

Preliminary Spatial Analysis of Veszto-Bikeri

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The site of Veszto-20 is located on the Great Hungarian Plain in the Carpathian Basin in Hungary. This Early Copper Age site belongs to the scarcely studied Tiszapolgar culture that extends across the Hungarian Plain. There are many different aspects of a site that need to be looked at in order to understand the spatial distribution of a site; all of them cannot be applied to this project at this time. For the purpose of this project, the definition of feature will be any non-portable artifact, and the definition of an artifact will be any portable object that has been modified by humans.

The Early Copper Age has not been as deeply investigated as the Neolithic has throughout Hungary. The lack of information on the Copper Age makes comparing Veszto-20 with other sites difficult. Most of what is known about the Tiszapolgar culture comes from their cemeteries, not their settlements. The settlements excavated thus far have either been partial excavations that were found when excavating Neolithic sites, or were rescue excavations. One reason why so few settlements have been excavated is that Tiszapolgar sites usually only have a thin cultural layer and are easily destroyed by deep plowing.

Previous Copper Age excavations have uncovered a few features and structures. The typical structure is 3 to 4 meters by 4 to 5 meters. Wattle and daub are the primary materials used for building. At some sites, postholes have been found in relation to supporting the house, but at others no postholes have been no found. Ovens have tended to be outside the structures. Other features found at Tiszapolgar sites are storage pits, external hearths and occasional burials (Parkinson 1999).

The excavation at Veszto-20 is unique, because it is one of the first excavations of a Tiszapolgar settlement site that has not been a rescue mission and will be excavated over many field seasons. There is not much to compare with Veszto-20, which raises many questions, such as how typical is Veszto-20 throughout the time period and the region. Comparing it with the few other Early Copper Age sites will give some idea of how Veszto-20 relates to the whole Tiszapolgar culture. Also, comparing it to sites from the Late Neolithic will be helpful to see the transition into the Copper Age, as well as any similarities in traditions that may have been held on to over time. The nearby tell site of Veszto-Magor has both Late Neolithic and Early Copper Age settlements, and can also be looked at in relation to Veszto-20.

Methodology

There are many ways to do the spatial analysis of a site. The use of statistics is very important in analyzing relationships of features and artifacts. One statistics test that is useful is chi-square, which can show if there is a random or non-random distribution of artifacts compared to an expected number (Drennan 1996). Cluster analysis would also be useful for looking at distributions of artifacts and features across the site. This can be done using statistics or mapping the distribution of artifacts or features and looking for high concentrations. Variables such as burned and unburned ceramics, decorated and undecorated ceramics and the distribution of bone would all be very useful for looking for signatures within a site that could possibly be applied across the region.

Another aspect to be looked at when doing spatial analysis is the degree of disturbance at the site. Are the artifacts where they fell 6,500 years ago, or have outside forces moved them? After thousands of years of plowing, the daub and ceramics near the

surface have been broken up and spread over a much larger distance than where they were originally concentrated. Bioturbation by rodents and other burrowing animals has actively moved the soil up and down, along with the artifacts in that soil. The intrusive burial uncovered this year in the south wall of the structure located in Block 2 forces the question of how disturbed the site is by later human activity. The burial probably dates to the Eighth or Ninth century. It was a male decorated with many brass, silver and iron goods. There was a horse skull and hooves found over the body with an iron bridle and iron stirrups. This seems to be a typical burial for that time period. There had been another burial found earlier in the southeast corner of the site. It was not excavated and originally assumed that it dated to the Tiszapolgar culture, but this should be questioned in light of this new find.

Instead of using statistics for looking at the spatial patterns this year, the combination of maps and unit lot descriptions of ceramics were used. To get the accurate lot size and weight of the ceramics found in each unit, the lot descriptions were used. Using these numbers the total weight and size per block per unit was calculated. There are not the same number of units in blocks 2 and 3, so comparing the averages of them may be biased toward block 2, because it has more units added into the total. Block 2 had 107 units added into the totals and block 3 had only 60 units added into the totals. The total weight of the ceramics in block 2 was 76,471 grams with a total number of 6,063. The average weight was 714.4 grams with about 56 ceramics per unit. This is very different from block 3. With the 60 units calculated, the total of ceramics was 2761 and the total weight was 24,390 grams. The average weight per unit was 406.5 grams and average count was about 46 ceramics per lot.

