

AKADÉMIAI KIADÓ

Castles, settlements, riverbeds from above – Aerial reconnaissance surveys by Zsuzsa Miklós in the Drava region

Acta Archaeologica
Academiae Scientiarum
Hungaricae

73 (2022) 1, 107–119

DOI:

10.1556/072.2022.00009

© 2022 The Author(s)

Zsuzsa Miklós (†)¹, Márton Rózsás², Csilla Zatykó¹  and
Gyöngyi Kovács^{1*} 

¹ Institute of Archaeology, Research Centre for the Humanities, Eötvös Loránd Research Network, Tóth Kálmán utca 4, H-1097, Budapest, Hungary

² Drava Museum (today 'Dráva Közérdekű Muzeális Kiállítóhely' [Drava Public Museum Exhibition Venue]), Széchenyi utca 22, H-7570, Barcs, Hungary

Received: February 4, 2022 • Accepted: February 19, 2022

ORIGINAL RESEARCH PAPER



ABSTRACT

The present study outlines the most important results of the aerial archaeological prospection surveys conducted by Zsuzsa Miklós (1948–2014) in South Transdanubia, with special regard to the fortifications, settlements, and landscapes along the Drava photographed between 2008 and 2013. This is a completed and edited version of the paper left to us from 2014.

KEYWORDS

Aerial archaeology, South Transdanubia, Drava region, archaeology of the Middle Ages and the Ottoman period in Hungary

Zsuzsa Miklós (1948–2014), as a senior research fellow at the Institute of Archaeology of the Hungarian Academy of Sciences and then of the Research Centre for the Humanities of the Hungarian Academy of Sciences, was one of the most renowned practitioners of aerial photography for archaeological purposes in Hungary. Her study written as part of a research project carried out in South Transdanubia remained unfinished due to her untimely death. Her colleagues, the members of the project team, pay tribute to her memory by making minor additions to the paper and getting it ready for publication.

Aerial reconnaissance and photography are absolutely indispensable for reconstructing the settlement history of a given area. As a result of aerial surveys carried out in different seasons and under different observation conditions, we are able to identify earthworks, villages, and cemeteries, which are only indicated by the archaeological finds discovered on the surface during traditional fieldwalking surveys. Nevertheless, aerial photography allow us to form a comprehensive picture of the structure of the fortifications and villages, the connectivity of the individual sites, and the wider landscape context (Fig. 1).

ŐCSÉNY-OLTOVÁNY-DŰLŐ (SITE ID 21277) AND DECS-ETE (SITE ID 20014)

The activity of Zsuzsa Miklós in aerial photography started at Ócsény, a site located near Szekszárd in County Tolna. From 1988 to 1992, she carried out excavations on the area of the *castellum* at Oltovány-dűlő dated between the fourteenth to sixteenth centuries. The site is bordered by the watercourse of Bába on one side and by a double ditch and an embankment in a horseshoe shape on the other three sides. The outer ditch is now only visible at times of high

*Corresponding author.

E-mail: kovacs.gyongyi@abtk.hu



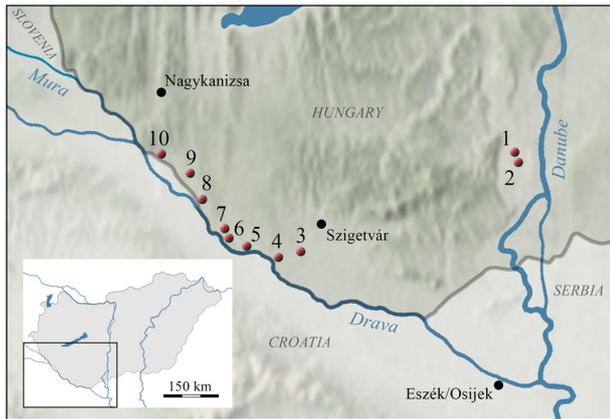


Fig. 1. The settlements mentioned in the text (1. Ócsény, 2. Decs, 3. Kétújfalu, 4. Drávacárdony, 5. Barcs, 6. Péterhida, 7. Babócsa, 8. Bélavár, 9. Berzence, 10. Gyékényes). Map: S. Ósi, and Zs. Réti



Fig. 2. Ócsény-Oltovány-dűlő. Aerial photograph: 12.23.1998. (Archive of the RCH Institute of Archaeology, Inv. No. 180.783.)

groundwater levels and in aerial photographs. Pál Engel hypothesised that the *castellum* could have been built on the estate of the Ipoltfi family of Győrke, presumably during the civil war after 1440. Its castellan, Kelemen Berseni Kis (*Parvus*) is mentioned in a source dating from 1446. The artefacts and observations made during the excavations, on the other hand, suggest that the origins of the site go back to the fourteenth century. According to the excavation results, the earthwork fortification was used up to the early Ottoman period.¹

Since the site in Ócsény was merely approximately 1 km away from the airport as the crow flies, Zsuzsa Miklós took aerial photographs of the site during the excavations relatively frequently. Depending on the possibilities offered by the airport, she usually flew by small planes and used an agricultural helicopter as a last resort. In 1991, and even more so in 1992, she photographed the squares of the site grid under excavation on a weekly basis and recorded each level. During this work, Zsuzsa Miklós learnt the basics of aerial photography, and due to the varying circumstances, she was able to observe and record even those details of the stronghold that are no longer visible in the field. The structure of the earthwork fortification could be observed when covered with snow and to a lesser extent in spring, during the foliage-free period (Figs 2 and 3). When the photographs were taken, the meanders of the stream and the soilmarks of the houses (?) standing next to the fortification were clearly visible from the air.²

The methods employed at Ócsény were later successfully developed further by Zsuzsa Miklós during the investigations of the ruined medieval market town of Ete near Decs, which was resumed in the 1990s. The settlement had probably already existed in the Árpáadian period and had its heyday in the fifteenth and sixteenth centuries. It may have been abandoned sometime between 1620 and 1627. Aerial photographs

