HUNGARIAN ARCHAEOLOGY
E-JOURNAL • 2017 SPRING
www.hungarianarchaeology.hu

REPORT ON THE EXCAVATION OF THE (SECTION OF THE) SCYTHIAN PERIOD POTTER'S COLONY AT SZIKSZÓ

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During construction by a multinational company in the spring of 2016, a section of a quite significant Scythian Period settlement was discovered on the border of Szikszó in Borsod-Abaúj-Zemplén County. The excavated portion of the archaeological site is nearly 3.7 hectares, which on the basis of the features and finds discovered can be interpreted as an extensive workshop district located on the edge of a settlement from the Middle Iron Age, where ceramics production was the main activity (mining, preparation and formation of clay and possibly its firing). According to our present knowledge, up to this point it may be the most extensive Scythian Period settlement found and the largest excavation on a settlement section of this type in the county – or possibly in the entire Carpathian Basin.

Fig. 1. Szikszó Hell Ring site 1, area I.

PRECEDING EVENTS

In 2016, the Quality Pack Zrt. company began the construction of Hungary's first aluminum beverage can factory as an extension of the energy drink production facility operated by the HELL corporate group on the southern outskirts of the city of Szikszó (25 km to the northeast of Miskolc). During the preparation of the Preliminary Archaeological Documentation it soon became clear that the investment project – which was later classified as a supported project of outstanding significance through a special governmental resolution – would affect and endanger the archaeological site designated as *Szikszó Hell Ring site 1, area I.* As prescribed by the legal regulations in force, an archaeological excavation of the entire area of the factory to be built (28.923 m^2) and archeological observations on the areas next to the factory that would be affected by earthwork was performed by employees from the Herman Ottó Museum of Miskolc under the leadership of the archaeologists Ágnes Király, Antónia Horváth and Krisztián Tóth.

Fig. 2. Visualisation of the aluminum beverage can factory and the state of the construction works a month after the completion of archaeological excavations (Source: http://www.hellenergy.com, 24 June 2016.)

METHODS EMPLOYED DURING THE EXCAVATION

Every research and site-diagnostic method at the disposal of the Herman Ottó Museum was employed during the preparations for excavation and the archaeological work. A geophysical (magnetometer) survey was performed on the entire area designated for the preventive excavation prior to and in parallel with the removal of about the top 40 cm of topsoil with machinery under the constant supervision of an archaeologist. Following this the survey was repeated over the smooth, graded excavation area created by the topsoil removal, where the outlines of the underground features had already become visible. The goal of this latter examination was to achieve a more precise image revealing the location and character of the archaeological features without the contamination found in the topsoil and its disruptive effects. The survey was performed with a portable *MAGNETO® DLM magnetometer*, which contains a DLM-98/3-8 channel data recording instrument and 5 FGM-650 vertical fluxgate gradiometers connected to this. The instrument simultaneously recorded the data from 2 x 5 sensors. The measurement range of the FGM-650 sensors was ±10,000 nT, and their resolution was <0,2 nT. The mounting base distance of the sensor pairs was 50 centimeters, and the sampling distance along the section was 10 centimeters. The data from the sensors providing analog signals was recorded at a frequency of 10 Hz. With the exception of the small post holes (with a diameter less than 50 cm) and one pit (S1, a quite shallow, amorphous pit with an uncertain outline), the archaeological features appeared on the magnetometer map as clear magnetic anomalies.

Fig. 3/1. Magntometer survey of the topsoil-stripped surface

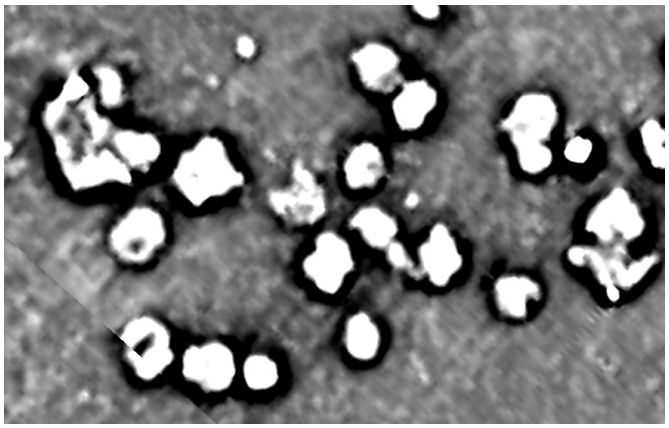

Fig. 3/2. A detail of the site at an image of the processed geophysical measurement (survey after the stripping of the topsoil)

The anomalies in the yellowish-brown, clayey, mosaic subsoil in the northwestern section of the graded surface were blurry and had uncertain outlines, but heading to the southeast, they appeared clearly and with sharp contours in the yellow, sandy subsoil. Soil samples were taken from every feature when possible during the excavation, and with the aid of Dr. Ferenc Kristály, a colleague from the Institute of Mineralogy and Geology at the University of Miskolc, the natural deposit layers (various clays and sands) as well as the rocks found at the site were also sampled for later tests.

