

## THE HINTERLAND OF AQUINCUM AND BRIGETIO AND RESEARCH ON THE FOOD PROVISIONING OF THE ROMAN ARMY IN HUNGARY<sup>1</sup>

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*The army stationed in Pannonia during the Roman Age played a prominent role in the province's daily life, as reflected by the archaeological relics of economic and social life. The provisioning of the military with the basic foodstuffs was a burden principally borne by the civilian settlements that emerged by the military camps and in the province's interior – however, few studies have explored the interaction between the military and the civilian settlements, or the interaction between the latter. Topographical and GIS-based studies offer new insights into the human and environmental factors that played a role in the emergence of the settlement network in the hinterland of the river frontier.*

“No matter how well Pannonia was defended by, and populated along, the Danube, there must have been mediating towns, villages, settlements and forts, which, by means of military and trade roads, enabled safe travel, food provisioning and defence.”<sup>3</sup> Nineteenth-century archaeological research had already directed attention to the link between the Roman military forts (and towns) along the Danube and the settlement network of the province's interior, which Flóris Rómer conceptualised as an economic and military relationship evolving along the roads, necessitated by the need for provisioning the forts and the towns as well as for ensuring the continuous flow of food supplies. The provisioning of the army stationed along the Danube was ensured by local roads and the routes spanning several provinces. Long-distance routes were mainly used for food commodities transported in amphoras and, occasionally, barrels, usually from the Mediterranean, while cereals (the basis of bread), livestock and products based on the latter (meat, leather, lard and the like) was procured from local sources.<sup>4</sup> My research focuses on the environmental, cultural historical and economic conditions in the hinterland of the forts, and on the reconstruction of the dynamics behind the emergence of the settlement structure in the hinterland as well as on the interaction with the military, principally by applying the methodology of archaeological topography.

### PREVIOUS RESEARCH AND THE STUDY REGION

Landscape archaeology came to Hungary relatively late compared to the western countries, in the 1990s;<sup>5</sup> however, major advances have been made in this discipline, especially regarding the adoption of its methodology. Similarly as in topographical research, in which Roman studies in Hungary follow the find-centric British schools, the research methods and goals of my doctoral thesis are based on the so-called hinterland studies as developed and practiced by British scholars.<sup>6</sup> In my thesis, I examine the ancient *territorium* of Aquincum and Brigetio: the study area comprises the Esztergom, Szentendre, Pilisvörösvár and Budakeszi

<sup>1</sup> The subject of my doctoral thesis is “The agricultural hinterland of Aquincum and Brigetio, and the local system of the army supply” (Eötvös Loránd University). Consultant: Dr. László Borhy MHAS, university professor, head of department.

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<sup>3</sup> Rómer, Flóris: Pannonia területén Magyarországon fennmaradt néhány római várnáról. (About some Roman castles, which have been preserved in the territory of Pannonia in Hungary.) *Archaeologiai Közlemények* 3 (1863), 34–53.

<sup>4</sup> These are general features; the provisioning of the army stationed in a specific province may have diverged from this general scheme.

<sup>5</sup> For an overview of the current state of landscape archaeology in Hungary, see Csilla Zatykó: People beyond landscapes: past, present and future of Hungarian landscape archaeology. *Antaeus* 33 (2015), 369–388.

<sup>6</sup> See, for example, Bintliff, John – Howard, Phil – Snodgrass, Anthony: *Testing the Hinterland: The Work of the Boeotia Survey (1989–1991) in the Southern Approaches to the City of Thespiai*. (Cambridge: McDonald Institute Monographs, 2007).

