TELL A DIFFERENT STORY
Preliminary Results from Investigations at the Late Neolithic Herpály Settlement Complex of Csökmő-Káposztás-domb


Over the past 100 years, archaeological research in Southeastern Hungary has resulted in a complex picture of the prehistoric past. To a certain extent, early concepts of archaeological cultures and their defining characteristics have become reified in the literature. Research on Late Neolithic (ca. 5,000–4,500 BC) cultures on the Great Hungarian Plain is no exception. However, through new collaborative archaeological projects, traditional concepts of culture and their associated cultural characteristics are being challenged and refined. This paper presents the results generated by the Prehistoric Interactions on the Plain Project (PIPP) at the Herpály site of Csökmő–Káposztás-domb. The data collected thus far illustrates that Herpály settlements could be quite expansive and complex in terms of settlement organization, which is transforming our understanding of cultural developments in the region.

Keywords: Late Neolithic, Herpály Culture, tell settlement, magnetometry, excavation, Csökmő-Káposztás-domb

The Late Neolithic (ca. 5,000–4,500 BCE) on the Great Hungarian Plain has been well studied over the past one hundred years. During this time, three major archaeological cultures inhabited the region, including the Csőszhalom (located in the northern sections of the Plain), Herpály (primarily located along the Berettyó River and its tributaries), and Tisza (were restricted to the Körös Rivers and their tributaries and along the southern section the Tisza River by the end of the Late Neolithic; see Fig. 1). For all these three contemporaneous cultures, the Late Neolithic was a period when fewer sites were inhabited than in the preceding period, but larger sites, specifically tell-centered settlements, dominated the landscape. With tells easily identifiable in the flat landscape of the Great Hungarian Plain, these became the typical focus of Late Neolithic archaeological investigations. More recent research in the region, however, has noted that many tells are part of settlement complexes, with various sized external settlements found in association with them (Gyucha et al. 2015; Hofmann et al. 2019; Raczky 2009; Raczky & Anders 2014). Therefore, while tells can be informative about various social and cultural practices, they are only one component of a site and without contextualizing the tell with the rest of the settlement, an already fragmented past becomes more convoluted.

Following the precedent set by the Körös Regional Archaeological Project (directed by Attila Gyucha and William Parkinson) at the Tisza site of Szeghalom-Kovács halom (2010–2019; see Gyucha et al. 2015; 2019; Parkinson et al. 2018), since 2018, the Prehistoric Interactions on the Plain Project (PIPP; directed by Danielle Riebe and János Dani) has conducted intensive and extensive archaeological investigations at the Herpály site of Csökmő-Káposztás-domb. These investigations identified a large contemporaneous settlement surrounding the central tell, and the results of the ongoing research has made it possible to start

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In the late 1970’s and early 1980’s, excavations were conducted on the type-site of the Herpály culture, Berettyóújfalu-Herpály (KALICZ & RACZKY 1984; 1987a; 1987b; KALICZ et al. 2011; KOREK & PATAY 1956; RACZKY et al. 2020). To a lesser extent, several other Herpály sites also have been investigated (Berettyóújfalu-Szilhalom: MÁTHÉ 1978; Esztár-Fenyvespart: KALICZ & RACZKY 1987a; Körösújfalu-Jákó-halom: ECSEDY et al. 1982; Szeghalom-Várhelyi erdő: GOLDMAN & SZÉNÁSZKY 1998), but the excavations at Berettyóújfalu-Herpály set a precedent for defining Herpály cultural characteristics and their developments over time. Like many of the excavations at Late Neolithic sites before recent times, most of the archaeological attention at Berettyóújfalu-Herpály was given to the tell itself, with very little research invested in the external site areas. As such, there is currently a skewed understanding about how Herpály settlements are organized and how they developed over time. Particular cultural and economic aspects identified for the Herpály, such as two-storied structures (KALICZ & RACZKY 1984), subsistence practices more reliant on wild game and fishing (BARTOSIEWICZ 2005; VÖRÖS 2005), and specific burial practices (KALICZ & RACZKY 1984), are all based on the recovery of materials from the Berettyóújfalu-Herpály tell.