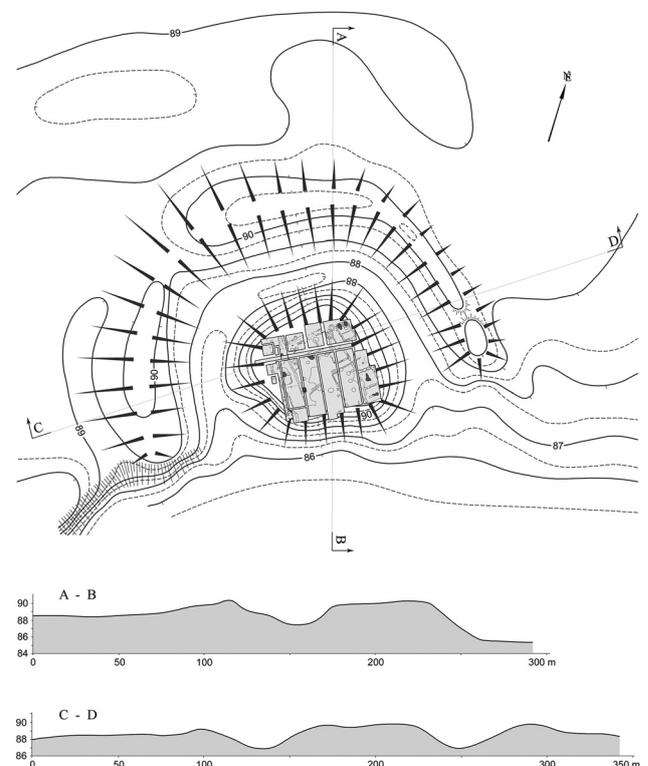


Fig. 3. Ócsény-Oltovány-dűlő. Site survey with levels at the place of the medieval *castellum* and the archaeological grid used during the excavations. Survey: Gy. Nováki, Gy. Sándorfi, E. Egyed, 1985/1991. After Miklós (2007) Fig. 271

revealed the streets, houses, and plots of the settlement, which made it possible to reconstruct the entire settlement structure (Figs 4 and 5).³ Furthermore, the photographs taken of the individual levels during the archaeological excavations also

¹Miklós (2007) 281–293.

²Thanks are due to the Ócsény Flying Club, as well as Zoltán Gáspár and Gábor Talabos for their help in the aerial reconnaissance surveys. A Z-101 aircraft was used for the surveys.

³Miklós (2004); Miklós and Vizi (2003) 209–212, ills. 2–3; Miklós (2007) Figs 154–155.



Fig. 4. Decs-Ete. Aerial photograph: 09.12.1992. (Archive of the RCH Institute of Archaeology, Inv. No. 161.474.)

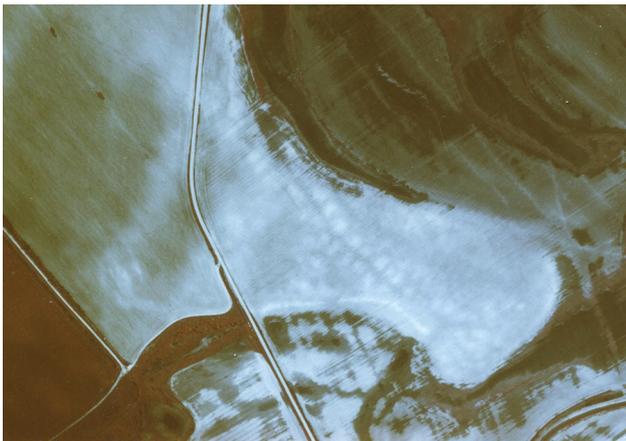


Fig. 5. Decs-Ete. Aerial photograph: 05.09.1998. (Archive of the RCH Institute of Archaeology, Inv. No. 179.272.)

allowed the observation and interpretation of the different soil discolorations of archaeological interest in their contexts.

SITES ALONG THE DRAVA

Between 2008 and 2013, Zsuzsa Miklós carried out aerial reconnaissance surveys in the Hungarian section of the Drava Valley and along the tributaries on several occasions within the framework of an interdisciplinary research project.⁴

⁴Településrégészeti és környezettörténeti kutatások a Dél-Dunántúlon, 1300–1700 [Studies on Settlement Archaeology and Environmental History in Southern Transdanubia, 1300–1700]. National Scientific Research Fund (OTKA) K 72231 (2008–2013). Project supervisor: Gyöngyi Kovács.

A total of about 1,300 digital and analogue photographs were taken. As the Drava is a border river in the south-western part of the country's current frontier, it was not possible to conduct any aerial reconnaissance and photography in this area until recently. We wanted to fill this gap – among other things – with the flights carried out during the project.⁵

The fact that the Drava is a border river made the survey complicated: it is difficult to fly over the meanders and backwaters which belong partly to Hungary and partly to Croatia. In the closely defined Drava Valley, the living river and the land between the backwaters are also covered by a dense forest. In these areas, there is little chance of detecting any sign of archaeological features even when there is snow.

According to the geological surveys made by Pál Sümegi, “due to the fluvial activity, a considerable layer of homogeneous, gravelled sediment covers the present-day Drava Valley, and the gravelled, sub-loess material of the terrace formed in the Ice Age indicates that this was also typical of the glacial activity of the river. As a result, homogenous rock material covers both the flood-free banks and the riverbed, which makes it difficult to detect measurable differences in the area by geophysical surveys or aerial photography. It is, therefore, much more complicated to explore archaeological features in the investigated region than elsewhere.

Aerial photography was made even more difficult by the uniform glacial loess covering the flood-free banks and the fact that the Drava Valley has the highest average temperature and is one of the wettest landscapes in Hungary, and, therefore, a closed forest canopy and a closed, homogeneous shrub-layer forest with aqueous and brown forest soils have developed over it during the past millennia. The abandoned and unmanaged man-made forest clearings close up very quickly. The natural and man-made glades in the forests disappear in just a few decades in lack of further human activity. These factors make the aerial reconnaissance in the Drava Valley extremely difficult, and even limit the results of geophysical surveys during the excavation of archaeological sites.”⁶

For the sake of effective aerial photography, Zsuzsa Miklós flew several times a year, under different weather and observation conditions: in spring, usually in late April and early May, when the trees of the forests are still leafless, and in the areas under agricultural cultivation, the soil ploughed in autumn has already been levelled. In these areas, maize or sunflowers are normally sown. These plants do not impair the possibilities of prospection even when they have started growing. Wheat sown in autumn is usually quite high by this period, and the different shades of green indicate the potential archaeological features as well as the old beds of rivers or streams. In summer, the ripe cereals may reveal

⁵A brief preliminary report on the aerial archaeological research: Miklós, Zs. (2014). Aerial archaeology on the Hungarian side of the Drava River. In: Kovács, Gy., Bartosiewicz, L., Éder, K., Gál, E., Miklós, Zs., Rózsás, M., Tóth, J.A., and Zatykó, Cs. (2014). Medieval and Ottoman Period (14th–17th c.) archaeology in the Drava river region, Hungary. *Acta Archaeologica Academiae Scientiarum Hungaricae*, 65: 156–157.

⁶Detail from a report prepared during the project above (n. 4) by Pál Sümegi (2012).



various marks (of houses, pits, former stream beds, the ploughed-away remains of fortifications). Hoed crops (maize and sunflowers) may sometimes indicate archaeological features when ripe, especially at times of drought. Under the right conditions, photography can also be very useful in winter: when the snow has an average thickness of 10–15 cm and when its top is already frozen, low-angle light may reveal such details in the fortifications that are otherwise invisible on the surface and during snow-free periods.

