The Beidaud Archaeological Microzone Research Project. Preliminary report on the 2020 and 2021 campaigns

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Résumé:

L'article présente le projet de recherche démarré par l'Université de Bucarest et l'Institut Eco-Muséal de Tulcea dans la *Micro-zone Archéologique Beidaud*, Département de Tulcea (Roumanie), où quatre sites sont déjà signalés (Fig. 1) : un établissement Néolithique, appartenant à la culture Hamangia, dans lieu nommé *la Grădină*, au Sud de la commune de Beidaud ; un établissement fortifié de la deuxième moitié du VI^{e} s. av. J.-C. sur la colline *Calebair*, localisé à 2 km Nord-Ouest de la commune de Beidaud ; un établissement rural romain sur le *Dealul cu Cişmea*, localisé à 500 m Nord-Ouest de l'établissement fortifié ; et l'espace funéraire tumulaire sur le *Dealul cu Cişmea*.

En 2021 et 2022, l'équipe de recherche a réussi à obtenir d'importantes informations par des prospections de terrain, concernant surtout les deux sites sur le *Dealul cu Cişmea*. On a aussi bien documenté, du point de vue topographique (carte topographique, orthophotoplan, modèle 3D), toute la région investiguée. L'équipe de géoarchéologie de l'Université de Bucarest a fait les premiers carottages à la bouche de la rivière Hamagia. La campagne archéologique a eu comme objectif principal d'obtenir des indicateurs chronologiques pour la datation de l'espace funéraire tumulaire. On a accompli cet objectif par la fouille partielle du tumulus **T01**, daté aux II^{e}-III^{e} s. ap. J.-C.

Abstract:

The paper presents the research project started by the University of Bucharest and the Eco-Museal Institute in Tulcea in the *Beidaud Archaeological Microzone*, Tulcea County (Romania), which contains four sites (Fig. 1): a Neolithic settlement pertaining to the Hamangia culture, in a location called *la Grădină*, south of the Beidaud commune; a fortified settlement dated to the second half of the 6th c. BC, located on the *Calebair* Hill, 2 km northwest of the Beidaud commune; a Roman rural settlement on the *Dealul cu Cişmea*, located 500 m northwest of the fortified settlement; and a tumular funerary space on the *Dealul cu Cişmea*.

In 2021 and 2022, our team obtained important information through field surveys of the two sites on the *Dealul cu Cişmea*. Also, the entire area under scrutiny was topographically surveyed (topographic plan, orthophotoplan, 3D model). The University of Bucharest geoarchaeological team also extracted its first cores at the mouth of the Hamangia river. The archaeological field campaign had, as a main objective, the dating of the tumular funerary space, which was accomplished by the excavation of tumulus **T1**, dated to the 2nd-3rd c. AD.

Mots-clé: Beidaud, période archaïque, établissement rural romain, paléo-environnement, espace funéraire.

Keywords: Beidaud, Archaic period, Roman rural settlement, paleoenvironment, funerary space.

The project

In 2020, the University of Bucharest (henceforth UB) signed a protocol of collaboration with the Institute for Eco-Museal Research in Tulcea (henceforth ICEM), with the aim of establishing a joint archaeological research program of the Beidaud area (Tulcea County, Romania). This program was materialized in the *The Hamangia Valley from Prehistory up to the Medieval Period. Evolution of the human habitat in the Beidaud archaeological microzone*[1] project, under the scientific coordination of the present paper's author. As the title suggests, the project

[1] Romanian name: *Valea Hamangiei din preistorie până în perioadă medievală. Evoluția habitatului uman în microzona arheologică Beidaud*.

proposes a more complex approach, spanning multiple time periods and focusing on the use of the territory in question, which implies a multi-disciplinary perspective.

Within the area covered by the project, several archaeological sites have been identified. The earliest one is a Neolithic settlement, belonging to the Hamangia culture, located in the southern part of the Beidaud commune, in a location called *La Grădină* (Fig. 1). The site is not currently researched, as the UB-ICEM team initially focuses on the Iron Age and Classical period sites. We are currently trying to establish a collaboration with a scientific partner specialized in the Neolithic period in general, who will undertake research in this site.

The second site is a fortified settlement on the *Calebair* Hill, dated to a time range between the First Iron Age and the Late Roman period (Fig. 1). This almost trapezoidal settlement, covering an area of 2.6 ha, is located on a plateau dominating the Hamangia and Solojan Valleys, which in this point are deep and rocky and which create natural defences for the settlement on its southern, western and eastern sides. On the northern and western sides, which are the most vulnerable to attack, the fortress also has a 15/17m-wide defensive ditch.

To the northwest, where the Dulghea Valley meets the Hamangia Valley, the *Dealul cu Cișmea* (the *Fountain/ Spring Hill*) starts, on whose southern side a Roman rural settlement has been identified (Fig. 1). 650 m west of the Dulghea-Hamangia confluence, a short (200 m) valley starts in a north-western direction, with a spring (the so-called *Cola Gudam Spring* – Fig. 1) located 125 m away from its confluence with the Dulghea. Near the spring, Roman aqueduct tubes were discovered, which suggests the spring constituted a *caput aquae* for a water supply installation. The discovery of ceramic tubes of an aqueduct in the Ciripciu valley[2], which must have supplied water to the Roman rural settlement at Stejaru, suggests that many Roman rural settlements could have built water supply installations in order to exploit the local water resources.

On the *Dealul cu Cișmea*, north and west of the Roman rural settlement, a tumular funerary space was identified (Fig. 1), composed of at least 20-30 tumuli. Up to 2021, this funerary space was not dated to a specific period, and obtaining a chronology for it became a priority, in order to further develop the research project.

State of the art

The archaeological investigation of the Beidaud area started in 1976, when large Roman storage vessels (*dolia* of around 200 litres capacity) were discovered in the commune of Beidaud[3]. We must stress here the fact that such a discovery indicates the existence of a Roman archaeological site in the commune of Beidaud, which is yet to be identified and investigated. Following this discovery, Gavrilă Simion, founder of the ICEM, investigated the entire area, identifying all the archaeological sites that we have previously presented and which currently constitute the *Beidaud Archaeological Microzone*. In 1976-7 and 1979-80, Gavrilă Simion undertook intrusive archaeological research of the *Calebair* Hill (the fortified settlement), where he excavated two long trial trenches[4] (Fig. 2). The first (SII; 140×1.5 m) crosses the middle of the settlement on an E-W direction, and perpendicular on its centre there is another (SI), which stretches across the northern half of the settlement.

