ANALECTA ARCHAEOLOGICA RESSOVIENSIA
VOLUME 12 RZESZÓW 2017

DOI: 10.15584/anarres.2017.12.6

Victor Sava*, Florin Gogâltan**

The Bronze Age Fortifications in Munar "Wolfsberg", Arad County. The 2014 and 2017 Archaeological Researches

ABSTRACT

Sava V., Gogâltan F. 2017. The Bronze Age Fortifications in Munar "Wolfsberg", Arad County. The 2014 and 2017 Archaeological Researches. *Analecta Archaeologica Ressoviensia* 12, 75–100

In spite that the Bronze Age site Munar "Wolfsberg" has been depicted on the Josephine topographic survey (late 18th century), the first scientific data focusing on this site occurs at the beginning of the 20th century. As "Wolfsberg" did not have the dimensions of the nearby prehistoric fortifications at Sântana and Cornești, the site was not targeted by archaeological investigations and it has only been occasionally mentioned in the secondary literature so far. During the year 2014 a team of researchers have started the investigations with the site's topographic survey, followed by a systematic ground survey, geophysical measurements, as well as aerial photographs. Three years later, a small test trench was excavated in order to attempt dating the Middle Bronze Age tell in terms of the absolute chronology.

Key words: Lower Mureș Basin, Munar, Bronze Age, tell, fortifications

Received: 11.09.2017; **Revised:** 28.11.2017; **Accepted:** 02.12.2017

Introduction

Until recently, the lack of systematic excavations on prehistoric objectives in the Lower Mureș Basin has distorted historical knowledge. In spite that towards the end of the 19th century there were several attempts to study important sites such as Pecica "Șanțul Mare" (Dömötör 1901; Dömötör 1902; Roska 1912) and Periam "Movila Șanului" (Roska 1911; Roska 1913; Roska 1914; Roska 1923), investigation of prehistoric eras was not a research goal in itself. Some of the more "attractive" sites, that were tested during the middle of the 20th century, were the tells of the Bronze Age (Popescu 1956, 5–50; 65–114; Crișan 1978; Soroceanu 1991).

The limited number of existing publications provided an anachronistic picture of the region in question. The few poorly investigated sites could not truly illustrate the complexity of this archaeological phenomenon.

* Museum of Arad, George Enescu Square, no. 1, 310131 Arad, Romania; sava_vic@yahoo.com
** Institute of Archaeology and Art History Cluj-Napoca, Mihail Kogălniceanu Street, no. 12–14, 400084, Cluj-Napoca, Romania; gogaltan@yahoo.com

Contrary to what was known from the archaeological literature, the recent systematic excavations in the Lower Mureş Basin led to radical changes in the historical perspective. Knowledge on the Bronze Age (for Neolithic and Eneolithic see Sava 2015), was enriched by the discovery of several settlements such as Şagu "Sit A1_1" (Sava *et al.* 2011; Sava *et al.* 2012; Sava 2014; Urák *et al.* 2015), Pecica "Situl 15" (Marta *et al.* 2012), and the cemetery Pecica "Situl 14" (Sava, Andreica 2013; Sava, Ignat 2014), the reopening of excavations in the tell at Pecica "Şanţul Mare" (O'Shea *et al.* 2005; O'Shea *et al.* 2006; O'Shea *et al.* 2011; Nicodemus 2011; Nicodemus *et al.* 2015; Nicodemus, O'Shea 2015) and in the fortifications at Sântana "Cetatea Veche" (Gogâltan, Sava 2010) and Corneşti "Iarcuri" (Szentmiklosi *et al.* 2011).

In order to enlarge the horizon of the investigations numerous non-invasive investigations were also initiated on the major Bronze Age objectives. Specialists managed to place all the tells as well as the major Bronze Age sites on the map of the Arad county. One of the highly interesting discoveries, little known to specialists, is the site at Munar "Wolfsberg".

In spite that the prehistoric fortification at "Wolfsberg" has been depicted on the Josephine topographic survey at the end of the 18th century, the first scientific data focusing on this site occurs at the beginning of the 20th century in B. Milleker's works (Milleker 1906a, 97; Milleker 1906b, 53–54). As "Wolfsberg" did not have the dimensions of the fortifications at Sântana and Corneşti, the site was not targeted by archaeological investigations and it has only been occasionally mentioned in the secondary literature so far.

The beginning of the project entitled *Living in the Bronze Age Tell Settlements. A Study of Settlement Archaeology at the Eastern Frontier of the Carpathian Basin* has led to a reevaluation of the site's scientific importance. The existence of a tell dated to the Middle Bronze Age, doubled by at least one fortification from the Late Bronze Age, offered us the possibility to study an ideal situation. There were preserved two stages in the chronological development. The fact that the site was only 15 ha large made it suitable for non-invasive investigations. This could provide a base for a coherent picture of the entire archaeological objective.

During the year 2014 the investigations have started with the site's topographic survey, followed by a systematic ground research, geophysical

measurements, as well as aerial photographs. Three years later, a small test trench was excavated in order to attempt dating the tell.

Until now, the site at Munar "Wolfsberg" has been the subject of several archaeological notes and it was also mentioned sometimes in studies dealing with various issues concerning the Bronze Age in the area. The goal of the present article is to present a complete history of the few performed investigations. The text is accompanied by a rich illustrative material meant to help the reader understand better the described archaeological discoveries.

Site location

The village of Munar is located ca. 30 km west from the city of Arad (Fig. 1), at the border between Arancăi and Vingăi plains (Fig. 2). Named "Wolfsberg" in the secondary literature the site may be easily identified on the field as it is located in the close proximity

Fig. 1. Administrative map of Romania with the location of the site at Munar "Wolfsberg"

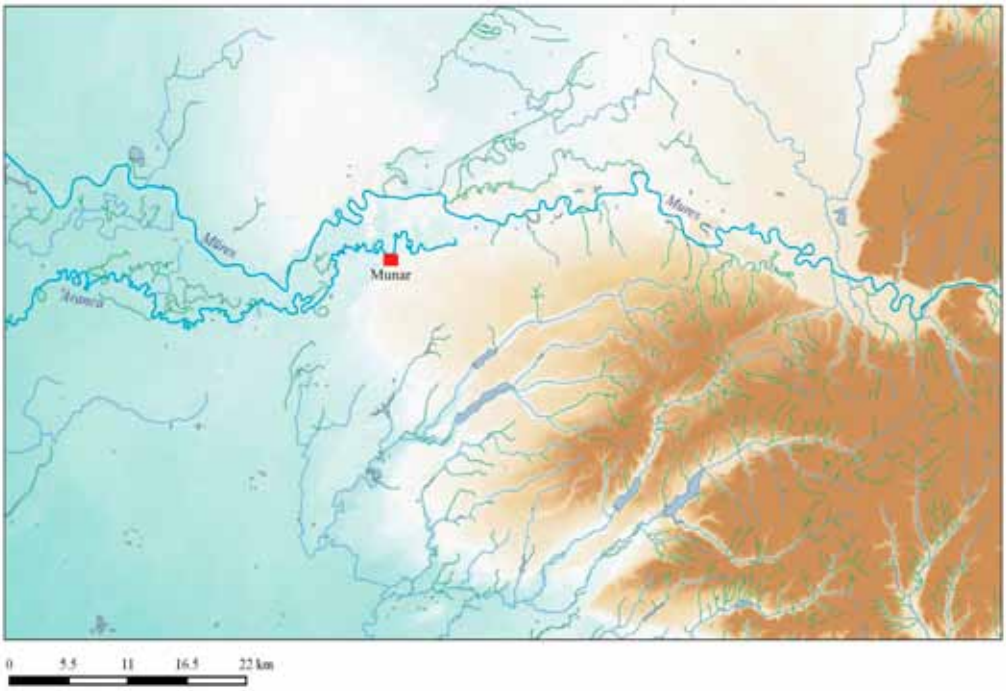

Fig. 2. The Lower Mureş Basin with the location of the site at Munar "Wolfsberg" (map adapted after Gogâltan 2016)

of the county road 682 connecting Arad and Sânicolau Mare. The Bronze Age tell and fortification may be observed between the settlements of Sânpetru German and Munar, on the right side of the above mentioned road.