Vesztzo-20

There were seven features found in the four test trenches last year. They ranged from possible postholes to artifact concentrations, but were mostly daub concentrations. Test trench 1 contained four features, more than the other test trenches. In both block 2 and 3 possible structures were identified. Test trench 4 came down directly on a midden. As of July 26 of the 2001 field season, seven new features had been found. Only blocks 2 and 3 were opened for further excavations and that was where all the further information from this year came from. Four of them were located in block 2. The remaining three were located in block 3.

In block 1 there were four features. Feature 1 was located on the East side of block 1. It contained a line of four possible shallow postholes running in the North-South direction. The matrix was dense clay with daub, bone and shell, with few ceramics. The possible postholes were between 10 and 20 centimeters in diameter. Feature 2 was also located in block 1, at the base of the first level. It was a circular concentration of daub and charcoal approximately 30 centimeters in diameter. It was not clear how this pit was associated with the other features in block 1. It was also unclear whether this feature was a pit, a hearth or neither. Feature 3 was at the base of the plow zone in block 1. It was a heavy daub concentration in the Northwest corner of the Northwest quad that was about 40 centimeters wide extending about 15 centimeters out of the North wall. This was the possible corner of a structure. Feature 7 was also in this block. It was uncovered during the cleaning of the block for mapping. It is in the Northeast corner, and the feature type was unrecorded.

Feature 4 was located in the majority of block 2, with the highest concentration of daub in the southwest corner of the two by two-meter test trench. This was thought to be the possible corner of a structure. This feature also contained a large amount of ceramic sherds and bone. It was located at the base of the plow zone. This block was expanded this year to a ten by ten-meter trench to try to find the rest of the structure. Feature 6 was also located in this block. It was a small concentration of daub on the Northeast side of the block.

Expanding the test trench this year confirmed the existence of a structure in block 2. The possible walls and corners were uncovered this year. The floor of the structure was found under a chunky daub layer, then a powdery daub layer. The floor was identified by a more compact earth layer and horizontally placed ceramics. The structure takes up roughly a 4 by 4-meter square. The Northwest corner is roughly at N490 E110, with a length and a width of about 4 meters. The possible southeast corner of the structure is the most unreliable because of the intrusive burial that cuts right through the corner.

The inside of the structure was somewhat clearly defined by the daub outline. Within the house was a cluster of bone points located in about the center. There were also a few almost complete pots that appeared to be smashed and burned by a wall. Feature 6 was located within the structure and appeared to be a shallow daub lined pit. It probably had not been in use long before the house was abandoned.

Directly east of the structure was a zone with a very high concentration of artifacts. It is unclear what the purpose of this zone was. It may have a toss zone between two structures. Another possibility is that there were many middens throughout the site,

possibly one trash zone per structure. Possibly before abandoning the house everything was cleared out and dumped outside the structure.

This season in block 2 features 8, 10, 11 and 13 were identified. Feature 8 was a large chunk of crumbly daub. There were no other artifacts in this feature and it was probably part of a daub streak from a nearby unit. Feature 10 was an almost complete pot that seemed to have broken in place. Soil was taken along with it when it was collected and the pot almost completely refits. Feature 11 was a very surprising find this field season. It was a human burial from the 8th/9th century that cut directly into the Southeast corner of the structure. It had a horse skull and hooves that were probably the remains of a horse pelt. Feature 13 was deep pit that is a possible thermal feature. It has both burnt and unburned daub in it. There were also some large pieces of charcoal and large pieces of ceramics.

In block 3, the only feature found in the 2000 field season was feature 5, a large artifact concentration. There was a daub concentration in the Northeast corner of the two by two-meter pit. The rest of the unit contained a large amount of ceramics. This was also thought to be the possible corner of a structure, and this block was expanded this field season to a six by six-meter square.

Block 3 contained features 9, 12 and 14. Feature 9 was a concentration of daub located on the south wall. It was in the lower level of the plow zone and it was not excavated past the plow zone. Feature 12 was another concentration of daub and it was located along the north wall. It is unclear if this was a wall of a structure that extends into the north wall of the unit. Feature 14 was found directly east of feature 12. It was a small conical depression with slightly darker sediment than the surrounding soil.

An interesting area in block 3 was a large concentration of artifacts that was on the south side of feature 5. It is unclear if this is inside or outside a structure. Another interesting area was along the north wall of the block. There was a complete spindle whirl found as well as possible loom weights found in the area. It is possible that this was an area of textile production, but loom weights and spindles were also found elsewhere in the site.