The results of this excavation are the identification of the fortification system: a ditch (possibly doubled by a second one on the settlement's northern and western sides[5]) and a defensive wall. The beginning of the settlement was dated to the first Iron Age, with the fortification raised during the late Second Iron Age. This is higly significant, as this is the only fortified settlement dated to that period (second half of the 6th c. BC) in the area, and points to its role as a contact settlement between the locals (Scythians or Getae) and the Greeks in the nearby Pontic colonies of *Orgamè* and *Istros* during the Archaic period[6]. Sorin Ailincăi identified two dwelling layers, the second one dated to the 6th-5th c. BC and associated with the fortification[7]. The latter was built in the technique of wooden boxes filled with stones and earth and is unique for that period in Dobrudja[8]. There are also three entrances to the fortification, namely to the West, North and Northeast. Inside the fortification a series of dwellings and other archaeological complexes were identified, including some Roman period pits.

[2] Topoleanu 2021, 165-166.

[3] In 2021 we investigated what happened to these *dolia* and, unfortunately, after seemingly being exhibited outside the local school for many years, they dissapeared during one of the school's restorations, along with several other ceramic and metal objects (possibly coins).

[4] Simion and Lazurcă 1980; Simion 2007; Ailincăi 2020, 102-105 organizes all the information concerning the excavation and publishes Simion's profiles and plans.

[5] The second ditch is also mentioned by Lungu, Dupont and Gavrilă 2007, 25 and Ailincăi 2020, 106.

[6] Dupont, Lungu 2010.

[7] Ailincăi 2020, 106 and Fig. 3.

[8] Ailincăi 2020, 108-109 and Fig. 6.

Sorin Ailincăi's article also analyzes the pottery and main results of Gavrilă Simion's research. Moreover, there are also two articles published by Vasilica Lungu and Pierre Dupont[9], which analyze the Greek pottery discovered during Gavrilă Simion's excavations and conclude that there is a local production of Greek pottery models, undertaken either by Greek potters settled among the locals, or by locals that copied Greek techniques.

Objectives

The first main objective is to evaluate the archaeological potential of the region, by identifying all the sites within – settlements, their funerary spaces or other archaeological complexes. This will enable us to better understand the general archaeological context of the area under investigation.

The second is to precisely establish the topography, in order to better understand the functioning of all the sites under investigation (including their connection to other neighbouring sites).

The third objective is to date and assign to a specific culture all the involved sites, starting with the only site we have no chronological information for, namely the tumular funerary space. Also, we are going to establish a general stratigraphy for the pluristratified sites and refine their chronology.

The fourth objective is to better delimit the archaeological sites under investigation, establish their functionality and their area of impact, as well as analyze the dwelling types in all of them by establishing their plan and the construction techniques involved. We also need to examine the existent water supply and sewer system for all the settlements, but especially for the Roman rural settlement, given the possible aqueduct at the Cola Gudam spring.

The fifth objective is to create a general picture of the paleoenvironment through biosedimentological, as well as archaeozoological, palinological and physical anthropology analyses.

Methodology

As we have already mentioned, our project aims to analyze human habitation on quite an extensive and geographically-complex area. This calls for a multi-proxy approach that would eventually provide a general overview of the evolution of the settlements in the area.

The first step is to have an appropriate visual and topographic image of the entire area. Our main objectives in this direction are to first obtain a detailed orthophotomap of the area containing and in-between the above-mentioned archaeological sites, as well as a system of topographic fixed points that will allow us to take measurements with the total station. Then we must obtain a high-resolution orthophoto plan, which will allow us to extract a Digital Elevation Model and a 3D model of the area in question. Finally, we intend to conduct a LIDAR survey of the area in question, in order to have all the aerial visual data we can obtain. These will be combined on a GIS platform that will allow us to centralize all the geographical data obtained.

A crucial direction of our research will be the geoarchaeological approach, which will provide data concerning the paleoenvironment of the Hamangia Valley. The data obtained by coring at the mouth of the Hamangia and upstream from the archaeological sites, as well as in its meanders, will hopefully be able to create an image of the area's geomorphological evolution and its paleo-vegetation (and thus we will hopefully be able to create an agricultural profile). We should also be able to investigate a possible connection between the establishment of settlements in the area and copper exploitation in the mine at Altân Tepe (located approx. 7 km NNW of the fortified settlement).

The archaeological research proper will be formed of three major phases: pre-excavation non-intrusive surveys, the archaeological excavation proper and the processing and analysis of the resulting archaeological materials.

As far as the non-intrusive surveys are concerned, we intend to conduct classic field surveys in order to better understand the terrain and to identify possible new sites (e.g. the funerary space of the fortified settlement, roads connecting the fortified settlement or the Roman rural settlement with other contemporary settlements in the area etc), as well as geophysical surveys. The latter will cover at least the entire fortified settlement and the Roman rural settlement (which needs to be delimited in order to also provide precise information in the Romanian National Archaeological Registry) and will determine the excavation strategy for these two objectives. The geophysical methods most efficient for the type of terrain the two archaeological sites are located on are magnetometry and probably GPR. The geoarchaeological research might also use electric resistivity in order to better understand the geological layers of the Hamangia Valley.

The archaeological excavation will be adapted to each site. In the case of the fortified settlement we will develop an excavation which will combine a 4×4 Wheeler boxes grid (for the settlement's surface) with vertical trial trenches for the fortification. For the Roman rural settlement we will use again the 4×4 Wheeler boxes grid, and for

[9] Dupont, Lungu 2010 and Lungu, Dupont and Simion 2007.

the tumular funerary space we will use long, 2 m-wide parallel trenches, in order to better document the mounds' stratigraphy.

The documentation of the archaeological contexts will be done using the MoLAS sheets and for the funerary spaces we intend to develop our own excavation protocol, adapted to the situation encountered in the field.

All dirt excavated from the settlements will be sieved, as well as that from the graves. All measurements will be made from a fixed point, using the optical level (and related to one another), as well as using the total station in the STEREO70 system (the Romanian national system). This will allow us to draw a detailed plan for all the building structures, vectorize it and add it on the topographic map in the GIS platform.

As far as the funerary archaeology is concerned, our methodology will also involve ancient DNA, microbioma and human genetic analyses, in order to better understand the structure, (hopefully) provenance and details of the ancient diet adopted by the communities that lived in the settlements under scrutiny.

The 2020 campaign

The first field campaign aimed at getting the joint UB-ICEM team acquainted with the terrain of the archaeological microzone and evaluating the area's infrastructure in view of the future research.

These limited objectives were also the result of the restrictions imposed due to the COVID-19 pandemic, which meant that, apart from the three specialists from UB and ICEM, only five experienced graduate students took part.

During the campaign, three field surveys were made. The first started with an inspection of the fortified settlement, which allowed the team to get a sense of the terrain and of the architectural elements forming the settlement. It continued with a field survey of the *Dealu cu Cişmea* (Fig. 3), the participants advancing in a row, set approximately 5-6 m apart, on an E-W and then SE-NW direction, on both sides of the DC25 dirt road that connects Beidaud to Neatârnarea. The entire southern part of the hill (maybe extending 100-150 m northwards and westwards up to the western end of the secondary valley to the Dulghea Valley, near the Cola Gudam spring) seems to contain rectangular structures made of stone-bound-with-earth walls, to be identified with the Roman rural settlement identified by Gavrilă Simion at the end of the 1970s. To the North the terrain is strongly affected by the water torrents that tore deep depressions into the ground on a W-E direction (Fig. 4). At the end of the valley the stone structures disappear and we identified a series of tumuli that extend around the end of the valley to the W and SW and continue to the NW and N of the rural settlement. In this area, north of the rural settlement, we identified a row of tumuli (Fig. 3 and 4), which suggest the existence of an ancient road connecting the Roman settlement at Neatârnarea (to the NW) with the settlement we were investigating. Following the preliminary analysis, the collected material (pottery and ceramic construction material fragments) seems to date from the Roman period, namely to the 2nd-5th c. AD[10].

