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RESEARCH PROPOSAL

Introduction

In the case of Százhalombatta fortified tell settlement, archaeologists are not only interested in merely archaeological questions, but also in questions related to the environment, and to the change of the environment. My professor, György Füleky, as the head of the Department of Soil Sciences and Agrochemistry at Szent István University, was asked to interpret the soils and the soil forming processes at Százhalombatta Bronze Age tell settlement. As one of his students I got the chance to get involved in this research in 1999. We attempted to reconstruct the Bronze Age environment, what is the topic of my Master's thesis. To date, results of this work indicate that the Bronze Age population settled down in the woods, as a brown forest soil can be observed beneath the tell. Subsequently, this landscape suffered deforestation and agricultural use, with the area today being characterized by steppe-like vegetation.

Soils can be described by their thickness, colour, structure, texture, wetness etc. on site. These primary observations contain a great amount of information about soils. These field observations are complimented by laboratory tests such as pH, calcium carbonate, total phosphorus, organic matter and soil texture. For example the amount of phosphorus is widely used to determine the extent of a settlement, and the analysis of organic matter can refer to the anthropogenic impact. All the above mentioned procedures and descriptions provide much of detail about the soils at the macroscopic scale, but there is a need to the microscopic level to add insight to the pedological, geological and anthropogenic processes which formed the soil.

PhD Proposal

The use of micromorphology in the investigation of buried soils and archaeological contexts is not practised in Hungary. But the grant success of the 'Emergence of European Communities Project' (Director Prof. K. Kristiansen, University of Göteborg, Sweden) will enable a pan-European investigation into the origins of Bronze Age and later urbanisation, and this includes provision for investigation of the Százhalombatta tell site and its immediate environs using geoarchaeological and micromorphological approaches as a vital part of the project.

The aim of my research within this larger project is to exploit soil/sediment micromorphological and geo-chemical analyses in order to determine detailed contextual information which will contribute to the archaeological analysis of social practices within a Bronze Age tell and its surrounding landscape. The aim is to investigate the distinct nature of

Bronze Age tells, as socio-political and economic phenomena. Soil micromorphology provides a method for the construction of data with unique resolution with which to trace human activities. These data can also be directly integrated with other types of collected geo-chemical, palaeobotanical and archaeological data. The use of micromorphology will help us to determine how such site as Százhalombatta could emerge and survive hundreds of years. Using micromorphology is an entirely novel approach in this region of Europe and it might let us to determine local practises and wider cultural contacts. This research would provide vitally needed data on changing local land-use and domestic patterns during Bronze Age in this region.

A number of questions must be addressed:

- how did the imposition of the urban settlement affect the forested landscape in which it was apparently set?
- what was the nature of the construction materials used in different building/structure types?
- what occupational sequences are evident in terms of building, destruction and re-buildings?
- can finger-prints of human activities on floors, streets and courtyards be identified?
- and to compare the data from Százhalombatta with the large existing database for the Near East (i.e. Matthews *et al* 1997, *World Archaeology* 29, 281-308)

Some preliminary sampling of the tell site has already been carried out and this will be built upon as the excavation progresses over the next two years. In addition, the immediately surrounding landscape has also been sampled as part of my Master's thesis. The comparison of these data would provide more information about the ancient environment and local land-use over time from the Neolithic period through to the Iron Age.

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