Since the Budaörs and Tököl airports were used for the flights, it was possible to take photographs of the already known settlements and fortifications located along the route. In this way, not only the changes in the condition of the sites could be monitored, but those details could also be identified that are no longer discernible during fieldwalking and geodetic surveys. Aerial photographs are also excellent for recording archaeological sites and their immediate surroundings. For example, the old riverbeds and streambeds of which little or absolutely nothing can be seen on the surface are clearly visible in them (Figs 6–8).

In the valley of the river, along the living and dried-up branches, the forest coverage is very dense. Here, no



Fig. 6. View of old riverbeds of the Drava Valley near Berzence. Aerial photograph: 06.11.2010.



Fig. 7. View of old riverbeds of the Drava Valley near Berzence. Aerial photograph: 06.11.2010.



Fig. 8. View of old riverbeds of the Drava Valley near Berzence. Aerial photograph: 06.11.2010.

fortifications or other sites could be detected even under snowy conditions. It was only possible to document the current state of the strongholds already known from previous research, or in some places, these photographs complemented the data of former geodetic surveys.

Satellite photographs can also be used for acquiring general information and drawing attention, but in most cases, the images available are not suitable for observing the details. Therefore, they cannot replace the aerial reconnaissance for archaeological purposes from a low altitude.

The findings of the geological investigations conducted by Pál Sümegi were supported by our work: compared to the rest of the country, very few sites can be documented by aerial photography in this area.

In the following, we present the results of aerial photography at some (partly previously identified) medieval and Ottoman period sites along the Drava (mainly in the Somogy county section), from the east to the west (see Fig. 1).

KÉTÚJFALU-TÖRÖK DOMB [‘TURKISH HILL’] (SITE ID 74871)

When flying over the surroundings of Kétújfalu, which currently belongs to County Baranya, Zsuzsa Miklós noticed the site of a hillfort enclosed by ditches and ramparts, lying approximately 5 m over the floodplain. In spring, the fortification is still inaccessible today due to the fact that the ditches are filled with water. It is distinctly visible even in winter when covered with snow (Figs 9 and 10).

The hillside is very steep. Farmers graze their sheep on the slopes and the top of the hill. Clearcutting had been carried out on the site before the photographs were taken. Afterwards, the bush became denser and thicker. Due to the vegetation, very few finds could be collected on the surface, mostly a few pot fragments were found at the entrance of fox dens. Based on these finds, the fortress must have been used in the fifteenth century and the first half of the sixteenth century.



Fig. 9. Kétújfalu-Török domb. Aerial photograph: 06.11.2010.



Fig. 10. Kétújfalu-Török domb. Aerial photograph: 12.18.2009.

Several fortress names are known near Kétújfalu, which – according to previous research – indicate the same site. The hillfort discovered and photographed by Zsuzsa Miklós can be identified with Jágó-hegy [‘Jágó Hill’] based on the Second Military Mapping Survey of the Habsburg Empire: in the vicinity of former Németújfalu, a round hill rises above the field next to the little Jákó-hegy [‘Jákó Hill’]. Its height is about 10–12 fathoms (18–22 m), and can only be accessed over a bridge in wet weather.⁷ Other sources suggest that the so-called Várhegy [‘Castle Hill’] next to Malom-árok [‘Mill Ditch’] was an Ottoman-period castle according to tradition.⁸ The Várhegy, on the other hand, can be identified with the site called Mórévár [‘Móré Castle’] or Török Gipfel [‘Turkish Summit’]. The same site is mentioned in historical documents together with the fifteenth-century *castellum* at Barcs.⁹ The different toponyms are connected by the fact that the fortress site identified during the aerial reconnaissance and then surveyed in 2012¹⁰ is located near Kétújfalu-Szentmihályfa-

⁷BMFN (1982) 533 (105/65.); Pesty (2001) 102. Türken Gipfel.

⁸MOVV (1900) 123.

⁹BMFN (1982) 534 (105/80); Csánki (1894) 527; Kiss (1984) 360.

¹⁰The fact that the survey was made is revealed by the legacy of Zsuzsa Miklós, but the documents of the survey themselves have not been found.

puszta, next to Malom-árok; the local inhabitants still call it Török domb [‘Turkish Hill’]; and it is called Jágó-hegy on the Second Military Mapping Survey of the Habsburg Empire.

The site is related to the question of locating the late medieval *castellum* of Barcs,¹¹ since according to Pál Engel’s findings (published in the book by Tibor Koppány),¹² the medieval *castellum* of Barcs can be located east of Barcs, near today’s Kétújfalu.

BARCS-TÖRÖK VÁR [‘TURKISH CASTLE’] (RESIDENTIAL AREA) (SITE ID 22906)

The Ottoman Turkish palisaded castle, which was used between 1567 and 1664, is now ruined. The castle once stood on the banks of the Drava. Its old site is located in the inner town of today’s Barcs, on several plots belonging to the Roman Catholic Church and clergy house as well as Nagyhíd Street. Its site was discovered in the 1970s, and some parts of it were excavated from 1989 to 1994 and from 2002 to 2003.¹³ In the aerial photographs, not even the fortification ditch of the castle could be observed outside the line of the flood-free bank of the Drava River.

DRÁVAGÁRDONY-TÖRÖK DOMB [‘TURKISH HILL’] (CALVINIST CEMETERY) (SITE ID 26568)

The site is located in Temető-dűlő in the Calvinist cemetery, to the south/south-west of Drávagárdony, approximately 1.3 km of it. The roughly square fortified area lies about 2 m above its immediate surroundings. It covers an area of 25 × 25 m (0.06 ha). The enclosing ditch is currently only visible on the west side (according to the local residents, some parts of the ditch have been filled back recently). In 1988, the geodetic survey was conducted by György Sándorfi and Gyula Nováki.¹⁴ In 2000, the castle was re-surveyed by György Terei (Figs 11 and 12).¹⁵

Fieldwalking surveys were carried out in the surroundings by Márton Rózsás, György Terei, and Gyöngyi Kovács in 1999, followed by Zsuzsa Miklós in 2013.

¹¹Based on the results of archaeological research, the Ottoman palisaded castle at Barcs built near the Drava in 1567 did not have a medieval antecedent, so the Barcz *castellum* built by the Bakonyai family in the fifteenth century, and first mentioned in 1460 should be sought elsewhere. Previously, the Vukovári-dűlő lying to the north of Barcs has been suggested as a potential site: Jankovich-B. (1976) 7. However, the archaeological excavations conducted there unearthed the foundations of a medieval church, Mógáné Aradi and Rózsás (1994).