In the second field survey (Fig. 3) we followed the Dulghea Valley and then the valley of the Cola Gudam spring. At the spring proper no traces of the Roman water supply system could be identified. But further westwards, when inspecting two deep crevasses cut by water torrents in the southern slope of the *Dealu cu Cişmea*, we identified a large quantity of Roman pottery and ceramic construction material (dated generally to the 2nd-3rd c. AD), as well as clear traces of constructions belonging to the Roman period (Fig. 3). These are a wall (Fig. 5) along the western side of the torrent, as well as one coming out of the western side (Fig. 6), and in the eastern side there is also the globular shape (Fig. 7) left by a large storage vessel (*dolium*). Following the information provided by a local shepherd, we identified, on the other side of the valley (Fig. 8), the place where a large *dolium* had been buried in the ground. This situation suggests that the rural settlement could have extended around the end of the valley.

The second leg of this survey took us on the part of the *Dealul cu Cişmea* extending south and west of the Cola Gudam spring, on a distance of 600 m in a WSW direction, down to a valley leading southwards into the Dulghea Valley. On the surveyed surface we encountered several structures that can be interpreted as walls (in one case we identified the perpendicular junction of two such structures), but they remain difficult to interpret or date. Very few pottery shards were found and, at a first glance, they can be interpreted as Roman.

Once we rejoined the Dulghea Valley we turned eastwards, passing through a deep, spectacular canyon, up to the point of confluence with the Cola Gudam spring. Only in one point several Roman shards were identified, but this valley seems to be devoid of human dwelling traces.

In the third field survey (Fig. 3) we chose to go around the *Dealul cu Cişmea* on its eastern and northern sides, up the Hamangia Valley. Most of the journey was done on the hill opposite the *Dealul cu Cişmea*, as the area at the latter's base is covered with thick and thorny vegetation. In the area, where the Hamangia Valley turns westwards,

[10] Information concerning this material in the fortchoming article by I. Iliescu, R. Stănescu and V. Bottez, to be published in 2022.

on the hill opposite the *Dealul cu Cişmea* hill, we identified two small, but running springs (despite the current drought – Fig. 3 and 9), which, together with the Dulghea and the Cola Gudam spring, could be an argument why this valley has been inhabited for such a long time. Just west of this point, we turned south and climbed back on the *Dealul cu Cişmea*, on a very steep slope (Fig. 10), characteristic for the entire eastern side of the hill (Fig. 11). On this (northern) part of the hill we did not find any archaeological material or structures until we reached the line of tumuli that seem to delimit the immediate area of the settlement.

The 2021 campaign

The 2021 campaign was, as one would expect, more intense and complex, involving specialists and students from ICEM and three faculties of the UB, international collaborations with specialists from the University of Texas, Austin (US) and from Aix-Marseille Université, France (henceforth AMU).

The topographic campaign. The first step was to establish a series of fixed topographic points on the *Dealul cu Cişmea*, in the area of the Roman rural settlement, that of the tumular funerary space and near the Cola Gudam spring. This was accomplished by Mr. Florin Nache (PhD student), Assistant Professor Engineer at the Faculty of Geology and Geophysics (University of Bucharest) who, using a differentiated GPS, set six topographic fixed points, with all the three-dimensional data set at an absolute level.

A second objective was to obtain a high-resolution orthophotoplan of the area of and in-between the *Calebair* Hill and the *Dealul cu Cişmea* (2.4 km ^{2}). The latter (Fig. 12) was obtained again, by Assistant Professor Florin Nache, based on the 1893 images taken by a multirotor drone; the aerial photogrammetric flight was made at a height of 160 m from the soil. From this was extracted a Digital Elevation Model (DEM), a very useful tool in spotting large archaeological features (Fig. 4 and 13). Apart from the orthophotoplan, which has a resolution of 4 cm on the ground/pixel, a digital model of the overflown area was obtained (Fig. 14 and 15). Finally, based on the orthophotoplan, on the digital model, as well as on the topographic measurements undertaken in the field, a 1:2000 orthophotomap (Fig. 16) of the required area was obtained.

Establishing the area's chemical profile. In order to be able to compare the strontium and oxygen isotopes analyses of the predicted discoveries of human remains during archaeological excavations against the local bioprint of the two elements, our team collaborated with Associate Professor Adam Rabinowitz (University of Texas, Austin), who is developing a strontium and oxygen profile of a larger area. Prof. Rabinowitz took water samples (Fig. 17) from the Cola Gudam spring as well as from the two springs located on the slope of the hill facing the north-eastern corner of the *Dealul cu Cişmea*. As of February 2022, the results of these analyses are ready and will be used in our future research.

The geoarchaeological campaign. In September 2021, the **Geoarchaeological Team of the University of Bucharest**, formed of Professor Habil. Alfred Vespremeanu-Stroe, university researcher Luminița Preoteasa, PhD students Laurențiu Țuțuianu, Ionel Stan, Alexandru Berbecariu and Daniel Ivanov, undertook a first geoarcheological survey of the Hamangia Valley.

The geoarchaeological field campaign surveyed the area where the Hamangia River flows into Golovița Lake, in order to obtain a stratigraphic sequence representative for the succession of sedimentation milieus in the Lower and Middle Holocene and of the dwelling periods, starting with the Neolithic. A 10 m-long core (Fig. 18) was obtained (its geographic coordinates are: 44° 42' 47.62" N lat. and 28° 43' 4.44" E long.) with the aid of a Eijkelkamp – Percussion hammer Cobra TT).

The sediment was sampled for multiple analyses (e.g. sedimentologic, geochemical, sporo-polenic, paleofauna, radiocarbon dating) in order to determine the identified layers' physical characteristics, a necessary step in the paleographic and dwelling reconstruction of the area.

The laboratory stage of the research started by the transportation of the sealed core tubes at the Laboratory of Sedimentology of the Faculty of Geology and Geophysics, where a detailed stratigraphic, as well as a granulometric analysis was performed. The organic and inorganic contents were established through the LOI (Loss on Ignition) method. 10 samples were collected for radiocarbon dating at the RoAMS Laboratory, at the IFIN-HH. The preliminary results will be published soon by the research team.