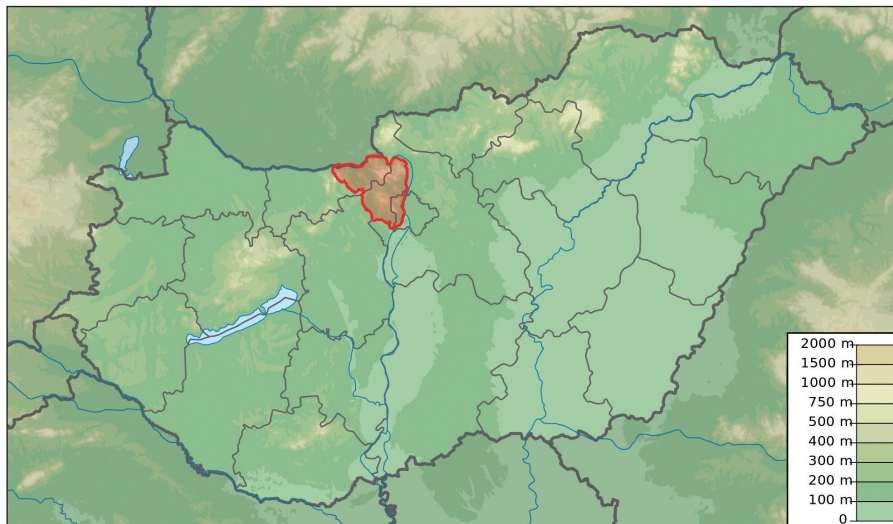


Fig. 1: *The study area of the doctoral research on the map of Hungary*

Districts of north-eastern Transdanubia, the districts of Buda and the administrative territory of Törökbálint (Fig. 1), all areas that have been systematically surveyed using the same sampling techniques, whose finds have been published in Volumes 5 and 7 of the *Magyarország Régészeti Topográfiája* [Archaeological Topography of Hungary] series,<sup>7</sup> making the area suitable for the topographical study of the rural settlement system.<sup>8</sup>

### ALL IN ITS PROPER PLACE ...

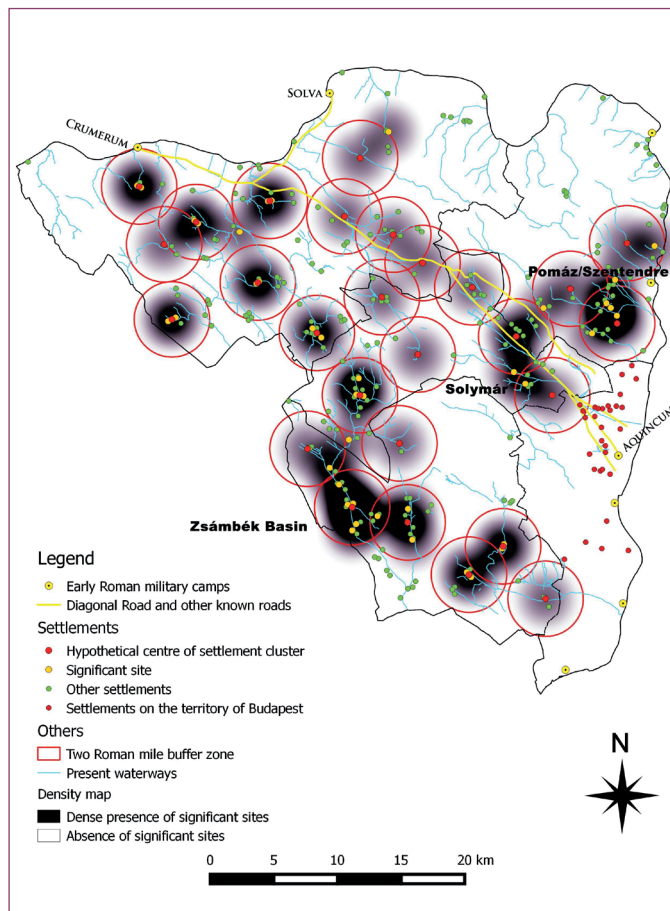
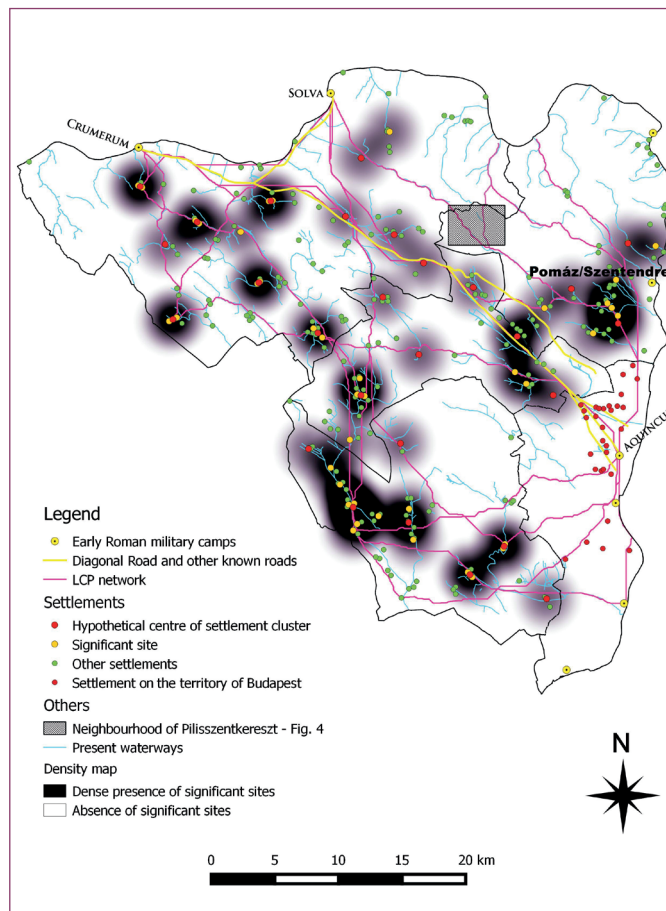
First, I strove to identify the settlements that played a key role and occupied a central position, which probably maintained prosperous economic links with the military troops stationed along the Danube. I selected sites where, in addition to stone building material, roof tiles and mortar as well as imported or regional pottery wares had also been found. In this manner, I distinguished 59 significant sites among the 264 sites that could be regarded as civilian settlements of the Roman Age.<sup>9</sup> It was clear from the earlier archaeological literature that the Zsámbék Basin and the Solymár and Pomáz/Szentendre areas were characterised by highly Romanised settlements; after applying my set of criteria, this entire area clearly stood out on the map showing settlement densities too (Fig. 2). By incorporating the prominent sites and an earlier observation into the model, the settlement network could be set into a regular system – the rural landscape of the Roman Age appears to have been determined by central settlements spaced some four Roman miles (six kilometres) apart and the cluster of villages/villas around them. This settlement pattern is comparable to the settlement network of the Rhine region, only the dimensions differ.<sup>10</sup>