¹²Koppány (1999) 114–115.

¹³Kovács and Rózsás (1996); Kovács and Rózsás (2010).

¹⁴Magyar and Nováki (2005) Fig. 83.

¹⁵Rózsás (2003) ill. 1.





Fig. 11. Drávacgárdony-Török domb. Aerial photograph: 12.18.2009.

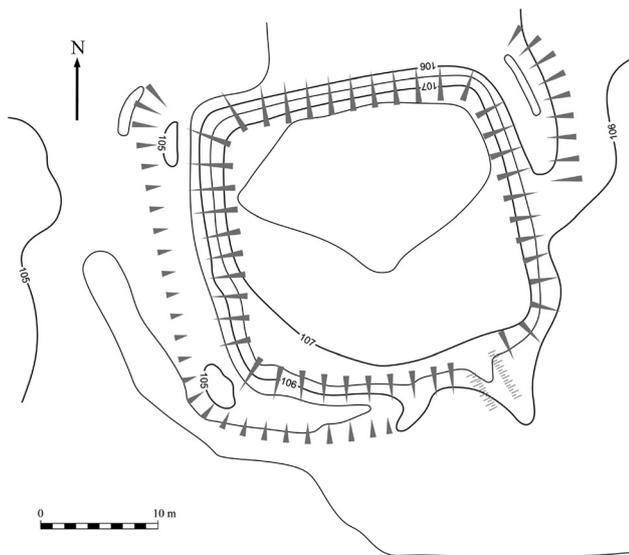


Fig. 12. Drávacgárdony-Török domb. Survey: Gy. Terei, 2000. After Rózsás (2003) Fig. 1.

Artefacts were not discovered on any occasion, although the area to the north and east of the cemetery was under arable cultivation. Nevertheless, Márton Rózsás collected Árpadian-age and late medieval finds, among Roman-period things, to the west of Török domb (in Temető-dűlő), and discovered medieval tiles to the east of it (on Tilos-domb).

According to the observations made by Márton Rózsás, the fortification is located directly on the north bank of the old narrowing riverbed of the Drava. Based on an entry from 1603 in the Chronicle by Gergely Pethő Gersei written in Hungarian, he assumes that the fortified site may have

served as a bridgehead connected to the nearby Turkish pontoon bridge at Drávatamási.¹⁶

PÉTERHIDA-GORICA (GÓRICDOMB) (SITE ID 48254)

Gorica or Góricdomb is located 500 m south of the road connecting Komlósd and Péterhida, on the edge of a pasture.¹⁷ It stands out of its environment to such an extent that it can be seen from afar. Based on the terrain features, it is evident that it was surrounded on all sides by water and swamps (Figs 13 and 14). As a result, the top of the hill could only be accessed from the north, across a narrow piece of land. The hill has been partly destroyed by sand mining by now. There is an altitude point at the top of the hill.



Fig. 13. Péterhida-Gorica. Aerial photograph: 05.14.2013.



Fig. 14. Péterhida-Gorica. The site from the south. Photograph: M. Rózsás. 04.13.2013.

¹⁶Rózsás (2003). See also Magyar and Nováki (2005) 44.

¹⁷Papp and Végh (1974) 798; Jankovich B. (1974) 40; Rózsás (2006) 249.

Very few traces of the old – presumed – fortification are visible today: there is a ditch on the north side and perhaps an edge on the east side. Sand mining mainly affected the southern and western parts. Zsuzsa Miklós could not see finds on the surface during her survey and fieldwalking on the site in 2013.¹⁸ However, Márton Rózsás had previously discovered Bronze Age and late medieval finds in the area of the hill. In the immediate vicinity of the hill, he collected fragments of wattle and daub and tiny shards of late medieval pottery that were brought to light by molehills or were dug up by wild boars.

Aerial photographs sometimes show the remains of the dried-up riverbeds. One of them encloses the hill in a U shape. It can only be decided by excavations whether it is the remnant of a meander or an artificial ditch.

PÉTERHIDA-PUSZTAFALUSI-DŰLŐ (VÁRHELY [‘FORTIFIED SITE’]) (SITE ID 59121)

The earthwork fortification is located to the south-west of Péterhida on a mound, a few metres above the floodplain (Fig. 15). The old riverbeds can be clearly seen in the aerial photographs of the area used as a hayfield – particularly in spring (Figs 16 and 17).

The fortification is located on the shores of one of the backwaters its area is flat and measures about 50 × 40 m (0.16 ha). The inner part is enclosed by an 8–15 m wide and 40–80 cm deep moat. On the outer edge of the moat, there is a rampart-like embankment, which is certainly the accumulated earth that was extracted during the construction of the moat.

The first survey of the earthworks was carried out by György Sándorfi and Gyula Nováki in 1988 (Fig. 18).¹⁹



Fig. 15. Péterhida-Pusztafalusi-dűlő (Várhely). Photograph: M. Rózsás. 04.15.2013.

¹⁸Unfortunately, the 2013 survey made by Zsuzsa Miklós has not been discovered in her legacy so far.

¹⁹Magyar and Nováki (2005) Fig. 77.



Fig. 16. Péterhida-Pusztafalusi-dűlő (Várhely). Aerial photograph: 12.18.2009.



Fig. 17. Péterhida-Pusztafalusi-dűlő (Várhely). Aerial photograph: 05.14.2013.

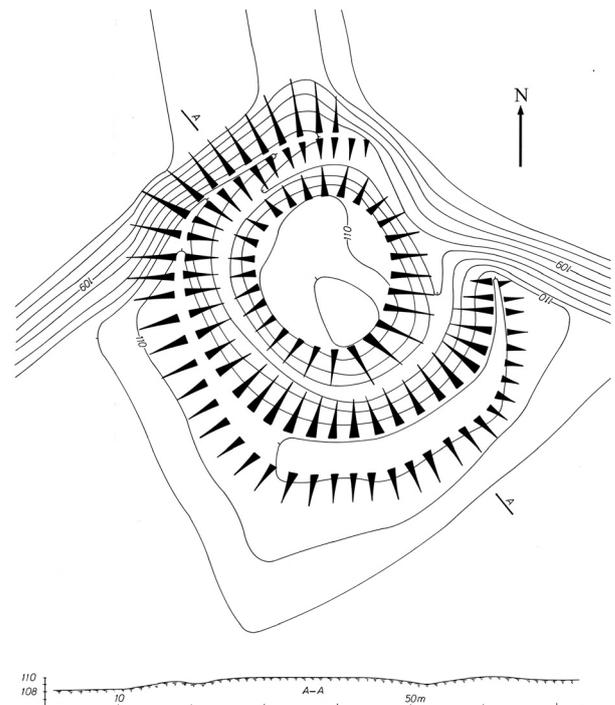


Fig. 18. Péterhida-Pusztafalusi-dűlő (Várhely). Survey: Gy. Sándorfi, and Gy. Nováki, 1988. After Magyar and Nováki (2005) Fig. 77