The site is very well located, on the high terrace of the River Mureş. One should also mention that the small river called Aranca, flowing into the Tisa, still runs today at the base of this terrace. The site's location was very advantageous; it provided a good defensive position on the northern side and was safe from flooding. One may easily notice (Fig. 7), that the level difference between the bed of the river Aranca, and the edge of the terrace is quite high, measuring 10 m. To the north, the prehistoric settlement was somewhat protected by the considerable height of the terrace, and to the west the situation was similar. There the site was separated from the rest of the terrace by the bed of a formed water course that communicates with Mureşului Meadow. One may note that the level difference to the west reaches almost 8 m. At the

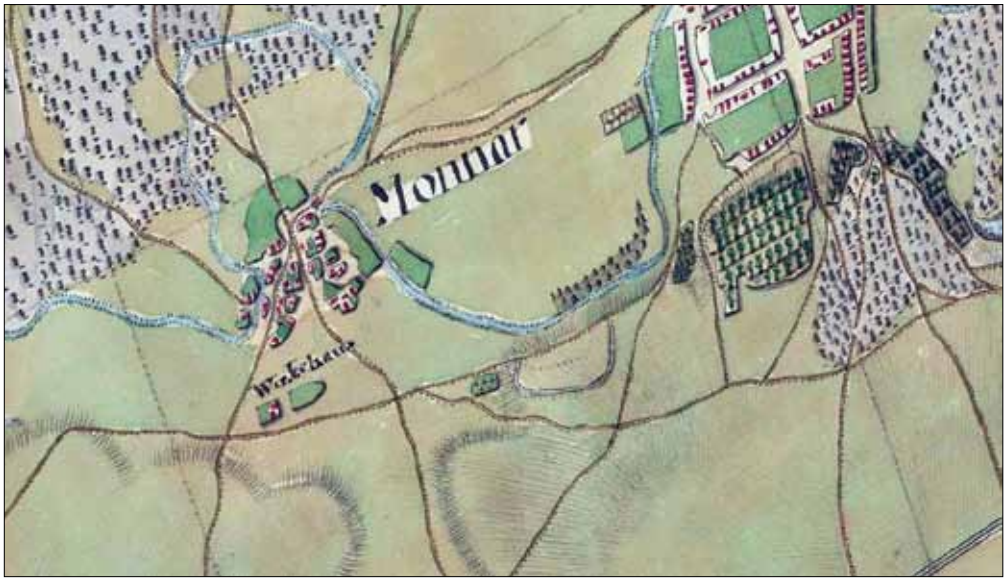

Fig. 3. The First Josephine Topographic Survey (1769–1772) with the depiction of the site at Munar "Wolfsberg" (source: www.mapire.eu)

same time, the proximity of the River Mureş' braches, that formed a true delta during Prehistory, provided important food sources and easy access to drinking water.

History of the researches

The fortified enclosure at Munar was illustrated on the First Josephine Military Topographic Survey (1769–1772) (Fig. 3). There, the site was rendered with two concentric fortifications, irregular in shape, depicted without interruptions. One may notice that the enclosures in question started from the edge of the high Mureş terrace. The outer fortification was clearly rendered with a well stressed line, while the inner one was depicted with a dotted line. The river Aranca appears at the base of the high terrace and a small cemetery was rendered on the western side, outside the fortification. At that time the prehistoric fortification was crossed by three roads: one leading from Felnac to Secusigiu; the second from Sânpetru German to Variaş; and another road that connected the first two. The second road is located right on the edge of the high terrace of the Mureş river. At the same time, a dry water

Fig. 4. The Second Josephine Topographic Survey (1819–1869) with the depiction of the site at Munar "Wolfsberg" (source: www.mapire.eu)

course may be seen on the map in the western side of the site, starting from the bed of Aranca and entering deeply into the terrace.

The fortification was also depicted on the Second Josephine Topographic Survey (1819–1869) (Fig. 4). However, on this map only the south-eastern sector of the outer fortification was represented. Although the landscape was rendered in detail, the inner fortification that could be seen on the First Josephine Survey, and the western sector of the outer fortification, no longer occurred. It is important to notice that at that time the land where the site was located was used for agriculture, being divided in several plots. The roads crossing the site or located in its vicinity also appear clearly depicted. The road connecting Arad and Sânnicolau Mare was moved in the southern edge of the site and it is still there today. One of the country roads on the map crosses the entire surface of the site from north to south, connecting the monastery of Bezdin and the road leading from Sânpetru German to Gelu. An access way that connected the main road and the Mureş meadow was in use on the eastern side of the site. Another road began from this access way, crossed the fortification from east to west and connected

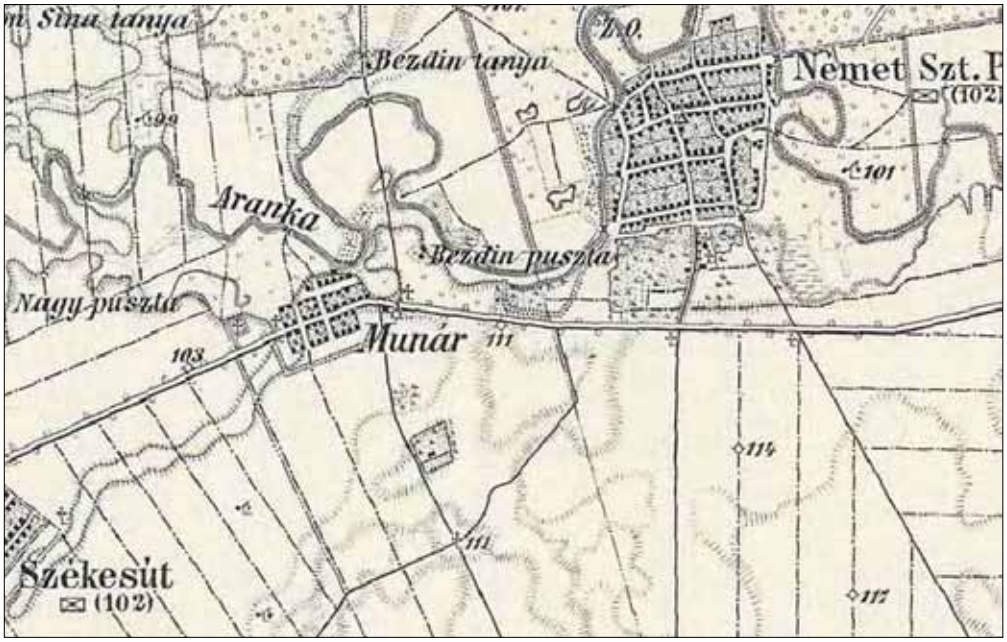

Fig. 5. The Third Josephine Topographic Survey (1869–1887) with the depiction of the site at Munar "Wolfsberg" (source: www.mapire.eu)

the agricultural plots. These roads may be easily identified on site today and they are visible in the following figures: Fig. 6–7, 13–17.

The complete contour of the outer fortification and two segments of roads crossing the surface of the site are visible on the Third Josephine Topographic Survey (1/25 000) created between 1869 and 1887 (Fig. 5).

In spite that the Austrian authorities knew about the site's existence already in the 18th century, as attested by its depiction on the First Josephine Survey, the first historical-archaeological information became available only at the beginning of the 20th century. In his archaeological repertory, as well as in a brief note, B. Milleker shortly discussed the site at "Wolfsberg" (Milleker 1906a, 97; Milleker 1906b, 53–54). Although the existing data at that time did not help readers have a coherent understanding of the site, the author's short descriptions and mentioning of clear landmarks represented a novelty in the history of researches. Milleker informed his readers on the site's exact location ("trapezoidal earth mound") and estimated its surface at 25 jugera (approx. 14.4 ha), very accurately for that era. He also mentioned certain topographic