<sup>7</sup> Horváth, István – H. Kelemen, Márta – Torma, István: Komárom megye régészeti topográfiája. Esztergom és a dorogi járás. (The Archaeological Topography of Komárom County. Esztergom and Doro Region) In: *Magyarország régészeti topográfiája* 5, ed. Gerevich, László (Budapest: Akadémiai Kiadó, 1979); Dinnyés, István – Kővári, Klára – Lovag, Zsuzsa – Tettamanti, Sarolta – Topál, Judit – Torma, István: Pest megye régészeti topográfiája. A budai és szentendrei járás (The Archaeological Topography of Pest County. Buda and Szentendre Region). In: *Magyarország régészeti topográfiája* 7, ed. Gerevich, László (Budapest: Akadémiai Kiadó, 1986).

<sup>8</sup> For previous overviews, see Gabler, Dénes: Die ländliche Besiedlung Oberpannoniens. In: *Ländliche Besiedlung und Landwirtschaft in den Rhein-Donau-Provinzen des Römischen Reiches*. Hrsg. Bender, Helmut – Wolff, Hartmut (Passau: Passauer Universitätsschriften zur Archäologie 2, 1994), 377–419; Visy, Zsolt: Die ländliche Besiedlung und Landwirtschaft in Niederpannonien. In: *Ländliche Besiedlung und Landwirtschaft in den Rhein-Donau-Provinzen des Römischen Reiches*, Hrsg. Bender, Helmut – Wolff, Hartmut (Passau: Passauer Universitätsschriften zur Archäologie 2, 1994), 421–449; Ottományi, Katalin: A római kor emlékei Pest megyében (Őslakosság, településszerkezet, temetkezés, vallás, betelepített barbárok) [Roman Remnants in Pest County (Indigenous Population, Settlement Structure, Burial, Religion, Settled Barbarians)]. In: *Pest Megye Monográfiája* I/1, ed. Torma, István – Fancsalszky, Gábor (Budapest: Pest Megye Monográfiája Közalapítvány, 2007), 249–341.

<sup>9</sup> For the choice of criteria and its possible drawbacks, see Simon, Bence: Roman settlement pattern and LCP modelling in ancient North-Eastern Pannonia (Hungary). *Dissertationes Archaeologicae* Ser. 3. No. 3 (2015), 105–126.