According to Gyula Nováki, there was no moat on the side adjacent to the forest,²⁰ but it can be seen well in aerial photographs (mainly in the snow). The fortification was re-surveyed by Zsuzsa Miklós in 2013. At that time, the bank was relatively steep, very scrubby, and slightly disturbed next to the forest and the backwater.²¹

Márton Rózsás identified Late Bronze Age, Roman-period, as well as tenth to sixteenth-century finds around the castle site. In 2013, Zsuzsa Miklós discovered no finds in the tall grass. There is no contemporary written evidence of the fortress. In the vicinity of the site, Dénes Jankovich-Bésán discovered the remains of a village dating from the sixteenth and seventeenth centuries. The other name for the area – Pusztafalu [‘perished village’] or Ófalu [‘old village’] – might be associated with this settlement.²²

**BABÓCSA-TEPLOMDOMB [‘CHURCH HILL’]
(VÁRDOMB [‘HILLFORT’], TÖRÖK VÁR [‘TURKISH
CASTLE’]) (SITE ID 19632) AND BABÓCSA-
NÁRCISZOS [‘DAFFODIL GARDEN’] (BASAKERT
[‘PASHA’S GARDEN’]) (SITE ID 19630)**

The site of the medieval castle called Török vár [‘Turkish castle’] is located near the so-called Kiskastély [‘small castle’], on the edge of the residential area of the modern settlement. It is a wooded area today. The remains and ramparts of the Turkish castle are still visible. The old castle is mentioned as a *castrum* in written sources dated to the fifteenth and sixteenth centuries. The stronghold, which is regarded as the centre of the Marczaly-Báthory family’s estate was first a Hungarian and then an Ottoman border

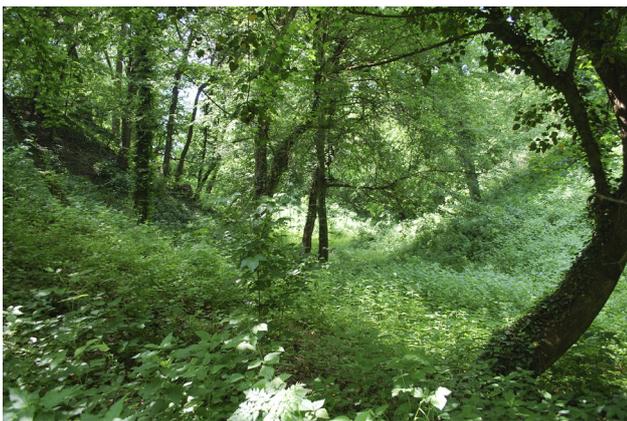


Fig. 19. Babócsa-Török vár. The ditch separating the castle from the hill. Photograph: Gy. Kovács, 05.20.2012.

²⁰Magyar and Nováki (2005) 111.

²¹The first draft of the survey is preserved in the Collection of Drawings at the Archive of the RCH Institute of Archaeology, inv. no. 42.609.

²²Jankovich-B. (1976) 17; Magyar and Nováki (2005) 111.

fortress in the sixteenth and seventeenth centuries. It had an important role in the control over the road running along the Stream Rinya and the crossing over the watercourse.²³ The fortified site is separated from the hill on the west by a 6 m deep and 10 m wide ditch, which can be clearly seen in the aerial photographs taken in spring (Fig. 19).

At the site called Nárciszos [‘daffodil garden’] (or Basakert [‘pasha’s garden’]) found on the left bank of the Stream Rinya, opposite the Turkish castle, 1–1.5 km east of Babócsa, there was a rectangular two-part stronghold measuring 230 × 220 m (4.3 ha), defended by a two-metre high rampart. In the area, there was a village, followed by an *oppidum* in the Middle Ages. After its capture by the Ottomans (1566), it functioned as a fortress and settlement. The site enclosed by still visible ramparts is a nature reserve today (Figs 20 and 21).²⁴



Fig. 20. Babócsa-Nárciszos. Aerial photograph: 03.22.2012. (Archive of the RCH Institute of Archaeology, Inv. No. 207.018.)

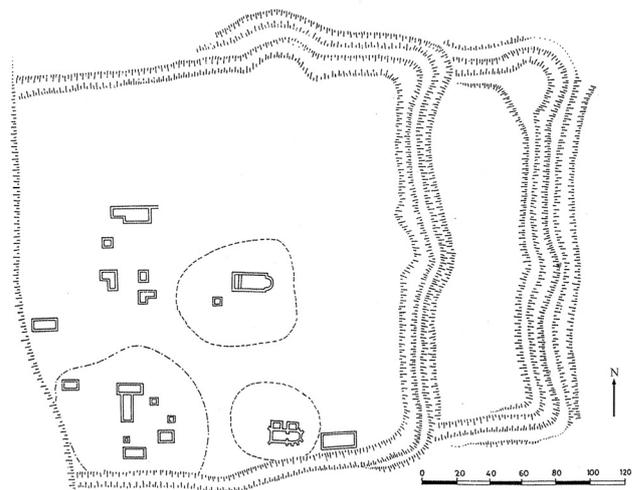


Fig. 21. Babócsa-Nárciszos. Survey: Gy. Sándorfi, 1984. After Magyar and Nováki (2005) Fig. 77

²³Jankovich-B. (1976) 25–26, 28; Magyar and Nováki (2005) 22–24, its survey: Fig. 75 (Gy. Sándorfi, 1984).

²⁴Jankovich-B. (1976) 28; Magyar (2003); Magyar and Nováki (2005) 20–21, its survey: Fig. 73 (Gy. Sándorfi, 1984).

BÉLAVÁR-BOCSKÁDI-ERDŐ [‘BOCSKÁD FOREST’] (SITE ID 22920)

The fortification located 2 km north of Bélavár on the flood-free bank of the Drava, measures 103×108 m (0.91 ha). It is separated by a steep bank from the floodplain, while its north-western and north-eastern sides are bordered by a valley each. It can only be accessed from the east and south-east, where it is defended by a triple rampart (Figs 22 and 23).

Although there is no written evidence about the castle, it can be dated to the late Middle Ages based on its characteristic features. The medieval village called Bochkad (1367) and Bachkad (1454) belonged to the Priory of Vrana. It was also mentioned in the 1536 tax register.²⁵ The castle and its



Fig. 22. Bélavár-Bocskádi-erdő. Aerial photograph: 02.11.2012.