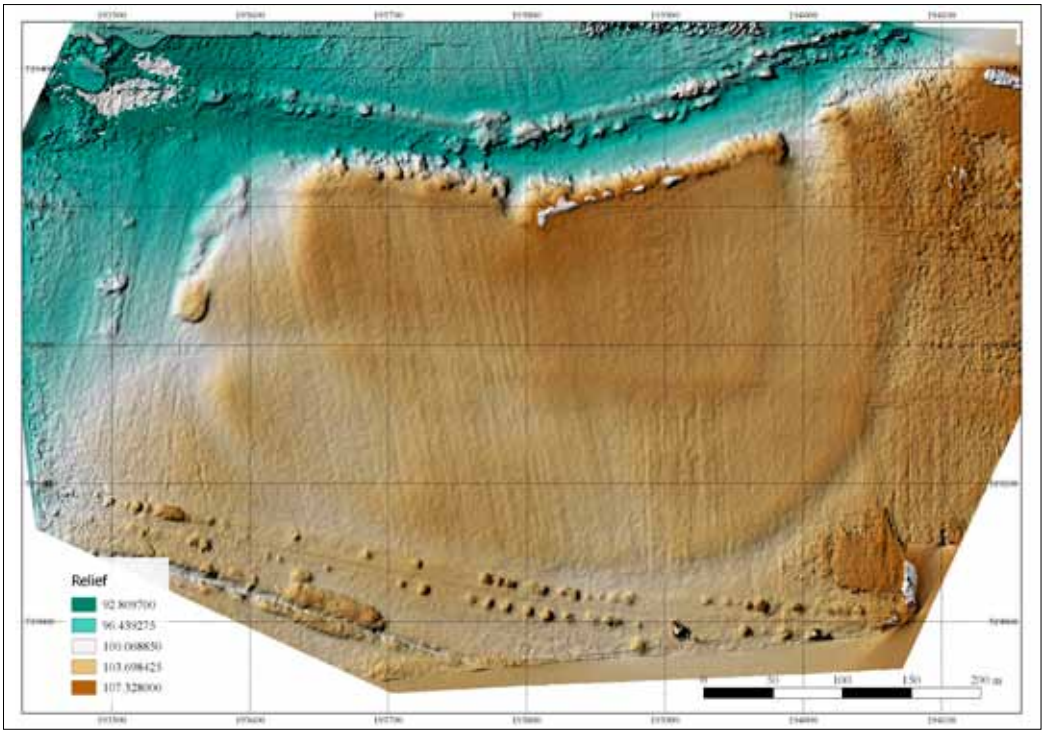

Fig. 6. Digital model of the terrain in Stereo 1970 coordinates

landmarks, writing that "the eastern part of the village of Munar is called Bezdin Weingärden, while the earth mound located to the south, towards Sâmpetru German, is called Wolfsberg". The author provided details on the fortification systems' state of preservation and mentioned the existence of some modern constructions inside the site (See in Gogâltan, Sava 2010, 58–59 a Romanian translation of Milleker's text). One is also informed that in 1904 a tax inspector discovered clay pots decorated with prominences on Jost Ivan's land (located towards the village of Sânpetru German) and even that one of the pots preserved bronze objects inside.

At the beginning of the 20th century, several authors mentioned the site at Munar, but only in passing. One of them is V.G. Childe who included Munar in his enumeration of the sites belonging to the Vatina Culture in his work entitled *The Danube in Prehistory* (Childe 1929, 287). A similar mention is I. Ghenadie's brief note on *Cetatea de la Munar* [The

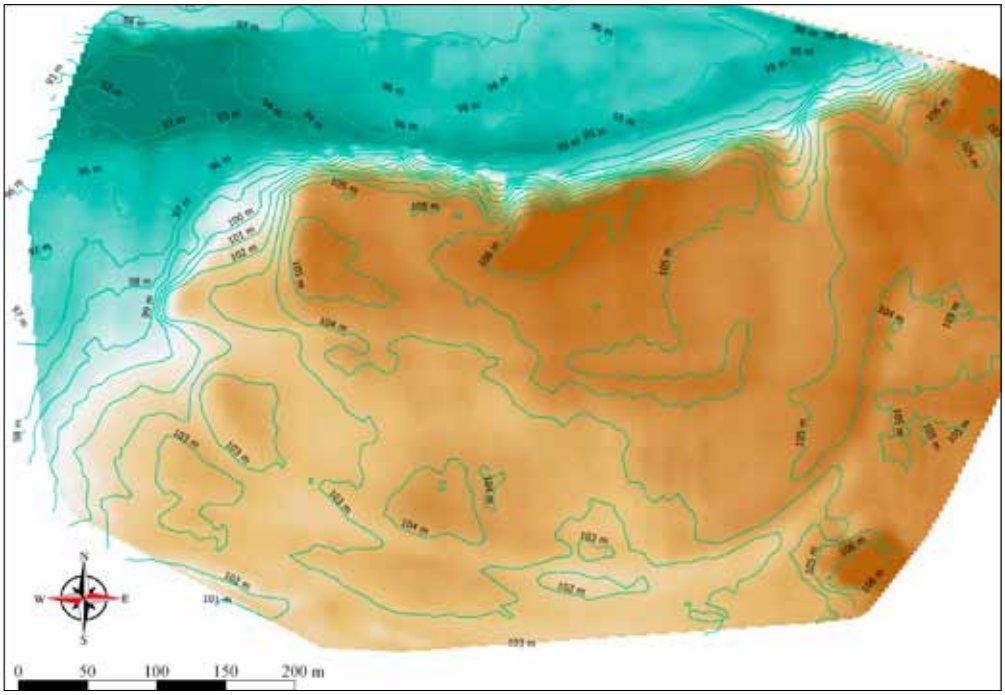

Fig. 7. Digital model of the terrain with the relief curves at 1 m

Fortification at Munar] (Ghenadie 1931) and G. Lotreanu's mentions in *Monografia Banatului* [Monography of Banat] (Lotreanu 1935, 286). Interesting to note is that I. Lotreanu believed the fortification to be an Avar ring. One may easily observe that the author was relying on old interpretations spread during the second part of the 19th century. Back then, the great fortifications built during the Bronze Age, such as the ones at Cornești "Iarcuri" (Pech 1877) and Sântana "Cetatea Veche" (Márki 1882; Márki 1884), were dated to the Migration Period and were called Avar rings.

Later on, the site of Munar "Wolfsberg" was often mentioned in scientific works, such as repertories (Roska 1942, 185, no. 270; Milojčić 1953, 275, Abb. 42; Moga 1964, 296; Medeleț, Bugilan, 1987, 149–150; Vasiliev, Hügel 1999; Luca 2005, 254, nr. 532d; Luca 2006, 117, nr. 385b, 230, nr. 532d; Luca 2010, 175, nr. 385b, 231, nr. 532.3d) and studies focusing on Bronze Age issues in the adjacent area (Horedt 1974, 223, nr. 14; Micle *et al.* 2006, 296; Gogâltan *et al.* 2013, 51; Sava, Andreica

Fig. 8. The network of magnetometric grids and systematic field research grids (pink polygons) – location and structuring in relation to the site's ortho-photo plan (UAV)

2013, 72; Sava 2014, 127; Sava, Ignat 2014, 21, 24; Sava, Ignat 2016, 191, 195, Fig. 15/Nr. 16, Fig. 16/nr. 10). Worth mentioning are two recent contributions that present the site's entire problematic, known at the time of the publication (Gogâltan, Sava 2010, 57–61; Sava, Gogâltan 2014).

An issue that has already been mentioned before (Gogâltan, Sava 2010, 60; Sava, Gogâltan 2014, 124, 25) concerns the archaeological excavations performed by M. Moga on the place called "Mănăstirea Bezdin". As we have previously emphasized, the site at "Wolfsberg" was known in literature under several names (see a discussion of the topic in Sava, Gogâltan 2014, 125). This fact has generated a series of confusions. For example, in 1948 M. Moga performed some archaeological excavations in the area of the village Sâmpetru German. According to E. Dörner, on that occasion certain archaeological objectives were tested, including the site "Fântâna Vacilor". The excavation was noted on an archaeological map preserved in the collection of the Arad Museum

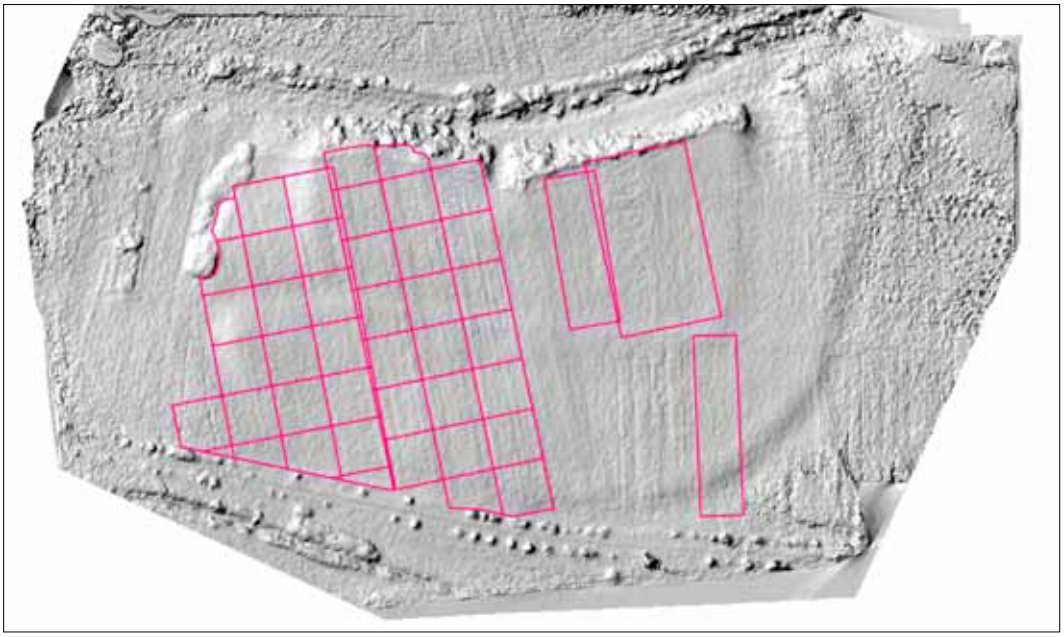

Fig. 9. The network of magnetometric measurements (pink polygons) – location and structuring in relation to the digital model of the terrain surface represented as *hillshade*

Complex. Besides this objective, Moga has also performed another test at "Mănăstirea Bezdin". He discovered there pottery fragments from the Bronze Age. The available information suggests that M. Moga's excavation was more than probable located on the site at "Wolfsberg".