Fig. 4. Geological sampling from the archaeological object

A 10x10 meter grid was set up over the excavation area that was adjusted to the Uniform National Projection coordinate network, and was marked out over the surface. The excavated archeological features were registered and drawn in accordance with this coordinate system during documentation, but every single feature was also measured with geodesic GPS at several points (section points, outlines, depth and unique finds). All of the archaeological work was also documented in digital photographs and video recordings from both the ground and the air. Both the topsoil removal and the progress of the excavation work were recorded step-by-step with the aid of drones. Due to this, a collection of photographs containing several thousand images was created, which following orthorectification (production of a parallel projection image eliminating the perspective distortions of the aerial photographs with the aid of software) and integration into the map aided in the checking of hand-made drawings, and when necessary their correction.

Fig. 5. Aerial documentation (implementation, digital processing: Szabolcs Honti, Zoltán Nagy)

THE EXCAVATION IN NUMBERS

The magnetometer survey was begun on the entire area designated for excavation within the territory of the project on April 8th, 2016. The mechanized earthwork was begun in part in parallel with the geophysical survey on April 11th, 2016 with the use of 1-4 caterpillar-tracked 360-degree excavators with ditching buckets and 4-10 trucks. The manual earthwork was started following the completion of the continuous 10,000 m^2 smooth surface on April 18th, 2016. By May 26th, 2016, in 29 workdays that were suitable to perform the work *a total of 565 stratigraphic units were uncovered* (identifiers facilitating the description of the spatial relationships between the various archaeological layers), which resulted in *an archaeologically positive area of 36,867 m^2* together with the features within the archaeological observation area that were excavated within the context of the observation and in accordance with the implementation plan that was modified several times along the way. The progress was significantly facilitated by the fact that a large portion of the features had a small or medium-sized ground area and proved to be relatively shallow.

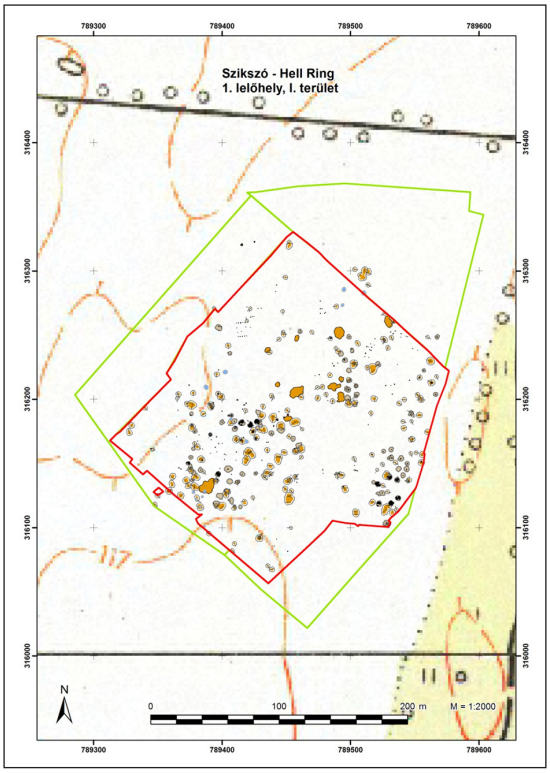

Fig. 6. Summary surface image of the excavated site (GIS processing: Zoltán Nagy)

A total of 42 cross-section drawings on A3 sheets, 211 summary surface drawings on A3 sheets, a drawing of excavation phases and details on an A4 sheet as well as 4 on tracing paper were prepared during the excavation. A total of 7,705 photographs were taken from the ground as well as 2,785 aerial photographs taken with the aid of a drone. At the completion of the work 87 PP raffia bags and 15 chests (the materials from well S 109) of ceramics, 25 PP raffia bags of animal bones, 18 PP raffia bags of rocks, 22 PP raffia bags of daub, 13 PP raffia bags of soil samples, 1 crate of human remains and 6 crates of wooden materials were transported to the museum.