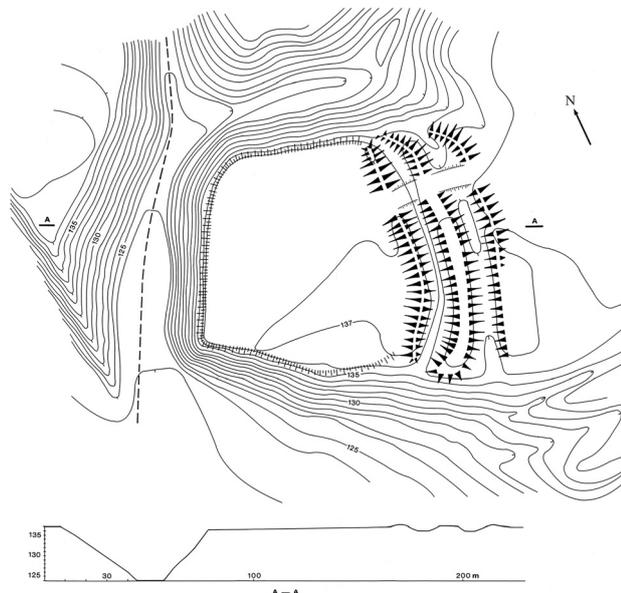


Fig. 23. Bélavár-Bocskádi-erdő. Survey: Gy. Sándorfi, and Gy. Nováki, 1986. After Magyar and Nováki (2005) Fig. 65

²⁵Magyar and Nováki (2005) 35, with a brief description. Survey: Gy. Sándorfi, and Gy. Nováki, 1986.

entire surroundings are covered with forest. Still, in aerial photographs, the structure of the fortification can be seen well in the snow and sunshine.

BERZENCE-VÁRDOMB [‘HILLFORT’] (RESIDENTIAL AREA) (SITE ID 19689)

Every year, photographs were taken of Berzence and its surroundings under different conditions (Figs 24 and 25). Pál Engel and Tibor Koppány considered the 1444 charter referring to Demeter, the *castellanus* of Berzence, as the earliest source testifying to the existence of the castle.²⁶ However, in his work on the 1468 building



Fig. 24. Berzence-Várdomb. Aerial photograph: 12.18.2009.

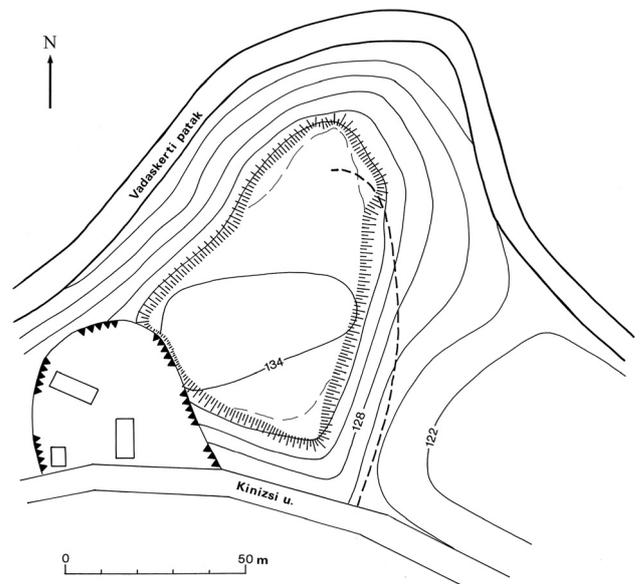


Fig. 25. Berzence-Várdomb. Survey: Gy. Sándorfi, and Gy. Nováki, 1985. After Magyar and Nováki (2005) Fig. 64

²⁶Engel (1996) I, 278; Koppány (1999) 119–120.



permit of the medieval *castellum*, Richárd Horváth assumes that the data from 1444 refer to another castle or palace built at Berzence before the construction of the castle known today.²⁷ The stronghold was first captured by the Ottomans in 1532. From that time on, the castle and manor became a permanent battlefield to the late seventeenth century, in which period it either belonged to the Hungarians or to the Ottomans.²⁸ In the residential area of the settlement, between Lipéki-árok and Kinizsi Street, on a currently wooded, scrubby hilltop, some remains of various sizes belonging to the inner castle came to light during disturbances and archaeological excavations.²⁹ Nevertheless, the traces of the old earthworks can only be identified in aerial photographs when the trees are without foliage, particularly when covered with snow.³⁰

SETTLEMENTS AROUND BERZENCE

In aerial photographs taken of the territory of Berzence in spring 2010, which was a particularly rainy season, the lines of the old meanders and oxbow lakes predominantly filled up by today can be differentiated from their surroundings as darker soilmarks, which suggest wetter soil (see, for example, Figs 6 and 7). These observations may offer further evidence for a better understanding of hydrography in the area before the river regulations. In the arable land stretching from the village to the frontier of the country in the south, various archaeological features could be identified. In spring, the different shades of green of wheat, while in summer, the differences in the height of the already ripe grain marked the houses, pits, and other features, which could be observed during the field surveys led by Csilla Zatykó.³¹

BERZENCE-BUZSÁKI-DŰLŐ I. (SITE ID 70589)

The formerly unknown site is located to the south-west of Berzence, in the field called Buzsáki-dűlő, north of the border crossing. West of the farmstead called Perdóc-major, in an area of approximately 200 × 300 m, we collected a large number of medieval finds (from the fifteenth and sixteenth centuries), as well as a few prehistoric pottery shards. In the easternmost part of the site, opposite the buildings of the Perdóc-major, where the majority of the

finds were collected, we discovered the traces of a building. It was revealed by medieval bricks in a lighter patch, scattered by ploughing. To the east of it, in a small area of about 10 × 10 m, we found bricks that were over-burnt, spoilt, and fused together. They appeared as a red patch on the ground, and may perhaps be identified as the remains of a brick kiln. The remains of both buildings lie on a piece of slightly elevated land surrounded by a former watercourse in a semicircle (Fig. 26).



Fig. 26. The outskirts of Berzence. Buzsáki-dűlő. Aerial photograph: 05.09.2011.

BERZENCE-GARICS-DŰLŐ 8 (SITE ID 70659)

In the south-western part of Berzence, south of the road running to the border crossing point, in the field called Garics-dűlő lying between Garics-árok and the water ditch to the east of it, the marks of a building could be discerned in an aerial photograph. To the east of it, in its immediate vicinity, in an area of about 100 × 100 m found on the edge of a somewhat elevated piece of land, we collected only a few prehistoric pottery shards and medieval ceramics. The traces of the building seen in the aerial photograph can be presumably identified with a building that was still shown by the 1941 Military Survey, but which has perished since then (Fig. 27).