<sup>10</sup> Until the precise determination of the exact extent and the chronology of the assumed “centres”, these centres remain hypothetical and there is nothing to justify their designation as *vici*.

Fig. 2: *Theoretical map of the settlement network*Fig. 3: *Least-cost path network and the settlement system*

### ALL ROADS LEAD TO THE FORT ...

Parallel to the growing number of Hungarian studies focusing on digital road modelling, I strove to determine the region's most ideal road network for the Roman Age. My work was greatly aided by Zsuzsa Petó's observation<sup>11</sup> that the so-called diagonal road linking Aquincum (Óbuda) with Crumerum (Nyergesújfalu) and eventually leading to Brigetio (Komárom, Szőny), of which the longest section has been identified in the study region, coincides with the line of the least-cost path that can be modelled from the slope gradients of the region's terrain. Using a digital elevation model with a 10 m x 10 m resolution, I drew the least-cost paths in three main directions, namely Aquincum (Óbuda), Solva (Esztergom) and Crumerum (Nyergesújfalu) from the prominent settlements lying on the fringes of the study area, and from the settlements that occupied a unique position owing to their geographic location. Certain sections of these routes, mostly running in stream valleys, showed a remarkable correlation with the roads appearing on the maps of the First Ordnance Survey (1763–1787) and the entire settlement system could be strung along these routes with the exception of a few sites (Fig. 3).

At Pilisszentkereszt, one of the least-cost paths coincides with a road whose date is uncertain, but which is generally regarded as dating from the Roman Age in the earlier archaeological literature (Fig. 4).<sup>12</sup> Obviously, the date of the road connecting the Pomáz/Szentendre area with Esztergom (Solva) cannot be determined without an excavation, but its importance is definitely underpinned by the road model.

<sup>11</sup> Petó, Zsuzsa Eszter: [Roman or Medieval? Historical Roads in the Pilis Forest](#). *Hungarian Archaeology* 2014/3, 1–8.

<sup>12</sup> [http://sirasok.blog.hu/2010/04/13/osi\\_utak\\_a\\_pilisben](http://sirasok.blog.hu/2010/04/13/osi_utak_a_pilisben) (last accessed: April 4, 2016).