The archaeological campaign

The 2021 archaeological campaign was divided into two different periods. The first one was in August, when the excavations were undertaken by a UB[11]-ICEM[12] team, which included PhD student Sterling Wright (Pennsylvania State University), Dr. Alexandra Dolea and Mr. Răzvan Plederer (MA). The second, in September, when the excavations were carried out in the framework of a CIVIS[13] Summer School, involving the Aix-Marseille Université, the Université Libre de Bruxelles, the Kapodistrian University in Athens and the UB, called *The Archaeology of Death: technical and historical problems and issues of archaeothanatology and the burials excavation*[14]. The partners' field team was led by Dr. **Gaëlle Granier** (archaeo-anthropologist, CNRS research fellow, AMU) and was formed by students Élodie Caserta (MA student at AMU), Manon Cobut de Haan and Clara Hostie (MA student and undergraduate student respectively at Université Libre de Bruxelles).

Given the project's general objectives, the 2021 excavation campaign's main priority was to provide preliminary dating of the tumular funerary space on the *Dealul cu Cișmea*. To this end, we decided to excavate a tumulus, and chose tumulus **T01** (with an approximate diameter of 23 m), which is located in the six tumuli row (Fig. 4), aligned on a WNW-ESE direction, and located approximately 350 m NW of the end of the valley along which the Cola Gudam spring flows. We must mention here that a detailed orthophotoplan and aerial photos of the excavation were taken by Dr. Marius Streinu, of the National Heritage Institute – and we would like to take this opportunity to thank him.

From a methodological point of view, we decided to investigate the tumulus using parallel trenches, starting with two 23×2 m excavating units (Fig. 19), namely **S01** and **S02** (in the latter we did not reach the bedrock), separated by a 1 m-wide baulk (located in the centre of the tumulus) and aligned on an N-S direction. In order to obtain preliminary information and to get acquainted with this new archaeological context, as well as to be able to establish a coherent approach for a new team, the excavating was done manually (from now on we will probably use mechanical means as well for removing the barrows' top layers). All the excavated dirt was sieved (in future research only the dirt from the graves will be sieved, in order to excavate efficiently, while at the same time avoiding the loss of relevant information).

The consistent layers of human residues identified in two of the funerary structures were excavated using a grid. A longitudinal axis was drawn, from which 30×30 cm boxes were delimited. The layers were therefore excavated in 30×30×5 cm passes, the dirt was collected separately and will be processed during a workshop to be held at the University by Dr. Gaëlle Granier in autumn 2022, in order to better locate all the anatomical elements.

The excavation of the two trenches allowed us to establish **T01**'s stratigraphy, as exemplified on **S01**'s eastern profile:

- context **1000**: a vegetal layer (of varying thickness), starting at -1.42 m/-2.25 m (at the top and on the sides);
- context **1002** (-2.25 m/-2.34 m): a layer of loose, dark-brown (10YR4/3) granulated earth; it is part of the barrow's mantle and contains many Early Roman (2nd-3rd c. AD) pottery fragments;
- context **1004** (-2.31 m/-2.34 m): a compact layer of dark, brownish grey (10YR4/2) granulated earth; it is also part of the barrow's mantle and contains bones and traces of burn;
- the green schist bedrock.

All the funerary structures researched until now were dug in the lower layer (**1004**), some of them reaching the bedrock, which was even dug up according to the needs of that respective structure.

The archaeological material discovered allow the preliminary dating of **T01** and, implicitly, the funerary space it was part of, to the 2nd-3rd c. AD.

[11] Associate Prof. Valentin-Victor Bottez, Lecturer Alexandra-Clara Țârlea, Lecturer Alexandra Lițu, Assistent Professor Iulia-Alexandra Iliescu, PhD student Anca Maria Constantin, Tatiana Iorganda (MA), Franceska-Cristina Știrbu (MA) and Radu Penea (MA student).

[12] Dr. Sorin-Cristian Ailincăi, PhD student Radu Stănescu and Răzvan Ceramoriți (MA).

[13] https://civis.eu/ro/pagina-principala.

[14] The summer school project covers three years (2021-2023), with the 2021 field stage planned for Beidaud, Romania, the second (2022) for Itanos and Marathon (Greece) and the 2023 stage for the ARKAIA Laboratory (AMU). The Beidaud stage was financed by the mentioned CIVIS project, as well as by a Romanian FDI-2021-v.1.0 project and by the UB.

The funerary structures[15]: seven such structures[16] (Fig. 19) were identified in the two trenches, of which:

- two inhumations: **SF03** (Fig. 20) and **SF06** (Fig. 21)
- five cremations: **SF01** (Fig. 22), **SF02** (Fig. 21), **SF04** (Fig. 23), **SF05** (Fig. 24), **SF07** (Fig. 25);

As far as the funerary structures are concerned, we could establish that the pit's fill layer was associated to the burn layer in the cremation graves, while the pit's fill layer in the inhumation graves was associated to one or several stones. Also, we must mention that in the first mantle layer over **SF01** we identified a large stone – a marker, as was probably the case with the other mentioned stones.

Another important aspect of the cremation funerary structures is that they did not suggest the sacralisation of the structures; they seem to represent only the cremation pits and the residue was transported somewhere else, possibly for a secondary deposit, namely a grave. But, in two of the cases (**SF04** and **SF07**), cremated residue was left in the pit. In the case of **SF04**, the bone fragments were sorted according to their size and were transported, most probably, to a secondary deposit. On the other hand, the residue in the western half of the pit was completely collected and transported. In the case of **SF07**, we identified a deposit of burned bones (burned bones mixed with charcoal, on the bottom of the pit). Even so, we cannot state that this was a burial, as the weight of the collected residue was way under 2 kg (the approximated weight of the complete cremated remains for one individual) and the bones could have, in fact, belonged to another complex that extends eastwards into the profile (and therefore will be investigated in 2022).

Last, but not least, the depth of the pits suggests that they represented semi-aerial structures, most probably a pyre. In the case of **SF02** we even identified fragments of two burnt beams on the pit's edge, on the outside (Fig. 26). So the contexts we have identified in 2021, namely both the traces of burn, as well as charcoal fragments and burnt bones, represent a primary cremation structure.

Preliminary conclusions

The main results of the 2020 campaign were the clear identification and better delimitation of the Roman rural settlement along the southern side of the *Dealul cu Cișmea*, with new information concerning its extension around the end of the Cola Gudam spring's valley (the presence of a *dolium*, a prized possession, indicates the presence of buildings on the southern side of this small valley) and possibly even to the west.

Also, from a strategic point of view, although the area to the West and Northwest is easily accessible, the northern, eastern and southern sides of the *Dealul cu Cișmea* are very well defended by its steep, rocky slopes.

The ceramic material discovered during this campaign, as well as during future campaigns, will have to be set in a regional context, as there are indications of local pottery workshops, such as one possible centre at Stejaru[17], or the ceramic roof tiles workshop located close by, in another Roman settlement located between Beidaud and Sarichioi Deal[18].