This brief history of researches indicates that the archaeological objective at Munar "Wolfsberg" is not only little known to specialists but also insufficiently investigated.

The 2014 researches

Precisely in order to fill this scientific gap we have decided to perform a series of non-intrusive investigations at Munar "Wolfsberg", as part of the project entitled *Living in the Bronze Age Tell Settlements. A Study of Settlement Archaeology at the Eastern Frontier of the Carpathian Basin* (some of the results of the researches performed during 2014 have been published in Gogâltan 2016, 90–94). These were completed by archaeological test excavations in order to establish the relative and

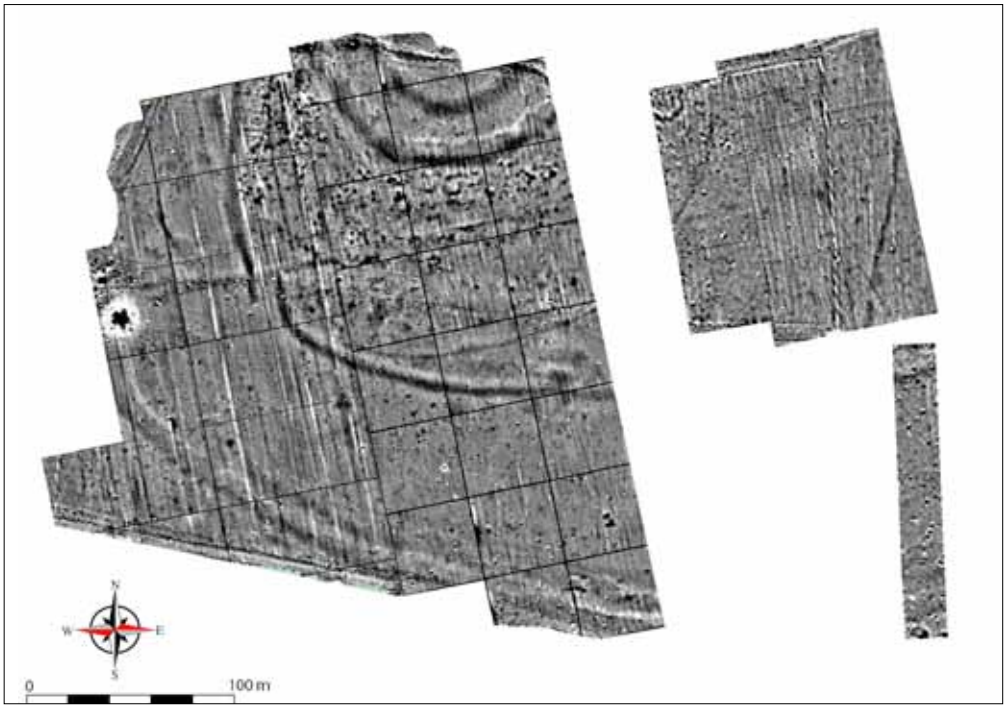

Fig. 10. Results of the magnetometric measurements

absolute chronology of the entire site. Excavationswere only initiated during 2017.

Performed during the winter of 2014, the first investigation focused on the topographic survey of the entire site (Fig. 6–7). On that occasion we have noted that the outer fortification reached the size of about 15 ha. The south-eastern and eastern sides of the outer fortification systems were visibly better preserved. The western side was poorly preserved, affected by some constructions from the modern and contemporary eras. The northern side displayed two, obviously man-made inlets into the river bed of Aranca. The terrace was probably cut during the Modern Era, when the already mentioned network of roads, also visible on the topographic survey, started to be used.

Subsequently, during the spring of the same year, we initiated the systematic field research. Our main goal was to establish, as much as possible, the relative chronology of the entire site. We also tried to identify the dispersion of the archaeological material. In order

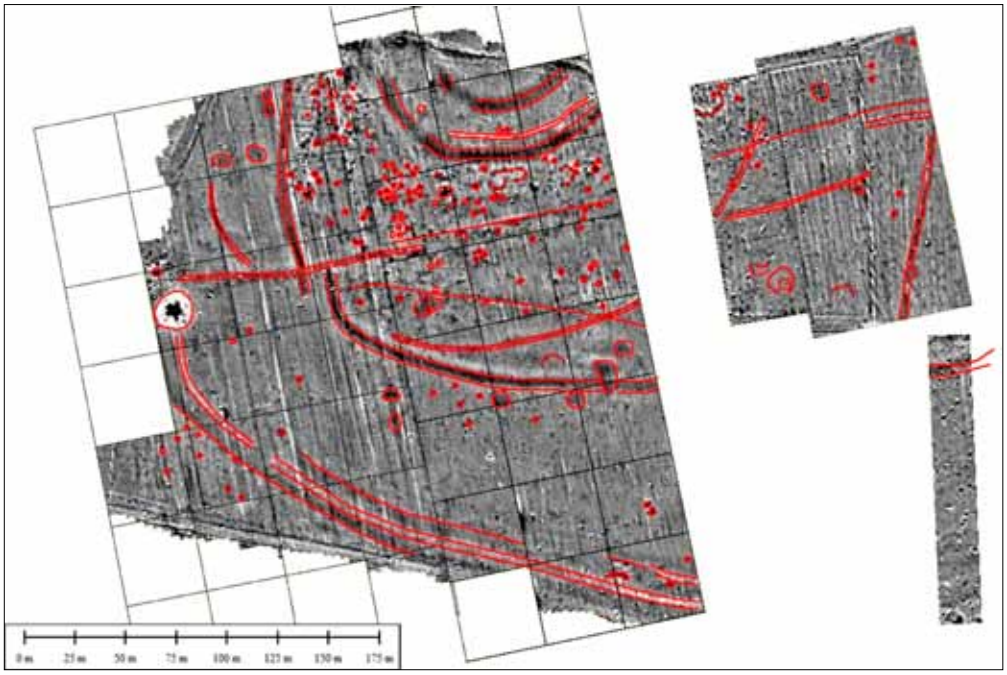

Fig. 11. Results of the magnetometric measurements with the anomalies

to achieve these goals we selected an area of 4 ha, located on the western side of the site. The reasons behind this choice were related to both the owner's consent and the structures' location on the site. The Bronze Age tell is also situated on the western side. Thus, the most numerous artifacts could be collected in that area, as the majority of the structures were there.

Starting from the 40×40 m grids required by the magnetometric measurements, the chosen surface was divided into grids of 4×4 m (Fig. 8–9). All the archaeological materials found at ground level (pottery, bones, stones, adobe) were collected. Each grid was allotted a technical record, filled in on site. It contained a series of fields for recording all data available during this type of research.

