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A landscape of tells: Geophysics and microstratigraphy at two Neolithic tell sites on the Great Hungarian Plain☆

William A. Parkinson[a,*], Attila Gyucha[a], Panagiotis Karkanas[b], Nikos Papadopoulos[c], Georgia Tsartsidou[d], Apostolos Sarris[e], Paul R. Duffy[f], Richard W. Yerkes[g]

[a] Field Museum of Natural History, United States
[b] Wiener Laboratory, American School of Classical Studies at Athens, Greece
[c] Foundation for Research and Technology-Hellas, Greece
[d] Ephorate of Palaeoanthropology - Speleology, Greece
[e] Foundation for Research and Technology-Hellas, Greece
[f] University of Toronto, Canada
[g] The Ohio State University, United States

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ABSTRACT

Nucleated tell sites emerged on the Great Hungarian Plain nearly a millennium after the earliest agricultural communities established sedentary settlements at the beginning of the Neolithic period. Once established, these unprecedentedly large population centers had a dramatic impact on their local environment. In this article, we present the results of our recent research at two Neolithic tells in the Körös Region of the Great Hungarian Plain. These sites – Vésztő-Mágor and Szeghalom-Kovácshalom – were established at roughly the same time and were located on the same branch of the Sebes-Körös River. Focusing on two methods – geophysics and microstratigraphy – we compare how these two nearby sites were established, evolved, and were abandoned within their local landscapes. Whereas geophysical surveys provide a horizontal picture of how the sites expanded over space, microstratigraphic studies provide a vertical perspective of the social processes that built the tells over time. Although both settlements were established at the same time, the sites developed in very different ways. We attribute these differences in the micro-regional trajectories to specific traditions associated with different local communities.

1. Introduction: a landscape of tells – Vésztő-Mágor and Szeghalom-Kovácshalom

In this article, we discuss multidisciplinary research recently conducted at two Neolithic tell sites on the Great Hungarian Plain – Vésztő-Mágor (Vésztő 15) and Szeghalom-Kovácshalom (Szeghalom 50). We focus on two aspects of our research that permit us to examine how these sites were established, how they grew, and eventually how they were abandoned: microstratigraphic sediment analysis and geophysical studies. Microstratigraphic studies provide a window into the vertical dimension of the evolution of these sites on the landscape, informing us about the diachronic actions that resulted in their establishment, growth, and abandonment. Geophysical studies, on the other hand, provide insight into the horizontal development of how the sites grew spatially within their local environments. Although both settlements were established at about the same time, just 7 km apart alongside the same river, the sites developed in very different ways during the Neolithic. We attribute these differences in the micro-regional trajectories to specific traditions associated with different local communities. These local, micro-regional, traditions articulated with, and were part of, regional and macro-regional social trajectories that occurred on broader temporal and geographic scales. By modeling variation at the local scale, therefore, we can better understand these broader patterns in prehistory, such as the end of the Neolithic period in Europe.

Nearly a millennium after agricultural communities first established sedentary, year-round, settlements in the Carpathian Basin (Anders and Siklósi, 2012; Whittle, 2007), sites emerged as tells, or artificial mounds, that were inhabited for multiple generations (Makkay, 1982; Parkinson and Gyucha, 2012). In contrast to Greece and the southern Balkans, where tell settlements formed early in the Neolithic period, the first tells of the Great Hungarian Plain were established only in the later Middle Neolithic, at the end of the sixth millennium BC. Settlement

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* Corresponding author.
E-mail address: wparkinson@fieldmuseum.org (W.A. Parkinson).

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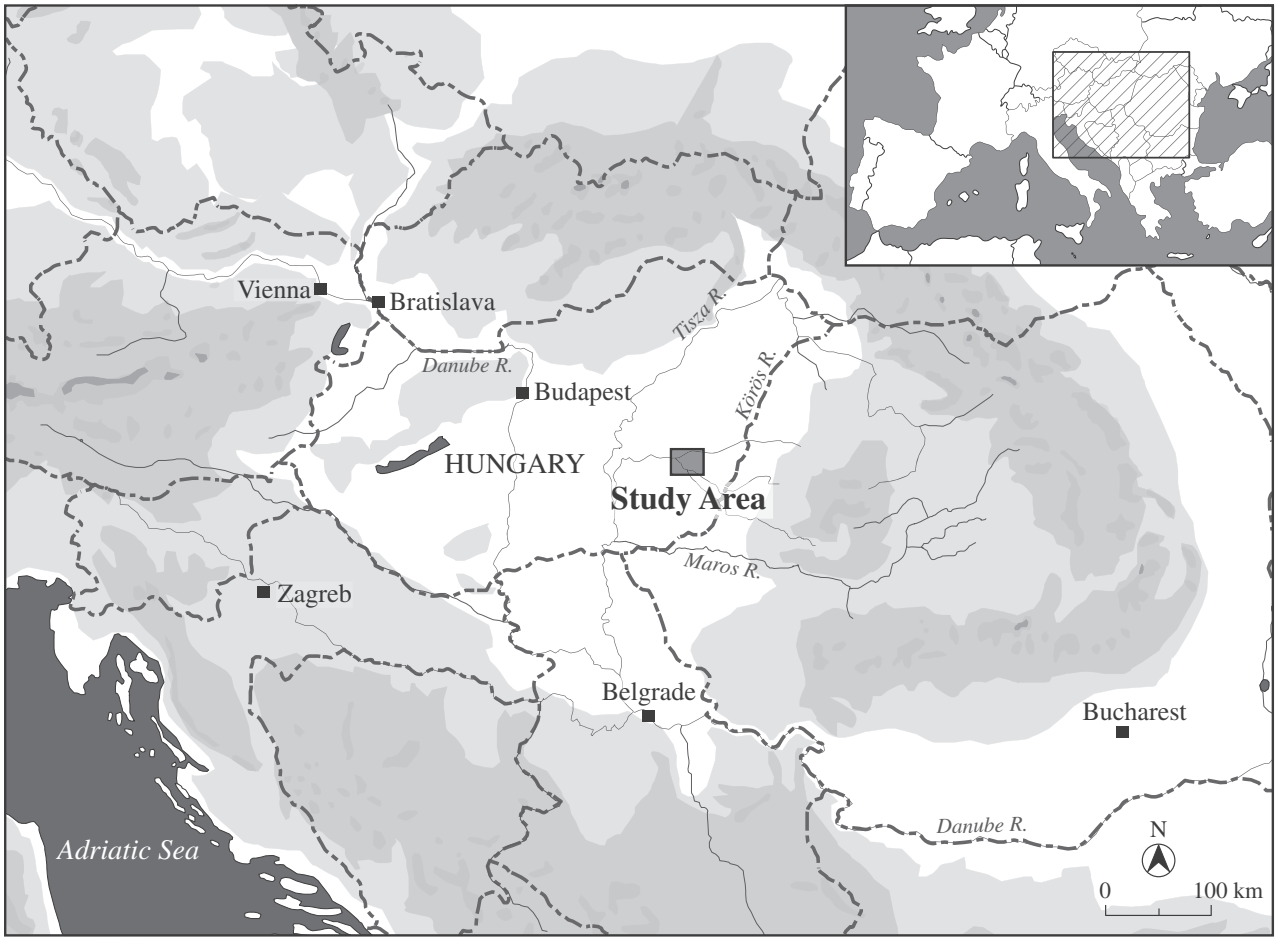