The tumular funerary space seems to surround the Roman rural settlement on its western and northern sides, but some mounds also seem to be on the territory of the settlement. This means either that they are not funerary structures, but mounds created by the collapse of larger buildings, or tumuli raised before the creation of the Roman settlement. This situation stressed the need to date the tumular funerary space in future campaigns – and this was accomplished in 2021. Also, 350 m northwest of the end of the Cola Gudam spring valley, we identified a row of at least six tumuli, set on WNW direction, indicating the presence of an ancient road, possibly connecting the settlements in the area with the Roman settlement at Neatârnarea. This was a first step in understanding the way the Roman rural settlement was integrated in the area's network of settlements. Excavating the tumuli could also bring answers to problems such as what roles these funerary structures, which at the same time constituted important visual markers, played in the local community's identity-building process.

The 2021 campaign also brought important new information. Apart from the topographic results (the fixed points system, the orthophotomap, the orthophotoplan and the 3D model) and the geoarchaeological campaign, the archaeological excavation proper brought a series of answers.

[15] In Romanian *structură funerară*, abbreviated **SF.**

[16] The full description and analysis of the funerary structures will be published when the excavation of the barrow will be completed. Here, we are presenting only partial results. Also, none of the funerary structures were completely excavated (this will be done when we excavate the central baulk), which is why we do not present plans and profiles in the present article.

[17] Topoleanu 2021, 164.

[18] Paraschiv *et al.* 2016, 232.

The most important is the preliminary dating of the tumular funerary space to the 2nd-3rd c. AD, which means this was the funerary space of the Roman rural settlement to the South. This constitutes an important opportunity for the project, as we will be able to research both the settlement, and its funerary space in parallel.

The characteristics of the funerary structures we identified clearly indicate that both rites were practiced in **T01**, even though the two inhumations were both of non-adults. Also, the bones' bad state of preservation, which makes impossible the taphonomic analysis, as well as the absence of an anthropological analysis[19], means that it is too early to say anything about the status or kinship of the deceased, or to establish a more refined chronology of the funerary structures.

To conclude, the preliminary data suggests that, in the case of **T01**, we are dealing with the cremation of the deceased on a tumulus, but the residue was deposited in a complex either in the barrow (and we will eventually discover them in the unexcavated part of the barrow), or outside, in a funerary space yet to be identified.

Objectives for the 2022 campaign

The main objective of the 2022 archaeological campaign is to finish the excavation of **T01** and the excavation of another barrow, using mechanical means for the removal of the top layers.

The geoarchaeological team will also continue its research, by also coring the courses of the Hamangia and the Solojan upstream from the fortified settlements.

We intend to create a detailed 3D model of the entire area under investigation using LIDAR, which could help us better identify structures in the entire area.

Also, it is of paramount importance that the delayed geophysical survey provides a clearer image of the fortified settlement, as well as of the Roman rural settlement.

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[19] We must mention the fact that Mr. Sterling Wright collected five teeth for the analysis of the dental tartar.

Illustration

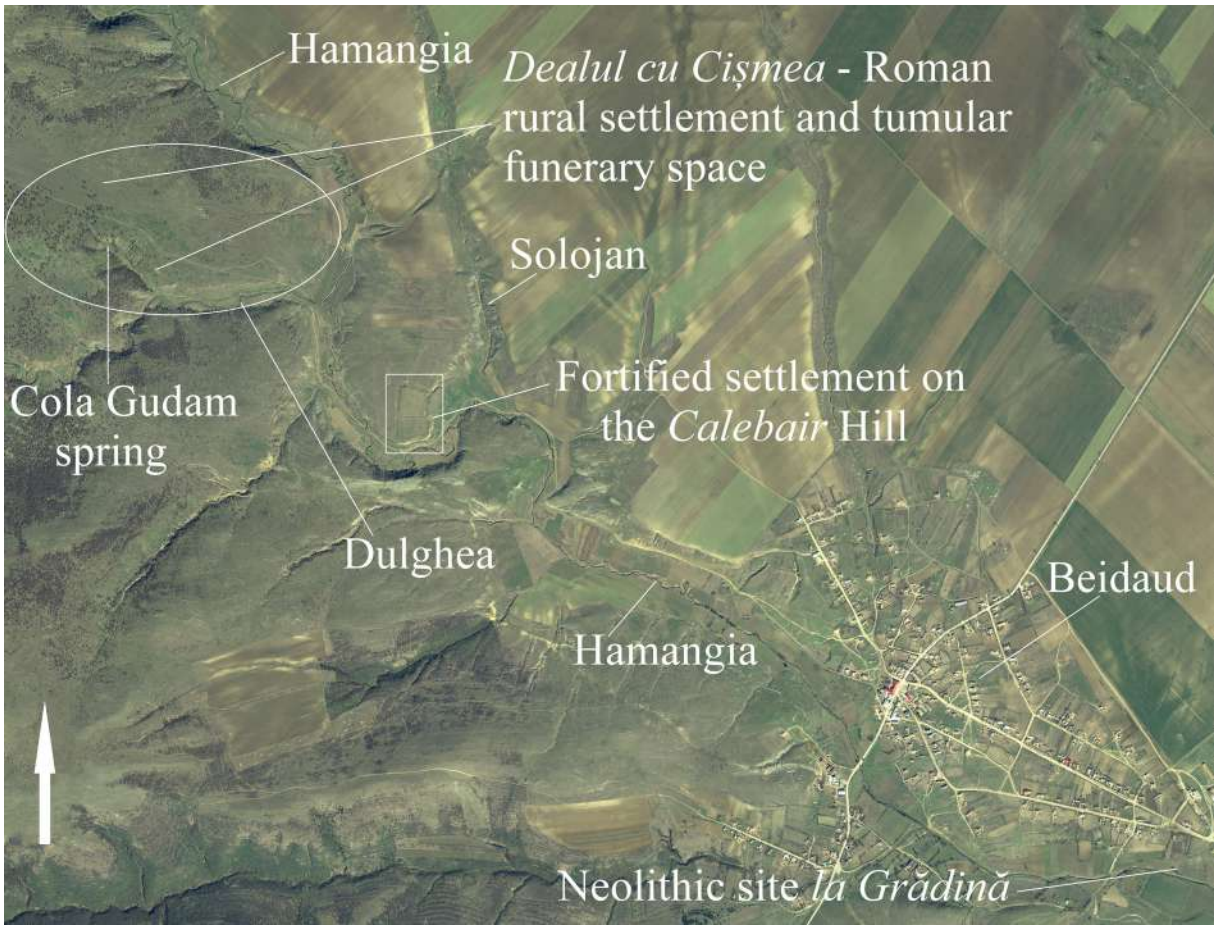

Fig. 1. The Beidaud Archaeological Microzone (orthophotoplan by M. Florea, MNIR)

Fig. 2. The fortified settlement on Calebair Hill at Beidaud (ICEM archive)