Despite that the results of the field research are not completed yet, one may sketch the site's chronological development. Certain hypotheses may be formulated regarding the dispersion of the material according to the chronological stages of its development. To the entire team's surprise, the earliest identified pottery fragments belonged to the Late

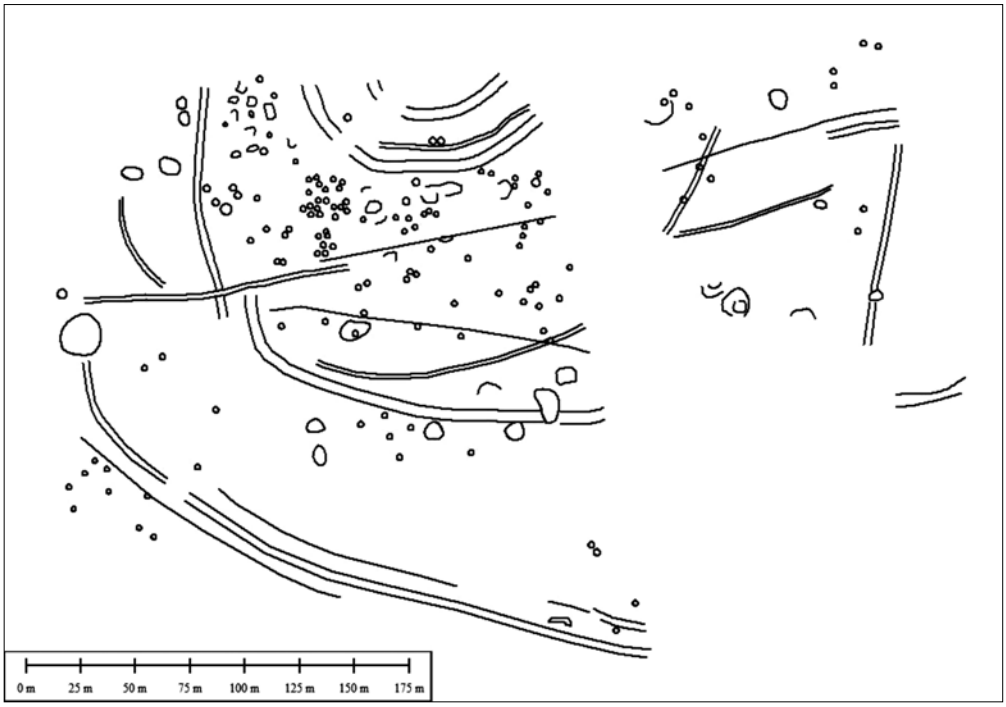

Fig. 12. Sketch of the magnetic anomalies

Eneolithic Era. The dotted and grooved decoration belonged, beyond doubt, to the Baden pottery style. From the point of view of the number of fragments, the Eneolithic pottery forms a restricted lot. The subsequent chronological horizon may be placed during the Middle Bronze Era. Ever since the first field researches performed during 2007 we were able to note the existence of this chronological horizon. The pottery fragments in question were decorated with typical Cornești-Crvenka motifs. The artifacts of this period form the largest lot by far. They are mainly concentrated in the north-western side of the site. Although it was quite clear from the very beginning, the Middle Bronze Age pottery and the majority of the adobe pieces were concentrated on the surface of the tell. Rather numerous pottery fragments, decorated with wide grooves in the style of the Late Bronze Age, were discovered in the western and south-western parts of the researched area. Several fragments dated to the Second Iron Age, tempered with graphite, were also found, scattered. The final habitation horizon, identified during the

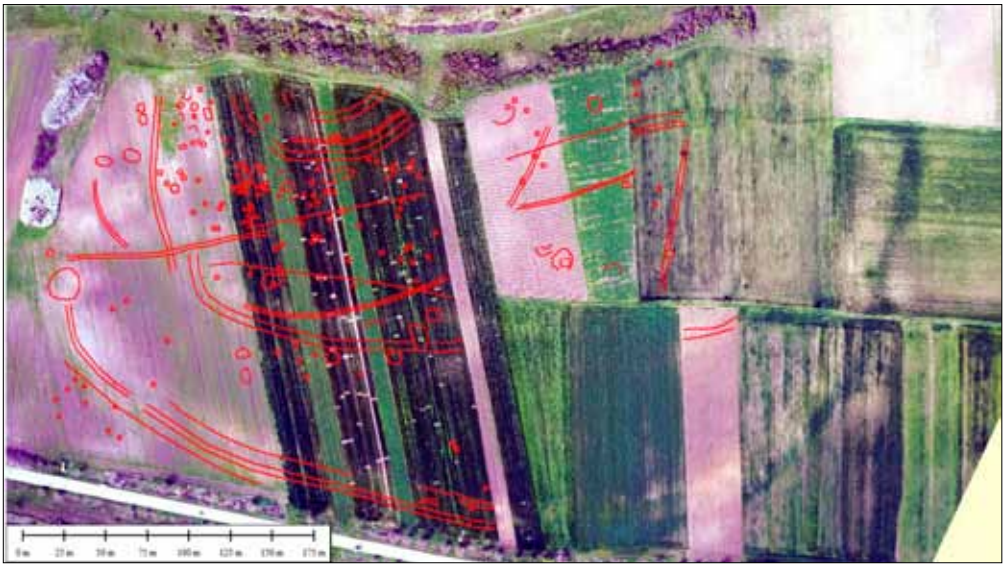

Fig. 13. Overlap of the interpretation of the magnetic map onto the ortho-photo plan (UAV)

field research, may be dated to the 18th–19th and even the 20th century. As we were able to note, the modern pottery fragments and the numerous bricks discovered confirm Milleker's statements regarding the existence of a keeper's house. Numerous pieces of evidence for the existence of a modern building were identified in the north-western and western corners of the fortification.

Magnetometric measurements and systematic field researches were performed at the same time. The first covered an area of 8.7 ha and overlapped the grid of the field research (Fig. 9). The measurements have led to the identification of numerous anomalies (Fig. 10–13). Though we are aware of the limits of this type of research, the results of the magnetometric measurements were relevant for establishing the main characteristics of the site. At the same time, the site's planimetric development and its structure were more than obvious. The most visible of the anomalies consisted of six ditches and one rampart that enclosed different areas of the site. Starting from north to south we have identified the existence of five enclosures that were in almost concentric succession. Among the most visible anomalies, revealed on the magnetometric ground plan, were two concentric ditches,

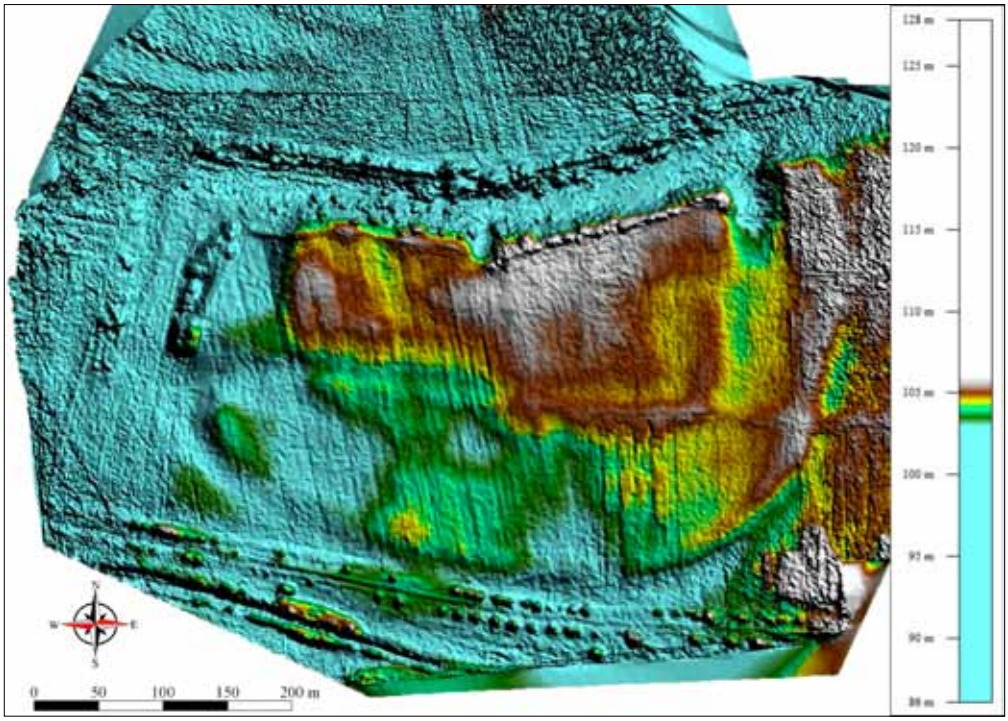

Fig. 14. Digital model of the surface

semicircular in shape. They were dug starting from the edge of the terrace. The first ditch enclosed an area of 70 ×40 m (0.28 ha) and very small anomalies could be seen inside this enclosed space. The second ditch, located 20–22 m south of the first, enclosed an area measuring 110×60 m (0.66 ha). Only four significant anomalies could be observed in the area between the two ditches. Among them was a narrow ditch located at a small distance behind the second ditch, doubling it. It is possible that the empty area, of approx. 5 m, located on the south-western side of both enclosures, marked an entrance.