THE EXCAVATED ARCHAEOLOGICAL FEATURES AND FINDS

The majority of the 565 excavated stratigraphic units proved to be the traces of storage or clay pits, semi-subterranean buildings or post holes for surface buildings (see below for more detail). The features uncovered can be dated *without exception* to the Middle/Late Iron Age, although in contrast to the identification in the Preliminary Archaeological Documentation, they are not Celtic, but *can be classified as from the Scythian Period*.

Fig. 7/1. Fragment of a typical amphora with two handles

Fig. 7/2. Secondarily strongly burnt mug (spoiled product?)

In the entire area we were able to excavate 216 smaller working, workshop or storage pits, 12 large, deep pits originally used as clay pits, but then filled with refuse from the settlement, 69 semi-subterranean buildings, 14 wells, 5 ovens or hearths and 226 post holes. Burnt debris was found in many pits or buildings and in two wells large, thoroughly burnt fragments of plastering were found, which in all likelihood were from buildings that burnt down or possibly from an oven that collapsed.

Fig. 8. Simple, ground level oven, connecting to a pit, in the second phase of wrecking

The wells excavated on the site were opened manually down to the level of the ground water, and then were fully excavated with machinery. Of the 14 wells, two (S109 and S 562) contained a conspicuously large amount of ceramics, and we also found traces of their former wooden structures. Of these, the S 109 well is genuinely extraordinary, as we found a deposit of vessels at the bottom of this 3-meter diameter feature. Unfortunately, due to the unfavorable conditions and the ground water quickly seeping into the pit, it was only possible to excavate the lowest two meters of the well pit using the excavator bucket, but even so it was possible to gain extraordinary information about the former structure of the feature. Various fragments of beams and planks from the interior of the well were conserved by the ground water and survived, and these were probably surrounded by wattle-work on the outside. The 70x70 cm plank-framed pit was tamped with clay soil on the outside. The excavated pit from an absolute depth of about 350 cm to about 6 m in depth continuously contained primarily fragments of about 40 jugs with handles that were of various sizes, but the same type. The further interpretation of the find will only be possible following the restoration of the materials.

Fig. 9/1. Cup with handles from well S 109

Fig. 9/2. Parts of the beam structure of well S 109 – survived relatively undamaged despite the unfortunate wrecking conditions

The bulk of the find materials from the features of the settlement was made up of ceramic fragments, the overwhelming majority of which were wheel-turned and gray or red in color. On the basis of their form types, most of them were jugs or amphora-like vessels with one or two handles, or dishes with in-turned rims. In all likelihood, these ceramics made at the same level of outstanding quality and with similar production technology were manufactured from clay mined on site. The well-like depressions visible in the middle of the clay pits were probably for the collection of water necessary during the preparation of the clay. On the basis of the clay pits that were abandoned at different phases it is possible to reconstruct the series of work processes through which the enormous, presumably partially-covered "clay mining" sites were formed from simple pits.

