

# ANALYSES OF ARCHEOLOGICAL GEOLOGY, GEOARCHEOLOGY AND ENVIRONMENTAL HISTORY ON THE ARCHEOLOGICAL SITES CONTACT BETWEEN EARTH SCIENCES AND ARCHEOLOGY

SÜMEGI PÁL<sup>1,2</sup>; BEDE ÁDÁM<sup>1,3</sup>; SZILÁGYI GÁBOR<sup>4</sup>

<sup>1</sup>Szegedi Tudományegyetem, Földtani és Őslénytani Tanszék

<sup>2</sup>Magyar Tudományos Akadémia, Régészeti Intézet

<sup>3</sup>Móra Ferenc Múzeum

<sup>4</sup>Hortobágyi Nemzeti Park Igazgatóság

E-mail: [sumegi@geo.u-szeged.hu](mailto:sumegi@geo.u-szeged.hu)

## **Abstract**

*Mineralogical, geological and paleontological analyses of archaeological tools and features have started already in the 18th century. These sporadic investigations were followed by systematic geological analysis from the middle of the 19th century. Following the proposals of Flóris Rómer archaeologist at this time in Hungary in the 1860s, geoarchaeological research started at first by the analysis of obsidian stone tools and later by the analysis of kurgans. Nowadays, geoarchaeological analyses relate to two different types of archaeological forms, negative and positive exogeological forms. Negative forms were created by human populations in the soil level and bedrock and we analyze and interpret the material of archeological features if they were accumulated in a sedimentary basin. According to these investigations we performed extralocal realized site-catchment analyses. As a result, we could reconstruct the natural environment of more human cultures, among others the regional and local milieu of the Urnfield and Tumulus cultures. Among positive anthropogenic geological forms we introduced the geoarchaeological analysis of kurgans. By the magnetic susceptibility analysis of Lyukas-halom (Hajdúnánás–Tiszavasvári), Őr-halom (Sárrétudvari) and Ecse-halom (Karcag–Kunmadaras) we were able to separate the different phases of accumulation of these kurgans. Furthermore, it was also possible to prove the formation of the bedrock and soils that cover the surface of kurgans.*