Although the first two enclosures were in close proximity of what we have labeled as the "center" of the tell (its highest part), we have noted surprisingly few anomalies. We initially believed that the absence of structures was due to modern agricultural works and the erosion affecting the edge of the terrace. At the same time, the northern side of the site showed traces of military trenches. Subsequently, the 2017 test excavation came to contradict the hypothesis of erosion, confirming

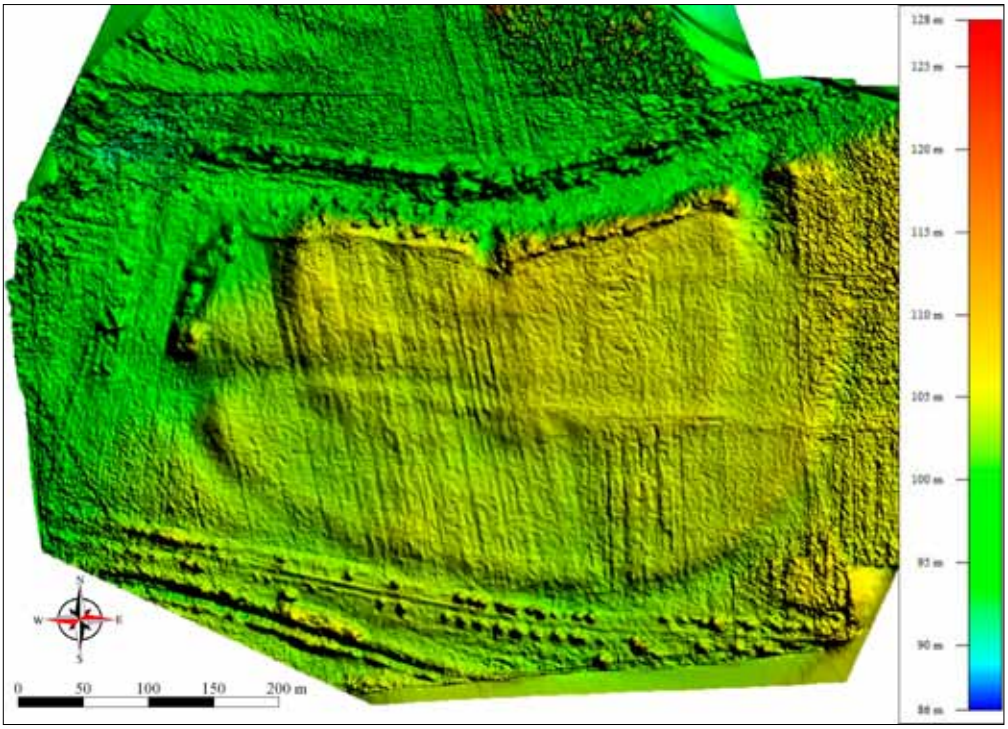

Fig. 15. Digital model of the terrain's surface (including the level of the vegetation in the beginning of April 2014), obtained through photogrammetric means on the basis of images obtained with the UAV

that the absence of features must be explained through the continuous exploitation of space ever since the Middle Bronze Age.

Also visible was a third ditch, narrower than the others, but enclosing a larger area. One could easily observe that, towards west, the ditch was interrupted over a considerable distance by a fourth ditch, much better stressed. The third enclosure housed the largest concentration of anomalies. The overlapping of the magnetometric plan and the aerial photographs indicated that this space clearly set apart the depositions of the Middle Bronze Age tell from the rest of the site.

As already mentioned, the third ditch was overlapped by another, more visible one. The latter measures 3–4 m in width and encloses an area of ca. 8 hectares. The chosen shape of the western entrance is novel, as the access way is "tangent".

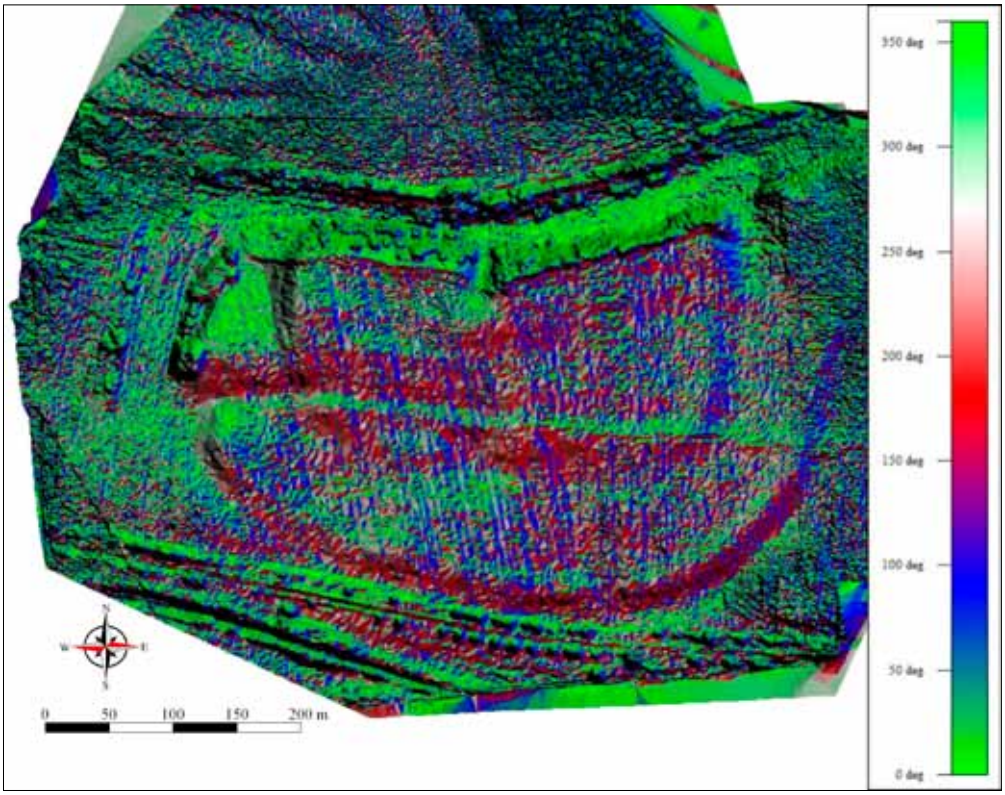

Fig. 16. Digital model of the surface – slope exposure

The fifth system of fortification consisted of a rampart and a ditch that enclosed an area of about 15 hectares. Like in the case of other contemporary fortifications in the Lower Mureş Basin, behind the rampart one may notice a ditch obtained when the earth for the rampart was excavated. The rampart measures 1.5 m in height and 15 m in width. In some areas there are traces of firing of the palisade that once stood on the crest of this structure. At the same time, on the magnetometric map one may follow the network of modern roads that cross the site from east to west.

Besides the non-invasive investigations mentioned above, we have also obtained aerial photographs shot from a drone. Based on these photos and the topographic survey we have generated the digital model of the surface including the exposition of the slopes, an image of the level curves at an interval of 0.5 m generated on the basis of the digital

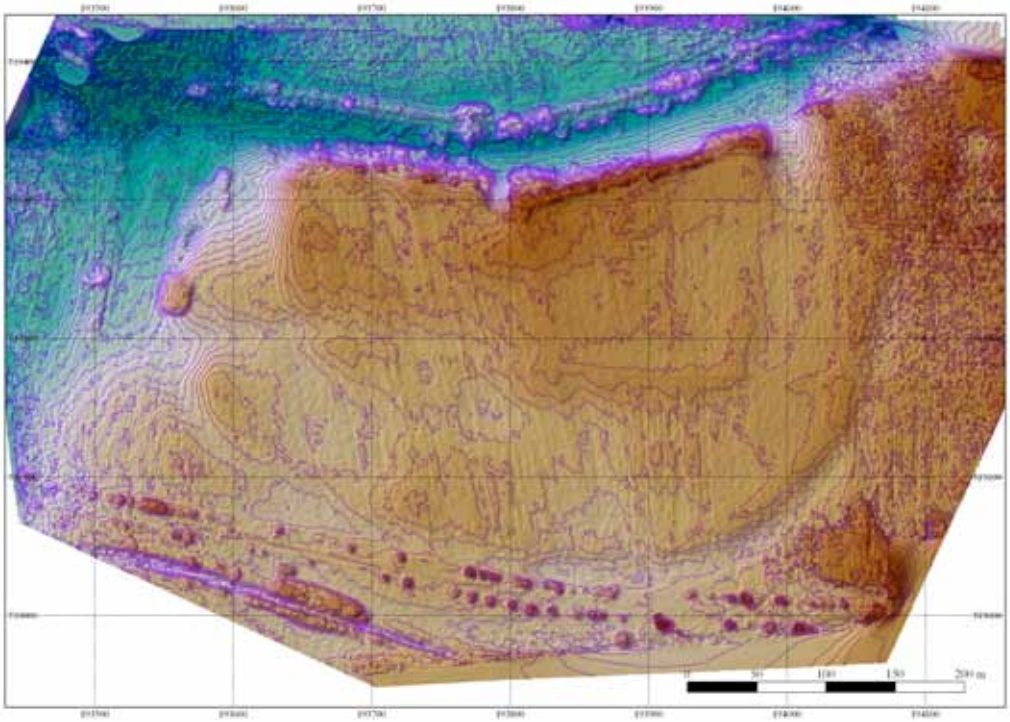

Fig. 17. Level curves at 0.5 m intervals generated on the basis of the digital model of the surface (including the vegetation)

model of the surface (including the vegetation) and the digital model of the terrain's surface (including the level of the vegetation in the beginning of April 2014) (Fig. 14–17).