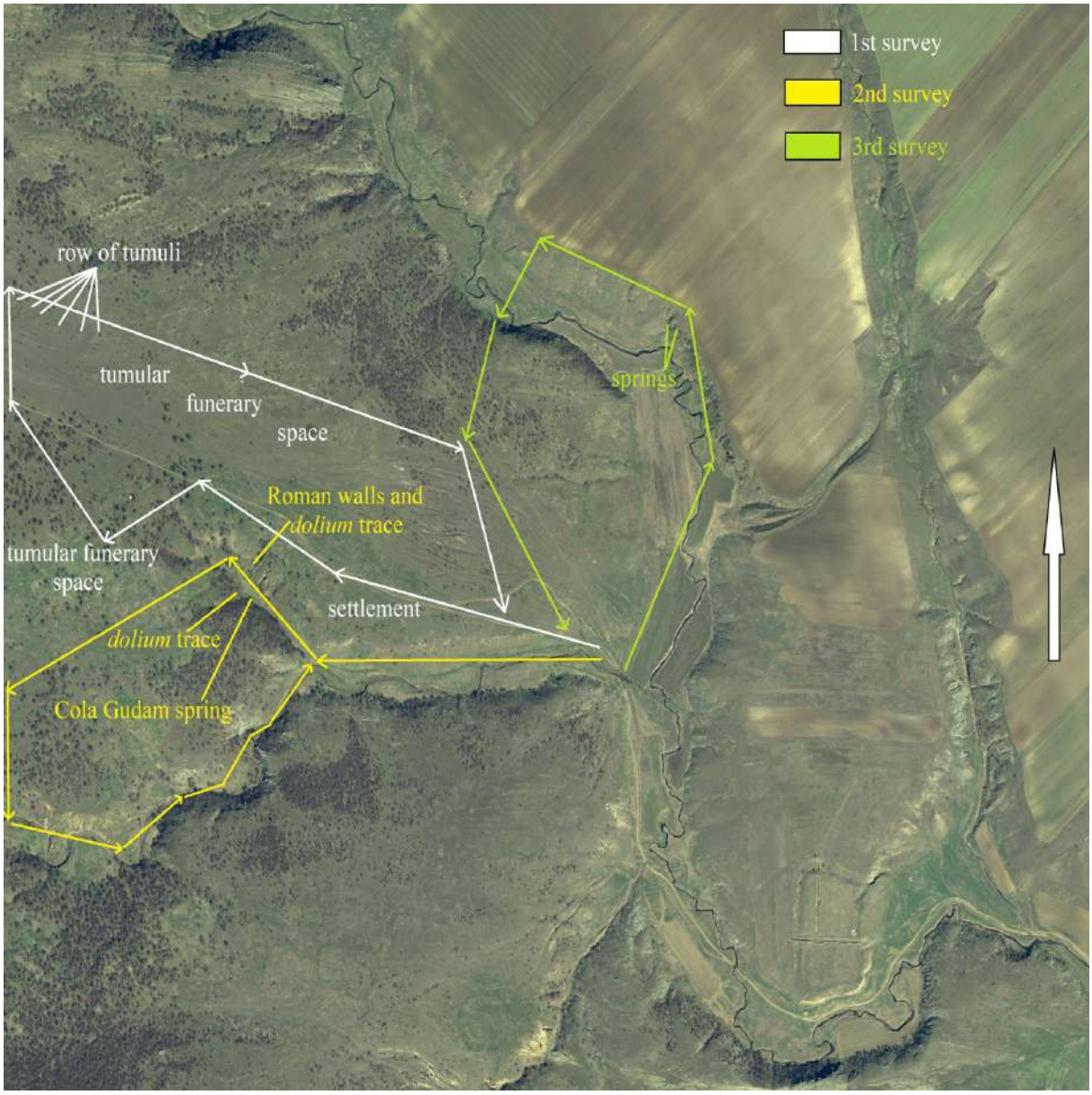

Fig. 3. The 2020 field surveys (orthophotoplan by M. Florea)

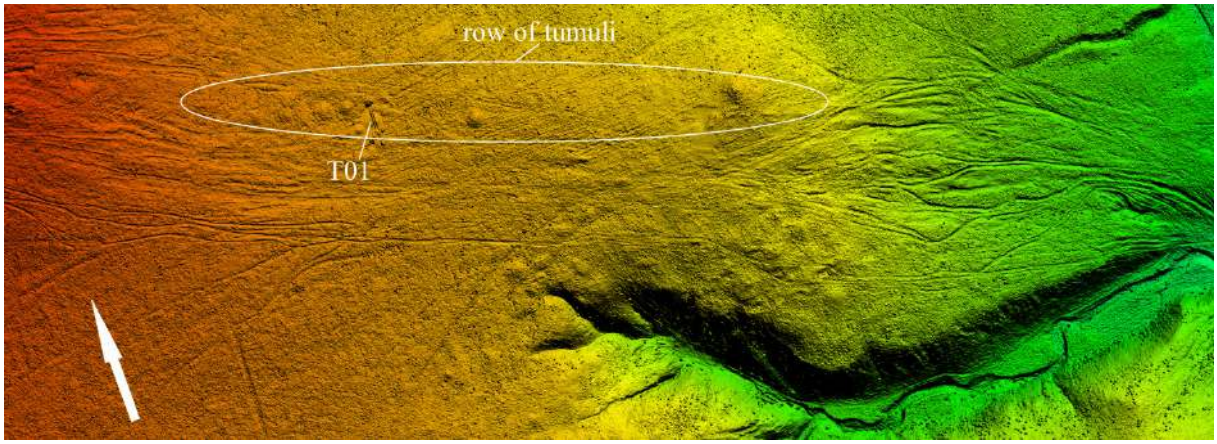

Fig. 4. DEM with row of tumuli and **T01** *(DEM by F. Nache)*

Fig. 5. Roman wall (Photo by V. Bottez)

Fig. 6. Roman wall (Photo by V. Bottez)

Fig. 7. Trace left by a Roman dolium (Photo by V. Bottez)

Fig. 8. Trace of Roman dolium on S slope of the valley (Photo by V. Bottez)