Block 4 came down directly on what is probably a midden. It was full of ceramics and bone, but contained very little daub. It was not further excavated this season.

If the signature of a house at Veszto-20 is Feature 4, which contains almost complete burnt vessels, a compact earth floor and a concentration of artifacts outside of the house, feature 5 in block 3 does not fit this signature. The only part of that signature that could possibly fit is the concentration of artifacts that are possibly outside the house.

Block 3 contains a very large artifact concentration directly to the south of what is considered feature 5. Feature 5 has not been labeled a structure since no corners have been identified.

There have been many differences between the two large blocks that were excavated this season. By comparing the lot averages it may be possible to conclude that the reason for the differences in the lot size and weight averages is because most of what has been excavated of feature 4 has been within the structure. It is still unclear what in block 3 is inside or outside a structure, if there even is a structure there.

Comparisons

The Neolithic has been intensely studied throughout the Hungarian Plain and varies greatly from what little is known about the Early Copper Age. Throughout the Neolithic

there was an increasing differentiation between three cultures on the Hungarian Plain. The Tisza-Herplay-Csoszhalom Complex has been distinguished from each other mostly through the differences in their ceramics.

The general trends in the Neolithic are much different than those of the Copper Age. From the few structures that have been excavated, Neolithic structures are much larger than those from the Copper Age. The houses from the Neolithic were probably multi-family structures about 10 to 20 meters long (Parkinson 1998). The structures from the Copper Age average 4 by 5 meters. Another difference in the Neolithic houses is the floors. Floors are typically plastered in the Neolithic, and in the Copper Age the floors are usually packed earth floors (Parkinson 1998 132). Veszto-20 seems to follow this pattern, which makes identifying the floors of the structures very difficult.

Tell sites or tell-like sites are the common forms of settlement in the Neolithic. Veszto-20 is a single layer site, but it is situated on the top of a small hill. This may have been for many reasons. The tell site of Veszto-Magor is in sight of Veszto-20, so the inhabitants could have been trying to mimic the tell on a smaller scale. Another possibility is that the small hill was the only habitable place because of frequent flooding in the Plain.

In the Early Copper Age, settlements seem to move from being concentrated at tell sites to having a wider distribution of smaller settlements. The size of the houses becomes considerably smaller in the Copper Age. The shift from large structures to smaller ones could reflect a significant change in the whole economic and familial organization of a culture.

Veszto-20 seems very similar to some other Early Copper Age sites that have been excavated. At the site of Tiszafoldvar, the structures found were roughly 4 by 5 meters,

oriented Northwest-Southeast, much like the one definite structure at Veszto-20. Also at this site, no postholes have been found in relation to the house, which is similar to Veszto-20. Although at Tiszafoldvar ovens and hearths have been found, none have been found at Veszto-20. It is possible that the ovens and hearths at Veszto-20 have not been uncovered yet, since so little of the site has been excavated.

The Copper Age sites of Kenderes-Kulis, Kenderes-Telkhalom, Tibava and Crna Bara all had wattle and daub structures that were supported by posts (Parkinson 1998). Ditches or other forms of fortification are also common in the few sites that have been excavated. A ditch has not been identified Veszto-20, but the line of possible postholes could be part of a fence. The nearby tell site, Veszto-Magor, had both Neolithic and Early Copper Age settlements on it. The size of the structure found there resembles the structure that was found at Veszto-20. So far there has not been enough evidence to see any spatial patterning of structures within sites.

Discussion

The excavations from this field season had mixed results. While block 2 yielded an almost definite structure, the status of block 3 is unclear. Feature 4 seems to fit the pattern of Tiszapolgar houses, while at the end of the field season it is unclear if there are any structures in block 3.

The use of excavation units was very difficult to work with when trying to figure out the spatial patterns of Veszto-20. Using standard arbitrary levels would have been much easier to work with when collecting and organizing the data. This would have given more vertical control over the site and would have been useful for knowing the elevations

and levels of artifacts. The use of random units makes it difficult to know how artifacts relate to each other across the site.

There are many ways to do the spatial analysis of Vezto-20 and the distribution of the ceramics was just one aspect to be looked at. The distribution of bones, bone tools, shell, daub and charcoal should all be analyzed to get a clearer picture of what, if any, patterns appear at Veszto-20. An interesting aspect of ceramics that could be investigated is the stylistic variation between the two blocks, specifically in the zones with the highest concentration of ceramics. Spatial analysis can be very useful tool for understanding and bringing together the many aspects of a site.

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