The 2017 researches

A test trench was performed in May 2017 in order to verify the stratigraphy in the tell's northern area and to collect relevant samples for radiocarbon dating. Studying the magnetometric results we have chosen to set the small test trench inside the first enclosure. The optimal area was selected approximately 20 m away from the tell's "center". There, the land was not cultivated and the consistent archaeological depositions seemed ideal to the purpose.

Fig. 18. Southern profile of section S1/2017

Measuring 3×2 m the test trench was labeled section S1. It was located in the northern margin of the terrace and, as mentioned above, inside the first enclosure.

In the excavated area, the stratigraphy was simple (Fig. 18): the first layer between 0–10 cm was the vegetal layer, gray in color, not very compact. Fragments of pottery that could be dated to the Middle Bronze Age, the Second Iron Age and the Modern Era were discovered in the fill. The second layer was outline between 10–50 cm, its soil was light gray in color, pigmented with adobe, and the same type of artifacts as in the first layer were discovered over its entire thickness. A layer of dark gray clayish soil became apparent between 50–80 cm and a fragment of a modern roof tile and pottery fragments from the Middle Bronze Age were identified at its base. The fourth layer developed between 80 cm – 1.30 m, the soil was very dark gray, rather granulose in consistency, and contained pottery from the Middle Bronze Age. A gray-yellow soil pigmented with pieces of adobe became apparent between 1.30 m and 2 m and this layer contained pottery fragments from the Middle Bronze Age.

In the test trench opened in the spring of 2017 we have noted the complete absence of structures or other archaeological features. Relatively few archaeological materials were discovered in the five identified layers.

Taking into consideration the absence of archaeological features, the few artifacts and the absence of organic materials that would allow for radiocarbon dating, we were able to presume that the sector tested through section S1 was not an area used for habitation. Soil samples were collected for chemical analyses that might help us understand the use of the part of the site delimited by the first two enclosures.

Conclusions

The investigations performed on the site of Munar "Wolfsberg" were far from providing a coagulated perspective. The small test trench that did not lead to the expected results and the non-intrusive investigations presented a rather narrow spectrum of what the site really was. The entire complexity of the archaeological objective may only be proven by systematic excavations.

Although the type of performed researches does not allow for detailed analyses, one may certainly state that the site under discussion here is a good benchmark in the understanding of the Middle and Late Bronze Age in the Lower Mureş Basin. We should underline that the most numerous artifacts recovered during the systematic field research belong to the Middle and Late Bronze periods and the five fortifications certainly belong to these eras.

On the basis of available data alone one cannot establish in all certainty the chronology, the development, and the function of the five enclosures. For now, we believe there were at least two major chronological moments in the evolution of the Bronze Age settlements. It is possible that the first three, possibly the first four enclosures were in close connection to the Middle Bronze Age tell. One should note that these fortifications were only delimited by ditches. The fifth fortification system, that enclosed the largest surface, was built differently; it was massive, provided with a rampart and a ditch that are still visible today. A burnt palisade was identified on the rampart's crest and another ditch, excavated when the rampart was erected, was found behind the impressive rampart. This construction system has good analogies among the Late Bronze fortifications at Sântana and Corneşti.

Besides the Bronze Age artifacts and structures, the systematic field research has also led to the identification of certain artifacts that belong to other chronological segments. The few Baden pottery fragments and those dated to the Second Iron Age might indicate the existence of not too ample and not too dense settlements. For the Second Iron Age one cannot eliminate the possible existence of funerary traces. Supporting this hypothesis one may notice in Fig. 10–13 certain magnetic anomalies that can be interpreted as ring graves. Some written data are also available for the remains that can be dated to the 18th–20th, maybe even to the 20th century. One knows, for example, from B. Milleker's account, that at the Bezdin monastery the keeper's house was built on the site's surface, though the existence of other buildings cannot be excluded. It is obvious that these statements may not be considered certain in the absence of archaeological excavations.

Analyzing the inner structure of the site it is noticeable that the most consistent traces of anthropic activity are concentrated inside the third enclosure. This corresponds to the Middle Bronze Age tell. A somewhat novel aspect of the tell is the absence of structures in the area outlind by the first two ditches, a fact also verified by the 2017 test excavation. One can presume that this space fulfilled a different function than the rest of the tell.

Following the recently performed investigations we are in the classical situation in which we have more questions than answers. The lack of radiocarbon dates prevents us from establishing the absolute chronological connections between the Middle Bronze Age tell and the fortification dated to the late stage of the same era. We also cannot stress the chronological connections with contemporary sites such as Pecica "Șanțul Mare", Satu Mare, or Sântana "Cetatea Veche". Also, at the current state of research, one cannot explain why Corneşti-Crvenka pottery was almost exclusively used in Munar while almost 7 km to the north, in the tell at Pecica "Șanțul Mare", people used pottery characteristic to the Mureş pottery style.

Acknowledgements

Our entire gratitude goes to the 2014 and 2017 research team. Besides the authors of this article, the systematic field researches were performed by Dr. Alexandra Găvan, MA Ana Ignat, MA Cristina Cordoş, MA Marian

Lie, and MA Mihaela Savu. A team coordinated by Dr. Dan Ştefan took the aerial photographs and performed the magnetometric studies. Dr. Florin Mărginean and Robert Ile have performed the topographic survey of the site. We thank our friend and colleague MA Gruia Fazecaş for his aid during the excavation of the small test trench. We also thank the board of the Museum of Arad, represented by Emanuela Bundea and Dr. Peter Hügel, for providing the financial support for the 2017 excavation. We are also grateful to Ilie Cheşa, the mayor of the municipality of Secusigiu, and the employees of the town hall for their prompt support. Dr. Ana-Maria Gruia has translated the text into English and Dr. Anca Gogâltan had the patience to read and correct the entire text. Part of the non-invasive investigations was covered by the grant offered by the National Ministry of Education, CNCS – UEFISCDI, project number PN-II-ID-PCE-2012-4-0020.

References

Childe V.G. 1929. *The Danube in Prehistory*. Oxford: University Press.

Crişan I.H. 1978, *Ziridava. Săpăturile de la „Şanţul Mare" din anii 1960, 1961, 1962, 1964.* Arad: Comitetul de Cultură şi Educaţie Socialistă al Judeţului Arad.

Dömötör L. 1901. Római korbeli edények a pécskai Nagy-sáncban. *Archaelogiai Értesítő* 21, 327–335.

Dömötör L. 1902. A pécskai ösztelepröl származó öntömintákról. *Archaelogiai Értesítő* 22, 271–274.

Ghenadie I. 1931. Cetatea de la Munar. *Analele Banatului* 2–4, 215–216.

Gogâltan F. 2016, Building power without power? Bronze Age fortified settlements on the Lower Mureş Basin. In F. Gogâltan and C. Cordoş (eds.), *Prehistoric settlements: social, economic and cultural aspects. Seven studies in the Carpathian area*. Cluj-Napoca: Editura Mega, 87–113.

Gogâltan F. and Sava V. 2010. *Sântana „Cetatea Veche". O fortificaţie de pământ a epocii bronzului la Mureşul de jos/A Late Bronze Age Earthwork on the Lower Mureş*. Arad: Complexul Muzeal Arad.

Gogâltan F., Sava V. and Mercea L. 2013. Sântana Cetatea Veche. Metal and power. *Ziridava Studia Archaeologica* 27, 21–72.

Horedt K. 1974. Befestigte Siedlungen der spätbronze- und der Hallstattzeit im innerkarpatischen Rumänien. In B. Chropovský (ed.), *Symposium zu Problemen der jüngeren Hallstattzeit in Mitteleuropa. 25.–29. September, 1970 Smolenice, CSSR*. Bratislava: Vydavatel'stvo Slovenskej Akadémie Vied, 205–228.