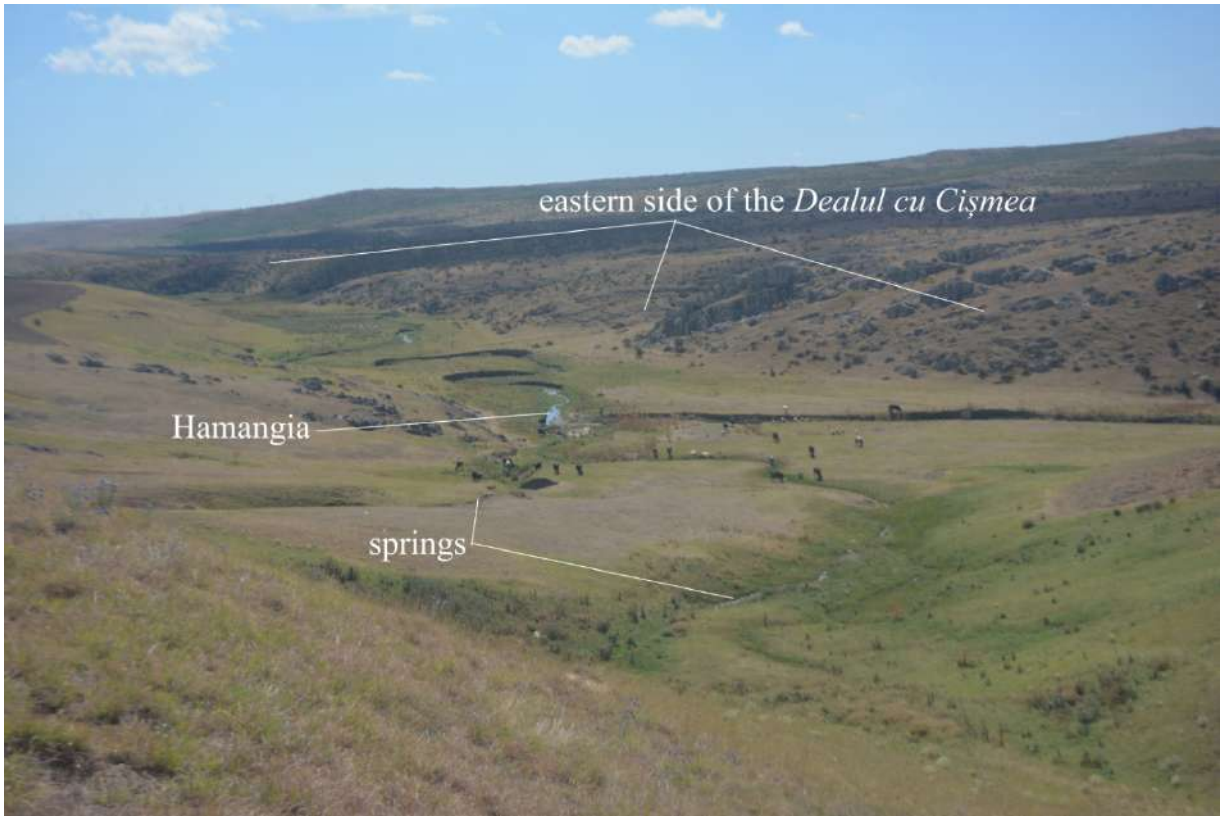

Fig. 9. The two springs and Eastern side of the Dealul cu Cișmea (Photo by V. Bottez)

Fig. 10. Northern side of the Dealul cu Cismea (Photo by V. Bottez)

Fig. 11. Eastern side of the Dealul cu Cismea (Photo by V. Bottez)

Fig. 12. The Beidaud Archaeological Microzone 2021 (Orthophotoplan by F. Nache)

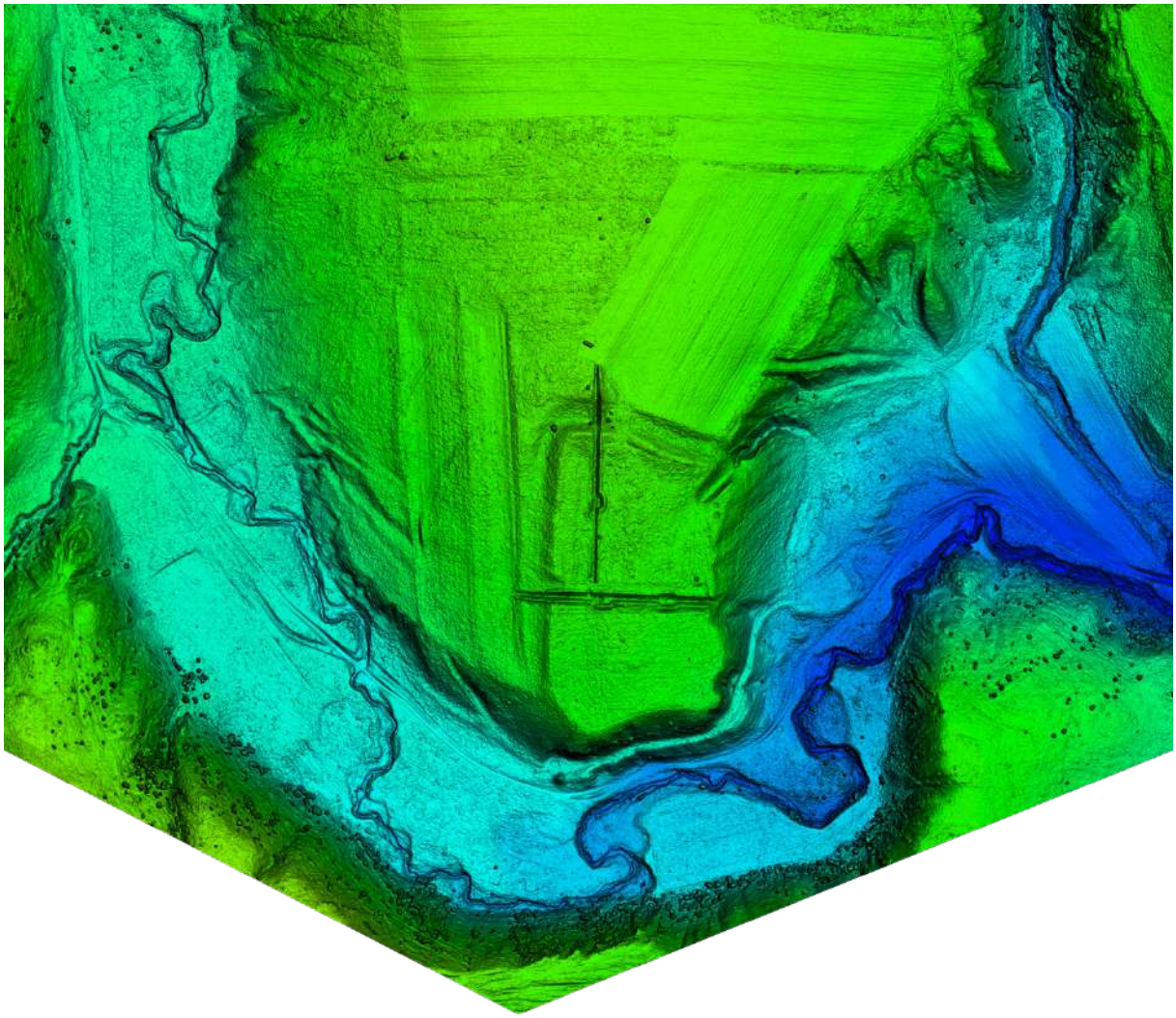

Fig. 13. DEM of the fortified settlement and the surrounding valley (F. Nache)

Fig. 14. 3D model - the fortified settlement (caption by F. Nache)