More recent archaeological investigations have been conducted at the Herpály tell sites of Szentpéterszeg-Kovadomb and Berettyóújfalu-Szilhalom. These sites underwent excavations in the early to mid-1900s (see RACZKY & ANDERS 2014) and the 1970s (see NEUMANN et al. 2014), and the work in the

reconstructing site-scale changes in land use and function over time. The purpose of this paper is to present the preliminary findings generated by PIPP from field research conducted between 2018 and 2022, and to begin contributing to a more nuanced understanding of large Herpály settlements.
2010s largely focused on implementing geophysical prospecting. In 2011, magnetometric survey at Szentpéterszeg-Kovadomb revealed a ditch system around the tell that had several houses located on it, and 10–15 structures off-tell also were identified (Raczky & Anders 2014). However, additional magnetometric survey to determine the complete extent of the external settlement has yet to be completed. In 2013, magnetometric survey was implemented at Berettyóújfalu-Szilhalom and a ditch encircling the tell was identified, along with additional houses located on the other side of the ditch suggesting a potential adjacent external settlement (Neumann et al. 2014). These geophysical surveys have offered some new insights on the spatial layout of Herpály sites, however, investigations remain primarily restricted to the tell. This is where the current research at Csökmő-Káposztás-domb differs. By equally focusing on both the tell and off-tell areas and using an array of intensive field techniques, it becomes possible to reconstruct a more complete picture of Herpály settlements and the variability that may exist in settlement layout and use.

GEOGRAPHICAL SETTING OF CsÖKMŐ-KÁPOSZTÁS-DOMB

The name of the site – more precisely, the highest part, that is the tell – was denoted as ‘Halas hát’ on the map of the First Habsburg Military Survey (1763–1787). ‘Halas’, which can translate to ‘rich in fish’, suggests that the area surrounding the tell was abundant in natural resources. By the time of the Second Habsburg Military Survey (1806–1869), the area had been renamed to ‘Molnár-halom,’ that is ‘Molnár Hill’ (Fig. 2).

The site is located on the western border of the town of Csökmő, on the northwestern periphery of an extensive marshland, the Kis-Sárrét, between the Berettyó and Sebes-Kőrös rivers. The variety of waterways that flows into the Kis-Sárrét divides this flat, lowland landscape into dry lands that are both smaller and larger in extent. These ridges and islands were suitable for human habitation throughout prehistoric times.

In multiple periods, centers with a focal role in their microregional settlement systems were established along a corridor of communication and transportation between the vast marshes of the Nagy- and Kis-Sárrét, north of the Kőrös rivers, and this corridor provided an overland connection between western Transylvania and the Great Hungarian Plain. In the microregion surrounding Csökmő, this geostrategic position explains...

Fig. 2. The Late Neolithic tell of Csökmő-Káposztás-domb and the Bronze Age tell of Csökmő-Budai-domb on the 1st (left) and 2nd (right) Habsburg military survey maps (map by J. Dani)
why two important prehistoric centers developed over time: Csökmő-Káposztás-domb in the Neolithic and, only ca. 700 m northeast of it, Csökmő-Budai-domb during the Bronze Age (Fig. 3). Whereas Budai-domb has been relatively well-known by the archaeological community throughout the 20th century (DANI 2012; DANI & FISCHL 2009), Káposztás-domb remained unstudied until recently.

PREVIOUS RESEARCH AT CSÖKMŐ-KÁPOSZTÁS-DOMB

While it is a registered Late Neolithic site, Csökmő-Káposztás-domb is perhaps best known by the locals in the area. In 1988, Imre Szatmári from the Munkácsy Mihály Museum in Békéscsaba visited the nearby Bronze Age site of Budai-domb and learned that “another hill is also known as a treasure place by the people of Csökmő, which is referred to here as Káposztás-domb” (SZATMÁRI 1988, translated by the authors). While Szatmári would again visit Csökmő-Káposztás-domb in 1994 to record the location of the site (SZATMÁRI 1994), formal archaeological research would not occur at the locale until 2013.