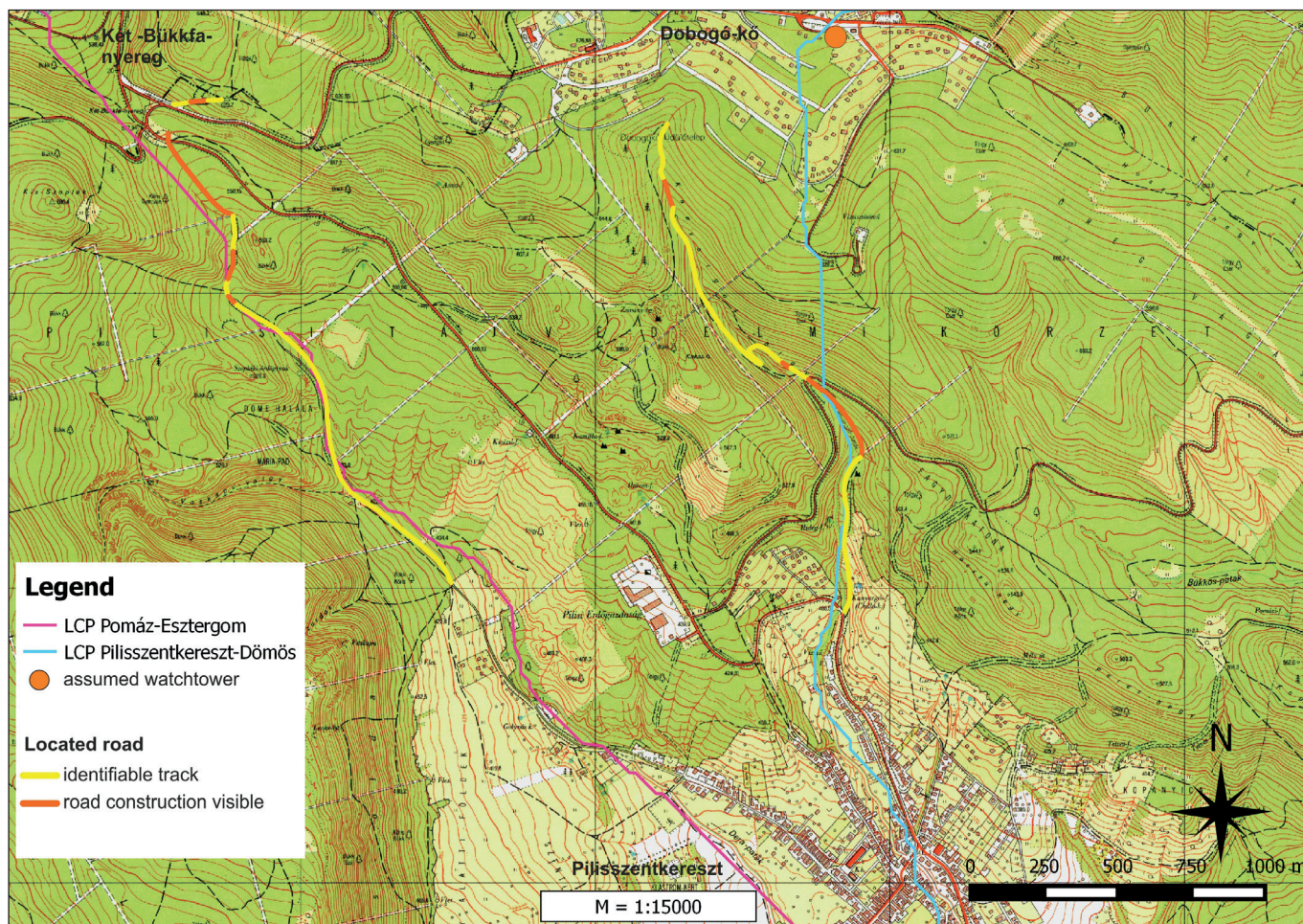


Fig. 4: Historical roads of Pilisszentkereszt (after Máté Szabó's study cited in note 12) and the least-cost paths

### THE DIE IS CAST ... (AND ROLLS ON)

In the light of the above, it is possible to shed new light on the spatial – although not the chronological – dimensions of the settlements of the Roman Age in north-eastern Transdanubia. Certain nodes oriented to possible regional roads can be determined in the Roman Age settlement system; these nodes played an active role in the region's economy and probably maintained an active connection with the military. The emergence of these nodes, and of the entire settlement network, was most profoundly influenced by human decisions that were to some extent constrained by the physical environment: these decisions led to the emergence of the Roman settlement system, into which settlement topographical studies allow a deeper insight. It is my hope that by refining the applied methods and by enlarging the available database, it will be possible to eventually identify the settlements mentioned by Flóris Rómer among the rural settlements, which – owing to their location – played a decisive role in the local provisioning of the military.

## GLOSSARY

**Archaeological topography:** a research direction in archaeology, which, in addition to describing various phenomena (sites) from prehistoric and historic periods, also examines their (spatial) connections with each other and with their natural environment.

**Hinterland studies:** a research direction introduced by British schools engaged in mapping the rural areas economically tied to ancient towns using non-invasive techniques for identifying archaeological sites (field surveys, aerial archaeological photography, geophysical surveys, etc.), with an emphasis on archaeological topographical methods.

**Landscape archaeology:** an archaeological research direction blending theoretical and practical research methods that focuses on the processes and dynamics underlying human impacts on the landscape.

## RECOMMENDED READING

GOODCHILD, HELEN

GIS Models of Roman Agricultural Production. In: *The Roman Agricultural Economy: Organisation, Investment, and Production*, ed. Bowman, Allen – Wilson, Andrew, 55–84. Oxford, Oxford Studies on the Roman Economy, 2013.

KOOISTRA, LAURA I. – VAN DINTER, MARIEKE – DÜTTING, MONIKA K. –

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Could the local population of the Lower Rhine delta supply the Roman army? Part 2.

*Journal of Archaeology in the Low Countries* 5 (2014)/1, 5–48.

## STUDIES BY THE AUTHOR ON THE SUBJECT

SIMON, BENCE

Roman settlement pattern and LCP modelling in ancient North-Eastern Pannonia (Hungary). *Dissertationes Archaeologicae* Ser. 3. No. 3 (2015), 105–126.

SIMON, BENCE

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Budapest: L'Harmattan, 2015.