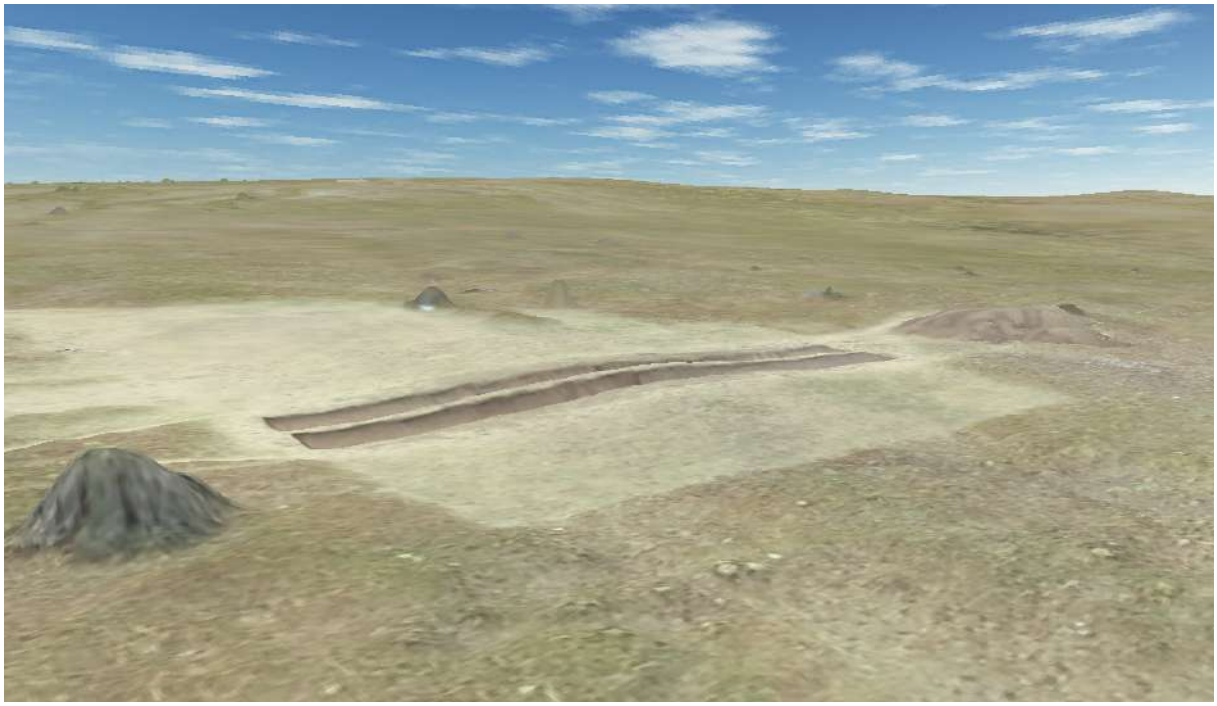

Fig. 15. 3D model - the excavation of **T01** *(caption by F. Nache)*

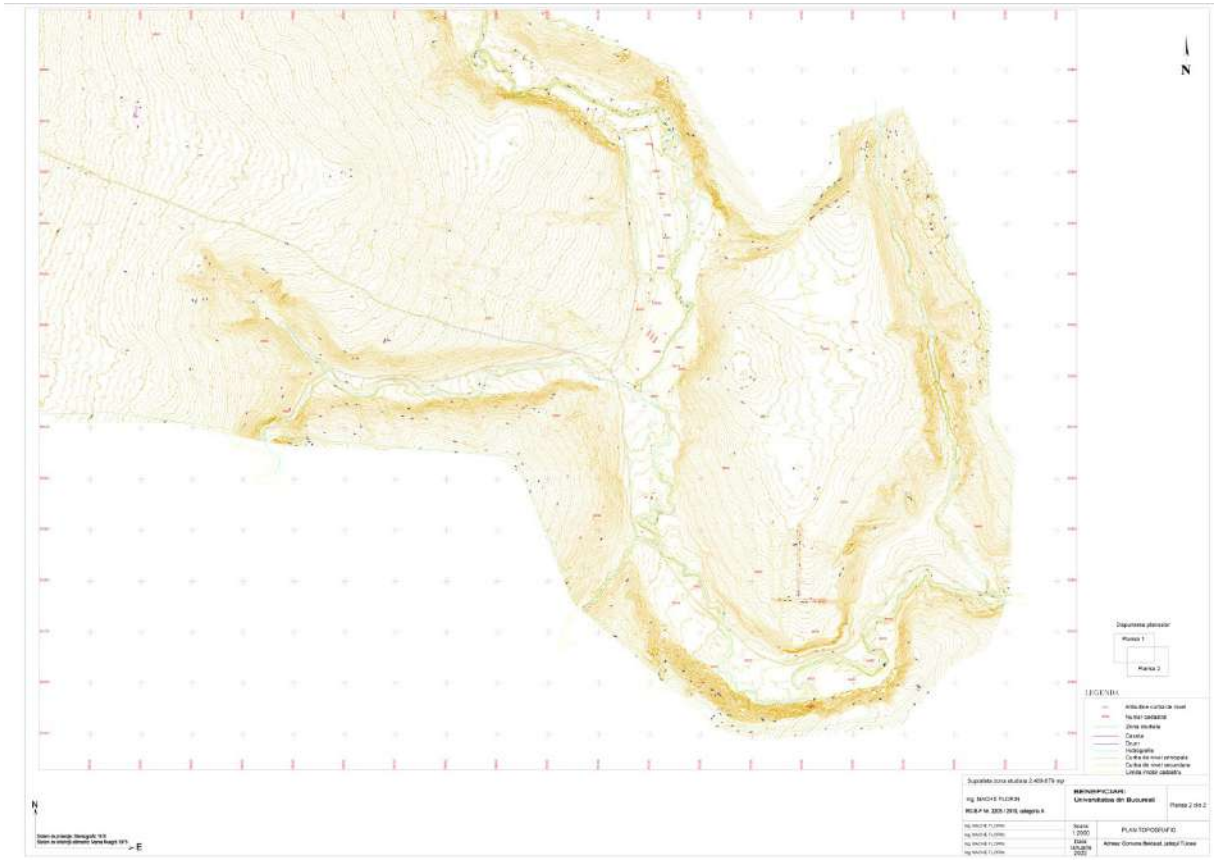

Fig. 16. Orthophotomap of the microzone in 2021 (F. Nache)

Fig. 17. Professor Adam Rabinowitz taking water samples (Photo by V. Bottez)

Fig. 18. Location of core **HAM-2** *(Photo by A. Vespremeanu-Stroe)*

Fig. 19. **S01** *and* **S02** *in* **T01** *(Photo by M. Streinu)*

Fig. 20. **SF03** *(Photo by V. Bottez)*

Fig. 21. **SF02** *and* **SF06** *(Photo by V. Bottez)*

Fig. 22. **SF01** *(Photo by V. Bottez)*

Fig. 23 **SF04** *(Photo by V. Bottez)*

Fig. 24. **SF05** *(Photo by V. Bottez)*

Fig. 25 **SF07** *(Photo by V. Bottez)*

Fig. 26. **SF02** *(detail). Pyre beam (Photo by V. Bottez)*