As part of a doctoral dissertation project, and the first phase of the PIPP research agenda, Riebe visited Csökmő-Káposztás-domb in April 2013 to conduct a systematic sample survey of the site. A ‘dog-leash’
Fig. 4. Surface survey collections by year at Csökmő-Káposztás-domb (map by V. Nuccio)
surface collection method was implemented in which a 10x10 meter collection unit was centrally placed on the tell, with additional similarly sized collection units placed in cardinal directions across the known extent of the site (Fig. 4). The collected artifacts from these units consisted of a wide range of materials, including bone, daub, chipped stone tools (with all stages of processing present), ground stone tools, shell, and ceramics. Primarily, all diagnostic materials represented a single occupation of the area dating to the Late Neolithic, however, one sherd and one glass bead confirmed that the site had been reused during the Sarmatian period as well (RIEBE 2021).

The surface survey at Csökmő-Káposztás-domb in 2013 laid the foundation for future research at the site. In November 2016, Riebe returned to the site with a team to expand the surface collection and conduct geophysical prospection. The initial surface survey in 2013 was just a small sample, so in this second phase of survey, tract walking with surface collection was implemented to cover the entirety of the known site extent. As was identified previously, the tract survey also indicated a primarily single-component Late Neolithic settlement. In addition to the surface collection, Apostolos Sarris and a team from the Foundation for Research & Technology Hellas (FORTH) conducted a small magnetic survey, approximately 40x60 meters, on the tell to map subsurface features and to test the viability of this investigatory technique at the site. The team identified clear subsurface anomalies representing houses/structures, ditches, and other features. With this new dataset in hand, it was possible to begin planning for more in-depth research at Csökmő-Káposztás-domb.

CURRENT RESEARCH AT CSÖKMŐ-KÁPOSZTÁS-DOMB

In 2018, Riebe applied for and received a Senior Grant in Archaeology from the National Science Foundation (BCS-2131357) to formally begin Phase II of PIPP by expanding archaeological research at Csökmő-Káposztás-domb. Funds were received too late in the year to execute a 2018 summer season, so the inaugural season was pushed to July 2019.

Magnetometric Survey

PIPP 2019 was prepared to be a multi-pronged summer season with tract surface collection and magnetometric survey. However, a spring drought accompanied by early summer rains resulted in the wheat harvest across the site being delayed by weeks, until the end of July/beginning of August. Thus, the summer plans were reduced to just geophysical survey.

Sarris and his team from FORTH returned with two Bartington G601 fluxgate gradiometers to do targeted prospection in difficult to access areas at the site, including fields with standing wheat and forested areas. A second team, led by Máté Stibrányi (formerly of the Várkapitányáság Ltd., now National Institute of Archeology at the Hungarian National Museum), operated a multi-sensor SENSYS magnetometer pulled by an ATV that was able to cover an immense amount of area in a relatively short amount of time (Fig. 5).

Between these two teams, a total of 387,678 m$^2$ was covered during the 2019 season. After processing the raw data, magnetic anomalies showed that the tell was densely covered with structures and two concentric ditches could be seen partially encircling the tell. In addition to these archaeological anomalies, it also became apparent that the eastern and southern extents of an external settlement surrounding the tell could be identified. However, in a surprising twist, the remote sensing results also revealed that the site extended further to the north and west than previously thought – this would kick off the next three years of additional magnetometric survey at the site.

In 2020, while the rest of the world was on pause...
Fig. 6. Magnetometric surveys by year at Csökmő-Káposztás-domb (map by V. Nuccio)
due to the Covid-19 global pandemic, Stibrányi’s team continued to conduct geophysical prospections. They returned to Csökmő-Káposztás-domb in August and completed an additional 342,833 m$^2$ of magnetic survey with the multi-sensor. The results again suggested that the site continued to the west, southwest, and northwest requiring that the team return again for additional survey, which would occur both in November 2021 (78,561 m$^2$) and July 2022 (387,171 m$^2$). In total, the magnetometric survey revealed that the Herpály site extended just over 100 ha (Fig. 6 and Table 1).

Beyond its size, the complexity of Csökmő-Káposztás-domb is unique for, as identified by the magnetometry, there are two fortified areas at the site, and both have a double ditch system. Moreover, the sprawling and relatively densely inhabited external settlement is partitioned by the ancient paleomeanders that wind through the site, creating a neighborhood-like appearance in the processed data. Additional investigations will be required to verify the presence of these neighborhoods, as well as to further understand the significance behind the two fortified areas.