Lotreanu G. 1935, *Monografia Banatului*, Vol. I. Timişoara: Institutul de Arte Grafice Timişoara.

Luca S.A. 2005. *Arheologie şi istorie (II). Descoperiri din Banat*. Bucureşti: Editura Economică.

Luca S.A. 2006. *Descoperiri arheologice din Banatul românesc – repertoriu*. Sibiu: Editura Altip.

Luca S.A. 2010, *Descoperiri arheologice din Banatul românesc – repertoriu–ediția a doua*. Sibiu: Editura Altip.

Márki S. 1882. A szent-annaiavar-ring. *Archaelogiai Értesítő* 2, 112–121.

Márki S. 1884. A szent-annai avar gyűrű. *A Kölcsey-Egyesület Évkönyve,* 185–194.

Marta L., Astaloş C., Virag C., Hágó A.N., Kádas Z., and Iegar D. 2012. Pecica, jud. Arad. Punct: Sit 15, km 28+600 – 29+100. In M.V. Angelescu (ed.), *Cronica cercetărilor arheologice. Campania 2011. XLVI-A Sesiune Națională de Rapoarte Arheologice, Târgu Mureş, 23–26 mai 2012*. Bucureşti: Institutul Național Al Patrimoniului, 288–290.

Medeleț F. and Bugilan I. 1987. Contribuții la problema şi la repertoriul movilelor de pământ din Banat. *Banatica* 9, 87–198.

Micle D., Măruia L. and Dorogostaisky L. 2006. The earth works from Cornești – "Iarcuri" (Orțișoara village, Timiș county) in the light of recent field research. *Analele Banatului, Serie Nouă* 4 (1), 283–305.

Milleker B. 1906a. *Délmagyarország régiségleletei a honfoglalás előtti időkből,* Vol. III, Temesvár (Timişoara).

Milleker B. 1906b. A nagyfalui őstelep és a munár-németszentpéter földvár. *Történelmi és Régészeti Értesitő* 22 (1–2), 53–54.

Milojčić V. 1953. Zur Frage der Chronologie der frühen und mittleren Bronzezeit in Ostungarn. In E. Vogt (ed.), *Actes de la IIIe session du Congres International des Sciences Préhistoriques et Protohistoriques, Zürich, 1950.* Zürich: Le Congrès, 256–278.

Moga M. 1964. Muzeul regional al Banatului. *Revista Muzeelor* 3 (1), 294.

Nicodemus A. 2011. The Bronze Age and Dacian Fauna from New Excavations at Pecica Şanțul Mare. *Analele Banatului, Serie Nouă* XVIII 18, 79–84.

Nicodemus A. and O'Shea J. M. 2015. From Relative to Absolute: The Radiometric Dating of Mureş Culture Ceramics at Pecica- Şanțul Mare. In S. Forțiu and A. Stavilă (eds.), *Interdisciplinarity in Archaeology and History, 3rd Edition: In Memoriam Florin Medeleț (1943–2005)*. Szeged: JATEPress Kiadó, 691–702.

Nicodemus A., Motta L. and O'Shea J.M. 2015. Archaeological Investigations at Pecica "Şanțul Mare" 2013–2014. *Ziridava Studia Archaeologica* 29, 105–118.

O'Shea J.M., Barker A.W., Sherwood S. and Szentmiklosi A. 2005. New Archaeological Investigations at Pecica Şanțul Mare. *Analele Banatului, Serie Nouă* 12–13, 81–109.

O'Shea J.M., Barker A.W., Nicodemus A., Sherwood S. and Szentmiklosi A. 2006. Archaeological Investigations at Pecica "Şanțul Mare": The 2006 Campaign. *Analele Banatului, Serie Nouă* 14 (1), 211–227.

O'Shea J., Barker A., Motta L. and Szentmiklosi A. 2011. Archaeological Investigations at Pecica "Şanțul Mare" 2006, 2009. *Analele Banatului, Serie Nouă* 19, 67–78.

Pech J. 1877. A zsadányi avar telepek Temes vármegyében. *Történeti és Régészeti Értesitö* 3, 49–59.

Popescu D. 1956. *Cercetări arheologice în Transilvania*. Bucureşti: Editura Academiei Republicii Populare Romîne.
Roska M. 1911. Ásatás a perjámosi Sánc-halmon. Fouilles aux remparts (Sánc-halom) Perjamos. *Földrajzi Közlemények* 39, 2–39.
Roska M. 1912. Ásatás a pécska-szemláki határbam levő Nagy Sáczon. *Dolgozatok az Erdélyi Nemzeti Érem- és Régiségtárából* 3, 1–73.
Roska M. 1913. Ásatás a perjámosi Sánchalmon. *Múzeumi és Könyvtári Értesitö* 7 (2–3), 81–122.
Roska M. 1914. Ásatás a perjámosi Sánchalmon. *Múzeumi és Könyvtári Értesitö* 8 (2–3), 73–104.
Roska M. 1923. Săpăturile arheologice de la Periamoș-Banat. *Gemina* 1, 9–15; 51–56; 78–93; 128–137.
Roska M. 1942, *Erdély Régészeti Repertóriuma*, Vol. I. Cluj.
Sava V. 2014, Un vas de tip butoi descoperit în aşezarea epocii bronzului de la Şagu "Sit A1_1". *Terra Sebus. Acta Musei Sabesiensis* 6, 127–146.
Sava V. 2015. *Neolithic and Eneolithic in the Lower Mureș Basin*. Cluj-Napoca: Mega Publishing House.
Sava V. and Andreica L. 2013. Social Identity in the Lower Mureș Basin During the Late Bronze Age: Two Seal-Headed Pins from Pecica "Site 14" Cemetery. In I.V. Ferencz, N.C. Rișcuța and O.T. Bărbat (eds.), *Archaeological Small Finds and Their Significance. Proceedings of the Symposium: Costume as an Identity Expression*. Cluj-Napoca: Editura Mega, 49–76.
Sava V. and Ignat A. 2014. Acquiring significance. Constructing warrior's identity at the Lower Mureș Basin. *Annales d'Université "Valahia" Târgoviște* 16 (1), 7–35.
Sava V. and Gogâltan F. 2014. Munar "Weingarten = Wolfsberg", Arad County. In F. Gogâltan, C. Cordoș and A. Ignat (eds.), *Bronze Age tells and tell-like settlements on the eastern frontier of the Carpathian Basin. History of research*. Cluj-Napoca: Mega Publishing House, 125–130.
Sava V. and Ignat A. 2016. The Beginning of the Late Bronze Age in the Lower Mureș Basin. An Overview. In F. Gogâltan and C. Cordoș (eds.), *Prehistoric settlements: social, economic and cultural aspects. Seven studies in the Carpathian area*. Cluj-Napoca: Editura Mega, 181–199.
Sava V., Hurezan G. P. and Mărginean F. 2011. *Şagu "Sit A1_1" o aşezare a epocii finale a bronzului la Mureşul de jos/A Late Bronze Age Settlement on the Lower Mureş*. Cluj-Napoca: Editura Mega.
Sava V., Hurezan G. P. and Mărginean F. 2012. Late Bronze Age Metal Artefacts Discovered in Şagu, Site "A1_1", Arad – Timişoara Highway (km 0+19.900 –0+20.620). *Ziridava Studia Archaeologica* 26, 83–107.
Soroceanu T. 1991 *Studien zur Mureş-Kultur*. Buch am Erlbach: VML.
Szentmiklosi A., Heeb B. S., Heeb J., Harding A., Krause R. and Becker H. 2011. Corneşti-Iarcuri – a Bronze Age town in the Romanian Banat? *Antiquity* 85, 819–838.
Urák M., Sava V. and Dimache M. 2015. Bringing to light an ancient miscarriage. A Late Bronze Age jar with human remains from the Lower Mureș. In A. Dobos, D. Petruț, S. Berecki, L. Vass, S.P. Pánczél, Z. Molnár-Kovács and P. Forisek

(eds.), *Archaeologica Transylvanica. Studia in honorem Stephani Bajusz*. Cluj-Napoca – Budapest: Transylvanian Museum Society, 23–33.

Vasiliev V. and Hügel P. 1999. Munar (Munariu, Szentanna, Újszentanna). In M. Barbu, P. Hügel, G.P. Hurezan and E.D. Pădurean (eds.), *Repertoriul arheologic al Mureşului Inferior. Judeţul Arad*. Timişoara: Orizonturi Universitare, 85–86.

Website

https://mapire.eu/en/