Fig. 1. Map showing the location of the Körös Regional Archaeological Project study area in the Carpathian Basin. Illustration by Jill Seagard.

complexes that included a tell as well as a so-called 'horizontal' settlement were founded across the Plain in the first centuries of the fifth millennium BC (Gyucha et al., 2015; Raczky and Anders, 2010). During the Late Neolithic, ca. 5000 to 4600/4500 BCE, three archaeologically defined 'cultural groups' emerged on the Great Hungarian Plain – Tisza in the Lower and Middle Tisza Valley and the Körös Valley, Herpály in the Berettyó Valley, and Csőszhalom in the Upper Tisza Valley. Within each of these archaeological culture groups, which traditionally have been defined by differences in ceramics, settlement type and distribution, and other characteristics, there was a tendency towards settlement nucleation with tell sites or very large horizontal sites (sometimes called 'supersites') acting as critical nodes within regional settlement hierarchies (Anders et al., 2010; Chapman, 1997; Kalicz, 1995; Raczky, 1995). Almost all of these centers were abandoned before the onset of the Copper Age, by the middle of the fifth millennium BC (Gyucha et al., 2009; Link, 2006).

The Körös Regional Archaeological Project was established in 1998 to investigate the changes in social organization that occurred throughout the Körös Region of the Great Hungarian Plain during the Holocene (Parkinson, 2006; see Fig. 1). Earlier phases of research conducted by the project focused on the organization of Early Copper Age settlement sites (e.g., Gyucha et al., 2006; Parkinson et al., 2010) and their regional distribution (Gyucha, 2015). More recently, we turned our attention to the later Neolithic tell-based settlements of Szeghalom-Kovácshalom and Vésztő-Mágor, two sites located along a stretch of the ancient Sebes-Körös river between the modern towns of Szeghalom and Vésztő. Both became nucleated tell sites operating as central nodes within the settlement network of the Körös Region during the Late Neolithic (Gyucha et al., 2015; see Fig. 2).

The tell of Szeghalom-Kovácshalom is located along an abandoned paleo-meander of the Sebes-Körös river. The tell covers an area of 0.8 ha. Since the early 1900s, several excavations were carried out at the site (Bakay, 1971; Darnay, 1905; Szeghalmy, 1913a, 1913b; see Fig. 3). As at most other Tisza tell sites, the process of tell formation began in the later Middle Neolithic (Szakálhát phase) and the occupation at Szeghalom-Kovácshalom continued without a break into the Late Neolithic Tisza period. Although the tell may have been used during the Early Copper Age (ca. 4600/4500–4000 BCE; Tiszapolgár Culture), the tell remained unoccupied until a burial ground was established there during the Hungarian Conquest period (10–11th century CE). Surface surveys in the early 1970s identified a series of small Neolithic sites in the immediate vicinity of the tell (Ecsedy et al., 1982). However, our systematic, gridded collections demonstrated that these clusters of archaeological materials belonged to a single, massive, 'horiztontal,' Late Neolithic settlement around the tell (Gyucha et al., 2015).

The Vésztő-Mágor tell is located about 7 km upstream (SE) of Szeghalom-Kovácshalom in a meander loop of the ancient Sebes-Körös river (Fig. 4). Rising to a height of nearly 9 m above the surrounding terrain and covering an area of 3.9 ha, the Vésztő-Mágor tell is significantly larger, both horizontally and vertically, than the Szeghalom-Kovácshalom tell. Initial archaeological investigations at the site in the late 1960s explored a Medieval Age monastery built on top of the tell, and later excavations in the 1970s focused on the prehistoric occupation at the site (Ecsedy et al., 1982:183–187; Hegedűs, 1977; Hegedűs and Makkay, 1987; Hegedűs and Makkay, 1990). In 1986, a large