Fig. 27. The outskirts of Berzence. Garics-dűlő 8, with the traces of a building. Aerial photograph: 05.25.2012.

²⁷Horváth (2005) 13–21.

²⁸Magyar and Nováki (2005) 37–39.

²⁹On the twentieth-century disturbances and minor surveys, see Magyar and Nováki (2005) 39. On more recent research by I. Molnár, see <https://nka.hu/kiemelt-kategoriak/hirek/ertesek-leletekre-bukkantak-berzence-varanak-feltarasa-kozben/> and <https://arheologia.hu/meglepetesekkel-is-szolgalt-a-berzencei-varasatas> (01.16.2022).

³⁰Magyar and Nováki (2005) Fig. 64. The survey of the castle: Gy. Sándorfi, and Gy. Nováki, 1985.

³¹A brief summary of the research: Zatykó (2013).



BERZENCE-GARICS-DŰLŐ 10 (SITE ID 55274)

The largest medieval settlement site in Berzence, which was perhaps the most densely covered one with finds, is located in the eastern part of the field called Garics-dűlő (Figs 28 and 29). Next to the Stream Zsdála, in the southern part of the site, stretching 1,200 m long in the north-south direction, we collected typical late medieval pottery fragments dated mainly to the fifteenth and sixteenth centuries. The area belongs to one of the few exceptions where satellite imagery clearly reveals settlement features on the surface, while in aerial photographs, these are less visible. The site can be identified with the settlement of Ór, which appears in written documents in the second half of the fifteenth century. In this period, it is often mentioned as one of the appurtenances of the castles of Berzence or Szentersébet.



Fig. 28. Berzence-Garics-dűlő 10. Satellite image of the location of a medieval settlement. Google Earth 2008.



Fig. 29. Berzence-Garics-dűlő 10. Aerial photograph: 06.11.2010.

BERZENCE-ORSZÁG-MEZŐ-DŰLŐ (SITE ID 55096)

The site lies close to the residential area of Berzence, to the north-west of it, in the southern part of the field Ország-mező-

dűlő. In this part, the flood-free bank extends to the south like a peninsula. Although the southern part of this strip of land was not suitable for a fieldwalking survey, the site that is known in an area of 300×500 m is likely to continue here as well. We collected a large amount of mostly medieval pottery fragments (from the fifteenth and sixteenth centuries). Not only the name of the field suggests how the medieval settlement was called, but also a handwritten map made around 1790 indicates the site of the perished village Ország at the exact place of the archaeological site.³² In the lists of appurtenances belonging to Berzence, it is referred to as Orsal/Orzal/Orzak during the fifteenth century, and Orzod in 1696 (Fig. 30).



Fig. 30. Berzence-Ország-mező-dűlő. Aerial photograph: 05.25.2012.

GYÉKÉNYES-KASTÉLY (ALSÓ-ZÁKÁNY, TÖRÖK KASTÉLY ['TURKISH PALACE']) (SITE ID 26618)

The castle is mentioned by charters from the fifteenth century onwards. It was built by Miklós Dombai in the early 1450s. He was the *vicecomes* of Somogy, then the ban of Macsó, and then the ban of Croatia and Dalmatia. It is referred to as *novum fortalitium seu castellum in facie possessionis Alsozakan* in 1458, and *castellum in Alsozakan* in 1476.³³

The castle is located in the vicinity of today's Gyékényes. In the Middle Ages, it belonged to the *oppidum* Alsó-Zákány. In the arable land, the shape and earthworks of the castle surrounded by ditches are disappearing on the surface due to agricultural cultivation, but it can still be observed in aerial photographs (when the field is ploughed, and especially when it is covered with snow and when the wheat is ripe). The line of the fortification can be the most distinctly seen in the green and ripe conditions of the winter wheat. In the photographs taken in spring, even the small corner

³²Országos Széchényi Könyvtár, Térképtár [National Széchényi Library, Map Library] 2007, TK784. ca. 1790.

³³Magyar and Nováki (2005) 54.

defences are clearly visible. The geodetic survey of the site was conducted by György Sándorfi and Gyula Nováki in 1985 (Figs 31–33).³⁴

Its total area is about 140×130 m (1.32 ha). The protected area (ca. 37×36 m, ca. 0.11 ha) rises above the flat environment 1–1.5 m in the middle. On the surface of the fortification, fragments of medieval ceramics, a coin of Ferdinand I, an iron knife, and two other iron tools were collected and taken to the museum in Kaposvár.³⁵

Aerial photography, as can be seen from the above, can yield positive results, even in the face of unfavourable geological and geographical conditions. Due to the geological conditions typical of the Drava Valley, Zsuzsa Miklós primarily took photographs of the more prominent fortified sites and the old riverbeds of the Drava, often for the first time on the Hungarian side of the Drava. Aerial photographs were taken of the locations and remains of Árpadian-



Fig. 31. Gyékényes-Kastély (Alsó-Zákány). Aerial photograph: 02.21.2012.



Fig. 32. Gyékényes-Kastély (Alsó-Zákány). Aerial photograph: 05.14.2013.

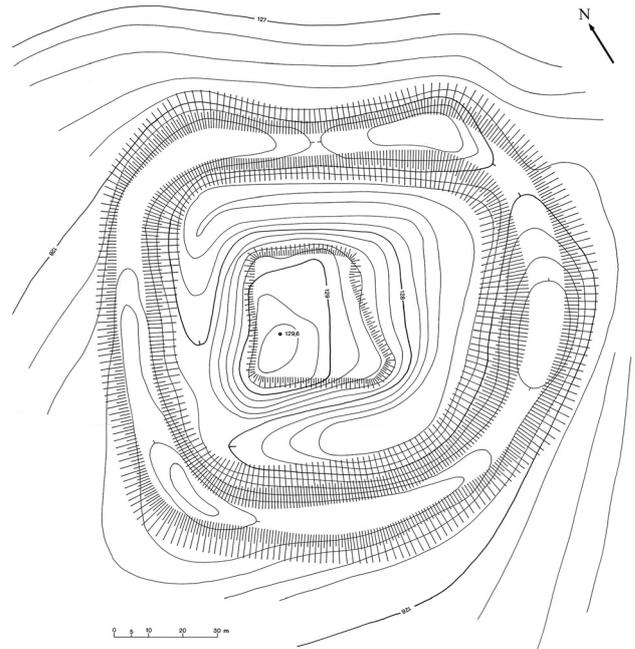


Fig. 33. Gyékényes-Kastély (Alsó-Zákány). Survey: Gy. Sándorfi, and Gy. Nováki, 1985. Magyar and Nováki (2005) Fig. 62

age strongholds surrounded by ditches and embankments, medieval castles, major fortifications, and outposts that still had an important role in the Ottoman period. The perished settlements around Berzence usually show patterns that are more difficult to interpret from the air, but the bends of the dried-up riverbeds, the old meanders, well illustrate the surroundings of the settlements, and how the Drava Valley looked and changed in the past. To sum up the results, we managed to record new features, to observe already known castles, the relationship of the castles and settlements, the environment, and the internal structure of the archaeological sites. Moreover, the aerial photographs added further data to the castle surveys and landscape reconstructions.³⁶