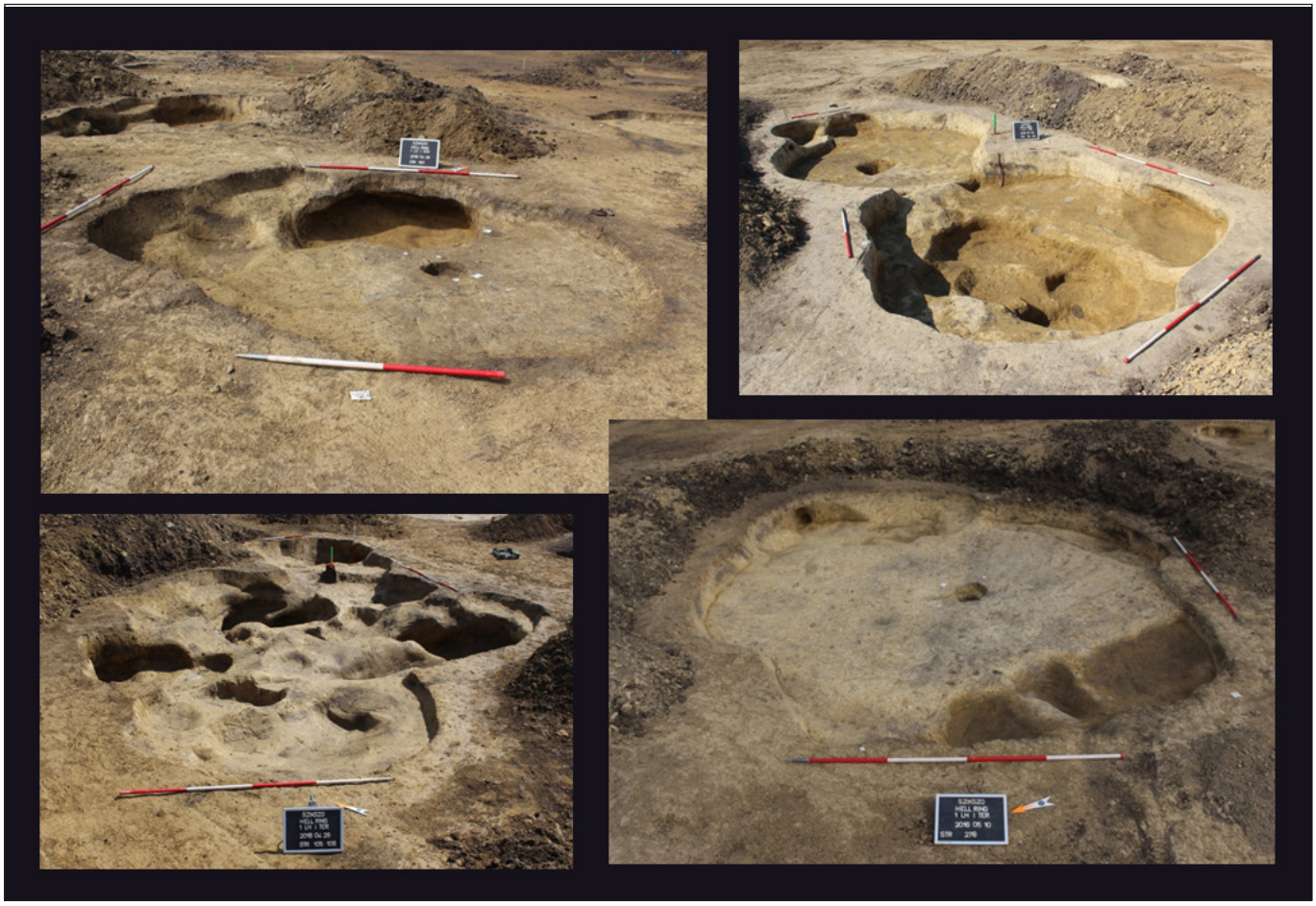

Fig. 10. „Chaîne opératoire" of pottery making – what objects tell us

The composition of the animal-bone materials from the features is varied, but at first glance it is dominated by the remains of large domesticated animals (cattle and horses) and dogs. Amongst the animal bones and shells there were a few examples that were worked (perforated or used as a hole-punch, a plane or a "skate"). In the materials from the pits a particularly large amount of volcanic stone used for grinding or pulverizing could be observed. The site proved to be relatively poor in terms of metals, with fragments of 5 smaller bronze objects (a pendant, a fibula fragment, a bracelet, a perforated plate disk and an arrowhead) and 30 minor iron objects (knives, sickles and nails), as well as slag. Amongst the minor finds, surprisingly spindle-shaped buttons dominated in numbers. A total of 49 spindle-shaped buttons or fragments came to light from 36 features, and these included many quite beautifully decorated examples as well.

Fig. 11/1. Fragment of a clay spoon

Fig. 11/2. Spindle button with spiral motif decorations

The skeleton of a 5-6 year old child found in one of the bundles in the number S85 large clay pit on the northeastern edge of the area is considered an extraordinary find. Various human remains (skull fragments and long bones, teeth and ribs) showing no anatomical coherence were discovered from several other features at the site, from a total of 9 pits.

Fig. 12. A child's skeleton at the side of S 85 clay extraction pit

THE SIGNIFICANCE OF THE SITE

On the basis of the archaeological features and finds, we have excavated a Middle/Late Iron Age (6th-5th century B.C.) workshop district located on the edge of a potter's colony and its associated pits and buildings. From the currently known area it is not possible to make observations on the internal chronology of the settlement or on its precise structure, but during the processing and evaluation of the excavated find materials it will likely be possible to reconstruct the various areas of activities. However, overall it is possible to state that the Szikszó – Hell Ring site 1, area I excavated Scythian Period potter's colony is unique in all of Hungary not only for its size, but also due to the characteristics of the find materials discovered here.