### Surface collection

While tract collection surface survey was delayed first due to crop growth in 2019 and then due to the Covid-19 pandemic in 2020, during a brief visit to the site in November 2021, it was possible to begin expanding the tract survey. Building on the 2021 work, during the PIPP 2022 summer season additional areas were collected, but standing crops, such as sunflowers, and undisked fields with thick chaff prevented a complete tract survey of the entire settlement. To date, approximately 75% of the site has been subjected to tract surface collection and the remaining areas will be collected when crop rotations allow.

The results of the tract collection survey showed that Herpály materials were distributed across the site in a manner that may reveal information about area function and use. However, with large portions of the site left to be collected, even initial, tentative conclusions could be misleading. Instead, with the data available, it is interesting to note the current distribution of total materials by square meter. With this calculation in place, it is possible to normalize the amount of material collected from the various sized tract collection areas (Fig. 7). For the most part, the pattern is similar to what is seen at other Late Neolithic nucleated, large sites, such as Szeghalom-Kovácshalom, with the tell having a dense concentration of materials per square meter, and the external settlement areas having higher concentrations of materials that correspond with sub-surface magnetometric anomalies, such as structures. However, at Csökmő-Káposztás-domb, what is striking is the area directly to the west of the tell, which has the densest concentration of materials for the site, but with extremely few anomalies of possible structures, making it a locale in need of further investigations.

<table>
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<th>Date</th>
<th>Method</th>
<th>Instrument</th>
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<tr>
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<td>Handheld</td>
<td>Bartington G601 fluxgate gradiometer</td>
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<td>SENSYS MX V3</td>
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<td>Handheld</td>
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*Area re-covered by the multi-sensor in 2019, so excluded in total area calculation

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**Table 1. Magnetometric surveys at Csökmő-Káposztás-domb**
Fig. 7. Results of tract surface survey illustrating artifact density at Csökmő-Káposztás-domb (map by V. Nuccio; Nuccio 2023)
Test excavations

With the magnetometric and the surface collection data in hand, it was necessary to ground truth the anomalies through test excavations. During the PIPP 2022 summer season, twelve anomalies from across the entirety of the site were selected, and 1x1 meter test excavation units were opened (Figs 8 and 9).

Through these test excavations, it was possible to determine the preservation of the structures indicated by magnetic anomalies, confirm the feature types, explore stratigraphy, note how material cultures varies by test unit location, and collect samples for radiocarbon dating. Small test units were chosen to minimize destruction and they generated data to guide larger-scale excavations of multiple structures, both on-tell and off-tell, at the site in 2023. Some of the analyses for the materials from these test excavations are still in progress, but the radiocarbon results from the units suggest that the site was in use from ca. 5,000 BCE until 4,350 BCE (radiocarbon results will be more fully published in a future article).
Previous research on Herpály sites portrayed them as relatively small, restricted areas. The tells were often surrounded by palaeomeanders with external settlements located adjacent to them. For instance, the tell-centered settlement complex at Berettyóújfalu-Herpály is estimated to have been approximately 15 ha (Raczky et al. 2020), Szentpéterszeg-Kovadomb approximately 34 ha (Raczky & Anders 2014), and Berettyóújfalu-Szilhalom approximately 4.5 ha (Neumann et al. 2014). The results from Csökmő-Káposztás-domb illustrate a completely different picture in terms of settlement size and complexity. Just like other Herpály settlements, the tell at Csökmő-Káposztás-domb is located along a palaeomeander, however, the external settlement area, as identified through geophysical survey, expands to include an area of approximately 100 ha, making it the largest, most expansive, Herpály settlement to date, as well the largest known Late Neolithic site on the Great Hungarian Plain.

The size of the site alone challenges archaeological generalizations about Herpály culture settlement organization. As more information is generated from PIPP’s investigations at Csökmő-Káposztás-domb, other concepts about the culture and period may be refined. As methods improve, as theoretical and research questions advance, and as researchers collaborate together, it is possible to begin to tell a different story about the development of the Late Neolithic Herpály culture.

ACKNOWLEDGEMENTS

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REFERENCES


