii przeddziejowej i badaniom

SaalbJb = Saalburg- Jahrbuch

Terra Sebus = Terra Sebus: Acta Musei Sabesensis

VAMZ = Vjesnik Arheološkog Muzeja u Zagrebu

ZM = Zalai Múzeum



# ABBREVIATIONS OF ANTIQUE SOURCES

*In alphabetical order*

*Cic, Verr.* = Cicero, *in Verrem actio*

*Macr, Sat.* = Ambrosius Aurelius Theodosius Macrobius, *Liber Saturnalia*

*Marcellin, Med.* = Marcellus Ulpius, *De Medicamentis*

*Pers.* = Aulus Persius Flaccus, *Satirae*

*Plaut, Rud.* = Titus Maccius Plautus, *Rudens*

*Porph, Hor. Sat.* = Pomponius Porphyrius, *Comentarii in Horatium Flaccum*

*Schol. Hor. Sat.* = Keller, O.: *Pseudacronis Scholia in Horatium Vetustiora* (1902)

*Schol. Pers.* = Wessner, P.: *Scholia in Iuvenalem Vetustiora* (1931 Stuttgart)

*Suet.* = C. Suetonius Tranquillus, *De vita Caesarum*

*Varro, ling.* = M. Terentius Varro, *De lingua Latina*

*Vitr, De Arch.* = Vitruvius, *De architectura libri decem*

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