REFERENCES

- BMFN (1982). Pesti, J. (Ed.), *Baranya megye földrajzi nevei*, 1–2 [The geographical names of County Baranya, 1–2]. Pécs.
- Csánki, D. (1894). *Magyarország történelmi földrajza a Hunyadiak korában*, II [The historical geography of Hungary under the Hunyadis, vol. 2]. Budapest.
- Engel, P. (1996). *Magyarország világi archontológiája, 1301–1457, I–II* [The secular archontology of Hungary, 1301–1457, 1–2]. Budapest.
- Horváth, R. (2005). Középkori kastélyépítési engedélyek Somogy megyéből [Building permits of castles in County Somogy in the Middle Ages]. *Castrum. A Castrum Bene Egyesület Hírlevele*, 2005(1): 13–21.

³⁴Magyar and Nováki (2005) Fig. 62.

³⁵Magyar and Nováki (2005) 54.

³⁶The aerial photographs published in the study belong to the Collection of Aerial Photographs at the Archive of the RCH Institute of Archaeology.

- Jankovich B., D. (1974). *A Rinya-völgy régészeti lelőhelyei és középkori településtörténete* [The archaeological sites and the medieval settlement history of the Rinya Valley]. M.A. thesis. Eötvös Loránd University, Budapest. (Manuscript in the Archives of the Drava Museum), pp. 341–387.
- Jankovich-B., D. (1976). Adatok a Rinya-völgy középkori településtörténetéhez (Angaben zur mittelalterlichen Ansiedlungsgeschichte von Rinyatal). In: Kanyar, J. (Ed.), *Somogy megye múltjából. Levéltári Évkönyv*, 7. Kaposvár, pp. 3–37.
- Kiss, G. (1984). *Várak, várkastélyok, várhelyek Magyarországon* [Fortresses, castles, and fortified sites in Hungary]. Budapest.
- Koppány, T. (1999). *A középkori Magyarország kastélyai* [Manor houses and castles in medieval Hungary]. Művészettörténeti füzetek, 26. Budapest.
- Kovács, Gy. and Rózsás, M. (1996). A barcsi török palánkvár (The Turkish hoarding [palisaded] castle of Barcs). *Somogyi Múzeumok Közleményei*, 12: 163–182.
- Kovács, Gy. and Rózsás, M. (2010). A barcsi török vár és környéke. Újabb kutatások (1999–2009) (The Ottoman-Turkish castle at Barcs and its surroundings. New research, 1999–2009). In: Benkő, E. and Kovács, Gy. (Eds.), *A középkor és a kora újkor régészete Magyarországon – Archaeology of the Middle Ages and the Early Modern Period in Hungary, I–II*. Budapest, II, pp. 621–642.
- Kovács, Gy., Bartosiewicz, L., Éder, K., Gál, E., Miklós, Zs., Rózsás, M., Tóth, J.A., and Zatykó, Cs. (2014). Medieval and Ottoman Period (14th–17th c.) archaeology in the Drava river region, Hungary. *Acta Archaeologica Academiae Scientiarum Hungariae*, 65: 155–168.
- Magyar, K. (2003). Babócsa-Nárciszos: a settlement from the Ottoman Age. In: Gerelyes, I. and Kovács, Gy. (Eds.), *Archaeology of the Ottoman Period in Hungary*. Opuscula Hungarica, 3. Budapest, pp. 97–104.
- Magyar, K. and Nováki, Gy. (2005). *Somogy megye várai a középkortól a kuruc korig* (Castles in the Middle-Ages in the Province of Somogy). Kaposvár.
- Miklós, Zs. (2004). Légifotózási tapasztalatok Decs-Ete középkori mezőváros területén (The aerial photography of Decs-Ete, a medieval market town). In: Kovács, Gy. (Ed.), „*Quasi liber et pictura*”. *Tanulmányok Kubinyi András hetvenedik születésnapjára – Studies in honour of András Kubinyi on his seventieth birthday*. Budapest, pp. 363–372.
- Miklós, Zs. (2007). *Tolna megye várai (Die Burgen des Komitats Tolna)*. Varia archaeologia Hungarica, 22. Budapest.
- Miklós, Zs. and Vizi, M. (2003). Data on the settlement history of Ete, medieval market town. In: Gerelyes, I. and Kovács, Gy. (Eds.), *Archaeology of the Ottoman Period in Hungary*. Opuscula Hungarica, 3. Budapest, pp. 207–220.
- MOVV (1900). Csánki, D. *Magyarország vármegyéi és városai. Somogy vármegye* [Town and counties in Hungary. County Somogy]. Budapest.
- Mógáné Aradi, Cs. and Rózsás, M. (1994). A középkori Valkó templomának régészeti feltárása (The results of the archaeological excavation at the parish church of the medieval settlement Valkó). *Somogyi Múzeumok Közleményei*, 10: 95–104.
- Papp, L. and Végh, J. (Eds.) (1974). *Somogy megye földrajzi nevei* (Die geographischen Namen des Komitats Somogy). Budapest.
- Pesty, F. (2001). *Helységnévtár. Somogy vármegye* [A toponymic gazetteer. County Somogy]. Kézirat. Országos Széchényi Könyvtár Kézirattár. [Manuscript, National Széchényi Library, Manuscripts Archive.] Budapest.
- Rózsás, M. (2003). A Turkish guard station on the lands of Drávátamási. In: Gerelyes, I. and Kovács, Gy. (Eds.), *Archaeology of the Ottoman Period in Hungary*. Opuscula Hungarica, 3. Budapest, pp. 145–150.
- Rózsás, M. (2006). Kisebb őrhelyek és erődített templom Barcs környékén (Klein Wachtposten und eine befestigte Kirche in der Umgebung von Barcs). In: Kovács, Gy. and Miklós, Zs. (Eds.), „*Gondolják, látják az várnak nagy voltát...*”. *Tanulmányok a 80 éves Nováki Gyula tiszteletére* [Studies in honour of Gyula Nováki on his eightieth birthday]. Budapest, pp. 247–252.
- Zatykó, Cs. (2013). Settlement pattern, landscape use in medieval Berzence (Hungary) – Obrasci naselja, Korištenje krajolika u srednjovjekovnom Berzencu (Mađarska). *Podravski Zbornik*, 39: 164–172.

